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Foreword

2012 has been another very bad year for Europe. After five years of economic crisis, recession has returned, unemployment has reached levels not experienced in nearly two decades and the social situation is also deteriorating. The effect of national automatic stabilisers, intended to keep up household expenditure and protect the most vulnerable, has weakened compared to early years of the crisis. With increasing long-term unemployment, marginalisation risks also increase. Groups already at a heightened risk of poverty, such as young adults, children and to some extent migrants, are now experiencing an even worse situation. The ESDE (Employment and Social Developments in Europe) 2012 review analyses both the risks of entering into poverty and the prospects of escaping it, with striking differences between Member States.

Wage developments have been subject of increasing attention throughout the crisis because of their importance for competitiveness, domestic demand, employment as well as social inequalities. Any fair analysis of this complex subject needs to take these multiple dimensions into account, and this review seeks to make a substantial contribution. ESDE 2012 also analyses the functioning of Europe's social protection systems over recent years. At the same time, recognising the importance of the revenue side of the welfare state, the review presents evidence on recent developments in taxation systems, shifts in the tax base and their employment and distributional implications.

The analysis crystallizing in this publication has underpinned the Commission's Annual Growth Survey 2013 as well as a number of new Commission initiatives. Within 12 months, the Commission is likely to have adopted three policy packages supporting Member States' efforts to make progress towards the Europe 2020 targets despite a worsening economic environment. First, in April 2012 the Commission adopted the Employment Package, setting out a reinforced agenda for job creation and dynamic labour markets. Second, the Commission responded to the fact that young people are particularly hard-hit by the crisis in many different ways, as can be seen throughout this report, and in December 2012 adopted a Youth Employment Package, including a proposal for development of Youth Guarantee schemes across the Union. Third, the Commission is preparing a Social Investment Package, intended to help reconcile the need for effective and activating social policies in the context of a fiscal crisis in many Member States.

I am convinced that the analysis in this review gives a clear picture of the need and points towards the means for the EU, its Member States and all other players to take action, to address divergences both between countries and between citizens, and to create a viable path for a job-rich and inclusive recovery.



László Andor
Commissioner for Employment,
Social Affairs and Inclusion

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Executive summary

The analytical focus of this review...

This second edition of the Employment and Social Developments in Europe (ESDE) Review builds on the integrated approach to employment and social analysis embarked on in the first ESDE Review last year. Our concentration on cross-cutting themes covering the employment and social domains, such as in-work poverty, wage polarisation and income inequalities in the 2011 Review, has met with a positive reception. The discussions which followed with stakeholders have helped shape our further analytical focus.

...reflects a deepening economic and social crisis in Europe.

The recent economic and social developments have also driven the choice of analytical subjects for this 2012 Review. Since 2011, the economic slowdown has gradually turned into recession in the EU, as the escalation of debt crises in several Member States led to significant policy shifts toward sharp fiscal consolidation by and large across the EU with adverse effects on aggregate demand. As a result, the previous timid employment growth has come to a standstill in the recent quarters and unemployment has reached levels not seen in more than a decade. Simultaneously, the social situation is deteriorating, especially in Member States in southern and eastern Europe, as the effect of national automatic stabilisers, which played an important role in keeping up household expenditure and protecting the most vulnerable in the first phase of the crisis, has weakened more recently.

Divergence between different parts of the EU is growing...

Very importantly, the social and employment trends are diverging significantly in different parts of the EU. A new divide is emerging between countries that seem trapped in a downward spiral of falling output, massively rising unemployment and eroding disposable incomes and those that have at least so far shown some resilience – partly thanks to better functioning labour markets and more robust welfare systems, although there is also uncertainty about their capacity to resist continuing economic pressures.

...social polarisation is on the rise...

The crisis has, additionally, not impacted uniformly across the whole population and has often led to an even worse situation for groups already at heightened risk, notably young adults, children and to some extent migrants, thus contributing to social polarisation. Indications from recent consumer surveys are that the social situation has further deteriorated since 2010 in most Member States, with the poorest quartile being affected more than the average.

...and gender differences still remain.

The gradual expansion of women's employment has stopped and gender differences still remain. While the gap in unemployment rates between men and women has largely disappeared since the beginning of the crisis, many Member States show no signs of closing the gender pay gap and women still face higher risks of poverty or exclusion than men. Specific labour market trends help explain this apparent paradox – part-time jobs, a traditional domain of female employment, have been the only

labour market segment continuously expanding even during the crisis, thus optically improving the labour market situation of women, but with only a limited impact in terms of income gains.

What, in such a complex situation, are the most relevant subjects for social and employment analysis?

The crisis has strongly increased the risks of long-term exclusion.

The absence of tangible recovery has strongly increased the risks of long-term exclusion for the most heavily affected people. Understanding the risks and mechanisms of long-term exclusion is crucial for successful policy intervention. Long-term exclusion needs to be looked at bearing in mind its nature as a dynamic phenomenon, whereby individual transitions – between different labour market statuses, to and from poverty – provide the key to the analysis.

Two chapters of this year's ESDE Review take a closer look first at the specific labour market dimension of long-term exclusion in the form of long-term unemployment, and, second, at the broader social dimension.

Long-term unemployment has increased in most Member States...

While long-term unemployment has increased in most Member States in recent years, the problem appears most concentrated in Spain and a few other Member States, affecting more severely specific groups, such as men, young people or low-skilled workers, predominantly those employed in declining occupations and sectors. Looking at the most recent available data on transitions, inflows into unemployment have returned close to pre-crisis level, but return rates to employment remain diminished for both short and long-term unemployed. The economic cycle remains a powerful factor explaining changes in levels and flows to and from long-term unemployment, but there are also strong country effects whereby some countries (such as the Netherlands, Sweden and Finland) ensure high transition rates back to employment thanks to good policy mix, in contrast with others which are less successful in this respect (for instance Slovakia, Greece and Bulgaria). Particularly in countries where temporary contracts play an important role, repeated multiple spells of short-term unemployment are also a widespread phenomenon.

... creating significant marginalisation risks.

In general, one in five long-term unemployed in the EU has never worked, three quarters of these being young people below 35 years of age. This points to strong risks of marginalisation for the affected group and underlines the urgency of defining effective policy combinations including active and passive measures both to protect from poverty and to provide incentives and support to finding a job.

Risks of entering and escaping poverty vary greatly across Member States...

Policies to address and prevent poverty and long-term exclusion need to be tailored to the specific country situations and population groups most at risk. Our results show that the risks of entering into and exiting out of poverty vary greatly across Member States, with three main groups of countries identified.

In the first group, consisting of Austria, France and the UK, rates of entry into and exit from poverty are high, although in some of these countries, a significant share of those at risk of poverty form a 'core group' that does not take part in the churning. In the second group, consisting of the Baltic States, Bulgaria, Greece, Italy, Malta and Spain, there is a high risk of entering into poverty, and low chances of getting out of it, creating a massive poverty trap. As the evidence relates to pre-crisis data, the situation is worsening as the current perspectives are gloomy for this subgroup. The last group of countries, including the Nordic and Benelux countries, displays low rates of entry into and exit from poverty. In these, the share of people at risk of persistent poverty is however high, which is a sign of a preoccupying social polarisation, with a group of people at risk of poverty for which there are few chances of getting out of it.

... and some population groups are affected more.

Evidence-based profiling of the different population subgroups facing poverty or social exclusion suggests that individuals trapped in poverty for a longer period have a specific profile compared to those experiencing shorter (even though possibly repeated) poverty spells. Individual profiles indicate that young adults, inactive or unemployed women, lone mothers, or older working age adults out of the labour market are among those facing higher risks of persistent poverty. Typical profiles vary across countries, suggesting that these people face specific structural and institutional barriers in different countries, which points to the need for further country-specific research in this field.

The welfare state faces major challenges.

The unfolding debt crisis and the subsequent wave of austerity policies raise important questions about the viability of European welfare states. At the same time there appear to be major differences in the way various social models have reacted and performed under the recent stress. In order to explore policy implications and identify ways for welfare states to adapt, two chapters of this volume assess the functioning of social protection systems and some tax implications of their financing with regard to both efficiency and equity goals of employment and social policies.

Social protection benefits have cushioned the crisis' effects, but have weakened over time…

Social protection benefits have generally significantly helped cushion the effects of the income shocks on households from the economic crisis, especially in the period 2007-09, as available data clearly illustrate. However, a more detailed analysis reveals significant differences between Member States' social protection systems with respect to their anti-cyclicality, poverty reduction effects and employment friendliness.

… while similar levels of social spending often achieved different outcomes.

For example, while pensions are generally considered as a less anti-cyclical type of social spending, especially in comparison with unemployment benefits, they have strongly anti-cyclical effects in Italy and Poland. Importantly, in terms of poverty reduction, Member States with similar levels of social spending achieve significantly different outcomes and, conversely, similar poverty reduction requires very different levels of spending in different Member States. Larger welfare states tend to have higher employment rates, and the design of the tax-benefit systems as well as incentives for job search and take-up play an important role in terms of the employment friendliness of social spending. One aspect that is shown to facilitate the take-up of jobs, in particular among women, is the provision of childcare services. There has, however, been little progress in this field.

Revenue side design of welfare systems is equally important…

The design of the revenue side of the European welfare systems is equally important, and the chapter on taxation assesses its impacts on the goals of the Europe 2020 strategy with regard to employment and poverty. While there is a long-standing proposition to shift taxation away from labour to other sources to increase the employment rate, it is important to consider that such a measure may be most effective when targeted at the most vulnerable groups in the labour market. In turn, the outcome of the tax shifts away from labour may differ significantly in different Member States depending on the characteristics and composition of their workforce.

… and distributional aspects need to be considered.

At the same time, distributional aspects of tax redesign call for a cautious approach when looking for alternative sources to replace the lost revenues from lower labour taxation. While the value added tax, various green taxes and property taxation are the most obvious candidates in this respect, their increase, if not properly designed, can have unfavourable distributional effects and hamper the goal of decreasing poverty.

No 'silver bullet' taxation solutions, but some elements better than others.

Our analysis demonstrates that while there are no optimal solutions for tax shifts from an integrated employment and social policy point of view, an appropriate design might increase the desirability of some tax shifts. For example, the regressive effects of VAT can be mitigated by providing compensation to targeted groups (unemployed, retirees), and by focusing on standard rather than reduced rates and exemptions. Similarly, proper taxation of imputed rent has socially favourable effects. Finally, measures aimed at tax simplification, such as reform of tax expenditures, and at reduction of tax evasion can positively contribute to both employment and social policy goals.

Wage developments matter at both national and EU levels…

In normal times, but especially in the current severe economic downturn, wage developments are of major concern for policy makers, social partners and the public in general. Much of the current policy debate is focussed on the impact of wages on international competitiveness, aggregate demand, and their potential to contribute to the efforts to reverse rising poverty – within the Member States as well as at the level of the EU as a whole. A chapter on wages contributes to this debate by assessing wage developments before and during the crisis from a socio-economic perspective, and by highlighting the transmission mechanisms through which they impact on the realisation of the Europe 2020 employment and poverty reduction targets.

… influencing labour costs and real disposable income alike.

The analysis illustrates that both labour costs (adjusted for labour productivity and producer prices) as well as earnings (adjusted for consumer prices and taxes) have to be considered when assessing the impact of wage developments on achieving the

Europe 2020 targets related to employment and social cohesion. It finds, for instance, that although the purchasing power of minimum wages in the EU generally remained fairly stable during the period of 2001-2012 the evidence that minimum wages would impact negatively on jobs even in a severe economic downturn is limited, while other effects - such as inducement for low-skilled workers to increase labor supply - may help lowering pressure for public spending.

Skills mismatch is an increasing economic problem...

The last chapter of the ESDE 2012 Review analyses the structural problem of skill mismatch, or, in other words, the discrepancy between the qualifications and skills that individuals possess and those needed by the labour market. Available macroeconomic evidence points to increasing levels of skills mismatch in the EU, further aggravating the labour market difficulties resulting from the unfavourable economic cycle. A mismatch in skills affects economic competitiveness and growth, increases unemployment, undermines social inclusion, and generates significant economic and social costs. One out of three European employees is either over- or under-qualified, with the mismatch especially high in Mediterranean countries. Countries with higher vertical skill mismatches share some common characteristics. They tend to have lower levels of public investment in education and training, which might reduce the quality and ability of education and training systems to respond to changing labour market needs. They also have lower expenditure on labour market programmes and more rigid and segmented labour markets, as the qualification mismatch predominantly affects younger male workers on non-standard contracts.

... requiring both supply and demand side solutions.

Even a good match in terms of educational qualifications, however, does not mean that individuals necessarily possess the skills relevant for their jobs. For instance, young people tend to be more often than other age groups over-qualified with respect to the educational requirements of their jobs, but also under-skilled and in need of further training to cope well with their duties. An effective reduction of the skills mismatch requires both supply and demand side policy measures. Reforms increasing flexibility and responsiveness of the education and training systems, including the improved recognition of skills acquired outside formal education or abroad, need to be combined with pursuing the creation of innovative and high-skilled jobs in sufficient numbers.

Conclusion: stronger employment and social policies are needed to tackle the crisis...

Europe has been struggling to find appropriate policy responses to mitigate the various adverse effects of the crisis and restore a credible path to sustained recovery. In terms of economic and fiscal policies, this path involves stronger macroeconomic governance in the framework of the Europe 2020 strategy.

Until recently, the governance aspects in terms of stronger employment and social policy coordination and a joint reform agenda have received comparatively little attention, largely as a consequence of political focus on emergencies in the financial markets and government finances. However, this situation is changing. As President Barroso stressed in his State of the Union 2012 Address, the structural adjustment agenda can only succeed if it is fair and equitable. Describing the situation in some parts of Europe as a real social emergency with rising poverty and massive levels of unemployment, especially among young people, he called for modernisation of European social protection systems and creation of better and fairer taxation systems, underlining that *"an effective social protection system that helps those in need is not an obstacle to prosperity. It is indeed an indispensable element of it."*

... and new Commission initiatives indicate possible solutions.

Several new Commission initiatives, including the Employment Package of April 2012, the Youth Employment Package of December 2012 and the Social Investment Package currently under preparation, have sought to develop policy responses capable to lift Europe from the present crisis back on a path of progress towards the Europe 2020 targets. The Employment and Social Developments in Europe Review 2012 attempts to underpin this process with solid analysis that will feed into the European semester 2013.

Key features of the current European employment and social situation[1]

This Chapter identifies some of the core aspects of the labour markets and social situation in the EU. It is designed to analyse the main challenges facing policy makers today and in the near future as they strive for inclusive as well as smart and sustainable growth within the Europe 2020 strategy. It does not, however, attempt to look at the quarterly developments in EU labour markets as this is regularly done in the EU Employment and Social Situation Quarterly Review[2].

The analysis starts with a look at key employment and social trends seen over recent years, stressing polarisation and divergence issues, then continues with a reminder on the main employment and social targets enshrined in the Europe 2020 strategy. The second part addresses challenges to overcome and action needed to counteract the sustained polarisation between different categories of citizens and the divergence seen across the EU in this respect.

1. Key employment and social trends in the context of Europe 2020: polarisation and divergence

Labour markets have continued to be marred by increasing divergence among Member States, whilst the average EU unemployment rate exceeded the 10% mark earlier this year. Young people are particularly hard hit, with more than one in five active Europeans aged 15-24 being unemployed. However, inactivity rates have fallen, except for among the young, where worryingly the number not in employment, education or training (NEETs) continued to rise in 2011. In addition to young people, non-nationals, the low-skilled and men are still the groups most affected by deteriorating labour market conditions. Increased part-time and temporary work, which were the main sources of job growth in 2011, point to a widespread uncertainty and an increasing segmentation of the labour market, considering the high percentages of involuntary short-term and part-time contracts, the latter affecting young people the most.

Divergence in the EU-27 and especially between the North and South of the euro area has never been so significant. For the EU as a whole mismatches with higher unemployment rates but vacancies still available are increasing overall, though, again, the picture for individual Member States is varied. This context has inevitably had a negative impact on income and poverty levels, further aggravated by the weakening the stabilizing and protective role of welfare systems over time in a context of prolonged recession. Risks of long-term exclusion are confirmed with children, youth and migrants being most affected. All these aspects contribute to the trend of increasing social polarisation in many Member States.

1.1. Divergence among Member States and social polarisation on the rise

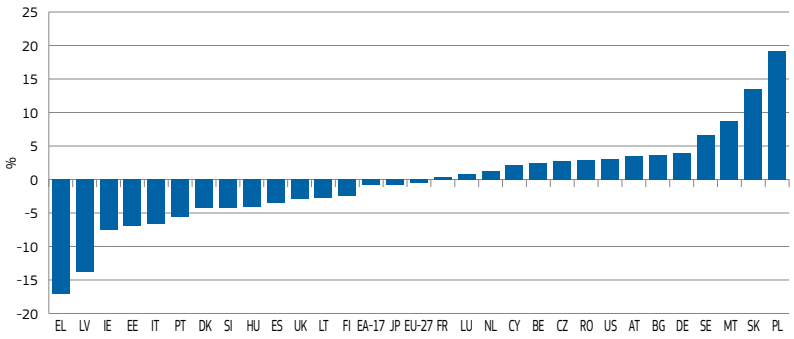
All employment and social indicators point to a growing divergence between the Southern and peripheral European countries, that seem to be trapped in a vicious circle of recession, while most of the countries of Northern and Central Europe have so far shown greater resilience. Part of this is driven by how the economy has performed overall but much of the overall performance is the result of how labour markets and social systems reacted to the severe global downturn. The shockwaves from the crisis appear to be asymmetric but the different institutional setups saw very different resistance to the generally experienced major shock from the initial financial crisis: very often countries with relatively un-segmented labour markets and strong welfare systems have fared better than those with highly segmented labour markets and weak welfare provisions. The (in)ability to cope with the shock was frequently compounded by the initial public debt and deficit levels, as well as the property market situation, and subsequent developments followed by the reaction of financial market.

Looking at GDP growth since 2007 alone, some Member States are richer than before the crisis, many are back to pre-crisis levels and some are

(1) By Frédéric Lagneaux, Isabelle Maquet-Engsted, Virginia Maestri and Monika Velikonja.

(2) See the Employment and Social Analysis website under http://ec.europa.eu/social/main.jsp?catId=113&langId=en

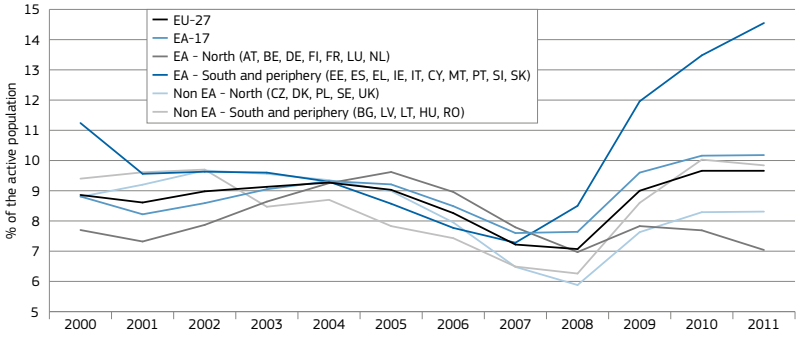
Chart 1: Change in GDP – second quarter 2012, compared to second quarter 2007, in percentages



Source: Eurostat, National Accounts [namq_gdp_k].

Note: Seasonally-adjusted data except for EL; data for EE, IE, LU refer to the 2007q1-2012q1 period. Millions of national currency, chain-linked volumes, reference year 2005 (including 'euro fixed' series for euro area countries).

Chart 2: Diverging unemployment rates by groups of Member States since 2000



Source: Eurostat, EU-LFS, and DG EMPL calculations.

significantly poorer (see Chart 1). While the EU-27 average is close to zero, significant divergences appear among groups of Member States.

The chart above depicts variations in real GDP between the second quarter of 2007 and the second quarter of 2012. On the one hand, many of the newer Member States maintained the trend of economic convergence, with Slovakia and Poland outperforming most significantly with real GDP increases of over 13% and 19%, respectively, over the five-year period. The Baltic countries, very severely affected in the early phase of the crisis, also show signs of a robust recovery in the recent quarters.

Among the old Member States, divergence is most striking between the North and the South and periphery of the Euro area (EA). Greece, Italy, Portugal (and also Ireland) all experienced output drops in 2008-2009, and have been on a downward slope since then. The North-South divergence is not entirely clear-cut: apart from Ireland, the UK and Denmark also underperformed economically in recent years. This may be at least partially explained by specific conditions, such as overheated property markets.

The EA countries have also seen very different developments in unemployment trends, as shown in Chart 2. Whereas labour market North-South divergence has been major issue for the EU, it has definitely become a common feature of the EA over recent years. After converging in the years up to 2004, in favour of southern and peripheral EA member countries – the average unemployment rate of the group made up of Cyprus, Estonia, Greece, Ireland, Italy, Malta, Portugal, Slovakia, Slovenia and Spain became lower than the average rate for Austria, Belgium, Finland, France, Germany, Luxembourg and the Netherlands, it changed in favour of Northern EA again in 2008. The gap was, in 2011, as high as an unprecedented 7.5 percentage points (percentage points)[3]: the average unemployment rate for the North of the EA was 7.0%, against 14.5% in the South and periphery of the EA. This gap was 'only' 3.5 percentage points in 2000, while in 2006 the situation was the opposite (-1.2 percentage points in favour of the south and periphery).

There is also growing divergence between the countries that were cushioned from the worse social impacts of the crisis, and those countries where living conditions have deteriorated markedly.

The decrease in household disposable income was most significant (above 4%) in the Southern countries, Ireland, Hungary and the Baltic States. It was the result of the further deterioration of the labour market conditions, as well as of the weakening of the cushioning impact of social expenditure over time (see section 1.3.2). In these countries, declining incomes affect the living conditions of a large part of the population, and in 2012 the decline of private consumption is expected to weaken already bleak growth prospects. In the Baltic States the rebound of the economic and labour market situation has contributed to stabilising income levels overall after 2010, but long-term unemployment and poverty remain at high levels in this region.

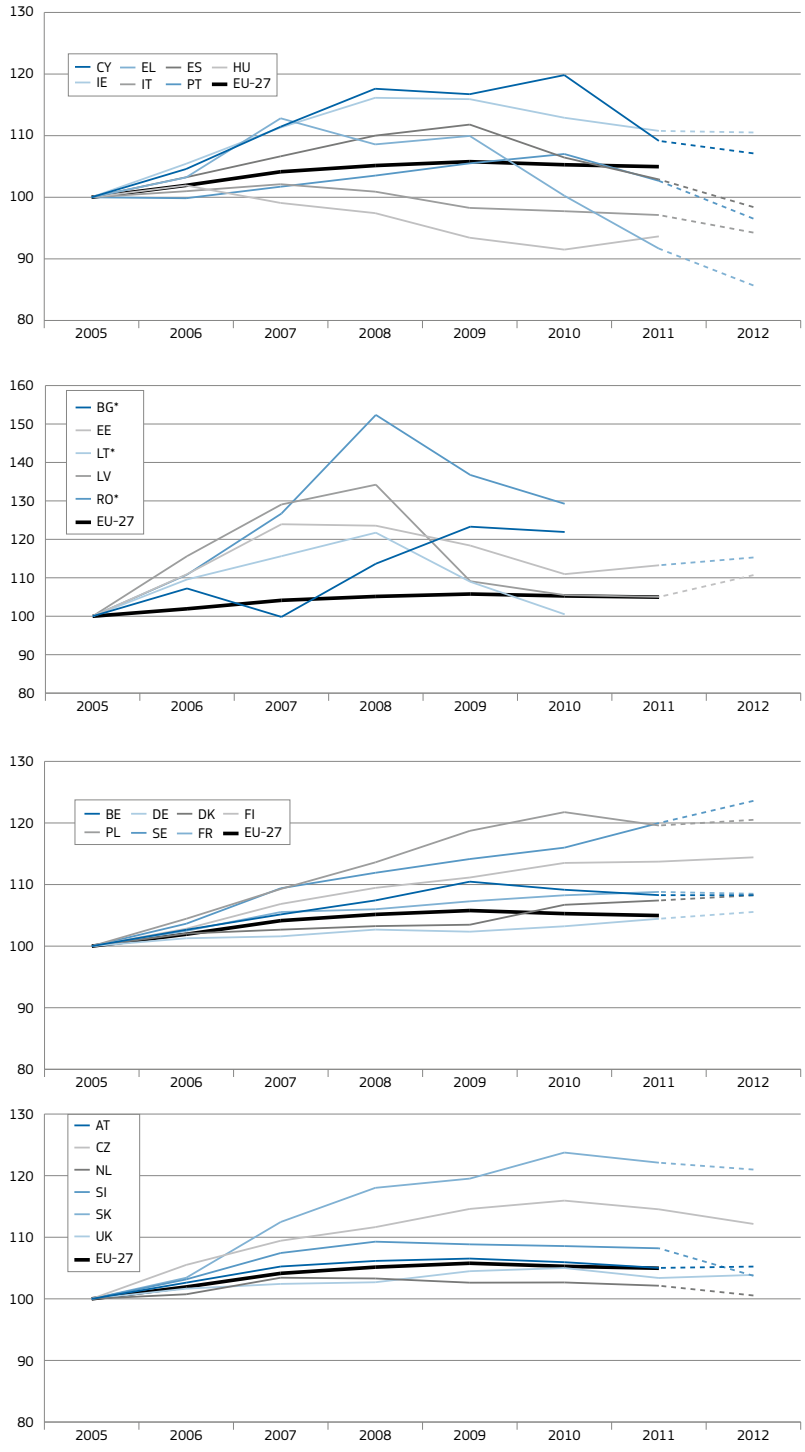
This significant decline is in stark contrast to the situation observed in Northern and Continental countries. In these Member States, the combined effect of robust automatic stabilizers (reinforced by initial discretionary measures) and more resilient labour markets in general helped mitigate the impact of the recession on overall household incomes and private demand. In these countries, while household incomes continued to increase during the crisis, some population groups were more affected than others by rising unemployment.

The crisis has revealed that external economic shocks translate differently within the EU – they are asymmetric-, and that diverging unemployment trends and the resulting social expenditure tend to exacerbate fiscal imbalances in countries facing the highest needs of adjustment and the highest threat to their social models.

Looking at both the labour market situation and the developments in income and poverty, a similar if more nuanced picture emerges, as the previous text illustrates.

(3) By way of comparison, the N-S gap was 'only' 1.5 percentage points in 2011 among the ten non-EA Member States.

Chart 3: Evolution of GHDI in real terms (2005=100) 2005 to 2011 (2012 forecast)



Source: AMECO.

Note: * Data available only until 2010.

Economic and social divergence among the Member States has been coupled with a trend of rising social polarisation within many Member States. This trend is visible in many different ways, and, like in the case of divergence among the Member States, it is partly linked to the protracted economic downturn and partly has deeper structural and institutional causes. While social polarisation in the labour markets is observable mainly through high levels of segmentation, 'hollowing out' of the medium paid jobs[4], and the increasing problem of long-term unemployment, in the social area it is mainly displayed through higher risks of long-term exclusion and recurrent poverty spells.

(4) Discussed in detail in European Commission, 2011e: Employment and Social Developments in Europe Review 2011 (ESDE 2011).

1.2. Latest labour market developments: deepening crisis

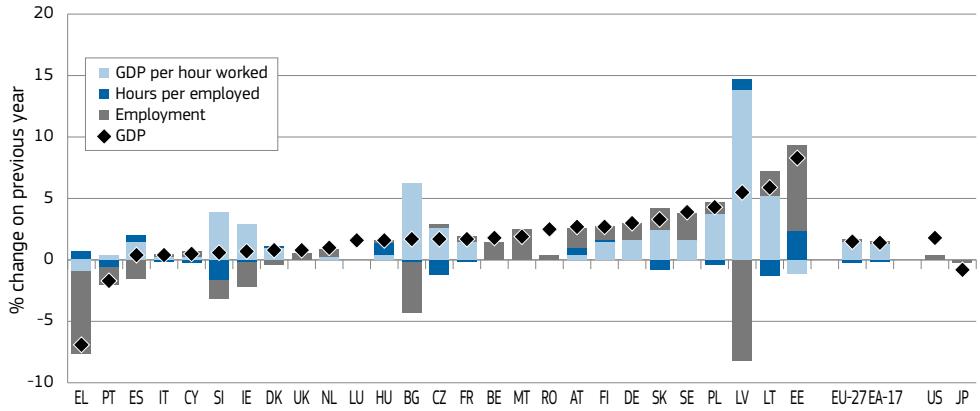
Labour markets are divergent as stressed above. This is, among other factors, the consequence of asymmetric economic shocks, in the context of a poor macro-economic situation. The prolonged crisis increasingly affects labour markets, resulting in a rise in unemployment, and long-term unemployment in particular. While inactivity remains low overall, it is high among youth. While the job matching process tends to deteriorate, there is a serious risk of continued segmentation and wages and labour costs are falling in response to the difficult labour market situation.

1.2.1. EU employment impacted by the poor macro-economic situation

Following the economic slowdown in late 2011 and the subsequent renewed if moderate recession of the European economy, the employment recovery from the 2008-2009 recession has come to a standstill. The number of people in employment in the EU grew by a modest 0.3% in 2011 of the working-age population, owing to the better first half of that year and then has stagnated until autumn 2012.

The overall pattern of jobless growth consecutive to a mild recession is reflected in the fact that most of the GDP growth corresponded to an increase in productivity and hours worked, leaving little room for employment growth. Conversely, the GDP losses in Greece and Portugal and stagnation in Spain translated into employment losses, while productivity grew in the latter two countries (see Chart 4). An employment recovery will require a level of economic growth which exceeds the trend in productivity. Strong employment policies focused on both the demand and supply sides of the labour market, as detailed in the April 2012 Employment Package, are important for bringing about a job-rich recovery where growth picks up thanks to improvements in both employment and productivity. Employment maintenance via working time reduction, as was seen in the first year of the crisis, proved to be a temporary response to the economic

Chart 4a: Change in GDP between 2010 and 2011 and underlying components



Source: Eurostat, national accounts, DG EMPL calculations.

Note: Data on hours worked and productivity missing for BE, LU, MT, RO, UK, US and JP.

Box 1: Okun estimations – the link between the change in unemployment and GDP growth

The issue of jobless growth can also be analysed from the angle of unemployment. An Okun estimation links the change in unemployment to GDP growth[1]. In what follows, Okun estimations for the US, the euro area and some Member States were produced for the period 1995q1-2007q4.

The residuals of that estimation since 2010q1 are then analysed. Relatively small residuals indicate that growth explains unemployment developments well and in the same way as in the past. On the other hand, residuals that are persistently lower or higher than expected suggest that structural factors have changed the relationship between growth and unemployment in that country.

Over the period 1995q1-2007q4, significant Okun estimations were obtained for the US, the euro area, Germany, Spain, France, the Netherlands, Portugal and Sweden[2].

Charts 4(b) and 4(c) show the divergent developments in the residuals by country. Unemployment seems to have increased less than expected in Germany and the US. In the case of Germany, it is likely that the Hartz reforms, with their effects on activation and job creation, are an important factor behind this better unemployment development. Structural unemployment has probably declined in Germany.

The decline in the US unemployment rate was helped by a fall in the participation rate to the lowest level since 1984. While the common view sees worker discouragement as a main cause for this decline, the participation rate is also subject to a secular trend decline due to ageing.

In Spain and Portugal, the shedding of low-productivity labour implies a larger increase in unemployment than expected from the GDP evolution. This shedding is linked to sectoral aspects (focus on construction and manufacturing) and segmentation (temporary jobs not being renewed). Structural unemployment has probably increased in these two countries.

Since 2010, the residuals for France and the Netherlands hover around the zero level in a fairly narrow range, suggesting unchanged structural unemployment. The residual for the euro area, by contrast, stood above zero for most of the recent quarters.

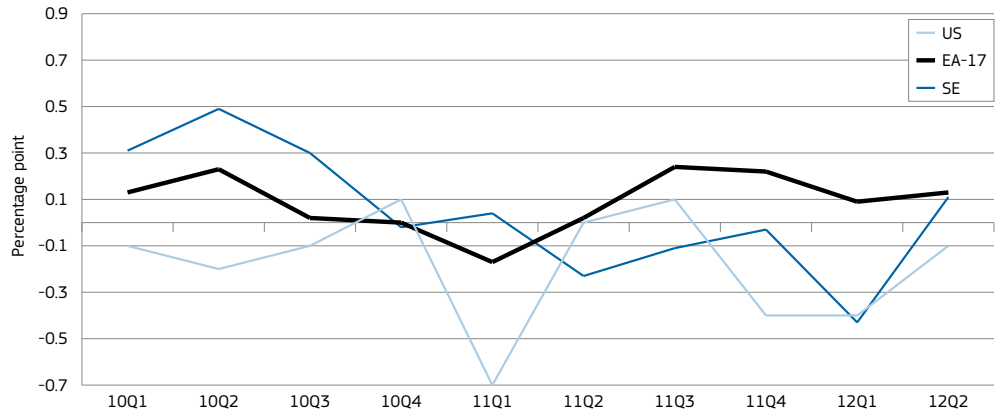
Moreover, as the Okun estimation for the euro area has a very good fit, the size of the recent residuals are non-negligible, suggesting some rise in the euro area's structural unemployment. In other words, the improvement in Germany is not enough to balance the deterioration in Southern Member States.

---

(1) 'Okun estimation' is generally called 'Okun's law'. The gap version of Okun's law links deviations from potential output to deviations from the natural rate of unemployment. This version is difficult to use in practice as potential output and the natural rate of unemployment are not observable. The basic version, in which the change in the unemployment rate in a given quarter depends on real GDP growth in that same quarter, can be analytically derived from the gap version under the assumptions of a constant natural rate of unemployment and a constant growth rate of potential output. In the estimations presented here, the lagged GDP growth rate was added as explanatory variable, as growth affects the labour market with a lag.

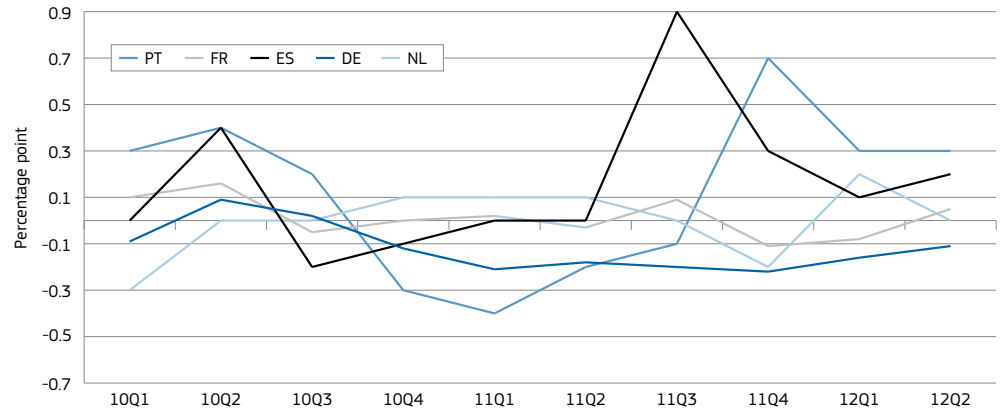
(2) The EU, Ireland, Greece and New Member States are not included due to data availability issues. Over the sample period, estimations were not significant for the remaining Member States (including Italy and the United Kingdom).

Chart 4b: Residuals of Okun estimations since 2010 (US, EA, SE)



Source: Commission services' estimations.

Chart 4c: Residuals of Okun estimations since 2010 (selected euro area Member States)



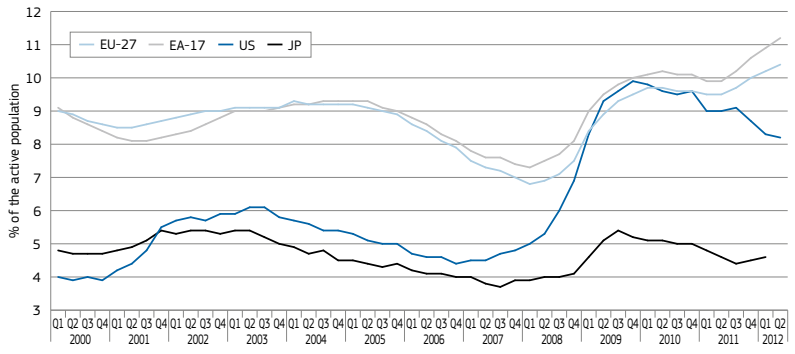
Source: Commission services' estimations.

downturn and cannot be relied on as a long-term solution[5].

Box 1 complements Chart 4, providing evidence about the inter-relation between unemployment developments and GDP growth.

In this context of stagnation or at best slow economic recovery[6], the rising unemployment trend, and its more important long-term and youth components are major challenges. Since mid-2012, more than 25 million Europeans have been unemployed, 10 million of whom had been so for more than 12 months. This contrasts with the United States and Japan where unemployment has been slowly declining.

Chart 5: Unemployment rates in the EU, USA and Japan, 15-74 age group, 2000Q1 - 2012Q2



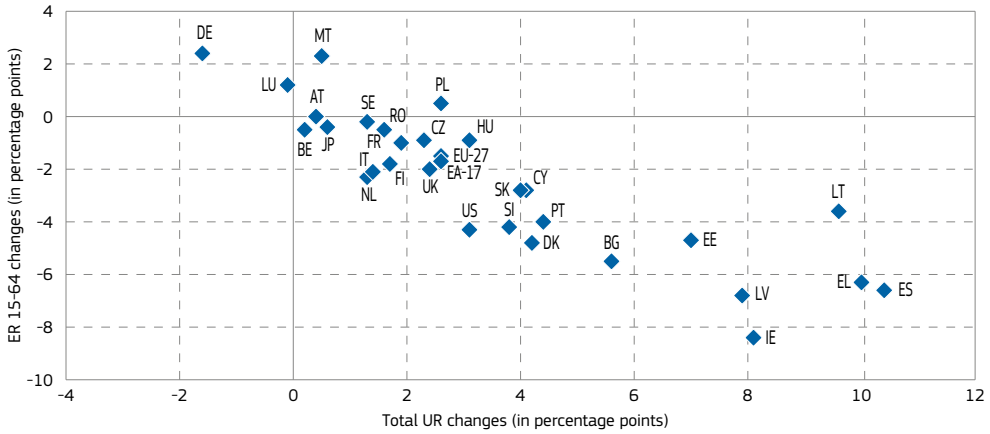
Source: Eurostat, EU-LFS, and OECD.

Over the whole of the period 2008-2011, the employed population shrank by 2.0%, although this percentage is still limited compared to the declines of -4.4 and -4.7% recorded by the US and Japan respectively. Likewise, in the three years to June 2011, the number of unemployed in the EU rose by 37.3%, as 6.2 million people joined the ranks of the unemployed, compared to 65.2% in the US (5.6 million people affected). Subsequently, while the unemployment rate has started to decline consistently in the US, dropping by 0.9 pp in the twelve months to June 2012 to 8.2%, in the EU, after falling somewhat in the year to March 2011 (-0.7 million, i.e. -3.0%) it began to grow again, by 0.9 pp to 10.4%. Chart 5 presents developments by quarter since 2000.

(5) For reference: (1) the serious GDP decline in 2009 (-4.3%) was driven first by a fall in employment (-1.8%), then in hours worked per employed (-1.4%) – namely in Germany, Austria and Belgium – and also in productivity (-1.3%); (2) the recovery noted in 2010 (+2.1%) is mainly explained by a rise in hourly productivity (+2.2%) and, to a lesser extent, in hours worked per person (+0.4%), while employment contracted slightly (down 0.5%).

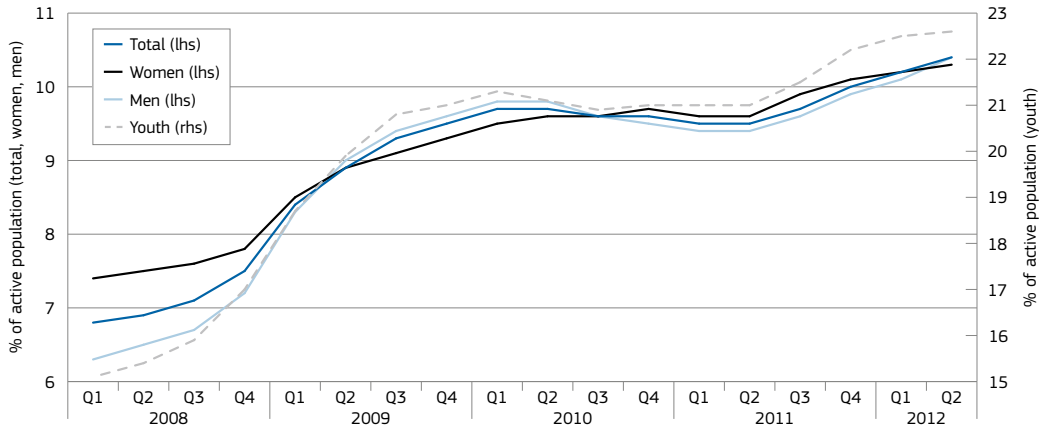
(6) According to the latest European Commission Economic Forecast (European Commission, 2012i), employment in the EU is expected to decline by 0.4% in 2012 and by 0.2% in 2013. The projection for this year is for real GDP to contract by 0.3% in the EU and by 0.4% in the Euro area. For 2013, growth is forecast at only 0.4% in the EU and 0.1% in the Euro area.

Chart 6: Changes in unemployment rates (UR) and employment rates (ER) from 2008 to 2011 in EU Member States, EU, EA, JP and US



Source: Eurostat, EU-LFS and DG EMPL calculations.

Chart 7: Unemployment rates in the EU, by gender and for youth (15-24 year-olds), 2008Q1 - 2012Q2



Source: Eurostat, EU-LFS and DG EMPL calculations.

Looking at the trends in the employment and unemployment rates in EU countries from 2008 to 2011, the effect of the economic slowdown and the persistent uncertainties in the labour markets was very pronounced. The employment rate for 15-64 year-olds, i.e. the working-age population, fell in all but five Member States, while the unemployment rate (among 15-74 year-olds) rose in all but two. The situation in the Baltic States remains worrying despite recent improvements. The situation has worsened significantly in Spain, Greece and Ireland, in terms of both rises in unemployment and contractions in employment. Not surprisingly, looking at the performances of the 27 Member States, there is a negative relationship between those two developments. The statistical correlation is negative (-87%) to a significant degree.

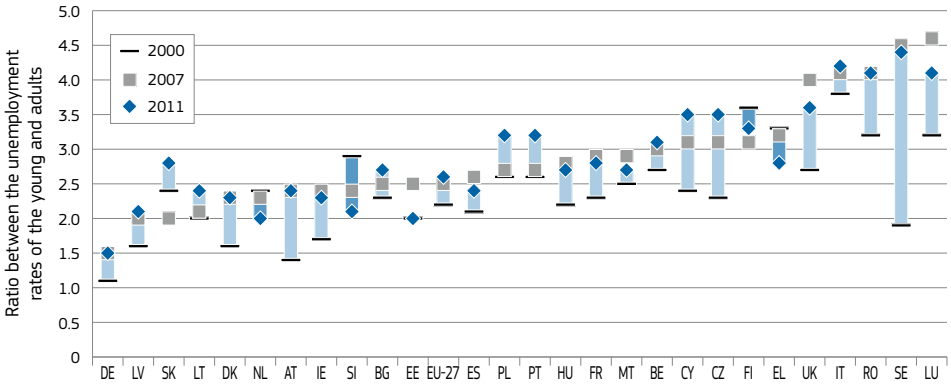
As far as the employment rate for the 15-64 year-olds is concerned, besides Germany and Luxembourg, which recorded rises of respectively 2.4 and 1.2 percentage points from 2008 to 2011, Malta made significant progress too (+2.3 percentage points), Poland showed moderate progress (+0.5 pp) and Austria's employment rate remained unchanged over the same period (see Chart 6). Employment levels in all the other Member States declined, in some cases very significantly (i.e. by more than 5 percentage points), namely in Bulgaria, Ireland, Greece, Spain and Latvia.

1.2.2. Some 2.5 million more people unemployed since spring 2011

In May 2012, the number of people unemployed in the EU exceeded the 25 million mark for the first time, at 25.2 million. It then continued to rise, to reach nearly 25.8 million in September 2012 (13.9 million men and 11.8 million women), i.e. 2.4 million more than the preceding peak recorded in April 2010 (23.3 million) and 3.1 million (1.7 million men + 1.4 million women) above the latest trough that was seen in March 2011 (22.6 million). At 10.6%, the EU unemployment rate is 1.2 percentage points higher than in March last year. Female and male unemployment rates are virtually equal (0.1 pp gap only). In the Euro area, the picture is even bleaker, as the unemployment rate has now reached 11.6%, i.e. 1.7 percentage points higher than in spring 2011.

The trend in unemployment is upward in the majority of the Member States and is most worrying for youth, as 22.8% of active people aged 15 to 24 were unemployed in the EU in September 2012 (23.3% in the Euro area). Disparities between Member States are at a historical high, with three Member States (Germany, Austria and the Netherlands) recording an unemployment rate for

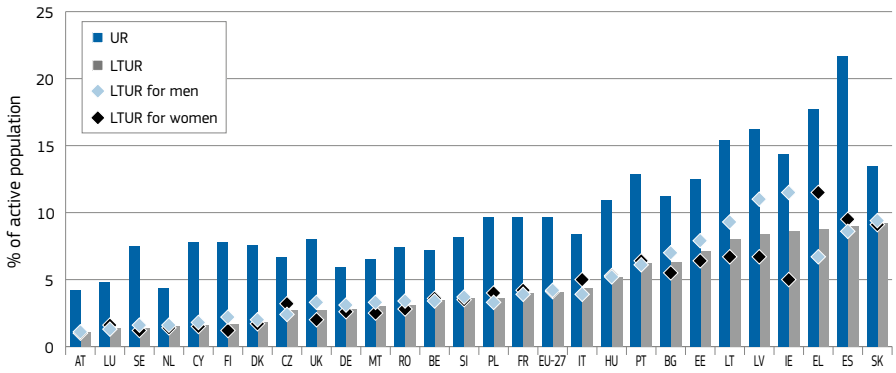
Chart 8: Risks of unemployment for the young, 2000, 2007 and 2011 in Member States



Source: European Commission 2012h.

Note: Countries are shown in ascending order according to the ratio in 2007.

Chart 9: Unemployment and long-term unemployment rates, 2011



Source: Eurostat, EU-LFS.

young people below 10%, while more than one young person in two wanting to work is unemployed in Greece and Spain[7].

Chart 7 presents the developments in unemployment rates by gender and age since the first quarter of 2008 in the EU-27. Although the female unemployment rate was traditionally higher than the male unemployment rate, the trend reversed with the crisis. In the second part of 2009 the EU aggregate unemployment rate for men exceeded that for women, as male-oriented sectors – construction, manufacturing industry, etc. - were hit first and hardest by the economic slowdown. But by the end of 2010, services were affected too, pushing female unemployment to higher levels again. Since then both rates have developed in parallel. Earlier this year though, while female unemployment growth was slowing somewhat, male unemployment continued to rise rapidly, which explains why it is exceeding female unemployment again. The youth unemployment rate is still more than double the overall unemployment rate (see right-hand side). It rose faster in the first phase of the crisis, tending to stabilise in early 2011 and over recent quarters.

However, differences in risks of unemployment for the young[8] among Member States can be only partially explained by the crisis. In 2007, the youth unemployment rate was already three times the adult levels in Belgium, Cyprus, Greece and Finland, while the rate was four times higher in Italy, Luxembourg, Romania, Sweden and the United Kingdom (see Chart 8). The risk of unemployment was higher for young men than for women in all Member States except Latvia, Portugal and Slovenia (in 2007 and 2011) and Lithuania, the Netherlands and Romania (in 2011).

1.2.3. Higher long-term unemployment, especially for the young

In 2011 nearly 10 million unemployed Europeans (accounting for 4.2% of the active population) had been so for more than 12 months. This is an increase of 3.7 million or 60.8% in comparison to 2008, while total unemployment rose by less than 40% in the same period. The countries with the lowest rate of long-term unemployment (less than 2%) in 2011 were Austria, Luxembourg, the Netherlands, the Nordic countries (Sweden, Finland, Denmark) and Cyprus (see Chart 9). At the other side of the spectrum are the Baltic States, Ireland, Greece, Spain and Slovakia, with 7% or more of the active population being unemployed for at least one year. Long-term unemployment is analysed in detail in Chapter 1.

In 2011, 70% of all long-term unemployed in the EU-27 were concentrated in the 6 largest Member States. Spain, a country that represents less than 10% of the EU labour force, accounted for more than

(7) A similar upward trend can be noted in terms of unemployment ratios (see also section 1.2.4). Unemployment ratio (defined as share of young unemployed persons in the whole young population), takes into account a large inactive group mainly in education in that age group and thereby gives more complete picture of the size of the unemployment problem.

(8) Ratio between the unemployment rates of the young and the adults.

Table 1: Long-term unemployment by educational level, 20-29, EU-27

	% of all LTU (20-29)		% of active population (20-29)		Growth in number of LTU (%)
	2008	2011	2008	2011	2008-2011
1. Low	41.4	40.0	6.3	12.0	72.8
2. Medium	48.4	46.1	2.7	4.8	69.7
3. High	9.9	13.7	1.2	2.7	145.8
Total	100.0	100.0	3.0	5.6	78.5

Source: Eurostat, EU-LFS, DG EMPL calculations.

21% of the EU total (more than 2 million long-term unemployed). Moreover, Spain contributed most to the total increase in the number of long-term unemployed in the EU-27 over 2008-2011 (1.6 million out of 3.7 million). Germany represents 12% of the long-term unemployed, compared to an overall share of close to 18% of the EU labour force (same for UK with 8.5 and 13% respectively). Other Member States representing a much higher share in the long-term unemployed figures than their overall share of the EU labour force are: Greece, Portugal, Slovakia, Hungary, Bulgaria and Ireland.

By 2011, around 55% of the long-term unemployed were men and 45% were women, although, given the different participation rates, long-term unemployment rates are equal (in 2011, it was 4.1% for women and 4.2% for men, see gaps by Member State on Chart 9). Since 2008, the gender distribution has shifted, to the detriment of men, partly as a result of the job losses after the construction boom in Spain and the Baltic States. On the other hand, the analysis of transitions in and out of unemployment reveals that long-term unemployment tends to be more frequently followed by inactivity in the case of women.

The long-term unemployed have fewer chances to return to employment and therefore it is better to prevent people staying in unemployment if they are to return to a job. While only one in five of the very short-term unemployed (<6 months) is still unemployed after one year, almost one in every two long-term unemployed (>12 months) people remains so after a year. Among the short-term unemployed (<12 months), one quarter remains unemployed.

Long-term unemployment for young people increased more significantly than for adults and more among the highly educated than among other groups. One out of three young unemployed people aged 15-24 were looking for a job for more than a year in 2011, compared to 22% at the onset of the crisis. Long-term unemployment increased significantly for the highly educated young between 2008 and 2011, albeit from relatively low levels, more than doubling their share among the active population (see Table 1). The gender gap differs across skills. The share of low skilled among the long-term unemployed men is higher than for women (45.1% vs. 33.7% in 2011), whereas long-term unemployed women are more often high skilled than men (19.1% vs. 9.5% in 2011).

1.2.4. Inactivity did not increase significantly

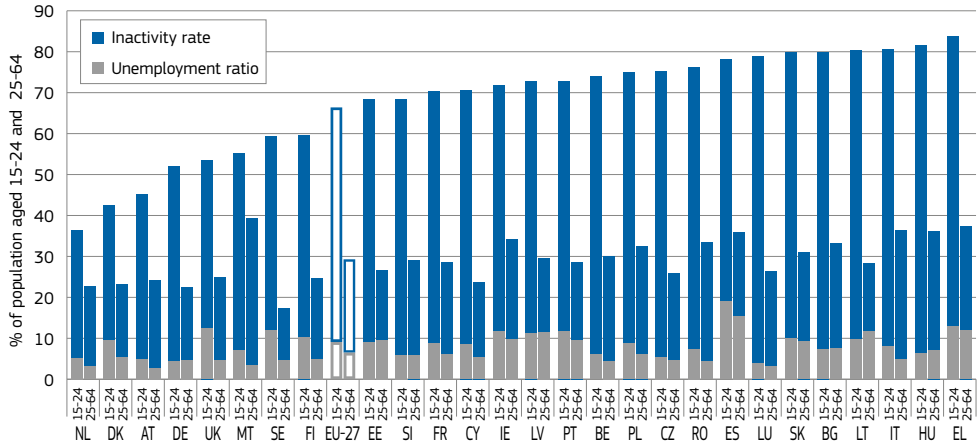
In 2011, 71.2% of the working-age population (15-64) in the EU was active on the labour market, i.e. either employed or unemployed. This is 0.2 pp higher than in 2010 and 0.4 pp up on 2008, which tends to support the weak labour market. High levels of unemployment did not, however, lead to any visible or general labour market withdrawal, as could be expected from the past in times of prolonged recession. There were nevertheless increases seen during those three years in Lithuania (+3.6 percentage points), Malta (+2.7 percentage points), Poland (+2.3 percentage points) and even Germany (+1.3 percentage points), while significant decreases were recorded in Ireland (-2.6 percentage points), Bulgaria (-1.8 percentage points) and Slovenia (-1.5 percentage points). The highest participation rates in 2011 were close to 80% (80.2% in Sweden and 79.3% in Denmark.

When comparing the development of unemployment and inactivity as a percentage of the EU population, it can be observed that, while the youth unemployment ratio rose from 6.9% to 9.1% between 2008 and 2011, the inactivity rate also rose quite significantly from 55.7% to 57.3% (up 1.6 percentage points), which mirrors, among other things, an increasing trend towards prolonging studies. On the other hand inactivity did not progress significantly among adults aged 25 and above, edging down by 0.4 pp, to 22.8%.

Chart 10 presents the specific situation in each Member State in 2011. Taking these two dimensions into account, Greece clearly tops the ranking for the young, given the continuous increase in youth unemployment over the past 2.5 years, at 83.8% (70.8% inactivity rate + 13.0% unemployment ratio), while Malta is in first place for adults, at 39.3% (36.0% + 3.3%). The Netherlands are at the bottom of the list for young people, at 36.4% (31.2% + 5.2%), and Sweden is at the bottom for adults, with only 17.3% (12.7% + 4.6%). Considering the youth unemployment ratio alone, Spain is by far the country facing the highest percentage of young people being unemployed, at 19%.

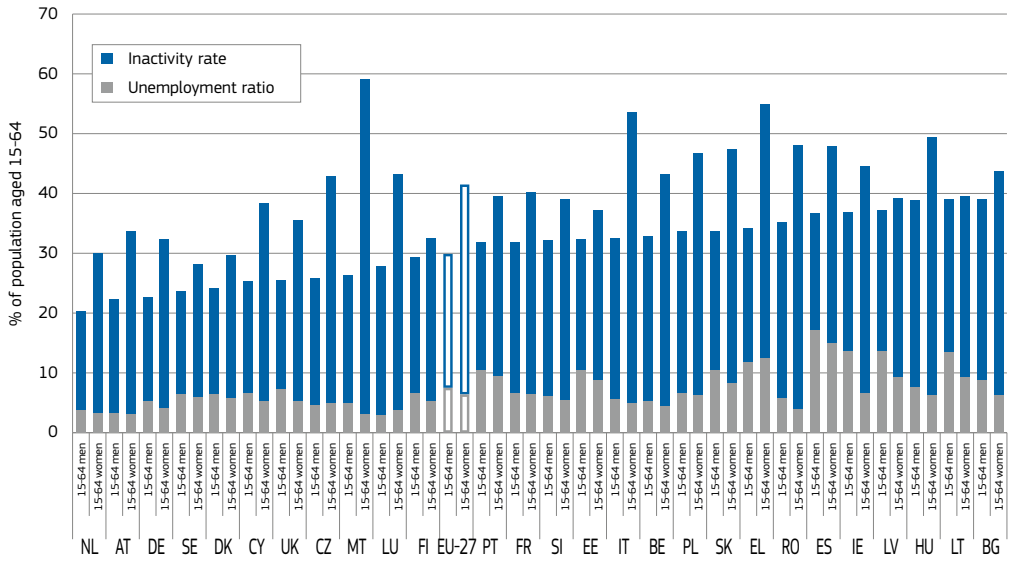
The inactivity rate for young people in the EU increased modestly over the last three years (by 1.6 percentage points up to 57.3% in 2011), but the rate and change diverged markedly among Member States. The inactivity rate augmented significantly in Ireland and to a lesser degree in Spain. This is not necessarily bad, provided

Chart 10: Unemployment and inactivity as a percentage of the young and adult population, by Member State, 2011



Source: Eurostat, EU-LFS, DG EMPL calculations.

Chart 11: Unemployment and inactivity as a percentage of the male and female population, by Member State, 2011



Source: Eurostat, EU-LFS, DG EMPL calculations.

that young people go in education or training ('inactivity for employability'), especially in the countries with low levels of participation in education and training. It seems that the crises helped to bring some youth (back) to school in Ireland, Spain and Portugal, but participation in education also increased in Luxembourg and Slovenia, which had already had high rates before. Yet, there are still a number of countries where increases in inactivity rate are much higher than increases in education and training. See Box 2 on young people not in employment, education or training.

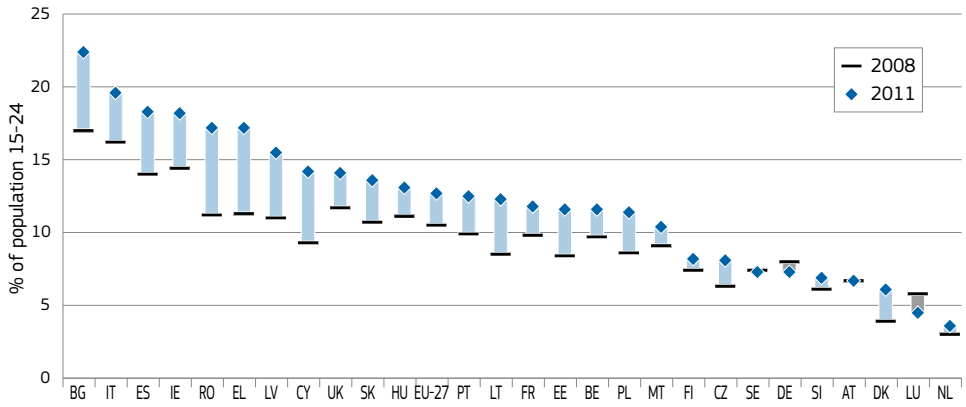
As highlighted by Chart 11 inactivity is clearly more widespread among women. 35.1% of women aged 15 to 64 were economically inactive in 2011, against 22.4% of men. Chart 11 presents the situation by Member State and gives an overall picture, presenting the sum of inactivity rates and unemployment ratios by gender. The lowest total for men was seen in the Netherlands (20.3%), and for women in Sweden (28.2%), while the highest rates were noted in Bulgaria and Lithuania for men (both 39.1%) and in Malta for women (59%). The latter is the country where the gender gap is the highest in that respect (32.7 percentage points).

Box 2: Young people not in employment, education or training (NEETs)[1]

High youth unemployment and inactivity, combined with increasingly difficult school-to-work transitions in a period of persistent uncertainty, inevitably create long-term risks of detachment from the labour market and require special attention from policy makers.

The share of young NEETs in the EU had been shrinking up until 2008, but has been growing again since then. In 2011, there were some 7.5 million young people (15-24 years) in a NEET status (12.9%), up by around 1 million (2 percentage points) in comparison to 2008 (see Chart 12). The most dramatic rises, over 4 percentage points, were recorded in Romania, Greece, Bulgaria, Cyprus, Latvia and Spain. In the majority of countries the share of women being NEET was higher than for young men. The gender gap was the highest in Romania and Greece in 2008 and 2011 although it did close somewhat (from above 5 percentage points difference to below 3 percentage points).

Chart 12: NEETs in the EU Member States, 2008-2011



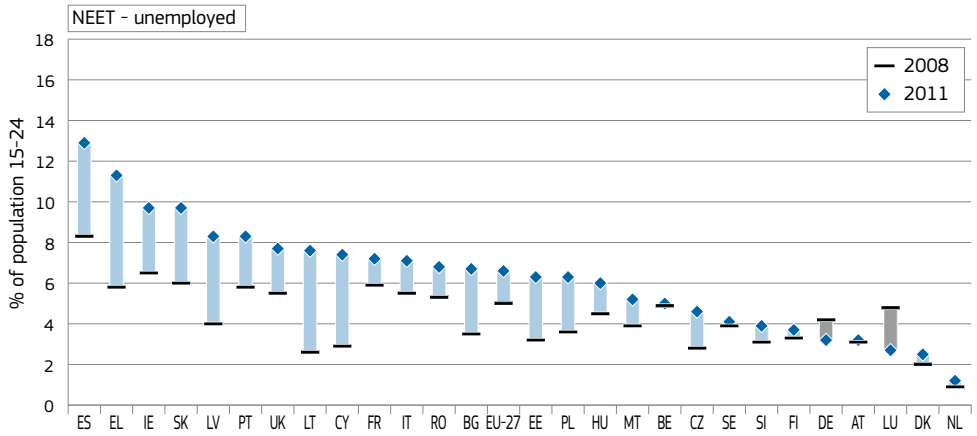
Source: Eurostat, EU-LFS.

However, the NEET rate has been still increasing, mostly due to higher unemployment and less because of higher 'inactivity not related to employability' (i.e. inactive and not in education and training) (see Chart 13). Thus, young people continue to look for jobs or go into education. To prevent increases in 'bad' inactivity, young people need support in staying in the labour market, in looking for employment or in continuing education or training. However, there are gender differences. A higher share of young men was unemployed and those shares increased between 2008 and 2011. On the other hand women had a higher share of inactivity, but it decreased in the majority of Member States between 2008 and 2011.

The highest increase in inactivity over the last three years was registered in Romania, whereas the change was more modest in Bulgaria, Italy, Belgium and Denmark. On the other hand it fell in some of the countries with high youth unemployment (e.g. Lithuania, Slovakia and Spain).

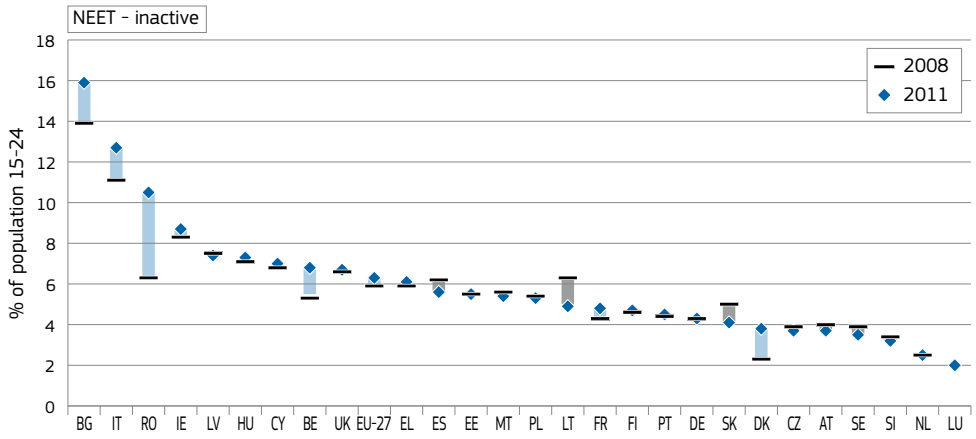
Chart 13: Components of NEET by work status in Member States, 2008 and 2011, 15-24

a) Unemployed



[1] The Box does not discuss two educational targets of the Europe 2020 strategy which aim at improving qualifications, skills and thereby the employability of young people (reducing the share of early leavers from education and training to below 10% and increasing the share of 30-34 year olds with completed tertiary or equivalent education to at least 40%). More information on that can be found in European Commission (2012b).

b) Inactive

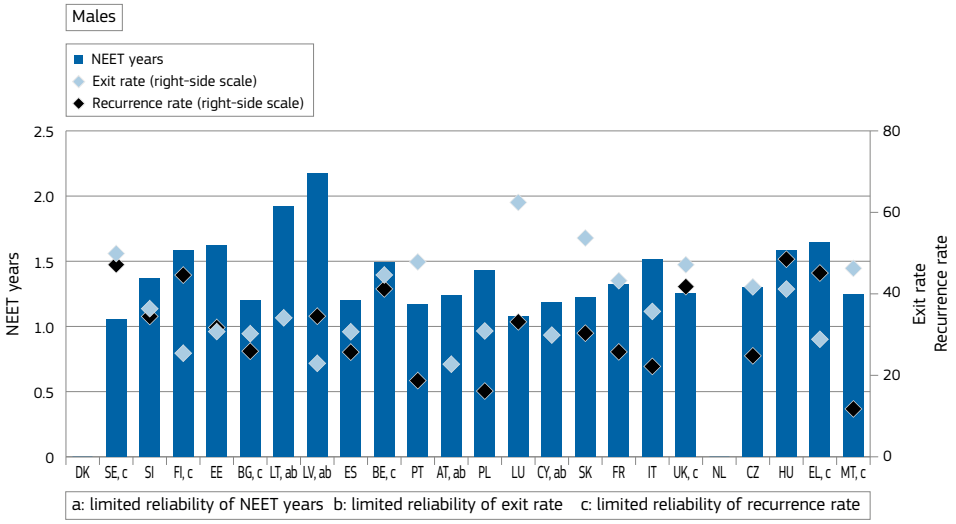


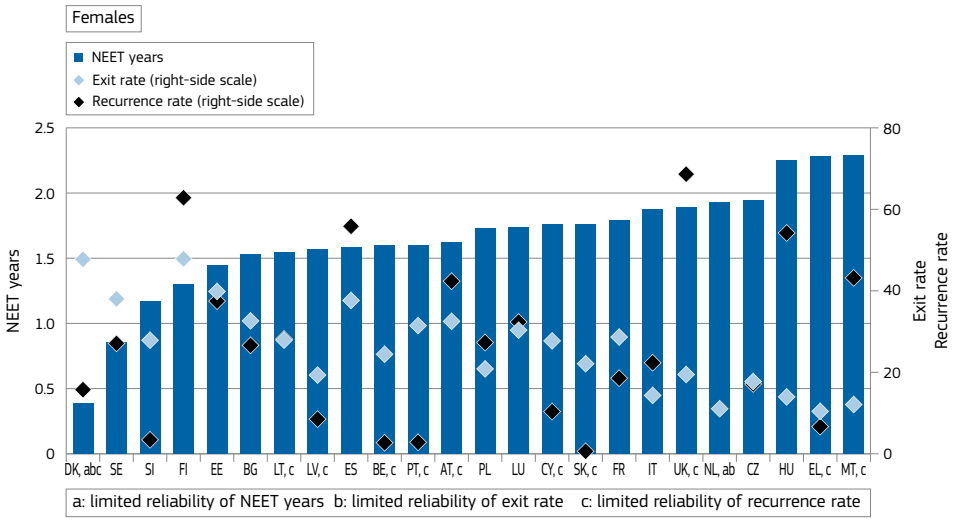
Source: Eurostat, EU-LFS, edat_lfse_20.

Notes: a) Breakdown by work status shows the share of unemployed/inactive NEET in the total population aged 15-24, i.e. the data is presented in percentage points of the overall NEET rates for age 15-24. Shares add up to the total NEET. b) The share of unemployed people in DE and LU decreased. c) No data for inactive for LU in 2008.

Chart 14: Incidence and experience of NEET among young (2006-2009)

a) Four years experience NEET

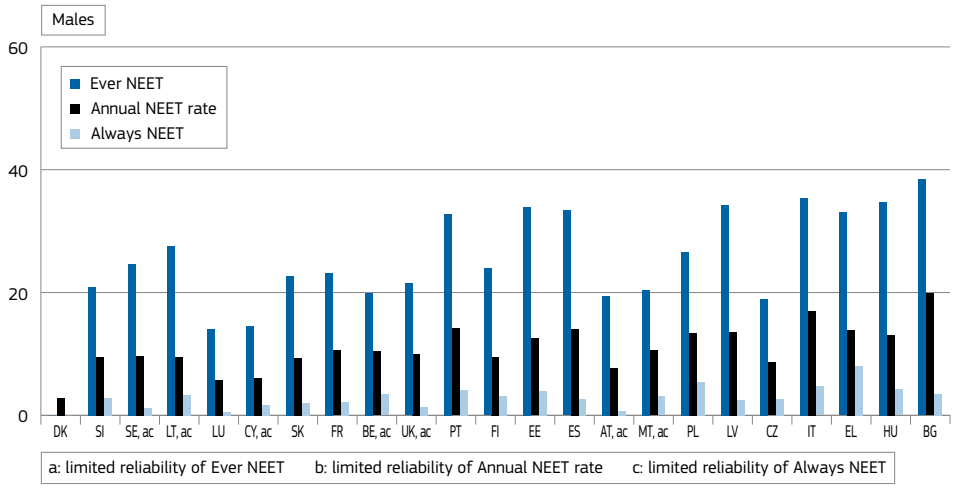


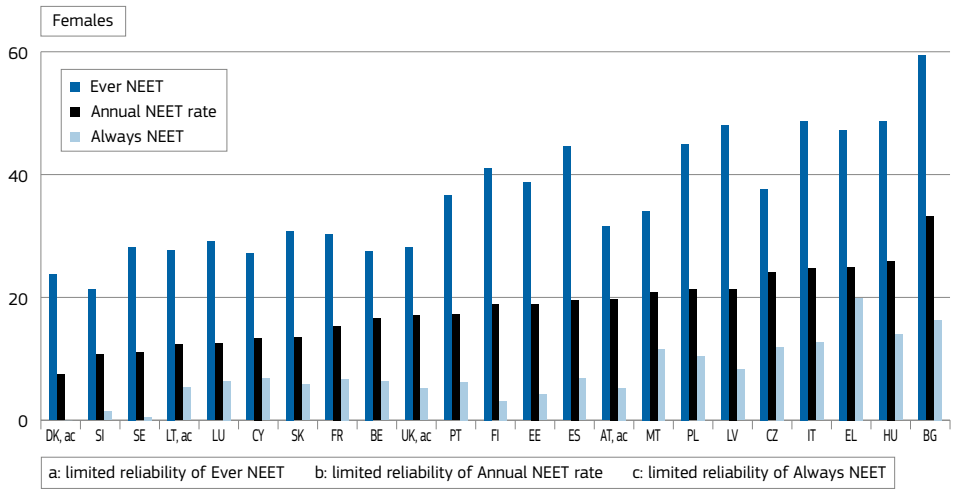


Young people go through many transitions and most of them enter the NEET category at a certain stage due to various reasons. Eurofound (2011a) identified eight key determinants that increase the probability of young people entering the NEET category: i) having some kind of disability; ii) immigration background; iii) low education; iv) living in remote areas; v) coming from a low household income; vi) having parents who experienced unemployment; vii) having parents with a low level of education and viii) coming from divorced families.

The challenge for the policy-makers is to increase the probability of successfully exiting this category and to lower the number of years spent as NEET, while paying sufficient attention to gender differences. An analysis by the Commission to be published in the near future shows that the share of young people observed in NEET for four consecutive years is rather small, but gender and cross-country differences are sizable, ranging from 0.5% in Luxembourg to 8% in Greece for men and from 0.6% in Sweden to 19.9% in Greece for women (see Chart 14). Turnover in NEET status, measured as the ratio of 'ever NEET' to 'always NEET', is higher in Nordic countries. The exit rate is, on average, above 30%, but the recurrence rate is also high, especially for females in Spain (59.9% enter NEET at least twice over a four year period) and Finland (66.9%).

b) Incidence of NEET





Source: Calculations from ENEGE (European Network of Experts on Gender Equality) based on EU-SILC longitudinal data.

Notes: Sample includes young individuals (age 15-29 in 2006) who have been NEET in 2006, still in the sample in 2009. Unreliable statistics and/or countries are not shown.

Notes Chart 14 a): a) Countries shown in ascending order of NEET years for females. b) Statistics in DK and NL for males are not reliable. c) NEET years are average number of years in NEET after 2006. Statistic has limited reliability for males in LT, LV, AT and CY; and for females in DK and NL (a). d) Exit rate is share of young who were NEET in 2006 and employed in 2007. Statistic has limited reliability for males in LT, LV, AT and CY; and for females in DK and NL (b). e) Recurrence rate is share of young who were NEET in 2006, employed in 2007 and experience NEET again in the following period. Statistic has limited reliability for males in SE, FI, BG, BE, UK, EL and MT; and for females in DK, LT, LV, BE, PT, AT, CY, SK, UK, EL and MT (c).

Notes Chart 14 b): a) Countries shown in ascending order of Annual NEET years for females. b) No reliable statistics for NL. c) Ever NEET is share of young individuals who experienced at least one NEET spell over the period 2006-2009. Statistic has limited reliability for males in SE, LT, CY, BE, UK, AT and MT; and for females in DK, LT, UK and AT (a). d) Annual NEET rate: share of NEET yearly average on 2006-2009. e) Always NEET: share of young who have been NEET from 2006 to 2009. Statistic has limited reliability for males in SE, LT, CY, BE, UK, AT and MT; and for females in DK, LT, UK and AT (c).

Young women show greater NEET persistence and lower turnover than young men, especially in Southern and Eastern Europe (Italy, Greece, Malta, Poland, Bulgaria, the Czech Republic and Hungary), where young women represent a higher share of annual NEET rate and always NEET in the 2006-2009 period and lower exit rates than men. However, once women exit NEET, recurrence is less likely. The higher persistence for young women is probably due to the fact that NEET women are more likely to be inactive rather than unemployed.

Eurofound (2012) identified some good practices in policy design and implementation that help bring young people to employment or education and training: i) Policy measures have to be diversified and should pay special attention to groups that are more likely to cumulate multiple disadvantages. ii) The labour market readiness of the beneficiaries must be taken into account. iii) Short-term solutions are not enough – young people have to be set on a long-term, sustainable pathway. iv) It is essential to involve a broad range of stakeholders, especially employers and their representatives, in the design and delivery of youth employment measures. v) Youth employment measures must be client-centred, not provider-focused. vi) Successful policies are innovative and introduce new ways of engaging disfranchised young people.

The best results of targeted help to young NEETs are achieved not only by setting requirements and targets, but also by clearly dividing responsibilities among various parties. Otherwise, each actor may cede the responsibility to activate hard-to-place workers to others. Furthermore, those who are investing in the activation of hard-to-place (young) workers should be rewarded for successful activation (European Commission 2012a).

1.2.5. Signs of deterioration in the job matching process

Chart 15 shows an unfavourable trend in the number of job flows throughout 2011, with a declining trend in job starters since late 2010, suggesting a deteriorating job finding rate and reduced job openings[9], on the one hand, and an increase in job separations driven by a renewed process of job sheddings. At the same time, the labour shortage indicator, derived from EU business survey results, returned to its level of the second half of 2011 (close to 6.5%), after a dip to 5.7% in the first quarter. So an increasing number of employers in industry are again pointing to labour as a factor restraining production. This is a worrying development, considering that the unemployment rate increased by about one percentage point at the same time (since mid-2011).

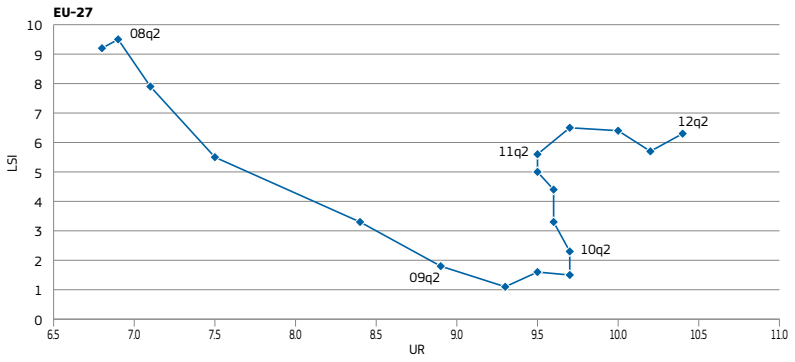
Chart 16 illustrates this: recent movements in the Beveridge curve point to a possibly substantial deterioration in the matching process since 2010. Unemployment has become more structural over the past two years.

Chart 15: Persons whose job started or ended in the last three months in the EU-27, as a share of total employment, y-o-y changes, 2006-2011 (percentage points)



Source: Eurostat, EU-LFS, DG EMPL calculations.

Chart 16: Beveridge curve for the EU



Sources: See Table 2.

Note: UR = unemployment rate (%); LSI = labour shortage indicator, derived from EU business survey results (% of manufacturing firms pointing to labour shortage as a factor limiting production).

[9] The EU job vacancy rate was slightly lower than a year ago, at 1.5% instead of 1.6%.

Table 2: Beveridge curve and change (percentage points or %) in related variables, by Member State, ranked according to the change in the unemployment rate between 2010q2 and 2012q2

	UR (pps)	LSI (pps)	JVR (pps)	GDP (%)	EMPL (%)
EE	-8.4	7.5	0.5	11.4	11.0
LT	-4.8	2.3	0.2	9.2	5.2
LV	-4.7	4.6	0.2	10.2	-6.2
DE	-1.7	6.1	0.7	4.0	2.6
BE	-1.4	1.6	0.7	1.7	1.7
SK	-0.9	-1.0	0.1	6.5	2.4
FI	-0.9	3.7	0.2	2.0	1.4
SE	-0.9	-0.3	0.4	5.9	3.2
MT	-0.8	1.2	-	3.6	3.8
CZ	-0.5	1.2	0.2	1.0	0.6
HU	-0.4	9.6	0.0	0.5	1.0
AT	-0.2	1.6	0.3	4.5	3.2
RO	0.0	1.2	0.0	2.9	-
UK	0.3	11.5	-0.1	0.2	1.7
DK	0.4	0.1	-	0.8	-1.0
FR	0.4	2.2	-	2.0	0.6
PL	0.4	1.3	-0.1	7.4	1.1
NL	0.6	3.9	-0.1	1.0	0.7
EU-27	**0.7**	**4.0**	**0.1**	**1.4**	**0.3**
SI	0.8	4.8	0.0	-0.7	-2.6
LU	0.8	0.5	0.3	-	-
IE	1.2	-	0.1	1.3	-3.9
IT	2.0	0.3	-	-1.7	0.0
BG	2.2	2.8	0.1	2.6	-6.4
PT	3.5	-0.7	0.0	-4.3	-5.0
CY	4.1	-2.1	-1.0	-0.9	-1.9
ES	4.6	-0.3	-0.6	-0.8	-4.7
EL	11.4	0.8	0.5	-	-

Source: Eurostat; UR = unemployment rate (ESTAT, une_rt_q); LSI = labour shortage indicator (ESTAT, bsin_q_r2); JVR= job vacancy rate (ESTAT, jvs_q); GDP = gross domestic product (ESTAT, namq_gdp); EMPL = employment (ESTAT, namq_aux_pem).

Box 3: Beveridge curve

The Beveridge curve compares unemployment rates to job vacancies. Shifts along the curve represent cyclical changes in the demand for labour, typically higher vacancies and lower unemployment in upturns, or lower vacancies and higher unemployment in downturns. On the other hand, shifts of the curve towards the left or the right (which can also be seen as, respectively, shifts down and up) are indicative of structural changes.

An alternative indicator for the job vacancy rate is the labour shortage indicator. The indicator is derived from EU business survey results[1]. In each first month of a quarter, companies are asked, in the business survey, which main factors are currently limiting production. Labour shortage is one of the possible options offered. The indicator is the percentage of respondents choosing this option. The indicator is timely and harmonised among Member States[2]. As a drawback, it covers only manufacturing. As the labour shortage indicator is seasonally adjusted, it allows for a short-term comparison. While the EU job vacancy rate rose moderately between the second quarter of 2010 and the second quarter of 2012 (from 1.4% to 1.5%), the EU labour shortage indicator went up much more quickly, to 6.3% (from 2.3%). As a result, the EU Beveridge curve is shifting to the right (see Chart 16). At the Member State level, the situation is very diverse.

Genuine shifts in the Beveridge curve can only be assessed after a certain time span. Nevertheless, data collected up to the second quarter of 2012 seems to suggest that, for most Member States, the Beveridge curve has a tendency to shift to the right, with a higher level of vacancies for a given unemployment rate.

Individual MS Beveridge curves were analysed in ESSQR of March 2012[3].

Since mid-2010, Germany has been the only Member State witnessing a shift to the left of its Beveridge curve, i.e. a lower level of vacancies for a given unemployment rate. It is likely that the Hartz reforms, with their effects on activation and job creation, are at least a partial explanation for this, at present, unusual shift in the curve.

(1) See also http://ec.europa.eu/economy_finance/db_indicators/surveys/method_guides/index_en.htm.

(2) The indicator is not available for Ireland.

(3) See Social Europe website on http://ec.europa.eu/social/BlobServlet?docId=7548&langId=en.

Almost half of the Member States saw a decline in their unemployment rate between the second quarter of 2010 and the second quarter of 2012. In most cases, this coincided with a slight rise in the labour shortage indicator, suggesting a very modest shift to the right of the Beveridge curve, like in the Czech Republic and Lithuania. In the cases of Belgium, Austria and Finland, shifts seem to take place along the curve, indicating an absence of structural change. As can be seen in Table 2, some newer Member States where the unemployment rate clearly declined since early-2010 still have an employment level trailing the early-2008 level, while the 'older' Member States of that group regained that level in 2011. The group of Member States which saw a rise in their labour shortage indicator as well as increases in the unemployment rate since mid-2010, are closer to the average EU Beveridge curve trend. Large Member States such as France, Italy, Poland and the United Kingdom are in this group.

Nevertheless, the latter group is very different from another group which saw quite unfavourable developments over the period concerned. In this group, unemployment rates clearly increased, while the labour shortage indicator fell. Moreover, in most cases, the labour shortage indicator and the job vacancy rate both declined[4]. This is indicative of a lack of demand, as an insufficient number of vacancies opened up to make a dent in unemployment. Unsurprisingly, Cyprus, Portugal and Spain are part of this group.

(4) In the Netherlands, the labour shortage indicator increased, but the job vacancy rate was stable. Spain saw very small increases in both indicators.

Chapter 6 assesses, in more depth, to what extent skills and educational mismatches impact on the labour market functioning.

1.2.6. Continuing segmentation in EU labour markets

Non-standard contracts signalling segmentation

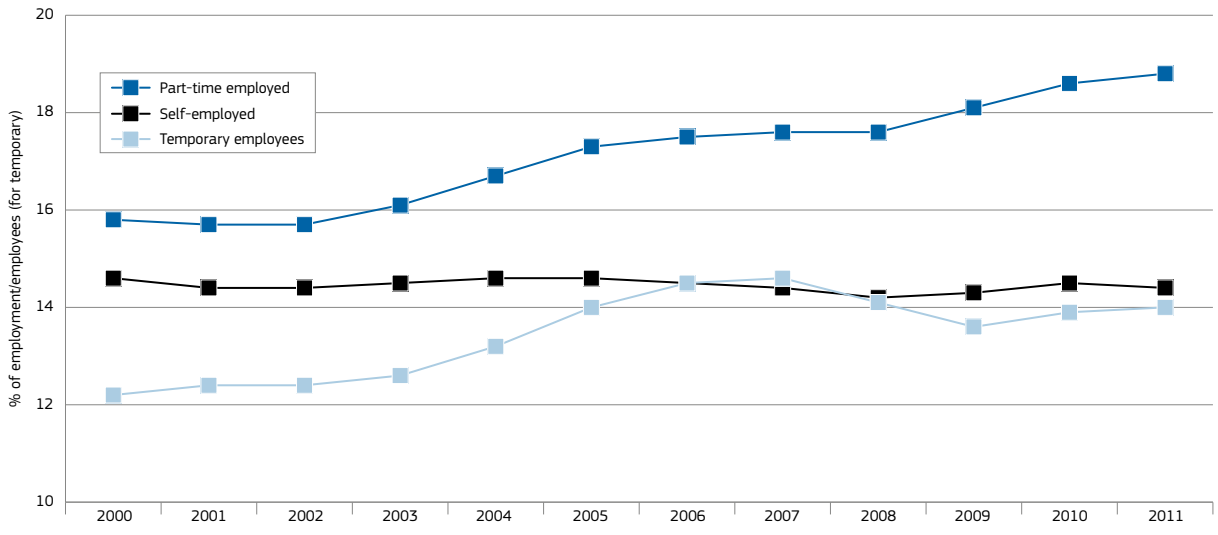
Fluctuations in the number of jobs in the EU since the crisis have been driven mainly by part-time work and temporary (short-term) contracts, while the number of self-employed did not vary much (see Chart 17). Part-time employment accounted for a significant share of the overall expansion in employment in the EU since 2000 and its growth was uninterrupted by the crisis. While the total employment figure contracted between 2008 and 2010, and the number of full-time workers shrank by 6.2 million, the number of part-timers increased by 1.1 million. This trend affected both adult women and men, as opposed to young people, who were affected by a decline in both full-time and part-time work.

Temporary contracts proved to be a major adjustment variable for companies as they have been the most reactive segment of the labour market since the crisis first broke out. The share of temporary employees in the total number of employees rose from 12.2% in 2000 to 14.6% in 2007, before falling to 14.1% and 13.6% in the two subsequent years, when the crisis started to affect the labour market. It then improved again to 13.9-14.0% during the timid recovery in 2010-2011.

Self-employment remained relatively stable, although this may hide a significant decline in real activity. The share of self-employment remained at around 14.5%. It rose slightly during the crisis, as their number was not affected by the crisis in the same proportion as paid employees (from 14.2% in 2008 to 14.5% in 2010). In 2011, it dropped down to 14.4%. This apparent resilience may however hide a significant decline in real activity (fall in turnover and/or hours worked). Indeed, between 2008 and 2011, while the number of hours worked by employees remained relatively stable (down from 36.8 to 36.4 hours per week), it fell from 44.4 to 43.5 for self-employed.

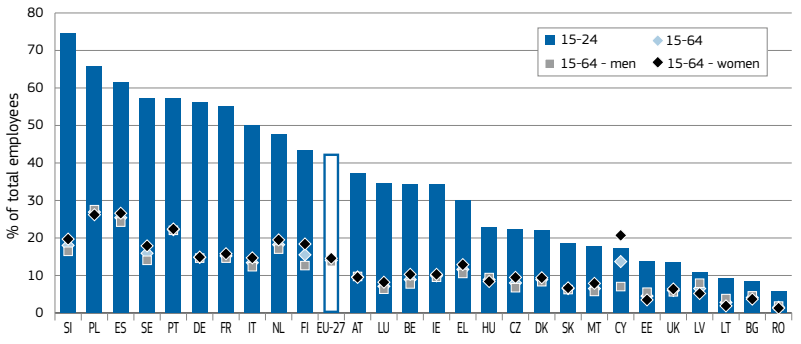
The number of part time and temporary jobs reveals different dynamics which can be associated with the phenomena of segmentation in the labour market.

Chart 17: **Part-time and temporary contracts and self-employment in the EU, working-age population (15-64), 2000-2011**



Source: Eurostat, EU-LFS.

Chart 18: Temporary employment in Member States for young and working-age employees (15-64), women and men, 2011



Source: Eurostat, EU-LFS.

Temporary work

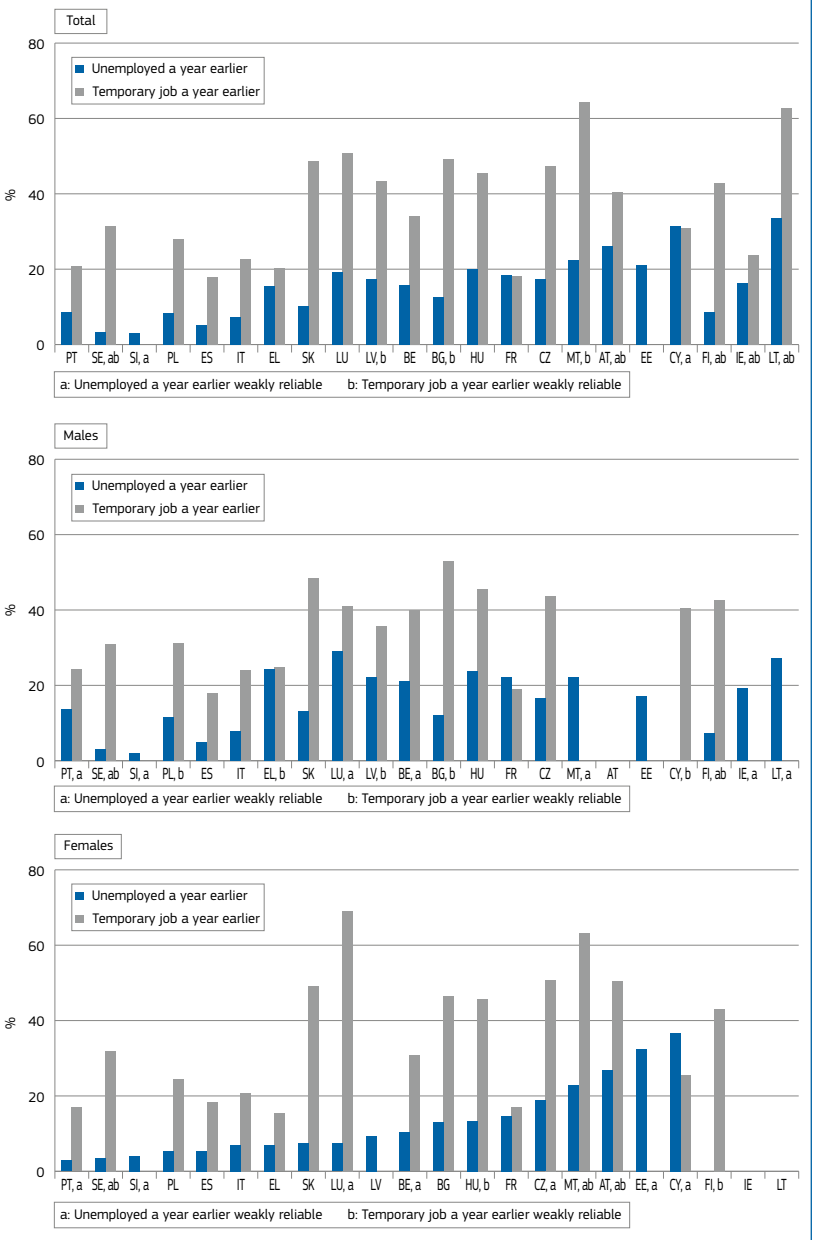
Young people are significantly over-represented in temporary work in Member States and their situation has been worsening over time (see Chart 18). In 2011, some 42.5 % of young employees in the EU were working on temporary contracts, i.e. a rate three times higher than the average of 14.0 % for working-age employees. Ten years ago, in 2001, ratio was less than three, with 35.9 % of young people and 12.4 % of adults on temporary contracts. The highest disproportion in the EU was found in Luxembourg and Slovenia, where the ratio of youth to adult temporary work was over 4, while the differences were smaller in Cyprus and Latvia (ratio lower than 2). Slovenia tops the ranking for young people with nearly 75 % of them working temporarily. It is followed by Poland, Spain, Sweden, Portugal and Germany, where between 56 % and 66 % of young employees have temporary contracts. The lowest percentages (under 10 %) for young employees were recorded in Romania (5.8 %), Bulgaria (8.3 %) and Lithuania (9.1 %). Among employees, at EU level, the share of temporary workers is the same between women and men. The only significant gap is noted in Cyprus, where the gap reaches 13 percentage points.

A high share of temporary work in the Member States is involuntary, which also applies to young people. In 2011, 60.4 % of the 15-64 year-old group and 36.7 % of young people worked on temporary contracts because they could not find a permanent job. However, the low EU average for young people hides important differences between Member States. More than 75 % of young people in the Czech Republic, Portugal and Cyprus were working temporarily because of a lack of permanent jobs, while the share was over 80 % in Spain and Slovakia. Comparatively slightly fewer, but still a significant figure of around 60 % of young people were working temporarily for the same reason in Latvia, Belgium, Greece and Romania, and one in every two people were doing so in Poland, Bulgaria and Hungary.

Temporary work and the young

Even though high share of temporary work among the young raises concerns, it appears that temporary jobs are a

Chart 19: Probability of being on a permanent contract in 2009



Source: calculations from ENEGE (European Network of Experts on Gender Equality) based on EU-SILC longitudinal data.

Notes: a) Sample includes all individuals aged 15-29 in 2009 observed as unemployed or in a temporary job in 2008. Unreliable statistics are not shown. b) Countries shown in ascending order of 'Unemployed a year earlier' for females. c) Unemployed a year earlier data reliable to a low degree (a). d) Temporary job a year earlier data reliable to a low degree (b).

stepping stone for permanent employment relative to unemployment, especially for women (see Chart 19). The importance of staying in the job, even temporarily, is especially relevant for women, while the differences are less significant for men. The probability of getting a permanent contract is much higher in the countries with a lower percentage of temporary work among the young, such as in Bulgaria, Lithuania and Latvia (below 10%); or in Malta, Slovakia and the Czech Republic (below 20%), with some exceptions such as Luxembourg, Hungary, Austria and Finland. Countries with stricter employment protection legislation, such as Greece, Portugal, France, Italy and Spain, had lower probabilities for a transition to permanent contracts, although there are exceptions, such as Luxembourg[10].

The extent of temporary work among the young reflects not only changing labour market demand but also structural features of the education systems and cultural differences. Participation in education and training is the most significant reason behind the high share of young people in temporary work in Germany and Austria, well known for their dual educational system (around 80%), and to a lesser extent in Denmark (around 55%). Temporary work among the young is also more widespread in countries that promote autonomy from an early age with public policies such as a monthly support allowance, the availability of affordable housing, free education etc. such as in Nordic countries, the UK and the Netherlands (see Oliveira et al. 2011). The young, who to a large extent stay in education, supplement their income by doing temporary or part-time work and are not actually looking for a permanent job. Over 40% of young temporary workers in the United Kingdom, Sweden and Finland did not actually want a permanent job in 2011. The leader in 'voluntary' temporary work is Slovenia, with 65.3% of the young not wanting a permanent post. Some of the reasons also apply to part-time work among young people.

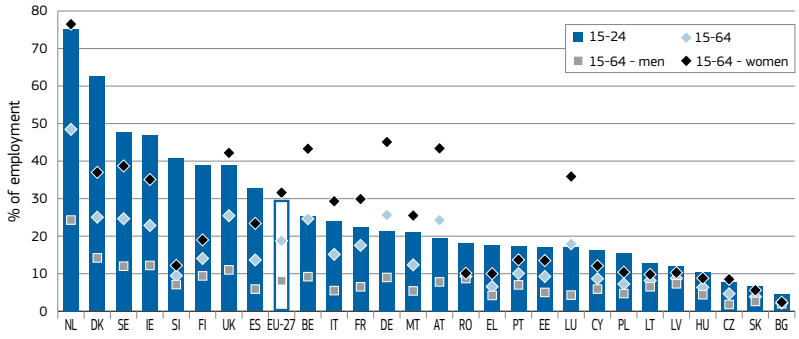
Part time work

Nearly 94% of the 632 000 jobs created in the 15-64 age group in 2011 had part-time contracts. Part-time employment accounted for a significant share of the overall expansion in employment in the EU since 2000 and its growth was uninterrupted by the crisis, in contrast to temporary employment and full time employment. The expansion of part-time work was clear from 2008, increasing by 1.2 percentage points to 18.8% in 2011. During the period when total employment contracted between 2008 and 2010, and the number of full-time workers shrank by 6.2 million, the number of part-timers was up by 1.1 million. This trend affected both adult women and men, as opposed to young people, who were affected by a decline in both full-time and part-time work.

Chart 20 shows the share of part time employment for the total workforce, by gender, and for the young, showing that the incidence of part time work is not as skewed towards the young as is the case for fixed term work. Part-time work is rather a common feature of female employment. At EU aggregate level, the gender gap was significant in 2011: 23.5 percentage points (31.6% for women against 8.1% for men). This ranking is topped by the Netherlands for all age groups and both genders. In the NL too, the gender gap is the EU's highest: 52.2 percentage points, between women (76.5%) and men (24.3%).

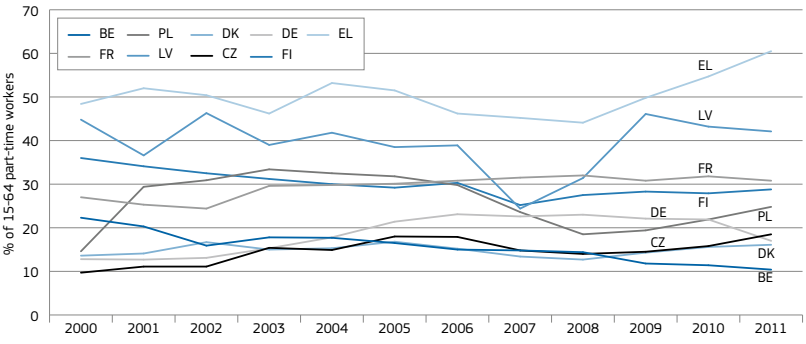
The crisis has not significantly increased the share of involuntary part time work, which is low overall compared to that of voluntary part-timers (see Chart 21). Declining percentages of involuntary part-time work might be read as a sign that, in some countries, and sometimes in a context of persistently uncertain labour market conditions, workers are more inclined to accept working part-time as a valuable opportunity. On the other hand, increasing percentages in countries where there is a dire labour market situation, such as Greece, may be seen as a sign that, although part-time work has not made many inroads lately, more and more part-time workers do not regard underemployment as an acceptable option. The main conclusion which can be drawn is that, while part-time work continues to progress, it does not mean it is better accepted by workers, and obviously not by young people who have been the first group to be affected by the expansion of this type of working arrangements in the recent period.

Chart 20: Part-time employment in Member States for young and working-age workers (15-64), women and men, 2011



Source: Eurostat, EU-LFS.

Chart 21: Involuntary part-time work in selected Member States, working-age part-time workers (15-64), 2000-2011



Source: Eurostat, EU-LFS [lfsa_eppgai].

(10) OECD data on employment protection legislation for 2008 (Venn 2009).

While the share of female employees working part-time is roughly four times higher than for men, less than one female part-timer in four (23.1%) declared that they worked part-time involuntarily in 2011, against 36.5% of male part-timers. For young employees, of whom roughly 30% worked part-time in 2011, that percentage is 28%.

Internal flexibility, through the use of temporary contracts, part-time work and low wages, has shielded many economies from even worse labour market performances but, at the same time, it has given rise to the phenomenon of 'in-work poverty'. In the EU today, 8.4% of workers live below the poverty line.

1.2.7. Wages and labour costs have started to adjust

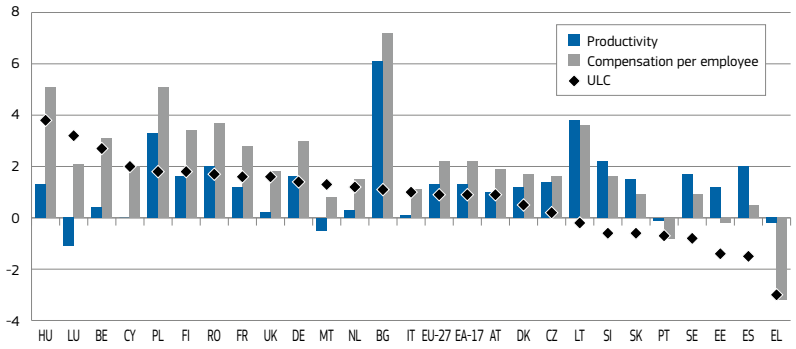
This issue is analysed in more detail in Chapter 5.

In 2011, the dynamics of nominal compensation per employee started exhibiting an increasingly clear differentiation between Member States with stronger needs to reduce unemployment and rebalance external positions and Member States with a more sustained recovery and current account surpluses. Variations in compensation per employee across the euro area range between plus 3% in Finland, Belgium and Germany to a similar rate of negative growth rate in Greece. See Chart 22. Persistent slack was mostly reflected in the dynamics of the variable components of wages, which almost offset the moderate increase stipulated by the collective bargaining agreements[11].

After having recorded significant growth in 2010, average productivity growth in the EU decelerated markedly, i.e. down from 2.6% in 2010 to 1.3% in 2011. Except for Bulgaria, Lithuania and Poland, where productivity grew by over 3%, all Member States recorded only modest labour productivity growth, with Luxembourg, Malta, Portugal and Greece even chalking up a decline in their labour productivity. Despite a slowdown of labour productivity growth, nominal unit labour costs only increased moderately in the EU and in the euro area. In Greece the unit labour cost (ULC) decreased by 3% mainly reflecting the decline in compensation per employee. By contrast, in Spain the decrease in unit labour cost was primarily generated by notable productivity growth close to 2% and moderate compensation per employee growth. In Estonia a small decrease in compensation per employee in combination with a modest increase in productivity generated a fall in its unit labour cost. See Chart 22.

In the first half of 2012, labour productivity growth in the EU continued to weaken with sharp falls in Italy, Hungary and the United Kingdom. At the same time nominal wage growth strengthened in some Member States, while it remained subdued in others such as Spain or negative in Slovenia. As a result, nominal unit labour cost developments continued to differ across Member States with, most notably, Spain further strengthening its path of negative ULC growth that started at the beginning of 2010.

Chart 22: Compensation per employee, productivity and ULC in 2011 (Annual % growth)



Source: Eurostat, National Accounts (nama_aux_lp,nama_aux_ulc).

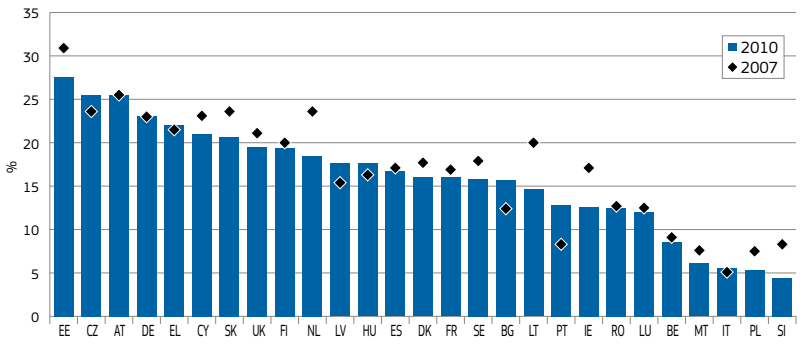
Notes: 1) Unit labour cost (ULC) growth = growth in nominal compensation per employee adjusted for productivity growth. 2) IE: data missing, LV: structural break in data.

Gender pay gaps persist in some EU Member States

Chart 23 shows the unadjusted gender pay gap in the Member States for 2007 and 2010 (which is the last available observation). This indicator measures the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees.

This Chart shows some significant differences across Member States. The pay gap was just above 4% in Slovenia in 2010, but in excess of 25% in several

Chart 23: Unadjusted gender pay gap in the Member States – 2007 & 2010

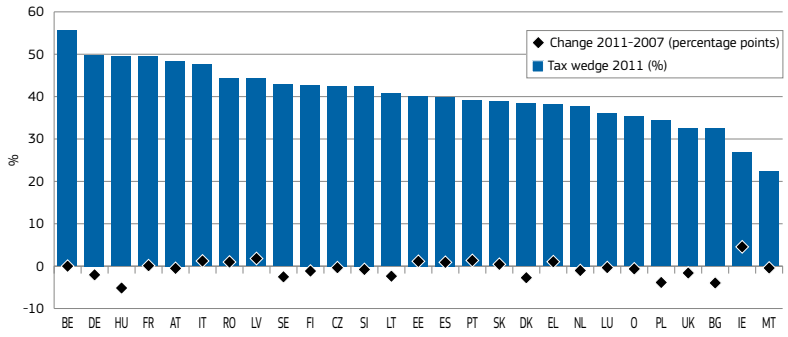


Source: Eurostat (tsdsc340).

Notes: 1) The gender pay gap measures the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees in enterprises with 10 employees or more in NACE Rev. 2 aggregate B to S (excluding O). 2) EE and EL show the 2008 observation instead of the 2010 observation. 3) These are unadjusted gaps in the sense that they only take the gender dimension into account to measure the gap, i.e. no adjustment for skills, age, etc.

(11) See European Commission, 2012h. Also according to Eurofound 2012b, the economic and financial crisis of 2008-2010 has impacted on pay in most EU Member States leading to wage deceleration, pay freezes and sometimes pay cuts.

Chart 24: Tax wedge for a single person without children, 100% of average wage



Source: OECD, 'Taxing Wages'.

Note: 'O' refers to OECD average; data refer to 2010 for BG, LV, LT, MT and RO.

Member States, i.e. Estonia[12], the Czech Republic and Austria.

Moreover, while some Member States recorded significant progress in closing the gender pay gap, including Lithuania (-5.4 percentage points), the Netherlands (-5.1 percentage points) and Ireland (-4.5 percentage points), several Member States experienced a sharp rise in the gender pay gap, with the largest increases recorded in Portugal (+4.4 percentage points) and Bulgaria (+3.3 percentage points).

All in all, it should be remembered that the indicators shown in Chart 23 are unadjusted in the sense that they do not take into account other personal or household characteristics such as age and education. Nevertheless, they underline the need to continue to pursue policies aimed at eradicating the drivers of these gaps.

Some reductions in the tax wedge

Labour costs are directly influenced by the tax wedge. The majority of Member States have somewhat reduced their tax wedge between 2007 and 2011 (see Chart 24). However, some with the highest percentages (Belgium, France, Austria) have not and some (Italy, Romania, Latvia) have increased it. An increase can also be noted for Spain, Portugal and Greece, a development which is unhelpful in countries facing high unemployment.

Minimum wages may have played a supportive role

In July 2012, 20 of the EU's 27 Member States had national legislation setting a minimum wage. See Chart 25.

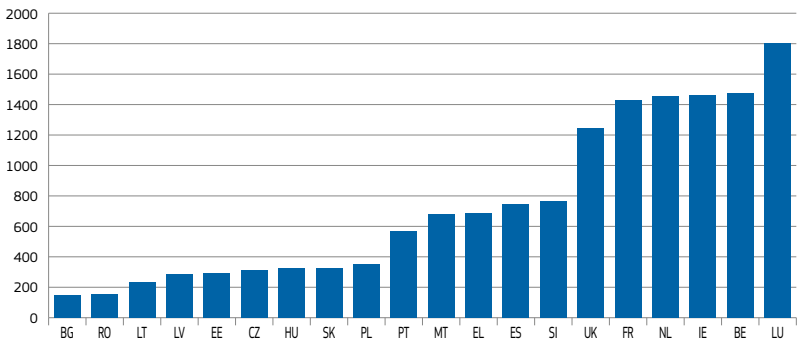
Minimum wages are by far highest in Luxembourg (about 1800 euro per month), followed by Belgium, Ireland, and the Netherlands (at about 1450 euro per month), and France (at about 1425 euro per month). Next in the ranking is the United Kingdom (1244 euro per month), followed by a group of 5 Member States (Slovenia, Spain, Greece, Malta and Portugal) where the minimum wages ranges between 565 euro (in Portugal) and 763 euro (in Slovenia).

All Member States that joined the EU in 2004 or later and having a national minimum wage recorded a minimum wage of less than 360 euro per month – except Slovenia and Malta. The lowest minimum wage is to be found in Bulgaria (148 euro) and Romania (157 euro).

When adjusted for price differentials across countries, the disparities between the Member States are reduced from a range of one to twelve (in EUR) to a range of one to five in purchasing power standard (PPS). At the opposite ends of the scale were Romania (276 PPS) and Luxembourg (1478 PPS per month). 11 Member States list a minimum wage (in PPS) that is less than half the minimum wage of Luxembourg, among them Greece and Portugal. See Chart 26.

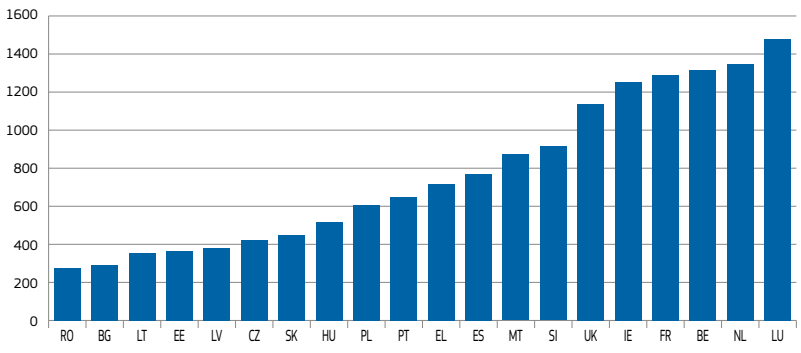
In 2011 the minimum wage levels in the EU varied between 30% and 50% of average gross monthly earnings in industry, construction and services (except activities of households as employers and extra-territorial organisations and bodies). The highest values are reported for Greece (but note that in Greece the minimum wage was

Chart 25: Minimum wages in euro – July 2012



Source: Eurostat, Labour market (earn_mw_cur).

Chart 26: Minimum wages in PPS – July 2012

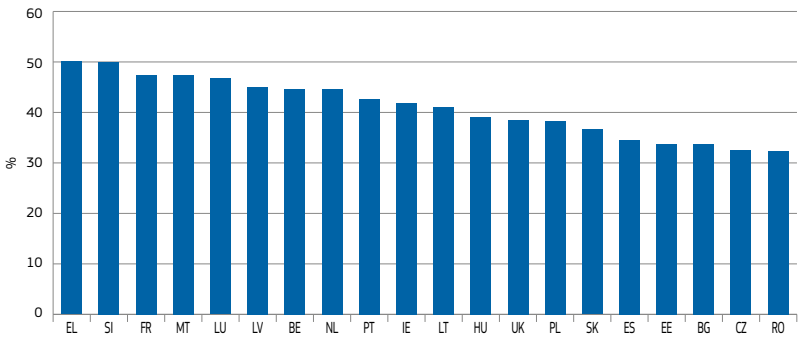


Source: Eurostat, Labour market (earn_mw_avgr2).

Note: The purchasing power standard, abbreviated as PPS, is an artificial currency unit. Theoretically, one PPS can buy the same amount of goods and services in each country.

(12) Note that for Estonia the last available observation is 2008.

Chart 27: Minimum wages as proportion of the mean value of average gross monthly earnings – 2011



Source: Eurostat, Labour market (earn_mw_avgr1).

Note: BE, FR, NL, RO refer to 2010. EL covers B-S excluding O.

substantially reduced by mid-2012, down from 876.62 euro per month in the second half of 2011 to 683.76 euro per month in the second half of 2012) and Slovenia followed by France, Malta and Luxembourg. At the lower end of the scale, Spain, Estonia, Bulgaria, the Czech Republic and Romania report minimum wages below 35% of the average gross monthly earnings, see Chart 27.

1.3. Mixed developments in income and poverty

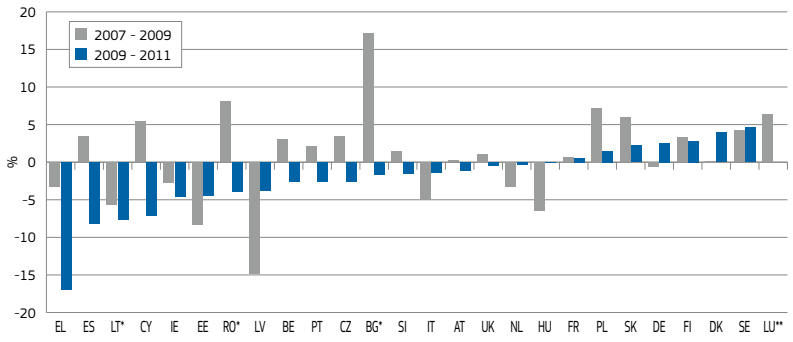
This section explores several issues related to income and poverty. It highlights the recent decline of the average household incomes in many countries and the weakening of the level of protection of the welfare state. It stresses the diverse ways in which the crisis has had an impact on income inequalities, as well as the subsequent rise in poverty and social exclusion. It also addresses the specific situation of children, youth and migrants, i.e. the most affected subgroups. Finally it confirms the risks of long-term exclusion.

1.3.1. Average household incomes have started to decline in many countries

During the crisis, job losses, reduced working hours, reduced activity among the self-employed, and in some cases pay freezes and pay cuts directly affected households' financial situation. Following a long period of decline, the share of people reporting great difficulty in making ends meet increased from 9.6% to 10.3% in the EU between 2008 and 2010, and by more than 4 percentage points in the Baltic States, Ireland, Greece, Hungary and Malta. This was also reflected in consumers' opinion reports which reported a deterioration of people's financial situation during the first year of the crisis.

Between 2009 and 2011, real gross household disposable income fell in ⅔ of EU countries (see Chart 28). Within the EU, the situation diverged further between countries where the situation worsened and countries where household incomes continued to increase as economic activity improved and unemployment started declining (the Nordic countries, Germany, Poland). In most countries, protracted economic and labour market conditions and the need to engage in fiscal consolidation (cuts in benefits and increases in taxes) accentuated the expected weakening of automatic stabilizers over time (e.g. end of benefit entitlement, decline in benefit generosity). As a result, real household incomes declined, especially in those where the recession was prolonged. Between 2009 and 2011, real GHDI dropped by more than 4% in Estonia and Ireland, by more than 7% in Cyprus and Lithuania, by more than 8% in Spain and by nearly 17% in Greece.

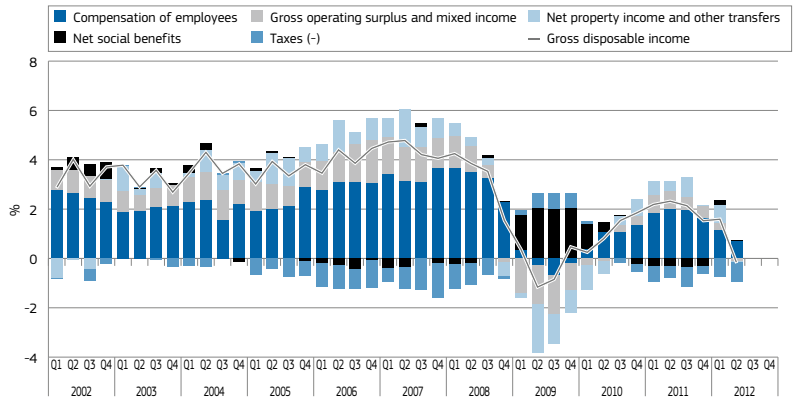
Chart 28: Change in real gross household disposable income in the first and second phases of the crisis, percent, EU-27



Source: AMECO – National Accounts.

Note: * – data is only available until 2010, ** – data is only available until 2009, – data is deflated by the HICP.

Chart 29: Contributions of components to the growth of nominal gross disposable income of households, Eurozone



Source: Eurostat/ECB.

1.3.2. Signs of weakening of the cushioning impact of the welfare state

In the first phase of the crisis, social benefits played an important role in sustaining household incomes as illustrated in Chart 29 below. In the Eurozone, net social benefits and reduced taxes contributed positively to the change in GHDI during 2009 and in the first two quarters of 2010[13]. However, in the second phase this effect started weakening. At the end of 2010, the contribution of social benefits to the change in gross household income lessens and starts being negative. In the second quarter of 2012,

Table 3: Changes in Gross Household Disposable Income between 2007 and 2009, and between 2009 and 2011, simulation of what the change would have been at constant taxes and benefits level

	2009 vs 2007				2011 vs 2009			
	(1a)	(2a)	(3a)	(4a)	(1b)	(2b)	(3b)	(4b)
	Actual change in GHDI (in %)	Contribution of social transfers to change in GHDI (in percentage points)	Contribution of taxes to change in GHDI (in percentage points)	Change in GHDI if social transfers and taxes stayed at 2007 value (in %)	Actual change in GHDI (in %)	Contribution of social transfers to change in GHDI (in percentage points)	Contribution of taxes to change in GHDI (in percentage points)	Change in GHDI if social transfers and taxes stayed at 2009 value (in %)
DK	0.1	3.2	0.9	-4.0	3.8	4.6	-0.6	-0.2
IE	-2.7	6.1	4.3	-13.1	-6.9	2.4	-2.3	-7.0
RO*	8.1	6.4	-0.9	2.5	-3.9	1.7	6.2	-11.8
CY	5.6	2.1	0.4	3.1	-3.0	1.5	-1.0	-11.8
SI	1.4	1.3	-0.4	0.5	-1.5	1.4	0.5	-3.4
ES	3.4	4.5	2.0	-3.1	-8.1	1.3	-0.2	-9.2
HU	-6.4	2.4	0.7	-9.5	0.0	0.9	4.2	-5.1
FI	3.3	3.2	1.6	-1.5	2.8	0.7	-0.1	2.2
IT	-5.0	1.5	0.4	-6.8	-1.4	0.7	0.3	-2.4
SK	5.9	2.1	0.7	3.1	2.2	0.7	-0.2	1.8
PT	2.1	2.4	-0.2	-0.1	-2.6	0.3	-0.4	-2.6
FR	0.7	1.4	0.4	-1.2	0.6	0.1	-0.6	1.1
NL	-3.3	3.0	-2.1	-4.2	-0.3	0.1	0.7	-1.1
BE	3.0	1.4	0.7	1.0	-2.6	0.0	-1.0	-1.6
SE	4.2	4.5	3.6	-3.8	4.6	-0.4	0.0	4.9
AT	0.2	1.2	0.3	-1.3	-1.2	-0.4	-0.2	-0.5
UK	1.1	4.3	1.5	-4.7	-0.5	-0.6	0.9	-0.8
CZ	3.4	4.3	1.5	-2.4	-2.5	-0.7	-0.1	-1.7
EL	-3.1	4.5	-0.3	-7.2	-20.1	-0.8	1.4	-20.7
DE	-0.6	0.4	0.0	-0.9	2.6	-1.7	0.3	3.9
EE	-8.3	8.2	3.0	-19.5	-4.5	-2.1	-0.3	-2.1
PL*	7.2	1.6	0.4	5.2	2.4	-2.6	7.7	-2.7
LT	-5.6	4.5	5.4	-15.5	-1.3	-2.6	0.2	1.1
LV	-14.6	7.9	4.0	-26.6	-3.0	-2.7	-1.1	0.8
BG*	17.1	5.7	0.4	11.0	-1.7	-7.3	5.1	0.6
LU	6.4	2.5	-0.2	4.0	NA	NA	NA	NA
MT	NA	NA	NA	NA	NA	NA	NA	NA

Source: AMECO – National Accounts.

(13) Chapter 3 (Welfare systems) presents a more detailed analysis by country highlighting the diversity of the impact of the crisis and of welfare responses across the EU.

GHDI decreases again after having increased for more than two years.

When we look at what happened in different countries, Table 3 shows that household incomes would have dropped significantly in most countries between 2007 and 2009 if taxes and benefits had been kept constant at the 2007 level. At the beginning of the crisis (2008-2009), the taxes levied decreased in many Member States, as original incomes dropped and tax breaks were granted as part of the stimulus packages. At the same time, the total amount of benefits distributed increased as more unemployed people became eligible. Countries where the impact of reduced taxes and increased benefits were strongest include the Nordic countries, the Czech Republic, Spain, the Baltic countries, Ireland and the UK.

Table 3 also illustrates at the macro level the weakening of the role played by the tax and benefit system in protecting households' income during the second phase of the great recession. From 2010 onwards, in many of the countries where unemployment kept increasing or remained at high levels (e.g. Portugal, Bulgaria, Ireland, Greece, Spain and Slovakia), the impact of taxes and benefits was much lower than in the first phase of the crisis, and in some cases it even contributed negatively to the change in gross household income. This may result both from the phasing out of entitlements; from fiscal consolidation measures that reduced the level or duration of the benefits, or from the tightening of eligibility rules that exclude some beneficiaries from a given scheme.

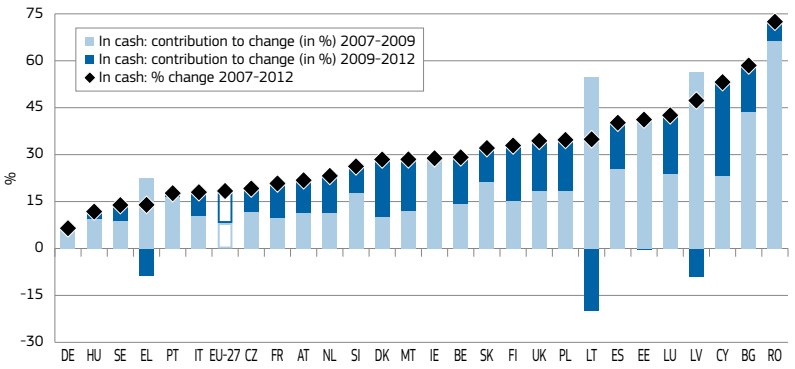
This observation is partly explained by the evolution of the spending on cash benefits (which have the most direct impact on disposable income) between 2009 and 2012. As illustrated in panel A of Chart 30 below, the total amount of cash benefits distributed decreased in Greece, Latvia and Lithuania and remained relatively stable in Hungary and Ireland even though unemployment in these countries remains well above 10% of the active population and keeps increasing (with the exception of Latvia and Lithuania where it started decreasing in 2011).

Another matter of concern is the cut in the spending on in-kind benefits that occurred, generally also between 2009-2012, in these countries (except for Latvia) and a few others where the labour market conditions are still bad (such as Spain or Portugal) (See panel B of Chart 30). A continuation of such a trend of cutting or freezing spending on services in areas such as health care, training, housing or child care could in the long term have a detrimental impact on employability and wellbeing.

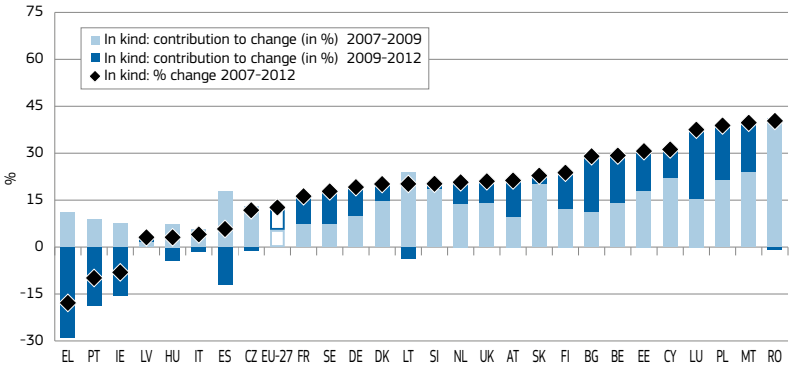
Large increases in unemployment and growing long-term unemployment lead to a significant increase in the number of people having to rely on benefits, including on social assistance. Administrative data collected by the Social Protection Committee on benefit recipients indicate that an increasing number of people rely on last resort schemes. In some countries (Bulgaria, Greece, Spain, Italy, Cyprus, Portugal and Slovenia) a growing gap between the number of unemployed and the number of benefit recipients seem to indicate that more and more people are not covered by any scheme at all.

Chart 30: Percentage change in social protection spending (in national currency, 2007-2012)

Panel A – in cash



Panel B – in kind



Source: Eurostat; National Accounts and European Commission economic forecast – Autumn 2012.

Note: data for years 2011 and 2012 are forecasts.

Table 4: Tax reforms in 2012

	PIT	PIT progressivity	VAT standard	VAT reduced	VAT exemptions/ reduced	Environmental	Property tax
BE	TEC[2]			+	-		
BG				+		+	
CZ	+	+		+ (4 pp)			
DK	TEC[2]				-		
DE							
EE							
IE	+/-		+ (2 pp)			+	+**
EL	+/TEC[2]	+		+/-		+	+ (?)
ES	+	+			-		+
FR	TEC[2]	+	+ (1.6 pp)	+			
IT	+	+	+ (1-3 pp)			+	+
CY	+	+	+ (2 pp)	1 new	-/+		+
LV	-		+ (1 pp)	+ (2 pp)	-	+	+
LT				-		+	+
LU	+/-	+					
HU	$	-	+ (2 pp)			+	
MT	-						
NL	+/-				-	+/-	-/+(IR[3])
AT	+	+			-	+	+
PL	+	+	+ (1 pp)	+ (1 pp)	-	+	
PT	+	+	+ (2 pp)		-	+	+
RO						+	
SI						-	
SK						+	
FI	+/-				-	+	
SE							
UK	+/-						+

Source: European Commission (2012c).

Notes: The table lists tax changes implemented in 2011 and the first half 2012 including temporary but significant changes. Minor changes are not included. (?) means: implementation of previous measures [2] TEC means tax expenditure cuts; ** means: from OECD (2012c); [3] IR means imputed rent (under PIT); $ means major reform with flat rate.

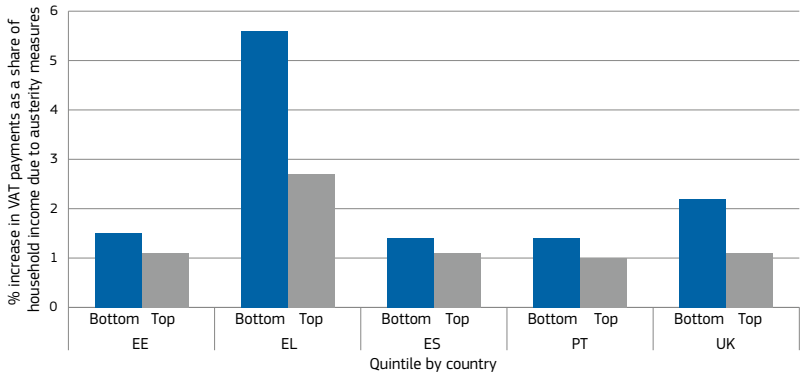
1.3.3. Signs of adverse social effects of recent tax reforms and potential for improvement

Several Member States have recently increased taxes on consumption or have been recommended to shift taxation from labour to consumption and property. Table 4 shows that most Member States recently have increased environmental taxation, VAT, property and personal income taxes, while (in some cases) increasing their progressivity.

Some of the advocated tax changes, when introduced without flanking measures aimed at the poorest, can have adverse social effects. Increases in VAT rates and the reduction in reduced rates and exemptions have a detrimental effect on poor households. Chart 31 shows the social impact of recent increases in VAT, as part of austerity measures, in Estonia, Greece, Spain, Portugal and the United Kingdom. The increase in VAT had a more severe impact on the disposable income inequality of the poorest groups. In all five countries, the relative loss of the top income group has been lower than for the bottom one. However, the socially detrimental effects of increasing VAT can be offset by increasing income support measures for the groups that would not benefit from lower labour taxes (unemployed, retired).

Tax shifts towards property have been strongly recommended. Nonetheless, the redistributive effect of current forms of

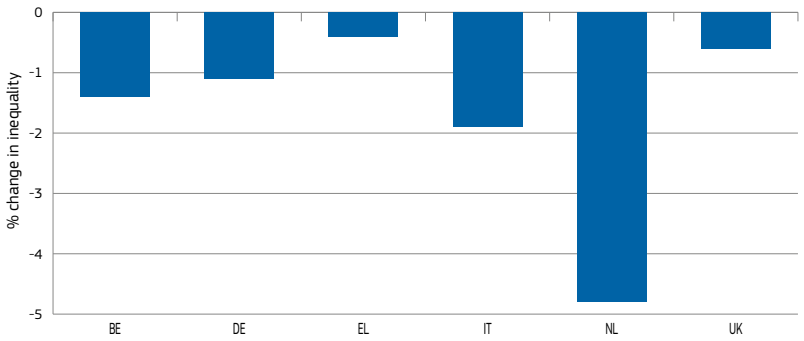
Chart 31: Effect of VAT reforms for the bottom and the top of the income distribution



Source: Own calculations based on data from Callan et al. (2011).

Notes: Callan et al. (2011) is based on Euromod simulations using 2008 EE-SILC, 2008 IE-SILC, 2007 EL-SILC, 2007 ES-SILC, 2007 PT-SILC and 2008/2009 FRS for the United Kingdom. VAT micro-simulations are approximations based on external information.

Chart 32: Change in inequality due to taxing imputed rent with lump-sum tax credit



Source: Own calculations based on data from Figari et al. (2012).

Notes: Figari et al. (2012) is based on Euromod simulations using 2006 BE-SILC, 2002 Socio-economic Panel for Germany, 2004/5 EL-HBS, 2004 IT-SILC, 2001 Socio-economic Panel for the Netherlands, 2003/4 Family Resource Survey for the United Kingdom. Inequality is measured with the Gini coefficient and refers to equivalised disposable income including imputed rent.

property taxation is limited if not regressive (e.g. in the United Kingdom). Recent property taxation reforms did not substantially change the design of property taxes. A shift from labour to property has a large potential in terms of employment and social effects. Property is an immobile tax base and it is more difficult to evade. However, different forms of property taxation are needed in order to achieve social goals, without increasing budget deficits.

A valid alternative to property taxation is to tax the in-kind income derived from homeownership. Few Member States tax imputed rent, although it is not fully taxed. Indeed, in some Member States the taxation of imputed rent is based on cadastral values (Luxembourg, Netherlands), in some others (Belgium, Italy, Spain) it only applies to properties other than the primary residence. A well-designed taxation of imputed rent would mean that the tax burden could be lowered on labour and inequality could be reduced. Chart 32 shows the simulated social impact of taxing imputed rent while the impact of compensation with a lump-sum tax credit is shown for Belgium, Germany, Greece, Italy, Netherlands and the United Kingdom. This reform would reduce inequality, although the extent of the effect varies by country. The effect would be limited in Greece and would have the greatest effect in the Netherlands.

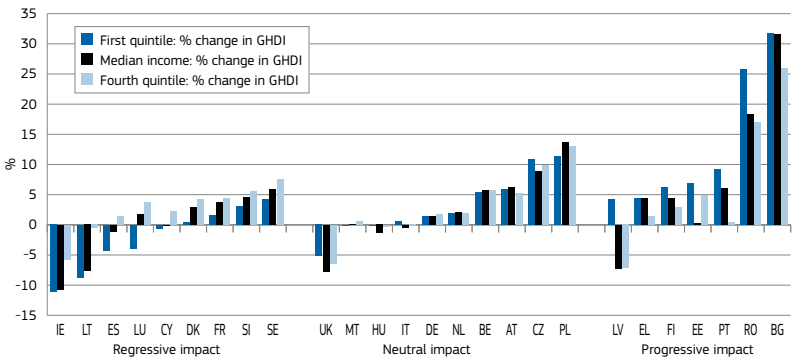
1.3.4. Diversity of trends in income inequalities during the crisis

The first phase of the crisis did not affect household income evenly across the income distribution. In one third of EU countries (on the left of Chart 33); the impact was regressive; in Ireland, Spain and Lithuania, the poorest segment of the population saw their income drop more than the rest of the population, while in France, Denmark, Sweden and Slovenia, their incomes grew significantly less than households higher up in the income distribution. In the UK, Hungary and Italy, the middle class (often workers) was most affected by the profound crisis, while in a few countries in continental Europe (Germany, Belgium, the Netherlands, Austria and Poland) the evolution of incomes was relatively even across the distribution. In Latvia, Greece and Portugal, the top incomes were proportionally more affected than the rest of the population.

This information is based on EU-SILC survey data, which only covers the first phase of the crisis. However, less precise, but more recent data points to a significant deterioration in the relative situation of the poorest segment of the population in a number of countries, including in those where they had been protected in the early phase of the crisis.

Monthly consumer surveys available up until Spring 2012 illustrate the significant deterioration of the reported financial situation of households[14] in the lowest quintiles of the income distribution in the majority of EU countries. The rise of the financial stress indicator among the lowest quintile was especially stark in Italy and Spain (10 percentage points more over a year), as well as in Greece, Ireland, and Sweden (5 percentage points more over a year), reflecting the very strong deterioration of economic conditions in these countries. In contrast, the share of lower income households reporting financial distress fell over the year to spring 2012 in Belgium, Denmark, Finland, Poland and Latvia and Lithuania. The situation of

Chart 33: Changes in household disposable income in different parts of the income distribution (% change of national currencies, 2007-2009); Member States grouped according to he degree of progressivity of the change



Source: EU-SILC.

(14) The financial stress indicator is defined as the share of people who report having to draw on their savings or having to run into debt to keep up current expenditures.

Chart 34a: Change in population share in households in the lowest income quartile reporting financial distress across the EU (as at July 2012)

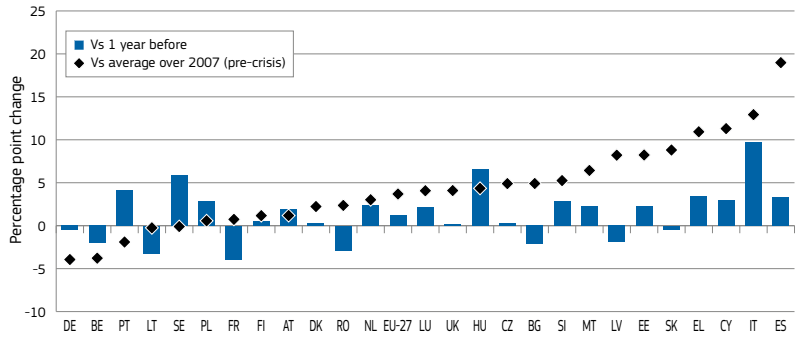


Chart 34b: Austria: Reported financial distress in households by income quartile of household (2000-2012)

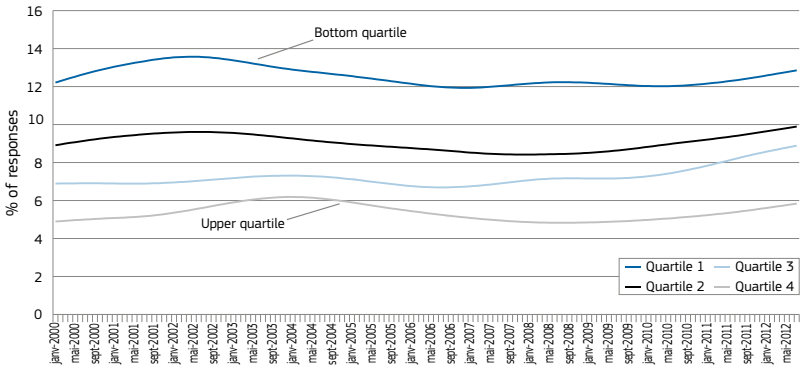
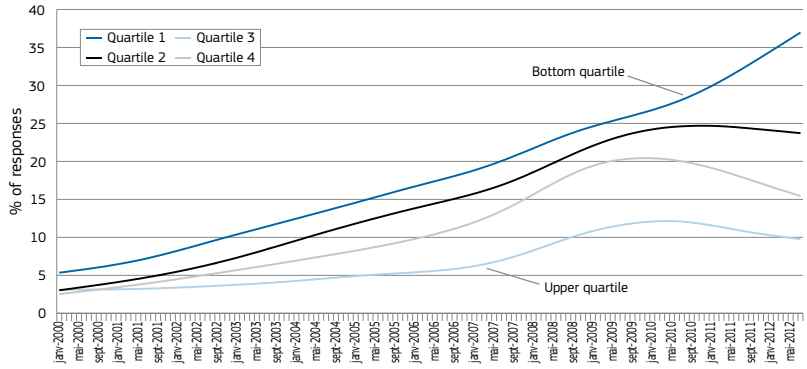


Chart 34c: Spain: Reported financial distress in households by income quartile of household (2000-2012)



Source: Joint harmonised EU consumer surveys & DG EMPL calculations.

Notes: Based on 3 month centred moving averages. Data not seasonally adjusted. Break in series for Ireland in 2009 (figures for change vs 3 months before 1.3 percentage points, and one year 7.6 percentage points.

such households in Germany changed little, but France and the UK saw rises of around 2 percentage points.

The crisis and fiscal consolidation measures had a negative effect on the incomes of households in most Member States. Evidence based on micro-simulation illustrates that in a few countries the relative situation of the poorest segments of the population worsened more than of some other segments (Lithuania, Estonia, Portugal). In some countries fiscal consolidation measures had a more progressive impact (Spain, Romania, Greece, and Latvia); however, in these countries the situation of the poorest segments of the population also worsened significantly (by more than 5 % in Greece and Latvia).

Euromod has reviewed austerity measures taken in 9 EU Member States between 2009 and 2012. Those affecting low-income groups were very diverse.

Many countries (Estonia, Greece, Spain, Latvia, Portugal and the UK) increased taxes on income or social contributions. Many also increased VAT (Estonia, Greece, Spain, Lithuania, Latvia, Portugal, Romania and the UK). In terms of taxes, Greece also introduced an emergency property tax.

Pensioners were negatively affected in Greece, Latvia, Portugal and Romania. Unemployment benefits were reduced in Greece, Lithuania, Portugal and Romania and child benefits were reduced in Estonia, Spain, Lithuania, Latvia, Portugal, Romania and the UK.

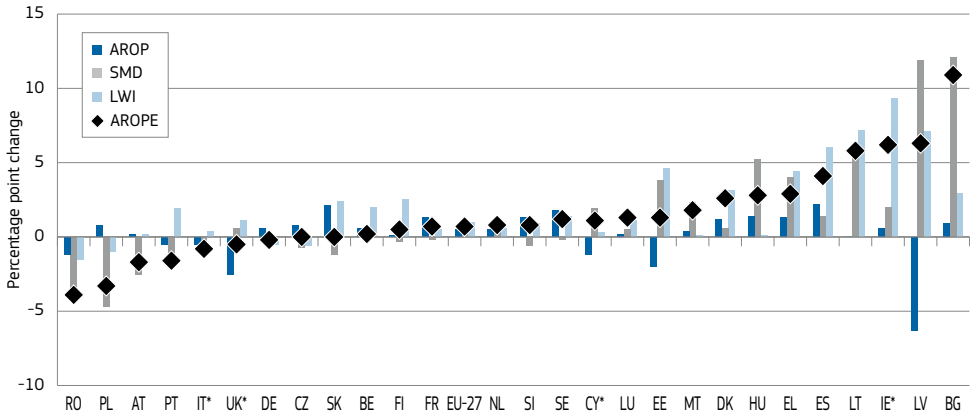
Other measures remained limited to only a few Member States: minimum wages were cut in Greece; housing benefits were cut in the UK; care benefits were cut in Spain and limited in the UK; Lithuania and Latvia did cuts in maternity/paternity benefits; and Lithuania also lowered social assistance benefits for those that are able to work and sickness benefits.

1.3.5. Poverty and social exclusion on the rise

Overall the crisis has halted the decline of the risk of poverty and social exclusion experienced since 2005, with around 24.2 % of the EU population at-risk-of-poverty or exclusion in 2011. As seen above the impact of the crisis on household incomes takes time to unfold. The small increase of the risk of poverty observed until 2011 hides more worrying trends that are likely to affect people's living conditions in the long term. The most direct effect of the deterioration of labour conditions is the rise in the share of people living in jobless households (LWI = low work intensity: households not working at all, or less than 1 day a week over a whole year). In Ireland, the Baltic States, Spain, Greece, and Denmark, the share of children and adults aged less than 59 living in jobless households increased by more than 3 percentage points between 2008 and 2011. In Bulgaria, the Baltic States, Greece and Hungary, the significant increase in severe material deprivation also illustrates the severity of the crisis and its impact of the most deprived populations.

NB: Please note that due to the last minute revision of the SILC 2011 data, Chart 35 and the statistical annex have

Chart 35: Change in the risk of poverty and social exclusion and its components in Member States between 2008 and 2011



Source: Eurostat, EU-SILC.

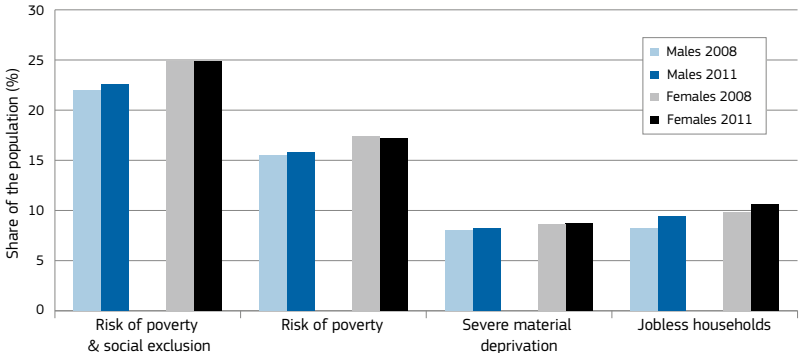
Notes: The income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom for which the income reference period is the current year of the survey and Ireland for which the survey is continuous and income is collected for the 12 months prior to the survey. AROP: at-risk-of poverty rate (60% of median income); SMD: severe material deprivation; LWI: people (0-59 not students) living households with zero or very low work intensity; AROPE: at-risk-of-poverty or exclusion rate (union of all three indicators). Changes for Ireland and Italy are to 2010 instead of 2011, and for EU-27 are based on Eurostat estimates.

been updated to reflect the latest figures as of 30 November 2012. However the rest of the report is based on the data available on 23 November 2011.

1.3.6. Women still face a higher risk of poverty and exclusion than men

Overall, women face a higher risk of poverty and exclusion than men (24.6% against 22.6% in 2011). The crisis has not aggravated this gap so far, since prime working age men have been most directly hit by the deterioration of labour market conditions. However, some categories of women face significantly higher relative risks of poverty – such as single mothers (34% against 16% for the total population), inactive women of working age (28%), and elderly women over 75 (20.1%). The latent class analysis developed in Chapter 2 reveals that women are more often represented in groups facing higher risks of persistent poverty, notably linked to inactivity and care responsibilities. Inactivity and career breaks linked to care responsibilities have long-term impacts on future pension entitlements and are important factors of poverty among older women. While inactivity rates have not increased so far as a consequence of the crisis, retrenchments or freezes in social spending, such as on family and child benefits or child care services may hamper female participation and aggravate the situation of the most vulnerable women.

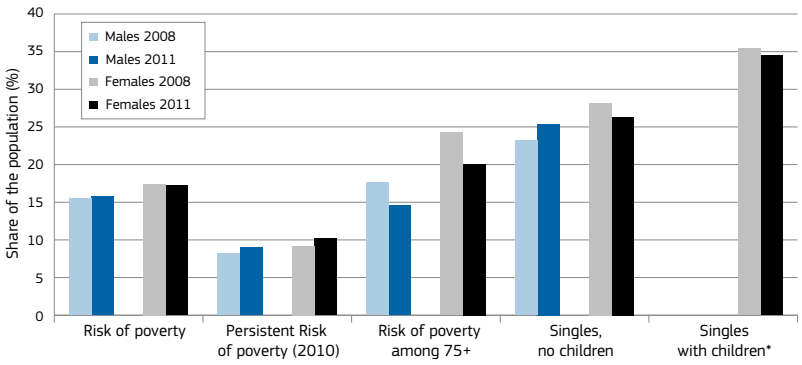
Chart 36a: Risk of poverty and social exclusion for women and men, 2008 and 2011



Source: Eurostat, EU-SILC (EU-27 Eurostat estimates).

Note: The income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom for which the income reference period is the current year of the survey and Ireland for which the survey is continuous and income is collected for the 12 months prior to the survey.

Chart 36b: Relative risk of poverty, and specific subgroups for women and men, 2008 and 2011



Source: Eurostat, EU-SILC (EU-27 estimates for 2011).

Note: The income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom for which the income reference period is the current year of the survey and Ireland for which the survey is continuous and income is collected for the 12 months prior to the survey.
* No gender breakdown available.

1.3.7. In-work poverty increased significantly in ⅓ of Member States

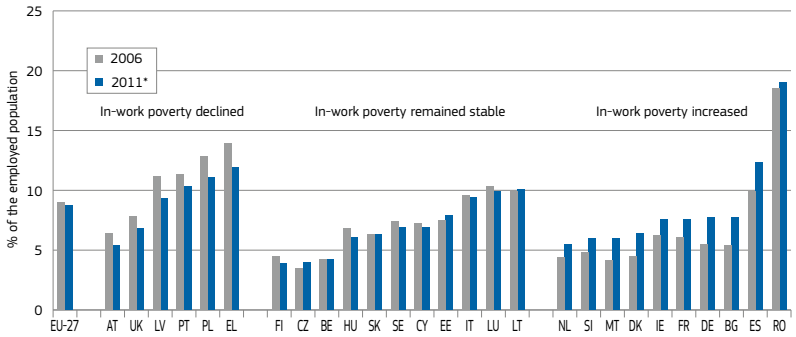
Having a job remains the best safeguard against poverty and exclusion, since the risk of poverty faced by working age adults without work (unemployed or inactive) is more than three times higher than those in work (28 % against 9 %). However, a job is not a guarantee against the risk of poverty and the working poor represent ⅓ of the working age adults at-risk-of-poverty. In 2011, 8.7 % of the people in employment were living under the poverty threshold.

In-work poverty significantly increased in ⅓ of EU countries between 2006 and 2011, including in Germany (+2 percentage points), the Netherlands or Denmark where overall economic and labour market conditions were more resilient than in the rest of the EU. Factors include wage moderation and the reduction of working hours of people in employment, notably due to the wide use of short term working arrangements.

The ESDE report 2011 (European Commission, 2011e) analysed the factors of in-work poverty in detail. As illustrated below, it is first of all linked to the employment status of workers, and related factors such as low pay, precarious employment and under-employment. The self-employed face a risk-of poverty that is more than 3 times that of employees; the risk-of-poverty of the temporary workers is twice as high as the risk faced by permanent workers, as is the case for part-time workers in comparison to the full-time worker. The increasing shares of part-time and temporary workers in the total employed population is likely to drive in-work poverty further in the coming years.

In-work poverty is also related to low work intensity in the household, i.e. situations where there are too few adults working in the household, or not working enough to earn a living (too few hours or only part of the year). Among these, single people and lone parent households not working full time, as well as one-earner families (medium level of work intensity) face the highest risks of poverty.

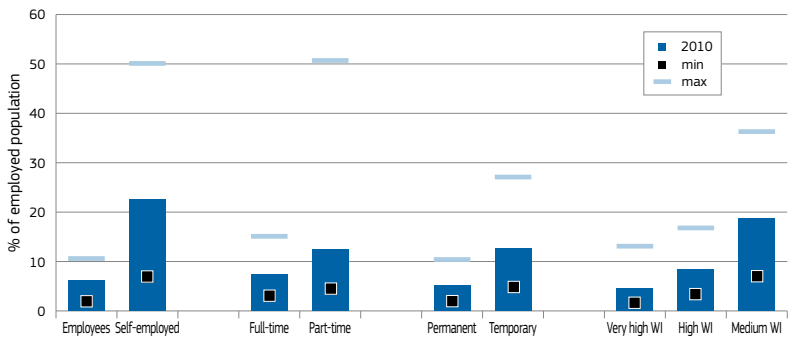
Chart 37: In-work poverty: at-risk-of-poverty rate of persons employed, evolution since 2006



Source: Eurostat – EU-SILC.

Notes: The income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom for which the income reference period is the current year of the survey and Ireland for which the survey is continuous and income is collected for the 12 months prior to the survey. * 2010 values instead of 2011 for CY, IE, IT and UK; EU-27 is based on Eurostat estimate for 2011. Data for 2007 and not 2006 in RO.

Chart 38: In-work poverty: at-risk-of-poverty rate of persons employed, per characteristics



Source: Eurostat – EU-SILC.

Notes: The income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom for which the income reference period is the current year of the survey and Ireland for which the survey is continuous and income is collected for the 12 months prior to the survey.

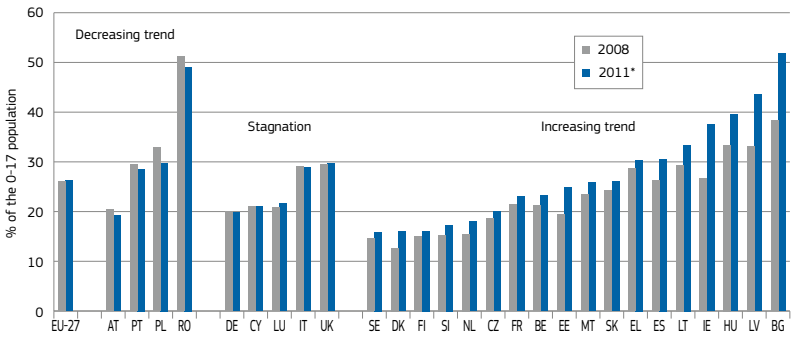
1.3.8. Working age people, children, youth and migrants have been most affected

Overall, the crisis has worsened the situation of children and young adults, already at heightened risk before the crisis. This is mainly due to the sharp rise in unemployment. Working age adults have been hit first by the economic crisis, with a direct impact for children growing up in their households. Young adults and adults of prime working age (25-54) have experienced increases in the risk of poverty or social exclusion of close to 1 percentage point at EU level, while for the elderly (65+) it is down 3.3 percentage points.

In a number of countries experiencing very severe recessions (Bulgaria, the Baltics, Ireland, Hungary, Spain and Greece) children have been significantly affected by the crisis. Lone parent households have been severely affected. For this group, the risk of poverty or social exclusion exceeds 50 %. In particular the risk of poverty or social exclusion for lone parents has worsened and increased by 9 percentage points in Ireland and Lithuania, 7 percentage points in Spain, 6 percentage points in Italy, 5 percentage points in France, 4 percentage points in Sweden and Slovakia and 3 percentage points in Denmark. Families with two adults and two children also experienced similar increases.

Young adults, who face the combined challenge of high unemployment and low income, have also been severely hit. Between 2008 and 2011 the risk of poverty or exclusion for those aged 18-24

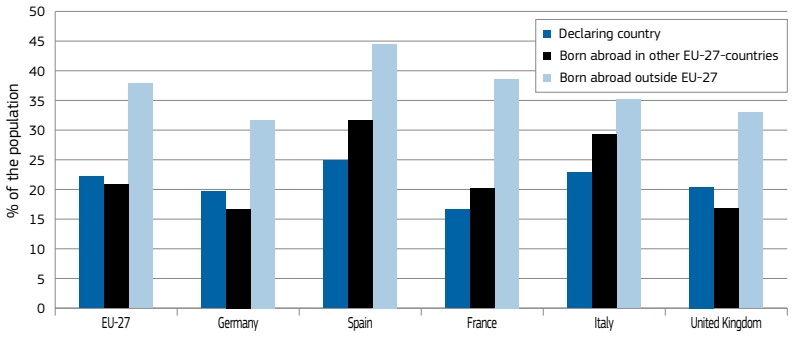
Chart 39: Change in the share of children at-risk-of-poverty or social exclusion between 2008 and 2011



Source: Eurostat – EU-SILC.

Notes: The income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom for which the income reference period is the current year of the survey and Ireland for which the survey is continuous and income is collected for the 12 months prior to the survey. * 2010 values instead of 2011 for CY, IE, IT and UK; EU-27 is based on Eurostat estimate for 2011.

Chart 40: At-risk-of-poverty and social exclusion of people aged 18+ by country of birth, 2011



Source: Eurostat – EU-SILC 2011; 2010 data for Italy and the United Kingdom.

Notes: The income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom for which the income reference period is the current year of the survey and Ireland for which the survey is continuous and income is collected for the 12 months prior to the survey.

increased by 6-8 percentage points in Greece, Spain and Malta, 10 percentage points in Denmark, Ireland, Estonia and Lithuania, and as much as around 16-17 percentage points in Bulgaria and Latvia.

At EU level, the risk of poverty or exclusion among the migrant population aged 18 and over remains much higher than the overall population. The risk of poverty or exclusion for people born outside the EU-27 stood at 37.8% in 2011, compared to 20.8% for those born in the country and 22.2% for those born in another EU country. Between 2008 and 2010, people born outside the EU have seen the sharpest rises in the risk of poverty or exclusion in Spain (by 3 percentage points) while in France and Italy it has been the mobile citizens from other EU Member States.

1.3.9. Risks of long-term exclusion confirmed

The large unemployment shocks experienced at the beginning of the crisis and the rising shares of the long-term unemployed point towards serious risks of long-term exclusion faced by a significant share of the population. The analysis of the transitions in and out of poverty and in and out of long-term unemployment presented in Chapter 1 and Chapter 2 of the annual review warns against the risk of a downward spiral entrapping individuals into exclusion in the coming years.

In a number of Member States (the Baltic States, Bulgaria, Greece, Hungary, Italy, Malta, Poland, Portugal and Romania) the risk of entering into poverty is associated with few chances to get out again, meaning that individuals falling into poverty have limited chances to get back out of it in the following years. Among these countries, this situation is most worrying in Bulgaria, Romania, Estonia, Greece, Malta, Portugal and to a certain extent Italy which already experienced high rates of persistent poverty (above the EU average) before the crisis, and are now among the countries with the worst labour market conditions, characterized by very high rates of long-term unemployment, and the lowest rates of return to employment.

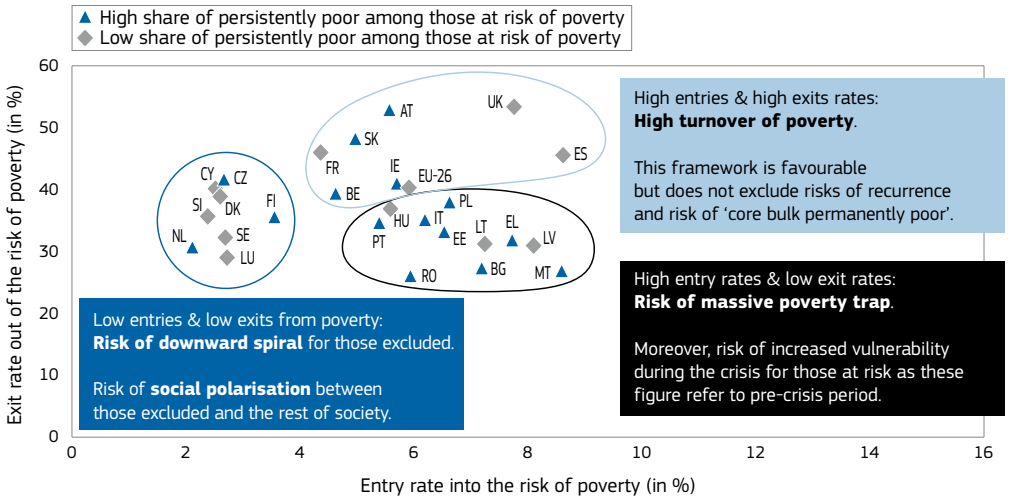
In another group of countries, which include the UK, Spain, and to a lesser extent Austria, France, Ireland Belgium and Slovakia, there is a large number of people dipping into and out of poverty, which indicates that a significant number of people are experiencing transient or recurrent poverty, who co-exist with a group of people trapped into persistent poverty, representing 40% to 55% of the poor (just below the EU average).

In a third group of countries (the Czech Republic, Denmark, the Netherlands, Slovenia, Finland and Luxembourg), entry rates are low but exit rates are also low. Despite poverty affecting a smaller part of the population in these countries, the situation reveals a potential poverty trap, especially in the Czech Republic, Finland, and the Netherlands where the share of the poor people experiencing persistent poverty exceeds 50%.

The differences observed in the dynamics of poverty, and related risks of long-term exclusion reflect the diversity of labour market conditions, and of the capacity of the welfare state to adequately protect people and to support their return to the labour market. It also depends on the significant differences still existing in the household structure and the level of work intensity of the households across EU countries.

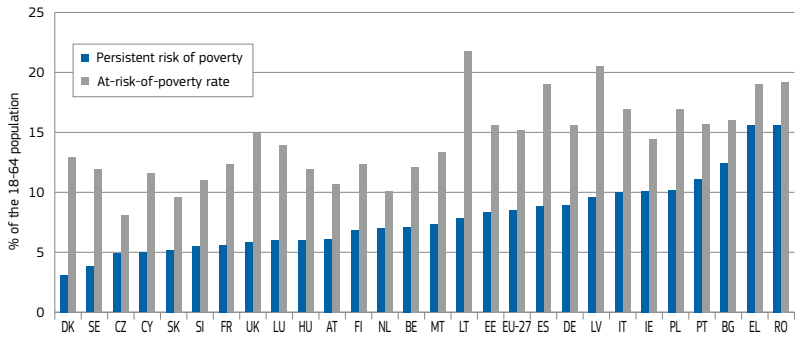
As these figures refer to pre-crisis years, the situation is likely to have worsened further, and is especially alarming in the first group of countries (the Baltic States, Bulgaria, Greece, Italy and Malta) where long-term unemployment has increased

Chart 41: Combination of entry and exit rates in and out of poverty among the 18-64 population



Source: EU-SILC LONGITUDINAL UDB 2009 – version-3 August 2012 – DG EMPL calculations.

Chart 42: Share of the working age population at risk of persistent poverty compared to the share at-risk-of-poverty



Source: EU-SILC 2010.

Notes: The income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom for which the income reference period is the current year of the survey and Ireland for which the survey is continuous and income is collected for the 12 months prior to the survey.

most. These countries are also those where the capacity of the welfare state to prevent and tackle poverty was the weakest, and has been weakened further during the crisis by important cuts in public expenditure (see Chapter 3).

The persistent risk of poverty is also a matter of concern. In 2010, 8.5% of the working age individuals had been at-risk-of-poverty in at least 3 out of the last 4 years (including the last one). Persistent poverty is high (10% or more) in Italy, Greece, Portugal, Bulgaria, Romania, Poland and Ireland. The crisis is likely to further aggravate the situation, especially in countries with low exit rates.

1.4. The Europe 2020 targets are becoming increasingly difficult to achieve

1.4.1. Many national employment rate targets looking increasingly ambitious

In 2011 (and it is expected also in 2012) setbacks were noted with respect to the Europe 2020 strategy's aim to increase the employment rate for the 20 – 64 age group to 75%. The average employment rate remained static in 2011 at 68.6%, which is still significantly below the pre-crisis level of 70.3% (in 2008). As only marginal increases are expected for 2012 and 2013, a considerable effort will be required to reach the Europe 2020 target: some 16.7 million jobs should still be created by 2020 in the EU (compared to 2011 levels), meaning that the overall EU employment figure should increase on average by 0.9% per year. It also implies an increasing need to mobilise women (their ER was 62.3% against 75% for men aged 20-64 in 2011), older workers aged 55-64 (47.4% against 60% in the US and 65% in Japan) and other under-represented groups in the labour market.

Employment rate developments by Member State

In only one year, comparing the 2011 achievements with the situation in 2010, the gap to the 2020 targets increased in eleven Member States, decreased in fourteen and remained unchanged in two. The most significant falls in the employment rates in 2011 (more than 1 percentage points) were noted in Greece (-4.1 percentage points), Slovenia, Cyprus, Bulgaria and Portugal, while the most significant rises were seen in the Baltic States (+2.2 to +3.7 percentage points), Germany, Sweden and Malta (+1.3 to +1.4 percentage points). See Table 5, third column. At EU level, in order to achieve the 75% headline target, of the estimated 17.6 million jobs that had to be created between 2010 and 2020, 16.7 million jobs would still need to be created by 2020 within the 20-64 age group, given the gain of 0.9 million jobs

(+0.4%) in 2011. But employment did not grow enough in 2011 to compensate for the recent growth of the population (+0.3% in 2011). The employment rate therefore remained unchanged compared to 2010, at 68.6%. Substantial efforts are still needed in order to achieve the goal set for 2020, according to which employment is required to grow by 0.9% per annum on average between 2011 and 2020, whereas no major improvement is expected in either 2012 or 2013.

Table 5: Employment rates in EU Member States in 2011 and progress needed in order to meet the Europe 2020 employment target

	(age group: 20-64)					
	Employment rate in 2011 (%)	Employment rate progress on 2010 (percentage points)	Employment rate national target for 2020 (%)	Current gap to national target for 2020 (percentage points)	Jobs in 2011 (x 1 000)	Employment average annual growth needed 2011-2020 (%)
BE	67.3	-0.3	73.2	5.9	4427	1.2
BG	63.9	-1.5	76.0	12.1	2897	0.7
CZ	70.9	0.5	75.0	4.1	4806	0.1
DK	75.7	-0.1	80.0	4.3	2474	0.6
DE	76.3	1.4	77.0	0.7	37855	0.0
EE	70.4	3.7	76.0	5.6	584	0.1
IE	64.1	-0.9	69.0 – 71.0	5.9*	1737	1.0*
EL	59.9	-4.1	70.0	10.1	3999	1.6
ES	61.6	-0.9	74.0	12.4	17830	2.1
FR	69.1	0.0	75.0	5.9	25179	0.8
IT	61.2	0.1	67.0 – 69.0	6.8*	22465	1.3*
CY	73.8	-1.6	75.0 – 77.0	2.2*	362	1.1*
LV	67.2	2.2	73.0	5.8	945	0.2
LT	67.2	2.8	72.8	5.6	1338	0.7
LU	70.1	-0.6	73.0	2.9	221	1.6
HU	60.7	0.3	75.0	14.3	3768	1.9
MT	61.5	1.4	62.9	1.4	161	0.0
NL	77.0	0.2	80.0	3.0	7703	0.3
AT	75.2	0.3	77.0 – 78.0	2.3*	3885	0.5*
PL	64.8	0.2	71.0	6.2	15769	0.5
PT	69.1	-1.4	75.0	5.9	4519	0.8
RO	62.8	-0.5	70.0	7.2	8655	0.7
SI	68.4	-1.9	75.0	6.6	902	0.9
SK	65.1	0.5	72.0	6.9	2332	1.0
FI	73.8	0.8	78.0	4.2	2361	0.2
SE	80.0	1.3	80.0**	0.0	4405	0.3
UK	73.6	0.0	–	1.4***	27214	0.5***
EU-27 national target-based	68.6	0.0	73.7 – 74.0	5.3	208789	0.7 – 0.8
EU-27 headline	68.6	0.0	75.0	6.4	208789	0.9

Source: Eurostat, EU-LFS.

Note: (*) IE; IT; CY; AT: taking the mean of the range into account. (**) SE has defined a national employment rate target of 'well over 80%'; for calculation purposes, 80.0% was taken into account. (***) The UK has not set a national employment rate target. However, the UK is included in the EU-27 calculation on the hypothetical assumption that its ER target for 2020 would be in line with the EU-27 headline target, at 75.0%.

In spite of the ambitious EU headline target (75%), taking into account the targets set at national level (see fourth column at Table 5), only 13.5 million jobs[15] are expected to be created by 2020 (0.7 to 0.8% annual increase on average). Still, these national targets, although most of them remain below the EU headline target, are challenging for most Member States, as the annual employment growth needed to achieve them ranges from 2.1% in Spain (against 1.7% in 2010), 1.9% in Hungary, 1.6% in Luxembourg and Greece (against only 0.7% a year previously), 1.3% in Italy, 1.2% in Belgium, 1.1% in Cyprus, 1.0% in Ireland and Slovakia, to 0.5% or less in Germany, the Czech Republic, Estonia, Latvia, Malta, the Netherlands, Austria, Poland, Finland, Sweden and the UK (see last column of Table 5)[16]. In the latter group of countries, demographic changes play a significant role. In Sweden, although the target employment rate of 80% was reached in 2011, after a rise of 1.3 percentage points compared to 2010, employment should increase by 0.3% per year until

[15] This amount, which corresponds to the national targets (and the mean of the ranges for those countries where targets were defined as ranges) accounts for 82% of the net total number of jobs created from 2000 to 2011 in the EU in the 20-64 age group (+16.5 million), and less than 70% of those recorded from 2000 to 2008 in that same age group (+19.5 million).

[16] Sweden has defined a national employment rate target of 'well over 80%'. For calculation purposes, 80.0% was taken into account. The UK has not set a national employment rate target. However, the UK is included in the EU-27 calculation on the hypothetical assumption that its ER target for 2020 would be in line with the EU-27 headline target, at 75.0%.

2020, in order to compensate for the forecast population growth. And this turns out to be a minimum, if demographic projections were to be confirmed and given the objective of the Swedish government to achieve an employment rate of 'well over 80%' by the end of the decade.

Very different outcomes for different individual groups

Some subgroups have been more affected than others by the contraction in employment over recent years: the young (15-24), non-EU nationals and those with a low level of education were more than proportionally affected, whereas the rise in the employment rate for women was interrupted from 2008 onwards. On the positive side, the employment rate of older workers was not affected by the crisis. See Table 6.

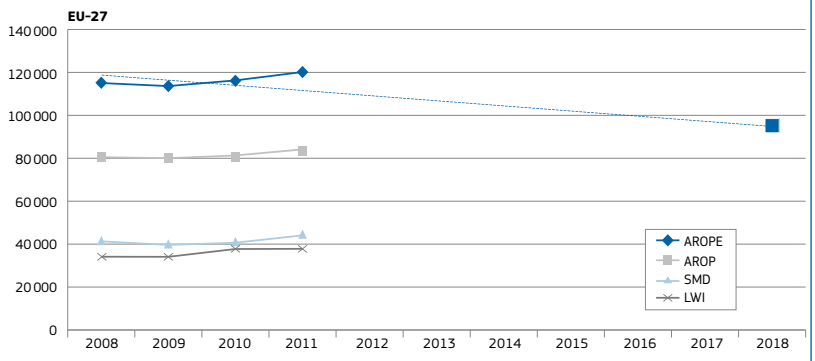
Table 6: Employment rate trends between 2000 and 2011

		2000 (% of pop.)	2008 (% of pop.)	2010 (% of pop.)	2011 (% of pop.)	Total change (percentage points)		
						2000-2011	2008-2011	2010-2011
Total	20-64	66.5	70.3	68.6	68.6	2.1	-1.7	0.0
	15-64	62.1	65.8	64.1	64.3	2.2	-1.5	0.2
Gender	Men (20-64)	75.8	77.9	75.1	75.0	-0.8	-2.9	-0.1
	Women (20-64)	57.3	62.8	62.1	62.3	5.0	-0.5	0.2
	Men (15-64)	70.7	72.7	70.1	70.1	-0.6	-2.6	0.0
	Women (15-64)	53.6	58.9	58.2	58.5	4.9	-0.4	0.3
Gender and other age groups	Men (15-24)	40.2	40.3	36.2	35.7	-4.5	-4.6	-0.5
	Men (55-64)	46.9	55.0	54.6	55.2	8.3	0.2	0.6
	Women (15-24)	33.9	34.4	31.8	31.4	-2.5	-3.0	-0.4
	Women (55-64)	27.4	36.8	38.6	40.2	12.8	3.4	1.6
Nationality (20-64)	Nationals	69.7	70.7	69.0	69.1	-0.6	-1.6	0.1
	Other EU nat.	n.	72.3	70.2	70.6	n.	-1.7	0.4
	Non-EU nat.	n.	62.8	58.5	58.0	n.	-4.8	-0.5
Education level (20-64)	Low	54.9	56.5	53.4	53.0	-1.9	-3.5	-0.4
	Medium	69.7	71.8	69.9	69.9	0.2	-1.9	0.0
	High	82.5	83.8	82.4	82.1	-0.4	-1.7	-0.3

Source: Eurostat, EU-LFS.

Despite significant and continuous improvements since 2000, the gender gap in terms of employment rate is still considerable, at 12.7% in the EU in 2011 (18.5 percentage points in 2000, 20-64 age group). The biggest gap between male and female employment rates was recorded in Malta (35.4 percentage points), followed by Italy (22.7 percentage points) and Greece (22.5 percentage points), all countries at the bottom of the ranking. The smallest gaps were noted in Lithuania (1.0 percentage points), Latvia (2.9 percentage points) and Finland (3.7 percentage points).

Chart 43: Evolution of the population at-risk-of-poverty or social exclusion (Europe 2020 headline target), 2008-2011



Source: Eurostat, EU-SILC (ilc_peps01). Eurostat provisional estimates for 2011.

1.4.2. Slippage on poverty and social exclusion reduction targets

The latest Eurostat estimates (2011) available for the EU-27 population living in poverty or social exclusion, as defined by the Europe 2020 poverty and social exclusion target, show that 119.6 million people living in the EU (23.6% of the EU population) were at-risk-of-poverty or social exclusion in 2011, an increase of nearly 6 million from 2009 (see Chart 43). Based on the current information and with respect to progress on the EU 2020 target, after some slight positive development in 2009, the number of people living in poverty and social exclusion is back to the 2008 levels.

2011 data shows that the majority of Member States (Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Greece, Spain, Hungary, Malta, Austria, Romania, Slovenia, Finland) are not making any progress towards their national 2020 poverty and social exclusion target but are, on the contrary, registering higher number of people in poverty or social exclusion (according to the selected national monitoring targets) than in 2008 (2008 being the baseline year for most Member States) (see

Table 7: National poverty and social exclusion targets in 2011 and progress necessary for achieving the 2020 targets

	2020 target monitoring indicator	Value of monitoring indicator for 2011 or latest available year	National 2020 target value (in 1000)	Evolution on 2008 (in 1000)
EU-27	AROPE	119.6	95 186	+4 435
BE	AROPE	2 271	1 814	+77
BG*	AROP	1 683	1 372	+51
CZ	AROPE	1 598	1 536	+32
DK	VLWI	480	325	+133
DE	LTU	1 200.19	1 332.96	-452.77
EE	AROP	232	222.7	-27
IE	consistent AROP	6.2 %* (2010)	≤ 2 %	n.a.
EL	AROPE	3 403	2 596	+357
ES	AROPE	12 371	8840	+2 031
FR	national indicator**	11.8 % (2009)	8.3 % (target for 2012)	-0.7pp (evolution 2007-2009)
IT	AROP	14 757 (2010)	12 899	-342
CY	AROPE	197	149	+15
LV	AROP and/or LWI	492	467	-96
LT	AROPE	1 080	758	+152
LU	AROPE	84	66	+12
HU	AROPE	3 051	2 344	+257
MT	AROPE	88	73.44	+8
NL	VLWI (0-64)	1 595 (2010)	1 513	-18
AT	AROPE	1 407	1 297	-125
PL	AROPE	10 196	9 991	-1 295
PT	AROPE	2 601	2 557	+156
RO	AROP	8 630	4 408	-240
SI	AROPE	386	321	+25
SK	AROPE	1 112	941	+1
FI	AROPE	949	760	+39
SE	national indicator**	12.9 %*	<14 %	n.a.
UK	relative low income (before housing costs)	18 %	<10 %	-5pp
	relative low income and material deprivation	14 %	<5 %	-3pp
	absolute low income (before housing costs)	11 %	<5 %	-2pp
	persistent low income	n.a.	to be defined by 2015	n.a.

Source: Eurostat (EU-SILC); for countries with an * – national data sources.

Notes: AROPE – at risk of poverty or social exclusion; AROP – at-risk-of-poverty; VLWI – population; ** FR national target - reduce the poverty rate anchored at a point in time by one third over the five years from 2007 to 2012; SE national target - reducing the percentage of women and men aged 20-64 who are not in the labour force (except full-time students), the long-term unemployed, or those on long-term sick leave.

Table 7). While these figures should be read cautiously as they are conditional upon the choice of national monitoring indicator as well as the relative ambition levels of individual MS, they are indicating the general trend in progress.

Progress on the national targets should be carefully evaluated as fiscal pressures leading some Member States to scale back income support for the unemployed, for example, may lead to some people taking up jobs and thus, reducing the proportion of households with very low work intensity but at the cost of reduced household incomes and at the risk of falling below the income poverty threshold (ref. in-work poverty).

The overall ambition of individual Member States in respect of the Europe 2020 poverty reduction target is, as highlighted before, difficult to compare in an objective manner due to the different definitions of national targets chosen by some Member States. It is evident, however, that the cumulative ambition levels of Member States are well below the 20 million reduction objective signed off by European Heads of States and Governments in 2010. One should recall the gap between the EU-level headline target and the sum of national targets and announced efforts, which amounts to some 5 to 8 million, depending on methodology[17]. This alongside the current economic stagnation and the widespread lack of progress on their national targets in a number of Member States makes achieving the EU 2020 headline target very challenging. Serious progress requires stepping up efforts and targeted measures.

[17] See European Commission, 2011e.

2. Challenges and areas for policy responses: increasing employment and reducing poverty

Policy makers across the EU face tough challenges stemming from the protracted economic slowdown and related fiscal problems. In terms of employment and social policies, they need to find answers to three interlinked questions:

1) How do we increase employment, reduce poverty rates and address the polarisation of society and growing socio-economic divergence across the EU?

2) How do we support jobs and social goals by increasing (deficient) aggregate demand and improving our welfare systems, without enlarging public deficits?

3) How do we help those groups hardest hit by the difficult economic and social circumstances, in particular migrants, young people and children? How do we prevent today's youth from becoming a 'lost generation' and how do we remedy the damage already caused by high levels of youth unemployment and labour market inactivity?

In addressing the above questions, four key challenges appear to stand out: sustaining growth and jobs without increasing deficits; improving the functioning of the labour market; addressing the social consequences of the crisis; and exploring new fiscal stabilisers for better convergence.

2.1. Sustaining growth and jobs without increasing deficits

Europe needs to get back on a path of sustainable, smart and inclusive growth and to create jobs of high quality for all. Aggregate demand is lacking in many Member States – with actual output in some of them more than 4% below potential output: Greece, Spain and Portugal[18]. The Commission's Employment Package of April 2012 outlined a number of concrete measures to boost employment (and growth) in a fiscally neutral way – by explicitly taking into account that labour market policies have an impact on the supply as well as the demand side of the economy in times characterised by sharp output gaps (in many Member States). A number of complementary actions can be identified to increase effective demand in a sustainable way without increasing fiscal deficits (indeed, such increased demand will almost certainly increase tax revenue and so reduce deficits in the medium term).

In the area of labour market policies, feasible fields for action include minimum wages, taxation and social spending and all involve rebalancing in one form or another. On wages, the action would involve raising or introducing minimum wages and greater social partners involvement through exchanging views on wage developments at European level. Taxation measures would see rebalancing within income tax shifting the burden from the lower paid to the higher wage earners and rebalancing taxation away from labour onto property and onto environmental 'bads'. Social spending would be rebalanced to improve efficiency in terms of reducing inequality. More generally, a social investment approach to social protection expenditure would be taken.

The Single Market offers the necessary scale for investment and developing employment-rich activities, as well as additional adjustment potential for both labour demand and supply, as is recently shown by the increasing labour mobility from Southern Europe to Northern Europe.

2.1.1. Minimum wages

Raising (or introducing) minimum wages may have important positive effects on demand and supply in times of severe economic downturn. Indeed, on the demand side, it helps to sustain aggregate demand, which is a major driver of total employment. It also helps to close the gender pay gap and to boost wage equality, by maintaining an adequate living standard for the most vulnerable workers, thereby fostering social inclusion – which is a necessary condition for sustainable, smart and inclusive growth. Moreover, minimum wages also create an anchor underpinning prices, thereby reducing the risk of deflationary pressure in times of a severe downturn characterised by nominal interest rates close to their lower bound.

On the supply side, minimum wages constitute an incentive to find and accept paid work, if set at a level sufficiently above unemployment benefits. This is particularly the case in combination with other factors, such as activation and fiscal relief for low income from work. A minimum wage may also induce the older low-skilled workers to postpone their retirement – thereby lowering pressure for public outlays for early retirement. But, of course, too high a minimum wage can price low-skilled workers (essentially the low skilled) out of jobs. One transmission mechanism for this is the rise in the minimum wage increasing the overall wage cost, thereby negatively affecting international competitiveness.

Nevertheless, on balance, in times of severe economic downturn, raising minimum wages has the potential to increase the tax base, as overall employment increases, and reduce the outlays for unemployment benefits and in-work benefits, thereby improving the overall fiscal stance.

2.1.2. Better taxation

Rebalancing income tax

Several Member States have been recommended to shift taxation away from labour and towards other tax bases, with the primary aim of stimulating growth and employment. However, the rebalancing among different tax bases can mean a trade-off between employment and social aspects. The analysis of tax shifts from a microeconomic perspective complements the results suggested from a macroeconomic point of view and can be useful for improving the design of tax shifts. Indeed, taxes on consumption and property, for instance, are not as redistributive as income taxes, and in the case of property taxes the redistributive effect is highly dependent on their exact design. Clearly, however, the social effects of taxation are of particular relevance in times of fiscal consolidation, as it is revealed whether the rich or the poor are carrying the highest burden of tax changes. Moreover, tax shifts linked to positive social effects can have beneficial effects on aggregate demand.

Income distribution does matter for macroeconomic balances[19]. In a given year, richer people tend to save more and spend less while poorer people do the reverse. Saving can, of course, be channelled into

[18] See details in European Commission, 2012i.

[19] Stockhammer E, et al, 2011

productive investment but, as Keynes showed, in situations of insufficient demand, a higher saving propensity leads to less overall demand as output falls to leave investment as a higher similar share of the total to match higher savings. Moreover, larger shares of profits do not translate into productive investments if the erosion of the income position of workers is not accompanied by lower standards of living. In fact, financial investments by those at the top of the income distribution facilitate the increased borrowing of the rest seeking to limit the drop in their consumption (ILO, 2011).

Rebalancing income taxation could simultaneously achieve employment and social targets. Tax rates on high incomes have tended to be reduced in recent years as policy makers sought to encourage richer people to work more. The substitution effect was seen as significant with the rich working substantially more if after-tax earnings were higher. Recent research by Piketty, Saez and Stantcheva[20] suggests that this effect may be quite small[21]. According to this research, tax rates as high as 83 % could have little effect on the amount of work done by the rich while a cut of the tax rate could actually have a significant positive incentive effect on the poor to work rather than not work.

A revenue-neutral shift to taxing the rich more could have the dual benefit of increasing consumption and acting as an incentive for the poor to work rather than stay on benefits or other situations. Beyond labour supply, such a tax shift may have other implications for efficiency.

Shifting from labour to other bases

As further highlighted in Chapter 4, long advocated to raise employment, a partial switch from labour taxes to VAT and green taxes has been undertaken by several Member States. In a fiscal consolidation context the increase of consumption taxes has not been accompanied by a lower labour tax burden. Among the EU-27 Member States in which the burden of consumption taxation increased between 2009 and 2010, only seven Member States succeeded in simultaneously reducing the burden on labour taxation[22]. In all the other Member States the increased burden of consumption taxation was accompanied by an increased tax burden on labour[23].

Nonetheless, a revenue-neutral tax shift from labour to VAT increases employment. On the other hand, a revenue-neutral tax shift from labour to consumption will have an adverse social impact on particular groups, e.g. those who do not finance consumption out of labour market income. Tax shifts from labour to consumption result in trade-offs between employment and poverty targets, as further illustrated in Chapter 4. In fact, consumption taxes disproportionately penalise income poorer households in a given year. The extent of the trade-off varies by country and depends on characteristics such as labour market institutions and the distribution of saving rates. Tax reforms aimed at curtailing VAT reduced rates and exemptions have a particularly detrimental effect on the income poor.

Green taxes have been advocated in order to increase employment and GDP, while protecting the environment. Depending on how vulnerable groups can be compensated for an increase in green taxes, there is a potential for shifting taxation away from labour without generating negative distributional effects. A shift from labour to green taxes provides incentives for the creation of 'green jobs', consistent with the Europe 2020 flagship initiative *A resource-efficient Europe*. Green taxes include taxes on energy, transport, pollution and resources. Macroeconomic policy modelling shows that rebalancing from labour to environmental taxes would result in (small) increases in GDP and employment in most countries (European Commission (2011f)).

The reduction in employers' social security contribution had the greatest employment effect. Revenue from auctioning carbon emissions or other ETS schemes could reduce labour taxes in a similar way to boost jobs and growth. However, the job potential of environmental taxes may also come at the expense of fairness. Green taxes often penalized poorer income groups as they normally tax necessities. Nonetheless, the employment and social effects vary by Member State and depend on the focus of the tax base (fuel and vehicles versus electricity and heating, commuting). Another lesson is that to cushion against negative social effects, shifts towards green taxes need to be accompanied by investments enabling Member States to maintain or improve living standards while reducing the resource intensity of consumption.

Proposals to shift taxation from labour to property reveal a renewed interest in employment-friendly taxation in times of crisis. The current favourable tax treatment of housing investments in many EU countries represents a potential solution for raising more revenue from property and a way to lighten the burden on labour. Indeed, the OECD, European Commission and IMF have recently recommended that certain EU countries[24] increase their property taxation, while shifting taxes away from labour. Higher taxes on property would rebalance the bias towards housing investments. Property is a stable and immobile tax base and taxes on it are difficult to avoid or evade. However, current forms of property taxes do not always achieve social objectives. The main reasons can be summarized as relating to the design of the tax rates, the calculation of the tax base and the distribution of homeownership. One employment and social friendly alternative form of property taxation is represented by a well-designed tax on imputed rent, as illustrated in Section 5.2 of Chapter 4.

The simultaneous achievement of EU 2020 employment and poverty goals can be successfully pursued through alternative measures. In particular, the fight against tax evasion and the reduction of tax expenditures (such as mortgage interest tax relief) can positively contribute to efficiency gains while lowering poverty and inequality.

2.1.3. Effective and efficient social spending

Social expenditures are powerful stabilizers of economic activity because they help to sustain effective demand during recessions. Available data now shows the

(20) Piketty, et al, 2011.

(21) However, the elasticity of taxable income might nevertheless be high for high income individuals, e.g. due to income transformation possibilities etc.

(22) In Bulgaria +1.7 versus -5.1 %, in Slovenia 0.2 % versus -0.4 %, in France +1.3 % versus -0.7 %, in Lithuania +10.6 % versus -2.7 %, in Poland +6.2 % versus -2.7 %, in Romania +11.6 versus -4.5 %, in Sweden +1.6 % versus -1 %.

(23) Data based on the implicit tax rates on consumption and labour provided by European Commission (2012b).

(24) Such as Denmark, Finland, Germany, Italy, Norway and Sweden.

significant role that social spending played in sustaining gross household disposable income during the 2008-2009 recession in most EU countries.

The empirical evidence presented in this review shows that countries with similar levels of expenditure achieve very different results in terms of both social (poverty reduction) and economic (stabilization) outcomes, thereby suggesting that there is room for efficiency gains. Comparative analysis illustrates that the size, structure and design of social expenditure all matter for the performance of welfare systems. Long-term trends also show that the countries with the highest welfare spending are not those with the highest public debt.

It also highlights quite strong variations across countries, with a rather weak stabilizing impact in Italy, Greece, Spain and Portugal, even when compared to countries with similar economic shocks and level of spending. These countries are also those with the lowest poverty reduction impact (excluding pensions). Given the rigid constraints on public finances in these countries, a careful rebalancing of expenditure, rather than an increase, would be needed to reinforce both the poverty reduction impact and the stabilizing effect, in a budget neutral way. This could include reviewing the structure of spending, currently skewed towards old age benefits (in comparison to other countries), making sure that unemployment insurance covers the most vulnerable workers (those who are first to lose their jobs), or adjusting the design of schemes to make them more responsive to the economic cycle (e.g. automatic adjustment of the duration of unemployment benefits).

The weaker efficiency of unemployment spending in Italy, Greece, Spain and Portugal derives from the labour market dualism that characterizes these countries, with a core of well-protected workers and unstable jobs at the margin, and the strictness of entitlement conditions for unemployment benefits. Recent or announced labour market reforms may not prove sufficient to extend safety nets to atypical workers. The effectiveness of the extension of unemployment coverage to atypical workers (coupled with a reduction of unemployment entitlements of standard workers) in stabilizing aggregate demand also depends on a timely implementation.

Reforms to rebalance social spending between old-age and unemployment benefits and to revise the design of unemployment benefits in specific countries are expected to achieve efficiency gains in terms of both economic and social effects. Nonetheless, attention should be paid to unintended effects such as those affecting the 'unprotected' groups, generated by introducing stricter pension requirements combined with a decrease in unemployment generosity for standard workers.

Rebalancing the structure and reforming the design of social spending may not be sufficient to make social spending more efficient. The shadow economy and undeclared work reduce tax revenues, from a macro perspective, and prevent irregular workers from benefitting from full social protection, from a micro perspective. Incentives to reduce the shadow economy can be provided by the tax and benefit system, through a link between rights and contributions and a reduction of the fiscal burden on low-skilled jobs.

Means-testing of social benefits can reduce social spending while more effectively protecting the most vulnerable groups, but Chapter 3 illustrates that means tested benefits are not necessarily more effective at reducing poverty overall. Attention should also be paid to the potential work disincentives and low benefit take-up associated with targeting.

A revision of the mix between cash and in-kind benefits can lead to efficiency gains. Both cash and in-kind benefits have pros and cons and an optimal choice depends on the type of benefit. In-kind family benefits such as childcare are more employment-friendly than cash family benefits and ease the participation of women into the labour market generating virtuous effects on female employment[25] (double channel of mothers working and women employed in childcare). Child care services also contribute to preventing child poverty and the intergenerational transmission of disadvantage by securing parental incomes and giving access to quality education and care to all children. Cash housing benefits are more efficient in cushioning effective situations of temporary financial distress, while in-kind housing benefits can hamper workers' mobility, create ghetto effects and are often poorly linked with effective financial difficulties (once they are in social housing, households tend to remain there even if their income increases).

Promoting an 'active' welfare state should also contribute to a well-functioning cyclical behaviour of social spending, whereby expenditure increases in response to a shock, and then decreases in times of recovery. This is an essential aspect of the sustainability of the systems. A recent study shows that countries that invested heavily in ALMP before the crisis saw their employment levels be less severely impacted during the crisis[26]. During the years 2000-2010, a number of countries (Nordic countries, Germany or the Netherlands, for example) engaged in successful reforms to modernise the welfare state, aimed at reabsorbing high levels of long-term unemployment and/or swelling numbers of people on long-term illness or disability benefits resulting from the recession of the 1990s.

Improving the efficiency of education systems (accompanied by demand side policies such as enhanced R&D spending and innovation) is a key priority for increasing human capital and boosting productivity[27]. Some proposed interventions do not entail higher spending, while at the same time increasing future returns from human capital investments. Depending on the country, such interventions include: curricula reforms of primary and secondary schools, promotion of vocational, scientific and technological education with a greater responsiveness to the labour market and attention to innovative sectors, wider use of standardized exams, postponing early tracking, improving the governance of universities.

2.1.4. Pensions: a key part of social spending

Pensions[28] are the main source of income for about 124 million older Europeans – a share of ¼ and growing. The ageing of population is both a challenge and a testimony to the importance of ensuring adequate and sustainable pensions in the long run.

The adequacy of pensions is generally measured through three dimensions: their ability to prevent poverty, the

(25) OECD, 2012a.

(26) OECD, 2012b.

(27) OECD, 2012c.

(28) See also European Commission, 2012n.

degree to which they replace individual income before retirement and how overall household incomes of older people compare to the average household incomes of people of active age. The at-risk-of-poverty or social exclusion measure is directly linked to the poverty reduction target of the Europe 2020 strategy.

Pensions affect public budgets and labour supply in major ways and these types of impact must be considered in pension policy. Pensions also play a key role as an economic stabiliser in recessions by sustaining the purchasing power of a growing share of the population and thus contributing to sustaining economic growth. Obviously the raison d'être of pensions is to deliver retirement incomes that are adequate to allow older people to enjoy decent living standards and economic independence. Yet, employment, sustainability and adequacy issues are linked since working to an older age and postponing pension take-up will raise labour supply, improve sustainability and long-term growth and provide the basis for higher benefits.

On top of demographic challenges, the economic crisis has strengthened the rationale for pension system reforms aimed at limiting the public budget impact of the growing share of people 65+. If effective retirement ages are raised this will not just bolster the sustainability and adequacy of pensions in the longer term but will also contribute to economic growth here and now. While the reforms already adopted have achieved clear advances in the sustainability of public pensions, the Pensions Adequacy Report 2012 (PAR) reveals that these have been largely obtained at the cost of adequacy since most reforms will result in lower replacement levels unless people work longer and save more, thus leaving future adequacy contingent on changes in people's retirement and savings behaviour.

As highlighted in the White Paper on Pensions, working longer and postponing retirement represents the main opportunity to compensate for declining replacement rates in public schemes. If pension and retirement systems sufficiently and sensibly reward working longer and discourage early retirement they can contribute to ensuring that longer working careers become the key avenue to more adequate pensions. Hence pension systems can help optimise labour supply over the working life, and notably for older workers, by setting strong work incentives in their entitlement rules and restricting access to early retirement. This is already the case in several Member States, but in others these incentives are still ill-adjusted.

To fully secure adequacy, longer working lives may still need to be combined with a greater emphasis on complementary retirement savings in pension provision. Hence, adequate pensions in the future will depend on a mix of working longer with fewer career breaks and saving more through second and third pillar schemes.

Pension entitlement rules are only one side of the challenge when trying to change retirement practices and raise effective retirement ages. As pointed out in the Pensions Adequacy Report 2012, the success of pension reforms that raise the pensionable age and possibly link it (or benefit levels) to longevity gains depends crucially on the reforms being underpinned through age management in workplaces (such as age-adverse aspects of work organisation, promotion, remuneration, access to training, and hiring and firing practices) and labour market measures that enable and encourage women and men to work longer. There are clear limits to how much age management practices at work can be influenced by incentive structures in pensions. Tackling the pension adequacy challenge will therefore require determined efforts to promote longer and healthier working lives through employment and industrial relations policies. A holistic approach to working longer will be needed and governments need to work with social partners to carry out the necessary changes, including through collective agreements.

To achieve the goal of raising the effective retirement age, men and women who are physically able and willing to work after reaching pensionable age must be enabled and encouraged to do so. As pointed out in the White Paper, one of the pre-conditions for this is the removal of unwarranted mandatory retirement rules where these exist.

The limitation of early exit pathways can contribute substantially to an increase in the effective retirement age. Almost all Member States have taken steps to make eligibility conditions stricter (e.g. raising minimum age and/or contributions record) and to strengthen financial disincentives to take up early retirement. However the impact of disincentives on take-up is limited by labour market factors. So far the employment rates of older workers have been resilient to the recession but recent administrative data now suggests the take-up of early pensions is increasing in a number of countries. While general access to early exit schemes has been restricted further, access to disability benefits for the elderly has partly been extended. According to administrative data on benefit recipients collected through the Social Protection Committee, this has not triggered a systematically higher take-up of disability benefits.

Most reforms across the EU aim to increase the effective retirement age, i.e. enabling and encouraging individuals to take their retirement later or accept a (partial or full) pension while continuing professional activity. There is a wide variety of initiatives across Member States to increase the pension eligibility age, including those for old-age pensions, minimum pensions, early exit pensions, and public sector pensions.

Over the last year, nine out of the remaining 12 Member States with different retirement ages have taken steps to equalise the pensionable age for women with that for men. The pace of these reforms varies significantly, ranging from very gradual (Poland, Austria) to extremely fast (Italy to raise pensionable age for women in the private sector by 5 years over a 6-year period). Three countries (Bulgaria, Romania, Slovenia) have not planned any reform in this direction.

Linking the pensionable age or benefits to gains in life expectancy is an important mechanism to adjust pension expenditures in line with demographic changes. While some countries have introduced a life expectancy coefficient in the benefit formula, others are raising the pension eligibility age in line with longevity gains.

Increasing the flexibility of the retirement age after a minimum retirement age (to be adjusted in line with longevity gains) is a key aspect of the paradigm shift taking place in pension policy. A universal retirement age is gradually replaced by an individual decision relating to when and on what conditions to retire. This has been explicitly reflected in some Member States' legislation, e.g. by replacing statutory with 'recommended' retirement age (Sweden) or abolishing the default retirement age (UK). One can speak of an increasing shift from retirement at a certain age to retirement at a certain income, although other

factors such as health status and family commitments must be taken into account to avoid over-simplification. A flexible retirement age, linked to financial entitlements and individual preferences, has significant stabilising potential for social protection spending.

While access to minimum and guaranteed pensions have often been strengthened in reform processes, fully earnings-related pensions, whether public or private, have been altered by the shift from defined benefits to defined contribution designs which have shifted the nature of these from social protection towards systems closer to pure income smoothing schemes. By strengthening the link between earnings during professional life and retirement income, defined contribution systems also clearly show that they are not designed to compensate for labour market shortcomings. In this context, persons who have been out of the labour market for long periods or have been 'working poor' during their professional life, can face a higher likelihood of falling under the poverty threshold after retirement, depending notably on the actual minimum income provision for older people in place.

When modelling the adequacy of pension systems, projections are frequently based on the assumption of a 'typical' or ideal retiree: one with a long and unbroken career who has worked full hours and earned an average income. In practise, a large share of retirees will not fulfil these conditions. In order to achieve the Europe 2020 poverty reduction target, pension reforms need to account for different types of retirees with realistic career paths, and envisage a solution for those who do not fulfil the criteria for a full pension, such as a minimum or social pension.

While the calculations in the Pensions Adequacy Report show that statutory pensions are expected to remain the core of old-age social protection, enhancing complementary savings in occupational and private pension schemes (2nd and 3rd pillar) is an important way of sustaining the adequacy of retirement income.

The direct impact of the crisis has been heavily felt by the pre-funded segments of pension systems, triggering policy consequences in managing contributions. Financial turmoil has hurt the short-term performance of pension funds, and fiscal pressures have forced some countries to backtrack on mandatory funded tiers, while most reforms undertaken by Member States still expect complementary private savings to play a more important role in the long-run.

The financial and economic crisis impacted quite drastically on the design of a number of mandatory funded pension schemes, in particular in the new Member States. The transition costs of the recently introduced private schemes were considered as a heavy financial burden for the state budget. Mandatory funded schemes were suspended, opened for a limited period, or reduced considerably in size.

The most striking example of policy reversal on mandatory funded pensions was the nationalisation of the second pillar in Hungary; contributions were permanently reduced in Hungary and Poland. Estonia, Latvia and Lithuania temporary re-channelled part of the contribution earmarked for funded schemes back into first pillar Pay-as-you-go pensions, seeking to balance the books at a time of crisis.

2.2. Improving the functioning of the labour market

Four issues should be addressed to improve labour market functioning to get more people, especially young people, into employment and out of joblessness: segmentation, mismatches, mobility and long-term unemployment. Young people deserve special attention.

2.2.1. Focus on youth[29]

The labour market situation of young people has become an increasingly urgent social matter in the EU[30] and the integration of young people into the labour market continues to be a major policy issue for the EU and individual Member States. Despite a shrinking and increasingly better-educated youth population, young people in many Member States still face considerable problems in making the transition from education into employment. And many of those who have gained a foothold in the labour market often hold unstable jobs with unfavourable conditions and career prospects.

The young need special attention and support for various reasons. Firstly, their situation is more challenging in comparison to adults and has been deteriorating over time. They face high unemployment rates and they are increasingly affected by long-term unemployment and labour market segmentation. The second reason is the negative long-term implications of unemployment at a young age, such as the increased probability of future unemployment, the reduced level of future earnings and the higher likelihood of precarious employment. The negative impact goes beyond the labour market and may also adversely influence poverty, young people's health status, life expectancy and youngsters' beliefs as well as their civic and political participation (see Bell and Blanchflower 2010, Scarpetta et al. 2010, Simms 2011, YOUNEX project[31], European Commission 2011a, Eurofound 2011a and Eurofound 2012a). This has a negative impact not only on young people's financial and social situation or training but also for the economy and social cohesion at large[32]. Finally, the

(29) 'Young people' refers to the age group 15-24. However, the labour market situation of the older young age group (25-29) is increasingly gaining importance. More young people aged between 20 and 24 stay longer in education and training both due to the recent economic downturn as well as a result of EU educational targets. Therefore the transition process from school to work is postponed to a later age .See a more detailed presentation of youth employment across various age groups in the European Commission (2012b).

(30) State of the Union address by President Barroso to the European Parliament in September 2011 (see also http://ec.europa.eu/commission_2010-2014/president/state-union-2011/index_en.htm).

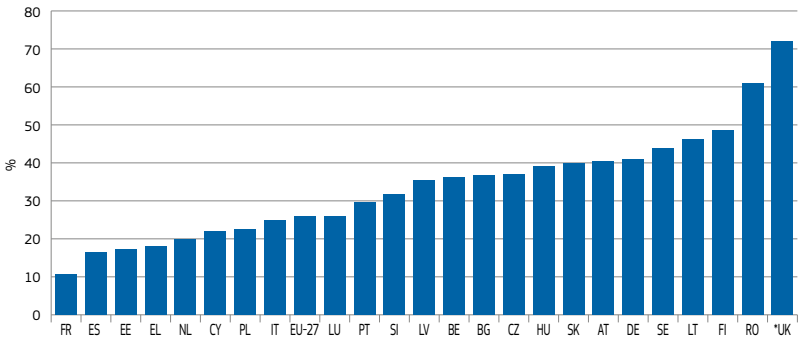
(31) YOUNEX: 'Youth, Unemployment, and Exclusion in Europe: A multidimensional approach to understanding the conditions and prospects for social and political integration of young unemployed' (http://www.younex.unige.ch/index.html). The project focused on the social and political dimension of young people's lives and investigated the effects of unemployment on the exclusion of young people from social and political spheres, including their civic and political participation, as well as the consequences on their well-being in Switzerland, Germany, Italy, France, Sweden, Poland and Portugal. The project was financed by the Seventh Framework Programme for research and technological development (FP7) of the European Union.

(32) Eurofound (2012a) estimated the economic costs of the disengagement of young people from the labour market (i.e. NEET costs) at around €153 billion or 1.2% of the aggregated GDP of EU-26 countries in 2011. This is an increase of €34 billion (0.3 pp) in comparison to 2008. The reintegration into the labour market of just 10% of NEETs would achieve a yearly saving of more than €15 billion. Malta was excluded due to missing variables. The estimation is underestimated because of certain costs, such as those related to the increased risks faced by NEETs of experiencing mental and physical health problems and of pursuing dangerous lifestyles. The analysis used the 2008 European Union Statistics on Income and Living Conditions (EU-SILC) for the age group 15-29. The NEET group was defined as those who have been unemployed or remained outside education or training for a period of six months (consecutive) or more during the 12 month reference period of the survey.

young are more exposed to systematic labour market risk (Chung et al. 2012). They are confronted with changed labour markets and more demanding employers than previous generations – there is greater pressure on them to be job-ready and to perform from day one (Sissons and Jones 2012).

While the young share several common characteristics, they are a heterogeneous group and this requires tailor made policies that go beyond a well-functioning labour market. The unemployed can be skilled or unskilled. The young might be inactive because they are in education, but also because they look after children or elderly relatives or because they are disabled or sick. Policies need to acknowledge that and include, besides general growth stimulating policies, specific measures to reduce income insecurity and poverty among the young as well as preventive measures starting in childhood to minimize the risk of the young becoming a NEET (neither employed, nor in education or training).

Chart 44: Annual transition rate from temporary to permanent jobs, 2010



Source: Eurostat, EU-SILC, Labour transitions by type of contract [ilc_lvhl32].

Note: Data unavailable for Denmark, Ireland; no data for Malta due to large year-to-year variations; * data for the United Kingdom subject to revision.

2.2.2. Segmentation

Labour market segmentation has certainly played a role in the rapid rise in unemployment for most ages since the crisis started, specifically in Spain and Portugal. Segmentation resulted in the existence of a large temporary workforce with weaker transition possibilities to permanent jobs (see Chart 44). Recent Commission findings regarding the costs and benefits of active and passive measures (European Commission 2012a) show that segmentation of the labour market – which also includes low-wage traps, part-time traps, sectoral or occupational segregation, etc. -, increases the risk of social exclusion and the low level of employment protection of young workers.

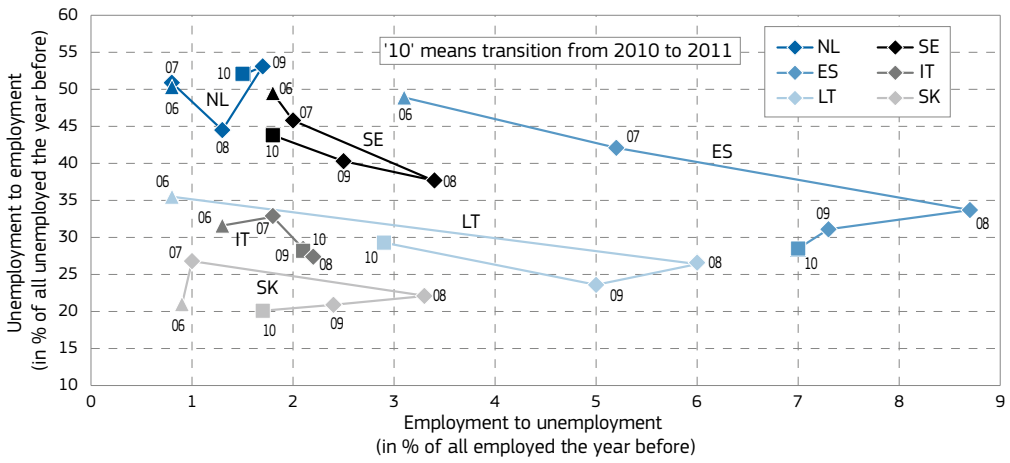
Flexicurity policies are supposed to help reduce the negative effects of segmentation. Analysing labour market segmentation involves certain difficulties as it cannot be fully observed in a direct way. A fixed-term contract is not necessarily an unfavourable contract for every worker, who may use it as a stepping stone, or it may well match his or her preferences. Using involuntary fixed-term contracts as an indicator provides a better insight regarding segmentation and over-use of fixed-term contracts. Southern and Eastern European Member States are often characterised by high levels of involuntary fixed-term workers, suggesting segmented labour markets.

Disparities in employment protection rights for permanent and fixed-term contracts have been identified as a key source of segmentation. During the crisis, a number of Member States started reviewing their labour laws to reduce protection for permanent contracts with a view to making hiring more attractive for employers. The latter has been particularly the case in some Southern and Eastern European Member States.

Many instruments combine flexibility and security element(s). Measures combining employment security and external flexibility seem to be the most prevalent. This includes measures that aim to replace traditional job protection with measures enhancing the employability of labour market outsiders while easing hiring and lay-off procedures and costs for employers, backed up by active labour market policies.

A second set of measures entails external flexibility being combined with job security, which, at a first glance, might

Chart 45: Transition rates into and out of unemployment from 2006 to 2011



Source: Eurostat, LFS, DG EMPL calculations.

appear contradictory. These measures often contain elements to facilitate hiring and laying off, which is combined with incentives for employees to maintain their existing jobs. Most of these measures are related to new regulations on types of employment contracts in terms of their duration. Prominent examples are regulations obliging companies to provide workers with an open-ended contract after repeated use of fixed-term contracts or after a certain period of time has elapsed, thereby contributing to decreasing segmentation.

The Commission's Employment Package[33] recommends that further reforms should include measured and balanced reforms in employment protection legislation in order to remedy segmentation or to halt the excessive use of non-standard contracts and the abuse of bogus self-employment. More generally, all types of contractual arrangements should give jobholders access to a core set of rights from the signature of the contract, including access to lifelong learning, social protection, and monetary protection in the case of termination without fault.

2.2.3. Jobs and skills mismatches

Another key challenge for Europe is to improve the provision of skills in line with labour market needs and to thereby reduce the skill mismatch, which has increased significantly since the start of the crisis. Recent analysis by the European Central Bank shows that skills mismatches significantly affect the unemployment rate and are caused more by structural imbalances between labour demand and supply rather than by a lack of geographical mobility (ECB 2012).

Countries with higher levels of vertical skills mismatches (over- or under-qualification) share some common characteristics, as highlighted in Chapter 6. They tend to have lower levels of public investment on education and training, which might reduce their quality and ability to respond to changing labour market needs. A high share of business executives in those countries believes that educational systems do not fulfil business needs. Furthermore they have lower expenditure in labour market programmes and more rigid labour markets. However, higher supply of highly educated workers does not increase over-qualification problems, provided that countries create sufficient number of innovative and high-skilled jobs. Vertical mismatch is especially high in Mediterranean countries.

The young tend to be more often over-qualified than other age groups, which might reflect labour market segmentation. The over-qualification of young in the Mediterranean[34] countries, known for their labour market segmentation and high unemployment rates, has risen much more sharply than in other countries in the last decade (SEO 2012). In the high-mismatch countries, young workers, notably males, are more willing to take up part-time and/or temporary jobs which demand lower qualifications than the ones they possess, because they are happy to find a job at all after searching for a long time. If the labour market does not recover, young workers get stuck in low level jobs and do not develop their productivity as much as they could. The longer the general and especially youth unemployment levels remain high, the more and more young workers are forced in jobs below their qualifications, thereby increasing country levels of over-qualification. On the other hand, young people in countries with lower unemployment rates, such as Western Europe-Rhineland[35] countries, have more opportunities to leave jobs for which they are over-qualified once the labour market improves.

Even though young workers tend to be formally over-qualified for their jobs, their skills are less likely to be matched to their jobs than those of the older workers. However, older workers are more exposed to the risk of skills obsolescence. Increased investment in skills, both specific and transversal, is thus needed across the workforce.

Another group that is very susceptible to over-qualification are third country nationals, in particular women. The underutilisation of their human capital tends towards a persistent phenomenon in many countries and requires specific policy answers. For more details see Chapter 6.

The trend in shifting jobs to services and to more skill-intensive jobs in the EU will continue and the labour force should be prepared for this. The sectoral shift within the EU from primary sectors towards services varies across regions[36]. Whereas employment in Western EU regions and Scandinavia is shifting to information & media and to financial & business services, it is shifting towards trade & repair and transportation in Eastern and Mediterranean countries. The highest number of total job openings[37] in the EU over 2010-2020 is expected in other business services and health & social work – more than 8 million according to the 2012 CEDEFOP forecasts[38]. 80 million total job openings (7.6 new jobs and 72.4 openings due to replacement needs) in the EU over 2010-2020 will demand both high and medium skilled workers (35 million and 36 million respectively). Highly skilled workers are needed especially for new jobs, whereas medium skilled workers will be mainly needed to satisfy replacement needs. The health and social work sector will offer the most replacement jobs. The supply forecasts show that labour force qualification is expected to increase. A prominent feature of employment developments over the past decade or more is the tendency for higher level jobs – e.g. managers and white-collar professionals – to expand at the expense, in particular, of skilled and semi-skilled manual jobs and, to a lesser extent, of clerks and office workers[39].

Vocational education and training brings short-term benefits in making people, notably the young, become employed more rapidly, but it might entail some long-term costs. More favourable labour market outcomes for the young can be observed in countries where a higher proportion of students undertake traineeships or work placements as part of higher education studies or for countries

(33) European Commission, 2012k.

(34) Mediterranean countries include Spain, Greece, Italy and Portugal.

(35) Western Europe-Rhineland countries include Austria, Germany and the Netherlands.

(36) SEO Economic Research, 2012.

(37) Total job openings are the sum of expansion demand (new jobs due to economic or population growth) and replacement demand (existing jobs open in order to replace people that retire or leave the workforce).

(38) Main source are CEDEFOP forecasts published in 2012, because they provide comprehensive overviews for the whole EU, http://www.cedefop.europa.eu/EN/news/19704.aspx.

(39) As recalled by WiiW and Applica, 2012.

with apprenticeship systems (such as Germany, the Netherlands, Austria and Denmark). (See European Commission 2012e, European Commission 2012f, Brennan et al 2009). Young graduates with medium-level vocational qualifications need less time to find their first job than young people with a general education, especially those who went through an educational programme with more workplace content. However, gains in youth employment from vocational education may be offset by the fact that specialized education can reduce workers' mobility and their ability to cope with economic changes and rapid technological change (see European Commission 2012f, Hanushek et al. 2011 and Lamo et al. 2011). In designing apprenticeship schemes it is therefore important to ensure a balanced provision of both occupational skills and general skills and competences for students as well as lifelong learning possibilities for apprenticeship-type VET students (European Commission 2012f). Next to that, the importance of improving the quality of vocational training was particularly stressed in the European Semester 2012 (European Commission 2012d).

Skill mismatches may also signal poor job quality. One out of three firms in the EU experiences difficulties in hiring staff for skilled jobs, and one out of ten do so for low-skilled or unskilled jobs, but not all difficulties are due to skill mismatches. Chapter 6 demonstrates that firms with a difficult working climate are 16% more likely to face shortages of skilled workers. The health and social care sector is more likely to experience shortages of skilled workers, while the probability of shortages in the finance industry is lower. The hotels and restaurant sector as well as construction firms are more likely to face shortages of low-skilled or unskilled workers than the manufacturing sector. Job quality therefore plays a role in creating or closing skill mismatches and, despite the crisis, should not be disregarded.

2.2.4. Opportunities provided by mobility

Classical economic theory favours mobility to resolve mismatches between supply and demand. This applies to labour as well as to goods and services. The EU has long promoted the increased mobility of workers between Member States to improve resource allocation but has also spent large amounts of Regional and Social Fund money on the development of disadvantaged regions, recognising that if they lost too much of their population regional disparities would increase rather than diminish (as textbook orthodoxy would suggest).

If there are job vacancies in the North of Europe and significant unemployment in the South and people were to move from South to North to work, this would increase output in the North and reduce labour supply and perhaps unemployment in the South: clearly a potential win-win outcome[40]. This applies across all skill types with the biggest overall gains when high skilled unemployed find high skilled jobs in the North.

Small scale initiatives have been launched to move unemployed engineers from Spain to Germany. Anecdotal evidence suggests many young Greeks are also moving to Germany (and the UK) to find work. The EU is increasingly focusing on promoting such movements, notably through EURES instruments.

Preliminary analysis of flows of mobile workers during 2011 confirms the increase in mobility from Southern-European countries to the North, in particular Germany[41]. However, despite a significant increase compared to past years, current flows remain quite limited in absolute terms (and in proportion to the size of the labour markets of origin and destination countries) and can only relieve a small part of the pressure on the respective labour markets. However, if current youth and long-term unemployment in those countries were to persist or to further worsen in the medium-run, mobility to North Europe could increase at much higher levels (not reached since the post-war decades).

It is, however, necessary to underline that there is a distinct risk that those who leave are the most dynamic and innovative workers and they will leave behind a proportionately larger pool of demotivated or less skilled, workers. Furthermore, the outward migration of young skilled workers is likely to significantly increase the economic dependency ratio in the regions they are leaving. While short-term unemployment costs might be reduced, the longer term fiscal disadvantages of fewer workers per dependant is far from negligible, especially in Southern Member States which are already fiscally strained. This will be mitigated if the unemployed workers who leave return after several years of valuable work experience abroad. For this, their home countries need to offer a favourable environment. Nonetheless, considering the size of the highly educated section of the labour force in Southern European countries, the current levels of mobility are too low to result in a phenomenon of 'brain drain' and one should also take into account the temporary nature of mobility and the potential gains among the movers in terms of experience and skills acquisition.

2.2.5. Long-term unemployment

Long-term unemployment is probably the harshest form of joblessness. It hinges on the hopes and chances to get back into the labour market and signals a structural weakness of the EU labour market to re-absorb job losses.

A key component of policies to counteract the cyclical component of unemployment and prevent long-term unemployment is the appropriate coverage and design of unemployment benefits and social assistance. Unemployment benefits have an important function as an automatic economic stabilizer, providing an income and consumption support to the unemployed, and they also tend to decrease precautionary savings. Increased consumption expenditure raises aggregate demand and consequently also labour demand during a recession. Activation strategies include job search requirements, the obligation to make frequent visits to the employment services, sanctions, etc. Make-work-pay policies accentuate the gap between incomes in and out of work in order to make work more attractive, particularly at low-wage levels, where the risk of unemployment traps is higher. Furthermore, many Member States make unemployment benefit receipt (as well as increasingly also the collection of social assistance)

(40) See notably Labour mobility in the Euro Area, DB Research, September 2011.

(41) For more details, see European Commission, 2012l, EU Employment and Social Situation Quarterly Review, June 2012, pp. 31-40, at: http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=1389&furtherNews=yes

conditional on participation in active labour market policies (such as training, etc.) in order to stimulate retraining and up-skilling, and thus reduce skill mismatches.

Another strand of policies to prevent long-term unemployment is to reduce skill mismatches by providing incentives to acquire qualifications that have emerged as necessary as a result of sector change/restructuring. Such policies should take place in the context of a broader reform of the education system that provides for a better link between education and the new needs of the labour market (e.g. more apprenticeships, adaptation of the curriculum), and can be strengthened through improved life-long learning opportunities and the development of networks providing vocational training, which can equip the participants with the right skills for the labour market. Targeted active labour market policies (e.g. training) combined with income support for needy participants can further improve the results.

A third strand of policies concentrates on tackling geographical mismatches and promoting mobility. Policies to overcome geographical mismatches can be strengthened by integrating obligations to accept job offers within a reasonable geographical range (commuting area) in the activation strategies for receiving benefits or social assistance. Mobility enhancing policies, especially long-distance mobility, may be more relevant for students than for the unemployed, but can still have added value in preventing future unemployment (skills acquisition, new work opportunities in future, etc.). In light of this, grants for education abroad (e.g. Erasmus exchange programme), income support for work abroad such as grants for young researchers could be a cornerstone for preventing unemployment among the young people, who are the most likely to be mobile.

2.2.6. Longer working lives for all

The most productive and promising answer to the demographic challenge of structural longevity growth is to extend working life for men and women: prolonging it at the end, starting it earlier at the beginning and reducing interruptions over the span of the career, and increasing activity rates (especially of women). This is what is being addressed through the re-balancing of time spent in work, in retirement and in activity. A longer working life will both support the sustainability and the adequacy of pensions, as well as bring growth and general welfare gains for an economy. Higher employment rates among older workers are also a precondition for our ability to reach the 2020 target of 75% employment rate of people 20-64, just as adequate pension systems are a precondition for the achievement of the poverty reduction target.

Three key sets of factors influence the length of people's working lives and their retirement behaviour: *i)* the tax-benefit context of working life – in which social protection financing and spending have a considerable weight; *ii)* age management in work places and labour markets as it has a major impact on people's desire and ability to continue working; and *iii)* the extent of work-life balances in late careers – in which social protection also plays a certain role. In this respect, it should be noted that almost 10% of the 20-64 year old people opted for inactivity or part-time work due to personal or family responsibilities.

As pensionable ages have been raised and early exit reduced over the last decade and notably in the context of last years' fiscal consolidation efforts, the main challenge of having longer working lives with fewer interruptions has moved to the field of employment, requiring changes in work place and labour market practices which can encourage and enable women and men to work longer. Measures include improving access to life-long learning; promoting healthy working conditions and suitable jobs for older workers; fighting age discrimination; promoting alternatives to early retirement; designing employment-friendly tax-benefit systems; and developing accessible and affordable care for dependent children and frail older people.

Despite substantial growth in the employment rates of older workers in many countries over the last decade, sizeable variations across Member States remain (from 31% to 72.5%) and the potential for increasing the employment rate for women and men aged 55-64 is still enormous. In 2011 the employment rate for workers aged 55-64 ranged from 31.2 in Slovakia to 72.3 in Sweden, i.e. varying by more than a factor of 2. The rate for the EU-27 is 47.4. Eight countries had rates below 40 (Belgium, Greece, Italy, Luxembourg, Hungary, Malta, Poland, Slovenia).

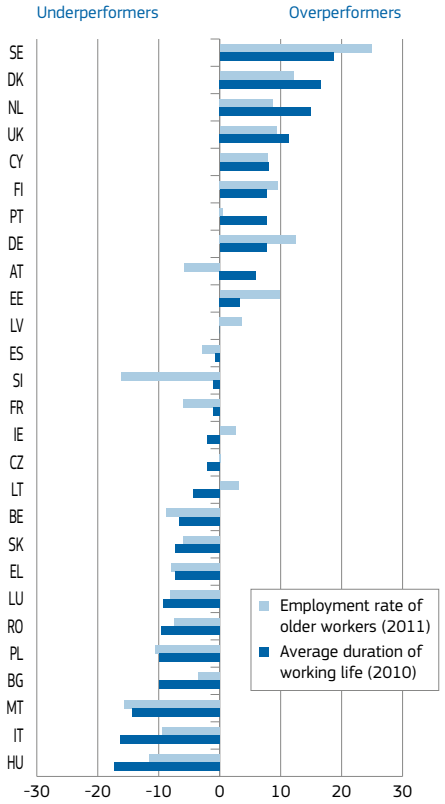
Female employment rates in the 55-64 age group ranged from just 13.8 in Malta to 68.9 in Sweden, i.e. varying by a factor of 5. The rate for the EU-27 was 40.2. Five countries had rates below 30 (Greece, Italy, Malta, Poland, Slovenia). In most of these, barriers to older female workers' employment are found in pension systems (e.g. lower pensionable age for women), in the work-life balance (e.g. insufficient access to childcare and eldercare) and in workplaces and labour markets (e.g. poor age and gender management).

Whereas the trend towards ever earlier retirement has been reversed in all Member States over the last decade, premature labour market exit is still a major problem in several countries. In 2010 the average exit age varied between 58.9 in Hungary and 65.2 years in Portugal. For the EU-27 it was 61.5 years. The exit age was below 60 in 6 Member States (Bulgaria, France, Luxembourg, Hungary, Malta, Slovakia), while 12 had exit ages at or above 62 (Cyprus, Germany, Denmark, Estonia, Finland, Ireland, Latvia, the Netherlands, Portugal, Romania, Sweden, the UK).

One crucial aspect of the strength of work incentives in pension schemes is the bonus/penalty of working longer/retiring earlier. Delaying retirement results in a higher net theoretical replacement rate in most Member States (increases of more than 10 percentage points for the average earner with respect to retirement at 65 occur in Germany, Estonia, Slovakia, Lithuania, Poland and Hungary). Early retirement (or shorter careers) result in lower replacement rates (drops of more than 10 percentage points for the average earner occur only in Latvia, Spain, France, Slovakia and the Czech Republic). However, the incentives are not symmetrical: in all but a few Member States, the increases in replacement rates gained by working two years longer are bigger than the reductions in replacement rates incurred by working two years less. Disincentives to take early retirement are thus not as strong as incentives to work longer.

In Chart 46 below, the pension-related employment challenge is illustrated by the extent to which Member States' performance deviates from the EU averages for the

Chart 46: The employment challenge: average duration of working life and employment rate of older workers, deviation from EU average; 2010



Source: Eurostat, EU-LFS.

Note: Score for each indicator = 10 x [(indicator - EU average) / standard deviation].

duration of working life and the employment of older workers. Underperformers are listed to the left in red and overperformers in green to the right of the vertical line indicating the EU average.

2.3. Addressing the social consequences of the crisis

2.3.1. Long-term exclusion

The combined analysis of entry and exit rates in and out of poverty confirms that fighting long-term exclusion requires actions to prevent new entries into poverty and action to reach out to those who are trapped into persistent poverty. This is especially the case in countries (Baltic States, Bulgaria, Greece, Italy and Malta) that already combined a high risk of entering into poverty with low chances of getting out of it before the crisis, and that are experiencing very bad labour market conditions.

Long-term exclusion and persistent poverty have multiple causes. Individuals in persistent poverty experience intricate social difficulties, such a as lack of adequate skills, including skills obsolescence, disability or weak health status and difficulties in accessing health care, etc. Tackling long-term exclusion therefore requires a mix of interventions. Adapted training schemes, combined with income support, and appropriate access to services, such as decent housing or health care can contribute to enhancing the employability of workers as well as their capacity to fully participate in society. Employment services, benefits designed to make work pay, job search assistance, targeted hiring subsidies, lower taxation of low paid labour, an adapted work place, reconciliation measures and key enabling services such as child care and care for other dependants are key to facilitating access to the labour market for all, including for workers who have special needs or care responsibilities.

Recurrent poverty is another phenomenon requiring attention. Having been poor in the past largely determines the risk of again being poor in the future. The recurrence of poverty is symptomatic of a risk of increased social polarization, with a group of individuals in hardship clearly distinct from the rest of the society and unable to pass from one state to another in a sustainable manner.

Recurrent poverty spells have multiple causes, including precarious employment, insufficient wages (including minimum wages) and inadequate or badly designed safety nets. Action to improve the quality of jobs, skill development, and financial support helping smooth income shocks could contribute significantly to establishing secure professional trajectories and prevent individual to enter again into poverty. The design of benefits is also a key parameter. An excessively long duration or means testing, for example, create unemployment or inactivity traps and weaken the situation of those just above the poverty thresholds.

Trajectories to get away from poverty and exclusion can also be supported by labour market policies addressing segmentation and improving labour market transitions. In ES or PL for example, the share of involuntary temporary employment is high, and the transition from temporary contracts to permanent contracts is relatively low compared to the EU average, which threatens to be a source for recurrent poverty spells.

The costs of long-term exclusion

A body of academic research has analysed the consequences of poverty or exclusion for individuals and for society at large, focusing on aspects such as future earnings, loss of human capital – in terms of knowledge, skills and health status, social unrest, etc.

At the individual level, Irons (2005) show that unemployment and income losses potentially reduce educational achievement by threatening early childhood nutrition, reducing families' abilities to provide a supportive learning environment, and by forcing children to delay or abandon higher education plans. Bell and Blanchflower (2011) show that entering the labour market during a recession often leads to substantially lower lifetime earnings for graduates, increased risks of ending up in lower-level occupations, and an increased probability of participating in crime. They emphasise the delayed negative impacts of unemployment when young on well-being, health status, and job satisfaction, pointing out that short-run government savings may be at the cost of increased future expenditures associated with the negative

effects of youth unemployment and with reduced well-being. Dao and Loungani also present evidence that although the decline in earnings is generally observed for job losers in any period, it is most pronounced during a period of recession. They also document the adverse health outcomes associated with unemployment. Sullivan and von Wachter (2009) found increased mortality rate due to unemployment can persist up to 20 years after the job loss and lead to an average loss of life expectancy from 1 to 1.5 years.

Efforts to illustrate, or quantify, the costs of poverty and exclusion for society as a whole mainly rely on the observation that poverty is consistently linked to poor health, lower literacy, poor school performance for children, more crime, and greater stress for family members – and often for communities. It is therefore society as a whole that bears the costs of poverty and social exclusion, through higher public health care costs, increased policing and crime costs, lost productivity and lost tax revenues, foregone economic activity, and the intergenerational costs that flow from the likelihood that a significant number of children from poor families will also remain poor. Poverty and social exclusion is a waste of human capital both now and in the long term.

2.3.2. Child poverty

The main determinants of child poverty in the EU

The main drivers of child poverty are the exclusion of parents from the labour market (children in jobless households), in-work poverty (parents work but do not earn an adequate living), and the effectiveness of welfare support. Depending on the way parents' labour market participation and welfare support interact, countries can be grouped according to three major profiles associated with very different child poverty outcomes (see Table 8). It notably shows that countries that combine adequate family support with measures to facilitate parents' labour market participation have the best outcomes.

Group A comprises the Nordic countries, Austria, Slovenia and to a lesser extent, Cyprus and Estonia. There are fewer children at risk of poverty, and the child poverty gap is lower in these countries than in other EU Member States. This can be

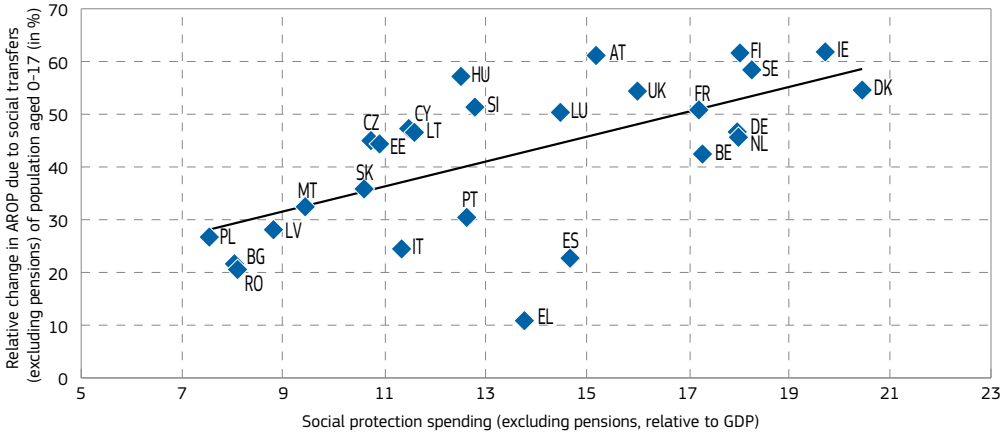
Table 8: Relative outcomes of countries related to the main determinants of child poverty

Drivers…	…level of child poverty	Countries	Tentative diagnosis
Impact **of social transfers** is high Low share of children in **jobless households** **Low risk of poverty** of children whose **parents are working**	**Low risk of child poverty**	DK AT SI FI SE (CY)	***Lowest rates of child poverty*** *thanks to a good balance between income support, labour market conditions and services that facilitate labour market participation of both parents.*
Impact **of social transfers** is relatively high Relatively high share of children in **jobless households** **Low risk of poverty** of children whose **parents are working**	**Medium risk of child poverty**	CZ NL BE DE FR (LT EE)	***Low to above average rates of child poverty*** *thanks to a good income support, but the share of children living in jobless households is high.*
Impact of **social transfers** is high High share of children in **jobless households** Relatively lower risk of poverty Average level of in-work poverty	**High risk of child poverty** (low poverty gap)	IE UK HU	***Average child poverty rates****. The high impact of social transfers is mitigated by disincentives to work and lack of adequate and affordable child care for some categories of parents (e.g. lone parents)*
Low **impact of social transfers** in reducing child poverty. Limited share of children in jobless households **Very high risk of poverty** of children whose **parents are working**	**High risk of child poverty** (high poverty gap)	PL LV RO BG SK PT IT EL ES MT	***Highest rates of child poverty*** *due to insufficient support for families, both in and out of work, in terms of income and services and poor access to quality jobs, especially for second earners.*

Source: Eurostat EU-SILC 2010, European Commission (DG EMPL) calculation. Groups are obtained by cluster analysis based on scores related to the following variables: children living in a jobless household, children living in households at work and at-risk-of-poverty and the impact of social transfers on children's risk of poverty. For each of these variables, the scores reflect both the situation of children in the country versus the rest of the population, and the situation of children in the country versus the rest of Europe.

Note: LU has not been introduced in the classes as it appears as an outlier. Countries in brackets are to be considered as on the edge of the cluster.

Chart 47: **Relationship between social protection spending excluding pensions and child poverty reduction (2009)**



Source: Eurostat. ESSPROS 2009 and EU-SILC 2010 (reference year 2009).

Note: y=2.4244x+8.9729
R^2=0.4068

attributed to sound performance on all fronts: the high impact of social transfers in reducing child poverty, the low proportion of children in jobless households and low levels of children living in working poor households. Nordic countries achieve these goals despite a high proportion of children living in lone parent households, thanks to broad childcare provision and a wide range of reconciliation measures. While the impact of social transfers on children at-risk-of-poverty is relatively low in Cyprus and Malta, children in these countries have so far been protected against the risk of poverty by strong family structures characterised by two-adult families and complex households, in which most working age adults are at work.

Group B contains Belgium, the Czech Republic, Germany, France, the Netherlands and to a lesser extent Lithuania and Estonia. These countries achieve relatively good to below average poverty outcomes. The main matter of concern in these countries is the relatively high number of children living in jobless households. Among these countries, Germany and France are limiting the risk of poverty for children through relatively high and effective social transfers.

Group C comprises Hungary, Ireland and the UK. The main concern in these countries is the high number of children living in jobless households. In these countries, social transfers have a strong impact on the reduction of child poverty, which ensure a relatively low risk of child poverty in jobless households. However, the analysis shows that the design of transfers, compounded by a lack of adequate and affordable child care provisions, create disincentives to work for specific family types, such as lone parents who represent more than ½ of the jobless households.

Group C comprises Southern Europe Member States (Greece, Italy, Malta, Portugal and Spain) as well as most of the eastern and Baltic countries (Bulgaria, Latvia, Romania, Poland and Slovakia). These countries face a high risk of child poverty and a high relative poverty gap for children. The in-work poverty risk among families is high. Important factors seem to be: insufficient work intensity and low earnings (in Latvia, Lithuania, Poland, Portugal and Spain). In these countries, the level and effectiveness of social spending are among the lowest in the EU. Family structures and intergenerational solidarity play a role in alleviating the risk of poverty for the most vulnerable children. Living in multi-generational households and/or relying on inter-household transfers, whether in cash or in kind, may partly compensate for the lack of governmental support to parents in the most vulnerable situations.

Why are some social protection systems more effective and efficient at reducing child poverty?

Higher government spending on social protection is associated with a higher reduction in poverty rates (see Chart 47). However, some countries which invest similar shares of their GDP in social benefits, achieve very different child poverty outcomes (e.g. FI and BE or AT and ES).

Differences in the effectiveness and efficiency of social spending depend on the size, composition and design of the tax and benefit system. Analysis shows that child and family benefits have the largest impact on lifting children out of poverty; health care and unemployment benefits also play a significant role.

A recent Euromod paper[42] explores to what extent a country's effectiveness in reducing child poverty can be attributed to the size of family cash transfers (i.e. benefits and tax instruments alike) or to their design. The results confirm that the level of expenditure is significant. Nevertheless, effectiveness is highly dependent on the composition of the selected measures (universal, categorical, income selective) and the parametric choices of the inner design of policies (thresholds, benefit size determination, etc.).

As highlighted in 3.1.4, the balance between benefits in cash and in-kind also matter. For instance, Matsaganis and Verbist show that child care subsidies reduce the risk of poverty among children, make the overall income distribution less unequal, and are fiscally progressive. These effects are reinforced if a more dynamic perspective is adopted: subsidising child care helps improve

[42] Salanauskaite L, and G Verbist, 2011.

human capital and achieve higher female employment, both leading to greater prosperity and a more equitable income distribution.

An OECD study (OECD, 2011[43]) shows that net childcare costs are indeed a critical factor for parents' employment decisions. Where targeted support policies do not exist, the cost of childcare can consume a third or more of family budgets and will therefore be unaffordable, especially for low income families and lone parents. Existing barriers to employment participation of lone parents and second earners with low earning potential could be reduced by increased targeting, to low income families, of government assistance aimed at reducing the cost of childcare.

2.3.3. Migrants and ethnic minorities

In all EU countries, migrants have been especially affected by the crisis. Their already unfavourable labour market and social conditions were further aggravated. They were among the first to lose their jobs, and were often in more precarious conditions to begin with, making it more difficult for them to withstand the income shocks.

A recent Commission study on the costs and benefits of labour market policies gives some recommendations about how to best help vulnerable groups, and migrants in particular (European Commission 2012a). It suggests an extension of coverage and eligibility for the vulnerable groups in countries with ungenerous social protection. Further to that, coverage should be based on 'apparent employment relationship' or 'assimilated workers' rather than on the specific forms of employment contracts and more generous social assistance should be linked with strict job search and acceptance criteria. To achieve the best social inclusion outcomes for vulnerable groups, whose employment prospects are low and decrease from the start, the active measures should be applied from the start of unemployment. Employment incentives are specifically appropriate for vulnerable groups and should be focused on the long-term unemployed among these groups. Direct jobs and sheltered work can offer meaningful activities to migrants and other vulnerable groups. However, there is a risk of high costs of prolonged wage subsidisation and the loss of highly productive work of those who would have found a regular job otherwise. In this respect, work-integration enterprises cooperating with mainstream businesses offer a promising mechanism for up-skilling disadvantaged workers and integrating them into the main labour market.

2.3.4. Homelessness

Spending more than 40% of a household budget on housing costs is considered a heavy burden which increases the vulnerability of low income households to income shocks, and in some circumstances may lead to eviction or repossession. In the EU, ⅓ of the people at-risk-of-poverty spend more than 40% of their budget on housing. Between 2007 and 2010, this percentage increased by 3.4 percentage at EU level from 33.2% to 36.6%. In some countries, during the same period, the share of poor people facing a heavy housing cost burden nearly doubled from 22% to 40% in Spain, and from 12% to 26% in Ireland.

Homelessness has grown across the EU as many people experienced a sudden job loss or income drop in the recession. The crisis changed the profile of the homeless population. The traditional core consisting of people with long-standing social problems, the mentally disturbed and drug addicts was joined by young people and foreign nationals who have been disproportionately affected. Some countries, e.g. UK, Ireland and Estonia, suffering from a recession and the collapse of the housing bubble managed to contain the spread of homelessness through effective assistance schemes. The rise in homelessness has put extra pressure on service providers (NGOs, local authorities) which are struggling both with the increased demand for their assistance and with cutbacks in funding. The continuing austerity and the limited prospects for economic recovery are likely to make homelessness a salient social problem of the coming years.

2.4. EMU level stabilisers for better convergence

While most decisions about taxes and spending remain at the national level, EU Member States' leeway on fiscal policy is now constrained, first by the Stability and Growth Pact, reinforced by the Euro Plus Pact and the so-called six-pack. Moreover, more stringent requirements for national budgets are expected with the so-called Fiscal Compact[44]. All Member States (except the Czech Republic and the United Kingdom) have signed this intergovernmental treaty in March 2012. The Fiscal Compact requires Member States to introduce a requirement to have national budgets that are in balance or in surplus (a structural deficit of maximum 0.5% of GDP will be allowed). Such a rule will also be introduced in Member States' national legal systems at constitutional or equivalent level. The rule will contain an automatic correction mechanism that shall be triggered in the event of deviation.

These agreements do not turn the EMU, the group of states participating in the Fiscal Compact or the EU into a fiscal union. A fiscal union is based on the integration of Member States' fiscal policy whereby decisions about collection and expenditure of (some if not all) taxes are taken by common institutions, shared by the participating governments. It has been observed that there are no precedents for a monetary union without a fiscal union[45]. In the long-lasting debate of whether the EMU is a so-called 'optimum currency area', many claim that a successful currency union needs a risk-sharing system such as an automatic fiscal transfer mechanism to redistribute money to countries which are hit by asymmetric shocks. Such transfers could be organised through new levies or existing ones (such as value-added tax). In the new perspective of the Fiscal Compact, EMU-wide automatic stabilisers appear to be needed to attenuate the effects of asymmetric shocks. They would constitute an element of an EMU-level fiscal policy which would function as a complement to (increasingly restricted) national fiscal policies.

(43) The following text largely quotes the results of this study.

(44) See http://www.european-council.europa.eu/media/579087/treaty.pdf

(45) See Bini Smaghi, 2011.

EMU-wide automatic stabilisers

Enacting EMU-wide automatic stabilisers could help to dampen fluctuations in real GDP, in the case of asymmetric shocks affecting some parts of the EMU more than others (insurance function), and maybe also if asymmetric shocks affect everybody (stabilisation function).

Such instruments could serve three purposes:
(1) aid ailing Member States through transfers, avoiding social meltdown and thus potential negative externalities; in this respect they could help balance the negative effects of adjustments through 'internal devaluation';
(2) contribute to stability of the European economy through keeping up overall demand;
(3) contribute to the creation of a true single market, including for labour.

As far as economies of scale exist, they can be even more efficient than national schemes.

The desirable properties of an EMU-wide stabiliser type instrument (von Hagen and Hammond (1998)[46]) include:
(1) simplicity, both regarding financing and transfer of funds;
(2) automaticity, avoiding bureaucratic intervention;
(3) design ensuring that one way redistribution in the long run is avoided;
(4) avoidance of moral hazard;
(5) wide coverage and budget neutrality;
(6) whole amount collected must be distributed.

Prior to the financial crisis, the usefulness of redistribution to Member States hit by asymmetric shocks was questioned, as shocks to real per capita GDP in the EMU seemed to be positively correlated (symmetric). The economic crisis that started in 2008 has uncovered large asymmetries, aggravated by different sovereign debt dynamics across Europe, again strengthening the case for an automatic stabilisation mechanism. Nevertheless, as mentioned, EMU-wide automatic stabilisers would need to serve short- to medium-term problems only and avoid setting up long-term transfer flows. Structural divergence, such as in productivity levels, would need to be addressed through other means, such as product and labour market reforms and structural investments.

EMU-wide unemployment insurance

Cyclical unemployment is a key indicator of economic shocks. Moreover, given that there are significant differences and even divergent changes in unemployment rates, an unemployment insurance scheme is a natural candidate for becoming a European automatic stabiliser. This was also the choice of analysis for Italianer and Pisani-Ferry (1994).

A European scheme could be based on contributions, determined e.g. as the% of previous earnings. It would act as an automatic stabiliser, both through the revenue side (those undergoing a shock pay in less) and the expenditure side (those in a shock get more). Most likely such a scheme would benefit different countries over time, which could help its political acceptance. Back of the envelope estimation based on the number of currently unemployed show that payments from and EMU-level unemployment insurance scheme could amount e.g. to 2% of Greek GDP – thus it could help crisis countries, but would not solve all their problems. Creating such a scheme would require considerable preparation[47].

Child basic income and other possible schemes

While not as effective a stabilizer as unemployment insurance per se (because of little cyclical increase on the expenditure side), an EMU-wide child basic income scheme, if jointly financed, would ease the situation of countries that face massive shocks. It could be a demonstration of the EU's commitment to children, to the future, and could contribute to the reduction of child poverty. It would also document the solidarity existing between people without and with children. A priori such a scheme need not be complicated and should be relatively easy to administer. Such schemes have been advocated by prominent academics including Atkinson and Marlier (2010).

Other similar schemes (always requiring common financing) could include:

- a youth grant, to promote e.g. education, staying in education, training, employment, volunteering;
- pensions, e.g. a 28th pension scheme, as proposed by Monti (2010), or a lump-sum scheme as a basic pension for all, along the lines of that advocated by Blackburn (2010);
- conditional EMU payments for MS in difficulty (cyclical grants);
- using EMU taxes as automatic stabilisers, e.g. making MS in difficulty pay less and receive more.

(46) Von Hagen, J. and Hammond, G. W., 1998; quoted in Bajo-Rubio, O. and Diaz-Roldán, C., 2003.

(47) Considerations to be addressed include: disincentives for MS with weak schemes to improve them, problems linked to the diversity of the EU situation, especially between structurally high unemployment and low unemployment countries (how to avoid low unemployment countries paying in the long term for high unemployment countries). Identifying the target population, and how the EMU scheme will interplay with current diversity of eligibility rules and generosity within EMU.

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Chapter 1

The dynamics of long-term unemployment[1]

Long-term unemployment (measured as a share of the total active population) has increased significantly since the onset of the crisis, from a low of 2.6% in 2008 to 4.1% in 2011, with the long-term unemployed accounting for 42.5% of all unemployed persons in 2011 as compared to 33% in 2009. Based on previous experience, there is a risk that long-term unemployment will continue to increase and it will remain a policy challenge for several years to come.

This chapter presents the main trends in the incidence of unemployment and the transitions into and out of short and long-term unemployment in the EU and across the Member States, investigates the main factors that lead people to become long-term unemployed, and seeks to identify the policy options that have been found to work best across the different Member States.

The main messages that emerge are that:

- The rise in long-term unemployment has been uneven between Member States and in various population sub-groups, occupations and sectors.
- The probability of finding a job is higher for the short-term than the long-term unemployed, but both groups have seen their transition rates to employment declining.
- In order to both prevent and tackle long-term unemployment, country-specific policy mixes are required which are tailored to particular groups (e.g. the short-term unemployed at low risk of becoming long-term unemployed; the short-term unemployed at high risk of becoming long-term unemployed; those who are already long-term unemployed).
- There is no universal policy mix, but the ability to balance the need for adequate income protection with appropriate work incentives depends on the effective design of both unemployment benefit systems and active labour market policies.

Average long-term unemployment rates have increased substantially in the EU, but there are important country differences. Certain Member States, such as Slovakia and Greece, have had high levels of long-term unemployment for some time and the recent crisis simply worsened the problem. But other Member States which previously had a limited long-term unemployment rate such as the Baltic countries, Spain, and Ireland, were particularly hard hit by the recession, and long-term unemployment has increased substantially over the last few years.

In terms of population subgroups overall, men, young people, and low and medium-skilled workers have been particularly affected by the recent increase in long-term unemployment.

The main factor driving the rise in long-term unemployment has been the inability of the labour market to accommodate the inflows of workers made redundant as a result of restructuring, either due to insufficient labour demand or to mismatches between labour demand and labour supply. Moreover, workers previously employed in certain sectors or occupations (notably construction) have experienced a double disadvantage in that they have a higher probability of becoming unemployed as well as a higher chance of becoming long-term unemployed. The resulting policy challenge is to ensure new opportunities for those who have been unemployed in both the short and long term, particularly in growing sectors, as well as to implement measures focusing on retraining in order to adapt workers' skills to the new needs of the labour market.

Although job creation is essential for reducing long-term unemployment, some countries (Netherlands, Sweden, Finland) have managed to limit the increase in long-term unemployment despite increases in the number of short-term unemployed persons (unlike countries such as Greece, Bulgaria and Slovakia), resulting in the highest transition rates out of unemployment for both the short and long-term unemployed. This is the result of successful labour market institutions (e.g. unemployment benefits and the social security system, active labour market policies, employment protection legislation, in-work benefits) which are complementing job creation.

The analysis of transition data also shows that the long-term unemployed face a

[1] By Laurent Aujean, Teodora Tchipeva, Jörg Peschner.

high risk of falling into inactivity (although 'discouragement' does not seem to have increased with the crisis) while the short-term unemployed are at greater risk of a recurrence of short unemployment spells. Overall, it seems clear that both cyclical factors (changes in GDP and labour demand) and structural factors (such as labour market institutions) explain cross-country differences in the transition rates into and out of unemployment.

Preventing and tackling long-term unemployment requires a range of different policy responses. Effective preventive policies distinguish between the short-term unemployed who are at a lower risk of long-term unemployment and those at a higher risk (e.g. through profiling). For the first group, activation incentives embodied in the unemployment benefit and social security systems, in-work benefits and job search assistance often suffice, since this type of unemployed person is more likely to find a job on their own. The second group, the short-term unemployed at higher risk of becoming long-term unemployed, may need more help and additional measures in the form of personal counselling and tailored activation programmes (including re-training or up-skilling). Furthermore, these programmes need to be applied at an early stage of the unemployment spell.

Policies that aim to re-activate the long-term unemployed involve special and often complex programmes that combine measures available to the short-term unemployed (such as counselling and job-search assistance) along with more costly measures such as longer training programmes, employment incentives and direct job creation. Although these programmes are costly, they may well be worthwhile undertaking, particularly in the time of the crisis, since long-term unemployment is already a reality in many Member States and its persistence incurs high social as well as economic costs in terms of the aggravation of poverty and social exclusion.

This chapter contains five sections:

Section 1 presents the most recent trends (2008-11) in long-term unemployment in the EU Member States.

Section 2 identifies the population groups most affected by long-term unemployment, analysing the differences with the pre-crisis period and touching on the main socio-economic categories (such as sex, age, education level) and the incidence of long-term unemployment by origin; the reason for leaving the last job and the previous sector/occupation are also investigated.

Section 3 reviews the main factors that have been put forward in the literature to explain the differing trends in long-term unemployment across countries. It concludes with a grouping of Member States according to the policy mix they have chosen, which will contribute to understanding the trends and transitions into long-term unemployment.

Section 4 goes beyond a static analysis of the long-term unemployment rate to analyse the underlying dynamics of long-term unemployment. The focus is on year-to-year transition rates from and to long-term unemployment using data from the longitudinal section of the EU-Labour Force Survey. This is the first time that longitudinal LFS data has been used to analyse long-term unemployment transitions at EU level.

Section 5 concludes by reviewing the main findings of the chapter along with policy-relevant implications and issues.

1. Trends in long-term unemployment in the EU

This section describes recent trends in long-term unemployment in the EU, discusses its measurement, and draws comparisons with experiences in previous recessions. It also analyses cross-country differences between EU Member States, looking in particular at differences in the rate of persistence in unemployment.

1.1. Current and past level of long-term unemployment at EU level

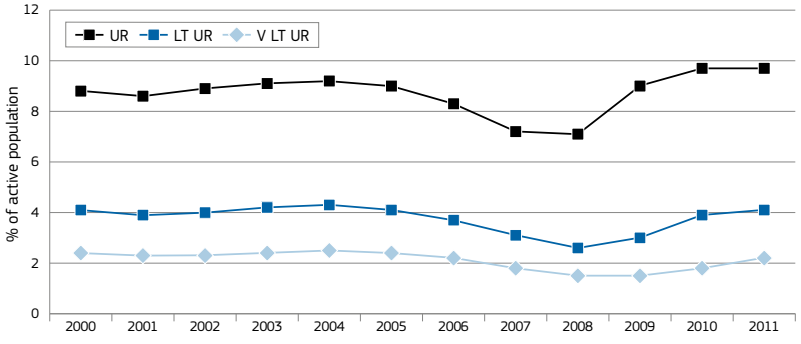
Long-term unemployment refers to those who remain unemployed for longer than twelve months (see Box 1 on definitions and measurement issues). Since the problem is primarily driven by changes in overall levels of unemployment, this section begins by summarising how unemployment has evolved in the EU in recent years.

1.1.1. Sharp increase in unemployment since 2008

During the 2008-09 financial and economic crisis, most EU Member States experienced a strong economic downturn, which after a certain time lag, led to a sharp deterioration in their labour markets. Over the past decade, the unemployment rate was at its lowest around 2007-08 in most Member States thanks to several years of steady economic growth in the prior three to four years, with the recorded rate of unemployment falling from 9.2% in 2004 to 7.1% in 2008.

All the progress made in terms of unemployment (and in terms of the improved employment rate) vanished with the economic crisis, with unemployment reaching 9.7% in both 2010 and 2011 (and 10.4% in 2012Q2). Since statistics have been recorded for the EU-27 (2000), never before had such a high percentage of the active population been unemployed and the last time there was such a high level of unemployment in the EU-15 was in the mid-90's following the 1993 economic recession.

Chart 1: Rates of unemployment, long-term unemployment, and very-long term unemployment (percentage of active population), EU-27



Source: Eurostat, EU-LFS.

Box 1: Defining and measuring long-term unemployment

Long-term unemployment is generally **defined** as those who have been unemployed for twelve consecutive months and this is the definition used in this chapter.

The term **'consecutive'** implies that those having worked (or been inactive) for a short period between two spells of unemployment are excluded from the measure. This may happen when a jobseeker works for a short duration (for instance, under a temporary contract) in the middle of a long spell of unemployment or even, in some countries, when a jobseeker participates in a labour market programme (since this may reset the duration of the unemployment spell). Due to the recurrence of unemployment spells (shorter than one year) among certain groups and the problem of discouragement among jobseekers (becoming inactive), the measure of long-term unemployment may underestimate the extent of 'long-term joblessness'.

Concerning the **twelve-month threshold**, of note is the fact that in the US, long-term unemployment is defined as an unemployment period of 'only' six consecutive months. The difference in the definition can be explained by the lower rate of long-term unemployment in the US compared with the EU, and is linked among other things to lower levels of income support provided to the unemployed for extended periods in the US, and the generally more flexible labour market.

At EU level, another important indicator concerns **very long-term** unemployment, defined as two years or longer. According to the literature, the two-year mark is the point at which returning to employment becomes more difficult, reflecting the *negative duration dependence*, i.e.: the exit rate from unemployment decreases as the duration increases. This can be explained by 'scarring effects' in the form of declining job search intensity, the discouragement of the long-term unemployed, and stigmatisation, since potential employers often see the duration of unemployment as a signal of a person's employability and potential productivity. However, what negatively influences the exit rate is, to a certain extent, a selection effect (the unemployed with the lowest chance of finding a job are those who become long-term unemployed) and not directly the duration itself[1].

The **measurement** of long-term unemployment is expressed as one of the following:

the absolute number of persons unemployed for more than twelve months;

the long-term unemployment rate, i.e., as a percentage of the active population (as with the standard unemployment rate);

the percentage of all unemployed persons (or the so-called **'incidence of long-term unemployment'**).

Another way to measure the duration of unemployment is to use the **average duration of unemployment.** However, this indicator is strongly influenced by the number of individuals who are unemployed for very long periods (four years or more) and is not necessarily a good indicator of differences between countries in the most relevant categories: for example, the two categories of 'less than one year' and 'one to two years' together represent around 80 % of the unemployed in the EU.

Moreover, the most convenient way to measure the duration of unemployment is to measure the length of time that currently unemployed persons have been spent without a job and looking for a job[2]. However, the unemployment spell is not over when the measurement (i.e. labour force survey) takes place, meaning that it is only possible to measure the duration of ***incomplete unemployment spells or spells in-progress***. Such measures are likely to underestimate the complete spell length as they do not take into account the period of unemployment that will still occur after the survey takes place[3].

(1) Cockx and Dejemeppe (2002) noted that 'for continental European countries researchers generally do not find evidence of marked negative duration dependence once observed and unobserved heterogeneity is controlled for'.

(2) In the EU-LFS, unemployment duration is indeed measured by the variable 'DURUNE' which is calculated as the minimum between two variables: LEAVCLASS (the time since the person last worked, grouped in classes) and SEEKDUR (duration of search for employment).

(3) See European Commission, 2009, Employment in Europe, Chapter 2, Labour flows, transitions and unemployment duration.

1.1.2. Long-term unemployment also increased, with a lag…

It is well known that labour market developments almost always lag behind changes in the economic situation. When an economic downturn occurs, employers tend to wait before adjusting their workforce[2], and the same is true when the economy recovers. According to Junankar (2011), changes in the overall unemployment level are determined by changes in inflows to, and outflows from unemployment. As a recession hits an economy, increases in inflows and decreases in outflows lead to an increase in the level of unemployment.

When the economy recovers, inflows to unemployment decrease and return to their previous equilibrium level, but outflows from unemployment take more time to reach their original level[3] and unemployment often continues to grow during the start of the recovery period. The result is that the impact on employment figures usually lags behind a fall in demand by between six and twelve months. Such a lag was very visible in the last recession, since for most Member

(2) Usually, they wait to see if the fall in demand is more than temporary, since they do not wish to lose the skilled and loyal staff they have been employing for some time.

(3) This is because the effect of the increase in inflows into unemployment is to decrease the probability of each unemployed person finding work, even when the level of demand for labour returns to previous levels, since for each job vacancy there are more potential applicants. As a result, some of the unemployed will now be unemployed for a longer duration: those previously unemployed for less than a month will now move into the next group of one to three months duration, and like a pack of dominoes falling there will be more unemployed workers shifted to the next duration level.

States, GDP was already stagnant in 2008 while unemployment only began to increase in 2009.

There is also an obvious time lag between developments in unemployment and changes in long-term unemployment, since individuals are only considered to be long-term unemployed when they have been out of work for twelve consecutive months (see Box 1).

Chart 2 shows how the change in long-term unemployment has lagged behind the change in unemployment in the EU-15 aggregate since the end of the eighties. This shows that in the recession of the 1990's, long-term unemployment started to increase only in 1993 after two years of increasing unemployment (1991-92). The same lag occurred in the recession in the early 2000's, with an increase in long-term unemployment beginning in 2003 following rising unemployment as of 2002, although the downturn was more limited.

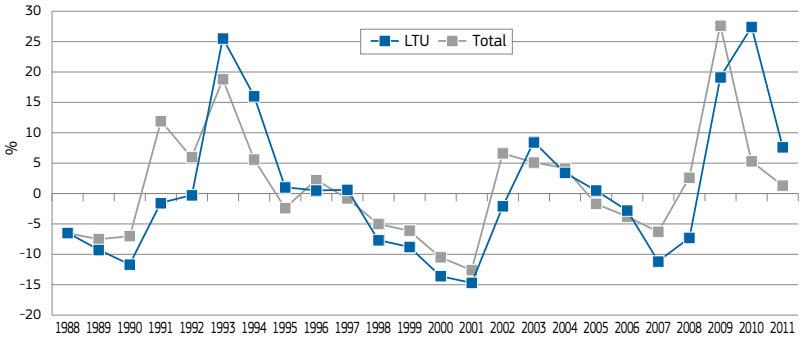
In general, past experience with recessions in the EU and other parts of the world show that long-term unemployment continues to rise after total unemployment has peaked, and almost always takes a long time before starting to decline. For instance, during the 1990's in the EU, while overall unemployment had already started to decline in 1995 following increases in the 1991-94 period, long-term unemployment only began to decrease in 1998[4].

There is also evidence from previous recessions that sharp increases in unemployment are not only of long duration, but that they may not be completely reversed in subsequent recoveries (OECD, 2009). The phenomenon in which increases in unemployment due to transitory shocks lengthen into extended periods of persistently high, long-term unemployment has been called the 'hysteresis effect' (see Box 2).

In the case of the United States, according to Junankar (2011), each recession has led to a higher level of long-term unemployment, even following a recovery. Looking at the minimum and maximum levels of long-term unemployment reached in previous recessions (Table 1), this does not seem to be the case in the EU, however. Indeed, the new minimums reached in the long-term unemployment rate are always lower than during previous recessions, and higher levels of long-term unemployment were recorded in the past, particularly following the recession in the 1990's[5].

This change may be partly linked to labour market reforms carried out in the 1990's and the 2000's that have reduced the so-called hysteresis effects. Indeed, Guichard and Rusticelli (2010) argue that 'thanks to labour and product market reforms, in the majority of countries, the impact of the crisis on long-term and structural unemployment is likely to be more moderate than in past severe downturns'. Boeri, Garibaldi, Fuest and Petrongolo (2009) have also pointed out that the decrease in unemployment and long-term unemployment between the 1990's and the last recession was very large, and argue that institutional reforms such as reduced employment protection and less generous unemployment benefits account for these changes.

Chart 2: Changes in the number of unemployed and long-term unemployed persons in EU-15*, 1998-2011 (%)



Source: OECD (except 2011: DG EMPL calculations based on EU-LFS). *EU-15 refers to the 15 EU Member States (before the 2004 enlargement).

Table 1: Long-term unemployment rate (percentage of active population) across previous recessions in EU-12*

Economic downturn starting in:	Peaks	LTU rate and change over the period
1992	Min (1992)	3.6
	Max (1994)	5.4
	Change (p.p.)	+1.8
2002	Min (2002)	3.2
	Max (2004)	3.5
	Change (p.p.)	+0.3
2008	Min (2008)	2.7
	Max (2011)	4.3
	Change (p.p.)	+1.6

Source: DG EMPL calculations based on EU-LFS.

Notes: *EU-12 refers to the twelve EU Member States before the 1995 enlargement. The maximum indicated for the last recession is the 2011 value, which is likely to be lower than what will be recorded for 2012 since the overall unemployment rate in the EU increased in 2011.

(4) The situation was a bit different following the economic downturn in the 2000's: long-term unemployment had already decreased in 2006, just one year later the decrease in unemployment (in 2005). This was probably linked to the fact that this recession was less severe and did not affect all Member States, as well as to labour market reforms implemented in the 90's.

(5) However, it in fact varies from one country to another (see Chart 11).

Box 2: Hysteresis effects in unemployment and structural unemployment

The notion of hysteresis has been borrowed from physics and is used to explain how transitory shocks may have lasting effects, and how structural unemployment may be influenced by the path of actual unemployment. Hysteresis effects are indeed likely to push up structural unemployment since workers who remain unemployed for long periods of time become less attractive to employers as a result of their declining human capital or as they reduce the intensity of their job search (Machin and Manning, 1998), thereby creating less downward pressure on wages and inflation. Long-term unemployment plays a key role in the hysteresis effect, as suggested by Ball (2009) in particular. Hysteresis was invoked as early as 1989 by Blanchard and Summers as one of the factors explaining the differences in long run unemployment rates between Europe and the United States.

Workers who have been unemployed for lengthy periods of time tend to become less attractive to employers. Not only does the human capital of the unemployed diminish over time but, due to recruitment costs, potential employees are frequently evaluated on the basis of the frequency and duration of their periods of unemployment (Lockwood, 1991). Active job searching may also diminish as the unemployed lose contact with the labour market and awareness of job offers. In addition, long-term unemployed may put less pressure on wages since long spells of unemployment can increase job seekers' reservation wage as a consequence of a social acceptance of their status (Lindbeck, 1995), and the human capital of the unemployed may fall below their reservation wage (Blanchard, 1991). Indeed, there is empirical evidence that those who have been out of work for long periods have less influence on wage bargaining than do those out of work for shorter periods (Llaudes, 2005 and Elmeskov and MacFarlan, 1993), and that this prevents real wages from falling sufficiently to enable them to be priced back into the labour market. Thus increases in the proportion of the long-term unemployed may increase the structural unemployment rate consistent with a stable inflation rate.

According to the OECD (2012), until recently, major increases in structural unemployment, measured as the NAIRU *(non-accelerating inflation rate of unemployment)*, have not been experienced. The OECD (2012) has estimated that structural unemployment has risen in most countries since the crisis began, but that the estimated increase in the NAIRU (+0.4 pp for the OECD countries) is generally small relative to the actual increase in the unemployment rate (+2.3 pps). From a policy perspective this suggests that priority should be given to encouraging economic growth and aggregate demand. However, the NAIRU appears to have increased significantly (by more than 2 pps) in a number of EU Member States, including Estonia, Greece, Ireland, Portugal and Spain. According to the OECD, this means that in those countries, *an expansion of aggregate demand will not be sufficient to bring unemployment back to pre-crisis levels. Specific measures with respect to training and job-search assistance will also be required*.

A complementary method of documenting recent developments in structural unemployment is based on the Beveridge curve, which charts the inverse relationship between job vacancies and unemployed job seekers over the business cycle. The OECD (2012) estimates that since mid-2010, the Beveridge curve has started to move outwards in many countries. This may simply reflect the normal cyclical pattern in which a recovery in vacancies is not immediately reflected in reductions in unemployment, but it may also be a sign of an increase in matching frictions related to the build-up of long-term unemployment or the need for structural change in the labour market. However, the detailed 2012 OECD analysis of matching frictions suggests that they have evolved very differently across countries during the current economic recovery. Therefore, an analysis of the Beveridge curve leads to no clear-cut conclusions on whether or not structural unemployment has increased significantly. The same results are found in the European Employment Observatory Review on long-term unemployment (*European Commission*, 2012a).

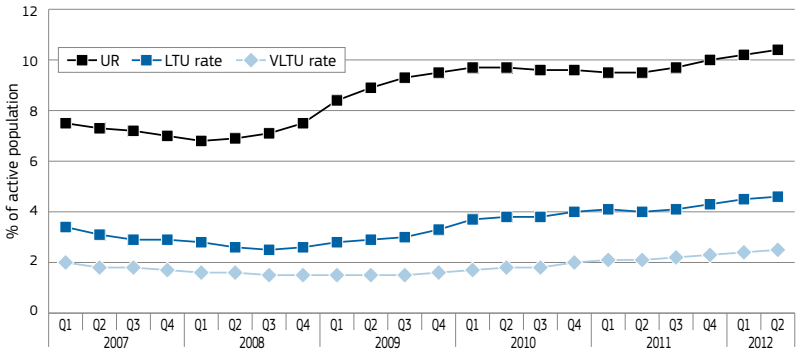
Source: Guichard and Rusticelli (2010); OECD (2012); European Commission (2012a).

1.1.3. …and long-term unemployment is set to increase further

An analysis of changes in unemployment and long-term unemployment rates in recent years confirms the usual lag in long-term unemployment compared with unemployment (see Chart 3). While the unemployment rate in the EU-27 reached its lowest point in 2008Q1 (6.8%), a sharp increase occurred between 2008Q3 and 2009Q3 (from 7.1 to 9.3%) while the long-term unemployment rate reached its lowest point in 2008Q3 (2.5%) and began to increase significantly after 2009Q3.

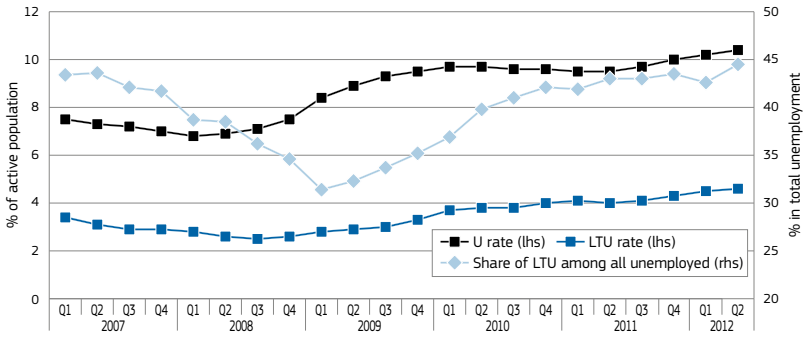
Moreover, while the unemployment rate remained stable between 2010 and 2011 (at around 9.7%), reflecting the modest economic recovery that took place in 2010, the long-term unemployment rate continued to increase (from 3.7% in 2010Q1 to 4.6% in 2012Q2). As for the very long-term unemployment rate, it remained barely unchanged during 2008 and 2009 but has increased gradually since then, from 1.6% in 2009Q4 to 2.5% in 2012Q2.

Chart 3: Rates of unemployment, long-term unemployment and very long-term unemployment (as a percentage of the active population)



Source: Eurostat, EU-LFS.

Chart 4: Unemployment and long-term unemployment rate (as a percentage of the active population, left scale) and incidence of long-term unemployment (long-term unemployment as a share of total unemployment, right scale), EU-27



Source: Eurostat, EU-LFS.

Given that the long-term unemployment rate tends to continue to increase for some time even once the unemployment rate has stabilised, the recent increase in the total unemployment rate (from 9.5% in 2011Q2 to 10.4% in 2012Q2) following the relative improvement in 2010, suggests that long-term unemployment is likely to increase further.

1.1.4. Another indicator: the incidence of long-term unemployment

The **incidence of long-term unemployment** (i.e. long-term unemployment as a share of total unemployment) was in decline in the pre-crisis period, but it declined even more sharply at the beginning of the economic downturn, reaching a low of 33.1% in 2009 when total unemployment and long-term unemployment rates had already begun to increase.

This drop in the incidence of long-term unemployment is caused by changes in the composition of the unemployed. At the start of an economic downturn, the number of newly unemployed workers rises (due both to temporary contracts not being renewed and to workers on permanent contracts being dismissed), leading to an automatic decrease in long-term unemployment as a share of the total. Later, those who were unemployed for short periods either found work or became long-term unemployed[6], and the incidence of long-term unemployment increased sharply: in 2011, it reached 42.9% (see Chart 4).

In *European Commission* (2009)[7], it was demonstrated that the relationship between the unemployment level and the incidence of long-term unemployment displays 'counter-clockwise loops' and that for a given level of unemployment, the incidence of long-term unemployment is usually higher during upturns than downturns. The indicator of incidence of long-term unemployment must therefore be interpreted cautiously and analysed together with the unemployment rate as well as with trends in inactivity (see section below).

Nevertheless, the fact that, according to the latest figures (2012Q2), 44.5% of the unemployed have been unemployed for at least twelve months is worrying. This rate is roughly the same as it was five years earlier (2007Q2) but as of 2012Q2, it applies to a larger overall number of unemployed persons (25 million) as compared with 2007 (17 million).

1.1.5. The transfer from short to long-term unemployment categories

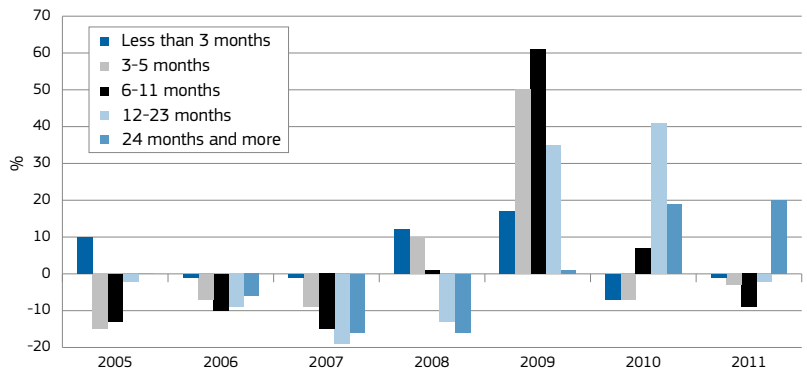
At EU level, unemployment figures showing numbers of persons by duration of unemployment provide insights into the development of spells of long-term unemployment. Chart 5 shows that unemployment was declining in 2006 and 2007 for every category of duration until the economic crisis began in 2008. At this point there was an increase in the number of short-term unemployed (fewer than six months) while the number of long-term unemployed was still diminishing.

The year 2009 was marked by an increase in all categories except for the very long-term unemployed (longer than two years), while the modest economic recovery of 2010 led to a decrease in short-term unemployment even while long-term (and very long-term) unemployment numbers were still on the upswing. Finally, in 2011, there was a reduction across all categories compared with the previous year, with the notable exception of very long-term unemployment for which the same increase was recorded as in 2010 (around +20%).

(6) These recently unemployed persons could also fall into inactivity, but the discouragement phenomenon mainly affects the long-term unemployed and much less the short-term unemployed who still have strong links with the labour market, a higher job search intensity and a greater likelihood of receiving unemployment benefits (see Section 4 on transitions).

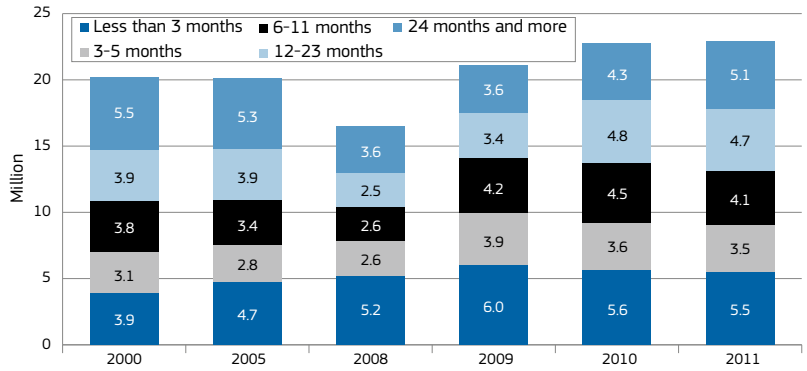
(7) *European Commission* (2009), Employment in Europe, Chapter 2, Labour flows, transitions and unemployment duration.

Chart 5: Changes in the number of unemployed by duration, EU-27 (%)



Source: Eurostat, EU-LFS.

Chart 6: Distribution of unemployed by duration (in millions), EU-27



Source: Eurostat, EU-LFS.

The declines recorded in 2010 and 2011 for the short-duration categories have, however, been relatively limited (with a less than 10% decline) and overall levels in terms of the number of unemployed persons have therefore remained substantial (Chart 6) and significantly higher than pre-crisis levels (2008). In other words, the situation did not evolve significantly between 2010 and 2011; the main change was the transfer from the short-term to long-term unemployment categories.

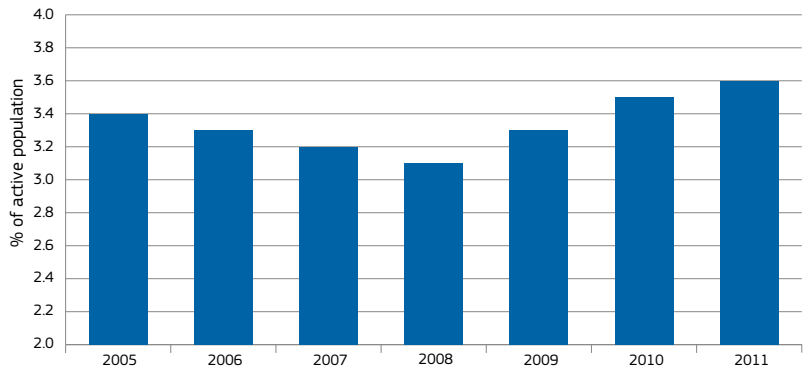
1.1.6. Until 2011, a moderate increase in the number of 'discouraged workers'

In addressing issues of unemployment, it is also important to analyse trends in inactivity, since a sharp increase in unemployment can lead those who are less likely to find a job to stop looking, to leave the labour market and thus to become inactive. In this case, they no longer appear in the unemployment statistics and, for this reason, Eurostat also publishes supplementary indicators to unemployment[8].

Chart 7 shows the number of persons available to work but not seeking a job as a percentage of the active population[9]. They are defined as persons who are neither employed nor unemployed, who wish to work and are available for work in the next two weeks, but who are not seeking work. While the 2005-08 period showed a reduction in the number of discouraged workers as a share of the active population as a whole, this trend has been reversed from 2009 onwards, increasing from 3.1% in 2008 to 3.6% in 2011.

In absolute terms, the number of 'discouraged workers'[10] increased from 7.3 million in 2008 to 8.6 million in 2011 (+1.25 million). Overall, however, this increase can be seen as limited when compared to the increase in overall unemployment of 6.4 million over the same period, confirming previous findings that there has not been a major drop in the activity rate in the EU during the recession[11]. However, this indicator is seen as important regarding future developments since any persistence of high levels of long-term unemployment could cause further increases in discouragement among job-seekers.

Chart 7: Persons available and willing to work but not seeking a job, as a percentage of the active population (EU-27)



Source: Eurostat, EU-LFS.

(8) See Eurostat, 2011, SiF 57/2011, *New measures of labour market attachment* and *European Commission*, 2012c, *EU Employment and Social situation Quarterly Review*, September 2012 (Special focus on LFS supplementary indicators to unemployment). Two other indicators that supplement the unemployment measure are underemployed part-timers and those seeking work but not immediately available.

(9) Strictly speaking, this is not a share, as the nominator (persons wishing to work, available for work but not seeking work and therefore considered economically inactive) is not part of the denominator (active population).

(10) The term 'discouraged workers' may not strictly apply to all these persons as only a limited proportion of inactive persons wishing to work declared in 2011 that they were not seeking a job because no jobs were available (5.2%); the main reasons quoted were participation in education or training programmes (32%), retirement (21%), illness or incapacity (14.1%) or other reasons (10.2%). Nevertheless, they may not have chosen to be in one of those situations and the overall increase in the number of inactive persons wishing to work but not searching in the 2008-11 period still seems to have been caused by a lack of job opportunities, especially for those already unemployed for a long period.

(11) At EU level, the activity rate even continued to rise slightly between 2008 and 2011 (from 72.3% to 72.5%), although at a much slower pace than before (having increased by more than 3 pps between 2001 and 2008).

Box 3: Relative importance of inactivity as a status: evidence from longitudinal EU-SILC data

Beyond the specific case of so-called 'discouraged workers' it is crucial to understand the dynamics of the process: many economically active individuals experience spells of unemployment but also of inactivity. *European Commission* (2010b) showed (on the basis of EU-SILC longitudinal data) that even in a period of high employment growth such as was seen in 2004-07, a large proportion (as high as 40%) of those who were economically active (at some point in the four-year period) experienced spells of being out of work (unemployment and/or inactivity).

On the basis of the most recent EU-SILC data (the three-year period from January 2007 to December 2009), it appears that around 28% of those aged 25-54 who were economically active at some point over the period experienced at least one spell out of work (i.e. of unemployment, inactivity or both). Moreover, among those who were out of work at least once during this three-year period, 54% were economically inactive at least once (and 35% experienced inactivity but were never unemployed). As pointed out in *European Commission* (2010b), this highlights the need to ensure that employment services do not focus simply on the unemployed but also offer guidance and support for inactive people wanting to work.

Finally, it should be noted that these patterns differ markedly by sex: a larger proportion of women (35%) than men (22%) experienced at least one spell out-of-work over the three-year time span. Moreover, among women who experienced at least one spell out of work, 66% were economically inactive at least once compared to 39% of men. According to *European Commission* (2010b), this relates partly to the unequal division of family responsibilities and the report underlined that, 'Employment services (both public and private) tend to deal primarily with individuals who are unemployed and actively seeking work, yet it is clear that many people, particularly women, have breaks from work in which they are not unemployed but inactive. It would be a major improvement in the functioning of the labour market if spells of unemployment could be avoided for individuals who have been inactive but want to return to the labour market'; see also Section 3.3.c on the role of employment services.

1.2. How do the EU Member States fare in terms of long-term unemployment?

The picture at EU level, as described above, represents an average position, within which there are heterogeneous situations and developments across Member States. Moreover, diversity has increased since 2008. This is illustrated by the unemployment rates across Member States in mid-2012 which range from around 5% among the best performing countries (Austria, Netherlands, Luxembourg and Germany) to around 25% in Spain and Greece.

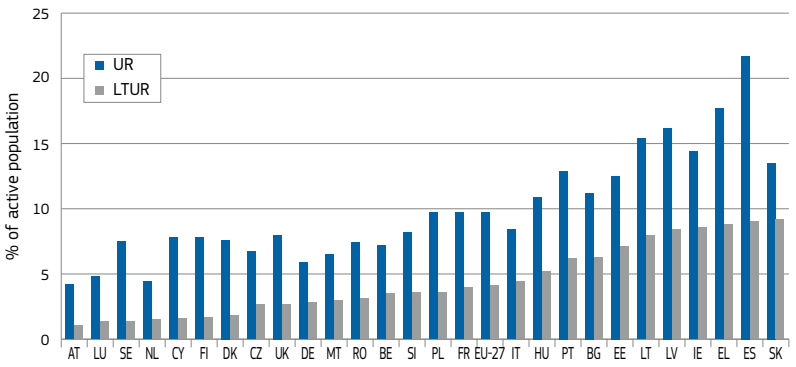
1.2.1. Large variations in the long-term unemployment rate across Member States

Chart 8 shows the 2011 unemployment and long-term unemployment rates for the 27 Member States. The countries which recorded the lowest level of long-term unemployment (less than 2%) in 2011 were Austria, Luxembourg, Netherlands, the Nordic countries (Sweden, Finland, Denmark) and Cyprus. Most of these countries (with the exception of Cyprus) are characterised by a high GDP per capita, a high rate of expenditure on social protection, a relatively flexible labour market, and above-average expenditures on active labour market policies (as a percentage of GDP). Moreover, these are countries that weathered the latest economic crisis relatively well, at least in terms of labour market impact.

At the other end of the spectrum, where 7% or more of the active population has been unemployed for at least one year, are the Baltic States, Ireland, Greece, Spain and Slovakia. Most of these countries did not have high rates of long-term unemployment before the recession (with the exception of Slovakia) but have been the hardest hit by it, as shown in Chart 9. Generally speaking, there seem to be geographic patterns, with high rates in the southern and most eastern Member States, low rates in the Nordic countries, and relatively low rates in the north-western Member States.

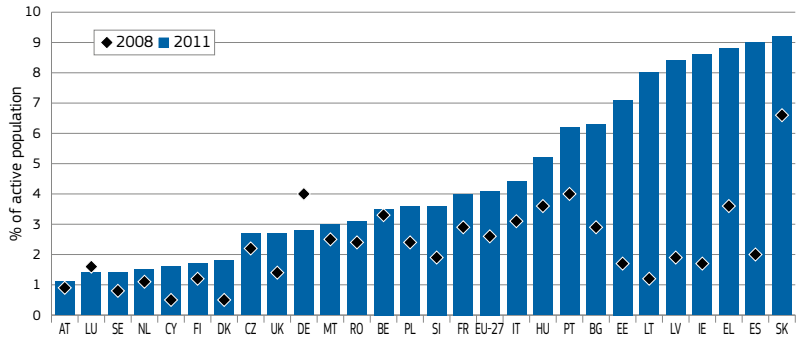
Across most Member States, the long-term unemployment rate seems (logically enough) to be correlated with the overall level of unemployment. There are, however, some variations (higher or lower-than-expected levels of long-term unemployment) due to the varying rates of incidence of long-term unemployment (see Chart 12). For instance, in 2011, Belgium had a slightly lower rate of unemployment than Sweden (7.2% and 7.5% respectively). However, due to a much higher incidence of long-term unemployment in Belgium, the long-term unemployment rate is 2.5 times greater than it is in Sweden (3.5% and 1.4% respectively).

Chart 8: Unemployment and long-term unemployment rates as a percentage of the active population, 2011



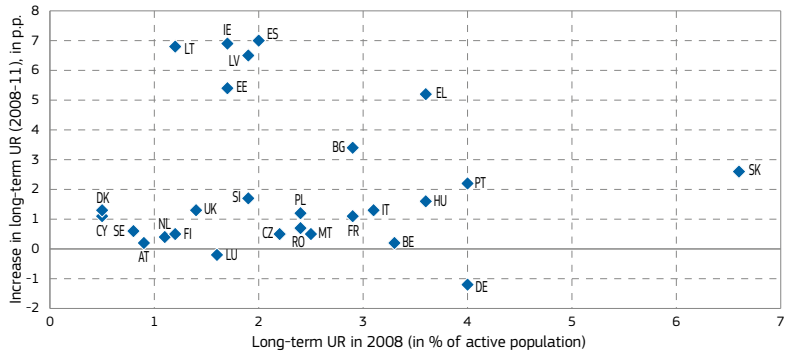
Source: Eurostat, EU-LFS.

Chart 9: Long-term unemployment rate as a percentage of the active population, 2008 and 2011



Source: Eurostat, EU-LFS.

Chart 10a: Long-term unemployment rate as a percentage of the active population in 2008 and increase over 2008-11 (in percentage points)



Source: Eurostat, EU-LFS.

1.2.2. Increases in almost all countries but sharper rises in those most affected by the crisis

Chart 9 indicates the long-term unemployment rates in Member States in 2011 as compared with 2008, i.e.: when the overall EU rate was at its lowest in recent years and for many individual Member States[12]. This change in the 2008-11 period can therefore be considered as a measurement of the impact of the crisis on the long-term unemployment rate.

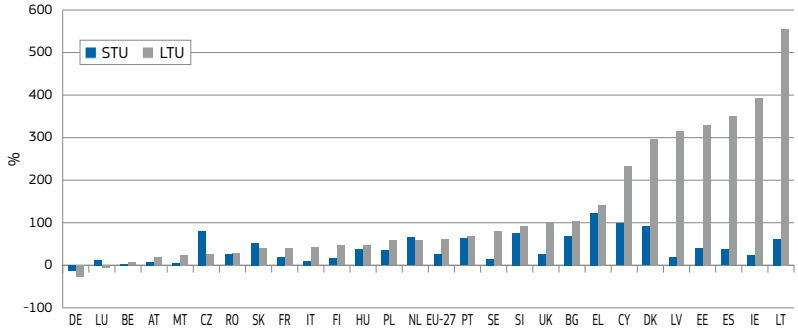
Between 2008 and 2011, the long-term unemployment rate increased in the great majority of Member States, with the notable exceptions of Germany (-1.2 pp) and Luxembourg (-0.2 pp), countries that are known to have weathered the economic recession well, or at least managed to limit the labour market impact. Moreover, the long-term unemployment rate increased only marginally in Austria, Belgium, Netherlands, Finland, Malta and Czech Republic. In other countries, however, the increase has been more substantial, particularly in Greece, the Baltic countries, Ireland and Spain, where it has ranged from 5 to 7 pps.

Generally speaking, the countries that had low rates of long-term unemployment (under 1.5%) in 2008 did not record large increases (Cyprus, Denmark, Sweden, Austria, Netherlands, Finland, Luxembourg). However, most of the countries in which long-term unemployment has increased substantially (more than 5 pps) since 2008 (Spain, Latvia, Ireland, Estonia, Lithuania) originally had rates below the EU average (and even below 2%), but were very adversely affected by the drop in output and employment that took place in 2008-09. In this respect, Greece is an exception in that it already had a high long-term unemployment rate in 2008 (3.6%, the fourth highest rate in the EU). Among other countries that recorded high rates of long-term unemployment in 2008, there were diverging trends: further increases in Slovakia, Portugal, Hungary and Bulgaria compared with moderate increases in Italy and Belgium, and even improvement in the case of Germany.

Germany is an exception in that while its 4.0% long-term unemployment rate was the third highest in 2008, this rate dropped to 2.8% in 2011. This can probably be explained by the country's resilience in the face of the crisis, not least of which through flexible adjustments to working time, but also through a general reduction in unemployment as a result of previous in-depth reforms of the unemployment benefits system (Harz reforms).

Overall, developments in the long-term unemployment rate across Member States appear highly correlated with the changes in economic conditions during and following the 2008-09 economic crisis, although the closeness of the association also depends on the reactions

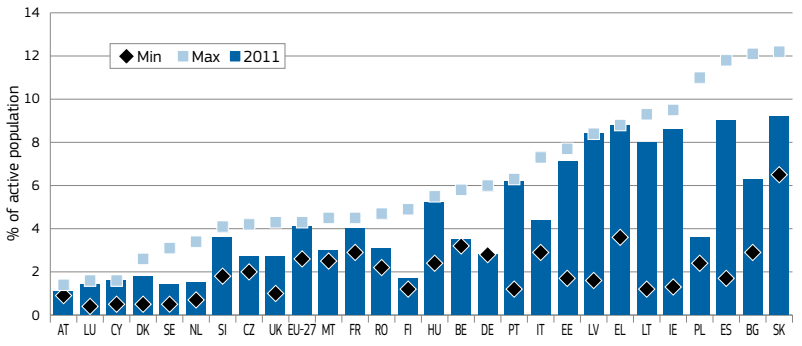
Chart 10b: Change in the number of unemployed by duration, EU-27, 2008-11 (%)



Source: Eurostat, EU-LFS.

(12) Considering the 2000-11 period, the minimum rate of long-term unemployment was reached in 2008 in 12 Member States, in 2007 in four Member States and in 2009 in four others. For the other countries, the minimum was reached before 2005, except for Germany where the minimum rate was reached in 2011.

Chart 11: Minimum and maximum reached since the 1990's together with 2011 levels in the long-term unemployment rate across EU Member States (as a percentage of the active population)



Source: Eurostat, EU-LFS.

within national labour markets to those shocks which have varied considerably between countries[13].

The rise in long-term unemployment in most Member States can also be viewed in Chart 10b, based on relative changes in the total short and long-term unemployment figures over the 2008-11 period. It shows that long-term unemployment has more than doubled in the UK, Bulgaria and Greece, more than tripled in Cyprus and Denmark, and increased more than four-fold in the Baltic states, Ireland and Spain.

1.2.3. Most Member States have experienced higher long-term unemployment rates in the past

When comparing data across the entire period for which Eurostat data on long-term unemployment exists, (and which varies between countries)[14], it appears that in only a few Member States was unemployment at its highest in 2011 (Cyprus, Greece and Latvia – see Chart 11) or 2010 (Estonia, Hungary and Portugal).

Moreover, the peaks in the long-term unemployment rate that followed the 1993-97 recession were much higher than the levels recorded in 2011 in Denmark, Sweden, Finland, Belgium, Italy, the Netherlands and the UK, but also in Spain and Ireland, despite the very high levels reached in these countries recently. For Austria and Germany, the peak was recorded in the mid-2000s.

1.2.4. The incidence of long-term unemployment varies from 20 to 70% across Member States

Apart from the long-term unemployment rate, it is also appropriate to look at the incidence of long-term unemployment relative to total unemployment. Indeed, despite the limitations of this indicator (notably its inverse relationship with the economic cycle, see Section 1.1.d above) it remains an important variable for each Member State to take into account when considering how best to address its particular unemployment problem.

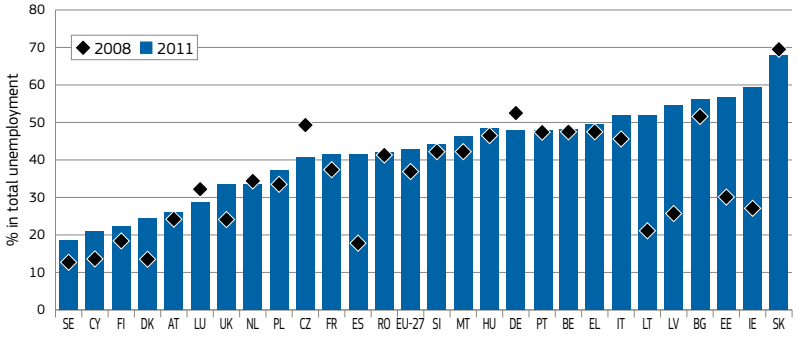
As shown in Chart 4, the incidence of long-term unemployment decreased from 2007 (43%) until the beginning of 2009 (33.2%) before it again increased in 2010 and 2011 (43%).

In 2011, the Member States in which long-term unemployment represented less than one-third of total unemployment were generally those that had a low level of unemployment (Austria, Netherlands and Luxembourg) but also those known to have dynamic labour markets with limited persistence rates in unemployment (such as the Nordic countries and the UK). For instance, in 2008, only around 13% of unemployed persons in Sweden and Denmark were unemployed for longer than one year and although this proportion has since increased, in 2011 the levels were still only 19% and 24% respectively.

At the other end of the spectrum, between 50% and 60% of the unemployed in 2011 had not worked for at least one year in the Baltic countries, Italy, Bulgaria, and Ireland; this rate was over 65% in Slovakia. Nevertheless, these countries represent different situations. In Italy, Bulgaria and Slovakia, the incidence of long-term unemployment was already high in 2008, and this is seen as a structural problem. On the other hand, in the Baltic States and Ireland it is largely a new phenomenon brought about by the particularly strong impact of the economic recession.

In Germany, there have been clear signs of improvement in labour market conditions since 2008, with a drop of almost 5 pps in the incidence of long-term unemployment, although it remained at 48% in 2011, far above the EU average.

Chart 12: Incidence of long-term unemployment (long-term unemployment as a percentage of total unemployment), 2008 and 2011, by Member State

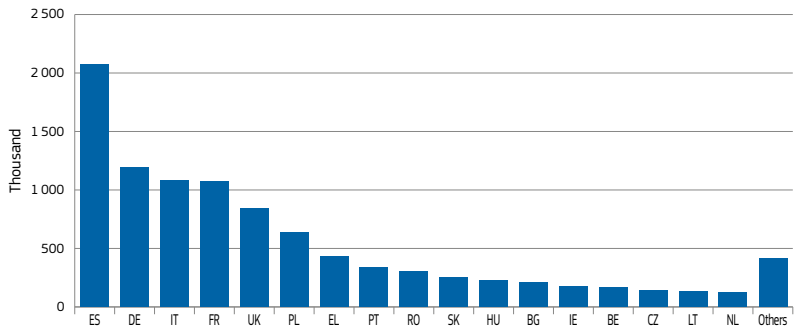


Source: Eurostat, EU-LFS.

(13) European Commission, 2010c, Employment in Europe, Chapter 1.

(14) This period varies across Member States. The first years for which the data series is available are 1992 for Belgium, Denmark, Ireland, Greece, Spain, France, Luxembourg, Netherlands, Portugal, Sweden and UK; 1993 for Germany and Italy; 1994 for Austria; 1996 for Hungary and Slovenia; 1997 for Poland, Romania and Finland; 1998 for Czech Republic, Estonia, Lithuania, Latvia and Slovakia; and 2000 for the EU-27 aggregate, Bulgaria, Cyprus and Malta.

Chart 13: Number of long-term unemployed persons by Member State in 2011 (in thousands)



Source: Eurostat, EU-LFS.

In Spain, the incidence of long-term unemployment was, in 2011, somewhat lower than the EU average, despite the country's critical unemployment problem. This can be explained by two factors:

- firstly, it had one of the lowest incidence of long-term unemployment before the recession (17.8% in 2008) due to a relatively dynamic labour market[15] based partly on the extensive use of temporary contracts;
- secondly it continued to experience strongly rising unemployment throughout 2010-11, with substantial inflows into unemployment resulting in a relatively low rate of long-term unemployment as a share of total unemployment.

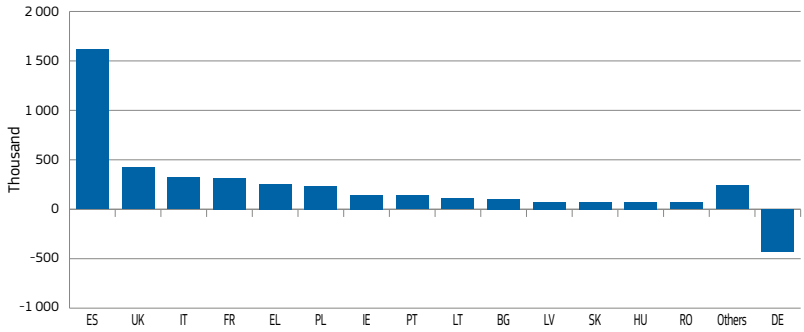
1.2.5. Concentration of the increase in Spain and a few other Member States

In terms of the overall number of long-term unemployed in the EU in 2011, 70% are in the six largest Member States, which is roughly in line with their share of the total EU labour force.

However, in Spain alone there were more than two million long-term unemployed persons in 2011, or more than 21% of the EU total (while accounting for less than 10% of the total EU labour force) while Germany accounted for 12% of the long-term unemployed (compared to its 18% share of the EU labour force). Comparable figures for the UK were 8.5% and 13%. Member States accounting for much higher shares of long-term unemployment relative to their overall weight in the EU labour force are Greece, Portugal, Slovakia, Hungary, Bulgaria and Ireland.

In terms of their contribution to the total number of long-term unemployed in the EU, the most striking evidence is seen in the net increase over the 2008-11 period (see Chart 14) during which Spain accounted for an increase of 1.6 million out of an EU total of 3.7 million (or 43%). The UK accounted for 11% of the net increase; Italy and France for around 8.5% each; Greece and Poland for around 6% to 7%; and Ireland and Portugal for close to 4%. Together these eight countries accounted for over 90% of the net increase in long-term unemployment in the EU over the 2008-11 period, while accounting for less than 60% of the total labour force.

Chart 14: Change in the number of long-term unemployed (2008-11) by Member State (in thousands)



Source: Eurostat, EU-LFS.

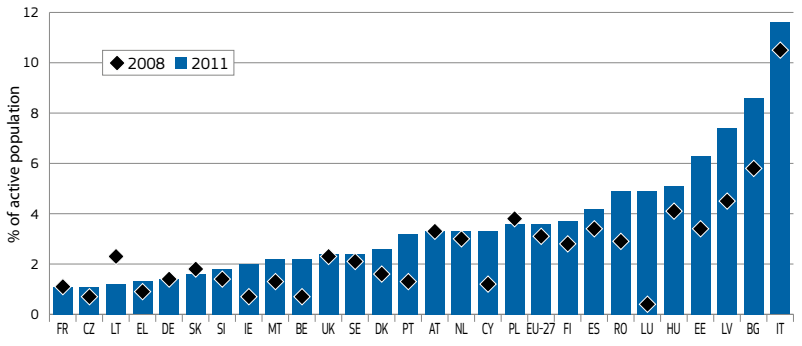
1.2.6. Large variations in the share of discouraged workers across countries

Chart 15 shows the share of discouraged workers, defined as those who are inactive and wanting to work, but not seeking a job, as a percentage of the the active population. In 2011, there was tremendous variation between Member States, with high rates (around 5-8%) in Hungary, Estonia, Latvia and Bulgaria, and nearly 12% in Italy. Between 2008 and 2011, the share increased in 21 out of 27 Member States, particularly in those in which unemployment had increased significantly due to the crisis (Latvia, Estonia, Bulgaria, Ireland, Cyprus, Portugal and Denmark).

Cross-country differences in the share of discouraged workers also seem to be

[15] ISG and RWI (2010) estimated country characteristics with respect to labour market transitions. They identified 'flexicurity'-type economies which feature low job stability and high levels of job-to-job transition, but also relatively high employment security (not necessarily in the same job) and high job-finding rates by the unemployed. These countries precisely included Spain, in addition to Denmark, Finland, the UK and the Baltic States. At the other end of the spectrum, with high job security but low exit rates from unemployment, they found, for example, Germany, Greece, and Italy.

Chart 15: Persons available and wanting to work but not seeking a job, as a percentage of the active population



Source: Eurostat, EU-LFS.

influenced by the nature of the unemployment benefits system. In countries where the system is not generous (in particular in some Central and Eastern or Southern Member States) discouraged workers have relatively little to lose by becoming inactive rather than reporting themselves as unemployed. This may also explain the notable difference between Italy where long-term unemployed are practically not covered by unemployment benefits and Spain, both southern European Member States (See Section 3).

1.3. To what extent does short-term unemployment translate into long-term unemployment across EU Member States?

1.3.1. High correlation between increases in overall and long-term unemployment

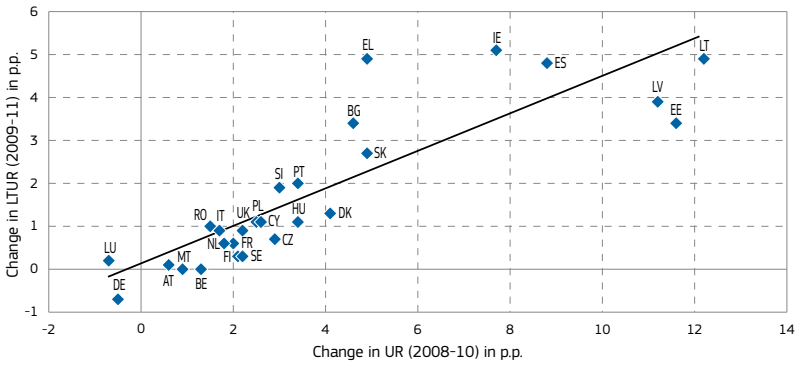
As underlined above, developments in long-term unemployment since 2008 have primarily been driven, with a certain lag, by the rise in unemployment that followed the economic downturn. Countries in which long-term unemployment increased substantially are obviously also those in which short-term unemployment had previously increased.

Chart 16 presents the relationship between changes in the unemployment rate in the first two years of the crisis (2008-10) and changes in the long-term unemployment rate one year later (2009-11). It shows that, on average, a one percentage point increase in the unemployment rate in the 2008-10 period translated into a 0.43 percentage point increase in the long-term unemployment rate in the 2009-11 period[16].

However, based on this relationship, some Member States (Greece, Ireland, Spain and Bulgaria) have displayed larger increases in long-term unemployment rate than might be expected based on the original increases in unemployment, while the Nordic countries (Sweden, Finland, Denmark) and Estonia, Latvia, Czech Republic and Belgium have had lower increases than expected. These differences can be explained both by cyclical factors (e.g. the more protracted crisis in Greece and Spain) and structural factors (e.g. the more favourable labour market institutions in Denmark); (see Section 3).

In other words, while it is clear that long-term unemployment is fuelled by changes in short-term unemployment, there are varying degrees of persistence in unemployment across EU Member States, as has been shown in previous studies (see Box 4).

Chart 16: Change in unemployment rate (2008-2010) and in long-term unemployment rate (2009-11), in percentage points



Source: DG EMPL calculations based on Eurostat, EU-LFS. Both rates are calculated as a percentage of the active population.

Notes: y = 0.4258x + 0.0958
R^2 = 0.7328

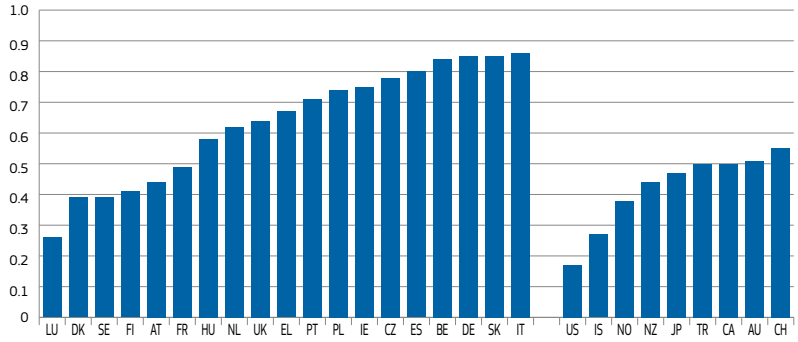
[16] At EU level, the unemployment rate increased by 2.6 pps in 2008-10 (from 7.1% to 9.7%) while long-term unemployment increased by 1.1 p.p. in the 2009-11 period (from 3.0% to 4.1%).

Box 4: Sensitivity of long-term unemployment to aggregate unemployment based on historical data

In order to assess the sensitivity of long-term unemployment to aggregate unemployment, Guichard and Rusticelli (2010) used historic data to develop simple dynamic regressions explaining long-term unemployment in terms of aggregate unemployment. They found that in the majority of OECD countries, long-term unemployment increases with aggregate unemployment. Most of the long-term impact of a sustained increase in unemployment on long-term unemployment takes place in three to four years and, in nearly all cases, this long-term effect is higher than the actual share of long-term unemployment. As a result, the incidence of long-term unemployment is expected to rise with unemployment.

What also comes out of their work is that cross-country differences are important and that the impact of a sustained increase in unemployment on its long-term component is quite different for the Euro area, Japan and the United States. After a permanent shock to unemployment, on average 70% of unemployed persons eventually became long-term unemployed in Europe, compared with under 50% in Japan and under 20% in the United States. However, within the Euro area, differences range from 25% in Luxembourg to over 80% in Italy (see Chart 17). A more recent analysis of the evolution of long-term unemployment in the US suggests, however, that the impact of the latest recession on long-term unemployment has been much greater than in the past[1].

Chart 17: OECD estimates of the effect of a unit shock to unemployment rate on long-term unemployment for EU and non-EU OECD countries (based on historical data)



Source: Guichard and Rusticelli (2010).

(1) For instance, while during the recession at the beginning of the 2000's the incidence of long-term unemployment (among total unemployment) in the US had increased from 6.1% to 12.7% (over 2001-04), the increase has been much more severe in the latest recession (from 10.6% to 31.3% for the 2008-11 period).

1.3.2. The persistence rate in unemployment has increased and varies from 15% to 65% across Member States

An alternative way of measuring how short-term unemployment translates into long-term unemployment across countries is to calculate the ratio between those who have been unemployed for 12-24 months and those who were unemployed for fewer than 12 months one year earlier. This ratio can be interpreted as a **persistence rate in unemployment for the short-term unemployed** (less than 12 months)[17].

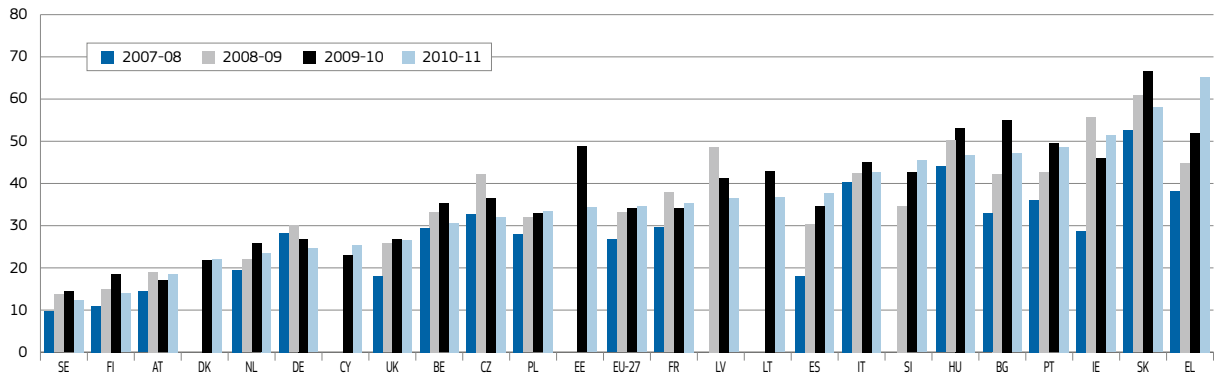
Chart 18 shows this ratio for various years[18] and for most Member States. At EU level, for instance, in 2010, there were 4.8 million persons unemployed for 12-24 months, compared to 14 million persons who were unemployed for fewer than 12 months in 2009, giving a persistence rate in unemployment of 34%. This ratio was much lower in 2007-08 (27%) but worsened in 2008-09 (33%). The most recent data available, for 2010-11, shows only a very limited increase, to 34.5%, which is largely due to the worsening situation in a few countries (particularly Spain and Greece) while there have been improvements in most other countries.

Indeed, for most Member States (18 out of 24), the highest persistence rates for the

(17) On a methodological note, it should be noted that in *OECD* (2012), the same calculation was made except that it is called the 'unemployment-exit probability' since the formula used was reversed: *one minus the ratio*. In our view, it may be preferable to calculate and label it as a 'persistence ratio in unemployment' since the term 'unemployment-exit probability' may imply that the individuals actually found a job, while they may simply have fallen into inactivity or may be unemployed again after a spell of employment (and therefore again be in the short-term unemployment category), see section 4.4.

(18) The rates for each year are the averages of the rates calculated for each quarter.

Chart 18: Persistence rate in unemployment for the short-term unemployed (ratio between the number of unemployed with a duration of 12-24 months and those unemployed for fewer than 12 months one year before)



Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: Luxembourg, Malta and Romania are not shown due to missing data. No data for 2007-08 and/or 2008-09 for Denmark, Cyprus, Estonia, Latvia, Lithuania and Slovenia due to too low number of observations.

short-term unemployed were reached between 2008 and 2009 (six Member States) or between 2009 and 2010 (12 Member States) before the improvement in the last year for which data is available (2010-11). This reflects the impact of the moderate economic recovery on labour demand and the declining flows into short-term unemployment which have had a positive influence on the probability of exiting unemployment.

Over the last few years, the share of the short-term unemployed remaining in unemployment has been the lowest in the Nordic countries (Sweden, Finland, Denmark), Austria, Cyprus, Germany, the Netherlands and the UK. This low rate of persistence seems to be explained partly by favourable cyclical developments, but also by the labour market institutions in those countries. In Germany, the persistence rate decreased substantially between 2009 and 2011 after an initial increase during the first year of the crisis (2008-09).

On the other hand, a high persistence ratio is found in Greece, Slovakia, Ireland, Portugal, Bulgaria and Hungary, with more than 40% of the short-term unemployed still unemployed one year later. The largest increases in the persistence rate over the period analysed are found in Greece, Ireland and Spain[19] (with a 20 pps or more increase), with a particularly high persistence rate in Greece (65.2%).

Many factors contribute to explaining cross-country differences in the persistence rate in unemployment for the short-term unemployed. Labour demand is obviously one factor since the probability of staying in, or exiting from unemployment depends very much on the opportunities available in the labour market[20]. However, other structural or institutional factors also play a role. For instance, Member States that invest in active labour market policies seem to increase the chances of the unemployed finding jobs[21]. The various factors (and policies) influencing long-term unemployment are discussed in Section 3.

1.3.3. A higher persistence rate for the long-term unemployed

In terms of policy action, long-term unemployment can be tackled in two ways: by preventing the short-term unemployed from becoming long-term unemployed in the first place, or by ensuring that the long-term unemployed are able to exit and return to employment easily. Therefore, it is also important to look at the **persistence rate in unemployment for the long-term unemployed**, paying particular attention to cross-country differences. It can be calculated as the ratio between the number of unemployed with a duration of more than 24 months and those unemployed for more than 12 months one year before[22].

Chart 19 shows this ratio for recent years in most Member States. The much higher persistence rate for the long-term unemployed (57% in 2010-11 at EU level) than for the short-term unemployed (34.5%) confirms the well-known fact that the chance of exiting unemployment decreases with duration. This is true for

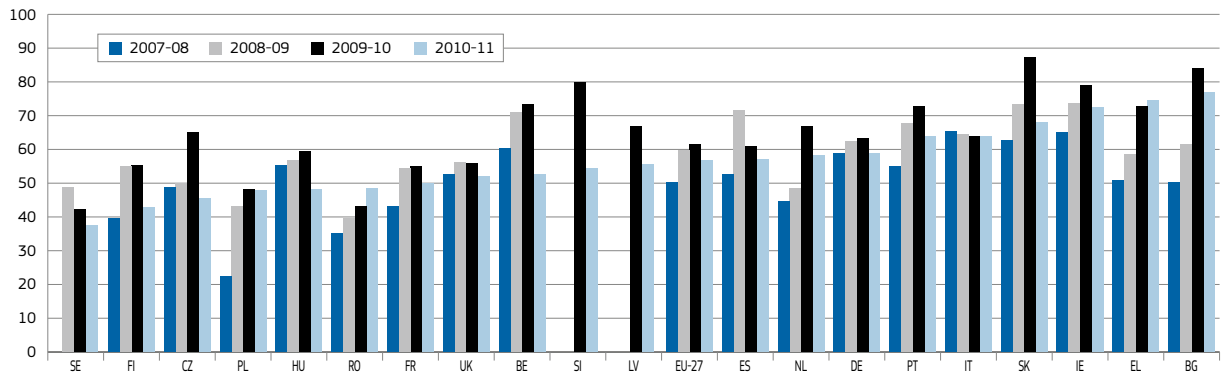
(19) In Spain, the persistence rate before the crisis (2007-08) was around 18%, far below the EU average (27%). This was presumably due to a dynamic labour market where exits out of unemployment were however not necessarily long-lasting due to the high prevalence of temporary contracts. Interestingly, even between 2008 and 2009, the persistence rate remained moderate (30%, versus 33% for the EU average). In the last year available (2010-11) the persistence rate in unemployment in Spain (at 38%) was lower than in eight Member States, but this rate applies to a very large pool of short-term unemployed (around 3 million) and therefore still ultimately results in a high number of long-term unemployed.

(20) The correlation coefficient between persistence rate in unemployment and job vacancy rate is indeed high and negative (-62%) for 2010.

(21) Considering the persistence rate in unemployment for the short-term unemployed presented above for the 'worst year' (2009-10), it appears that the correlation with expenditures in active labour market policies (including labour market policies) as a percentage of GDP is negative and relatively high (-47%). It should be noted that expenditures in ALMPs explain much better the variations in persistence rates in unemployment than variations in the overall long-term unemployment rates.

(22) In order to obtain a more precise measurement, it would be useful to calculate the persistence rate solely for those who have been unemployed 12 to 24 months, i.e., the ratio between those unemployed for 24 to 36 months and those unemployed 12 to 24 months one year before. However, such calculation cannot be performed since the DURUNE variable in the EU-LFS is disseminated by class and all those unemployed 24 to 48 months are grouped together.

Chart 19: Persistence rate in unemployment for the long-term unemployed (ratio between the number of unemployed with a duration of more than 24 months and those unemployed for more than 12 months one year before)



Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: Denmark, Estonia, Cyprus, Luxembourg, Lithuania, Malta and Austria: not shown due to missing data. No data for 2007-08 and/or 2008-09 for Latvia, Sweden and Slovenia due to low number of observations.

Table 2: Comparing persistence rates in unemployment for the short vs. the long-term unemployed in 2010-11

Indicators		Persistence rate for STU		
		<33%	33-45%	>45%
Persistence rate for LTU	<50%	SE, FI, CZ	PL, RO, FR	HU
	50-60%	UK, BE, NL, DE	LV, LT, ES	SI
	>60%		IT	PT, SK, IE, EL, BG

Source: DG EMPL calculations based on Eurostat, EU-LFS.

all the Member States for which data is available.

With regard to developments in recent years, the persistence rate for the long-term unemployed worsened markedly between 2007-08 (50%) and 2008-09 (60%) to reach 62% in 2009-10, before improving in 2010-11 (57%). The rate was the highest between 2009 and 2010 in 14 out of the 20 Member States for which data is available, and between 2008 and 2009 in three others. The only two Member States in which the persistence rate worsened further in 2010-11 were Greece (74.5%) and Romania (but to a relatively low rate of 48.5%).

Over recent years, the persistence rate for the long-term unemployed has been lowest in Poland, Romania, Sweden and Finland, with an average of less than 50%. However, more than two-thirds of the long-term unemployed remained unemployed in Slovenia, Bulgaria, Ireland and Slovakia (an average figure over the four years analysed). In the last year for which data is available (from 2010 to 2011) the highest persistence rates were found in Bulgaria, Greece, Ireland and Slovakia, with rates close to or above 70%. The largest increases (around 25 pps) since the period before the crisis (2007-08) occurred in Bulgaria, Greece and also Poland (but from a very low level).

The rankings across countries bear some similarities to the ranking based on the persistence rate for short-term unemployed, but with some differences (see Table 2). In particular, the Netherlands, Belgium, the UK and Germany have low persistence rates for short-term unemployed, but much higher rates for long-term unemployed. In other words, in these countries, a limited proportion of the unemployed become long-term unemployed but when they do, they have a very high persistence rate. In contrast, in Hungary, the two rates are almost equal.

Unlike the situation for the short-term unemployed, the persistence rate for the long-term unemployed is not closely correlated with either the job vacancy rate or active labour market policy (ALMP) expenditures[23]. This suggests that:

- Improvements in the economic and labour market situation have a greater impact on those with the strongest links to the labour market, namely the short-term unemployed. Thus there is uncertainty about the extent to which a future recovery will lead to a strong reduction in long-term unemployment.

- While active labour market policies can help to reintegrate the short-term unemployed (even if the transition may not always be long lasting) their impact on the exit rate out of long-term unemployment seems more limited. This may be because the long-term unemployed have limited access to such measures or lack strong incentives to participate. It may also be that the measures available are not efficient in ensuring their return to employment (see Section 3 for more details).

While the persistence rates in unemployment presented above have been calculated on the basis of aggregate cross-sectional data, Section 4 of this chapter contains analyses of the transition rates between various labour force statuses based on longitudinal data (also from EU-LFS), which provide a more refined analysis.

[23] For 2010-11, the coefficient of correlation with the job vacancy rate (in 2010) is around -23% (and R^2=0.05) and for the 2009-10, the coefficient of correlation with the level of expenditure in ALMPs is around -7% (R^2=0.005).

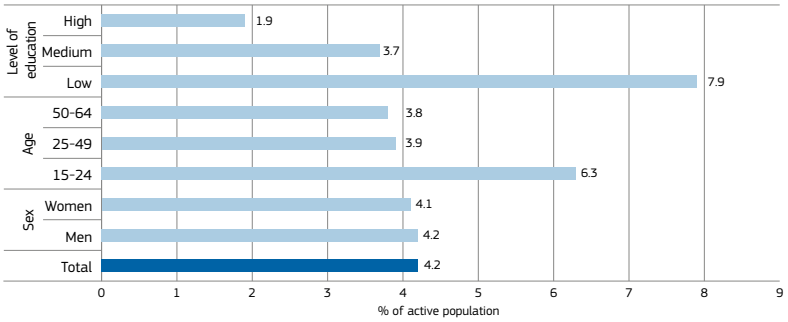
2. Who is affected by long-term unemployment?

From a policy perspective, it is important to identify not only the overall extent of long-term unemployment, but also the main groups of workers affected in terms of sex, age and education level, as well as in terms of their origin, reason for leaving employment, and previous sector/occupation. This section contains an analysis at both EU and Member State level, with a focus on the 2008-11 period in order to assess the impact of the recession.

2.1. Individual characteristics strongly influence levels of long-term unemployment

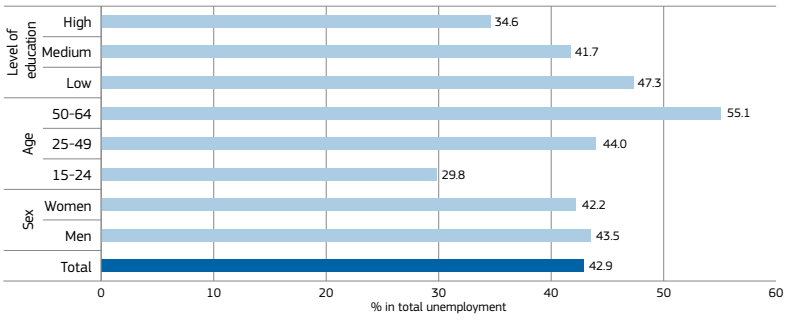
Charts 20a, 20b and 20c use different indicators to show how various sub-groups were affected in 2011: the long-term unemployment rate, the incidence of long-term unemployment as a percentage of unemployment, and the increase in the absolute number since 2008.

Chart 20a: Long-term unemployment rate in 2011, as a percentage of the active population (%)



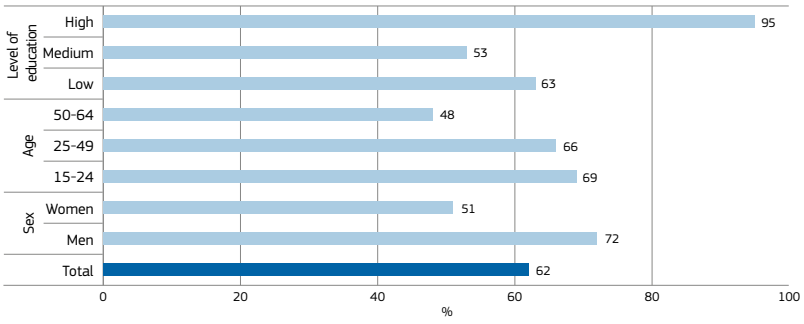
Source: DG EMPL calculations based on Eurostat, EU-LFS.

Chart 20b: Incidence of long-term unemployment within total unemployment in 2011 (%)



Source: DG EMPL calculations based on Eurostat, EU-LFS.

Chart 20c: Changes in the numbers of long-term unemployed, EU-27, 2008-2011 (%)



Source: DG EMPL calculations based on Eurostat, EU-LFS.

2.1.1. Greater increase in long-term unemployment among men

In 2011 at EU level, women and men experienced very similar rates of long-term unemployment (4.1% and 4.2% respectively); this represents a significant change from the situation in 2000 when women, on average, were much more affected than men (4.8% vs. 3.5%).

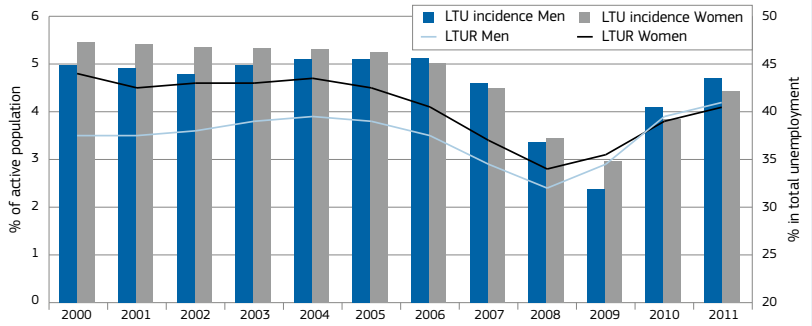
This change was the result of the sharp increase in long-term unemployment among men (from 2.4% to 4.2% between 2008 and 2011) compared to the more moderate increase among women (from 2.8% to 4.1%) which reflects the more serious impact of the crisis on sectors where men are over-represented, notably construction and manufacturing.

In 2011, 17 out of the 27 Member States had higher long-term unemployment rates for men than for women. This was particularly the case in Ireland (6.6 pps), Latvia (4.1 pps) and Lithuania (2.6 pps) – all countries that were strongly affected by the 2008-09 economic recession, notably in male-dominated sectors. At the other end of the scale, only Greece experienced a significantly higher rate for women than for men (11.6% vs. 6.8%). Italy, Czech Republic and Spain also had higher long-term unemployment rates among women than men, although the gender gap was much smaller, at around 1 pp.

Over the past decade, however, differences between women and men in terms of the long-term unemployment rate were mainly explained by differences in the overall unemployment rate (with a much higher rate for women in 2000-08) rather than the incidence of long-term unemployment (which was also higher for women, but with much smaller differences, even at the start of the 2000's).

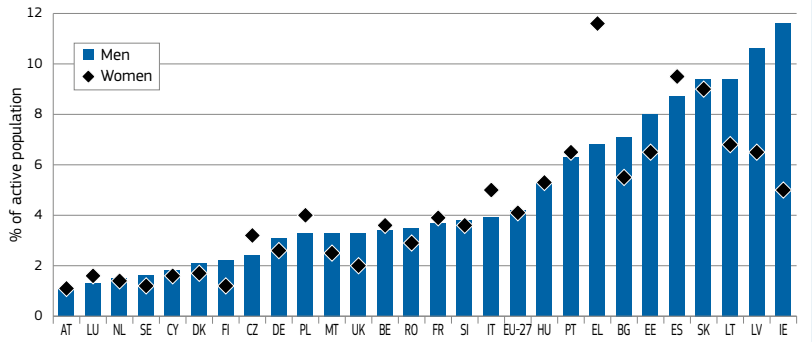
In 2011, 43.5% of unemployed men were long-term unemployed, compared to 42.2% of women. Moreover, 20 Member States had a higher incidence of long-term unemployment among men than women, although the gender gap was only significant (>10 pps) in certain countries: Malta (18.6 pps), Ireland (18.2 pps), Latvia (10.5 pps) and the UK (10.2 pps). On the other hand, women were more often long-term unemployed in Greece (9 pps), and to a lesser extent in Belgium (2.7 pps), Spain (2.1 pps) and Poland (1.9 pps).

Chart 21: Long-term unemployment rate by sex as a percentage of the active population (left scale) and incidence of long-term unemployment as a percentage of total unemployment (right scale), EU-27



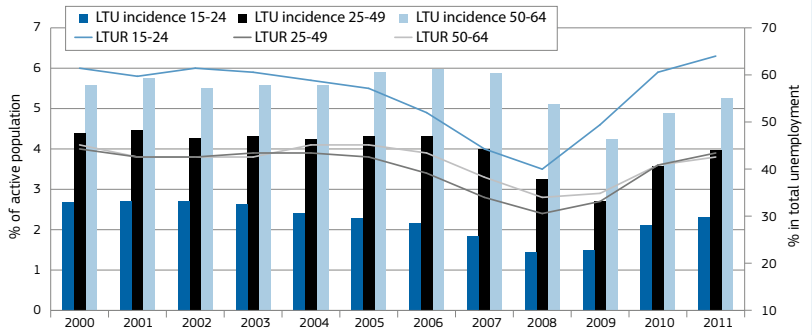
Source: DG EMPL calculations based on Eurostat, EU-LFS.

Chart 22: Long-term unemployment rate (for men and women) as a percentage of the active population, 2011



Source: DG EMPL calculations based on Eurostat, EU-LFS.

Chart 23: Long-term unemployment rate by age group as a percentage of the active population (left scale) and incidence of long-term unemployment, as a percentage of the total unemployment (right scale)



Source: DG EMPL calculations based on Eurostat, EU-LFS.

Another result was that by 2011 at EU level, around 55% of the long-term unemployed were men and 45% were women (compared to a more balanced distribution in 2008 of 51.5% and 48.5% respectively)[24] with this pattern repeated in most Member States[25]. However, more than two-thirds of the long-term unemployed were men in Ireland, Malta and Finland and at least 60% were men in the UK, Latvia and Romania. Only in Greece, the Czech Republic and Poland were there more women long-term unemployed than men.

Over the 2008-11 period, the increase in the proportion of men in total long-term unemployed exceeded 10 pps in the Member States in which the impact of the recession on male-dominated sectors was particularly pronounced (Latvia, Greece, Finland, Spain and Lithuania). In four Member States (Estonia, Romania, the UK and Ireland) the share of women in long-term unemployed increased overall although most of the long-term unemployed were still men. In the UK, long-term unemployment increased more amongst women because of job losses in female-dominated sectors such as retail, financial services and public services[26].

2.1.2. Young people have higher long-term unemployment rates – but older persons have the lowest chances of escaping unemployment

In 2011, the long-term unemployment rates were very similar for prime-age (25-49) and older workers (50-64), at 3.9% and 3.8% of the active population respectively, while the rate for young people (15-24) was much higher, at 6.3% (compared to 3.5% in 2008). This situation is very close to that which existed at the beginning of the 2000's (see Chart 23). In other words, the high level of long-term unemployment among young people represents a return to a previously unsatisfactory situation rather than the development of a new pattern.

In contrast, the indicator concerning the incidence of long-term unemployment shows that those aged 50-64 who were unemployed in 2011 were much more likely to have been in that situation for more than one year (55%), compared to those of prime-age (44%), and even more than those who were youngest (just below 30%).

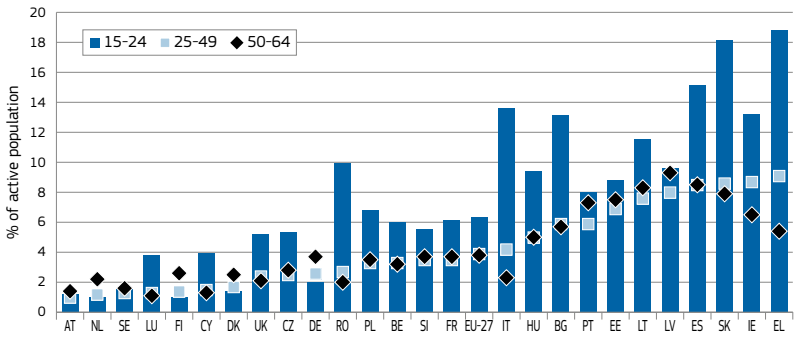
The evidence on young people indicates that their high overall rate of long-term unemployment is mainly due to their high level of unemployment (21.3% in 2011) and *not* to the incidence of long-term

[24] Detailed statistics on the level, distribution and changes of long-term unemployment by sex, age and education level are provided in the tables in annex.

[25] This is due to their slightly higher long-term unemployment rate but also to their overall higher activity rate: in 2011 there were more economically active men than women in all Member States, and in some Member States, men represent close to or more than 60% of the labour force.

[26] European Commission, 2012a, *EEO Review on long-term unemployment.*

Chart 24: Long-term unemployment rate, by age group, as a percentage of the active population, 2011



Source: DG EMPL calculations based on Eurostat, EU-LFS. MT: data not publishable due to too small sample size.

unemployment as such, which is quite low compared to other age groups. On the other hand, those aged 50-64 have, on average, a relatively low unemployment rate (6.9% in 2011) but the majority of those who are unemployed are without a job for a long duration[27].

There are several obstacles preventing older workers from finding a job when they are unemployed, including negative stereotypes among employers resulting in discrimination in recruitment procedures and a greater risk of skill obsolescence. Moreover, their overrepresentation in economic sectors facing restructuring tends to inhibit their redeployment to new jobs[28].

In terms of the overall distribution of the long-term unemployed by age group in 2011, most (61%) were prime-age workers (25-49); 23% were aged 50-64, and 16% were young people[29]. Changes since 2008 have actually led to a decrease of the share of the oldest in overall long-term unemployment due to the fact that older workers have been, on average, less affected by employment losses during the crisis.

Young people have a higher long-term unemployment rate than other age groups in most Member States (23 out of 27). The rate for young persons is three times the overall rate in Romania and Italy, and twice the overall rate in Slovakia, Bulgaria, Greece, Cyprus and Luxembourg. In 2011, more than 15% of economically active young people had been unemployed for more than twelve months in Greece, Slovakia and Spain (and between 10% and 15% in Italy, Ireland, Bulgaria and Lithuania) due to both the high overall rate of unemployment among young people (around 30% or more in 2011) and the high incidence of long-term unemployment among the young (roughly 50%, except in Spain).

On the other side of the scale, a few countries had a lower rate of long-term unemployment among young people than among the average population (Finland, the Netherlands, Germany and Denmark). In these countries, less than 2% of young people were long-term unemployed, which was also the case in Austria and Sweden. In Finland and Sweden, this low rate is achieved despite a high overall rate of unemployment among young economically active persons (more than 20%) because only a very small proportion of those unemployed stay in that situation for more than a year (5% and 6% respectively). In these two countries, the low incidence of long-term unemployment among young people is achieved through specific measures[30] for young people (reinforced during the crisis) such as youth guarantee schemes involving early intervention, guidance and individual plans, providing young people with work experience and personal advisors for early school leavers, etc.

The strong deterioration of employment perspectives for young people in the EU over the last few years has pushed Member States to take specific measures. At EU level, the Council of Education Ministers adopted in May 2012 a benchmark on the contribution of education to employability[31]. It refers to the employment rate of people aged 20-34 who are no longer in education and training, within three years of graduating.

With regard to older workers (aged 50-64), the highest long-term unemployment rates are found in Spain, the Baltic States, Slovakia, Portugal and Ireland – in other words, in those countries that also have the highest long-term unemployment rate among the total population. Generally speaking, the rates for older workers are lower than or similar to the average. However, they do have higher than average rates in the Netherlands, Finland, Denmark, Germany and Sweden, countries in which the overall long-term unemployment rate is moderate or low. Consequently, it is also in those countries that older workers represent a major part of the total long-term unemployed population: more than one-third (compared to 23% at EU level) and rising to 46% in Finland. However, this evidence is also partially explained by the higher rate of labour force participation of this age group in these countries compared to other Member States.

Finally, prime-age workers (25-49) account for 61% of the long-term unemployed at EU level[32] (and more than two thirds in countries such as Italy, Luxembourg, Ireland and Greece), which

(27) This is even more the case as far as very long-term unemployment (unemployment for two years and more) is concerned. It affected around 34% of older workers (50-64) in 2011, compared to only 12.1% among young people (and around 23% of the prime-age workers).

(28) European Commission, 2012a, *EEO Review on long-term unemployment.*

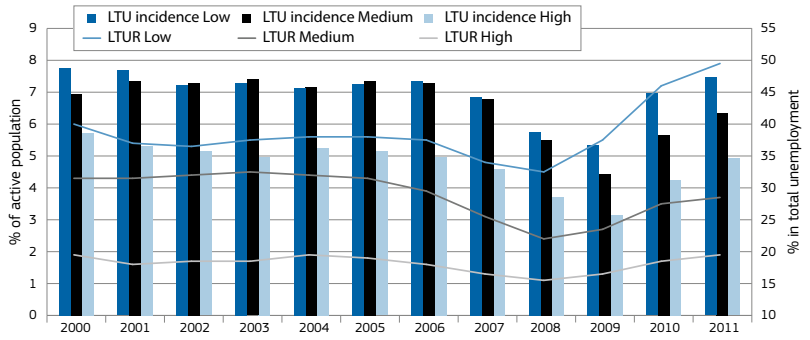
(29) Overall it is important to note that young people never represent a major part of the long-term unemployed (16% on average at EU level) – although the rate is close to 30% in RO and the UK (and a bit higher than 20% in Italy and Cyprus).

(30) European Commission, 2010d, *EEO Review on youth employment measures.*

(31) Council of the EU, Council conclusions on the employability of graduates from education and training, May 2012, http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/educ/130142.pdf.

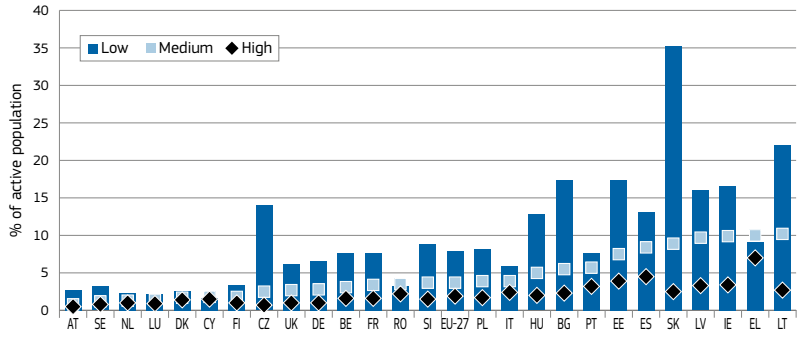
(32) Member States where prime-age workers represent only around half of the long-term unemployed population or even less than 50% are mainly those where older workers are an important share (as described above: Finland, Netherlands, Germany, Sweden), with the exception of the UK and Romania (high share of young people).

Chart 25: Long-term unemployment rate by education level as a percentage of the active population (left scale) and incidence of long-term unemployment, as a percentage of total unemployment (right scale)



Source: DG EMPL calculations based on Eurostat, EU-LFS.

Chart 26: Long-term unemployment rate by educational level, as a percentage of the active population, 2011



Source: DG EMPL calculations based on Eurostat, EU-LFS. MT: data not publishable due to too small sample size.

underlines the importance of ensuring that policies to reduce or prevent long-term unemployed do not focus only on the youngest or the oldest segment of the population.

2.1.3. Education is a major factor in avoiding long-term unemployment

Against the backdrop of continuous restructuring and technological change in our economies, the education level plays a major and increasing role in determining the employability of individuals and hence their chances of finding new employment when they become unemployed. In 2011, the long-term unemployment rate was more than four times higher for those with lower education levels (7.9%) than it was for the highly educated (1.9%) and more than twice as high as it was for those with a medium education level (3.7%)[33].

The higher rate of long-term unemployment among persons with low and medium education levels results mainly from their higher level of overall unemployment (16.7% and 9.0% respectively, compared to 5.6% for the highly educated) rather than from differences in the incidence of long-term unemployment among all unemployed persons, which is much less pronounced (47% and 42% respectively compared to only around 35% among the highly educated). This also means, however, that while highly educated persons have a much lower probability of being unemployed, their risk of becoming long-term unemployed is relatively high if they do become unemployed.

It is notable, moreover, that the number of persons who are long-term unemployed despite having a high education level nearly doubled in the 2008-11 period (+95%), compared to less severe increases for other groups (+53% for those with a medium education level and +63% for those with a low education level). However, this increase took place from a very low level, and highly educated persons still represent only around 13% of all long-term unemployed persons (compared to 11% in 2008). In 2011, most of the long-term unemployed had a medium (around 44%) or low (around 43%) education level.

Relatively lower long-term unemployment rates among the highly educated segment of the active population compared with other groups is a characteristic of all Member States. However it is particularly pronounced in the Czech Republic, Slovakia and Lithuania (with rates more than three times lower than average) while it is less so in Romania, Denmark, and Greece. In Cyprus it appears that having a high education level brings only a limited advantage in terms of avoiding long-term unemployment.

The highest long-term unemployment rates are found in the least-educated segment of the population in every Member State. In some countries, the ratio compared to the overall rate (which is close to 2:1 at EU level) is extremely high: close to 3:1 in Lithuania and Bulgaria, close to 4:1 in Slovakia, and more than 5:1 in Czech Republic. In other Member States the disadvantage is less obvious and comparable to having a medium education level. In fact, long-term unemployment rates are very similar for both educational attainment groups in Portugal, Romania, Cyprus and Greece.

(33) Throughout the chapter the classification of educational levels is based on ISCED: low level of education means 'at most lower secondary' (ISCED 0-2), medium level of education means 'upper secondary and post secondary (non tertiary)' (ISCED 3-4), and high level of education means 'tertiary education' (ISCED 5-6).

Table 3: LTU rate by various sub-groups in the EU-27 (2011)

		Education Level			
Sex	Age groups	Low	Medium	High	Total
Men	15-24	10.4	5.4	2.6	6.9
	25-49	7.8	3.3	1.8	3.8
	50-64	6.5	3.6	2.0	4.0
	Total	7.8	3.6	1.9	4.2
Women	15-24	9.2	5.0	2.7	5.7
	25-49	9.1	3.9	2.1	4.1
	50-64	5.7	3.4	1.6	3.6
	Total	8.0	3.9	2.0	4.1

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Table 4: Incidence of LTU as a percentage of all unemployed by various sub-groups in the EU-27 (2011)

		Education Level			
Sex	Age groups	Low	Medium	High	Total
Men	15-24	36.9	28.9	15.8	31.6
	25-49	48.1	44.1	35.2	44.3
	50-64	56.2	54.1	52.4	54.7
	Total	46.8	42.1	36.2	43.3
Women	15-24	33.0	26.7	16.2	27.5
	25-49	49.9	43.7	34.8	43.6
	50-64	58.7	55.1	46.7	55.5
	Total	47.9	41.3	33.3	42.0

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Relative to all long-term unemployed, the low-skilled segment accounts for more than 45% of the total in France, Belgium and Italy (compared to 43% at EU level) and more than 60% in Spain, Portugal and Malta (almost 90%) – these being the three countries in which the share of low-skilled persons in the total economically active population is the largest. At the other extreme, the low-skilled segment as a share of the long-term unemployed is under 20% in Slovakia, Latvia, Cyprus, Romania, Poland and Lithuania – countries in which the share of low-skilled people in the overall active population is below the EU average.

In 11 Member States, more than half of those who are long-term unemployed have a medium education level (compared to 44% at EU level). The rate is particularly high in Romania, Czech Republic, and Latvia (around two-thirds) and Poland, Slovakia and Lithuania (above 70%). The proportion of people with a medium education level among the long-term unemployed has increased in 20 Member States[34], rising above 9 pps in Czech Republic, Bulgaria, Slovakia and Ireland.

2.1.4. Which sub-groups appear as most affected in cross-tabulations of socio-demographic variables?

In order to identify the most affected sub-groups, Tables 3 and 4 indicate the long-term unemployment rate and the incidence of long-term unemployment by cross-tabulating various socio-demographic variables. Unsurprisingly, the highest long-term unemployment rate is found among those with a low education level, particularly young men (10.4%) and young women (9.2%), with the slight gender gap possibly related to the higher incidence of early-school-leavers among men[35].

Among low-skilled workers, prime-age women are particularly affected by long-term unemployment (9.1% vs. 7.8% for men) and this may be particularly linked to the barriers they face upon entering or re-entering the labour market while coping with family responsibilities, given the frequent lack of affordable care facilities and substantial inactivity/unemployment traps for second-earners – both problems that are more acute for those on lower incomes.

Finally, men aged 50-64 with a low education level are slightly more affected than their female counterparts (6.5% vs. 5.7%). This may be explained by various factors including the fact that older men are over-represented in some of the sectors most affected in the crisis. Older men generally seem to experience higher rates of long-term unemployment than older women, whatever their education level.

In terms of the incidence of long-term unemployment, it is highest among older men and women: more precisely, the sub-groups most affected are older women and men with low and medium levels of education, although it also includes men with high education levels (with an incidence of long-term unemployment around 53%). As described above, the incidence of long-term unemployment and the probability of remaining unemployed increase with age. Conversely, it is lowest for young people, although it is much higher for young men than women (31.6% vs. 27.5%), notably for those with a low education level (36.9% vs. 33.0%).

2.1.5. High long-term unemployment among migrants

Apart from basic socio-economic variables such as sex, age or education, it is important to look at the long-term unemployment rate by origin since migrants[36] tend to have less favourable outcomes on the labour market, and this is reflected in their rates of

[34] See tables in annex. This contrasts with an overall decline (by 2.6 pps) when only the EU aggregate is considered – which is mainly due to changes in Germany (with a strong decline in the number of persons being long-term unemployed among the medium-skilled).

[35] European Commission, 2012a, *EEO Review on long-term unemployment.*

[36] For measurement issues, migrants are defined here as 'third-country nationals'.

unemployment[37]. In 2011, the unemployment rate for third-country nationals was around 20% in the EU-27, twice the average (9.7%), with a rate above 25% in France, Belgium, Sweden and Spain.

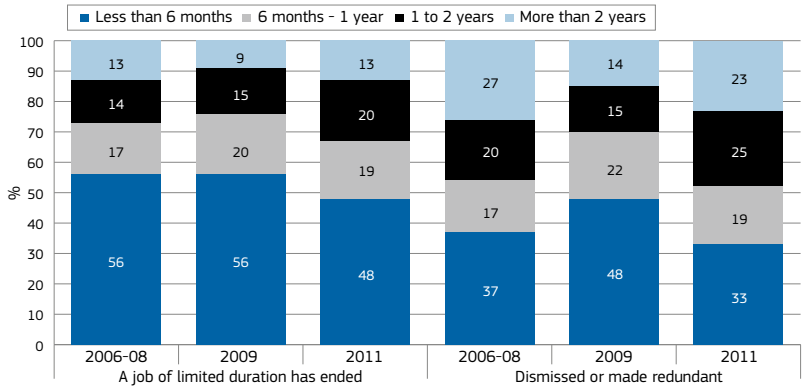
In terms of long-term unemployment, 8.6% of third-country nationals were affected in 2011 – again twice the overall EU rate of 4.3%. The highest rates were in Estonia, Belgium, Latvia, Spain and France where more than 10% of economically active third-country nationals were unemployed for at least one year[38].

However, the incidence of long-term unemployment among third-country nationals is close to, or even lower than, the level for the average population in the EU as a whole and in most countries. In other words, third-country nationals who are unemployed are *not* more likely to become long-term unemployed than average workers. Rather it is their higher overall rate of unemployment that explains their high long-term unemployment rate.

In the EU as a whole, third-country nationals accounted for 4.6% of the active population in 2011, but 9.5% of overall unemployment, and the same share of the long-term unemployed. In Estonia and Latvia, third-country nationals account for 32% and 26% of the long-term unemployed population, although this is due to their high representation in the overall active population. Other countries in which third-country nationals represent a substantial share (>10%) of the long-term unemployed are: Spain, Sweden, Germany, Austria, Denmark, Belgium and France. Compared to their weight in the overall active population, third-country nationals are notably over-represented among the long-term unemployed in Sweden (a ratio of 1 to 5), Belgium and Netherlands (around 1 to 4) and France and Denmark (around 1 to 3).

Beyond the issue of third-country migrants, ethnic minorities (including those who may have been residing for a long time in EU Member States) may also be over-represented among the long-term unemployed. This is the case, for instance, in Slovakia where the Roma minority is reported to represent around

Chart 27: Distribution of unemployed by duration and reason for leaving the last job, EU-27



Source: DG EMPL calculations based on Eurostat, EU-LFS.

half of the long-term unemployed while accounting for less than 10% of the overall active population[39].

2.2. The context in which the last job was lost matters

One factor that may impact the incidence of long-term unemployment is the context in which unemployed persons left their last job. This can be analysed by examining the distribution of the unemployed population across various unemployment durations, distinguishing those who were 'dismissed or made redundant' from the context of a temporary contract ('a job of limited duration has ended')[40].

In the 2006-08 period, immediately before the crisis, those who had lost their last job because of the temporary nature of their work contract (i.e. which had ended and not been renewed) had a much lower incidence of long-term unemployment (with 27% unemployed for more than one year, and 13% for more than two years) than did those who were dismissed or made redundant (47% and 27% respectively).

In 2009, the share of the short-term unemployed increased, particularly for those who had been 'dismissed or made redundant,' as a result of the reduction in labour demand and the sharp increase in redundancies. By 2011, however, the incidence of long-term unemployment among those who had been dismissed or made redundant had returned to its original level (48%) while for those who had lost their previous job due to their temporary contract ending, the incidence of long-term unemployment was higher (33%) than it had been before the crisis (27% in 2006-08).

This seems to indicate that temporary workers, who had previously experienced only limited spells of unemployment (possibly due in part to pressures to take any available work given their limited access to benefits) may currently be more affected by long-term unemployment. Moreover, while temporary workers may be less likely to become long-term unemployed that those who were dismissed or made redundant, they may be more exposed to the risk of recurrent unemployment[41].

The incidence of long-term unemployment among those who lost their last job due to the end of a temporary contract increased in most EU Member States (20 out of 27) between 2006-08 and 2011[42], with decreases in only a few countries (Austria, Poland, Hungary, Romania, Germany, Slovakia, Czech Republic) in which the share of temporary employment was limited (with the exception of Germany). Moreover, in several countries (such as the Netherlands, Spain, Luxembourg, Lithuania) in which the unemployment duration for temporary workers in 2006-08 was short, the incidence of long-term unemployment is now close to, or even above, the EU

(37) European Commission, *Employment in Europe 2008a*, Chapter 2.

(38) See figures in the Annex.

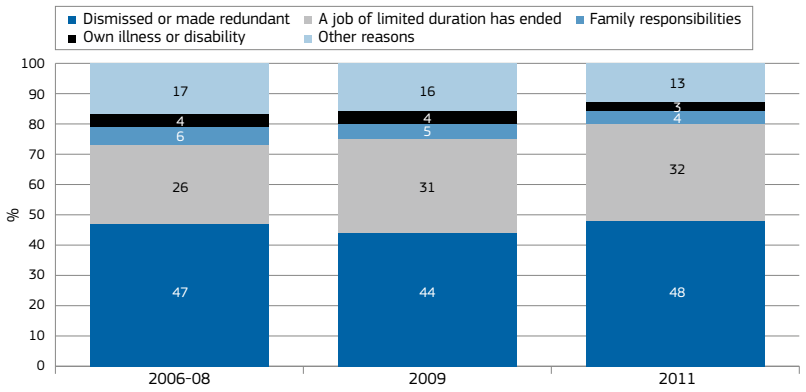
(39) European Commission, 2012a.

(40) On the basis of the EU-LFS variable, 'LEAVREAS'. 'Dismissed or made redundant' and 'a job of limited duration has ended' are numerically the most important categories but other reasons are analysed below.

(41) As pointed out in *European Commission*, 2012a, these variables interact with age as older workers are very well represented in redundancies and young people in fixed and temporary contracts. It is, however, difficult to determine whether the 'reason for leaving last job' or one's age was the decisive factor.

(42) See detailed country tables in annex.

Chart 28: Distribution of the long-term unemployed by reason for leaving last job, EU-27



Source: DG EMPL calculations based on Eurostat, EU-LFS.

average. Large increases also occurred in France and Ireland where more than half of those who had lost their job because their work contract had ended were long-term unemployed in 2011. It should be noted, however, that a large part of the rise recorded at EU level is actually due to developments in Spain[43], where temporary work had been a major feature of the labour market, and where the incidence of long-term unemployment among temporary workers had leapt from 14% in 2006-08 to 34% in 2011.

The incidence of long-term unemployment among dismissed/redundant workers increased in 16 Member States, with the sharpest rises in the Baltic states, Ireland, Spain and France – all countries that had a lower than average incidence in 2006-08, but which experienced (with the exception of France) significant mass redundancies in the 2008-09 downturn. At the same time, however, the long-term unemployment rates for dismissed/redundant workers decreased in 11 Member States, and particularly so in Slovenia, Romania, Luxembourg, the Czech Republic, the Netherlands and Poland.

For around 32% of the long-term unemployed, their reason for leaving their last job[44] was that it was the end of a temporary contract (compared to 26% in 2006-08), while 48% had been 'dismissed or made redundant' (close to 47% in 2006-08). In addition, 3% left their job because of illness or disability, and 4% because of family responsibilities. Compared to the overall share of temporary contract workers in total employment (around 14% at EU level in both 2008 and 2011), this shows that temporary workers are strongly over-represented among the long-term unemployed and even more so among the short-term unemployed (40%).

In terms of differences between Member States, the share of the long-term unemployed having left their last job because of a temporary contract is particularly high in Finland (55%), Spain (52%) and France (42%), followed by Italy (35%), Slovenia (33%), Belgium (31%) and Sweden (30%). Over-representation compared to the share of temporary contracts in total employment is particularly pronounced in Belgium and Finland (in which the share in long-term unemployment is almost four times higher than in total employment), in France and Italy (around three times higher), and even in countries with a low incidence of temporary employment, such as Romania, Lithuania, Estonia, Luxembourg and Bulgaria (where the ratios are between four and seven times higher). On the other hand, there are countries in which the share of temporary workers in long-term unemployment is close to the share of temporary contracts in total employment (Portugal, Germany, Poland, Austria), or even lower, as in the case of Denmark, Netherlands and Cyprus.

Illness and disability seem to play a larger role in people entering and remaining in long-term unemployment in Austria (12%), Denmark (10%), Netherlands (13%) and the UK (8%), although this may not necessarily be due to a higher incidence of illness or disability among workers from these countries, but rather to the benefit system which led to transfers of unemployed persons from unemployment benefits to sickness/disability schemes, as an escape route from the labour market[45].

With regard to 'family responsibilities' as a reason, this accounts for a significant share of the long-term unemployed in Cyprus (15%), Latvia (12%), Slovakia (12%), Estonia (9%), the UK (8%), Poland (7%), Czech Republic (6%) and Ireland (6%); this may be linked to insufficient access to childcare and other care facilities for dependent persons[46].

According to ISG and RWI (2010), one explanatory variable of a longer unemployment duration across many EU countries is the number of elderly people living in the household. A policy implication could be to improve access to care facilities or to implement labour market institutions which allow individuals to combine care provisions and paid work, such as the possibility of part-time employment or tax breaks for workers who must pay for care provision.

Finally, among the long-term unemployed, the distribution of their reasons for having left their last job varies

(43) Without Spain, the incidence of long-term unemployment for those having lost their jobs due to the end of a temporary contract increased in the EU by less than 2 pps (from 30.8% to 32.7%), compared to more than 6 pps when this country is included (from 26.8% to 33.2%).

(44) The statistics given here refer only to the long-term unemployed for which the EU-LFS provides information on the reason for having left one's last job. Overall they represent around 68% of all long-term unemployed workers. The remaining share of 32% have not been asked the question either because they have never had a job or because the last time they worked was more than eight years ago (they are excluded from this question in order to avoid recall problems).

(45) See Eichhorst and Konle-Seidl, 2008

(46) Most of these countries have a coverage rate of children under three by formal childcare facilities below the EU average, see also European Commission, 2008b, *Report on Implementation of the Barcelona objectives concerning childcare facilities for pre-school-age children,* COM(2008) 638 final.

between men and women: the female long-term unemployed are slightly more likely to have previously been temporary workers (34 %) than men (32 %), and notably less likely to have been dismissed or made redundant (43 % of women compared to 52 % of men). The most significant gender difference is in the share of those who left their job for family responsibilities before becoming long-term unemployed: 7.5 % among women compared to 2.2 % among men.

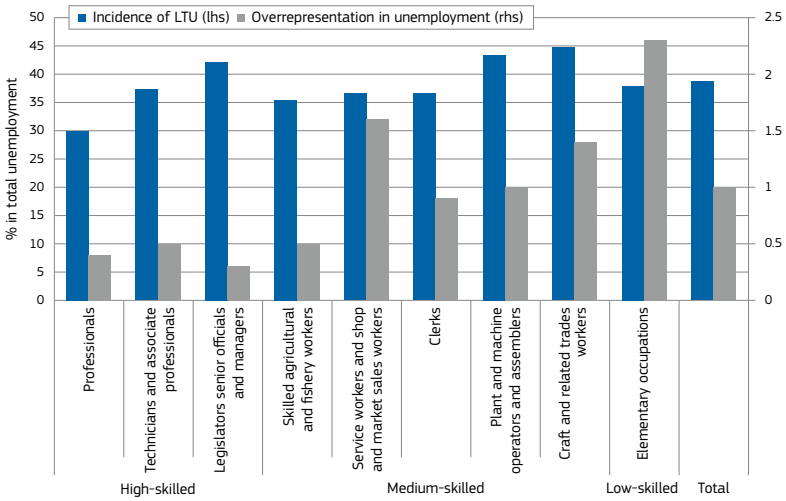
2.3. The strong influence of the previous occupation on long-term unemployment reflects the importance of the skill level

The previous sector of activity or occupation of a currently unemployed person is also a factor that can affect the likelihood of finding (or not finding) a job and, hence, the risk of becoming long-term unemployed. In this regard, the economic crisis has had a strong sectoral bias, notably affecting construction and manufacturing[47], and those employed in medium or low skilled occupations in particular[48]. In addition, structural changes in some sectors or occupations have also been driven by global competition and the associated restructuring.

In considering the previous occupation of the unemployed, two indicators stand out as important (see Chart 29):

- First, the overall probability of being unemployed, which can be estimated by a ratio of over/under-representation (by comparing the overall share of the occupation in total unemployment, compared to the overall share in employment).

Chart 29: Overrepresentation in unemployment and incidence of long-term unemployment, by previous occupation group, in 2011, EU-27



Source: DG EMPL calculations based on Eurostat, EU-LFS. The ratio of over-representation in unemployment is calculated as the share of the occupation group in total unemployment divided by the share of the occupation group in total employment.

- Second, the risk, if unemployed, of becoming long-term unemployed, which can be estimated by the incidence of long-term unemployment among the unemployed.

The occupation groups that are over-represented in terms of unemployment compared to employment are: 'elementary occupations' (a ratio of around 2.3), followed by 'service workers and shop and market sales' (1.6) and 'craft and related trades workers' (1.4). At the other end of the scale, the 'high-skilled' occupations (ISCO groups 1, 2 and 3) all display a much lower chance of being unemployed.

The incidence of long-term unemployment is highest for those who were previously categorised as 'craft and related trades workers' (44.7 %) or 'plant and machine operators and assemblers' (43.4 %). Perhaps more surprising is the high rate of those previously employed in the high-skilled occupational group, 'legislators, senior officials and managers' (42.1 %) although this may be linked to favourable treatment in terms of unemployment benefits (due to more stable contracts and work history) and a high reservation wage (which may limit the incentive to find a new job quickly and encourage a more extensive job search). Moreover, in comparison to other high-skilled occupations, their curriculum may be of a more general nature, less specific and therefore in lower demand than those working as 'professionals' or as 'technicians and associate professionals,' where the incidence of long-term unemployment is lower (30.0 % and 37.3 % respectively). Also, 'legislators, senior officials and managers' have the least chance of becoming unemployed (ratio of 0.3), and represent only 2.6 % of all long-term unemployed in the EU.

With regard to the 'professionals' category, they are strongly under-represented among the unemployed (accounting for only 6.4 % of the unemployed as opposed to 15 % of employment) and, when unemployed, they have the lowest incidence of long-term unemployment (30 %) of all the groups.

Overall, the categories that account for the majority of the long-term unemployed are those previously employed in 'elementary occupations' (21.9 %), as 'craft and related trades workers' (21.9 %), or as 'service workers and shop and market sales workers' (21.0 %).

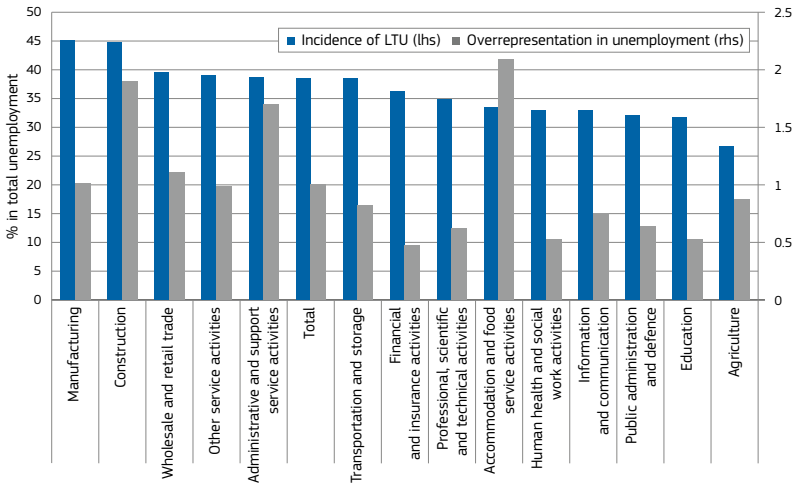
Compared to the pre-crisis period, i.e. pre-2008, the already adverse over-representation in unemployment of 'craft and related trades workers' and 'service workers and shop and market sales workers' has worsened further[49], while it has improved for 'legislators, senior officials and managers' and 'technicians and associate professionals'. Moreover, the incidence of long-term unemployment (which has increased in most occupation groups) has risen in particular for 'craft and related trades workers' (+12 pps)

(47) Between 2008 and 2010, manufacturing recorded a net loss of 3.8 million jobs (-10 %) and employment in construction declined by almost 2 million (-11 %). Important drops were also recorded in wholesale and retail trade (1 million or -3 %) and transportation and storage (0.5 million or -5 %).

(48) At aggregate level (group of ISCO occupations at 1-digit level), it involved a drop in employment (over 2008-10) of 'Craft and related trades workers' by 2.9 million (-10 %), almost 1.5 million among 'Plant and machine operators and assemblers' (-8 %) and around 600 000 among 'Elementary occupations' (-3 %). For 'clerks,' the decline in employment volume (-700 000 or -3 %) was less sector-specific and rather linked to overall declining growth, while the small decline in the group of high-skilled occupations named 'Legislators, senior officials and managers' (-400 000 or -2 %) was also of a general nature (driven by many sectors).

(49) See detailed tables in annex.

Chart 30: Overrepresentation in unemployment and incidence of long-term unemployment, by previous sector, in 2011, EU-27



Source: DG EMPL calculations based on Eurostat, EU-LFS. The ratio of over-representation in unemployment is calculated as the share of the sector in total unemployment divided by the share of the sector in total employment.

and 'plant and machine operators and assemblers' (+11 pps). This implies that unemployed people who were previously employed in these occupations will face particular difficulties in returning to employment without appropriate re-skilling given the on-going structural changes in the EU economy[50].

2.4. The previous sector of activity also matters: the influence of restructuring

The impact of the previous sector of activity of unemployed persons can also be measured on the basis of the same indicators: their probability of being unemployed (measured through the ratio of over/under representation) and their incidence of long-term unemployment (see Chart 30).

In 2011, the following sectors displayed a higher than average probability of unemployment: accommodation and food service activities, construction, administrative and support service activities. On the other hand, financial and insurance activities, education, human health and social work activities, professional activities and public administration all showed lower than average probabilities.

The incidence of long-term unemployment was:

- highest for those previously employed in manufacturing (45.1%), construction (44.7%), wholesale and retail trade (39.5%).
- lowest among those previously employed in agriculture (26.6%), education (31.7%), public administration (32.1%), information and communication (32.9%), human health (33.0%) and accomodation and food services activities (33.5%).

To summarise, some sectors are characterised by a relatively low chance of *becoming* unemployed and a limited probability of *remaining* unemployed more than twelve months: education, public administration, information and communications, human health, and, to some extent, professional, scientific and technical activities, and financial and insurance activities.

On the other hand, workers from 'administrative and support service activities' and 'construction' (as well as 'accommodation and food service activities,' 'transportation and storage,' 'wholesale and retail trade' and 'manufacturing') seem to have a double disadvantage, being more likely to *become* unemployed, and more likely to *remain* unemployed.

This analysis seems consistent with the experience of the recession, which impacted heavily on the construction, manufacturing and related sectors. In 2011, most of the long-term unemployed in the EU were found in manufacturing (18.8%), construction (17.1%), wholesale and retail trade (16.2%), accommodation and food service activities (8.1%), and administrative and support service activities (6.6%). In one sense this is not surprising given the importance of these five sectors in global employment. In fact, however, they account for 67% of all long-term unemployed persons[51] but only 46% of total employment.

Compared to 2008, the main change in the relative probability of being unemployed by sector has been in the construction sector, where the ratio reached almost 2:1 in 2011, i.e. where the share of construction workers in the unemployment figures was twice their share in total employment. Adverse changes also occurred in the 'public administration' and 'mining and quarrying' sectors but workers in these two sectors still had a relatively lower than average probability of being unemployed in 2011 (ratio lower than 1).

The incidence of long-term unemployment has increased on average and in most sectors since 2008, but it has had a particular impact on those previously employed in construction (+18 pps), financial and insurance activities (+14 pps up from a very low level), manufacturing (+10 pps), professional, scientific and technical activities (+9 pps up from a relatively low level), wholesale and retail trade (+9 pps) and tranportation and storage (+8 pps).

It is notable that, before the crisis, construction workers losing their job were less likely to become long-term unemployed than the average unemployed person (26.8% vs. 30.4%). In other words, while they may have had a higher than average probability of becoming unemployed, they had a higher than average chance of finding another job relatively quickly, i.e. of not remaining unemployed for more than a year.

(50) Considering the 2000-10 period, the number of jobs in the occupations groups, 'Craft and related trades workers' and ' Plant and machine operators and assemblers' has been reduced by 12% and 5% respectively (compared to a 7% increase in overall employment). This trend had started before the crisis since these two occupation groups had seen their total employment level stagnate in 2000-08 while employment was rising by 10% overall.

(51) It should be noted, however, that this concerns only those who were asked the question about their previous sector of activity since one-third of the long-term unemployed in 2011 either had never had a job or had left their last job more than eight years ago and were therefore not asked the question in the EU-LFS.

Given the fact that some of the sectors most affected by long-term unemployment, such as construction and manufacturing, account for a relatively large share of total employment and contain various sub-sectors that may not all be affected to same extent, it was considered useful to conduct similar analysis at a more detailed level (NACE 2 digit)[52]. The conclusion is that all of the sub-sectors displaying a high incidence of long-term unemployment belonged to either construction or industry. Workers previously employed in the manufacture of textiles, leather, clothes, as well as basic metals and furniture show an incidence of long-term unemployment that is higher than 50%, as is also the case of those previously employed in the 'construction of building' sector.

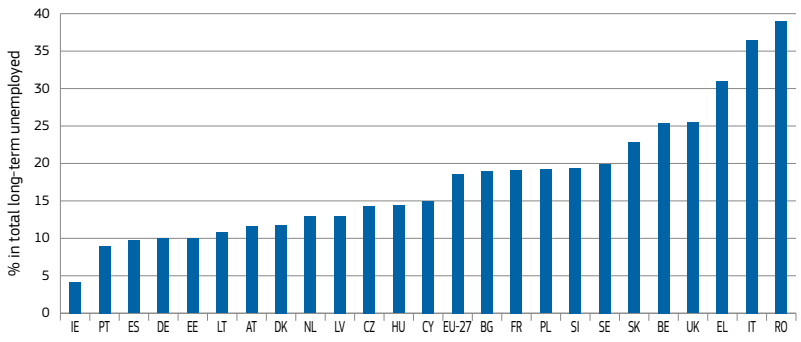
Of course the incidence of unemployment and long-term unemployment by previous sector of employment is linked to the overall demand for labour in each sector. In terms of its evolution over the past decade, the sectors in which employment suffered from both structural decline (2001-07) and economic recession (2008-10) were manufacturing, mining and quarrying, and, to a certain extent, transportation and storage. In the case of construction and wholesale and retail trade, employment increased in the first period but was then badly affected during the recession. Some sectors nevertheless saw their volume of employment grow over the two periods, namely education, health, real estate, and business services.

2.5. One fifth of the long-term unemployed have never had a job

One important point is that there is probably a general assumption that those who are long-term unemployed have had a job, lost it, and, for one reason or another, have not been able to find another. In fact, some 1.8 million of the nearly 10 million long-term unemployed in 2011 have never actually been in employment.

This raises significant policy issues, not least that a substantial part of the long-term unemployed have no work experience and are likely to need various forms of support in order to find a first job, as well as concerns regarding access to benefits and the risk of social and economic marginalisation given that, in most Member States, access to unemployment benefits is usually restricted to those who have previously worked.

Chart 31: Share of the long-term unemployed that have never had a job, 2011 (%)



Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: Cyprus and Austria: unreliable figures due to small sample size. Finland, Luxembourg and Malta: no data publishable due to small sample size.

Among the long-term unemployed, the share of those that have never worked is, not surprisingly, much higher (62%) among young people (15-24) and those aged 25-29 (29%), much lower (9%) among other prime-age workers (30-49), and very low (2%) among the older age group (50-64). In fact, young people (15-24) represent 53% of all the long-term unemployed who have never had a job – a figure that rises to around 75% if those aged 25-29 are also included.

Here again, the education level is a significant factor. High-skilled individuals represent less than 15% of the long-term unemployed who have never had a job, those with a medium education level account for 41%, and those who with a low education level account for 44%. Such differences are even more notable with regard to young people (15-24) where the shares are respectively 6%, 48% and 46%. However, the 25-29 age class displays rather different patterns. Among them, 35% of the long-term unemployed who have never had a job are highly educated, which may be due to the late entry into the labour market of tertiary level graduates, and the difficulties that some may find in obtaining an appropriate first job.

In five Member States (Belgium, the UK, Greece, Italy and Romania), more than a quarter of the long-term unemployed have never had a job and in two of them (UK and Romania) this seems to be linked to the high share of young people among the long-term unemployed (close to, or higher than, 30%, compared to 16% for the EU as a whole).

At the other extreme, in Portugal, Spain, Germany and Estonia, roughly 10% or less of the long-term unemployed have never had a job, in Ireland the figure is just over 4%. In these countries, the issue of long-term unemployment seems to be linked much more to problems faced by people who were employed, lost their job and could not find another, rather than difficulties in entering the labour market in the first place.

3. What drives long-term unemployment?

This section aims to help interpret the analytical findings in this chapter by briefly reviewing theoretical insights and relevant national empirical evidence. The factors most commonly put forward in the literature fall into two main groups: first, labour demand and economic activity in general, and second, the institutional settings in the different Member States. In this sense, differences in the design of labour market institutions can help explain why countries with similar trends in GDP and labour demand may have divergent experiences in terms of their LTU rates[53].

The most important institutional factors covered by the literature relate to the design of the unemployment benefit (UB) and social security systems, and the structure and effectiveness of active labour market policies, including the role

[52] See results in table in annex.

[53] On the role of labour market institutions, see Nickel and Layard (1999), Davis (1998).

of public employment services. Other institutional variables that are seen to matter are the tax system (particularly the tax wedge), employment protection legislation, skill mismatches and geographical mobility.

3.1. Aggregate demand is the first factor

The first factor influencing development in long-term unemployment is aggregate demand and the resulting inflows to and outflows from unemployment: an obvious factor, but one that should not be under-estimated given the current labour market slack in many Member States.

In Section 1 it was noted that the countries in which long-term unemployment rates increased the most between 2008 and 2011 were also those in which employment declined severely. Indeed, most of the Member States that had the highest long-term unemployment rates in 2011 (the Baltic countries, Spain and Ireland) had had a long-term unemployment rate below the EU average (and much below that of Germany) three years earlier. Among the worst performers in 2011, only Slovakia, and to a certain extent Greece, had had a very high long-term unemployment rate before the crisis (in 2008).

Broadly speaking, the countries that managed to limit or contain the increase in long-term unemployment have been those in which:

- the recession has been limited (e.g. Poland);
- the impact of the economic shock on the labour market has been cushioned through adjustments in working time, notably through short-time working schemes (e.g. Germany, Belgium, Luxembourg);
- the decline in aggregate demand led to increased inflows into unemployment but most of those affected were able to find a new job relatively quickly (e.g. Denmark, Netherlands, Sweden, Finland).

The first two points are beyond the scope of this chapter, which is focussed primarily on the third point, and it seeks to show how some countries have managed to limit the flow from short-term to long-term unemployment (persistence rate) and achieve a higher rate of return to employment.

Chart 32: Persistence rate in unemployment for short-term unemployed (2010-11) and job vacancy rate in 2010



Source: For persistence rate: DG EMPL calculations based on Eurostat, EU-LFS; For job vacancy rate: Eurostat, annual data on job vacancy rates for NACE sectors B to S. The chart only covers countries for which data is available for both indicators.

Notes: y = -14.424x + 51.644
R^2 = 0.3845

Aggregate demand is clearly fundamental in that the probability of staying in, or exiting, unemployment depends significantly on available job opportunities. As Chart 32 shows, there is a clear negative correlation between the persistence rate in unemployment (for the short-term unemployed) and the job vacancy rate.

Other studies also confirm the relevance of developments in aggregate demand in explaining changes in long-term unemployment, particularly in the current recession.

For instance, the relatively limited increase in structural unemployment (estimated by the NAIRU, see *OECD*, 2012) compared to the overall increase in unemployment (see Box 2) is a sign that, in the current crisis, unemployment is mainly driven by changes in aggregate demand and that, in order to prevent/reduce long-term unemployment, priority should be given to encouraging economic growth and labour demand.

Moreover, the *European Commission* (2011)[54] also underlined that 'in contrast to previous periods, the recent rise in structural unemployment appears to be driven by persistent demand shocks, whereas institutional factors limiting the efficiency of the labour market (e.g. tax wedge, employment protection) seem to be less relevant'. Moreover, the same analysis concluded that 'given the severity of the demand shock and its far-ranging implications for sectoral adjustment, a significant decline of unemployment over the forecast horizon is not to be expected'.

[54] European Commission, 2011a, p.77.

Another indication of increased structural unemployment is available through an analysis of the Beveridge curve which compares the joint evolution of job vacancies and unemployed job seekers over time. The European Employment Observatory (2012) found that, during the crisis, there was an increase in labour market mismatches in many Member States (e.g. Belgium, Sweden, Bulgaria, Slovakia, Cyprus), while for others (for instance, Greece) the movement was along the curve, showing that most of change was cyclical.

The lesson is that additional job creation is needed in order to reduce and avoid long-term unemployment since boosting labour demand will simultaneously reduce inflows into unemployment and increase the outflows from unemployment.

However, stimulating labour demand will not be sufficient, particularly in countries in which long-term unemployment has increased considerably (Spain, Greece, Ireland, Baltic countries). Supply-side policies to raise the employability of the unemployed and prepare them for more viable jobs are equally important.

Moreover, aggregate demand only partially explains developments in long-term unemployment. The chart above shows that some countries, such as the Netherlands, Sweden and Finland have lower persistence rates in unemployment than might be expected on the basis of their levels of labour demand as measured by the job vacancy rate. In other words, there are other country-specific

factors behind the variations in persistence rates in unemployment among EU Member States.

These factors are analysed in detail below. They mainly relate to the unemployment and/or social benefit system, the design of active labour market policies, the role of public employment services and other factors such as the tax system and employment protection legislation.

3.2. Unemployment benefit system

The following sub-section looks at key dimensions of the unemployment benefit system and their role in relation to the prevention or persistence of unemployment.

3.2.1. Large benefits do not necessarily increase the persistence of unemployment…

Partial equilibrium job search models emphasize the disincentive effects of high levels of unemployment benefits, pointing out that they tend to increase the reservation wage of the unemployed, thereby prolonging the job search process. However, unemployment benefits also act as search subsidies, which may raise productivity by improving the match between jobs and vacancies. Furthermore, the extent of any disincentive effect depends on the overall design of the unemployment benefit system (how replacement rates fall over the unemployment period, the duration of entitlement, the strictness of requirements for their administration) and appropriate activation strategies (e.g. active labour market policies). Cross-country evidence shows, for example, that countries with some of the highest benefits (e.g. the Nordic countries) nevertheless feature among those with the lowest LTU rates.

There is a substantial literature showing that unemployment benefits do not necessarily prolong unemployment although there are also empirical studies that have found that they do. FEDEA (2012), for example, finds that, in Spain, unemployed workers who do not receive unemployment benefits are twice as likely to find jobs compared to the rest of the unemployed. This, they explain, is due to the fact that job search requirements for obtaining unemployment benefits are not very rigorous.

Chart 33a: Net replacement rates, 2007 and 2010

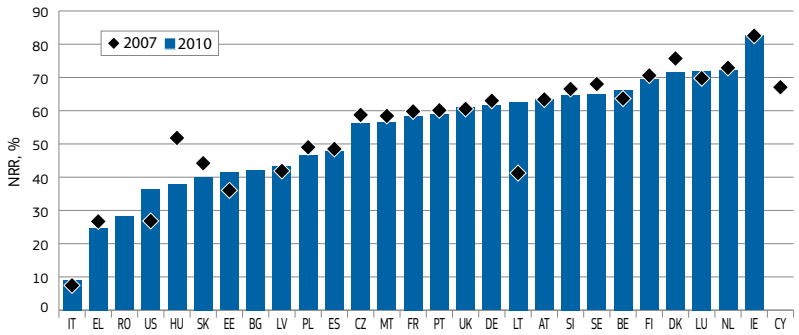
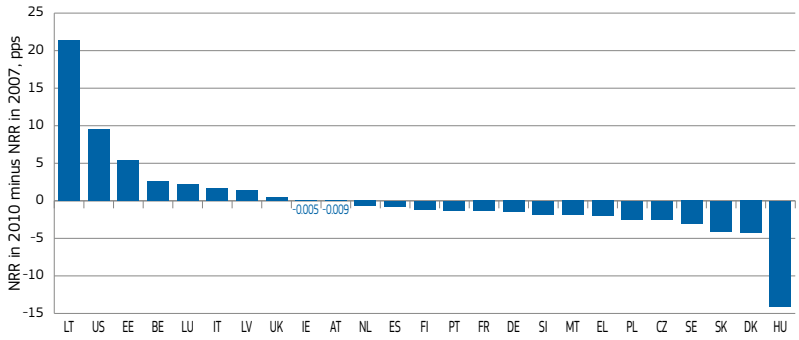


Chart 33b: Change in net replacement rates, 2007-10



Source: OECD, Tax-benefit model[1].

(1) Assumptions of the OECD tax-benefit model: Any income taxes payable on unemployment benefits are determined in relation to annualised benefit values (i.e. monthly values multiplied by 12) even if the maximum benefit duration is shorter than 12 months. The net replacement rates are calculated after tax and including unemployment and family benefits. Social assistance and other means-tested benefits are assumed to be available subject to relevant income conditions. NRRs presented in the chart are simple averages of the NRRs for 4 family types (single individuals, lone parent with 2 children, one earner couple with and without children) and 2 previous earnings levels (67% and 100% of average wage). They represent an average over NRRs after 1, 2, 3, 4 and 5 years of unemployment.

Bassanini and Duval (2006) and Blanchard and Wolfers (2000), find a positive relationship between the replacement rate and the unemployment rate and *OECD* (2009) indicates that higher benefit replacement rates tend to reduce unemployment outflow rates, which would imply longer periods of unemployment.

On the other hand, *European Commission* (2009), Chapter 2 does not find the impact of financial incentives (unemployment trap variable, net replacement rates) on the incidence of LTU to be significant. Similarly, ISG and RWI (2010) do not find a link between the replacement rate of unemployment insurance and the unemployment duration. Junankar (2011) shows that the higher the replacement rate, the lower the increase in the rate of long-term unemployment. Interestingly, in the case of Belgium, Desmet (2011) even found that a higher level of unemployment benefits equates with a greater probability of re-entering the labour market.

The disincentive effects of unemployment benefits may be offset by other factors such as income redistribution and the quality of job matching. In the Nordic countries, where the benefits are in general more generous or longer, these systems are matched by effective activation measures such as stricter job search requirements for benefit receipt, a focus on in-work benefits, and efficient labour offices.

Chart 33a and Chart 33b show the diversity in the level of replacement income between Member States, together with the change between 2007 and 2010[55]. Net replacement rates (NRR) in Italy (7%) and Greece (26%) are the lowest in the EU, followed by most of the new Member States, while in the Nordic countries, Luxembourg and Ireland they are above 70%. During the crisis, net replacement

(55) The changes in NRRs 2007-10 may be the result of reforms that took place before the recession. In this sense the changes presented in the chart should not be interpreted as strictly 'crisis-driven'.

Chart 34a: Min/Max duration of unemployment benefits, 2011

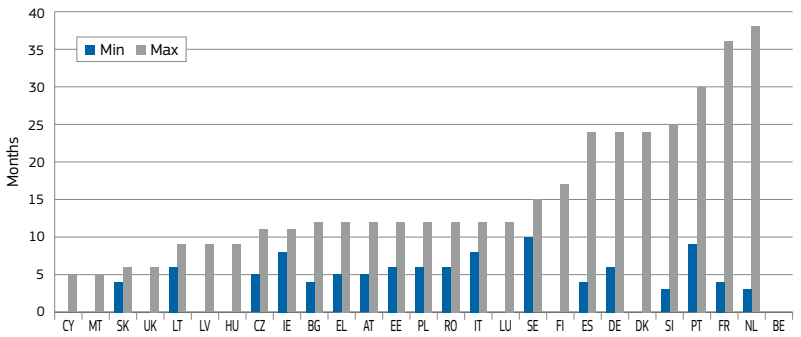
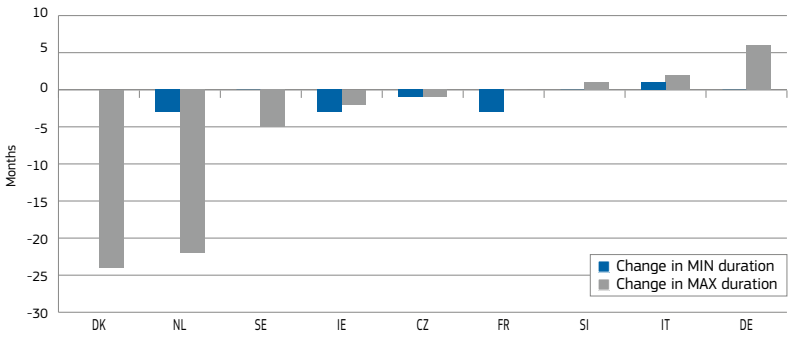


Chart 34b: Change in duration, 2007-11



Source: MISSOC database.

Note: No legal maximum of duration of UBs in Belgium.

rates decreased slightly in most Member States, although they increased in the three Baltic states, Belgium, Luxembourg and Italy[56].

3.2.2. ...and neither does the duration of unemployment benefits

Durable benefits i.e. those that last for lengthy periods, can increase the persistence of unemployment. However this is not necessarily the case if they are flanked by successful activation elements in the unemployment benefit system or ALMPs.

There is considerable literature concerning the effect of the duration of unemployment benefits on the average duration of unemployment. Job search models point out that longer entitlement periods may lead to moral hazard problems, i.e. they reduce the need or incentive to look for work, thereby raising the persistence of unemployment, particularly when combined with high levels of replacement income. Using data for the US, Moffitt (1985) and Katz and Meyer (1990), for example, suggest that an extension of the entitlement period results in a significant rise in the average duration of unemployment, and Van Ours and Vodopivec (2004), using data for France and Slovenia, arrive at similar results, showing a significant increase in the exit rate out of unemployment around the time when the benefit expires. On the other hand, as mentioned before, unemployment benefits also serve several other positive purposes, including providing income support, enabling continued labour market participation, and encouraging better job matching.

Chart 34a and 34b present the maximum and minimum duration of unemployment insurance benefits and the change between January 2007 and July 2011[57]. The long-term unemployed seem to be covered by unemployment insurance benefits where the maximum duration exceeds 12 months in around two thirds of the countries, and the very long-term where the maximum duration exceeds 24 months in only five Member States (Belgium, Netherlands, France, Portugal, Slovenia).

As a result of the crisis, unemployment benefit regimes have changed in a number of countries, although the direction has not always been the same. The Member States that had the longest lasting benefits in 2007 decreased the duration of payment over the period. The maximum duration decreased in Denmark (by two years), the Netherlands (22 months), Sweden (5 months), the Czech Republic and Ireland, while it was increased in Slovenia, Italy and, more significantly, in Germany (by six months). In Luxembourg the prolongation ranged between 6 and 12 months depending on age and years of work. Several Member States that had the longest lasting benefits in 2007 decreased the duration of payment over the period.

In the context of insufficient labour demand, benefits that are too restrictive may lead to increasing poverty and social exclusion without necessarily achieving successful activation. During the recent recession, some countries such as Latvia, Estonia, Luxembourg and Germany acted counter-cyclically by increasing the level of replacement income and/ or by extending eligibility, while others (e.g. Ireland, France, Netherlands, Denmark) decreased the generosity of their unemployment benefits. In many cases, the countercyclical measures are of a temporary nature and may be reconsidered once the recovery gains momentum in order to strengthen the focus on activation. In their joint assessment of the crisis and recovery measures, the OECD and the Commission both recommend a cautious approach on increasing the generosity of benefits, while recognising the need in certain cases (including in Italy and Finland) to extend their coverage or duration for social reasons as well as to enhance beneficiaries' integration into the labour market[58].

3.2.3. Social assistance schemes affect level and duration of replacement income

It is not possible to discuss the effect of contribution-based unemployment benefit systems on the exit rate out of unemployment/duration of unemployment without taking into account social assistance schemes that effectively provide income support to the long-term

[56] The net replacement rate measures net income while out of work (unemployment benefits or means-tested social assistance, housing benefits) relative to the net income previously earned in a given point in time, e.g. after 6 months of unemployment.

[57] Missoc database, reference 1st January 2007 and 1st July 2011.

[58] European Commission (2010a), Stovicek and Turrini (2012), OECD (2011), p. 277.

Box 5: Unemployment insurance benefits extended through social assistance: example of Malta

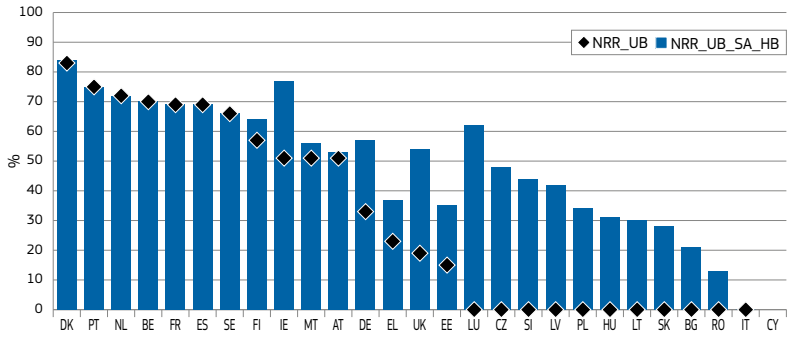
According to the European Employment Observatory,[1] in Malta, 49% of the unemployed are caught in a benefit trap. Unemployment insurance benefits cease after 156 days, but the social assistance package (*Ghajnuna Socjali*) is of unlimited duration and comparable to the minimum wage. Given that 80% of the unemployed are low-skilled, the scheme would not appear to offer any strong financial incentive to take up work paying only the minimum wage. The Maltese government's expenditure on long-term unemployment assistance is much higher than on short-term unemployment benefits. Zerafa (2007) shows that persons receiving special unemployment benefits or married persons would lose money if they found a part-time job or become self-employed.

(1) *European Commission* (2011b), p. 15. This is confirmed also by data presented in Chart 36.

unemployed in many Member States[59]. The following example illustrates the potential interaction between contribution-based benefits and publicly funded social assistance.

There are considerable differences between Member States in terms of what they offer as unemployment assistance. Some Member States do not operate explicit unemployment assistance schemes, while others have schemes that last indefinitely[60]. Chart 35 shows the importance of unemployment assistance and other benefits such as housing benefits in terms of the level of replacement income they represent after one year of unemployment. They indicate both the level of the net replacement rate (NRR) based on unemployment benefits alone, and the NRR including social assistance and housing benefits in addition to unemployment benefits.

Chart 35: NRRs based on UB vs. NRRs based on UB, social assistance and housing benefits



Source: OECD tax benefit model[1].

(1) The chart refers to 2010. The model is calculated for a single person earning 67% of the average wage in the 13th month of unemployment.

For the first year of unemployment (see Chart A1 in the Annex) in the majority of Member States there is little difference between the replacement rate based on unemployment benefits alone and the rate that includes social assistance since most of the replacement income is provided through UB.

In the second year of unemployment (see Chart 35), the additional effect of social assistance is still not felt in countries such as Denmark, Belgium, Netherlands, Portugal and France since they have particularly durable unemployment benefits (maximum duration of benefits exceeding 24 months, see Chart 34a). However, in some other countries, notably the majority of the new Member States, unemployment insurance expires after one year of unemployment, leaving many of the long-term unemployed to rely on additional replacement income from social assistance schemes. This means that the level of replacement income provided by the social assistance system can also play an important role in terms of creating work disincentives.

Data for the fifth year of unemployment shows that the level of replacement income for the (very) long-term unemployed in almost all Member States is mainly determined by what is provided by the social security system (see Chart A2 in the Annex). Its level is more significant in the Nordic countries (Denmark, Finland, Netherlands and Sweden) and Luxembourg. For these countries, it is important that the replacement income fall sufficiently quickly when transitioning from unemployment insurance to unemployment assistance in order to counterbalance possible negative effects on work incentives (see also next section, time profile and section on ALMP) while, at the same time, ensuring that effective job activation strategies for the long-term unemployed and social assistance recipients are in place. Box 6 provides two examples from this group of countries.

(59) Unemployment benefit systems consist of two main instruments: unemployment benefits and unemployment assistance. Unemployment benefits are typically contribution-based and time-limited. They are payable to job losers who within a certain reference period have completed a minimum period of employment and/ or paid contributions. They are based on the insurance principle: when the event occurs (i.e. the person becomes unemployed), the claim has to be satisfied subject to the fulfilment of a set of preset eligibility conditions. Therefore, when unemployment rises, an increasing number of claims need to be awarded, and expenditure on unemployment benefits rises. Unemployment assistance aims at preventing unemployment-related poverty, and is usually means-tested and paid to the long-term unemployed with insufficient means who have exhausted their unemployment insurance benefits or who do not qualify. To qualify for unemployment assistance the unemployed often do not need to have any employment/ contribution history or it is much shorter than for insurance benefits. In many countries assistance is not contribution-based.

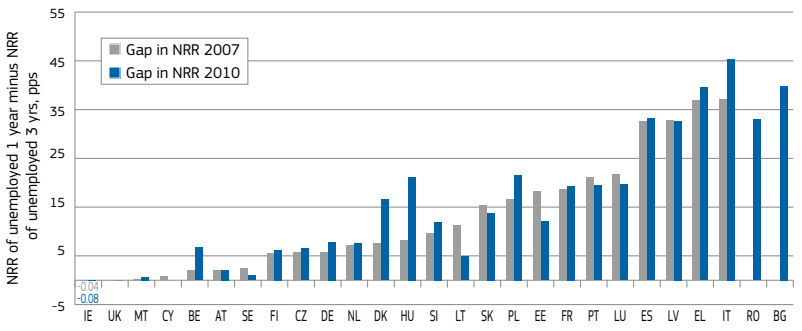
(60) For example, the unemployment allowance in the UK ('Jobseekers' allowance'), Ireland ('Assistance'), Austria ('Notstandshilfe'), Germany ('Sozialgeld' and 'Arbeitslosendgeld II'), Finland ('Labour market support: työmarkkinatuki') and Malta ('Ghajnuna Socjali') are of unlimited duration. In France and Portugal the benefit is limited (six months in France). In Belgium the insurance benefit is of unlimited duration and there is no special unemployment assistance scheme. Many new Member States do not operate assistance schemes, even though the insurance benefit payment is of limited duration, usually between 9 and 12 months. *Source:* MISSOC database and OECD country reports.

Box 6: Addressing the work disincentives of social assistance: examples of Finland and the Netherlands.

Many countries that operate social assistance schemes provide additional conditionalities for recipients in order to reduce the incentive to remain on welfare for long periods. In Finland, for example, full social benefits are conditioned on participation in ALMPs; participation in 'rehabilitative work' has been also made mandatory since 2010.

In the Netherlands, UB recipients can decline a job if it pays less than 70% of their previous income, while a social security benefit recipient (social security benefits being paid on expiration of UB) must accept any job available, regardless of how much it pays. Furthermore, the social security benefit is considerably lower than the UB.

Chart 36: Gaps in net replacement rates: initial phase of unemployment vs. long-term unemployment



Source: OECD, Tax-benefit model.

However, it is also important that social assistant recipients have the same access to employment services as unemployment benefits recipients, and the fact that they are often covered by multiple institutions may create a risk that labour offices pay insufficient attention to this group when designing and targeting programmes.

3.2.4. Time profile of unemployment benefits can contain activation elements

The risk of benefit dependence increases with the duration of unemployment transfers (unemployment benefits or assistance), and is stronger when replacement rates do not fall substantially over the unemployment period. Chart 36 shows the difference (or gap) in average NRRs for those who are in the first year of unemployment and those who are in the third year of unemployment in 2007 and 2010 respectively.

As the chart shows, in all Member States net replacement rates are higher for those in the initial phase of unemployment than for the long-term unemployed[61]. The higher the bars, the greater the difference between the replacement incomes of the short-term and long-term unemployed. Thus, in countries such as Belgium, Austria, Sweden and Malta the short-term and long-term unemployed receive approximately the same replacement income in both cases, pointing to a risk of low work incentives. However, Belgium adopted a reform of the unemployment benefit system which was to be implemented in November 2012 to increase the unemployment benefit in the initial phase of unemployment, but reduce it more quickly over time.

At the other extreme are countries such as Romania, Bulgaria, Italy, Greece, Spain and Latvia in which the difference between replacement income for the short-term and long-term unemployed is significant. In these cases the entitlement period elapses relatively quickly (usually between nine months and one year) and the importance of unemployment allowance schemes is negligible. In the UK and Ireland the duration of benefits is small, but the unemployment assistance schemes compensate accordingly.

Furthermore, there have been changes in the structure of the net replacement rates over time. The gap between the replacement income for those in the initial phase of unemployment and those who are long-term unemployed increased from 2007 to 2010 in countries such as Hungary, Poland, Italy, Denmark and Belgium; this generally reflects a move towards a decrease in replacement income for the long-term unemployed as compared with those who are unemployed for shorter durations (Hungary, Denmark[62]), with an increase in the replacement income for those unemployed for shorter periods and a decrease in the replacement income for the long-term unemployed in the case of Poland. On the other hand, in countries such as Portugal, Slovakia, Estonia, and Lithuania, the gap between the two decreased, which can be seen as reflecting an extension of the social protection system in these countries, where LTU increased substantially during the crisis.

3.2.5. Eligibility conditions/ coverage rates

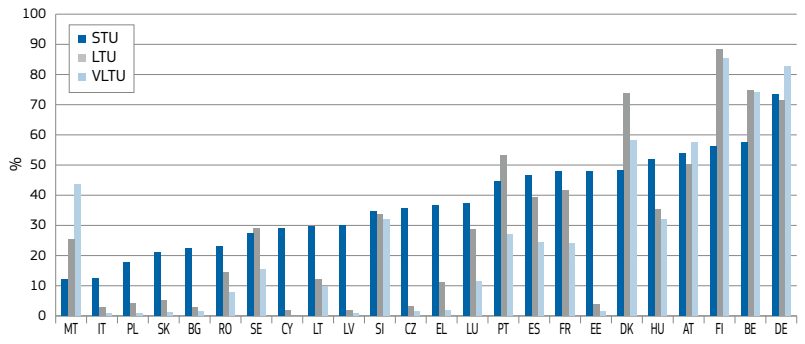
Eligibility criteria include conditions that the unemployed must fulfil in order to qualify for benefits which determine who is able to access unemployment benefits and the extent to which the unemployment benefit system will provide income protection, help integrate the unemployed into the labour market, and provide general support to labour demand.

Chart 37 shows the unemployment coverage rates for the short-term, long-term and very-long unemployed in 2010. In the new Member States, Greece and Italy, the coverage rates for the short-term unemployed are higher than for the long-term unemployed, and coverage of the very long-term unemployed

(61) The OECD data refers to those in the first year of unemployment/ benefit receipt compared to those in the third year of unemployment/ benefit receipt. For Ireland the difference is minus 0.08 (2010) and minus 0.04 (2007), and for the UK it is 0.

(62) In Denmark the decrease in net replacement income for the long-term unemployed reflects a decrease in the maximum duration of benefit receipt (from 4 to 2 years), which is a clear sign of a policy shift toward strengthening incentives.

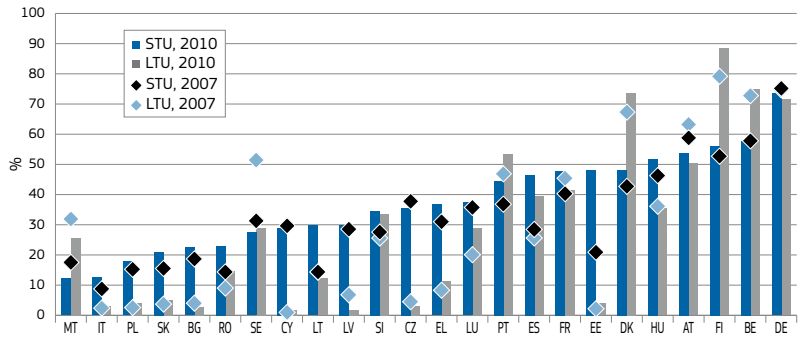
Chart 37: Coverage rates by unemployment benefits/ assistance, 2010



Source: DG EMPL calculations based on data from Eurostat, LFS[1].

(1) The coverage rate is the ratio of the unemployed who receive unemployment benefits or assistance. Data for Ireland are missing, and data for Netherlands and the UK are not reliable. The short-term unemployed are those who are unemployed for up to one year, the long-term unemployed are those who remain unemployed between 12 and 24 months, and the very long-term unemployed are who remained unemployed for longer than two years.

Chart 38: Coverage rates by unemployment benefits/ assistance, 2010 and 2007



Source: DG EMPL calculations based on data from Eurostat, LFS. Ireland: no data, Netherlands, the UK: data not reliable.

is negligible. This is mainly due to the fact that unemployment insurance benefits expire by the end of the first year of unemployment, and unemployment/ social assistance schemes do not play an important role in these countries.

On the other hand, in the Nordic countries, Belgium and Portugal, coverage of the long-term unemployed is higher than it is for the short-term unemployed due to longer benefit and assistance schemes. Corroborating data from the sub-section on social assistance, coverage of the very long-term unemployed is high only in countries which operate durable unemployment or social assistance schemes such as the Nordic countries, Austria, Germany, Malta, and Portugal[63].

Chart 38 shows how coverage has evolved in the Member States since the onset of the crisis. It was extended slightly in most of the new Member States, Italy and Greece in order to provide social protection to new vulnerable groups (notably, the low-skilled and difficult-to-place unemployed) and to contribute to their integration into the labour market. In these countries coverage was among the lowest before the crisis and it was extended mostly for the short-term unemployed. Coverage was increased the most in Estonia, but again only for the short-term unemployed.

(63) The LFS data on this variable is based on personal reporting on the receipt of benefits and/ or social assistance payments, which is subjective and could lead to skewed results. Registration with employment services is a prerequisite for benefit receipt in many Member States. Looking only at the coverage rates of those who are registered leads to the same results.

Coverage for the long-term unemployed was increased in Luxembourg and Spain in particular, and more moderately in Denmark and Finland. In a few countries, such as Sweden, Austria and Malta, coverage was reduced for both unemployed groups.

3.2.6. Accumulation of benefits improves early activation

Allowing unemployment benefits to be received while undertaking part-time work or self-employment has proved to be a useful policy to address long-term unemployment, enabling beneficiaries to retain close links with the labour market. Some countries, including Belgium, Germany and Austria, have strengthened in-work benefit schemes as a way of incentivising the unemployed to take up employment. As noted in the *European Commission* (2012a), a strand of the Hartz labour market reforms in Germany addressed this by promoting 'mini and midi jobs,' and the so-called 'one-euro jobs' which are in-work benefit schemes. In Austria, the 'new combination wage' ('Kombilohn neu') available since 2009 has made it possible for certain groups of those who have been unemployed for more than six months to receive in-work top-up benefits when they take full-time jobs. In Belgium, the ALE programme allows the long-term unemployed to work a certain number of hours per month while retaining their unemployment benefit.

Likewise, a lump-sum payment to those who find a job before the benefit entitlement period ends, as in Slovakia and Romania, or incentives to take low-paid work, as in Ireland, Slovakia, Malta, Netherlands, Austria, Portugal, France and Sweden, can also encourage early activation. While such measures help overcome benefit dependency, the risk of which is highest among low-wage workers, they need to be accompanied by policies that ensure satisfactory job quality in order to protect them from falling into in-work poverty[64].

(64) European Commission (2011c), Chapter 4.

3.3. Active labour market policies

In order to improve the employability of the unemployed and to avoid the moral hazard associated with unemployment benefits, benefits are sometimes made conditional on requirements such as:

- the requirement to undertake a job search and demonstrate availability for suitable jobs within a reasonable geographical range;
- participation in active labour market policies such as training, job counselling, individual action plans;
- maintaining regular contact with employment services.

In some cases there may be sanctions for non-compliance, for example in terms of a reduction in the benefit amount. In some Member States there is a requirement to undertake socially useful work. In Finland, for example, receipt of full social benefits has been conditional on participation in ALMP and on participation in 'rehabilitative work' since 2010. An increasing number of Member States link not only the receipt of unemployment benefits to participation in ALMP but also the receipt of social assistance.

3.3.1. Spending and participation in ALMP decrease long-term unemployment…

Many econometric studies show the positive effect of spending or participating in ALMP on decreasing the duration of unemployment after controlling for the economic cycle (e.g. Nickel and Layard 1999). The following two charts present this link in a country-specific setting.

In particular, Chart 39 shows the relationship between the *level* of long-term unemployment and the rate of participation by job seekers in ALMP.

Participation in activation programmes helps to reduce LTU by facilitating outflows from unemployment rather than by affecting inflows into unemployment, which are largely cyclical. The countries with the lowest level of long-term unemployment (Denmark, Luxembourg, Finland, Netherlands, Austria) are among those in which the level of participation in ALMP is the highest, while the countries with the highest level of LTU, such as the Baltic states and Greece, have the lowest level of participation in ALMP.

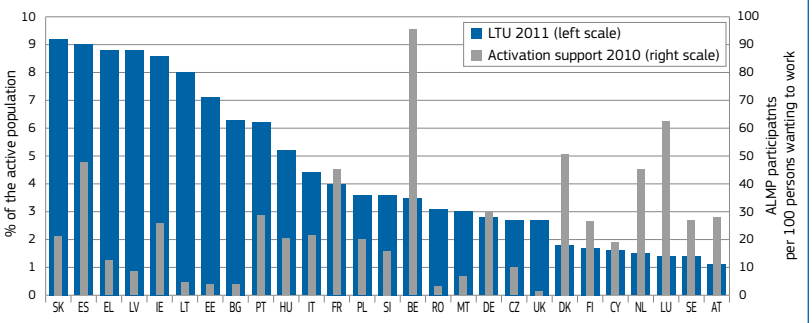
Nevertheless, some countries such as the UK and most of the new Member States have similar levels of participation in ALMP, but divergent LTU rates ranging from above 9 % in Slovakia to around 3 % in the UK. Likewise, while participation rates in ALMP are similar in Portugal and Sweden (Austria), the rates of LTU are not. These differences pick up notably cyclical effects, but they also underline the importance of ensuring the effectiveness of ALMP programmes.

Chart 40 plots expenditure on ALMP as a percentage of GDP against an indicator of the persistence of unemployment (as measured in Section 1.3).

This chart shows that, overall, the Nordic and continental countries tend to have the highest levels of expenditure on ALMPs coupled with the lowest persistence rates in unemployment, while the Central and Eastern Member States, and some South European countries such as Italy and Greece, show a low level of expenditures on ALMPs and generally high persistence rates of unemployment.

As indicated by the chart on activation support, there are Member States which spend similar amounts on ALMP but achieve very different results in terms of reducing LTU, which serves to underline, apart from cyclical effects, the importance of factors such as the efficiency of ALMP programmes, the stringency of activation obligations,

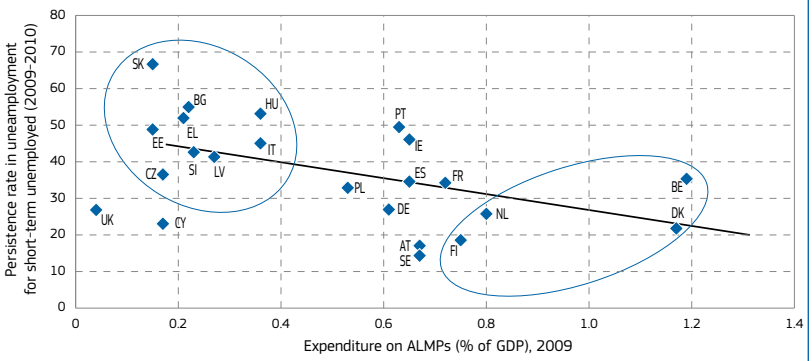
Chart 39: Participation in active labour market programmes (right scale) and long-term unemployment rate as a percentage of the active population (left scale)



Source: Eurostat, LMP[1].

[1] Data on the long-term unemployment rate (as a percentage of the active population) refers to 2011, which is one year later than the latest data on participation in ALMP, which is for 2010. The latter ALMP indicator shows the number of participants in regular activation measures (Categories 2-7 in the LMP database) in relation to 100 persons wishing to work. Data for activation support in the UK refers to 2009. Data on activation support is flagged as unreliable in Czech Republic, Ireland, Spain, France, Italy, Lithuania, Luxembourg, Hungary, Poland, Portugal, Slovakia and Sweden. Estimates are used for the Netherlands, Cyprus and Denmark.

Chart 40: Persistence rate of unemployment and expenditure on ALMPs



Source: For persistence rate: DG EMPL calculations based on Eurostat, EU-LFS. Expenditures on ALMPs: Eurostat LMP database.

Notes: spending on active labour market policies includes categories 2-7 in the LMP database.
y = -20.404x + 46.979
R^2 = 0.2227

the role of PES and the design of the unemployment benefits system. Extensive and expensive training programmes, as found in Spain, or long-lasting and high levels of benefits, as found in Belgium, may explain why these countries have similar or even greater levels of expenditure on ALMP than Austria, Finland or Sweden, but experience a much higher persistence of unemployment.

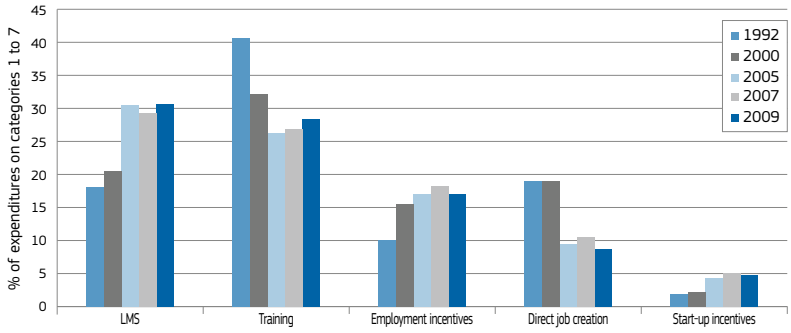
3.3.2. ...but the type and design of ALMP matters

The success of ALMP depends not only on expenditure levels but also on the design of the measures involved and the way they are implemented, as indicated by various econometric studies using macroeconomic and microeconomic data[65].

The following paragraphs recall, or update, the findings of an in-depth review of the effectiveness of ALMP presented in the 2006 *Employment in Europe* report. The following paragraphs are organized around five categories of the LMP database: labour market services (LMS, category 1), training (category 2), employment incentives (category 4), direct job creation (category 6) and start-up incentives (category 7).

In this respect, over time, Member States have on average adapted the structure of their activation measures, mainly by reducing expensive and less immediately effective policies such as long-term and general training or direct job creation in favour of cheaper interventions such as job search assistance, counselling and monitoring, and specific short training arrangements. This can be seen in the evolution of the shares of each category mentioned above in the total expenditure on LMS and LMP measures (i.e. in the

Chart 41: Share of expenditure on categories 1 to 7 (LMS and LMP measures) by category, 1992-2009



Source: Eurostat, LMP for 2005, 2007 and 2009. For 2000 and 1992 the data is complemented by the OECD database as it is not available in Eurostat.

Box 7: Costs and benefits of ALMP

Benefits. The availability of high-quality employment service support, including, for example, job counselling, individual interviews, job search assistance and job brokerage, can reduce the cost and improve the efficiency of job searching. Likewise, profiling can contribute to the early identification of at-risk groups and the adoption of appropriate measures. Well-targeted and tailored training can likewise help in the acquisition of the right skills, in order to increase the employability of beneficiaries and help the adjustment process. Incentive programmes and direct job creation may likewise boost labour demand while contributing to the preservation of skills, work attitude and ties with the labour market.

Costs. Apart from the direct financial costs of ALMP programmes, the possibility of unintended consequences must also be taken into account[1].

Crowding-out effects can occur if jobs created under ALMP lead to the destruction of existing jobs as, for example, when an increase in production and market share by a subsidized company leads to a loss of market share for other companies and consequently to a reduction of regular employment in these companies. The crowding-out effect is most likely to occur in the case of subsidized employment and direct job creation.

Substitution effects occur when ALMP participants find employment at the expense of non-participants. Firms may replace their employees with government-assisted workers or may prefer ALMP participants to non-participants when hiring. If the substitution effect is strong, the effect of ALMP is to change the composition of the labour force rather than to decrease unemployment. This risk is more likely in the case of supported and subsidized employment than it is in relation to training.

Lock-in effects: over the course of a given programme, participants may put less effort into their job search than non-participants because they have less free time or because unemployment is no longer such a burden. This risk is more relevant to training, particularly when it is long-lasting.

Fiscal distortion effects: ALMP programmes are financed through taxes and tax systems may affect decisions made by labour market participants, e.g. taxing labour may lower its supply and reduce employment levels. This effect is more likely to be of concern in the case of large-scale active labour market policies.

Deadweight loss effects are deemed to have occurred if an ALMP participant would have reached the same result without participating in a programme. All activation policies involve the risk of deadweight loss, particularly if such programmes are directed to broadly defined and heterogeneous target groups; profiling of the unemployed can help to reduce this.

(1) See Cahuc and Zylberberg (2004).

(65) For relevant references, please refer to the respective categories of programmes in the following paragraphs.

total expenditure on categories 1 to7) as illustrated in Chart 41[66].

3.3.3. Public employment services are best suited to address heterogeneous groups of unemployed persons

Because of their access to personal data and the possibility of a personalized approach, public employment services (PES) are in the best position to reach heterogeneous groups of unemployed persons and offer tailored solutions, increasing programme efficiency. Not surprisingly, the share of LMS in the total expenditure on categories 1-7 (LMS and LMP measures) increased from 18% in 1992 to around 31% in 2009 (see Chart 41 above). The countries with the highest percentage spent on labour market services in 2010 were Malta (75%), Romania (50%), Germany and Sweden (both around 40%). The least was spent in Greece (5%), Latvia and Italy (7%). For the period 2007-10, this percentage increased more significantly in Romania, Sweden, Denmark and Bulgaria[67].

Preventing and tackling LTU requires different policy solutions, and this underlines the importance of profiling the unemployed with the aim of early identification of groups at higher (and lower) risk of becoming long-term unemployed. Early profiling allows for a more precise targeting of measures and optimizes the use of resources. For example, early intervention through expensive programmes for those at low risk of becoming long-term unemployed involves a deadweight loss (as many of these individuals would have found a job without extensive help). On the other hand, intervening too late for those who are at high risk of becoming long-term unemployed will involve more costly re-activation programmes once these individuals are long-term unemployed, and a higher risk of failure.

Box 8: Gains from profiling: Best practices from Denmark, Sweden and Ireland

International experience has shown that targeting ALMP programmes to precisely determined groups of recipients increases their effectiveness, therefore, a number of Member States have designed tools to 'profile' the unemployed. In Denmark, econometric models using data from 1993-03 are used to predict length of unemployment based on variables such as age, marital status, the local unemployment rate, education, district of residence, participation in an ALMP, and the individual labour market record.

The model estimates the probability that a person who registers in a labour office will still be jobless six months later, with individuals assigned to 'high' or 'low' risk groups. In the second stage, detailed individual interviews are conducted. The aim is to identify the strengths and weaknesses of the unemployed (Rosholm et al. 2004). The Swedish PES recently (2012) introduced a similar system of statistical profiling.

In Ireland, the Probability of Exit (PEX) profiling model assigns to each registered unemployed a high, middle or low score, on the basis of which it is decided whether he or she will only receive help with the job search, receive guidance with respect to which support programmes they need to attend, or receive one-to-one support from an advisor, and individuals may be redirected to particular work experience or training programmes.

For the short-term unemployed at low risk of becoming long-term unemployed, short and inexpensive programmes such as job search assistance and counselling are often sufficient.

For the short-term unemployed who are at a high risk of becoming long-term unemployed, additional training (up-skilling or re-skilling) may be necessary, particularly for those coming from restructuring sectors. And these programmes need to be undertaken at an early stage to prevent them from falling into long-term unemployment.

For those who have already been long-term unemployed, more complex and costly programmes (often in the form of individual action plans) involving several stages (job search assistance and counselling, longer training programmes and employment incentives/ job creation schemes) may be necessary. The Irish example in Box 8 illustrates the differentiation between ALMP programmes by unemployment group[68].

Profiling, targeting and reasonable programmes are only possible when labour offices operate appropriately. Contracting out labour services to the private sector is one way to increase their efficiency (e.g. Netherlands, the UK). Contracting out increases the diversification of actions taken, improves their quality and lowers costs. Nevertheless, the deregulation of labour services may be associated with certain unintended consequences such as high administrative costs due to the tendering process (a barrier for small companies) and open procedures used on a small scale, an insufficient focus on monitoring and evaluation, and the so-called 'creaming' effect where in a bid to maximise the share of people returning to the labour force after completing

(66) It should be noted that the concept of ALMP includes LMP measures (i.e. categories 2-7) and only a subcategory of LMS called Individual case management (sub-category 1.1.2).

(67) Eurostat, LMP database.

(68) The empirical findings also show that job search assistance (job brokerage, counselling) is a cheap and effective ALMP measure facilitating the transition to employment. For relevant references see, for example, Weber and Hofer 2004; Van der Heul, 2006; and the Polish Ministry of Labour (2007). In some countries, including the UK, PES implement the entire range of activation policies, meaning that job search counselling and monitoring are combined with other measures including training, wage subsidies, etc., and it is difficult to disentangle the isolated effects of each of these measures within the package. In other countries such as Austria, Germany, and to some extent the Netherlands, there is a clearer separation of measures, and this allows for an estimation of the effect of participation in some measures such as job searching or job counselling.

the programme, companies primarily help those who already stand a better chance of finding a job[69].

Employment offices (both public and private) tend to deal primarily with people who are unemployed and actively seeking work. Yet there are many inactive people (e.g. women who take breaks from work, discouraged people, students, etc.) who do not fall under the strict definition of 'unemployed,' who wish to find a job but are faced with difficulties. The appropriate response seems to be for labour market intermediaries to be proactive and seek to reach these people before they become inactive long term. This depends first on contacting these individuals rather than waiting for them to come for help, but the mechanisms for doing so depend significantly on the institutional set-up in each country and the extent to which there is co-ordination between employment offices and benefit agencies[70].

Due to their potential to reach heterogeneous groups of people, PES's can be very effective in both preventing and decreasing long-term unemployment and enhancing their role, and expanding the scope of their services will serve both those who have recently fallen into unemployment and those facing multiple challenges (long-term unemployment, a low skill level, etc.) But this depends a lot on the experience, efficiency and administrative capacity of labour offices, and last but not least on the individuals who register with the labour office.

3.3.4. Training is expensive and needs to be customised

Training is among the very costly ALMP measures, and in order to be efficient, must be well targeted and tailored to the needs of particular unemployed groups in terms of content and duration. It captured the largest share of spending in the early 90s (40% of total expenditure on LMS and regular activation programmes). This share decreased over the following decade, however, and is now commensurate with spending on employment services (30%, see Chart 41). The Member States that spent the most on training as part of their total budget for categories 1-7 in 2010 were Austria (61%), Portugal (57%), Finland (53%), Ireland and Italy (around 45%), and those that spent the least were Slovakia (2%), Bulgaria (3%) and Poland (5%)[71].

The results from empirical evaluations of training are mixed. In particular, a series of studies tend to show little or no impact in the short run but widely acknowledged positive impacts in the medium and long run (e.g. Card et al. 2010, Fitzenberger and Speckesser 2007, Estevao 2003, Van der Haul 2006, Weber and Hofer 2003, Meager and Evans 1998[72]).

Furthermore, training seems to be more effective for smaller scale schemes targeted to specific groups (being particularly effective for the young and low-skilled) and to specific occupations, rather than for larger general schemes (e.g. Lechner, Miquel and Wunsch 2007, O'Connell and McGinnity 1997, McGuinness et al. 2011, Polish Ministry of Labour 2007, Meager and Evans 1998[73]). This can be attributed to dead-weight loss and lock-in effects, with such risks appearing to be greatest in large-scale programmes. Likewise, Dorsett (2006), McVicar and Podivinsky (2003) point to the much higher effectiveness of the first, least costly, stage of the UK New Deal for Young People programme which includes targeted, short-term training, job assistance and counselling as compared to the second stage which includes subsidized jobs, a return to full-time education, etc. Positive effects are recorded in particular in the case of on-the-job training (Card et al. 2010, Kuddo 2009).

The relationship between this type of targeted training and general education/ vocational training systems varies between countries. Studies show that general programmes contribute to a better matching of skills, particularly after the first entry into the labour market (Verhaest and Van der Velden 2010) while (certified) vocational training programmes (workplace-based or combined with school-based) have been shown to be very effective in facilitating the transition from education to work in that they are based on a more targeted and market-oriented background[74]. In order to accommodate the higher distance from the labour market of general education, higher respect is given to dual training systems, such as those found in Germany, which combine education with work experience through internships that ease the transition to employment.

An obligation to participate in some form of training is almost always included as an eligibility requirement for those receiving unemployment benefits (or even social benefits in some Member States), given the desire to up-skill or reskill the unemployed. The European Commission in the 2012 Annual Growth Survey invited Member States to maintain, and even reinforce, the coverage and effectiveness of training schemes for the unemployed[75]. PES can help by profiling people and ensuring better targeting of programmes. They can help identify those coming from declining sectors, or those undergoing major restructuring, and help them to re-skill (e.g. promote acquisition of skills demanded in new, growing sectors). This both increases the employability of participants and their chances of getting a job and enhances competitiveness in growing sectors[76].

(69) However there are studies (e.g. Koning 2009) which find no evidence of cream-skimming. This they say is attributable to the short leeway given to service providers, i.e. only a few weeks between signing a contract and placing the unemployed.

(70) For more details, see Mobility in Europe 2010, p.30-31.

(71) Eurostat, LMP database.

(72) For example, Weber and Hofer 2003 found that participation in training reduced the transition rate from unemployment to employment by 12% in a target group of newly unemployed and long-term unemployed individuals who had recently finished a programme targeted at improving their employability.

(73) The Irish study by McGuinness et al. (2011), for example, found that unemployed persons who participated in a short (less than 6 months) training programme provided by FAS, Ireland's national training and employment authority, were 11% less likely to be unemployed 13 months after the start of the programme compared to a control group of unemployed persons who were either referred to FAS for job search assistance or interviewed. The Polish Ministry of Labour (2007) showed that participating in training increased the probability of moving from unemployment to employment by almost 80% as compared to non-participation in the programme, and by 43% through participation in an apprenticeship or on-the-job training.

(74) Walther and Pohl (2005), CEDEFOP (2012). See Chapter 6, Section 4 of this publication.

(75) European Commission (2011d).

(76) It would be useful to have an insight into participation numbers in training programmes by socio-demographic characteristics such as gender, age and level of education. Unfortunately such a level of disaggregation is not possible in the LMP database. If we consider the indicator of LLL (participation in education or training) which is available by gender and labour status, there does not seem to be a large difference between unemployed men and women: in 2011, 10.3% of females vs. 8.1% of males participated in LLL.

Box 9: Training, country examples

Germany has created a comprehensive 'transition system' ('*Berufsvorbereitende Maßnahmen'/* Preparatory measures programme) designed to ease entry into the regular vocational education or training system. The National Employment Office in Belgium has set up a scheme which removes the obligation to look for work from those long-term unemployed who take up studies in one of the listed 'shortage occupations'. In Luxembourg, the Fit4Job initiative organises reskilling through tailor-made training programmes adapted to the demand for sectoral skills.

An economic downturn is a good time to invest in training since the opportunity cost is lower and this time can be used to prepare the unemployed for the recovery phase when more jobs will be available. The portion of the total budget for categories 1-7 spent on training increased considerably in Portugal, Latvia, Ireland and the Czech Republic (between 10 pps and 18 pps) in the 2007-10 period. Nevertheless, many Member States decreased their spending on training in favour of other measures, notably employment incentives (e.g. Estonia, Greece, Luxembourg and Poland), labour market services (e.g. Denmark) and direct job creation (e.g. Hungary)[77].

3.3.5. Employment incentives

Employment incentives are another relatively important category of expenditures, accounting for slightly less than 20% of total expenditure on categories 1-7. They boost labour demand and facilitate the recruitment of particular groups such as the low-skilled, the long-term unemployed, and women returning from maternity leave. Under these programmes, employers receive support from the government in the form of wage subsidies, reductions in social security contributions, tax exemptions, tax credits, etc. when they hire individuals from particular unemployment categories, usually those which are more difficult to be placed.

According to the LMP database, countries' attitudes toward these measures vary widely, with the percentage of spending dedicated to employment incentives ranging between 7% and 71% in 2010. The Member States with the highest rates of spending were Cyprus (71%), Luxembourg (67%), Greece (46%) and Belgium (41%). At the other extreme were Ireland, Austria and Finland (6-8%). Some countries increased this type of expenditure considerably in the context of the crisis, i.e. between 2007 and 2010: Cyprus (27 pps), Poland, Slovakia and Estonia (20-25 pps), Luxembourg (15 pps).

Moral hazard issues can arise with employment incentives if, for example, employers substitute people from these programmes with their regular workers in order to reduce labour costs[78] (see Box 7). Displacement and deadweight loss effects are likely to be much higher when programmes are run on a large scale (Meager and Evans (1998)). In order for such measures to be effective in reducing unemployment in the long run, and not just in substituting one group of employees for another, mechanisms need to be in place which provide obligations or incentives for employers to retain workers after the subsidies expire[79], and/or are combined with other ALMP measures in order to improve the employability of beneficiaries (e.g. integrated retraining/skill upgrading, job search assistance) within integrated programmes (see Box 10).

(77) Eurostat, LMP database.

(78) A Hungarian study (O'Leary, Koledziejczyk, Lazar 1998), for example, finds that participation in a wage subsidy programme has zero or negative impact on employment probability. The authors explain this finding by the fact that the subsidy is available after six months of unemployment and many employers postpone the recruitment of higher educated graduates until they have been unemployed for at least six months in order to obtain the subsidy. Some studies, Jaenichen (2002, 2005), Jaenichen and Stephan (2011) for Germany, and Sianesi (2008) for Sweden showed that participants (both short-term and long-term unemployed) in different types of targeted wage subsidy schemes subsequently had much higher employment rates than similar unemployed persons who did not take a subsidized job. In another study on Germany, Schuenemann, Lechner and Wunsch (2011) focused on eligibility for a subsidy receipt rather than participation in the programme for long-term unemployed. They find no impact on transition rates from unemployment to employment.

(79) The usual duration of the subsidy ranges from several months to one year. In exceptional cases, e.g. Sweden for older workers, it reaches 10 years (Duell 2012).

Box 10: Employment incentives, country examples

In Germany, the Hartz reform introduced a new type of wage subsidy for newly created jobs with a social or ecological utility. 'Job Perspektive' is another programme that provides wage subsidies to employers (up to 75 % of gross wage costs), targeting long-term unemployed persons with at least two employment 'barriers'. Integration wage cost subsidies (*Eingliederungshilfen)* are meant to compensate employers for productivity disadvantages when employing difficult-to-place jobseekers. The objective is to integrate these individuals into regular, long-term, employment. Evaluations of these programmes have shown that, in general, the match between wage subsidies and jobseekers with particular placement difficulties is satisfactory (Brussig et al. 2011).

In Belgium, there are a number of programmes which grant employers a reduction in social contributions or wage subsidies when they take on the long-term unemployed (ACTIVA and ACTIVA APS plans, SINE programme, etc.). In Sweden, the Nystartjobb programme offers subsidized employment to the long-term unemployed, with the wage subsidy proportional to the jobseeker's unemployment duration.

Sweden offers a three-stage integrated programme (Jobb- och utvecklingsgarantin) combining job search assistance, special training and subsidized employment, all targeted at the long-term unemployed. Similarly, The UK New Deal for Young People programme, which targets young unemployed people, consists of two phases: the first includes targeted, short training programmes, job assistance and counselling, while the second includes subsidized jobs and a return to education.

In Luxembourg, crisis payments for companies hit by the economic slow-down, previously available for six months, are being extended in 2012. Companies can have a part of their wage bill subsidised by a state fund, enabling them to retain skilled staff who might otherwise have to be made redundant.

3.3.6. Direct job creation

Direct job creation programmes are comparatively rare these days, with many Member States having either scaled back or phased them out altogether, such that they currently account for only 8.5 % of all expenditure on categories 1-7. Where they continue, the jobs are generally reserved for the long-term unemployed and other groups very difficult to place, and are mostly undertaken in sectors not in direct competition with the private sector, usually with a social or ecological purpose. The countries with the highest share of spending dedicated to direct job creation schemes in 2010 were Hungary (63 %), Bulgaria (53 %) and Latvia (38 %). Significant amounts, between 20 % and 30 %, were also spent in France Belgium, Ireland and Slovenia[80].

The reason for the general decline of these programmes is largely their high cost and concerns about crowding-out and substitution effects. Another concern with such jobs is the extent to which the beneficiaries will be able to move to regular employment once the temporary job ends. Factors such as a lack of competitiveness, inadequate skills or skills which do not match needs of employers, stigmatization, etc. can explain why the transition of participants to regular jobs can be impeded.

Nevertheless, investment in direct job creation programmes can be useful in times of recession since it creates additional opportunities for the long-term unemployed and helps to avoid the heavy long-run costs of social exclusion and poverty (see Chapter 2). Indeed, since the onset of the recession, several countries (Latvia, Hungary, Slovenia, Portugal, the Czech Republic) have re-launched these kinds of programmes, usually as the last stage of integrated programmes complementing job search assistance and training. These programmes allow the unemployed to maintain links to the labour market, retain their skills, and serve as a 'work test' for employers. Moreover, earlier evaluations of direct job creation schemes were generally concerned with people who were difficult to place, while the 'new long-term unemployed' are often people who were well integrated in the labour market prior to the onset of the crisis.

The evidence shows, however, that in order to be successful in reducing unemployment in the long-term, direct job creation programmes (like subsidized employment programmes) need to be run on a smaller scale and be combined with other ALMP measures, such as adequate and appropriate (re-)training that can increase the value of beneficiaries to potential employers.

Box 11: Direct job creation programmes, country examples

In Germany, Kommunal Kombi is a federal direct job-creation programme co-financed through federal and ESF funding which expires at the end of 2012. It concentrates on job creation for the long-term unemployed in regions with exceptionally high unemployment rates. The follow-up programme of Kommunal Kombi is the Bürgerarbeit programme, which is implemented at regional level and focuses on activation of the long-term unemployed. In Finland, participation in 'rehabilitation programmes,' which are of social utility has been mandatory since 2010 for recipients of full social benefits.

[80] Eurostat, LMP database.

3.3.7. Start-up incentives

Start-up incentives (e.g. start-up grants or allowances and tax credits) increasingly target unemployed workers, with the aim of promoting their re-integration into the labour market and preventing long-term unemployment. The share of these incentives in total expenditure on LMS and LMP measures (i.e. categories 1-7) has steadily increased over the past two decades, from 2% in 1992 to 5% in 2009 (see Chart 41). These incentives usually complement other more general job-creation policies, which are overviewed in Section 3.1[81].

The costs associated with these programmes depend on their particular design: whether there are continuing rights to unemployment compensation and for how long; how claims are dealt with in case of failure (i.e. how the cost of failure is shared between the beneficiary and the state). As elsewhere, deadweight loss is of concern, i.e. does this create an incentive to register as unemployed before starting a business in order to qualify for the subsidy? Nevertheless, the available evidence suggests that start-up incentives are viewed as highly effective with regard to improving employment prospects[82].

3.4. How do the Member States stack up in relation to their UB and ALMP schemes?

Box 12 presents the main characteristics of the unemployment benefit systems (and active labour market policies) in the Member States by groups, and illustrates the extent to which the various elements complement each other or balance out.

Box 12: Classification of unemployment benefit systems[1]

Nordic countries (Denmark, Finland, Sweden) and the Netherlands**:** These countries are characterised by a very generous unemployment benefit system both in terms of entitlement conditions and income support. Long benefit duration is often coupled with high net replacement rates, in particular in the first two years of unemployment. The benefit system is highly redistributive, with caps on maximum benefits reducing the generosity of benefits for higher wage persons. In order to ensure that work incentives remain high, activation and active labour market policies play a prominent role, with strict conditions on job search and work availability.

Continental countries (Austria, Germany, Belgium, France, Luxembourg): These countries have a reasonably generous unemployment insurance system in general, but benefit duration is generally shorter and net replacement rates are lower than in the Nordic countries. Unemployment assistance often complements income support. The benefit coverage is extensive and ensures that the bulk of those unemployed receive benefits. A prominent role is given to job search and activation strategies in order to address the risk of reduced incentives.

Anglo-Saxon countries (IE, the UK, Malta, Cyprus): Unemployment insurance benefits are relatively modest and of short duration, while unemployment assistance (means-tested) is very important (usually indefinite and often exceeding non-means-tested benefits). Benefit dependency is an issue, mainly due to the long-lasting and almost flat-rate unemployment assistance. Job-search activity obligations are strict, although spending on other active labour market policies is minimal.

Southern countries (Spain, Italy, Portugal): Unemployment insurance benefits vary widely depending on one's age and contribution period (those having contributed for longer periods and older persons are entitled to longer-term benefits, with high replacement rates). Coverage is lower due to strict entitlement conditions. Unemployment assistance is limited, as well as the risk of inactivity traps. Participation in active labour market policies is widespread, though often ineffective.

Central and Eastern countries (Bulgaria, Czech Republic, Estonia, Hungary, Poland, Slovakia, Slovenia, Latvia, Lithuania, Romania, Greece): Unemployment benefits are limited in terms of both level and duration. Net replacement rates can in some cases be high at the beginning of the unemployment spell, but drop sharply after the first year of unemployment. Access is strict and rates of coverage low. Unemployment assistance plays a minor role. In many of these countries, the role of PES and the range of available services are not well developed, with limited monitoring or obligations to participate in activation strategies.

(1) This classification follows Stovicek and Turrini (2012). The grouping of countries proposed in the study is based on the European Commission's flexicurity model, see *European Commission* (2007), Chapter 3.

(81) In order to receive start-up grants/ allowances under ALMP start-up programmes, the potential beneficiary has to prove eligibility to unemployment compensation, which is not necessarily a requirement for more general job-creation initiatives.

(82) Caliendo, Kuenn and Wiessner (2010) evaluate the effectiveness of two German programmes, UBG (bridging allowance or Ueberbrueckungsgeld) and EGZ (start-up allowance or Existenzgruendungszuschuss). They find that five years after programme entry, participants show a remarkably higher probability of employment than non-participants for both programmes. The Polish Ministry of Labour (2007) also found that beneficiaries of start-up incentives in Poland had about a four times greater probability of moving to employment than non-beneficiaries. Eurofound (2010) pointed out that in the context of supported employment for people with disabilities the transition from sheltered employment to regular jobs on the open market is considerably impeded.

As Section 4 will show, the Nordic countries, which combine relatively generous benefits with strong activation requirements and high participation in ALMPs, exhibit high transition rates *out* of unemployment, showing that high benefits need not necessarily lead to high long-term unemployment, if flanked by activation policies.

On the other hand, many of the new Member States and Southern countries with stringent unemployment benefit regimes, less flexible labour markets and relatively low spending on and participation in ALMPs, are much less successful in helping people move back to employment once they become unemployed.

According to some studies (e.g. ECORYS and IZA 2012, Duell 2012), a period of labour market slack is an appropriate moment to invest in (re-)training when the opportunity cost of the time spent on training or in education is lower. At the same time, it prepares the unemployed for new and more viable jobs that will emerge once the labour demand recovers. Even costly ALMP programmes such as job creation and employment incentives may be worth undertaking in times of crisis (provided that any unintended impact on the private sector due to displacement is offset) because they help to avoid the major long-run costs of the social exclusion of the long-term unemployed and the aggravation of poverty. At the same time, however, it is necessary to ensure that, as recovery occurs, the policy emphasis shifts to activation measures in order to provide stronger incentives for the unemployed to return to work.

3.5. Other institutional factors

3.5.1. Tax wedge: Benefit dependency and traps.

The interaction between tax systems and benefit or welfare systems influences the labour supply by affecting incentives with regard to work. If the income from work is taxed away, or the foregone benefits on returning to work outweigh the gain from the new wage income, it may not pay the benefit recipient to return to work. In particular, generous and long-lasting transfers to the unemployed (contribution-based unemployment benefits or assistance) can increase the risk of unemployment traps and benefit dependence, and contribute to the entrenchment of long-term unemployment[83].

The OECD tax-benefit model suggests that unemployment traps are much higher for low-wage persons given that they tend to have higher net replacement rates. This is one of the factors that explain why low-wage persons are, in general, more at risk of unemployment and, in particular, of becoming long-term unemployed. In most Member States, replacement rates are not considered to create disincentives for those on higher incomes. However, in some Member States (e.g. Portugal, France, Spain) differences between income levels are smaller, and this can create a risk of unemployment traps and low-wage traps even at higher income levels.

Data from an OECD tax-benefit model shows that, in all Member States, both the short and long-term unemployed with children have higher net replacement rates than those without children at all income levels. This reflects the fact that the accrual of family benefits and the provision of higher unemployment benefits is conditional on having children in order to compensate parents for the additional cost of having children.

The difference in NRRs between the unemployed with children and without children is very small at low income levels (pointing to the smaller role of family benefits and other family compensations at low incomes) while it is large at high income levels in some Member States (e.g. Ireland, Denmark, Netherlands and Luxembourg regardless of the duration of employment). Such a design provides good incentives for second earners to take up work or move to better paying jobs and longer hours of work when they have children while in Member States such as Latvia, Slovakia, Lithuania (for short-term unemployed) and Lithuania, Bulgaria, Poland, France (for long-term unemployed), the opposite holds true[84].

3.5.2. Employment protection legislation (EPL)

EPL refers to all types of employment protection measures concerning hiring (e.g. rules favouring disadvantaged groups, conditions for using temporary and fixed-term contracts) and firing (e.g. redundancy procedures, mandated prenotification periods, severance payments, special requirements for collective dismissals, short-time work schemes). The nature of these restrictions on a firm's freedom to adjust its labour input are seen to depend on the overall degree of stringency, the precedural details, and the attitude and behaviour of courts with regard to appeals by fired workers in the Member States[85].

It would be logical to expect EPL to reduce both job destruction and job creation, leaving the net effect on average employment and unemployment as an empirical issue. On the one hand, strict EPL decreases flows into unemployment, but on the other, it also reduces the propensity to hire in so far as employers fear that such decisions will be difficult or costly to reverse in the future. To the extent that EPL favours those with permanent employment contracts, it may be an important factor behind the expansion of temporary jobs, together with the fact that the latter may allow more flexibility in relation to changes in labour demand. While temporary jobs undoubtedly help reduce long-term unemployment, if carried out on a large scale, they can lead to segmentation and dual labour markets (as for example in Spain) with potentially serious drawbacks in terms of job quality (lack of job security, reduced social protection, poor transitions, lower wages and higher risk of in-work poverty) and protracted periods of repetitive unemployment[86].

The empirical evidence on the effect of EPL on the duration of unemployment is mixed. One of the more frequently used measures of strictness of EPL is the OECD EPL index. For instance, several econometric analyses[87] have found that EPL does have an impact on long-term unemployment. Other studies (e.g. IZA 2011, RWI), on the other hand, found no significant effect of the EPL variable. One should interpret the findings from the econometric studies using the EPL index

[83] For more extensive coverage of the subject, please refer to Chapter 3.

[84] See Charts A3 and A4 in the Annex based on OECD tax-benefit model.

[85] Bassanini, A. A. Garnero, P. Marianna and S. Martin (2010), Boeri, T. and J. van Ours (2008), Clark, A. and F. Postel-Vinay (2009), Venn, D. (2009).

[86] See *European Commission* (2011c), Chapter 4. See also the analytical focus on the macroeconomic implications of Employment Protection Legislation in the European Commission (2012d), part II, Section 2.

[87] For instance, see Guichard, S. and E. Rusticelli (2010).

with caution since the most recent year for which it is available is 2009, while EPL has been undergoing considerable reforms in many Member States (e.g. Spain, Portugal, Italy, Greece) and these changes will probably help to improve the outflow rate from unemployment and thus prevent future transitions into long-term unemployment.

4. What can be learned from longitudinal data on labour market transitions to and from long-term unemployment?

This section uses longitudinal data on labour market transitions in order to better understand the dynamics of long-term unemployment over the last few years and complement the findings presented in previous sections. Using new data on transitions from the longitudinal section of the EU-LFS, this section aims to:

- describe recent changes across Member States in the rates of transition between various labour force statuses, with a focus on unemployment duration through a distinction between short and long-term unemployment;
- identify the main factors driving the exit rate out of unemployment;
- examine the impact of policy-related variables on these transition rates.

The first sub-section describes the longitudinal data and its added value compared with the cross-sectional data[88] used in sections 1 and 2; this section goes on to describe how labour market transitions changed in the EU during the crisis, with the transition rates to and from unemployment described in detail at Member State level. A sub-section seeks to measure the impact of certain policy-related variables on the transition rate out of unemployment. A final section is based on econometric work and aims to summarise the main lessons that can be drawn from the data on labour market transitions.

Box 13: How has longitudinal data on labour force status been extracted from the EU-LFS?

The transition data presented below was produced by Eurostat using the methodology described as follows. In most countries LFS respondents are interviewed several times throughout a period of up to six quarters (eight in Sweden). Eurostat targeted the respondents whose interviews were separated by an interval of four quarters, e.g. in 2009Q1 and again in 2010Q1. Only a part of the sample fulfilled this condition, therefore the results obtained are based on only part of the EU-LFS sample. Eurostat linked the answers of these respondents period by period and grossed them up. This gave the estimated flow of people moving from one labour situation to another between e.g. 2009Q1 and 2010Q1, 2009Q2 and 2010Q2, etc. The four quarterly flows were then summed in order to obtain the flow volume for the whole year. Finally, transition probabilities were derived, calculated as the ratio between the persons who changed their status between e.g. 2009 and 2010 and the number of persons in the initial status in 2009. Some Member States have successfully used this technique in their national LFS for years but it is not straightforward to use it at EU level to obtain results comparable across countries.

In order to exploit the longitudinal data, Eurostat needed to identify and link responses from the same respondents within households during repeated interviews. This was carried out on the basis of the household identifiers (variables HHNUM, and HHSEQNUM), SEX and AGE. However, this technique was only successful in 17 Member States: Bulgaria, Cyprus, Czech Republic, Estonia, Ireland, Spain, Finland, France, Greece, Hungary, Italy, Lithuania, Malta, Netherlands, Romania, Sweden and Slovakia. For Austria, Denmark, Latvia, Portugal, Poland, Slovenia and the UK it was not possible to link a part of the sample representative of the changes in the overall population while, for Belgium, Germany and Luxembourg, there is no repeated interview, which is required for the method to succeed. Finally, the 'EU-13' figures reported below are the sum of the 13 of the 17 Member States for which data could be estimated for every quarter in the 2005-11 period, namely the 17 Member States less Netherlands, Ireland, Lithuania and Malta.

To summarise, the data used in this section is based on quarterly data that has been averaged to produce an estimate for each year, from 2005-06 through 2010-11, with the data corresponding to **year-to-year**[1] transition rates between the three main labour force statuses: E (Employed), U (Unemployed) and I (Inactive). Moreover, the 'unemployed' category has been broken down into several sub-categories according to the length of time spent unemployed (fewer than six months, less than one year, and more than one year).

(1) In order to analyse changes in a shorter term period, quarter-to-quarter transition rates could also be produced and analysed. However, since this chapter is focussed on long-term unemployment, we are more interested in longer periods (such as one year) and this is why priority was given to producing and analysing year-to-year transition rates.

(88) This section uses the term 'cross-sectional data' to mean standard LFS data regarding stocks, e.g. the number of long-term unemployed at a certain point in time.

4.1. What is the added value of using longitudinal data?

This section of the chapter is based on data from the longitudinal section of the EU-LFS which follows individuals from one year to another and it is therefore important to understand how it contributes to an understanding of the dynamics of long-term unemployment.

In the first section of the chapter, the use of cross-sectional data on long-term unemployment provided valuable information on levels of long-term unemployment across EU countries and across various subgroups, with rates of persistence in unemployment estimated by country and over time for both the short and long-term unemployed. Moreover, labour market dynamics can also be studied using cross-sectional data by looking at the numbers of persons who started or left jobs recently (e.g. over the last three months)[89].

However, cross-sectional data does not allow for an analysis of the most dynamic aspect of movements into and out of long-term unemployment. While comparing cross-sectional data across time provides information on changes in the average situation in the labour market, it does not show changes in individual situations[90]. Moreover, as pointed out in Chapter 2, longitudinal data allows you to measure whether a phenomenon (e.g. poverty, unemployment) is persistent for the same (low number of) individuals, or whether there is a strong turnover i.e. many individuals experiencing relatively frequent transitions between different statuses.

In the past, data on individual transitions between labour force statuses have been computed from the EU-LFS, but on the basis of a *retrospective question* put to respondents concerning their labour force status one year earlier[91]. While it has enabled researchers and institutions to study transition and persistence rates between labour force statuses (and the cross-country differences), this variable has some clear weaknesses compared to real longitudinal data (see Box 14).

Box 14: Using EU-LFS data to analyse transitions: differences between the retrospective question and the longitudinal data

The EU-LFS has been used in the past to analyse transitions between, or the persistence of labour force statuses from one year to the next on the basis of a so-called *retrospective question (*variable WSTAT1Y, or 'situation with regard to activity one year before survey'*)*. In effect, respondents are asked in a given year about their labour force status 12 months earlier. This variable can then be compared to the variable MAINSTAT (the variable indicating the 'self-declared' main labour force status in the current year) in order to produce transition matrices between the three main labour force statuses: E (employed), U (unemployed) and I (economically inactive).

Most analyses based on this data and method have produced results that seem consistent with expectations and findings from the literature. For instance, the analyses show a higher risk of becoming inactive for women than men; higher employment persistency among middle-aged workers than young and older workers; higher escape rates from unemployment for younger workers than for older workers; the exit rate from unemployment increasing with skill level; and lower transition rates to unemployment and inactivity for high-skilled workers than for medium and low-skilled workers[1].

However, use of the 'WSTAT1Y' variable has some disadvantages. Firstly, as with any retrospective question, people may not recall when exactly their labour force status changed one year before, i.e. 12 months before.

Secondly, the variable 'WSTAT1Y' indicates the 'self-declared' main labour force status. Therefore, it can only be compared to the MAINSTAT variable, and not to the more useful ILOSTAT variable which indicates the actual labour force status of the individual using strict ILO definitions. The differences between MAINSTAT and ILOSTAT are most important for unemployment.

This can have a strong impact on the results. A comparison of transition rates between E, U and I obtained through retrospective questions (explained here) and the longitudinal data (explained in Box 13) provide quite similar results, except for the transition rates of unemployed persons. According to the data based on the retrospective question, around two-thirds are still unemployed one year later (and less than 10 % become inactive), while the longitudinal data points to a lower persistence rate in unemployment (lower than 50 %), and a much higher (almost 25 %) transition rate to inactivity[2].

These differences are largely due to the different definitions of the MAINSTAT and ILOSTAT variables. They stem in particular from the fact that some people unemployed for a certain period of time tend to still consider themselves as being 'unemployed' and not economically inactive although, using the ILO criteria, they fall into the inactive category (for instance, because they are currently not available or actively seeking work). In other words, the way the labour force status is defined and measured greatly influences transition rates between labour force statuses[3].

(1) See For instance, ISG and RWI (2010), Section 4.

(2) The transition rate to employment is quite similar for both methods (around 25-30 %).

(3) See also Eurostat (2011).

(89) See European Commission, 2012b, *EU Employment and Social situation Quarterly Review,* March 2012, pp. 32-33.

(90) For instance, with cross-sectional data, the persistence rate in unemployment could be estimated – but one does not know whether those who have not become long-term unemployed are now employed, inactive or again short-term unemployed.

(91) It has been used, for instance, in *European Commission*, 2009, Chapter 2 and ISG and RWI (2010), Section 4.

Table 5: Transition matrix (age 25-49), EU-13[1] (%)

	From E to:			From U to:			From I to:		
	E	U	I	E	U	I	E	U	I
2010-11	94	2.8	3.0	32	49	19	13	10	77
2008-09	93	3.6	3.0	33	44	23	13	9	78
2006-07	95	1.7	3.0	39	40	21	15	7	78

Source: Eurostat, EU-LFS, ad-hoc transitions calculations. The years indicated in the first column are the two reference years used for the calculation of the transition rate. 2010-11 indicates that the rates are calculated as the ratio between persons having the status i in 2010 and status j in 2011 over persons having status i in 2010.

(1) As detailed in Box 14, the EU-13 aggregate refers to the 13 countries for which transition probabilities could be produced by Eurostat for the full period under analysis (2005-11): Bulgaria, Cyprus, Czech Republic, Estonia, Spain, Finland, France, Greece, Hungary, Italy, Romania, Sweden and Slovakia. Overall this aggregate is quite representative of the EU-27 Member States as it contains almost half of the Member States (13 out of 27), almost half of the EU-27 labour force (48.4% in 2011), and all geographical areas are represented. However, it should be noted that the labour market indicators are less favourable for the EU-13 than for the EU-27 aggregate, with a lower employment rate (60.2% versus 64.3%), higher unemployment rate (11.9% versus 9.7%) and higher impact from the crisis (decline of employment by 3.9% over 2008-11 versus 2.0%).

While longitudinal data of individuals surveyed several times has significant added value (see method described in Box 13), there are also caveats:

- the EU-LFS is primarily designed to measure stocks, such as the number of unemployed persons at a point in time, rather than flows, such as the number of persons falling into or leaving unemployment across a time span. Since the use of longitudinal data from the EU-LFS is relatively new, the analysis developed in this section should be considered as experimental and the results should be interpreted cautiously;

- the data is only available for a limited number of Member States. In addition, only a fraction of the LFS sample can be used, and because of the limited sample size, the results can only be broken down into a limited number of variables for analysis;

- the longitudinal data from the EU-LFS does not allow comparisons for periods longer than one year (unlike the longer period of the EU-SILC which allows for a much deeper understanding of transitions, see Chapter 2).

This section focuses mainly on transitions between various labour force statuses, with a specific emphasis on unemployment periods of various durations. Other types of transitions, in particular job-to-to transitions, are not analysed here (for example, studying the probability of temporary workers obtaining an indefinite term contract, of part-timers becoming full-time workers, or of lower-paid workers gaining higher paid jobs).

4.2. How have transitions between labour force statuses changed in the EU during the crisis?

Before focusing on detailed analyses of transitions between unemployment and employment with a focus on duration of unemployment, the current subsection presents transition rates between the three main labour force statuses (E=employment, U=unemployment and I=Inactive) at EU level over the last few years. The analysis is also done for various subgroups (age, sex, education level).

4.2.1. Increasing inflows into unemployment, decreasing outflows from unemployment

Due to the crisis, labour market transitions have changed in a negative direction over the last few years as more persons have become unemployed, while the rate of return to employment[92] for both unemployed and inactive persons has decreased and the persistence in unemployment increased.

Table 5 presents, for the 25-49 age group[93], year-to-year transition and permanence rates between the three main statuses for three years: the pre-crisis period (from 2006 to 2007), the recession year (from 2008 to 2009) and the last year available (from 2010 to 2011), characterised in most countries by a moderate recovery.

The permanence rate in employment (the probability of remaining employed in the following year) decreased from a pre-crisis level of 95% to 93% in 2008-09 before improving to 94% in 2010-11. The drop in 2008-09 was mainly due to the transition from employment to unemployment doubling between 2006-07 (1.7%) and 2008-09 (3.6%) before returning to lower levels (2.8% for 2010-11). These changes reflect the patterns observed during the crisis (increases in job losses followed by a decrease but no complete recovery).

The data also confirms the declining exit rate out of unemployment to employment from 39% in 2006-07 to 33% in 2008-09 and, more worrying still, the decline in the two most recent years for which data is available (less than 32% in 2010-11). In other words, unemployed persons in the EU have an increasingly lower chance of finding a job. Consequently the persistence rate in unemployment, the probability of remaining (or being again) unemployed

(92) By 'rate of return' to employment, we refer in this section to the transition rate out of unemployment and towards employment. However, it should be borne in mind that not all those unemployed previously had jobs (see Section 2.5) and that the term 'return' can therefore be misleading.

(93) As transitions from and to inactivity are very different for the youngest (15-24) and oldest (50-74) age group, it is preferable to use the 25-49 age group as the group of reference to analyse simple transition matrices. However, transition rates for every age group are analysed below. All the tables in the current section use the 25-49 age group, except where another age group is specified.

from one year to the next increased continuously, from 40% in 2006-07, to 44% in 2008-09, to around 49% in 2010-11, almost 10 pps above the pre-crisis level. This means that almost half of all unemployed persons remained in the same situation from one year to the next.

Finally, the transition rate from unemployment to inactivity has decreased in recent years (following an initial increase in 2008-09[94]), which seems to show a limited incidence of 'discouragement'. This confirms previous analyses[95] that have shown a limited increase in inactivity compared to developments in previous recessions, despite the difficulties of finding a job. This lower transition rate to inactivity is a positive signal in terms of labour supply and the desire to remain economically active. However, as it applies to a much larger number of unemployed persons than before the crisis (i.e. the number of unemployed persons has increased by almost 40% between 2008 and 2010) the absolute number of people falling into inactivity from unemployment has nevertheless increased compared to the past.

Interestingly, there has been a slight increase in the share of inactive persons exiting inactivity (entering or re-entering the labour force), although it has taken place mainly in the direction of unemployment rather than employment.

4.2.2. Transition rates vary across population subgroups

In applying the same simple transition matrix to subgroups (sex, age, education), interesting patterns can be identified which are broadly consistent with the analysis of long-term unemployment rates and incidence in Section 2.

Table 6: Transition matrix for men and women (age 25-49), EU-13, from 2010 to 2011

	From E to:			From U to:			From I to:		
	E	U	I	E	U	I	E	U	I
Men	95	2.9	2.0	34	51	14	19	15	67
Women	93	2.8	4.2	29	46	25	12	8	80

Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

With regard to **gender** differences, we observe that:

- women generally have a lower persistence rate in employment and higher transition rate to inactivity;
- while men were initially more affected by the crisis than women (with a stronger increase in the transition rate from employment to unemployment[96]), the gap disappeared in the most recent year and both rates remain (at almost 3%) much higher than in the pre-crisis level;
- unemployed men have a higher chance of remaining unemployed than women (51% vs. 46%) but also have a higher chance of subsequent employment (34% vs. 29%), due to a much higher probability of unemployed women becoming inactive (25% compared to 14% for men);
- once women become inactive, they are more likely than men to remain so (67% vs. 80%);
- most of these patterns already existed before the crisis – except that the overall persistence rate in unemployment increased more for men than for women and consequently the rate of return to employment decreased more sharply for men than for women.

Concerning differences in transition rates by **age group**, it appears that:

- the permanence rate in employment is the highest among prime-age adults who also have a very low transition rate towards inactivity (3%);
- among young people, the permanence rate in employment is much lower (83%) due to both high transition rates to unemployment (8%) and to inactivity (10%) including returning to education[97];
- older persons exiting employment mainly go to inactivity, with most of them entering normal retirement schemes (this is also due to the large age group considered, from 50 to 74);
- for the unemployed, the probability of remaining unemployed increased only slightly with age (47% for the youngest vs. 49% for the oldest); the gap (currently at 2 pps) was larger before the crisis (5 pps in 2007-08) pointing out again the sharper labour market impact of the crisis on younger compared to older persons;
- on the other hand, unemployed young people have much higher rates of return to employment (30%) than do older persons (21%) but the highest rate is among prime-age adults (32%) while in 2006-07 the highest rate of return to employment was among young people, at a high level of 40%;
- in short, not only do young people suffer more than before from unfavourable transitions (from employment to unemployment), they are also **less** likely to have favourable transitions compared to prime-age workers and compared to the pre-crisis situation.

Finally, **education levels** also lead to quite different patterns in terms of labour market transitions:

- The permanence rate in employment increases with the education level, from 90% for persons with low education levels to 96% for the highly

(94) The initial increase in 2008-09 of the 'discouragement rate' may be due to the fact that during this year of crisis, those who had already been unemployed for some time realised that they had an even lower chance of finding a job than they had before (due to declining labour demand and increased competition with other jobseekers) and therefore became inactive in higher numbers. Later, the discouragement rate decreased, especially among the long-term unemployed. This trend may be explained by the changing characteristics of the unemployed in the crisis which now includes more experienced workers with a stronger attachment to the labour market, see *OECD* (2012), page 44.

(95) European Commission (2012b), EU *Employment and Social Situation Quarterly Review*, March 2012

(96) The transition rate from employment to unemployment increased for men from 1.6% in 2006-07 to 3.8% in 2008-09 (+2.2 pps) while the increase was less sharp for women (from 1.9% to 3.2%, or +1.3 pp).

(97) According to the EU-LFS, in 2011, *between 85% and 95% (depending on the Member State) of inactive young people (15-24) were students (MAINSTAT variable).*

Table 7: Transition matrix, by age group, EU-13, from 2010 to 2011

	From E to:			From U to:			From I to:		
	E	U	I	E	U	I	E	U	I
15-24	83	8	10	30	47	24	8	7	85
25-49	94	2.8	3.0	32	49	20	13	10	77
50-74	90	1.7	9	21	49	30	2.0	1.0	97

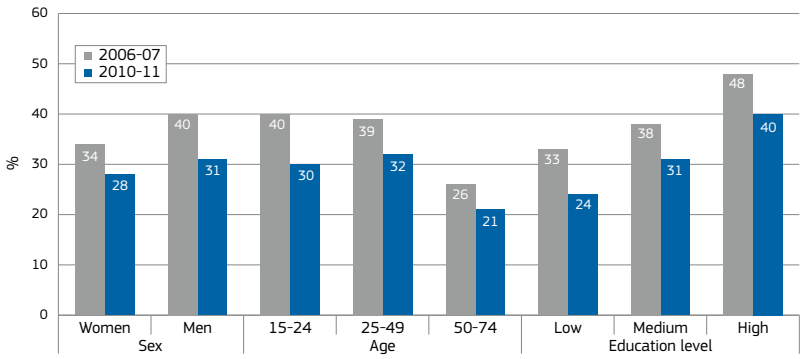
Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Table 8: Transition matrix, by educational attainment, EU-13, from 2010 to 2011

	From E to:			From U to:			From I to:		
	E	U	I	E	U	I	E	U	I
Low	90	4.8	4.8	27	52	21	9	9	81
Medium	95	2.3	2.7	32	49	20	14	9	76
High	96	2.1	2.1	41	42	16	25	14	62

Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Chart 42: Transition rate from unemployment to employment, by individual characteristics, EU-13, 2006 to 2007 and 2010 to 2011 (%)



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

educated; this gap was previously less pronounced in 2006-07, reflecting the fact that those with a low education level have been hardest hit by the crisis[98].

- In 2010-11, transition rates from employment to both unemployment and inactivity strongly decreased with the education level – this had previously already been the case, but the gaps are now more pronounced than they were in 2006-07.
- In terms of unemployed persons, their persistence rates decrease with the increase in education (52% for the less educated vs. 42% for the highly educated). In other words, people with an advanced education are less likely to remain unemployed, although the rates increased for all groups and the trend has not been reversed for either group.
- Similarly, rates of 'good transition' from unemployment to employment have decreased since the crisis for all three groups by much the same amount, with no reversal of this trend. At 41%, the transition rate is, nevertheless, much higher for those with a high level of education: nearly 10 pps higher than for the medium-educated, and 15 pps higher than for the low-educated.
- In brief, low-skilled workers have the double disadvantage of being more likely to become unemployed (either through a layoff or the end of a temporary contract) than high-skilled workers and then less likely to get out of unemployment.
- Among the inactive, the share of those who remain inactive after one year is the largest among the least-educated persons (81% vs. 62% for the high-skilled) and transitions out of inactivity to employment improve with the education level (25% for the high-skilled and only 9% for the low-skilled) which reflects better employability of those with a higher education level even after a period of inactivity.

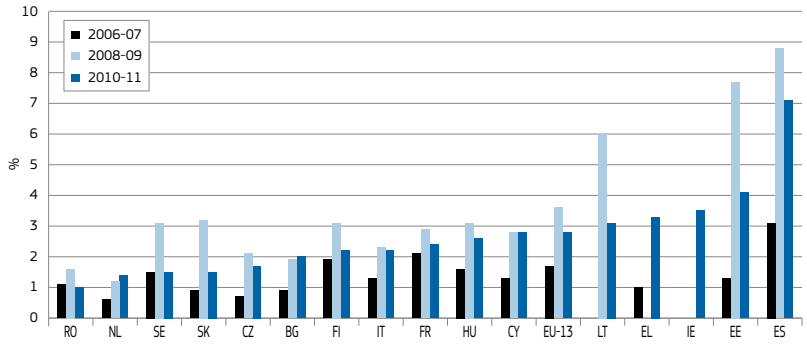
Chart 42 shows the decline in the transition rate from unemployment to employment between 2006-07 and 2010-11, which is more pronounced for men than for women, for young people than for other age groups and for the low skilled, although the differences with the other categories are limited.

4.3. How do rates of entry and exit from unemployment vary across EU Member States?

This sub-section is focussed on two crucial types of transition – from employment to unemployment and from unemployment to employment – and their level and evolution across the Member States over the last few years. While the share of those losing their jobs strongly increased during the crisis before returning to lower levels in most (but not all) countries, the rate of return to employment for

(98) For instance, in 2008-09, the transition rate to unemployment was at 5.8% for workers with a low education level, 3.0% for those with a medium education level and 2.5% for the highly educated.

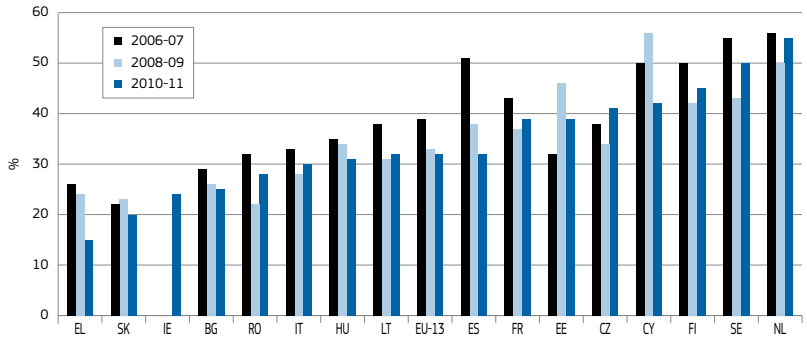
Chart 43: Transition rate from employment to unemployment for those aged 25-49, for various years (%)



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Note: data of limited reliability due to small sample size: Bulgaria, Cyprus and Slovakia in 2006-07.

Chart 44: Transition rate from unemployment to employment for those aged 25-49, before and after the crisis (%)



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Note: data of limited reliability due to small sample size: Cyprus and Lithuania in 2008-09 and Cyprus in 2006-07. For 2008-09, values for Greece are an average of values in 2009-10 and 2007-08.

the unemployed has not recovered in most countries and is very low in some cases, fuelling long-term unemployment. Economic developments explain part of the difference across countries but there are also country-specific factors, some of which are related to the policies implemented.

4.3.1. Large disparities in entry and exit from unemployment

Chart 43 shows the transition rate from employment to unemployment for the same three typical years analysed above (see Table 5). The patterns are very consistent with the well-known differential impact of the crisis across countries:

- the rate of people becoming unemployed increased in all countries between 2006-07 and 2008-09: the increase has been sharp in Spain, Estonia and Lithuania while it has been limited in Romania, Netherlands, Italy and France;
- in 2010-11 the transition rate from employment to unemployment returned to (or approached) pre-crisis levels in Sweden, Romania, Slovakia, Finland, France;
- in contrast, the rate remained extremely high in Spain (7%), Ireland and Greece (around 3%) and also in Estonia and Lithuania but major improvements were seen in these two countries compared to conditions in 2008-09.

The transition from employment to unemployment mainly seems to reflect the economic situation and resulting labour demand. In fact, increasing unemployment at the time of an economic downturn is not necessarily bad in itself if it is short in duration, since it provides flexibility to the labour market to respond to changes as a result of restructuring. This is precisely the alleged advantages of a flexicurity approach (such as implemented in Denmark or the Netherlands): it promotes easier firing and hiring by making the labour market more flexible, and ensures high employment security (rather than job security) by helping the unemployed to quickly find a job through notably active labour market policies. It is therefore important to jointly analyse transition rates from employment to unemployment and from unemployment to employment to see what the various patterns in these countries are.

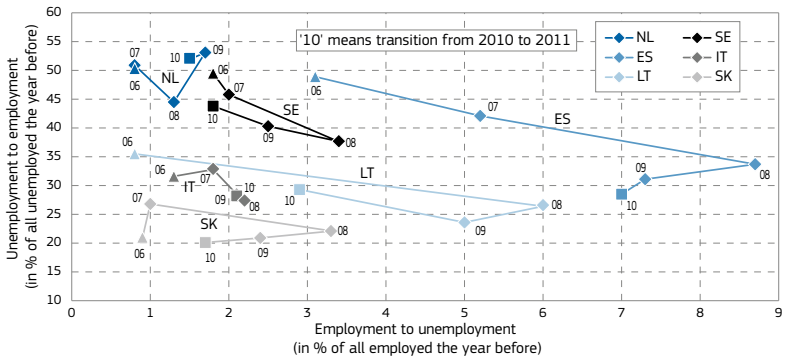
Chart 44 shows the precise extent to which the unemployed are able to find a job (transition rate from unemployment to employment) for all countries. It appears that:

- in 2010-11, the rates of exit from unemployment to employment were particularly low (below 20%) in Greece and Slovakia and also below 30% in Ireland, Bulgaria and Romania; in contrast, high exit rates were found in Netherlands, Sweden and Finland;
- compared to the past, the exit rates out of unemployment to employment have decreased in most Member States;
- the slowdown has been particularly apparent in Spain and Greece. For instance, in 2006-07, Spain had one of the highest exit rates out of unemployment (51%) while four years later (2010-11) the rate was only just above 30%, close to the EU-13 average;
- in Estonia and the Czech Republic the exit rate out of unemployment was higher in 2010-11 than it was before the crisis (2006-07) and for the Netherlands the drop has been limited (only 1 pp).

The effect of the crisis on transition rates between employment and unemployment is visible in charts 45a, 45b and 45c for selected Member States.

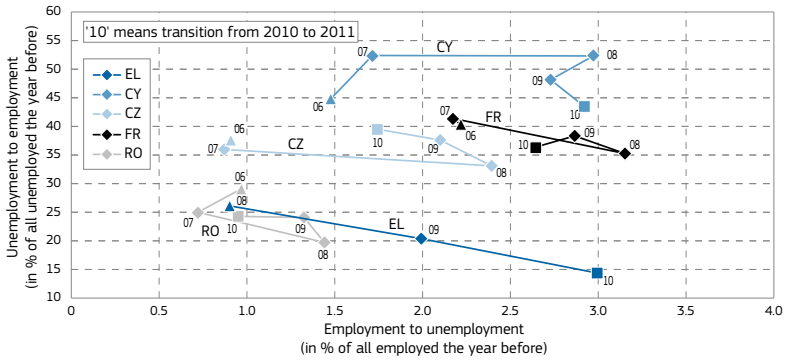
While the rate of transition from employment to unemployment has returned to lower levels for all countries (following an increase during the crisis), the recovery in the exit rate out of unemployment

Chart 45a: Transition rates between employment and unemployment for selected countries over the 2006-07 and 2010-11 periods, for those aged 15-74



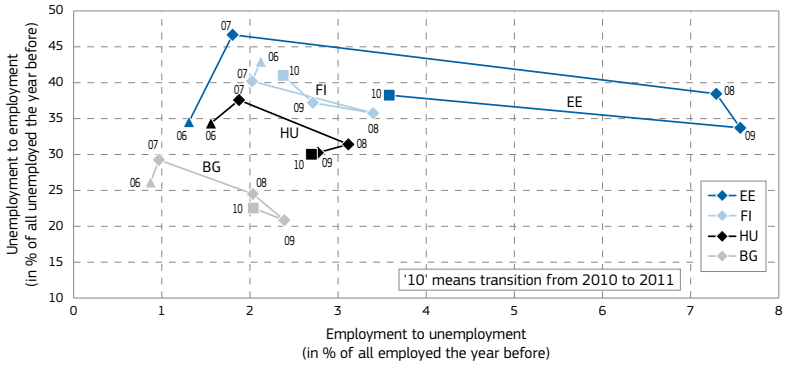
Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Chart 45b: Transition rates between employment and unemployment for selected countries over the 2006-07 and 2010-11 periods, for those aged 15-74



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Chart 45c: Transition rates between employment and unemployment for selected countries over the 2006-07 and 2010-11 periods, for those aged 15-74



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

since 2008-09 is apparent (for instance in chart 45a) in some countries (Netherlands, Sweden, Lithuania) but not in others (Spain, Italy, Slovakia). This is a sign of divergent labour market performance across countries.

The second point is that even if the crisis has pushed most countries further to the bottom and to the right of the chart, the overall position of the countries with regard to each of these transition rates did not change significantly between 2006-07 and 2010-11 (Spain being an important exception). This seems to show that, beyond the impact of the crisis, there is some stability in the overall level of transition rates that is explained by structural differences.

4.3.2. Despite the impact of the crisis on transition rates, some stable patterns across countries

This is confirmed in Charts 46a and 46b, which show, for all the available countries, the two transition rates before the crisis (2006-07) and for the last year available (2010-11), demonstrating that there are two large groups of countries for which the patterns are quite stable:

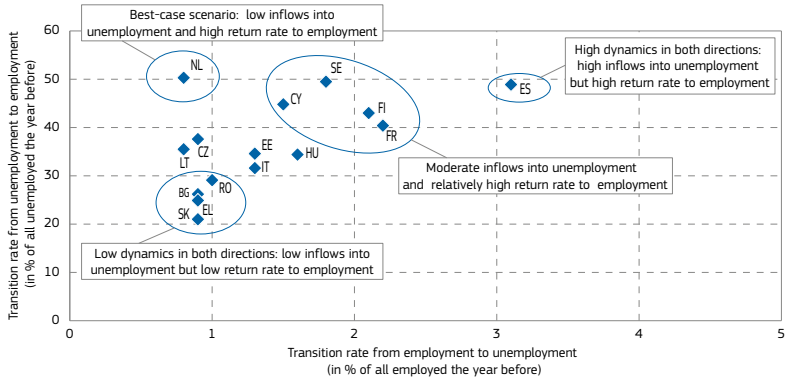
- some countries were characterised in both years by a relatively high exit rate out of unemployment and moderate inflows into unemployment. This is the case in the Netherlands and also characterises Sweden, Finland and to a certain extent, France and Cyprus although transition rates worsened slightly in those countries;

- on the other side, there are countries with low labour market dynamics (relatively low inflows into unemployment but low return to employment) and in which both transition rates worsened: Italy, Bulgaria, Slovakia, Romania and to a certain extent, Hungary;

In contrast, a few countries[99] have been subject to significant changes in the transition rates between employment and unemployment:

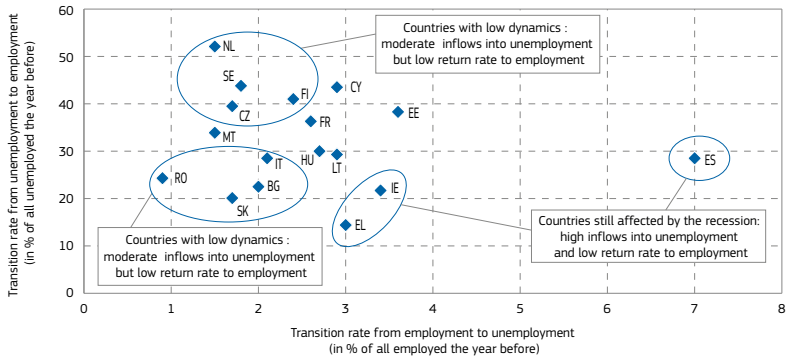
[99] In the case of Ireland, although the time comparison is not possible due to a lack of reliable data for previous years, one can assume that the situation also changed radically compared to the pre-crisis period (with increasing inflows into unemployment and a decreasing exit rate out of unemployment).

Chart 46a: Transition rates between employment and unemployment between 2006 and 2007, for those aged 15-74



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Chart 46b: Transition rates between employment and unemployment between 2010 and 2011, for those aged 15-74



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Chart 47: Transition rate from unemployment to employment for those aged 25-49, 2010-11, and job vacancy rate, 2010



Source: for transition rates: Eurostat, EU-LFS, ad-hoc transitions calculations. For job vacancy rates: Eurostat, annual data on job vacancy rates for NACE sectors B to S. The chart only covers countries for which data is available for both indicators.

Notes: y = 18.9x + 15.073
R^2 = 0.3949

- Spain, originally with a high rate of return to employment but high inflows into unemployment and where both transitions rates worsened very significantly;
- Greece, which originally had low dynamics (relatively low inflows into unemployment but a low rate of return to employment) and where both transition rates also worsened very strongly;
- the Czech Republic and Estonia, countries which had a moderate rate of return to employment and where (unlike all other countries for which data is available) the rate of return to employment improved substantially.

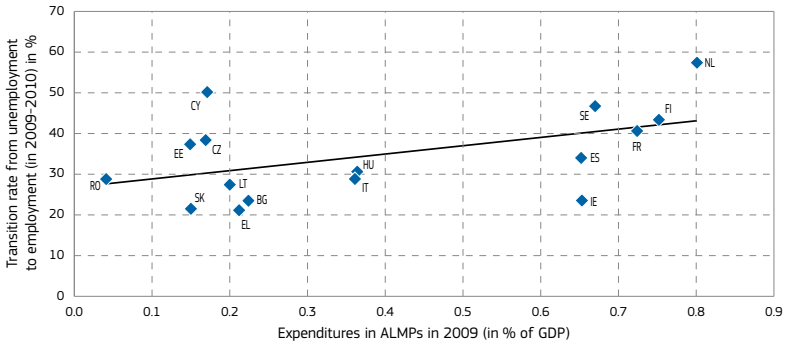
4.3.3. Exit rates out of unemployment are influenced by the economic cycle, but also by country-specific factors

The overall level of labour demand (measured by the job vacancy rate) seems to partially explain cross-country differences. There is indeed a positive correlation[100] between the job vacancy rate in each country (in 2010) and the probability of an unemployed person being employed one year later (in 2010-11). However, some countries display higher than expected (Sweden, Netherlands, Czech Republic) or lower than expected (Greece, Slovakia, Hungary) probabilities of exiting unemployment, indicating that other country-specific factors (such as labour market institutions) are at work.

As already pointed out in Sections 1 and 3, one important factor may be how much the countries invest in active labour market policies. The correlation between the exit rate out of unemployment and spending in active labour market policies as a percentage of GDP is indeed positive as showed in Chart 48. Moreover, some of the countries having a higher exit rate out of unemployment than expected from their job vacancy rate (such as Sweden, Netherlands and France, see Chart 47) are also those spending large amounts in ALMPs – while the inverse is true for those spending small amounts (such as Greece, Bulgaria and Slovakia). However, again this only explains part of the country differences.

(100) Coefficient of correlation around 63%.

Chart 48: Transition rate from unemployment to employment for those aged 25-49, 2009-10 and expenditures in active labour market policies, 2009



Source: for transition rates: Eurostat, EU-LFS, ad-hoc transitions calculations. For expenditures in ALMPs: Eurostat, LMP database.

Notes: expenditures in ALMPs include categories 2-7.
y = 19.853x + 26.781
R^2 = 0.2348

The current analysis is not aimed at identifying the relative weight of the various factors impacting the exit rate out of unemployment. However, Section 4.6 is an attempt to measure the relative influence of the economic environment vs. country-specific factors (among which labour market institutions possibly play a large role).

4.4. How do transitions differ for the short and long-term unemployed?

This sub-section analyses transitions out of unemployment, focusing on the distinction between the two groups of short-term and long-term unemployed persons. It confirms that the duration of unemployment negatively impacts the rate of return to employment and positively impacts the persistence in unemployment, as well as the withdrawal into inactivity. Some countries (Netherlands, Sweden) perform better than others in ensuring the return to employment for both the short and long-term unemployed while others have very low exit rates out of unemployment (Greece, Bulgaria, Slovakia). The long-term unemployed have a very high persistence rate in unemployment in most countries, confirming that once an individual has already been unemployed for one year, it becomes difficult to exit. In some countries such as Italy, however, many of the long-term as well as the short-term unemployed fall into inactivity. Using longitudinal data, it is also possible to identify countries in which there is a high recurrence of (shorter than a year) unemployment spells (Spain, Greece, Cyprus, but also Sweden and Finland). Finally, there exist some specificities as regards sub-groups of the population: for instance, men's advantage (over women) in the exit rate of unemployment is less pronounced for the long-term unemployed; the recurrence of short unemployment spells is more frequent among young people; the unemployment duration may matter more than education level in that the low-educated short-term unemployed have a higher chance of transitioning to employment than the highly educated who have been unemployed for more than one year.

4.4.1. Persistence in unemployment and transition to inactivity increase with duration

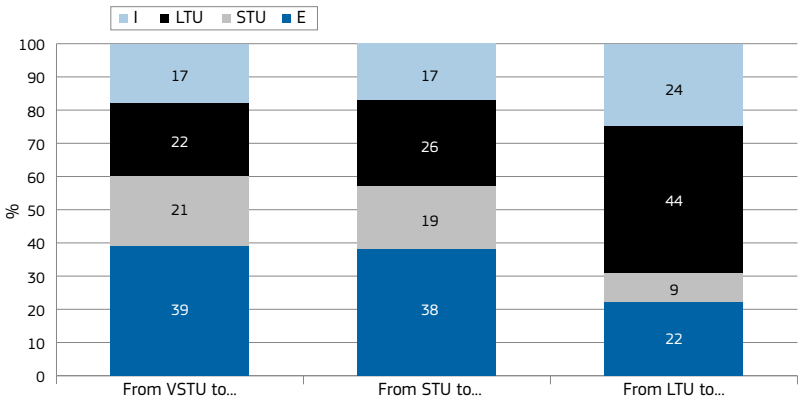
When addressing long-term unemployment, it is important to analyse the different probabilities of returning to employment or falling into protracted spells of unemployment/inactivity according to the time spent in unemployment. In the chart below this has been done for three categories:

- very short-term unemployment: those who spent fewer than six months unemployed;
- short-term unemployment: those who spent fewer than 12 months unemployed;
- long-term unemployment: those who spent more than 12 months unemployed.

Not surprisingly, this indicates that the rate of return to employment decreases with the duration spent in unemployment. At EU level, nearly 40% of those unemployed for fewer than six months in 2010 were employed one year later, with the rate for those unemployed fewer than 12 months very close, at 38%. However it falls to only 22% for those who were already unemployed for more than 12 months. The long-term unemployed have a high probability of remaining unemployed (44%) or falling into inactivity (24%). Spending a long time without a job negatively affects one's chances of finding employment and highlights the important role of early activation policies to prevent people from becoming long-term unemployed.

The very short-term unemployed have a lower chance (22%) than the short-term unemployed (26%) of becoming long-term unemployed but a higher chance (21% vs. 19%) of again being short-term unemployed (<12 months) one year later. Moreover, they both have the same rate of transition to inactivity. As the

Chart 49: Transition rate from unemployment to various statuses (employment, short-term unemployment, long-term unemployment and inactivity), by duration of unemployment, in 2010-11, age 25-49, EU-13

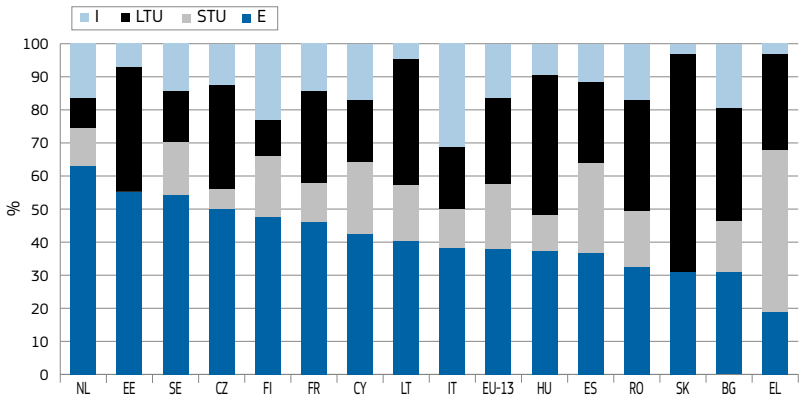


Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

differences between those two categories are limited, the analysis of transition rates that follows will focus only on differences between short and long-term unemployed (no further analysis of the *very* short-term unemployed category).

Compared to the pre-crisis period (2006-07), the exit rate out of unemployment has decreased by 10 pps (from 48% to 38%) for the short-term unemployed and the transition rate to long-term unemployment subsequently increased by 8 pps (from 18% to 26%). Transitions for the long-term unemployed have also worsened but to a lesser extent (5 pps) as the exit rate out of long-term unemployment has decreased from 27% to 22% while the persistence rate has increased from 39 to 44%.

Chart 50: Transition rate from short-term unemployment to various other statuses (employment, short-term unemployment, long-term unemployment and inactivity), 2010-11, aged 25-49



Source: Eurostat, EU-LFS, ad-hoc transitions calculations. Data of limited reliability due to small sample size for Lithuania, Netherlands and Finland.

Note: for Estonia and Slovakia, those in STU the second year (2011) are included in the LTU category.

4.4.2. Transition for short vs. long-term unemployed by country

Charts 50 and 51 show the transition rates of the short and long-term unemployed for all Member States for which the data is available.

Regarding **short-term unemployment**, it appears that:

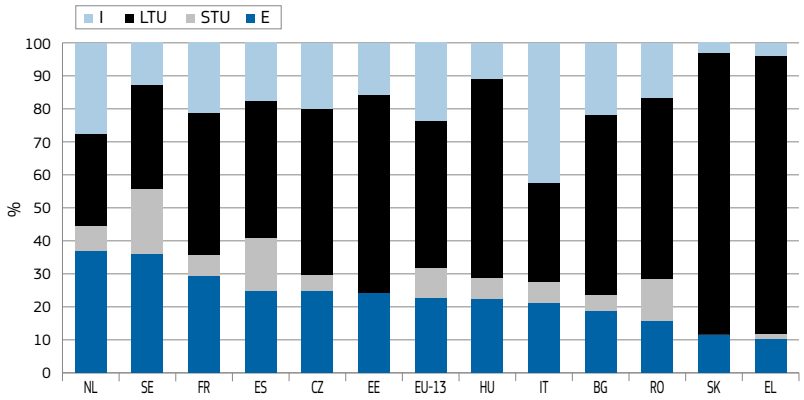
- More than half the short-term unemployed are employed one year later in the Netherlands (63%), Estonia, Sweden and the Czech Republic and more than 45% in Finland and France; at the other end of the spectrum, the rate is below one-third in Romania, Slovakia and Bulgaria and reaches the very low figure of 19% in Greece.
- The share of the short-term unemployed becoming long-term unemployed is the highest in Slovakia (66%) and between 35-45% in Hungary, Lithuania and Estonia, while it is the lowest in the Netherlands, Finland and Sweden. This is consistent with findings from Section 1.3 concerning the persistence rate in unemployment.
- Interestingly, in Finland, Spain and Cyprus and even more in Greece, most of the short-term unemployed do not become long-term unemployed but rather are again short-term unemployed one year later: this shows the importance of the phenomenon of recurrence of unemployment spells (shorter than a year) in those countries[101], driven partly by the prevalence of temporary contracts; this phenomenon was already prevalent before the crisis.
- Italy seems to be a specific case since 31% of the short-term unemployed are inactive one year later – this may be linked to the ungenerous unemployment benefits system and the relatively limited expenditures on active labour market policies. This is even more the case among the long-term unemployed (43%, see Chart 51).
- Compared to the pre-crisis situation (2006-07, not shown in the graph), the rate of return to employment has decreased in most Member States and particularly so in Spain (-20 pps), Cyprus (-14 pps), Greece (-13 pps) and Bulgaria (-10 pps). In contrast, it has returned to the original level in the Czech Republic, Lithuania and increased in Estonia.

Considering those in **long-term unemployment** in 2010, one can note that:

- The highest rate of return to employment was reached, once again, in the Netherlands, Finland and Sweden, with a rate around 36-37% while

[101] It is also the case in Sweden and Netherlands – although in these countries the share of the short-term unemployed who again have the same status one year later is lower (16% and 11% respectively).

Chart 51: Transition rate from long-term unemployment to various other statuses (employment, short-term unemployment, long-term unemployment and inactivity), in 2010-11, aged 25-49



Source: Eurostat, EU-LFS, ad-hoc transitions calculations. Data of limited reliability due to small sample size for Estonia, Greece, Netherlands and Romania.

Note: for Estonia and Slovakia, those in STU the second year (2011) are included in the LTU category.

only around 10% of the long-term unemployed in Greece and Slovakia were employed one year later.

- Consequently, very high persistence rates in unemployment are found in Slovakia and Greece with more than 80% of the long-term unemployed remaining at the same status, followed by Hungary and Estonia (around 60%) while the lowest persistence rates are found in the Netherlands and Sweden.

- A substantial share of the long-term unemployed find themselves in short-term unemployment one year later in Sweden (20%), Spain (16%) and Romania (13%); this means that they have transited through another status (most probably a short-term job). It is a positive sign that they manage to exit long spells of consecutive unemployment – on the other hand, the fact that they are again in unemployment shows that the 'good transition' (exiting unemployment) was only temporary.

- Compared to the pre-crisis situation (2006-07), the rate of return to employment has decreased in most Member States and particularly so in Romania (-10 pps), Greece (-10 pps), Spain (-9 pps), Lithuania (-9 pps) but also Sweden (-7 pps). In contrast, it has only declined slightly in Estonia (-1 pp) and increased slightly in Czech Republic (+ 1 pp).

Box 15: Recurrence of unemployment spells and unemployment duration: more data from the EU-LFS and EU-SILC longitudinal data

As pointed out in Box 1, the recurrence of unemployment spells shorter than one year in some countries implies that the long-term unemployment rate is an imperfect measure of long-term joblessness. Indeed those having spent fewer than 12 consecutive months in unemployment are not included in the measure, even if they are unemployed regularly for long periods. Taking into account the recurrence of unemployment spells shorter than one year (as in Chart 50) somewhat qualifies the favourable performance of countries such as Sweden, Finland (or Spain before the crisis) in terms of the low persistence rate of unemployment (as measured on the basis of cross-sectional data in Section 1.3.b).

Beyond this methodological issue, the recurrence of unemployment spells is also a policy challenge as it means that many individuals manage to exit unemployment, but only on a temporary basis. Two factors may drive this phenomenon: the prevalence of temporary contracts coupled with frequent transitions back and forth to unemployment/inactivity and participation in labour market programmes that only 'reset' the duration of the unemployment spell without necessarily leading to a transition to a stable job (see OECD, 2002[1]).

Interestingly, the phenomenon of a strong rate of recurrence of unemployment spells shorter than one year was already prevalent before the onset of the crisis. Using LFS longitudinal data, the proportion of the short-term unemployed again short-term unemployed one year later in 2007-08 was even slightly higher (18%) than the share of those becoming long-term unemployed (17%). In the latest year (2010-11) those figures were around 19% and 26% respectively, showing that it is mainly the transition rate to long-term unemployment that has increased the most at EU level and in most countries.

In order to better understand patterns of unemployment duration, it is important to consider labour market experiences over periods longer than one year. Longitudinal data from the EU-SILC presented below provide information over a period of 36 consecutive months (from January 2007 to December 2009) on the (self-declared) labour force status of individuals aged 25-54 who were unemployed in the middle of the period (July 2008). Three indicators are considered[2]:

- the first measure indicates, among all the unemployed in July 2008, the share of those having already spent 12 consecutive months unemployed i.e. prior to July 2008. It corresponds to the standard measure of incidence of long-term unemployment (using spells-in-progress data);
- the second indicator gives an indication of the completed spells of unemployment by providing, among all the unemployed in July 2008, the share of those that went on to experience 12 or more consecutive months of unemployment (by the time their current spell had finished, thus including the period after July 2008);
- finally, the third indicator measures, among all the unemployed in July 2008, the share of those that had spent at least 12 months unemployed, even if not consecutively (the various spells of unemployment over the 36-month period are summed up).

Table 9 shows that:

- in July 2008 in the EU, almost half of the unemployed (aged 25-54) had already spent at least twelve months unemployed (see first column) and the country ranking was very similar to the one resulting from the EU-LFS indicator of incidence of long-term unemployment;
- however, a further 34% of the unemployed (aged 25-54) ended up experiencing a complete spell of unemployment lasting 12 months or more (see difference between first and second columns). On this basis, around 83% of the unemployed in the EU were 'long-term unemployed';
- finally, according to the third indicator measuring the sum of all the unemployment spells that occurred in the three-year period, almost 90% of the unemployed (aged 25-54) went on to spend 12 or more months in unemployment in total[3]. This shows the importance of the recurrence of unemployment spells and the need to take this into account when monitoring unemployment and evaluating policy measures.

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(1) OECD (2002), '2002 Employment Outlook,' Chapter 4, The ins and outs of long-term unemployment.

(2) These indicators are inspired from *OECD* (2002) and *European Commission* (2009).

(3) The countries for which the third indicator is significantly higher than the second one are also those pointed out above (on the basis of longitudinal EU-LFS data) as being characterised by the recurrence of short unemployment spells, in particular: Sweden, Finland, Spain and to a certain extent Greece and Cyprus.

Table 9: Percentage of all persons unemployed in July 2008 (aged 25-54) who experienced at least 12 months of unemployment as measured by:

Country	1. those having already spent 12 consecutive months unemployed in July 2008 (i.e.: standard measure of incidence of LTU, using spells-in-progress data)	2. those that went on to experience 12 or more consecutive months of unemployment, by the time their current spell had finished, thus including the period after July 2008 (i.e.: measure of completed duration of unemployment spell)	3. those that had spent at least 12 months unemployed, even if not consecutively (the various spells of unemployment over the 36-month period are summed up)
SE	13	39	57
UK	17	64	70
SI	23	66	75
ES	26	73	86
AT	28	83	89
CY	28	55	63
LV	30	76	84
HU	32	78	84
LU	34	80	85
EE	35	79	83
PT	41	89	92
LT	45	74	84
FI	45	68	78
PL	46	80	85
EL	47	81	89
EU	49	83	89
BE	51	91	95
IT	51	92	94
NL	53	74	95
RO	55	89	90
FR	58	84	91
CZ	65	86	88
MT	66	84	87
BG	67	91	94
DE	67	91	93

Source: DG EMPL calculations based on Eurostat, EU-SILC longitudinal data. EU: estimates. No data for Ireland and Slovakia. Data not presented for Denmark due to reliability issues.

The figures reported in Table 9 may appear relatively high compared to other estimates (such as those derived from the EU-LFS[1]) and they should therefore be interpreted cautiously due to the experimental nature of the EU-SILC monthly calendar data, the limited sample size, and the fact that it is the self-declared labour force status which is reported (not comparable to the ILO status as pointed out in Box 14).

(1) Part of the difference is explained by the fact that the age class used in the two datasets is different and that the incidence of long-term unemployment among persons aged 15-24 (that are excluded from the EU-SILC calculations above) is lower than among those aged 25-54.

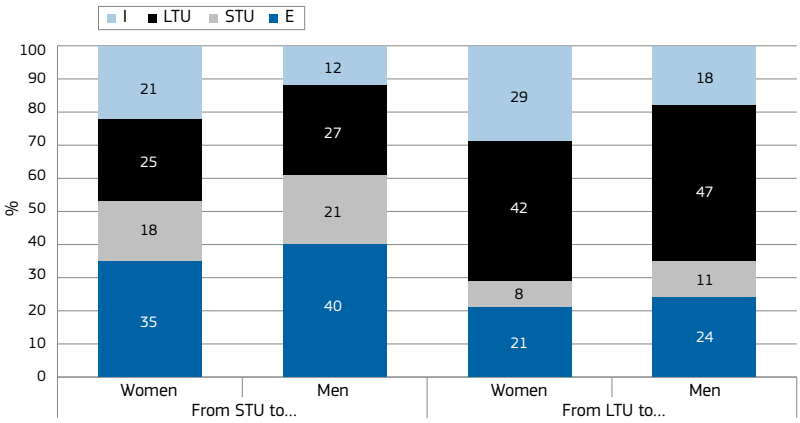
4.4.3. Transition for short vs. long-term unemployed for various subgroups

When breaking down the transition rates for the short and long-term unemployed by various sub-group (sex, age, education), interesting differences can be identified.

As regards **gender differences**, one can point out that:

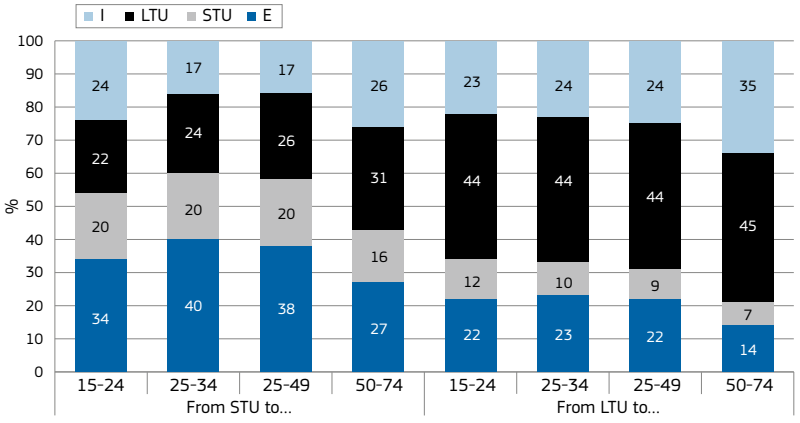
- Men have an overall higher rate of return to employment than women but men's advantage is more pronounced for the short-term unemployed (5 pps, 40% vs. 35%) than it is for the long-term unemployed (3 pps, 24% vs. 21%).
- In terms of the short-term unemployed, 21% of women are inactive one year later compared to only 12% of men, and 29% of long-term unemployed women find themselves inactive one year later, compared to 18% of men. It can also be seen that, when they are long-term unemployed, women transit more often towards inactivity than employment (29% vs. 21%), while the contrary is true for men (18% and 24% respectively).
- Comparing the rates before and during the crisis, the performance of women and men have moved in the same direction but sometimes with different timing; for instance, the rate of return to employment from long-term unemployed declined sharply for men during the crisis (from 31% to 22% from 2006-07 to 2008-09) while the rate for women diminished by only 1.5 pp. However, since 2008, the rate for women has worsened further (reaching a low of 21% in 2010-11) while there has been some improvement in the case of men (from 22% to 24%).

Chart 52a: Transition rate from short or long-term unemployment to various statuses (employment, short-term unemployment, long-term unemployment and inactivity), in 2010-11, by sex, age 25-49



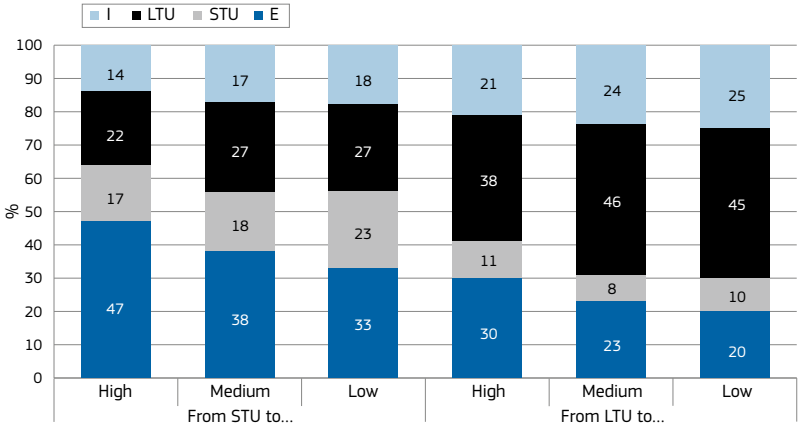
Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Chart 52b: Transition rate from short or long-term unemployment to various statuses (employment, short-term unemployment, long-term unemployment and inactivity), in 2010-11, by age group



Source: Eurostat, ad-hoc calculations based on longitudinal section.

Chart 52c: Transition rate from short or long-term unemployment to various statuses (employment, short-term unemployment, long-term unemployment and inactivity), in 2010-11, by education level (aged 25-49)



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Differences among **age groups** can also be identified:

- Unsurprisingly, the older unemployed (50-74) have the lowest return to employment (as low as 14% once they have already spent at least one year unemployed); they also have high transition rates to inactivity (26% for the short-term unemployed and 35% for the long-term unemployed).

- The recurrence of short unemployment spells (measured as a transition from short-term to short-term unemployment compared with a transition to long-term unemployment) seems particularly prevalent for those aged 25-34, and even more so for the 15-24's. This is consistent with the well-known difficulties faced by young people in entering the labour market on a stable, long-term basis given the widespread use of temporary and short-term contracts.

- Among young people (15-24) who are unemployed for a short-duration, around 34% manage to be employed one year later. This rate is particularly high in the Netherlands (65%), Cyprus (61%) and the Czech Republic (56%) while it is below 20% in Romania and Greece. For the 25-34 age group, the highest rates are reached in the Netherlands (66%), Sweden (58%) and Finland (55%) and the lowest in Romania and Bulgaria (around 30%) and in Greece (18%).

Finally, a comparison of transition rates for the short-term vs. long-term unemployed by **educational attainment** confirms that positive transitions are more frequent for the high-skilled unemployed than the low-skilled, and that the long-term unemployed achieve weaker transition rates whatever their education level. However it also appears that:

- In some cases unemployment duration may matter more than the education level; for instance, the low-skilled who are unemployed for less than one year have a higher chance of transiting to employment (33%) than do the highly-educated in long-term unemployment (30%) – and also a lower chance of falling into inactivity.

- For those who have previously been short-term unemployed, the recurrence of short-term unemployment

spells is more frequent for high-skilled and low-skilled workers than it is for the medium-skilled.

- Since the crisis, the persistence rate in unemployment has increased substantially for the low-educated (+10 pps) but also for the highly educated (9 pps) more than for the medium-skilled (+ 6 pps) who already had a high rate in 2006-07 (22%) compared with other groups.

4.5. Impact of policy-related variables on the transition out of unemployment

This sub-section attempts to measure the impact of various labour market interventions on the exit rate out of unemployment by using the few policy-related variables that exist in the EU-LFS. For instance, participation in lifelong learning (education or training) by unemployed persons improves their transition rates out of unemployment. However participation in lifelong learning is currently limited in many Member States, particularly among low and medium-skilled workers. Another finding is the positive effect of being registered with the public employment service, particularly when receiving unemployment benefits. However this impact partly hides a compositional effect (linked to the different exit rates from unemployment among short vs. long-term unemployed).

4.5.1. Participation in lifelong learning increases rate of return to employment

The previous analysis showed that education has an importance influence on the transition rates from unemployment to employment (and vice versa) and on unemployment/ inactivity persistence rates, particularly for young people (15-24). Apart from initial educational attainment, lifelong learning possibilities (either while employed or unemployed/ inactive) can boost positive transitions on the labour market.

Training to improve the occupational mobility of workers is seen as particularly relevant in times of high unemployment, when people may lose jobs in declining occupations and need to be trained for new occupations. This is seen to apply specifically to older workers. In the case of the Netherlands, Van der Heul (2006) found that the effectiveness of training increased for older workers in a time of high unemployment. At the time of the study, 2003, the majority of the unemployed not only found a new job, but even a new job in a different sector. However, Ecorys and IZA (2012) have found that re-training needs to be accompanied by job search assistance in order to be effective.

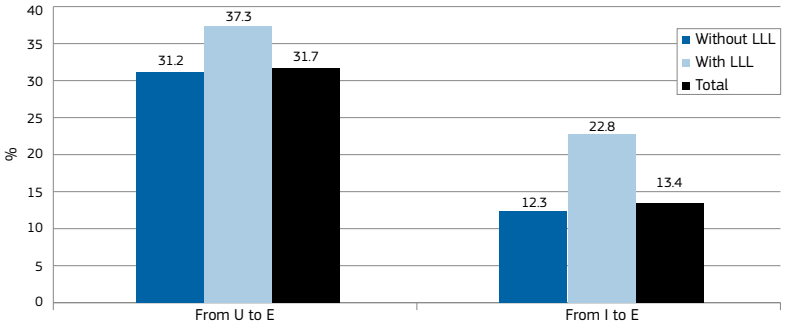
Transition rates from short and long-term unemployment can be analysed separately, depending on whether or not the unemployed person has had access to lifelong-learning in the previous year[102]. The results suggest that participation in lifelong learning can increase the frequency of positive transitions (from unemployment or inactivity to employment) and reduce the frequency of negative transitions (staying in unemployment or in inactivity).

In particular, the transition rate out of unemployment to employment is 6 points higher for those having had some lifelong learning opportunities (37% vs. 31%), as also mirrored in a lower persistence rate in unemployment (44% vs. 49%).

Making a comparison over time it appears that the labour market advantage of participating in lifelong learning was somewhat higher before the crisis (2006-07) – with a rate of return from unemployment to employment 9 pps higher for participants compared to non-participants (47% vs. 38%) – in contrast to the 6 pps advantage in 2010-11.

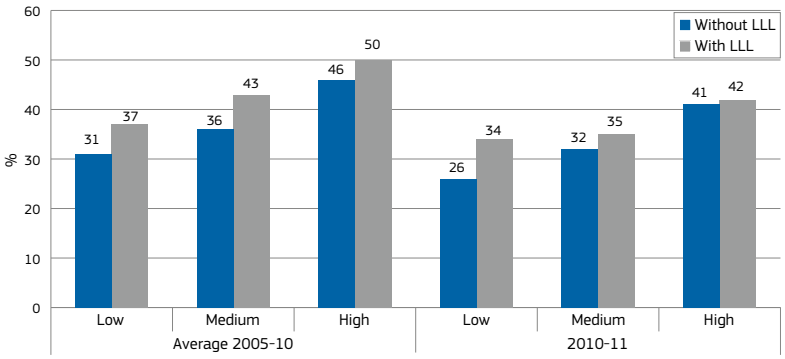
The difference in the transition rate to employment between those without lifelong learning and the overall rate is low,

Chart 53: Transition rate to employment for unemployed and inactive persons, depending on participation in lifelong learning, 2010-11, EU-13



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Chart 54: Transition rate to employment for the unemployed, depending on participation in lifelong learning and by education level, average 2005-10 and 2010-11, EU-13



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

[102] In the EU-LFS, the indicator on lifelong learning denotes the percentage of persons aged 25 to 64 who received education or training in the four weeks preceding the survey. The information collected relates to all education and training, whether relevant to the respondent's current or possible future job or not. It includes formal and non-formal education and training. This means general activities in the school/university systems but also courses, seminars, workshops, etc. outside the formal education system, regardless of the topic.

reflecting the fact that participation in lifelong learning in the overall population is very low, at less than 9% at EU level, in 2010, for adults (aged 25-64)[103].

In 2010-11, participation in lifelong learning had a stronger impact for those with a low education level, with a transition rate from unemployment to employment 8 pps higher for participants, compared to the medium-skilled (3 pps) and high-skilled, for which the effect is negligible (1%). Considering the 2005-10 period, it seems, however, that the positive effect of participation in lifelong learning was substantial for all education groups.

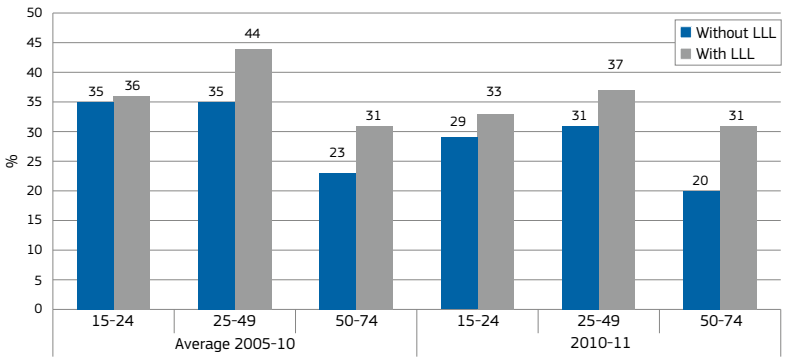
This contrasts with the fact that high-skilled workers are much more likely to participate in lifelong learning (16.0%) than medium-skilled (8%) and low-skilled (4%) workers. To summarise, only a limited share of the adult population participates in lifelong learning[104] (education or training) but, when they do, it seems to have a positive impact on their probability of transitioning out of unemployment and inactivity, particularly for the medium and low-skilled segment.

In terms of age groups, among the unemployed, participation in lifelong learning is seen as particularly beneficial to the older age group (50-74), with a rate of return to employment 10 pps higher for participants, and a much lower incidence of inactivity.

The positive impact of participation in lifelong learning on the transition rate from unemployment to employment can be seen in all Member States for which data is available, with the exception of Sweden in which the impact appears to be negative (around 5 pps)[105].

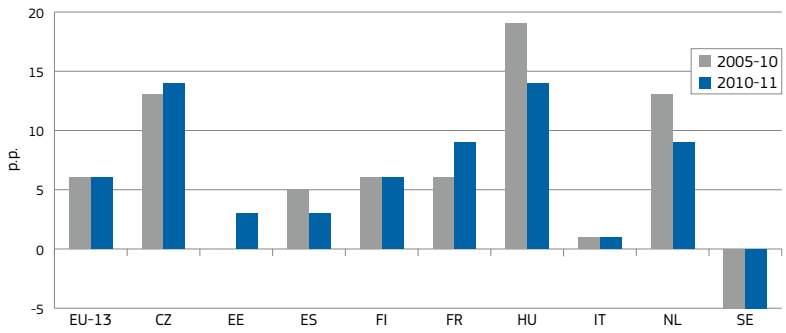
Finally, in terms of the impact of lifelong learning, taking account of the different lengths of time spent unemployed does not make a large difference. Participation in lifelong learning has a positive impact on the rate of return to employment for both the short-term unemployed (+5 pps) and the long-term unemployed (+6 pps). Among the long-term unemployed, the impact of lifelong learning can also be seen in a strong reduction in the persistence of long-term unemployment (-11 pps), although this is partly offset by a rise in the transition to short-term unemployment (+5%), which may be explained by temporary exits as a result of the training (which reset the unemployment duration to zero).

Chart 55: Transition rate to employment for the unemployed, depending on participation in lifelong learning and by age group, average 2005-10 and 2010-11, EU-13



Source: Eurostat, EU-LFS, ad-hoc transitions calculations.

Chart 56: Impact of participation in lifelong learning on the transition rate from unemployment to employment (in percentage points) for those aged 15-74, in 2005-10 (average over the period) and in 2010-11



Source: Eurostat, EU-LFS, ad-hoc transition calculations. Limited reliability due to small sample size for Hungary and EE in 2010. For EE: no data for 2005-10 average.

4.5.2. The impact of being registered in the PES and of receiving benefits

For unemployed persons, both passive and active labour market measures may play an important role in helping them to return to employment. Using longitudinal data from the EU-LFS, it is possible to see the extent to which registration with the national Public Employment Service, and receipt of unemployment benefits influences the transition out of unemployment, and to determine the degree to which these two factors individually affect transition rates from unemployment[106].

The chart below presents the transition, for those people unemployed the year before, to unemployment, employment or inactivity, depending on whether the person was registered with the national Public Employment service, and whether they were receiving unemployment benefits.

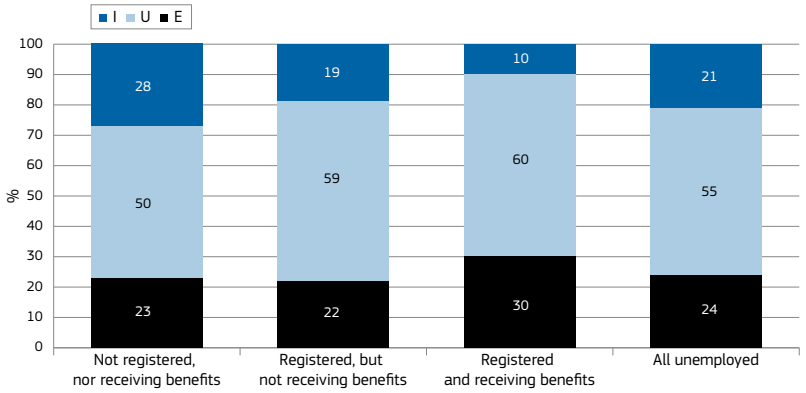
[103] With tremendous variety across EU Member States: rates as high as 25.0% in Sweden and 32.3% in Denmark and lower than 3% in Greece, Hungary, Romania and Bulgaria.

[104] For the EU-27 average, in 2011, among the adult population (25-64), 9.5% of those in employment participated in lifelong learning, compared to 9.1% for the unemployed and 6.9% for the inactive.

[105] There is no straightforward explanation for the findings for Sweden. However, it worth noting that, for those participating in lifelong learning in that country, the persistence rate in unemployment is also lower than it is for non-participants because they more often become inactive; this may be linked to longer training programmes.

[106] This can be done on the basis of the EU-LFS variable REGISTER which summarises replies to two questions: whether the respondent is 'registered at a public employment office' and whether he/she 'receives benefit or assistance'. The data used therefore corresponds to self-declared information and not to precisely defined administrative data.

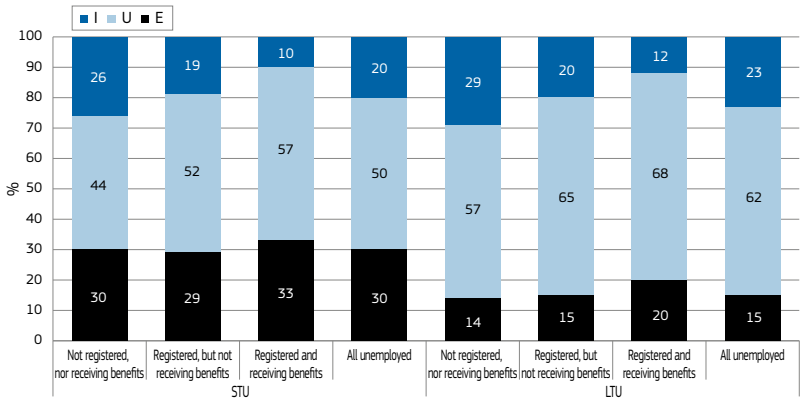
Chart 57: Transition from unemployment to various statuses, for EU-9[1] (2010 to 2011), for those aged 15-74, depending on whether they were registered with the PES and receiving benefits



Source: Eurostat, EU-LFS, ad-hoc transitions calculations. As very few persons receive benefits without being registered with the PES, the values for this category are not reliable and therefore not shown.

(1) As REGISTER is a yearly variable, the longitudinal data used in this sub-section are based on yearly estimates and differ from the previous sub-sections (based on quarterly estimates). For those yearly estimates the EU aggregate is made of nine Member States: Estonia, Romania, Cyprus, GR, Hungary, Italy, Malta, Sweden and Slovakia.

Chart 58: Transition rates for the short-term and long-term unemployed (15-74), EU-9, 2010-11



Source: Eurostat, EU-LFS, ad-hoc transitions calculations. As very few persons receive benefits without being registered with the PES, the values for this category are not reliable and therefore not shown here.

The best outcomes are for those who are both registered and receiving benefits, with around 30% returning to employment, compared with slightly over 20% for the two groups of unemployed people not receiving benefits (whether or not they are registered with the PES).

It seems, therefore, that receiving benefits does influence the probability of exiting from unemployment, and that registration with the PES alone is not sufficient. Registration with the PES, despite often being a necessary condition to receiving benefits, does not necessarily imply access to the services or labour market programmes (such as training, etc) that are potentially available.

In practice, the PES may limit its active measures to those who receive unemployment benefits and therefore represent a cost. Moreover, even if those registered with the PES without receiving benefits do have access to services and programmes, the fact that they are not entitled to benefits may limit their own incentive to participate actively in the programmes.

Furthermore, those not registered with the PES and not receiving benefits are characterised by a very high transition or 'discouragement' rate to inactivity (28%).

These average EU patterns for the latest year (2010-11), namely that those registered and receiving benefits have a higher rate of return to employment one year later, also apply to the 2005-10[107] period across all countries[108].

However, a series of factors other than registration in a PES and receipt of benefits can influence the rate of transition of unemployed persons, and the evidence needs to be interpreted cautiously. In practice, there may be a bias in the sense that those registered and receiving benefits have characteristics that make them more employable in general. For instance, having long work experience tends not only to increase the likelihood of receiving benefits, but also to improve the chances of finding a job again compared to someone who has never worked, or worked only irregularly.

If the education level is taken as a proxy of employability, this does not seem to affect outcomes since the impact of registration/benefits is still significant across all levels of education. However, differentiating the transition rates based on the time spent in unemployment (short-term vs. long-term unemployed) leads to a weakening of the effect (see Chart 58). Indeed, when looking separately at the short and long-term unemployed, it appears that the effect of registration/receiving benefits on the transition rate to employment is (at around 3-5 pps) lower compared to a situation when the unemployed are considered altogether (7-8 pps).

This is due to the fact that the short-term unemployed, who are more likely to transit to employment (as shown several times before), also account for the majority (78%) of those who are registered and receiving benefits. On the other hand, the long-term unemployed (who

(107) However, the gap with the two other categories diminished in 2008-09 and 2009-10. This can be interpreted to mean that for these particular years, the fall in employment and labour demand was so high that even for this category, receiving PES did not make a significant difference.

(108) Across all EU countries for which data is available, except Malta, the transition rate from unemployment to employment was, from 2010-11, larger for those registered in the PES and receiving benefits. The gap between those registered but not receiving benefits is the largest in EE (23 pps), Italy (18 pps), Lithuania (14%), Cyprus (13 pps) and Sweden (10 pps).

have lower transition rates to employment) account for more than half (54%) of those who are registered but not receiving benefits[109].

From Chart 58, it can also be interpreted that:

- For both the short-term and long-term unemployed, the transition rate to employment is higher when registered and receiving benefits compared with the other groups.

- Those not registered with the PES, nor receiving benefits, fall into inactivity at a high rate, particularly among the long-term unemployed (around 30%). In other words, not receiving benefits while being long-term unemployed does not seem to encourage the unemployed to intensify their job search activity (or at least does not lead to a higher rate of return to employment). This finding may be counterintuitive and not in line with existing studies showing an increase in the job finding rate when the period of receipt of benefits is close to an end. However section 3.2.b already pointed out the overall mixed evidence about the impact of the level and duration of benefits on unemployment duration.

- While being registered and receiving benefits may lead to a higher persistence rate of unemployment (68% vs. 57%), it can also be argued that it leads to a much lower rate of transition to inactivity (12% vs. 29%).

- Among the short-term unemployed not receiving benefits, the rate of return to employment is slightly higher (1 pp) when they are not registered with the PES than when they are. This seems to show that the short-term unemployed do not necessarily need the support of the PES in order to get back into employment. This may be related to the findings of Section 3, namely that activation measures for the recently unemployed may not be efficient, and that there may be a risk of 'deadweight' losses when applying active measures to them. However, the validity of this finding obviously depends on the characteristics of each unemployed person (some of whom may need more support than others in order not to fall into long-term unemployment). This reinforces the argument that public employment services should better profile and target those who are most likely to become long-term unemployed.

Finally, it should be added that:

- When looking at the same indicators by country, one finds higher rates of return to employment for those who are registered and receiving benefits compared with other categories of unemployed, except for the short-term unemployed in Slovakia, Romania and Cyprus.

- For the young unemployed, the lower transition rates to employment are for those 'not registered or receiving benefits'. This suggests that, for young people, the early involvement of the PES seems to play a small but positive role in moving the youngest members of the workforce out of unemployment, even when they do not receive benefits.

4.6. Supplementary econometric analysis: A regression analysis on the LFS transition data

The analysis carried out so far has shown that transition rates between the different labour statuses are strongly influenced by socio-economic characteristics and the general economic climate. In order to supplement the descriptive analysis of transition rates, a multinomial logistic regression analysis will be applied. The year-to-year transition rates from employment into short and long-term unemployment and vice versa will be the dependent variable.

In a first analysis these transition rates are regressed against sex (SEX variable), age (variable AGE: three age groups: 15-24 years, 25-49 years and 50-74 years of age), the educational attainment level (variable EDUC: three groups, i.e. ISCED 0-2 as low, ISCED 3-4 as medium, ISCED 5-6 as high education) participation in lifelong learning in the last year before observation (variable LLL: dichotomous). In addition, to capture the macro-economic conditions, the overall unemployment rate (variable URATE), will be taken on board as a supplementary independent variable. Note that the transition rates observed in year t refer to the socio-economic characteristics one year before the observation (t-1), so the actual period taken into account is from 2005 to 2010. Finally, another dummy variable is introduced to capture the years of crisis, i.e. equal to 1 for 2008 and later, 0 otherwise.

In the second analysis on the transition from unemployment into employment, whether or not the individual is registered as unemployed with the PES and whether she or he receives unemployment benefits/assistance (both dichotomous) is taken into account, controlling for age, sex, the unemployment rate (by age and sex), and the year, but dropping lifelong learning and educational attainment as independent variables because of data quality problems at disaggregated levels.

Data is only available for 17 countries[110]. Moreover, given the necessary disaggregation, a number of gaps occur, particularly for smaller countries. Country fixed effects could therefore only be included for the countries in which sufficient observations had been made. In addition, some of the transition rates are classified as 'unreliable' due to limited sample size. In view of data quality problems, the results must be interpreted with care.

[109] These percentages have been calculated for the year 2010 for the EU-9 aggregate used in this sub-section. It should be noted that this aggregate does not seem representative of the EU-27 average situation. For instance, in the EU-9 aggregate used here, only 17% of all unemployed persons are registered and receive benefits, compared to 38% at EU-27 level.

[110] Bulgaria, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Lithuania, Malta, the Netherlands, Romania, Sweden, Slovakia and Spain.

Table 10: **Linear regression of transition rates (independent variable) from…**

	…short-term unemployment into employment		…long-term unemployment into employment		…employment into unemployment	
	Coefficient	Sign	Coefficient	Sign	Coefficient	Sign
(Constant)	38.348	0.000	23.700	0.000	6.547	0.000
AGE	-4.570	0.000	-6.608	0.000	-2.439	0.000
EDUC	8.038	0.000	6.797	0.000	-1.419	0.000
LLL	4.954	0.000	11.155	0.000	0.053	0.742
SEX	3.317	0.000	2.438	0.004	0.256	0.050
URATE	-0.164	0.101	0.195	0.122	0.337	0.000
DUM_Crisis	-7.018	0.000	-4.820	0.000	1.761	0.000
Is FI	0.985	0.484	11.958	0.000	0.871	0.001
Is FR	2.815	0.033	6.912	0.000	1.180	0.000
Is IT	-5.616	0.000	-3.700	0.016	-0.298	0.250
Is NL	15.364	0.000	14.459	0.000	-0.106	0.720
Is SE	4.219	0.002	7.699	0.000	0.881	0.000

Source: Eurostat LFS, DG EMPL calculations.

4.6.1. Transition rates out of and into (long-term) unemployment

Table 10 gives the results for the simple multivariate regression, including country fixed effects for Finland, France, Italy, the Netherlands and Sweden.

Despite many gaps, the sample size for the three regressions is still 1805, 1105 and 1781, respectively. The results for all three transitions are straightforward. The respective left column contains the non-standardised coefficients, the right column the significance level resulting from a test that these coefficients be equal to zero, i.e. having no impact on the respective transition rate.

All coefficients contain the expected signs, except the (insignificant) impact of the overall unemployment rate on transitions into employment. However, this result is only a consequence of country fixed effects being included, i.e. the negative fixed effect for Italy captures the main effect of unemployment. Without fixed effects, the coefficient for overall unemployment on transition rates into employment is clearly negative: higher unemployment hinders 'good transitions' and triggers transitions into unemployment.

Having a higher education clearly helps the short and long-term unemployed to find a job, and the risk of becoming unemployed is significantly lower for higher educated people. Likewise, having participated in LLL measures in the year before the observation clearly resulted in higher 'good' transition rates and the positive effect of LLL is particularly significant for the long-term unemployed. However, for transition into unemployment ('bad' transition), the impact of LLL becomes insignificant. The risk of becoming unemployed is obviously less influenced by LLL activity.

A higher age reduces the transition probability both into and out of unemployment: more generous benefits and/or the option to retire early may hinder older unemployed workers from applying for new jobs. On the other hand, due to stronger job protection, they are less exposed to the risk of being dismissed.

The crisis dummy is highly significant in all transitions considered. From 2008 on, transition rates out of unemployment slowed significantly, whereas the probability of falling into unemployment shifted.

The SEX variable shows positive coefficients across all transitions. That is, the transition rates for men are higher than for women in both directions.

4.6.2. Transition rates out of (long-term) unemployment: The impact of registration and benefits

A second regression on transition rates from short-term and long-term unemployment into employment was run without the variables EDUC and LLL, but taking on board two new dummy variables: 'Benefit' is equal to 1 if the unemployed person received any kind of unemployment benefit (or assistance), otherwise it is 0. The variable 'Reg' captures whether or not the person is registered as unemployed.

The respective dataset used for the regression contains only 12 countries[111] – for some of which data quality is very limited with numerous gaps. If all 12 countries were included for fixed effects, none of those fixed effects would be significant. The inclusion of country fixed effects actually adds instability also to the other parameter estimations. Therefore, fixed effects will not be included in this regression.

The number of observations is 897 in the case of transition from short-term, 584 in the case of transition from long-term unemployment.

Receiving a benefit clearly favours higher transition rates out of short and long-term unemployment and back into employment. This finding goes against the argument that benefits raise the incentives not to search for a new job.

On the other hand, being registered plays a much less significant role in explaining transitions out of unemployment. At a 3.5 % significance level the impact of being registered is actually even negative

[111] Bulgaria, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Italy, Lithuania, Malta, Romania, Sweden and Slovakia.

Table 11: **Linear regression of transition rates (independent variable) from…**

	…short-term unemployment into employment		…long-term unemployment into employment	
	Coefficient	Sign	Coefficient	Sign
(CONSTANT)	44.879	0.000	33.170	0.000
AGE	-3.557	0.000	-5.055	0.000
SEX	3.447	0.000	3.029	0.008
BENEFIT	5.631	0.000	5.852	0.000
REG	-2.271	0.035	-1.507	0.226
URATE	-0.382	0.002	-0.344	0.049
DUM_CRISIS	-2.041	0.027	-0.228	0.840

Source: Eurostat LFS, DG EMPL calculations.

in the case of transition out of short-term unemployment. Lower significance for registration (in a regression together with receiving benefits as independent variables) could reflect registration often being a precondition for benefit receipt. Correlation between 'Benefit' and 'Reg' is indeed positive, but its levels (below 0.5 and below 0.4, respectively, for the two regressions) do not hint at this conditionality to apply everywhere. If the regressions above are run for the two variables 'Benefit' and 'Reg' separately, it turns out that receiving a benefit remains highly and positively significant whereas being registered indeed becomes completely insignificant in both regressions. Therefore, there is strong evidence that being registered with the PES may in itself not be very supportive in finding a new job if unemployed – a result which may call for improving efficiency of employment services.

5. Conclusions

During the 2008-09 financial and economic recession, most EU Member States experienced a major economic downturn that led to a sharp deterioration in their labour markets. At EU level, the unemployment rate increased from 7.1% in 2008 to 9.7% in both 2010 and 2011, and up to 10.4% in 2012 Q2, a historically high level. Consequently, long-term unemployment also increased substantially, with a roughly one year lag compared to overall unemployment, from 2.6% at the end of 2008 to 4% at the end of 2010 and 4.5% in the beginning of 2012. Given that the long-term unemployment rate tends to continue to increase even when the rate of unemployment has stabilised, long-term unemployment is clearly set to increase further and will remain a policy challenge for several years.

Measured as a share of total unemployment, the incidence of long-term unemployment decreased at the start of the recession, reaching a minimum in 2009 (33%) due to the inflows of recently unemployed people. As the short-term unemployed either found a job or became long-term unemployed, the incidence of long-term unemployment increased to 43% in 2011. This share is similar to five years before but now applies to a much larger overall number of unemployed people (25 million, compared to fewer than 17 million before).

The rise in the average rate and incidence of LTU hides increasing diversity across the Member States. Between 2008 and 2011, the **long-term unemployment rate** increased in almost all Member States but rose particularly sharply (more than 5 pps) in Greece, Spain, Ireland and the Baltic countries. Consequently, these countries recorded a long-term unemployment rate higher than 7% in 2011 (which is also the case in Slovakia where long-term unemployment was previously already very high). On the other hand, rates below 2% were found in the Nordic and some continental (Austria, Luxembourg, Netherlands) countries. Germany is the only country in which the long-term unemployment rate has substantially declined since 2008. Overall the changes in long-term unemployment across countries are highly correlated with the change in aggregate demand and in employment since the onset of the crisis.

In 2011, the countries in which the **incidence of long-term unemployment** was the lowest (below 33%) had either a low level of overall unemployment (Austria and Luxembourg) or a dynamic labour market with a low persistence rate in unemployment, as was found in the Nordic countries and the UK, or both (e.g the Netherlands). At the other end of the scale, between 50% and 60% of the unemployed in the Baltic countries, Italy, Bulgaria, and Ireland and over 65% in Slovakia were long-term unemployed. Until 2008, Spain also had a 'dynamic' labour market with high transition rates, nevertheless characterised by the extensive use of temporary contracts and the recurrence of short spells of unemployment. Since then the incidence of long-term unemployment has more than doubled, yet remained below the EU average.

Using LFS cross-sectional data on unemployment duration, it is possible to estimate the **persistence rate in unemployment.** In recent years, less than one-quarter of the short-term (<12 months) unemployed remained unemployed the following year in the Nordic countries, Austria, Cyprus, Germany, the Netherlands and the UK. On the other hand, a high persistence rate (around 45-65%) was found in Greece, Slovakia, Ireland, Portugal, Bulgaria and Hungary. The largest increases since 2007 took place in Greece, Ireland and Spain, due to the protracted recession in those countries. Unsurprisingly, the long-term unemployed have higher persistence rates than the short-term unemployed, due to *negative duration dependence*. However both rates have increased with the crisis and have not recovered since, although inflows *into* unemployment have returned close to pre-crisis rates in most countries.

In order to formulate policies that effectively target the populations at risk, it is necessary to take account of the fact that long-term unemployment is **more pronounced for some population sub-groups than for others:**

- While women were much more affected by long-term unemployment than men in 2000, the gap has been reversed, at least for the moment, because of the **sharper increase in the rate among men,** due to the stronger impact of the crisis on sectors in which men are over-represented, notably in construction and manufacturing. At EU level, men represent the majority (55%) of the long-term unemployed (which is also due to their higher activity rate), and this is also the case in most Member States.

- **Young people (15-24)** have a higher long-term unemployment rate compared to other age groups and have seen their situation worsen rapidly since 2008, although the level recorded in 2011 (6.3%) is similar to the situation in 2000. However those aged 50-64 who are unemployed have the highest chance of remaining long-term unemployed, although more than 60% of the long-term unemployed are prime-age persons (25-49) signalling the need for policies which do not just focus on the youngest or the oldest sections of the population. There are also large disparities between countries: in 2011, more than 15% of economically active young people had been unemployed for more than one year in Greece, Slovakia and Spain – while the rate was below 1.5% in the Nordic countries, where specific measures for young people exist, notably through early interventions.

- The **education level** strongly influences the chance of an unemployed person finding a new job: in 2011, the long-term unemployment rate was more than four times higher for persons with a low education level than those with a high education level. Nevertheless, when they become unemployed, jobseekers with a high education level can also face difficulties, with as many as 35% long-term unemployed, although close to 90% of the long-term unemployed have a low or a medium education level. In this respect, the analysis based on longitudinal data shows that participation in lifelong learning (general education or vocational training) improves transition rates out of unemployment for those with a low or medium education level.

The **context in which the last job was lost** also plays a role in explaining the levels of incidence of long-term unemployment across individuals:

- The crisis had a disproportionate impact on **temporary workers** such that, in 2011, they had a much higher incidence (33%) of long-term unemployment than previously (27%) in the EU as a whole, although most of this change was due only to changes in Spain. Moreover, while they remain less likely to become long-term unemployed than those who have been dismissed or made redundant (47%), temporary workers may be more exposed to the risk of recurrence of unemployment.

- One's **previous occupations and economic sectors** are also factors affecting the likelihood of finding a job and, hence, the risk of becoming long-term unemployed. Compared to the pre-crisis period, the incidence of long-term unemployment has risen particulary for craft and related trades workers, and for plant and machine operators and assemblers. Moreover, former workers from construction, accommodation and food service activities, transportation and storage, wholesale and retail trade and manufacturing seem to have a double disadvantage: they are more likely to become unemployed, and then more likely to remain unemployed for more than one year. Given the on-going structural changes in the EU economy, it appears that jobseekers previously employed in these occupations and sectors will face particular difficulties in returning to employment without appropriate re-skilling.

- Finally, almost 20% of the long-term unemployed in 2011 had **have never had a job**. Among them, three quarters were aged below 30, which mainly reflects the difficulties that many young people encounter in finding their first job (including those with tertiary level education). They may also face a high risk of social marginalisation given that, in most Member States, access to unemployment benefits is usually restricted to those who have previously worked. Policies that promote transitions from education to work (e.g. dual education systems, including interships, on-the job-training programmes, job shadowing, etc.) are seen as particularly relevant in contributing to the alleviation of the problem.

The findings based on EU-LFS cross-sectional data are confirmed by an analysis of longitudinal data, also from the EU-LFS. Though it is based on a limited number of Member States (due to data availability), the **analysis of year-to-year transition rates** demonstrates that:

- The duration of unemployment reduces the rate of return to employment, and increases the persistence in unemployment as well as the transition to inactivity. Overall the long-term unemployed have a very high persistence rate in most countries, confirming that once an individual has spent one year in unemployment, it becomes difficult to exit.

- In some cases, the unemployment duration may matter even more than the education level: for instance, the low-educated short-term unemployed have a higher chance of transition to employment than the highly-educated long-term unemployed.

- Some countries (Netherlands, Sweden) perform well in ensuring a return to employment for both the short and long-term unemployed, while other countries have very low exit rates out of unemployment (Greece, Bulgaria, Slovakia).

- Following the crisis, the probability of unemployed persons finding a job has decreased in most countries, for both the short and long-term unemployed. However this decrease has been particularly pronounced in Spain (from 50% to around 30%) and Greece (from 25% to 15%). On the other hand, the rate has remained stable in the Netherlands and improved in the Czech Republic and Estonia.

- In terms of population sub-groups, the rate of return of the unemployed to employment diminished most

strongly for men, young people and the low-skilled (the rate for high-skilled also dropped strongly, but from a much higher level).

- In Spain, Greece and Cyprus (as well as in Sweden and Finland) there seems to be a high recurrence of short unemployment spells, linked partly to the importance of temporary contracts: people move out of unemployment to employment (or to a labour market programme such as training) but find themselves unemployed again one year later.

- Since the onset of the recession, the transition rate from unemployment to inactivity has decreased, which seems to suggest a limited incidence of 'discouragement' (although in countries such as Italy it is much higher than average). This is a positive sign in terms of the labour supply and the desire to remain economically active, given that previous recessions have led to decreases in activity rates. However, as this transition rate applies to a much larger number of unemployed persons than before the crisis, the absolute number of people falling into inactivity from unemployment has nevertheless increased.

- Due to the recurrence of short unemployment spells and also to discouragement among jobseekers who have become economically inactive, the standard measure of the long-term unemployment rate may underestimate the extent of long-term joblessness.

The findings in the existing literature and the results of the econometric analysis performed in this chapter outline **two underlying groups of factors that lead to the increase in long-term unemployment: persistent aggregate demand shocks and institutional factors**, with the former seeming to explain a larger part of the increase in the long-term unemployment rate (and flows in and out of unemployment) during the recession. A deterioration in economic activity and labour demand explains why the countries that were most severely hit by the crisis (e.g. Baltic countries, Ireland, Greece, Spain) also experienced the largest increases in long-term unemployment, while countries that weathered the crisis somewhat better (such as Germany, Austria, Netherlands and the Nordic countries) experienced much smaller increases in long-term unemployment.

Therefore, job creation is critical to reducing and preventing long-term unemployment. Boosting labour demand would both reduce the inflows into unemployment and increase the outflows from unemployment, thereby reducing or avoiding long-term unemployment. Moreover, given the sectoral nature of the current labour market slack, encouraging job creation in growing sectors (e.g. green jobs, ICT, etc.), coupled with appropriate, timely retraining schemes and employment incentives, could be seen as a way to move jobseekers who have lost their jobs in declining occupations and sectors into more viable jobs.

However, structural unemployment also seems to have become increasingly significant in a number of Member States (Estonia, Greece, Ireland, Portugal and ES) such that an expansion of aggregate demand would not, in itself, be sufficient to bring unemployment back to pre-crisis levels.

Moreover, even if cross-country differences can generally be explained by changes in economic conditions and labour demand, there are certain strong country specificities confirmed by the econometric analysis. This can be illustrated by the **stability of the country patterns in terms of transition rates** (from employment to unemployment and from unemployment to employment) despite important changes in terms of labour demand over the last five years. Indeed the picture from 2006-07 was very similar to that we witnessed in 2010-11 in that:

- One group of countries (Netherlands, Sweden, Finland and to a certain extent France) have moderate inflows into unemployment and a relatively high exit rate out of unemployment. These are also countries that combine relatively generous benefits with strong activation requirements and high participation in ALMPs to increase employability and work incentives. This combination shows that stringent benefit systems are not a precondition for limiting long-term unemployment.

- A second group of countries (Italy, Bulgaria, Slovakia, Romania and to a certain extent, Hungary) have limited labour market dynamics: relatively low inflows into unemployment but a low return to employment, and a worsening of both transition rates. These countries have relatively rigid labour markets with low replacement income provided by the social and unemployment benefit systems, a short duration for benefits, and strict eligibility conditions, all of which make falling into unemployment very unattractive. Moreover, they have very low spending and participation in ALMPs, which render transitions back to employment very difficult for those who become unemployed, leading to higher unemployment persistence.

Finally, a few countries *did* experience significant changes between 2007 and 2011: on the one hand, Spain and Greece, where both transition rates worsened severely, but on the other hand, Estonia and the Czech Republic, where the rate of return to employment improved. In the latter countries, policies have been adopted over the last few years to make the labour market more flexible, with a special focus on activation policies.

This evidence points to the need to promote a favourable institutional setting: namely, a well-adapted policy mix of unemployment benefits, ALMP, EPL, and in-work benefits that both protect and activate the unemployed. The appropriate policy mix is, however, country-specific and there is no universal solution.

Efficient spending and participation in activation measures (job search requirements, training programmes, etc) seem to reduce the level of long-term unemployment and facilitate upward labour market transitions. The countries with the highest expenditures and participation rates, such as the Netherlands, Finland, Denmark and Luxembourg are among those that also have the lowest long-term unemployment rates.

Nevertheless, high spending and participation in ALMP is not sufficient to ensure low persistence of unemployment: high efficiency in labour market programmes is also crucial. A country such as the UK manages to achieve a lower persistence of unemployment with participation and spending levels much lower than other countries (such as Hungary, Portugal, Spain, Belgium).

The efficiency of ALMP programmes improves with the use of techniques such as profiling of the unemployed and targeting of programme. Short and inexpensive programmes such as job search assistance and counselling are often sufficient for the short-term unemployed who are at a low risk of becoming long-term unemployed, although training (up-skilling or re-skilling) may be necessary for the short-term unemployed at higher risk, such as those coming from restructuring sectors. For the long-term unemployed, more complex and costly programmes involving several stages (job search assistance and counselling, longer training programmes and employment incentives/ job creation schemes) are appropriate. Although these programmes are costly, they might still be envisaged, particularly in countries with high and increasing levels of long-term unemployment, because the high and prolonged persistence of long-term unemployment incurs high social and economic costs such as obsolescence of skills, exit from the labour market, and the aggravation of poverty and social exclusion.

Labour offices have raised their profiles in terms of providing substantial assistance to those facing unemployment. However, profiling, targeting and the development of meaningful programmes are only possible when they operate appropriately and effectively. The longitudinal data analysis confirms the positive effect of being registered with a labour office in terms of transiting out of unemployment, particularly for those receiving benefits. The countries in which these services have been well developed perform better at curbing long-term unemployment (e.g. Netherlands, Nordic countries, the UK). Moreover, labour offices, in cooperation with other institutions (benefit-paying agencies), can act pro-actively to reach many inactive people who, although not formally classified or registered as unemployed, may nevertheless be willing to work.

Despite the stronger impact of the crisis on men, women still have an overall lower rate of return to employment and are more likely to fall into and remain in inactivity. Moreover, analysis shows that family reasons and insufficient/ non-affordable care facilities (for children and other dependent persons) can be a reason both for becoming and for remaining long-term unemployed and/or economically inactive, especially in the case of prime-aged women. Improving access to care facilities, allowing individuals to combine care provisions and paid work (e.g.: possibility of part-time employment; tax breaks for workers who must pay for care provision) and reducing the inactivity/unemployment traps for second earners could help in this matter.

Annex

Table A1: Changes in long-term unemployment by sex, age and education level, 2008-11 (%)

Country	Total	Men	Women	15-24	25-49	50-64	Low	Medium	High
AT	18	21	14	4	18	28	12	20	:
BE	6	11	1	20	3	8	7	-4	32
BG	103	138	68	113	116	69	53	147	202
CY	233	*235*	*230*	:	*281*	:	*145*	*234*	*316*
CZ	26	37	18	54	24	20	-8	46	92
DE	-27	-22	-32	-34	-28	-23	-27	-26	-28
DK	296	338	251	:	283	281	253	328	*256*
EE	329	283	406	*161*	469	255	279	317	*472*
EL	142	224	102	117	144	161	122	139	188
ES	350	503	252	369	388	255	330	383	391
FI	47	77	9	:	53	35	38	65	26
FR	41	41	42	38	39	49	38	52	28
HU	47	45	48	41	42	63	21	56	121
IE	392	375	446	236	451	387	229	633	*595*
IT	42	61	26	51	37	59	36	52	32
LT	556	781	384	:	644	*419*	*336*	627	:
LU	-5	12	-18	*-8*	-6	*5*	*-34*	*0*	*55*
LV	315	404	219	306	344	268	291	323	316
MT	24	*29*	:	:	*25*	:	25	:	:
NL	58	68	48	77	73	40	60	57	56
PL	58	68	50	65	56	59	37	54	153
PT	68	87	52	67	71	63	60	126	48
RO	29	16	54	14	35	39	-1	29	152
SE	81	89	71	118	95	54	114	73	60
SI	92	117	67	*109*	95	74	104	96	*52*
SK	40	65	18	53	36	45	-11	65	131
UK	101	90	124	106	103	88	65	126	180
EU-27	62	72	51	69	66	48	63	53	95

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: (:) means figures not publishable; italics: limited reliability due to small sample size.

Table A2: Incidence of long-term unemployment (rate of long-term unemployment within total unemployment) by sex, age and education level (%)

Country	Total	Sex		Age			Education Level		
		Men	Women	15-24	25-49	50-64	Low	Medium	High
AT	25.9	27.6	24.2	14.1	26.0	46.9	31.8	23.5	*20.0*
BE	48.3	47.1	49.8	32.0	49.0	69.8	54.6	45.5	40.6
BG	56.1	57.1	54.8	49.1	56.6	60.8	64.2	53.2	47.0
CY	20.9	21.7	20.0	*17.2*	20.9	*27.6*	*20.7*	20.6	21.4
CZ	40.6	40.5	40.6	29.2	41.7	47.3	56.6	38.0	23.0
DE	47.6	49.0	45.9	23.6	47.1	62.4	49.5	47.9	41.5
DK	24.4	26.3	22.3	9.9	25.2	44.2	22.5	24.5	25.9
EE	56.8	59.8	53.4	39.4	58.0	67.2	63.6	57.9	47.7
EL	49.6	45.0	54.0	42.4	50.6	52.4	49.2	49.6	49.9
ES	41.6	40.6	42.7	32.4	40.9	54.6	44.9	39.0	35.2
FI	22.0	26.0	16.8	*5.0*	23.2	41.5	20.7	21.8	24.6
FR	41.1	41.8	40.3	27.4	41.8	57.4	49.9	37.9	30.2
HU	47.9	47.5	48.3	35.9	48.4	56.1	51.3	46.8	44.3
IE	58.8	64.7	46.7	44.9	61.5	65.5	69.0	57.9	44.5
IT	51.3	50.7	51.9	46.6	52.2	55.3	54.6	49.8	43.6
LT	51.9	52.3	51.5	35.0	53.8	60.4	55.8	53.3	41.9
LU	28.6	33.1	25.0	*22.5*	29.3	*34.5*	*27.0*	*32.5*	*25.7*
LV	54.6	59.0	48.5	32.9	57.6	65.1	57.2	55.0	48.1
MT	46.2	53.3	*34.7*	:	54.9	:	52.3	:	:
NL	32.9	34.6	31.0	13.1	33.6	54.6	33.1	32.8	34.2
PL	37.2	36.3	38.2	26.4	38.8	46.8	42.7	37.3	31.3
PT	48.1	47.8	48.3	26.5	48.8	66.2	52.5	42.7	34.1
RO	41.9	42.6	41.0	41.5	41.3	45.8	38.6	42.8	43.4
SE	18.1	20.0	15.9	6.3	22.2	35.0	19.0	17.4	18.4
SI	44.2	45.1	43.1	35.3	44.2	52.3	61.9	42.1	30.9
SK	67.8	69.1	66.2	54.4	70.0	75.4	83.3	66.9	42.3
UK	33.4	37.6	27.5	24.6	37.3	43.4	42.4	30.8	23.5
EU-27	42.7	43.3	42.0	29.8	44.0	55.1	47.3	41.7	34.6

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: (:) means figures not publishable; italics: limited reliability due to small sample size.

Table A3: Composition of the long-term unemployed by sex, age and education level in 2011 and changes since 2008

	Sex				Age						Level of education					
	Composition in 2011		Change in composition 2008-2011 (in p.p.)		Composition in 2011			Change in composition 2008-2011 (in p.p.)			Composition in 2011			Change in composition 2008-2011 (in p.p.)		
	Men	Women	Men	Women	15-24	25-49	50-64	15-24	25-49	50-64	Low	Medium	High	Low	Medium	High
AT	55.2	44.8	1.4	-1.4	15.0	57.6	27.5	-2.0	-0.2	2.2	41.6	49.9	8.5	-2.2	0.9	:
BE	53.0	47.0	2.4	-2.4	15.2	62.9	22.0	1.7	-2.1	0.4	47.2	35.5	17.4	0.4	-3.8	3.4
BG	59.1	40.9	8.6	-8.6	15.3	62.5	22.2	0.7	3.8	-4.6	37.7	52.8	9.5	-12.4	9.3	3.1
CY	57.2	42.8	0.4	-0.4	20.5	61.0	18.5	:	7.7	:	21.1	41.8	37.0	-7.5	0.1	7.4
CZ	48.8	51.2	3.9	-3.9	13.9	59.4	26.7	2.5	-1.0	-1.5	28.3	67.2	4.5	-10.6	9.1	1.5
DE	57.8	42.2	3.4	-3.4	8.1	54.2	37.7	-0.9	-1.1	2.0	33.2	57.0	9.9	-0.4	0.5	-0.1
DK	57.3	42.7	5.5	-5.5	12.1	51.9	36.0	:	-1.8	-1.4	36.2	40.0	23.8	-2.8	4.5	-1.6
EE	55.5	44.5	-6.8	6.8	13.0	58.2	28.8	-8.3	14.3	-6.0	24.5	56.1	19.4	-3.2	-1.6	4.8
EL	44.4	55.6	11.2	-11.2	13.8	71.9	14.3	-1.6	0.6	1.0	31.6	45.9	22.5	-2.9	-0.6	3.6
ES	52.6	47.4	13.3	-13.3	13.9	65.1	21.0	0.6	5.1	-5.7	61.1	22.1	16.8	-2.9	1.5	1.4
FI	66.5	33.5	11.3	-11.3	7.1	47.1	45.8	:	2.1	-4.0	30.0	48.4	21.5	-2.0	5.5	-3.5
FR	50.7	49.3	-0.2	0.2	16.0	59.3	24.7	-0.4	-0.9	1.3	46.8	39.2	14.0	-1.2	2.7	-1.5
HU	53.7	46.3	-0.5	0.5	12.3	63.7	24.0	-0.5	-1.9	2.4	31.6	59.5	9.0	-6.8	3.8	3.0
IE	73.9	26.1	-2.6	2.6	15.3	67.9	16.7	-7.1	7.3	-0.2	39.1	44.3	16.6	-19.4	14.5	4.8
IT	52.3	47.7	6.1	-6.1	20.8	66.1	13.1	1.2	-2.6	1.4	48.2	42.4	9.4	-2.1	2.8	-0.7
LT	58.2	41.8	14.9	-14.9	12.3	60.6	27.1	:	7.2	-7.2	14.9	73.0	12.1	-7.5	7.1	:
LU	51.1	48.9	7.6	-7.6	16.9	66.7	16.4	-0.6	-1.0	1.5	32.8	39.9	27.2	-13.5	2.6	10.9
LV	62.8	37.2	11.1	-11.1	11.9	59.3	28.8	-0.2	3.9	-3.6	21.5	67.3	11.1	-1.3	1.3	0.0
MT	71.3	28.7	3.0	:	:	61.3	:	:	0.9	:	89.4	:	:	0.3	:	:
NL	56.5	43.5	3.2	-3.2	11.0	49.2	39.8	1.2	4.1	-5.2	40.4	38.5	21.1	0.5	-0.3	-0.3
PL	49.7	50.3	2.9	-2.9	17.6	59.7	22.8	0.7	-0.8	0.1	17.1	70.5	12.4	-2.6	-2.1	4.7
PT	51.6	48.4	5.2	-5.2	10.5	62.0	27.5	-0.1	1.0	-0.9	71.9	18.9	9.2	-3.6	4.9	-1.3
RO	60.0	40.0	-6.6	6.6	28.5	57.4	14.1	-3.8	2.8	1.1	21.1	66.6	12.3	-6.2	0.2	6.0
SE	58.6	41.4	2.4	-2.4	14.0	52.3	33.7	2.4	3.6	-6.0	38.3	43.1	18.6	5.4	-2.6	-2.8
SI	55.2	44.8	6.5	-6.5	13.1	65.3	21.6	1.1	1.0	-2.2	28.0	60.6	11.5	1.8	1.3	-3.0
SK	56.7	43.3	8.4	-8.4	16.6	62.4	21.0	1.3	-2.0	0.6	22.4	72.4	5.2	-12.8	10.7	2.1
UK	65.5	34.5	-3.6	3.6	28.3	52.0	19.7	0.7	0.7	-1.4	43.0	42.9	14.1	-9.1	5.0	4.1
EU-27	54.7	45.3	3.3	-3.3	16.0	60.9	23.1	0.7	1.5	-2.1	42.8	43.9	13.3	0.3	-2.6	2.3

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: (:) means figures not publishable; italics: limited reliability due to small sample size.

Table A4: Long-term unemployment by sex, age and education level, 2011

	Long-term unemployment rate (% active population)									Rate by group compared to the overall rate							
	Total	Sex		Age			Level of education			Sex		Age			Level of education		
		Men	Women	15-24	25-49	50-64	Low	Medium	High	Men	Women	15-24	25-49	50-64	Low	Medium	High
AT	1.1	1.1	1.1	1.2	1.0	1.4	2.7	0.8	0.5	1.0	1.0	1.1	0.9	1.2	**2.5**	0.8	0.4
BE	3.5	3.4	3.6	6.0	3.3	3.2	7.7	3.1	1.6	1.0	1.0	**1.7**	0.9	0.9	**2.2**	0.9	0.4
BG	6.3	7.1	5.5	13.1	5.9	5.7	17.4	5.5	2.3	1.1	0.9	**2.1**	0.9	0.9	**2.7**	0.9	0.4
CY	1.7	1.8	1.6	3.9	1.5	1.3	1.7	1.8	1.5	1.1	0.9	**2.3**	0.9	0.8	1.0	1.1	0.9
CZ	2.8	2.4	3.2	5.3	2.5	2.8	14.0	2.5	0.7	0.9	1.2	**1.9**	0.9	1.0	**5.1**	0.9	0.2
DE	2.9	3.1	2.6	2.0	2.6	3.7	6.6	2.8	1.0	1.1	0.9	0.7	0.9	1.3	**2.3**	1.0	0.4
DK	1.9	2.1	1.7	1.4	1.7	2.5	2.6	1.7	1.4	1.1	0.9	0.8	0.9	1.3	1.4	0.9	0.7
EE	7.2	8.0	6.5	8.8	6.9	7.5	17.4	7.5	3.9	1.1	0.9	1.2	0.9	1.0	**2.4**	1.0	0.5
EL	8.9	6.8	11.6	18.8	9.1	5.4	9.1	10.0	7.0	0.8	1.3	**2.1**	1.0	0.6	1.0	1.1	0.8
ES	9.0	8.7	9.5	15.1	8.5	8.5	13.1	8.4	4.5	1.0	1.1	**1.7**	0.9	0.9	1.4	0.9	0.5
FI	1.7	2.2	1.2	1.0	1.4	2.6	3.4	1.8	1.0	1.3	0.7	0.6	0.8	**1.5**	**2.0**	1.0	0.6
FR	3.8	3.7	3.9	6.1	3.5	3.7	7.6	3.4	1.6	1.0	1.0	**1.6**	0.9	1.0	**2.0**	0.9	0.4
HU	5.3	5.3	5.3	9.4	5.0	5.0	12.8	5.0	2.0	1.0	1.0	**1.8**	0.9	1.0	**2.4**	0.9	0.4
IE	8.6	11.6	5.0	13.2	8.7	6.5	16.6	9.9	3.4	1.3	0.6	**1.5**	1.0	0.7	**1.9**	1.1	0.4
IT	4.4	3.9	5.0	13.6	4.2	2.3	5.9	3.9	2.4	0.9	1.1	**3.1**	1.0	0.5	1.3	0.9	0.5
LT	8.1	9.4	6.8	11.5	7.6	8.3	22.1	10.2	2.7	1.2	0.8	1.4	0.9	1.0	**2.7**	1.3	0.3
LU	1.4	1.3	1.6	3.8	1.3	1.1	2.2	1.4	0.9	0.9	1.1	**2.7**	0.9	0.8	**1.6**	1.0	0.7
LV	8.5	10.6	6.5	9.6	8.0	9.3	16.0	9.7	3.3	1.2	0.8	1.1	0.9	1.1	**1.9**	1.1	0.4
MT	3.0	3.3	2.5	:	3.0	:	4.8	:	:	1.1	0.8	:	1.0	:	**1.6**	:	:
NL	1.5	1.5	1.4	1.0	1.2	2.2	2.3	1.3	1.0	1.1	0.9	0.7	0.9	**1.5**	**1.6**	0.9	0.7
PL	3.6	3.3	4.0	6.8	3.3	3.5	8.2	3.9	1.7	0.9	1.1	**1.9**	0.9	1.0	**2.2**	1.1	0.5
PT	6.4	6.3	6.5	8.0	5.9	7.3	7.7	5.7	3.2	1.0	1.0	1.2	0.9	1.1	1.2	0.9	0.5
RO	3.2	3.5	2.9	9.9	2.7	2.0	3.3	3.5	2.2	1.1	0.9	**3.1**	0.8	0.6	1.0	1.1	0.7
SE	1.4	1.6	1.2	1.5	1.3	1.6	3.2	1.2	0.8	1.1	0.9	1.0	0.9	1.2	**2.3**	0.9	0.6
SI	3.7	3.8	3.6	5.5	3.5	3.7	8.9	3.7	1.5	1.0	1.0	**1.5**	0.9	1.0	**2.4**	1.0	0.4
SK	9.2	9.4	9.0	18.1	8.6	7.9	35.3	8.9	2.5	1.0	1.0	**2.0**	0.9	0.9	**3.8**	1.0	0.3
UK	2.7	3.3	2.0	5.2	2.4	2.1	6.2	2.7	1.0	1.2	0.7	**1.9**	0.9	0.8	**2.3**	1.0	0.4
EU-27	4.2	4.2	4.1	6.3	3.9	3.8	7.9	3.7	1.9	1.0	1.0	**1.5**	0.9	0.9	**1.9**	0.9	0.5

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Notes: (:) means figures not publishable; italics: limited reliability due to small sample size. Figures in bold indicate that the rate for the group is >1.5 times the overall rate.

Table A5: Unemployment and long-term unemployment among third-country nationals and share of third country nationals in overall active population, unemployment and long-term unemployment

Country	Indicators for third-country nationals			Share of third-country nationals overall:		
	Unemp. rate	LTU rate	Incidence of LTU	Active population	Unemployment	LTU
AT	9.7	2.2	22.6	6.7	15.5	13.5
BE	27.8	14.3	51.5	3.0	11.5	12.2
CY	5.0	:	:	8.7	5.5	:
CZ	5.9	:	:	0.8	0.7	:
DE	13.9	7.0	50.4	5.6	13.0	13.8
DK	19.5	6.3	32.2	3.8	9.7	12.8
EE	22.0	14.5	66.0	16.0	27.6	32.1
ES	34.6	14.2	40.9	10.7	17.1	16.8
FI	21.7	:	:	1.3	3.7	:
FR	25.1	11.6	46.3	3.5	9.5	10.7
EL	22.3	8.6	38.8	7.4	9.3	7.3
IE	15.0	8.6	57.3	3.2	3.2	3.2
IT	12.3	5.5	44.6	6.9	10.0	8.7
LU	(13.8)	:	:	4.5	(12.5)	:
LV	21.3	14.2	66.7	15.5	21.1	25.8
NL	13.7	5.2	38.1	1.9	5.8	6.7
PT	23.5	9.5	40.4	3.2	5.6	4.7
SE	30.9	6.8	21.9	2.9	11.9	14.4
SI	(11.8)	(5.7)	(48.4)	2.0	(2.9)	(3.2)
UK	12.0	4.0	33.0	4.5	6.6	6.5
EU-27	20.1	8.6	42.8	4.6	9.5	9.5

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: T.C.N. are third-country nationals. Figures in brackets: limited reliability due to small sample size. Data not publishable due to small sample size for: Bulgaria, Hungary, Lithuania, Malta, Poland, Romania and Slovakia.

Table A6: Incidence of long-term unemployment broken down into two main reasons for leaving last job, 2006-08 and 2011

Country	Job of limited duration		Dismissed/made redundant	
	2006-08	2011	2006-08	2011
AT	18%	15%	30%	30%
BE	36%	37%	49%	45%
BG	41%	43%	59%	60%
CY	8%	9%	15%	23%
CZ	40%	24%	54%	41%
DE	43%	30%	53%	46%
DK	15%	15%	22%	32%
EE	31%	39%	48%	62%
ES	14%	34%	20%	48%
FI	17%	19%	35%	31%
FR	30%	50%	45%	64%
GR	28%	35%	44%	46%
HU	30%	24%	46%	49%
IE	34%	53%	31%	68%
IT	26%	32%	42%	49%
LT	20%	31%	42%	59%
LU	16%	27%	35%	25%
LV	21%	26%	25%	65%
MT	33%	34%	44%	55%
NL	15%	38%	71%	56%
PL	32%	27%	55%	38%
PT	35%	36%	56%	55%
RO	25%	15%	57%	49%
SE	8%	13%	26%	33%
SI	33%	37%	52%	44%
SK	63%	49%	71%	67%
UK	20%	22%	23%	33%
EU-27	27%	33%	47%	48%

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Table A7: Distribution of long-term unemployed according to reason for leaving last job, 2011

Country	A job of limited duration has ended	Dismissed or made redundant	Own illness or disability	Family responsibilities	Other reasons
AT	(10)	44	(12)	:	30
BE	31	34	8	(3)	24
BG	21	63	:	(3)	12
CY	(10)	51	:	(15)	(21)
CZ	11	71	7	6	4
DE	16	60	1	4	18
DK	8	68	10	(6)	8
EE	13	65	:	9	10
ES	52	33	3	2	10
FI	55	27	:	:	16
FR	42	41	5	5	7
GR	29	53	:	5	12
HU	10	79	3	3	6
IE	11	72	:	6	9
IT	35	51	3	4	6
LT	14	47	:	(6)	30
LU	(27)	(32)	:	:	(23)
LV	7	70	(2)	12	9
MT	:	:	:	:	:
NL	15	49	13	(3)	20
PL	29	46	4	7	14
PT	26	50	4	3	17
RO	9	83	:	:	(6)
SE	30	49	5	:	13
SI	33	48	(3)	:	(15)
SK	14	64	4	12	6
UK	15	43	8	8	26
EU-27	32	48	3	4	13

Source: DG EMPL calculations based on Eurostat, EU-LFS. Figures in brackets: limited reliability due to small sample size.

Table A8: Unemployment and LTU indicators by previous occupational group, in 2011 (EU-27)

Previous occupational group (ISCO, 1 digit)	Number of LTU (000s)	Incidence of LTU	Share in:			Ratio (a)/(b)
			LTU	(a) unemployment	(b) employment	
Professionals	288	30.0	5	6.4	14.7	0.4
Skilled agricultural and fishery workers	95	35.4	1.6	1.8	4.0	0.5
Service workers and shop and market sales workers	1216	36.6	21.0	22.3	14.3	1.6
Clerks	507	36.6	8.8	9.3	10.8	0.9
Technicians and associate professionals	447	37.3	7.7	8.0	16.8	0.5
Elementary occupations	1263	37.9	21.9	22.3	9.8	2.3
Legislators, senior officials and managers	151	42.1	2.6	2.4	8.3	0.3
Plant and machine operators and assemblers	551	43.4	9.5	8.5	8.2	1.0
Craft and related trades workers	1265	44.7	21.9	19.0	13.1	1.4
Total	5783	38.7	100	100.0	100.0	1.0

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: the share in total employment was calculated in 2010. Overall, only 5.8 million long-term unemployed are included in this table (out of a total of 9.8 million) due to not answering the question or more frequently because of not being interviewed (i.e. those never having worked or whose last job was more than 8 years ago).

Table A9: Unemployment and LTU indicators by group of previous occupational group, in 2011 and 2008 (EU-27)

Previous occupational group (ISCO, 1 digit)	Incidence of LTU		Ratio of over-representation in unemployment	
	2008	2011	2008	2011
Professionals	27.3	30	0.35	0.44
Craft and related trades workers	32.4	44.7	1.31	1.44
Service workers and shop and market sales workers	27.8	36.6	1.47	1.56
Total	**30.0**	**38.7**	**1.00**	**1.00**
Elementary occupations	29.7	37.9	2.30	2.29
Skilled agricultural and fishery workers	36.0	35.4	0.46	0.45
Plant and machine operators and assemblers	32.5	43.4	1.06	1.04
Clerks	28.2	36.6	0.93	0.86
Technicians and associate professionals	29.5	37.3	0.56	0.48
Legislators, senior officials and managers	32.4	42.1	0.37	0.29

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Note: The ratio of over-representation in unemployment is calculated as the share of the occupation group in total unemployment divided by the share of the occupation group in total employment.

Table A10: Unemployment and LTU indicators by previous sector, in 2011 (EU-27)

Previous sector (NACE rev 2, 1 digit)	Number of LTU (000s)	Incidence of LTU	Share in total:			Ratio (a)/(b)
			LTU	(a) unemployment	(b) employment	
Agriculture	187	26.6	2.8	4.1	4.7	0.87
Arts, entertainment and recreation	101	28.9	1.5	2.0	1.6	1.29
Education	213	31.7	3.2	3.9	7.4	0.53
Public administration and defence	257	32.1	3.9	4.7	7.3	0.64
Information and communication	122	32.9	1.8	2.2	2.9	0.75
Human health and social work activities	311	33.0	4.7	5.5	10.4	0.53
Accommodation and food service activities	532	33.5	8.1	9.3	4.4	2.09
Professional, scientific and technical activities	182	34.9	2.8	3.0	4.9	0.62
Financial and insurance activities	90	36.2	1.4	1.4	3.0	0.47
Transportation and storage	279	38.5	4.2	4.2	5.1	0.82
Administrative and support service activities	439	38.7	6.6	6.6	3.9	1.70
Other service activities	161	39.1	2.4	2.4	2.4	0.99
Wholesale and retail trade	1 069	39.5	16.2	15.8	14.2	1.11
Activities of households as employers	140	41.4	2.1	2.0	1.2	1.64
Electricity	22	41.4	0.3	0.3	0.8	0.40
Real estate activities	45	41.8	0.7	0.6	0.8	0.83
Mining and quarrying	22	43.3	0.3	0.3	0.4	0.74
Construction	1 130	44.7	17.1	14.7	7.8	1.90
Manufacturing	1 244	45.1	18.8	16.1	16.0	1.01
Water supply; sewerage	58	45.2	0.9	0.7	0.7	1.01
Total	**6 605**	**38.5**	**100**	**100**	**100**	**1**

Source: DG EMPL calculations based on Eurostat, EU-LFS.

Notes: (1) the share in total employment is calculated for 2010.
(2) in total only 6.6 million of the long-term unemployed are included in this table (out of a total of 9.8 million) because of those not answering the question or not interviewed (because of never having worked before or because their last job was more than 8 years ago). All NACE sectors except U (activities of extra-territorial organisations and bodies).

Table A11: Overrepresentation in unemployment by previous sectors (ratio between the share of the sector in total unemployment and the share in total employment), 2008 and 2011, EU-27

Previous sector(NACE rev 2, 1 digit)	2008	2011	Difference
Construction	1.63	1.90	0.27
Public administration and defence	0.55	0.64	0.09
Mining and quarrying	0.67	0.74	0.07
Accommodation and food service activities	2.05	2.09	0.03
Administrative and support service activities	1.67	1.70	0.03
Professional, scientific and technical activities	0.61	0.62	0.01
Transportation and storage	0.81	0.82	0.01
Agriculture	0.86	0.87	0.00
Total	**1.00**	**1.00**	**0.00**
Activities of households as employers;	1.65	1.64	-0.01
Wholesale and retail trade	1.12	1.11	-0.01
Information and communication	0.76	0.75	-0.01
Manufacturing	1.03	1.01	-0.02
Financial and insurance activities	0.49	0.47	-0.02
Education	0.55	0.53	-0.02
Arts, entertainment and recreation	1.35	1.29	-0.06
Electricity	0.47	0.40	-0.06
Water supply; sewerage	1.10	1.01	-0.09
Human health and social work activities	0.63	0.53	-0.10
Real estate activities	0.95	0.83	-0.12
Other service activities	1.14	0.99	-0.16

Source: DG EMPL calculations based on Eurostat, EU-LFS. All NACE sectors except U (activities of extra-territorial organisations and bodies).

Table A12: Incidence of long-term unemployment by previous sector of activity, 2008 and 2011, EU-27

Previous sector(NACE rev 2, 1 digit)	2008	2011	Difference
Construction	26.8	44.7	17.9
Activities of households as employers	26.7	41.4	14.7
Real estate activities	27.7	41.8	14.1
Financial and insurance activities	22.5	36.2	13.7
Manufacturing	35.4	45.1	9.7
Professional, scientific and technical activities	25.5	34.9	9.4
Wholesale and retail trade	30.6	39.5	8.8
Total	**30.4**	**38.5**	**8.1**
Transportation and storage	30.6	38.5	8.0
Accommodation and food service activities	26.7	33.5	6.8
Electricity	34.7	41.4	6.7
Administrative and support service activities	32.0	38.7	6.7
Arts, entertainment and recreation	22.3	28.9	6.6
Information and communication	28.9	32.9	4.0
Human health and social work activities	29.5	33.0	3.5
Other service activities	35.8	39.1	3.3
Education	31.4	31.7	0.2
Agriculture	27.7	26.6	-1.1
Public administration and defence	34.1	32.1	-2.1
Mining and quarrying	49.0	43.3	-5.7
Water supply; sewerage	51.1	45.2	-5.9

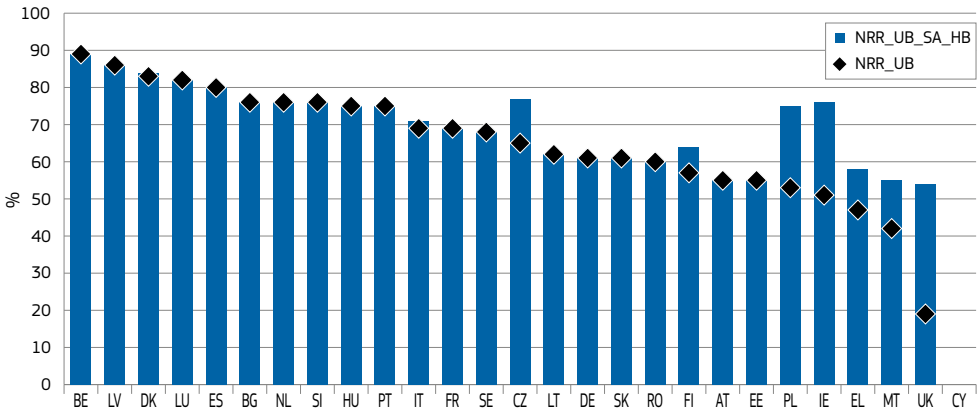
Source: DG EMPL calculations based on Eurostat, EU-LFS. All NACE sectors except U (activities of extra-territorial organisations and bodies).

Table A13: Incidence of long-term unemployment by previous sector of activity, 2008 and 2011, EU-27 (NACE rev.2, two digit)

Previous sector(NACE rev 2, 2 digits)	NACE code	Total number of LTU (2011)	Incidence of LTU		
			2011	2008	change
Manufacture of textiles	13	58	60	42	18
Manufacture of basic metals	24	52	55	50	4
Manufacture of leather and related products	15	26	55	54	1
Manufacture of wearing apparel	14	85	53	41	12
Construction of buildings	41	600	50	22	28
Manufacture of furniture	31	65	50	31	20
Manufacture of electrical equipment	27	56	49	33	16
Printing and reproduction of recorded media	18	44	49	41	8
Manufacture of other non-metallic mineral products	23	62	49	30	19
Manufacture of wood and of products of wood and cork,...	16	63	48	36	12
Manufacture of motor vehicles, trailers and semi-trailers	29	89	46	35	11

Source: DG EMPL calculations based on Eurostat, EU-LFS. Only the top ten NACE-2 digit sectors in terms of incidence of LTU in 2011 are shown.

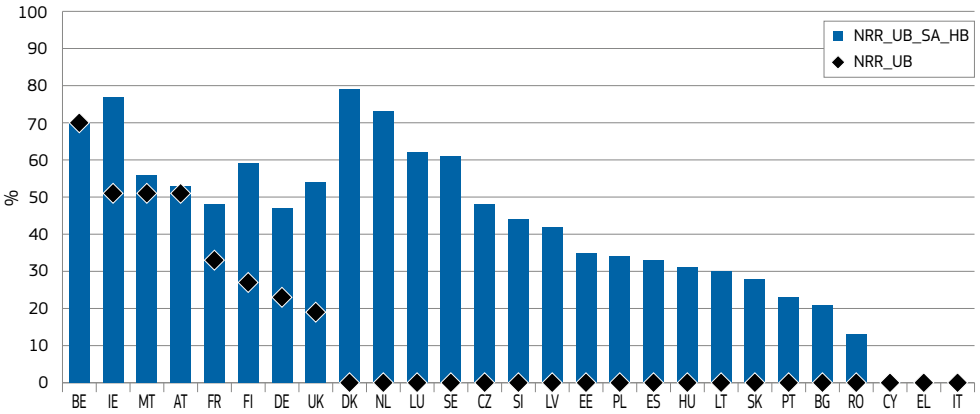
Chart A1: NRRs based on UB vs. NRRs based on UB, social assistance and housing benefits, 2 months unemployment



Source: OECD tax benefit model[1].

(1) The chart refers to 2010. The model is calculated for a single person earning 67 % of the average wage in the second month of unemployment.

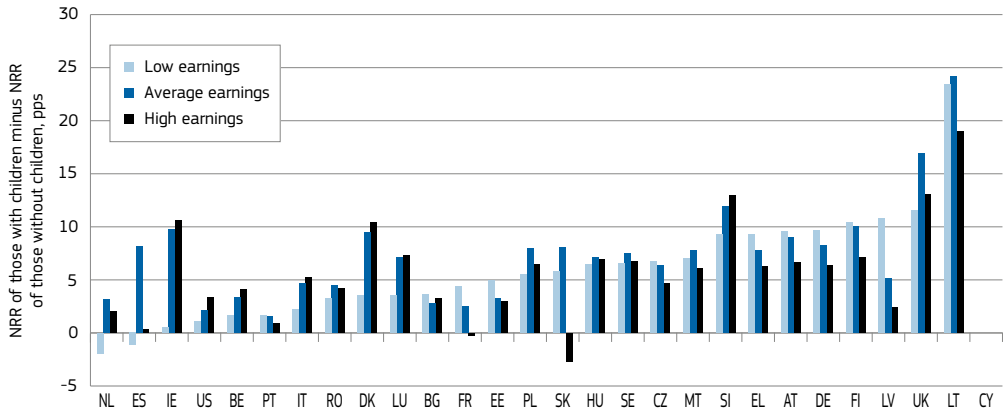
Chart A2: NRRs based on UB vs. NRRs based on UB, social assistance and housing benefits, 5 years unemployment



Source: OECD tax benefit model[2].

(2) The chart refers to 2010. The model is calculated for a single person earning 67% of the average wage in the fifth year of unemployment.

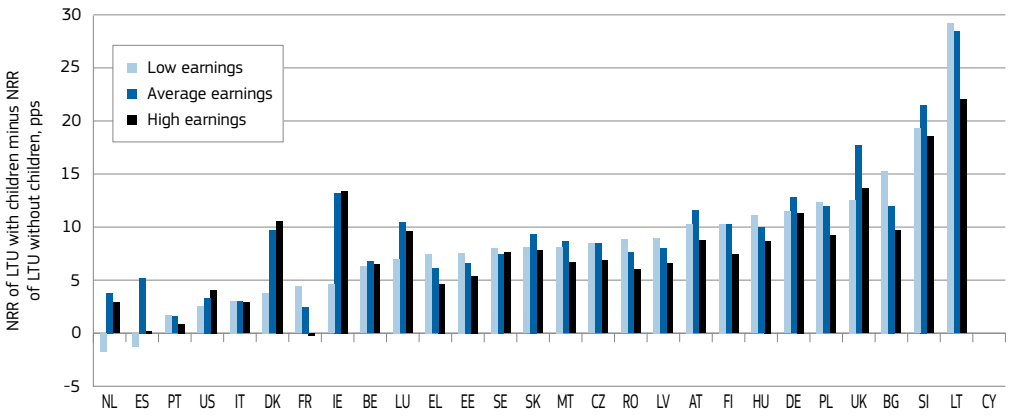
Chart A3: Gap in NRRs between STU with and without children, 3 income levels



Source: OECD tax-benefit model. The data refers to 2010. STU are those in the first year of unemployment[3].

[3] The NRRs are presented for unemployed respectively with and without children at 3 previous (full-time) earnings levels: low – 67% of the average wage, average – 100% and high –150% of the average wage. The NRRs are unweighted averages over the disaggregated NRRs for 4 family types, with and without children respectively: single person/lone parent; one-earner couple; two-earner couple, where second spouse earns 67% of the average wage; two-earner couple where the second spouse earns the average wage. For couples, the percentage of AW relates to the previous earnings of the 'unemployed' spouse only; in one-earner couples the second spouse is assumed to be 'inactive' with no earnings and no recent employment history, and in two-earner couples the second spouse is assumed to work full time and have earnings respectively at 67% and 100% of the average wage. Calculations for families with children assume two children aged 4 and 6 and neither childcare benefits nor childcare costs are considered.

Chart A4: Gap in NRRs between LTU with and without children, 3 income levels



Source: OECD tax-benefit model. The data refers to 2010. LTU are those in the second year of unemployment. For more details, see the description above.

References

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Chapter 2

Social trends and dynamics of poverty and exclusion[1]

1. Introduction

Poverty and social exclusion have increased in many Member States since the crisis began in 2008 and have been associated with a diminished cushion effect from automatic stabilisers (see Chapter 3) and growing divergences between Member States. This raises greater concerns than ever about the social consequences for individuals and society at large – in particular, the risk of people becoming permanently stuck in poverty, or more generally excluded from participation in society and economic activity[2].

The chapter shows that poverty and social exclusion are on the rise – and deepening – in many Member States, especially for certain groups of the population, increasing risks of greater long-term exclusion. It shows that an in-depth understanding of what can be done to address and prevent poverty and long-term exclusion needs to take into account its dynamic nature and demonstrates that the risks of entering into or the chances of getting out of poverty vary across Member States. Evidence-based profiling of the different population subgroups facing poverty or social exclusion suggests that individuals trapped in poverty for a longer period and living in persistent poverty have a specific profile compared to those experiencing shorter (despite possibly recurring) poverty spells.

The chapter starts by examining developments in the extent and depth of poverty and social exclusion since the crisis began, with special attention paid to its multi-dimensional nature, the diverging impacts across Member States and population segments, and the wider social risks that arise. The second part of the chapter considers the dynamics and persistence of poverty and material deprivation. This includes an examination of the factors and pathways that determine the transitions in or out of these situations, together with the trajectories towards these states. Finally, the chapter briefly examines the wider social consequences of poverty and exclusion, focusing on the cost for individuals, households and society at large. In this context, it provides a review of the debate on the development of a social investment approach, as a potential complement to existing approaches to help avoid long-term poverty and social exclusion.

The analysis reported in the chapter is mainly based on detailed analysis of the EU Statistics on Income and Living Conditions (EU-SILC) instrument. As the most recent SILC data relate to the year 2011, it is complemented by more recent sources whenever possible. The data used for the dynamic approach relate to the time period 2006-2009.

2. Developments in poverty and social exclusion since the crisis

This section explores, on the basis of cross-sectional data, the developments in the population at-risk-of-poverty or exclusion and its components (Box 1), with a particular emphasis on how recent trends vary between Member States and subgroups of their populations[3]. It also examines, not just the extent of the problem, but also developments in its severity, including through a focus on specific issues such as financial stress, extreme deprivation, and developments in the population experiencing various combinations of poverty, deprivation and very low work intensity. This makes it possible to identify who has been most adversely affected by the crisis.

(1) By Céline Thevenot, Paul Minty, Alexander Willen, Céline Ferré.

(2) It should be noted that, even during the years before the economic crisis, poverty and exclusion were at persistently high levels.

(3) For a more detailed review of social developments since the crisis began, see for example the 2011 report of the EU Social Protection Committee entitled 'Third Report on the Social Impact of the Economic Crisis and Ongoing Fiscal Consolidation' (http://register.consilium.europa.eu/pdf/en/12/st05/st05858-ad01.en12.pdf).

Box 1: Poverty and social exclusion: current definition and scope for improvement

Poverty and social exclusion in the European process

Since the mid-90s, EU documents have referred to 'poverty and social exclusion' together, and a common understanding has emerged that is wide enough to cover the national variations in the use of the concept. Among the advantages of this approach are:

- it recognises that there are concerns about people's lives that go beyond just the satisfaction of their basic needs;
- it emphasizes the multiple dimension of exclusion which goes beyond the lack of income;
- it emphasizes the temporal and dynamic dimensions of the phenomenon that call for solutions that allow people to escape from poverty on a lasting basis;
- it considers that situations of poverty and social exclusion are relative in time and space.

The European poverty target for 2020

In June 2010, the EU heads of States and Governments agreed on a poverty and social exclusion target as part of the Europe 2020 agenda under which they committed themselves to reducing poverty and social exclusion in the EU by at least 20 million people by 2020 (compared to the situation in 2008). This target is one of three integrated objectives (along with employment and education) which are intended to contribute to inclusive growth, defined as '*building a cohesive society in which people are empowered to anticipate and manage change and consequently to actively participate in society and the economy*'.

The population living at-risk-of-poverty-or-social exclusion is identified as belonging to one or more of the following categories:

- *people at-risk-of-poverty after social transfers* (people with an equivalised[1] disposable income below the at-risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers));
- *severely materially deprived people* (people having living conditions severely constrained by a lack of resources, namely they experience at least 4 out of 9 key aspects of deprivation[2]);
- *people living in households with very low work intensity* (people aged 0-59 living in households where the adults worked less than 20% of their total work potential during the past year).

The population at-risk-of-poverty or exclusion (hereafter referred to as AROPE) is estimated on the basis of the above three components[3], and is the reference population for the analysis reported in this chapter. While it is a very broad definition, it reflects the multiple facets of poverty and exclusion across Europe and extends the original concept of relative income poverty to cover the non-monetary dimension of poverty and labour market exclusion. By recognising the multi-dimensional approach to fighting poverty and social exclusion, it allows us to take account of the diversity of situations and priorities across the EU.

Toward better measures of exclusion: fully reflecting the multi-dimensional nature of poverty and social exclusion

Throughout this chapter the basic reference point is the Europe 2020 target population of those at-risk-of-poverty-or-social exclusion. This allows the current analysis to be conducted on a comparable basis across countries, while recognising that further information on exclusion needs to be incorporated in order to provide a more comprehensive coverage of the phenomenon. In the sections that address dynamic aspects, however, the coverage is limited to those at-risk-of-poverty or material deprivation since the required data is not yet available on a longitudinal basis to examine all components of the poverty and social exclusion indicator.

Such data limitations have been fully recognised by the EU's Social Protection Committee in its contribution to the preparation of the Europe 2020 strategy, where it has highlighted the need to work further on indicators in order to fully reflect the multi-dimensional nature of poverty and social exclusion and to better assess the role and effectiveness of the policies that are mobilised to combat them.

The debate on what social exclusion means

The EU defines social exclusion[4] as a process whereby certain individuals are pushed to the edge of society and prevented from participating fully by virtue of their poverty, or lack of basic competencies and lifelong learning opportunities, or as a result of discrimination. This distances them from job, income and education and training opportunities, as well as social and community networks and activities. They have little access to power and decision-making bodies and thus often feel powerless and unable to take control over the decisions that affect their day to day lives.

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(1) 'Equivalised income': In order to reflect differences in household size and composition, the total household income is divided by the number of 'equivalent adults' using a standard (equivalence) scale, the so-called 'modified OECD' scale, which attributes a weight of 1 to the first adult in the household, 0.5 to each subsequent member of the household aged 14 and over, and 0.3 to household members aged under 14. The resulting figure is called the equivalised income and is attributed to each member of the household.

(2) The collection 'material deprivation' covers indicators relating to economic strain, durables, housing and the environment of the dwelling. Severely materially deprived persons have living conditions severely constrained by a lack of resources, they experience at least 4 out of the following 9 deprivation items: they cannot afford to i) pay rent or utility bills, ii) keep their home adequately warm, iii) pay unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) have a week's holiday away from home, vi) buy a car, vii) buy a washing machine, viii) buy a colour TV, or ix) have a telephone.

(3) People are considered to be at-risk-of-poverty-or-social exclusion if they are at-risk-of-poverty or experience severe material deprivation or live in households with very low work intensity.

(4) Definition from the EC's 2004 Joint Report on Social Inclusion.

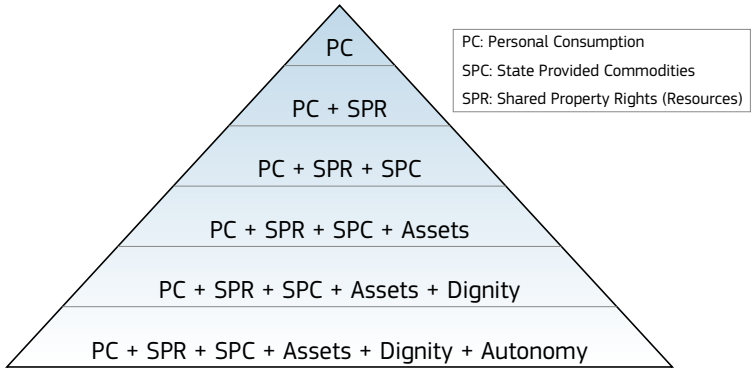
Leading academic Atkinson (1998) points out that social exclusion is a term that has come to be widely used, but that observers only really agree on a single point: the impossibility of defining the status of being 'excluded' using a single and unique criterion. Likewise, Orr (2005) notes that 'a problem with the idea of social exclusion is that there seem to be as many definitions of social exclusion as there are people working on social exclusion'. However, a theme common to most definitions is that social exclusion is multi-dimensional, and that it usually results from the combination of underlying factors. In the United Kingdom the Social Exclusion Unit (2004) attached to the Office of the Deputy Prime Minister has described it as follows:

> 'Social exclusion is about more than income poverty. It is a short-hand term for what can happen when people or areas face a combination of linked problems, such as unemployment, discrimination, poor skills, low incomes, poor housing, high crime and family breakdown. These problems are linked and mutually reinforcing'.

While being poor or excluded is primarily understood in terms of being short of money, there is consensus that it can also mean being deprived of other aspects of life in a rich European society, such as access to paid employment, quality education, health and health care, housing, public benefits, and social contacts. In a broader interpretation, social exclusion refers to processes in which individuals and entire communities of people are systematically blocked from opportunities and resources (for example, housing, employment, healthcare, civic engagement, democratic participation and due process) that are normally available to members of society and which are key to social integration (see for example Paugam (1991), one of the first to use the term social exclusion to describe deprivation in this more comprehensive sense).

The complex multi-dimensional nature of poverty and exclusion is well illustrated by Baulch (1996) through the use of a pyramid of concepts (Chart 1), which takes account of a rising number of aspects of poverty as one moves lower down the pyramid. The most frequently used measures are at the top of the pyramid, and cover aspects which are more straightforward to operationalise. Personal consumption is placed at the top of the pyramid, although this is typically measured with reference to income. The concept of poverty gradually increases in scope to include shared property rights, state-provided commodities, assets, dignity and autonomy at the bottom of the pyramid.

Chart 1: The multidimensional nature of poverty and exclusion: Baulch's pyramid



Source: Baulch (1996).

Atkinson (1998) states that exclusion is related to both poverty and inequality, but should not be equated with either of them, and highlights a 'three-way relationship' between poverty, unemployment and social exclusion. A clear element of exclusion, which is of particular relevance in the current economic situation, is exclusion from work. Being unemployed, or inactive in labour market terms, has an impact which goes beyond the loss of cash income, since a working life is, in itself, one of the multiple dimensions of social participation, a way of building a social network and realising the individual's potential.

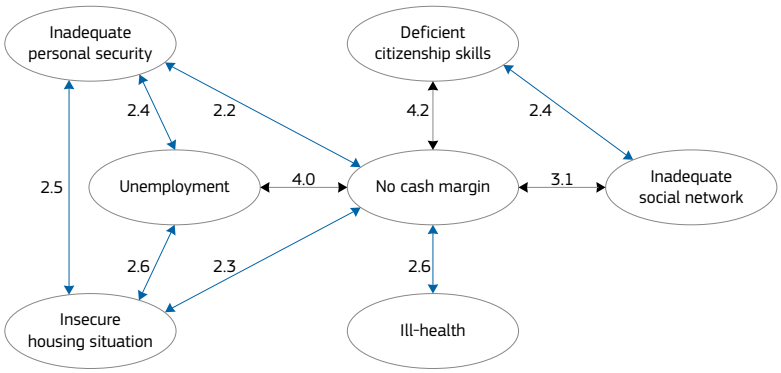
Moreover, it is not only individual welfare which is at stake, but also wider objectives such as social integration. However, social exclusion is not just related to unemployment or inactivity, but rather goes beyond simple exclusion from the labour market. Indeed, it does not follow that employment implies social inclusion, since many employed persons may still feel excluded from the society in which they live if they are deprived of access to the housing market, to bank accounts, to social facilities, etc.

People may also face exclusion if they are unable to participate in the customary consumption activities of the society in which they live. This can include lack of access to basic supplies such as electricity, water, gas, durable goods, nutritional food or recreational, cultural and leisure activities. Likewise the poor may be excluded from services such as insurance cover where premiums are determined by the areas where they live, with banks and credit card companies liable to refuse them on similar criteria.

However it can also be argued that social exclusion should be extended to other dimensions, and include the development of an individual's capabilities (Sen, 2000). In a similar vein, Korpi, Nelson and Stenberg have gone beyond a focus on financial disadvantage towards the accumulation of other disadvantages, and include in their approach an analysis of multi-dimensional 'social problems' covering deficient citizenship skills and inadequate social networks together with unemployment, ill-health,

inadequate personal security and insecure housing situations. However their analysis of the strength of mutual linkages between the different social problem areas also show that these are all closely linked to the central 'lack of a cash margin' dimension, highlighting the key role played by financial difficulties, but also that no area is completely isolated from another (Chart 2).

Chart 2: Illustration of the links between different types of social problems among the Swedish population, from Nelson et al.



Source: Swedish Institute for Social Research/LNU.

Note: Illustration of the links between different types of social problems in the population. The figures represent the mean value of association measures (odds ratios) for 1974, 1981, 1991 and 2000.

The above suggests that a more comprehensive indicator of social exclusion would need to cover at least three main areas, namely: adequate income support, labour market integration, and access to quality services. The first two aspects are reasonably well covered in the existing Europe 2020 headline indicator on poverty and social exclusion, but the third is less satisfactorily addressed.

In recent years a general agreement has emerged that, despite the continuing vagueness of the term 'social exclusion', its value lies in drawing attention to issues of dynamics and multi-dimensionality (Berghman, 1995; Room, 1999; Sen, 2000), and methodological issues relating to this have been the subject of increased scrutiny (Whelan & Maitre, 2008).

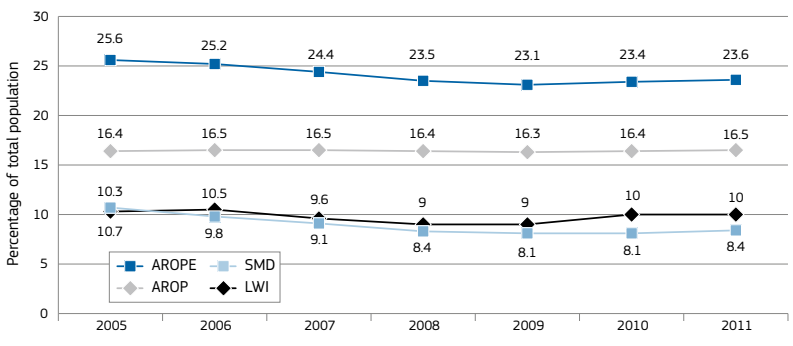
The analysis of the dynamics of these processes that are reported on in this chapter focus on the longitudinal aspects of poverty and severe material deprivation, using available data, although it is recognised that it is not possible to analyse the Europe 2020 poverty headline indicator in this way because of the current lack of longitudinal data concerning jobless (i.e. very low work intensity) households.

2.1. Poverty and social exclusion on the rise in many Member States

The overall movements of the AROPE indicator suggest little change in the extent of poverty and social exclusion at EU level since the onset of the crisis in 2008, with around 1-in-4 at-risk-of-poverty or exclusion in 2011, but it does appear to have brought to an end, or at least halted, the previous trend of a slow continuous reduction (see Chart 3). This reflects a rise in the number of people living in very low work intensity households (LWI), while the at-risk-of-poverty (AROP) and severe material deprivation (SMD) rates have remained broadly stable.

However, the apparent stability in the risk of poverty or social exclusion at EU level hides strong divergence across Member States (see Chart 4), with strong rises compared to 2008 being observed in some (for example, up by 11 percentage points in Bulgaria[4], around 6 percentage points in Ireland[5], Latvia and Lithuania, 4 percentage points in Spain and close to 3 percentage points in Denmark, Greece and Hungary), while others have seen recent declines (especially Poland and Romania, with both seeing the risk fall by 3 to 4 percentage points). As a result, in 2011 the risk of poverty or social exclusion ranged from around 15% in the Czech Republic, the Netherlands

Chart 3: Developments in the risk of poverty or social exclusion and its components in the EU, 2005-2011



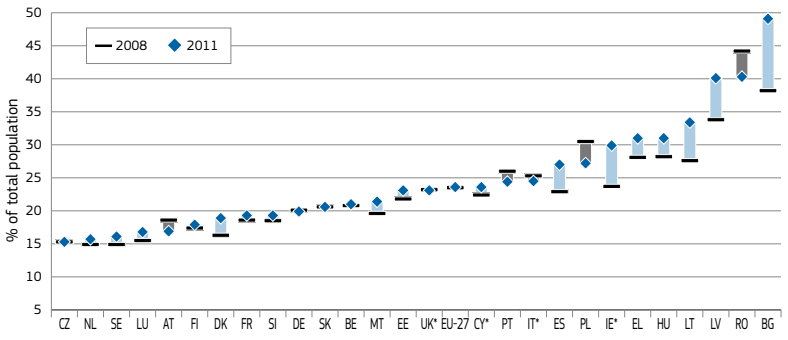
Source: Eurostat, EU-SILC.

Note : Low work intensity indicator refers to the age group 0-59. 2011 figures are Eurostat estimates.

(4) This may partly reflect a break in the time series for Bulgaria in 2008.

(5) In this chapter, the year mentioned refers to the EU-SILC survey year, and not the underlying reference year for the specific component. The annual income and activity status information in the EU-SILC refers to the situation of the previous year (reference year) in almost all countries. Data for the United Kingdom and Ireland refer, however, to a slightly different concept, as the reference time period is the current year for the United Kingdom and the last twelve months for Ireland. Other EU-SILC variables, such as material deprivation, refer to the actual year of the survey.

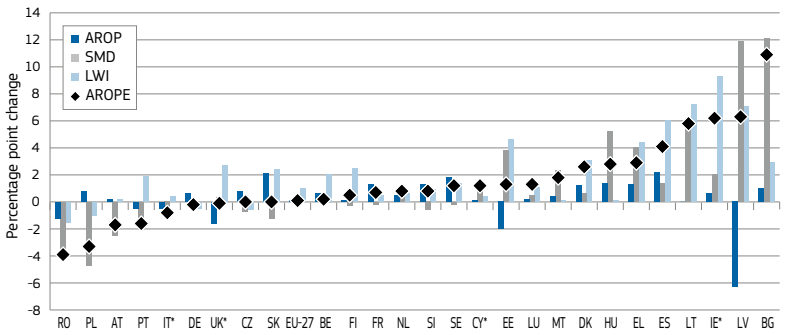
Chart 4: Developments in the at-risk-of-poverty-or-social exclusion rate across EU Member States between 2008 and 2011



Source: Eurostat, EU-SILC.

Note: *Figures for CY, IE, IT and UK are for 2010 instead of 2011. 2011 figure for EU-27 is Eurostat estimate.

Chart 5: Change in the at-risk-of-poverty-or-social exclusion rate and its components in Member States between 2008 and 2011



Source: Eurostat, EU-SILC.

Note: Reference periods for income and activity status for IE and UK differ to the other countries (where it refers to the previous year). *Changes for CY, IE, IT and UK are to 2010 instead of 2011, and for EU-27 are based on Eurostat estimates.

and Sweden to over 40% in Latvia and Romania, and almost 50% in Bulgaria.

It is also clear that there is no common pattern in the trends in the underlying components of the at-risk-of-poverty or exclusion indicator (see Chart 5). For example, among those countries having experienced a sharp rise in the risk of poverty or exclusion, the increase in Ireland and Spain mainly reflected increases in the share of the population in very low work intensity households (LWI), while in Latvia and Lithuania it reflected developments in severe material deprivation (SMD) combined with a marked rise in the number of very low work intensity households. Among the countries that recorded an improvement[6], the reductions mainly reflected strong falls in severe material deprivation, as highlighted most strongly in Poland and Romania.

There has been an increase in the very low work intensity component in the majority of Member States, which clearly reflects the labour market effects of the crisis, with more people living in a jobless (or near jobless) household. This is often (but not always) associated with a rise in severe material deprivation, depending on the extent to which the reduced income due to job loss is compensated by benefit transfers or other sources of income. However, the occurrence of severe material deprivation has fallen in some Member States since 2008, reflecting an overall improvement in living standards associated with economic development that continued in the first phase of the crisis in a few countries.

(6) The decline in Austria may be (partly) due to a statistical artefact arising from the unusually high value recorded for severe material deprivation in 2008.

2.2. Diverging trends across Member States in poverty, severe material deprivation and jobless households

This section examines, in more detail, the developments in the underlying components of the at-risk-of-poverty or social exclusion indicator. A general overview is provided of trends in poverty, severe material deprivation and very low work intensity households, set against the background of rising unemployment and long-term unemployment.

2.2.1. Risk of poverty (AROP) up in many Member States

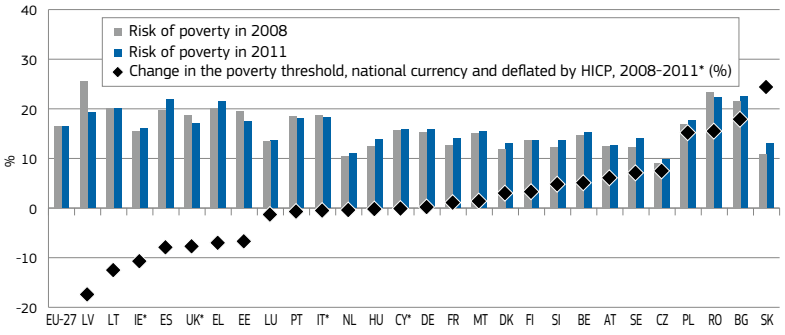
Even though the risk of poverty remained essentially unchanged at EU level overall between 2008 and 2011[7], the risk of poverty nevertheless increased in around half of the Member States, with the most notable rises (of the order of 2 pp or more) being in Slovakia, Spain and Sweden. In contrast, risk of poverty rates decreased noticeably in Estonia, Latvia, Romania and the United Kingdom (see Chart 6).

However, the trends in the AROP indicator must be treated with caution, since the risk of poverty threshold is related to the general level of income, and its distribution, of the whole population. This poverty threshold reflects strongly the evolution of overall incomes and may, therefore, change from one year to another as individual incomes change suddenly, as has occurred since the beginning of the crisis in many countries.

With respect to the effect of the financial and economic crisis, such changes can be due to the fact that different sources of income are not all hit at the same time following such a shock. Work incomes (i.e. wages and salaries) are the first to decrease as the situation on the labour market deteriorates, while other sources of income, such as pensions and social benefits, do not adjust immediately. As work incomes decrease while others remain unchanged, there is distortion in the overall income distribution, and so the median income and therefore the poverty threshold fall. For example, people with an income that was previously slightly below the poverty line may

(7) Note that poverty indicators derived from the EU-SILC survey results are actually based on the income situation of the year preceding the survey (except in Ireland and the United Kingdom). For example 2011 actually refers to the situation in 2010.

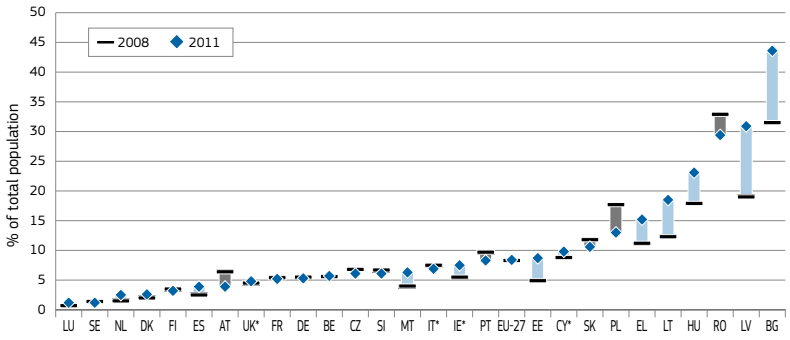
Chart 6: Developments in the at-risk-of-poverty indicator from 2008 to 2011 and the underlying poverty threshold (adjusted for inflation)



Source: Eurostat, EU-SILC.

Note: : *Figures for CY, IE, IT and UK are for 2010 instead of 2011. 2011 figure for EU-27 is Eurostat estimate.

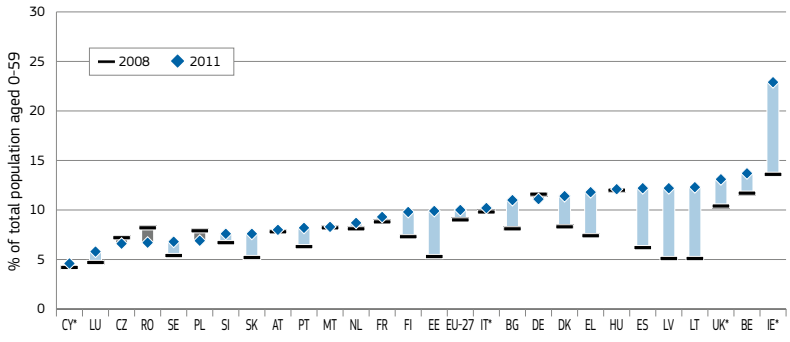
Chart 7: Developments in severe material deprivation across EU Member States, 2008-2011



Source: Eurostat, EU-SILC.

Note: Grey bars indicate declines, blue ones increases. *Changes for CY, IE, IT and UK are to 2010 instead of 2011, and for EU-27 is based on Eurostat estimate for 2011.

Chart 8: Developments in the share of people living in jobless/very low work intensity households across EU Member States, 2008-2011



Source: Eurostat, EU-SILC.

Note: Grey bars indicate declines, blue ones increases. *Figures for CY, IE, IT and UK are for 2010 instead of 2011, and for EU-27 is based on Eurostat estimate for 2011.

now move above the line, even though their actual situation has not changed or, conceivably, has even worsened.

Bearing all this in mind, the poverty threshold was seen to decline dramatically in Latvia between the EU-SILC results for 2008 and 2011, falling 17.4% in real terms (i.e. accounting for inflation over the period). However it also fell in real terms by 12.5% in Lithuania, around 11% in Ireland, and between 7% and 8% in Estonia, Greece, Spain and the United Kingdom. In other words, decreases in the poverty rate that are accompanied by a drop in the poverty threshold, as observed for example in Latvia and the United Kingdom, do not indicate that the situation of people has improved.

2.2.2. Severe material deprivation (SMD) has risen more noticeably in several Member States

Signs of the worsening situation following the crisis are more evident in the trends in severe material deprivation, which rose markedly in several Member States (see Chart 7) between 2008 and 2011 in response to the shock. The most notable rises were in Bulgaria[8] and Latvia (both up around 12 percentage points), while Estonia, Greece, Hungary and Lithuania also experienced rises of around 4 percentage points or more.

In contrast, severe material deprivation declined or remained broadly stable in around half of the Member States, most notably in Romania (with a decline of around 3.5 pps) and Poland (down almost 5 pps). Once again this highlights the strong polarisation in developments across Member States including the way in which the impact of the crisis has been offset to some degree by improvements in underlying economic performance in some new Member States.

2.2.3. Clear impact of the crisis through rising number of jobless (LWI) households

The most immediately evident impact of the crisis has been the growing exclusion from the labour market, as indicated in the AROPE component that focuses on the share of people living in jobless households (i.e. households with very low work intensity (see Chart 8)), with more than half of the Member States experiencing rises to various degrees in the very low work intensity component. The main developments can be summarised as follows:

- For the EU as a whole, the share of persons living in jobless households (defined as households with zero or very low work intensity) increased from 9% to 10% between 2008 and 2011.
- The situation worsened significantly in several Member States, with an increase of 1 pp or more in fifteen. Among these the rise was especially marked in Estonia, Greece, and Spain (all up between 4 and 6 pps), in Latvia and Lithuania (both up 7 pps), and above all in Ireland (up 9 pps).

(8) This may partly reflect a break in the series in the year 2008.

As a result, the share of people living in very low work intensity households in 2011 exceeded 10% in twelve Member States, including Ireland where it was considerably higher at 23%.

2.3. Varied impact of labour market developments on poverty and exclusion

In general there is a strong link between poverty and exclusion and the labour market situation: most countries with high employment rates also have the lowest levels of poverty and exclusion (see Chart 9). Exclusion from the labour market, poor working conditions and the lack of opportunities to remain and progress on a segmented labour market are major determinants of poverty. Indeed, while the risk of poverty or exclusion was 65% for the unemployed in 2011, and 43% for (non-retired) inactive adults, it was only 12.5% for those in employment. Nevertheless, the employed still represent around a quarter of the people at-risk-of-poverty or exclusion in the EU, and it is therefore important from a poverty perspective to see labour market policies addressing issues of living wages for those in work, labour market segmentation, low pay, and under-employment (for further details see Chapter 4 of the 2011 Employment and Social Developments in Europe review).

As indicated above, in line with the rise in unemployment following the 2008 financial and economic crisis, many Member States have seen an increase in the number of households experiencing joblessness (zero or very low work intensity), however labour market developments do not explain the whole picture.

Comparing the change in the AROPE indicator between 2008 and 2011 with the change in employment rates over the same period indicates a clear relationship, but it does not account for all the variation across Member States (see Chart 10). Of particular note are Poland and Romania, which experienced only limited change in the employment rate but a significant drop in the risk of poverty or exclusion. In contrast, in relation to changes in employment, particularly strong increases in the risk of poverty or exclusion were seen in Bulgaria, Ireland, Latvia and Lithuania, and also in Luxembourg and Malta, even though for the latter two their labour market situations had improved.

Part of the explanation for the variations in the impact of labour market developments on the risk of poverty or exclusion seems to lie in how strongly the developments in employment are linked to the level of work intensity in households. Analysis shows that the strength of the correlation depends, for example, on the prevalence and economic vulnerability of single households as well as the extent to which households with several working age adults are able to increase

Chart 9: At-risk-of-poverty-or-social exclusion rates versus employment rates, 2011

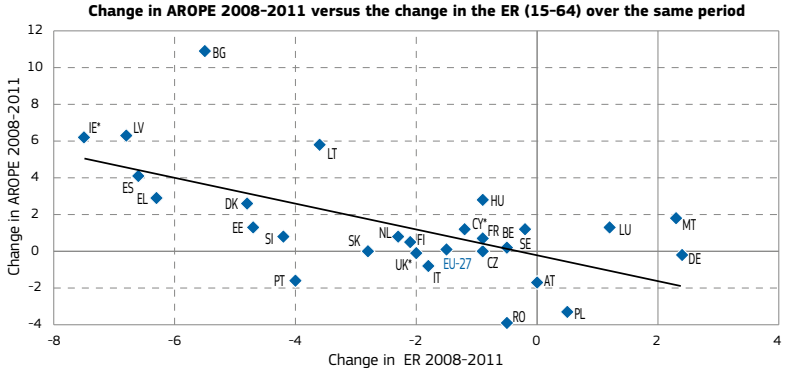


Source: Eurostat, EU-SILC and Labour Force Survey.

Note: *Figures for CY, IE, IT and UK are for 2010 instead of 2011, and for EU-27 the 2011. AROPE figure is a Eurostat estimate.

Chart 10: Changes in the risk of poverty and social exclusion and in the share of jobless/very low work intensity households versus the change in employment rates 2008-2011

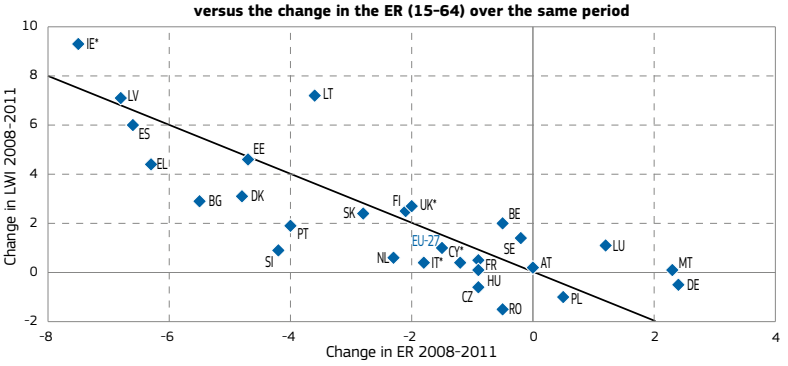
Change in AROPE 2008-2011 versus the change in the ER (15-64) over the same period



Source: Eurostat, EU-SILC and Labour Force Survey.

Note: Black line is OLS regression fit. *Changes for CY, IE, IT and UK are to 2010 instead of 2011, and for EU-27 is based on Eurostat estimate for 2011.

Change in the share of households in jobless/low work intensity households 2008-2011 versus the change in the ER (15-64) over the same period



Source: Eurostat, EU-SILC and Labour Force Survey.

Note: Black line indicates equal change in ER and LWI rate. *Changes for CY, IE, IT and UK are to 2010 instead of 2011, and for EU-27 is based on Eurostat estimate for 2011.

or maintain their level of work intensity (for example, through a second household member taking up work or deciding to work more).

In some countries experiencing strong declines in employment levels, such as Bulgaria, Denmark Greece, Portugal and Slovenia, the share of people living in very low work intensity households increased to a much lesser extent than the decline in employment. In other countries, the share of people in such households increased in a similar proportion to the fall in employment rates, and in a few countries, such as Ireland and Lithuania, even more markedly. This could be due to the decline in employment mainly affecting workers living in the most vulnerable households, such as single households (including single parents), single breadwinner couples, or couples where both are employed in similar jobs with little possibility to increase work intensity.

2.4. Developments in poverty or exclusion for different population groups

The following sections examine which population subgroups are traditionally at greater risk of poverty or exclusion and which have been impacted most by the crisis.

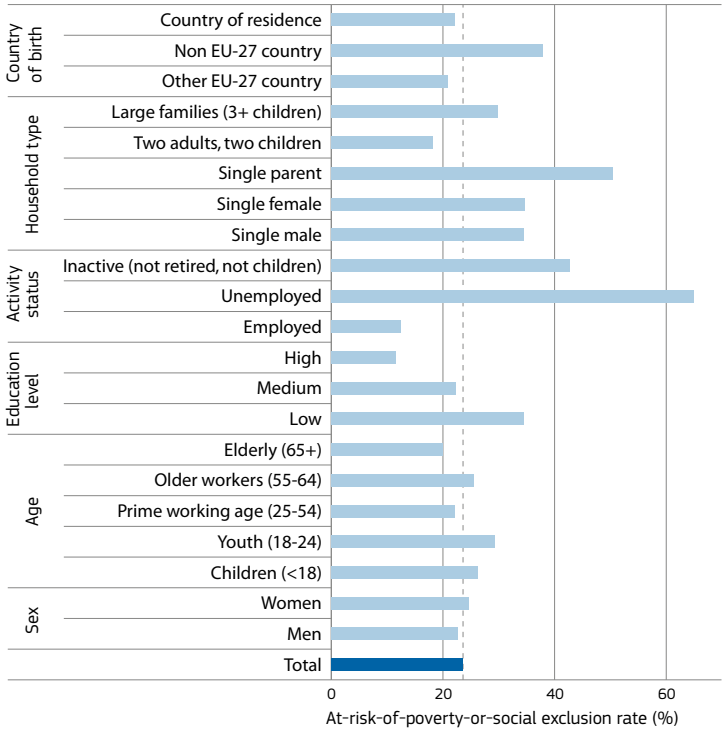
2.4.1. The unemployed, the inactive, single parent families and migrants at greater risk of poverty or exclusion

Among the population subgroups, it is the unemployed, the inactive[9], single parent families and migrants who clearly face the greatest risks of poverty or exclusion.

As illustrated in Chart 11, nearly two thirds of the unemployed are at-risk-of-poverty or exclusion, while the inactive of working age (excluding the retired) also face a much higher risk than the overall population (43% against around 24% overall). People in employment face a much lower risk of poverty and exclusion (12.5%) than the average population, again emphasising the key role employment plays in reducing exposure.

(9) Here referring to those who are not retired and are in the age group 18+.

Chart 11: Risk of poverty or social exclusion in the EU for population subgroups, 2011



Source: Eurostat, EU-SILC.

Note: Figures are Eurostat estimates for 2011.

Among different household types, single parent families face a particularly high risk (50%), but risks are also above average for single households and large families (households consisting of two adults and three or more dependent children). In terms of age groups, children and young adults are more at risk than others, while the elderly and those of prime working age (25-54) have below average risks. There is also a clear link with levels of education, with the low-skilled facing a much higher risk (34.5%) compared to the medium-skilled (22%) and the high-skilled (12%).

Among different groups according to country of birth, migrants from outside the EU clearly face the highest risks. For them the risk of poverty or social exclusion is 38%, much higher than the risk for non-migrants (i.e. people born in their country of residence), at 22%, and for mobile EU citizens from other EU Member States (around 21%). Ethnic minorities, including the Roma, cannot be identified through EU-SILC data, but available national sources indicate that they also face high risks of exclusion.

2.4.2. The crisis has not impacted uniformly across the whole population

Focusing on developments across Member States in terms of the risk of poverty or social exclusion for different age groups (see Chart 12), it is evident that the crisis has not impacted uniformly across the whole population, and has often led to a worsening situation for groups such as children and young adults, who were already at heightened risk before the crisis.

Young adults and working age adults were the first to be hit by the economic crisis. Between 2008 and 2011 they experienced increases in the risk of poverty or social exclusion of 1.2 and 1.3 percentage points respectively across the EU as a whole, while the rate for the 55-64 age group decreased by 0.3 percentage points, and for those aged 65 and over it fell by more than 3 percentage points.

However, the apparent improvement in the relative situation for the elderly reflects the fact that pensions have remained to a large extent unchanged during the crisis, and have in some cases brought

pensioners' income above the poverty threshold due to the changes in the total income distribution while not altering in real terms their economic situation.

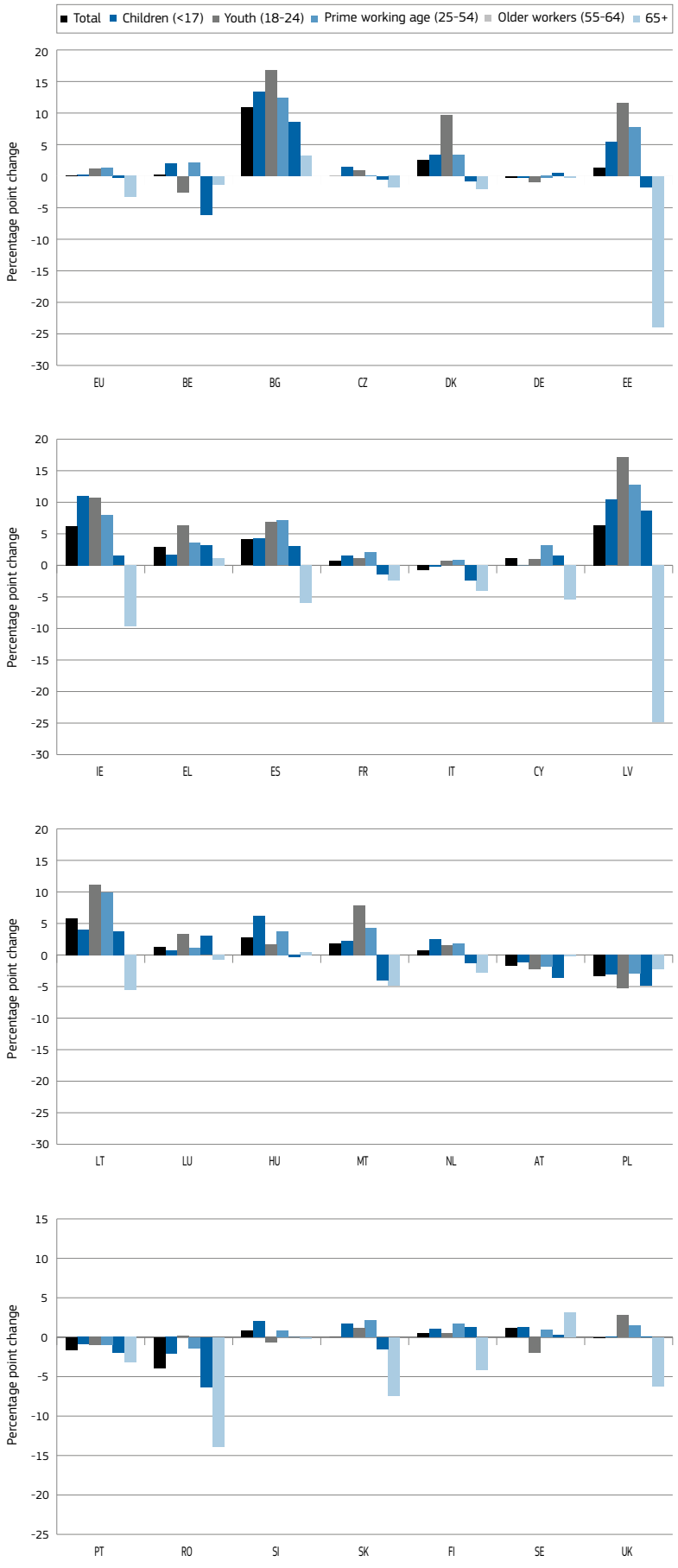
In contrast, there has been a notable rise in poverty and social exclusion among youth, even in countries where the overall risk of poverty or exclusion has been stable. For example, in the United Kingdom the risk of poverty or exclusion has remained stable overall, but has increased around 3 pps for young adults, while decreasing 6 pps for the elderly.

In terms of the impact in different Member States:

- the risk of poverty or exclusion among the prime working age group has risen by more than 7 pps in Bulgaria, Estonia, Ireland, Latvia, Lithuania and Spain with a notable impact on the equivalent risk for children in these Member States;
- the risk of poverty or exclusion among children increased markedly (of the order of 5 pps or more) in Estonia and Hungary, and in excess of 10 pps in Bulgaria, Ireland and Latvia;
- young adults, who face the combined challenge of high unemployment and low income, have also been severely hit, again especially in the Baltic States, Bulgaria and Ireland but also in Denmark, Greece, Malta and Spain. (The risk of poverty or exclusion for those aged 18-24 increased by 6-7 pps in Greece and Spain, 8-12 pps in Denmark, Estonia, Ireland, Lithuania and Malta, and by as much as around 17 pps in Bulgaria and Latvia between 2008 and 2011).

The above results highlight that, apart from marked impacts on children in certain Member States, the working age population is, generally speaking, the age group that has been most directly hit by the recent financial and economic crisis, and hence the one which needs more immediate attention, but it is also the case that addressing the situation of this group ultimately also impacts on the other age groups, especially children. Much of the analysis in the latter part of the chapter therefore focuses on the dynamics of and transitions in poverty and deprivation among the working age population 18-64.

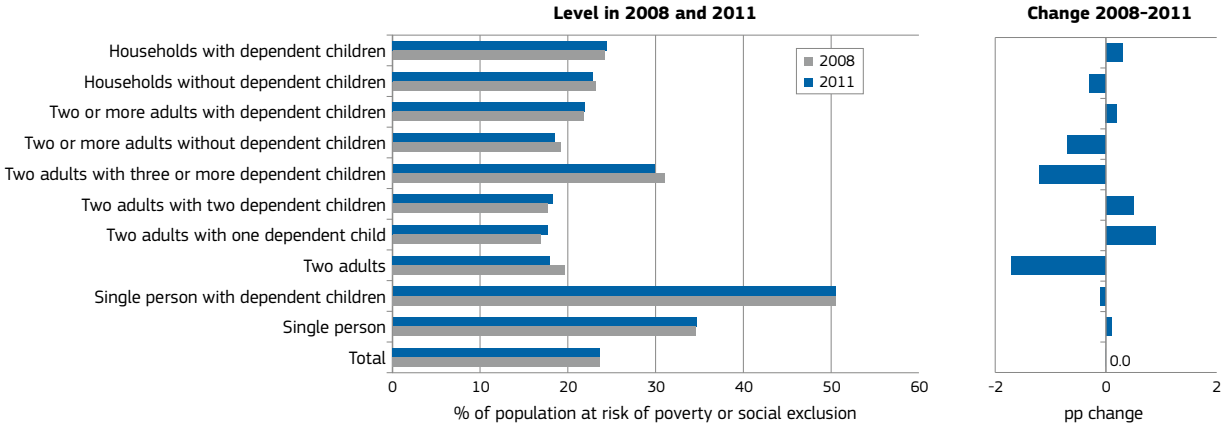
Chart 12: Change in the at-risk-of-poverty-or-social exclusion rate by age groups across Member States, 2008-2011



Source: Eurostat, EU-SILC

Note: *Figures for CY, IE, IT and UK are for changes to 2010 instead of 2011.
EU-27: Based on Eurostat estimates for 2011.

Chart 13: The at-risk-of-poverty-or-social exclusion rate by household type at EU level in 2008 and 2011



Source: Eurostat, EU-SILC.

Note: 2011 figures for EU-27 are Eurostat estimates.

In terms of types of household most affected by rises in poverty or exclusion, households with children have suffered more than those without (see Chart 13), with the former seeing the risk of poverty or social exclusion rise 0.3 pp across the EU as a whole since 2008, while the latter group experienced a 0.3 pp decrease. Single parent households remain the most at risk. However, even family households of two adults and one or two children have experienced increases, although their overall rates remain among the lowest.

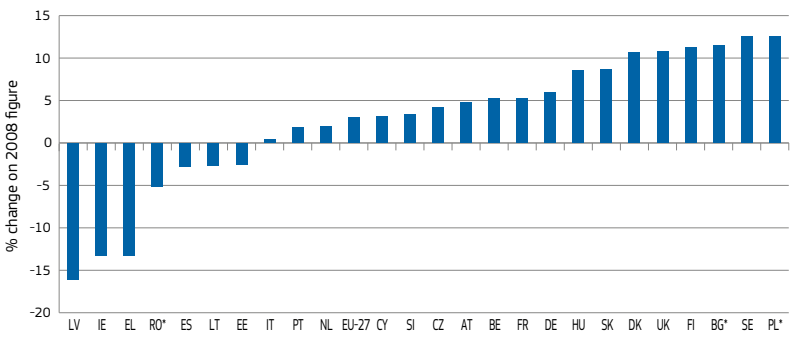
3. Trends in the severity of poverty and social exclusion and in multiple disadvantage

It is important not just to focus on trends in the extent of poverty and social exclusion, but also to consider developments in its severity or depth. This section therefore focuses on trends in indicators of household financial stress, the poverty gap, and some of the more severe forms of poverty and deprivation. It also addresses issues of multiple disadvantage combining poverty and/or deprivation, and/or very low work intensity – in other words, the intersections of the three components of the at-risk-of-poverty-or-social exclusion indicator.

3.1. The crisis has led to increased household financial stress in many Member States

The crisis has had a strong impact on the financial situation of households in several Member States. For example, between 2008 and 2011 average household gross disposable income fell in nominal terms by as much as 16% in Latvia and by around 13% in Ireland and Greece (see Chart 14). Notable falls were also recorded in Estonia, Lithuania, Romania and Spain.

Chart 14: Change in gross household disposable income between 2008 and 2011 (% change on 2008)



Source: Eurostat, annual sector accounts.

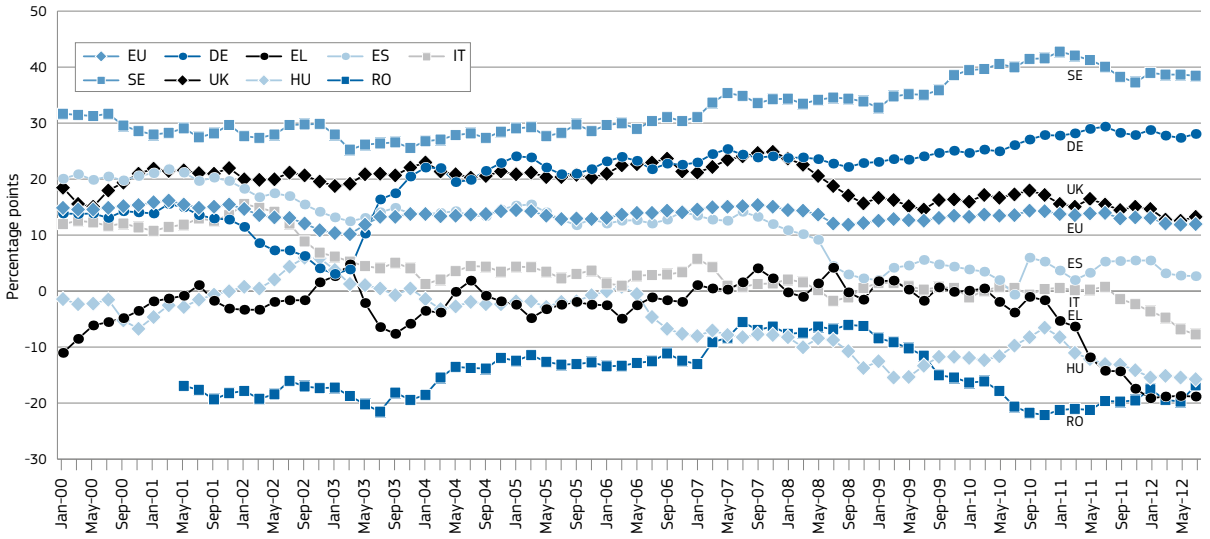
Note: *Changes for BG, PL and RO are to 2010 instead of 2011.

Results from consumer surveys carried out under the joint harmonised EU programme of business and consumer surveys suggest there is a marked divergence in developments in the financial situations of households across individual Member States (see Chart 15). For example, the balance of positive against negative assessments of household financial situations[10] indicates broadly positive trends in countries such as Germany and Sweden since the onset of the financial crisis, resulting in improvements compared with the pre-crisis level, although with a general weakening in 2011 and into 2012.

However, this contrasts with the marked downward trends since the economic crisis first hit in countries such as the United Kingdom, Spain, and, with a delay, Romania. For all these Member States, the balance remains well down on pre-crisis levels, with no signs yet of a sustained recovery. In fact all except Romania report a marked worsening in the balance figures over 2012, a development also observed in Italy.

(10) The overall balance for the consumer survey questions reported here is calculated according to the formula *balance = (PP + ½ P) – (1/2 M + MM)*, where PP is the number of the most positive responses (for example, got a lot better, we are saving a lot), P the number of slightly positive responses (got a little better, we are saving a little), M the number of slightly negative responses (for example, got a little worse, we are having to draw on our savings), etc.

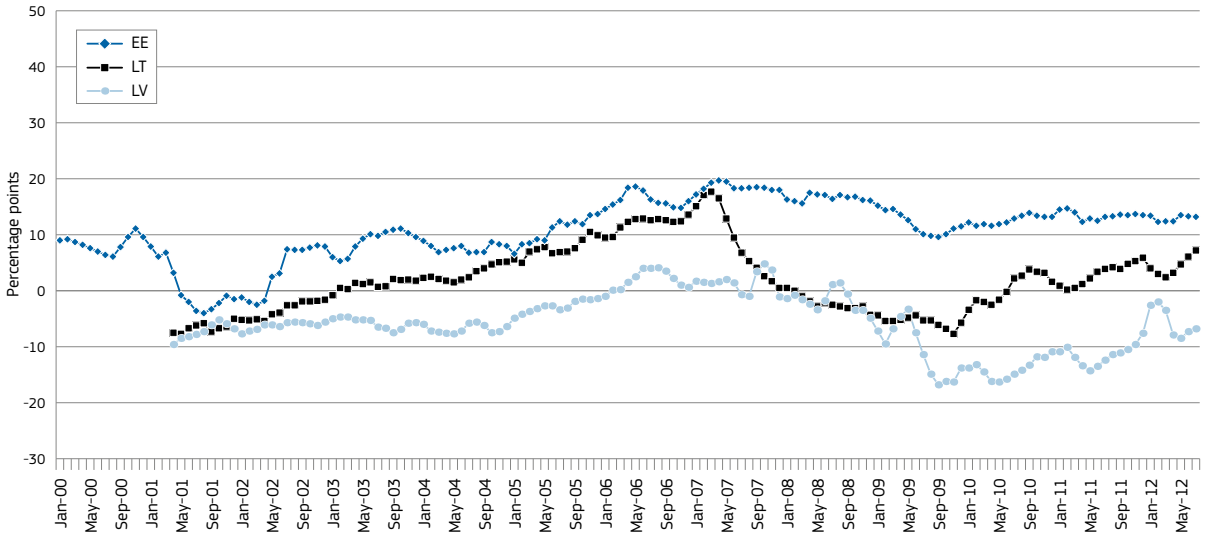
Chart 15: Balance of consumer opinion on the current financial situation in their households for selected Member States, 2000-2012



Source: Joint EU harmonised consumer surveys, seasonally adjusted data.

Note: 3-month centred moving averages.

Chart 16: Balance of consumer opinion on the current financial situation in their households in the Baltic States, 2000-2012



Source: Joint EU harmonised consumer surveys, seasonally adjusted data.

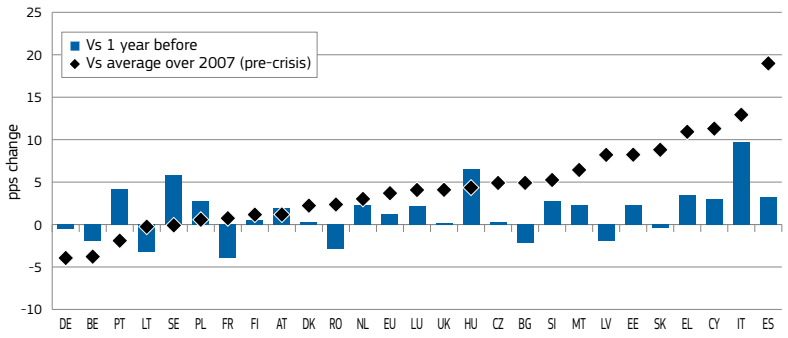
Note: 3-month centred moving averages.

Reflecting the recent financial turmoil in that Member State, there was also a very pronounced downward trend in the balance of consumer opinions on households' current financial situations in Greece from autumn 2010 until early 2012, while similar developments can be observed in Hungary. In contrast, the Baltic States of Latvia and Lithuania, which were among those showing the worst deterioration in social outcomes between 2008 and 2010, seem to have experienced some improvement in 2011 on the back of strong economic recoveries, but with signs of a partial relapse in the early part of 2012 (see Chart 16).

Consumer survey questions about the current financial situation of households also allow us to monitor the share of people in households that face particularly marked financial difficulties in terms of having to draw on savings, or go into debt, in order to cover current expenditures. Focusing on the lowest income quartile group, which is most at-risk-of-poverty-and-social exclusion, we see that the share experiencing this form of 'financial distress'[11] increased over the year to mid-2012 in the majority of Member States and indeed for the EU as a whole (see Chart 17).

(11) The combined share of households reporting that they are either having to draw on savings or are running into debt.

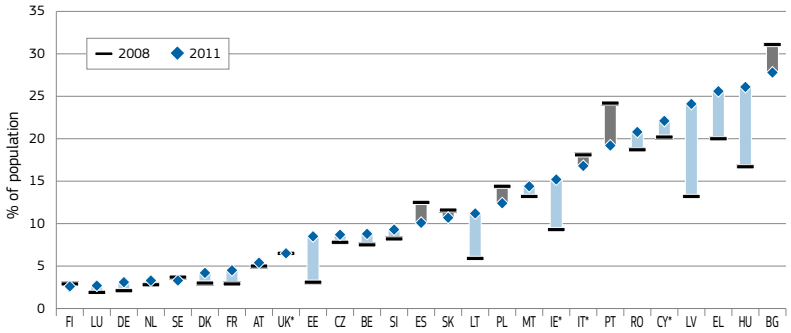
Chart 17: Change in population share in households in the lowest income quartile reporting financial distress across the EU (as at July 2012)



Source: Joint harmonised EU consumer surveys & DG EMPL calculations.

Note: Based on 3 month centred moving averages. Data not seasonally adjusted. Break in series for Ireland in 2009 (figures for change vs one year before 7.6 pps).

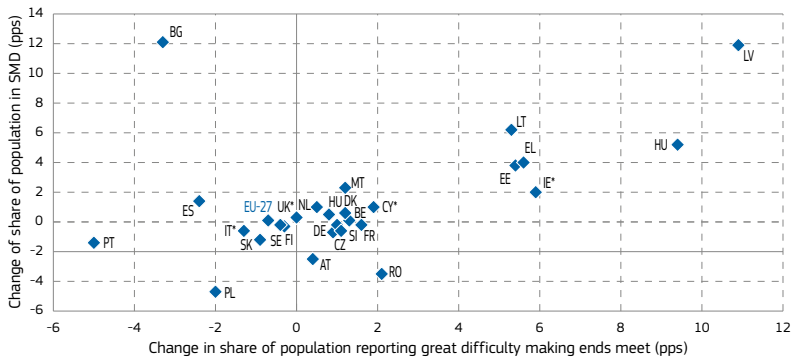
Chart 18: Share of the population reporting great difficulty in making ends meet, 2008-2011



Source: Eurostat, EU SILC.

Note: Grey bars indicate declines and blue ones increases. *Changes for CY, IE, IT and UK are to 2010 instead of 2011.

Chart 19: Changes (from 2008 to 2011) in the share of the population experiencing severe material deprivation and the share of the population reporting great difficulty in making ends meet



Source: Eurostat, EU-SILC.

Note: *Changes for CY, IE, IT and UK are to 2010 instead of 2011, and for EU-27 is based on Eurostat estimates for 2011.

Of particular note is the rise in financial distress among the lower income quartile households in Italy, with a year-on-year rise of the order of 10 pps. Ireland, Hungary and Sweden have also seen rises in excess of five percentage points over the year. Only a few Member States have seen a noticeable fall in the share of lower income households reporting financial distress over the last year, most notably France, Lithuania and Romania, but also Belgium, Bulgaria and Latvia, while the situation of such households in the Czech Republic, Denmark, Finland, Germany, Slovakia and the United Kingdom has changed little.

If these trends are confirmed in subsequent EU-SILC data on poverty and deprivation then the indications are that the social situation has deteriorated further beyond 2011 in most Member States. From a longer-term perspective, comparisons with the pre-crisis position (i.e. the average level of the financial distress indicator over 2007) serve to indicate how low income households in many Member States are continuing to suffer from the crisis, while highlighting the significantly worsened situation especially in Cyprus, Greece, Italy and Spain.

Similar to the above trends, there has been a significant jump in many Member States in the number of people reporting economic strains in their household as collected via the EU-SILC instrument. In particular, the share of people reporting that their household is only managing to 'make ends meet' with great difficulty has risen sharply (by more than 5 pps) in the Baltic States, Greece, Hungary and Ireland since 2008 (see Chart 18), with Hungary and Latvia experiencing jumps of around 10 pps.

As a result of these developments, in around half of the Member States more than 1-in-10 people reported their households had great difficulty in making ends meet in 2011, while in several Member States (Bulgaria, Cyprus, Greece, Hungary, Latvia and Romania) the share was more than 1-in-5.

While the basis for this assessment may appear rather subjective, it should be recognised that the focus is on the more extreme cases (those facing great difficulty) and that there is (excluding the outlier Bulgaria), in fact, a strong correlation across countries between changes in the numbers reporting great difficulty in making ends meet, and in the share of the population facing severe material deprivation (see Chart 19).

In most countries, the rise in the numbers reporting only being able to make ends meet with great difficulty is generally associated with increases in other factors indicating economic strain within households, such as being in

arrears on mortgage or rent payments, or being in arrears with respect to utility bills (see Chart 20).

For the EU as a whole, the share of the population reporting 'being in arrears on utility bills' increased by 0.5 pp between 2008 and 2011, to 8.4%, with the greatest increases (in excess of 4 pps) in Cyprus, Estonia, Greece, Hungary, Ireland, Latvia (up 12 pps) and Lithuania. While some Member States (Bulgaria, Italy and Sweden) did see falls in the share, the vast majority witnessed noticeable increases, with the population in arrears exceeding 10% in 12 Member States in 2011, including Bulgaria, Greece, Hungary, Latvia and Romania where the shares even exceeded 20%.

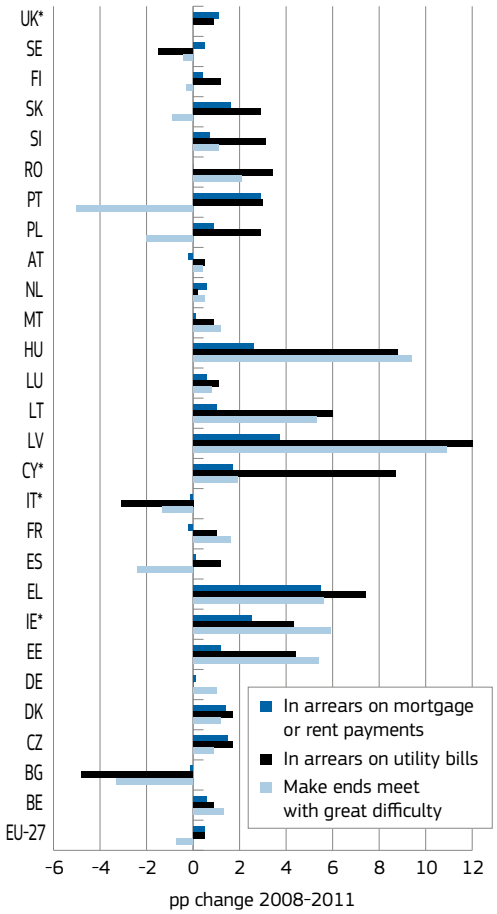
In terms of 'falling into arrears on mortgage or rent payments' the rise has been similar (although in this case the consequences are potentially more severe) with the share across the EU as a whole increasing by 0.5 pps from some 3.3% in 2008 to nearly 4% in 2011, but again with a wide variation across Member States. Twelve Member States witnessed significant rises in excess of 1pp, with the most notable increases (of more than 2 pps) in Hungary, Ireland and Portugal, and of around 4 pps or more in Greece and Latvia.

More than 1-in-20 of the population reported being in arrears on mortgage or rent payments in 2011 in Cyprus, France, Hungary, Latvia, and Portugal, while in Ireland the share had jumped to 8% and in Greece to 11%. This potentially has implications for rates of homelessness unless appropriate measures are taken to provide support and prevent repossession or evictions.

The rise in the population in arrears on mortgage or rent payments partly reflects the changes in the burden that this major element of household expenditure represents. Among the population at-risk-of-poverty (those with incomes below 60% of the national median equivalised income) 50% live with a heavy financial burden due to housing costs. In several Member States the share rose markedly over the three-year period (see Chart 21), most notably in Estonia, Greece and Hungary (all up around 16-18 pps) and above all in Latvia (up 23 pps), Poland (up 23 pps) and Malta (up 28 pps).

Combining data on the changes in the population shares affected by the two types of arrears suggests that perhaps the strongest impact of the crisis in terms of putting financial strain on households has occurred in Cyprus, Greece, Hungary, Ireland, Latvia and Portugal (see Chart 22). Moreover these are almost all among the Member States with the worst situations in terms of levels in 2011, while Bulgaria and Romania also stand out in terms of the shares of the populations with arrears on utility payments.

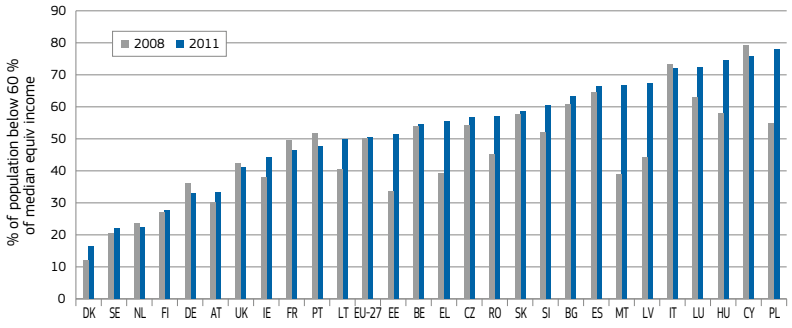
Chart 20: Changes in major factors indicating economic strain in households, 2008-2011



Source: Eurostat, EU-SILC.

Note: *Changes for CY, IE, IT and UK are to 2010 instead of 2011, and for EU-27 are based on Eurostat estimates for 2011.

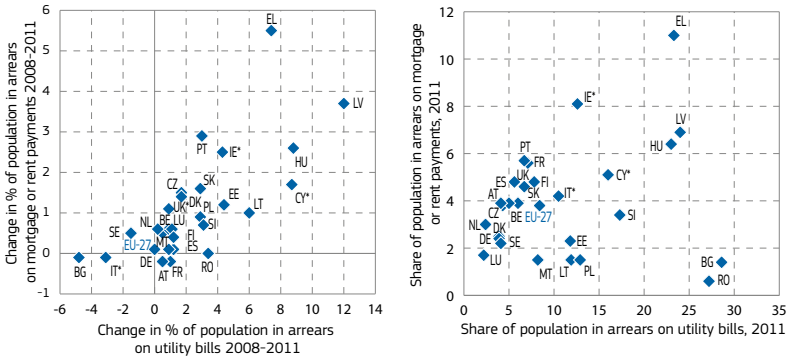
Chart 21: Share of the population at-risk-of-poverty living in households with a heavy financial burden due to housing costs, 2008 and 2011



Source: Eurostat, EU-SILC.

Note: *Figures for CY, IE, IT and UK are for 2010 instead of 2011. 2011 figure for EU-27 is Eurostat estimate.

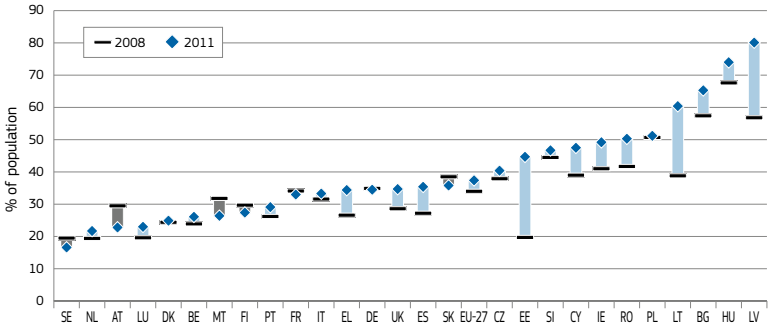
Chart 22: Change over 2008-2011 in the population shares in arrears on mortgage/rent payments and on utility bills, and situation in 2011



Source: Eurostat, EU-SILC.

Note: *Changes and situation for CY, IE, IT and UK are for 2010 instead of 2011, and for EU-27 are based on Eurostat estimates for 2011.

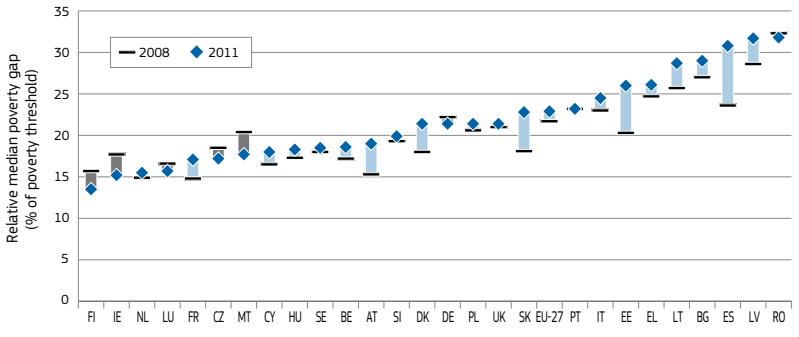
Chart 23: Share of the population unable to meet unexpected financial expenses, 2008-2011



Source: Eurostat, EU SILC.

Note: Grey bars indicate declines and blue ones increases. *Figures for CY, IE, IT and UK are for 2010 instead of 2011. 2011 EU-27 figure is Eurostat estimate.

Chart 24: Change in the relative median at-risk-of-poverty gap 2008-2011



Source: Eurostat, EU-SILC.

Note: Figures refer to cut-off point: 60% of median equivalised income, grey bars indicate declines in the poverty gap and blue ones increases. *Figures for CY, IE, IT and UK are for 2010 instead of 2011. 2011 EU-27 figure is Eurostat estimate.

The generally worsening financial situation of households has had a clear impact on their ability to cope with unexpected financial expenses (see Chart 23), which highlights the risk that unforeseen life events or further economic shocks could significantly affect their welfare and social situation. In particular, the number of people unable to meet unexpected expenses increased dramatically on 2008 in Estonia, Latvia and Lithuania (all seeing rises in the share in excess of 20 pps), with significant increases also in Bulgaria, Cyprus, Greece, Hungary, Ireland, Spain, Romania and the United Kingdom (all up around 6-9 pps).

3.2. Poverty gap figures indicate that poverty has generally become more severe

Developments in the poverty gap[12] (see Chart 24), which highlights "how poor the poor are" or the depth of poverty, indicate that poverty has generally become more severe since the crisis, with a rise in the indicator in all but a few Member States, and with especially strong increases (ranging from around 5 to 7 pps) in Estonia, Slovakia and Spain. Only in the Czech Republic, Finland, Ireland and Malta have there been notable falls in the poverty gap (of more than 1 pp), although for Ireland this was associated with a considerable fall in the underlying poverty threshold. For the EU as a whole, the median poverty gap was up 1.2 pps to 23% in 2011, indicating that half of those living at-risk-of-poverty were at least 23% below the relevant at-risk-of-poverty threshold. Differences across Member States are significant, with particularly high (of the order of 30%) poverty gaps being recorded in Bulgaria, Latvia, Lithuania, Romania and Spain in 2011.

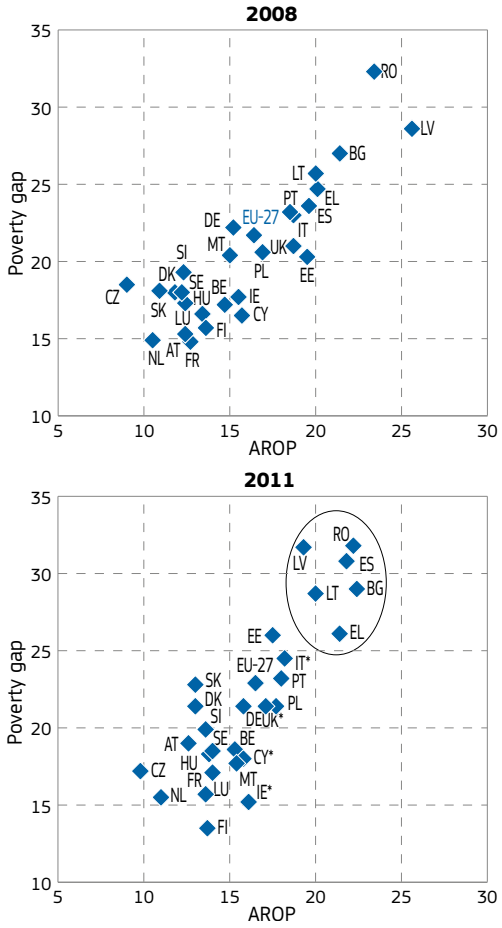
Combining the indicators of the extent and the severity of poverty (see Chart 25) highlights those Member States who face particularly strong social challenges in terms of poverty, namely Bulgaria, Latvia and Romania, who have been joined by Greece, Lithuania and Spain as the crisis continues, with Estonia, Italy and Portugal not far behind.

While there have been relatively few instances of Member States showing substantial rises in the overall poverty rate (i.e. the extent of poverty), there are many cases of marked increases in the poverty gap (i.e. the severity of poverty), with the rise in the latter at EU level being 1.2 pps. Of particular note are the sizeable increases in both the poverty rate and the poverty gap in Denmark, France, Greece, Slovakia and Spain.

The increase in the severity of poverty is confirmed by data on the dispersion around the at-risk-of-poverty threshold.

(12) The indicator is defined as the difference between the median equivalised total net income of persons below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold, expressed as a percentage of the at-risk-of-poverty threshold. It gives an idea of the severity of poverty for those experiencing it.

Chart 25: Developments over 2008-2011 in the poverty gap and the risk of poverty across EU Member States in 2008 and 2011



	Changes 2008-2011 in percentage points	
	AROP	Poverty Gap
EU-27	0.1	**1.2**
BE	0.6	**1.4**
BG	1.0	**2.0**
CZ	0.8	-1.3
DK	**1.2**	**3.4**
DE	0.6	-0.8
EE	-2.0	**5.7**
IE*	0.6	-2.5
EL	**1.3**	**1.4**
ES	**2.2**	**7.2**
FR	**1.3**	**2.3**
IT*	-0.5	**1.5**
CY*	0.1	**1.5**
LV	-6.3	**3.1**
LT	0.0	**3.0**
LU	0.2	-0.9
HU	**1.4**	1.0
MT	0.4	-2.7
NL	0.5	0.6
AT	0.2	**3.7**
PL	0.8	0.8
PT	-0.5	0.0
RO	-1.2	-0.5
SI	**1.3**	0.6
SK	**2.1**	**4.7**
FI	0.1	-2.2
SE	**1.8**	0.5
UK*	-1.6	0.4

Source: Eurostat, EU-SILC.

Note: Changes in AROP and Poverty gap of more than 1 percentage point are highlighted in bold. *Figures for CY, IE, IT and UK are for 2010 instead of 2011. 2011 EU-27 figure is Eurostat estimate.

Figures on the percentage of the population with an equivalised disposable income below 40%, 50%, 60% and 70% respectively of the national median equivalised disposable income indicate that, for the EU as a whole, the greatest increase between 2008 and 2011 was in the groups with an equivalised disposable income of below 40% and below 50% of the median. This suggests that within the population living at-risk-of-poverty, more people have dropped to the bottom of the income distribution since the beginning of the crisis.

At individual Member State level, the most substantial rises in the share of the population in the poorest group (with income below 40% of the national median equivalised income) occurred in Bulgaria, Denmark, Estonia, Greece, Ireland, Lithuania and Slovakia (all with rises of the order of 1-2 pps) and, above all, in Spain where the share increased by 3 pps. In contrast, Latvia and Malta saw the population shares in the below 40% median income group decline by around 1 pp or more.

3.3. Rising population facing multiple disadvantage

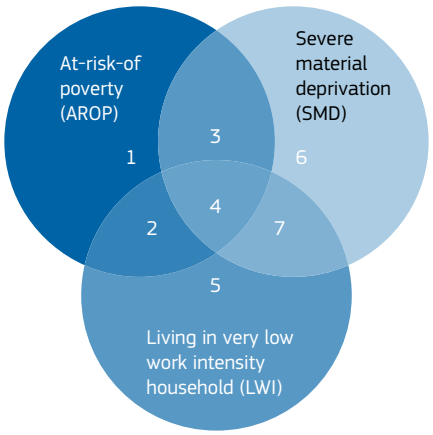
The population that falls in the different intersections of the three components of the AROPE indicator – being at-risk-of-poverty (AROP)/ in severe material deprivation (SMD)/living in a household with very low work intensity (LWI) – represents people in various situations of multiple disadvantage[13], for example experiencing both poverty and severe material deprivation, or combining this with living in a household with very low work intensity, etc. The possible combinations of multiple disadvantage are illustrated in Chart 26 where, for example, the segment numbered 3 represents those people at-risk-of-poverty and suffering severe material deprivation, but not living in a household with very low work intensity.

The population shares within the different overlapping segments, and how these evolved between 2008 and 2010, are shown in Table 1. In terms of overlaps between any two components, the situation in 2010 can be summarised as follows:

- around 4% (19 million) of the EU population were both at-risk-of-poverty and experiencing severe material deprivation (*segments 3 and 4*) in 2010. This covers people who have a relatively low income that also has an impact on their living standards; the overlap is largest mainly in low GDP per capita countries (see Box 2 for a detailed review of this overlap population);

(13) It does not always follow that someone in a situation of experiencing more components is necessarily more severely affected than one concerned with fewer components. While this may be true for the intersection of poverty and severe material deprivation, it is less clear with the jobless household component, which does not cover some segments of the population. For example, an elderly woman with a very small pension may be much worse off than someone in early retirement who might be considered as living in a jobless household, living just below the poverty line and declaring he or she is suffering severe material deprivation. In summary, the three components enable us to capture the multiple dimensions of poverty, but these dimensions are not necessarily 'additive' in the strict sense.

Chart 26: Schematic diagram of the segments and overlaps in the components of the AROPE indicator



1 Population at risk of poverty but not severely materially deprived and not living in a household with low work intensity
2 Population at risk of poverty, not severely materially deprived but living in a household with low work intensity
3 Population at risk of poverty, severely materially deprived but not living in a household with low work intensity
4 Population at risk of poverty, severely materially deprived and living in a household with low work intensity
5 Population not at risk of poverty, not severely materially deprived but living in a household with low work intensity
6 Population not at risk of poverty but severely materially deprived and not living in a household with low work intensity
7 Population not at risk of poverty but severely materially deprived and living in a household with low work intensity

- some 2% (10 million) suffered both severe material deprivation and were living in a household with very low work intensity (*segments 4 and 7*). This covers people living in essentially jobless households whose lack of work involvement has an impact on their living standards (for example where benefits have less impact on reducing deprivation); the overlap is largest mainly in countries with low GDP per capita and/or less generous benefit systems;

- over 4% (21 million) were at-risk-of-poverty and were living in a household with very low work intensity (*segments 2 and 4*). This covers people in jobless households that also have a relatively low income. Apart from the overlap of all three components (segment 4), it depends on the size of the overlap between jobless households and at-risk-of-poverty excluding severe material deprivation, which means that many rich Member States are also covered in this population (since these households are often in rich countries with low severe material deprivation) .

With regard to developments from 2008 to 2010, the shares in the first two overlap cases above changed little at EU level, but a more noticeable change can be seen with respect to those who are at-risk-of-poverty and living in a household with very low work intensity, where the share has risen 0.4 pps, reflecting the effect of the deterioration in the labour market on households.

Of course there are large variations across Member States in the population shares in the different overlapping segments between any two components. The largest variation in 2010 occurred in the overlap of being both at-risk-of-poverty and experiencing severe material deprivation, which ranged from below 1% of the population in Luxembourg, the Netherlands and Sweden to over 12% in Latvia and Romania, and close to 15% in Bulgaria. The share of the population both at-risk-of-poverty and living in a very low work intensity household varied much less across countries, from 2% in Cyprus to 7.4% in Ireland, while those both in severe material deprivation and living in a household with very low work intensity accounted for relatively few people in Luxembourg but 6% of the population in Latvia.

The intersection of all three components (at-risk-of-poverty, severely materially deprived, and living in a household with very low work intensity – segment 4 in the above schematic diagram) was experienced by 1.5% of the total EU population (or 7.5 million people) in 2010, remaining broadly stable in comparison with the share in 2008. However, substantial rises in the population shares (in excess of 1 pp) were recorded in Latvia, Lithuania and Slovakia, with the rise in Latvia almost 3 pps (see Table 1, where the number in parenthesis in the column heading refers to the segment code in the preceding schematic diagram, and Chart 27). There are also signs of the shares having risen noticeably in Estonia, Hungary, Ireland and Portugal. In Latvia almost 5% of the population was in this situation in 2010, while Bulgaria, Hungary, Lithuania and Slovakia also had sizeable shares of close to 3% or more.

At the level of the EU as a whole, the population in the cross-section of all three components is fairly evenly split between men and women while, in terms of age groups, children (aged <18) account for 28% and those of working age (18-64) the other 72% (note that the elderly are not included since the low work intensity component only covers the age rage 0-59).

Details of the propensity at EU level of people to be in one of the above cases of multiple disadvantage (i.e. in the different intersections of the poverty, severe material deprivation and very low work intensity household components of the overall poverty or social exclusion indicator) according to various characteristics are shown in Table 2. This shows the share of sub-populations by various characteristics in the respective situations in 2008 and 2010, together with the changes in the share between these years. For comparison, the same information is provided for the overall population at-risk-of-poverty-or-social exclusion (i.e. in the union of all components), with the same breakdowns.

The main issues identified from this table can be summarised as follows:

- In terms of age groups, children have the highest tendency to not only be at-risk-of-poverty-or-exclusion, but also to experience multiple disadvantage in the sense of having higher propensity to be in the intersections of the components of the poverty or social exclusion indicator compared to other age groups. Furthermore, their situation worsened more than for any other age group (in terms of percentage point increases) between 2008 and 2010 in most intersections (especially the one combining being at-risk-of-poverty and living in a very low work intensity household). In contrast, the tendency for the elderly to be at risk has reduced, while generally already facing a lower propensity to be in the disadvantaged populations compared to other age groups (although this

partly reflects the fact that they are not in the low work intensity component by definition).

- Women face a greater overall risk than men of poverty and social exclusion but risks of being subject to multiple disadvantage are generally similar. However, the position of men has generally worsened more markedly than for women since 2008.

- The low-skilled clearly face a much higher risk of poverty or social exclusion than average, and the high-skilled a much lower risk, and this also applies to the cases of multiple disadvantage. Furthermore, although the overall risk of poverty or exclusion for the low-skilled fell slightly between 2008 and 2010, for most cases of multiple disadvantage the risks actually rose noticeably for this group.

- In terms of household types, people living in single parent households are most likely to face poverty or social exclusion and multiple disadvantage. Among single person households, women face a higher risk of poverty or social exclusion than men, but men face a markedly greater risk of experiencing multiple disadvantage, and their position has worsened markedly since 2008 compared with the overall improvement for single women. The presence of children leads to greater risk in all cases, including the risk of experiencing multiple disadvantage. Moreover, households with children have seen risks increase since 2008 in almost all cases, while those without children (excluding single males) have often seen their situation improve.

- Non EU-27 nationals face much greater risks of multiple disadvantage (especially the combinations of poverty and severe material deprivation and of poverty and living in a very low work intensity household) than nationals of the country or other EU nationals, and these risks have worsened since the crisis much more for this group than for other groups.

Above all, the low-skilled, those living in single parent households, men living alone, third country migrants and, to some extent, children, face considerably greater risks of multiple disadvantage, and apart from single parent households, their risks have generally worsened most since the beginning of the crisis. This can be seen, for example, in Chart 28, which shows the case of suffering all three components of poverty, severe material deprivation and living in a very low work intensity household.

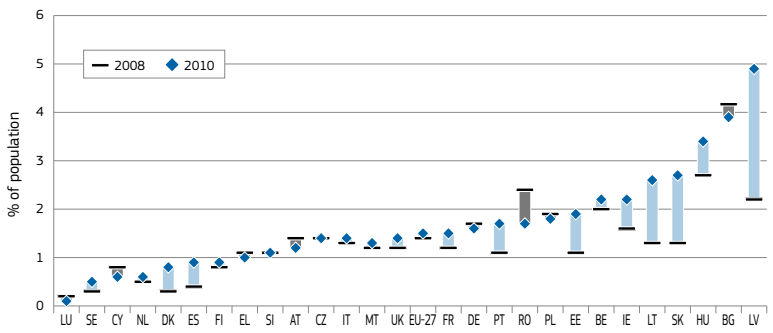
Table 1: Summary of the shares of the population in various overlaps of the AROPE components and the changes 2008-2010

	AROP and SMD but not LWI (3)		AROP and LWI but not SMD (2)		SMD and LWI but not AROP (7)		All 3 (4)	
	2010	Change 2008-2010	2010	Change 2008-2010	2010	Change 2008-2010	2010	Change 2008-2010
EU-27	2.3	-0.1	2.8	0.3	0.5	0.0	1.5	0.1
BE	1.2	-0.1	3.3	0.3	0.6	0.2	2.2	0.2
BG	10.9	-0.4	0.7	0.0	0.7	0.0	3.9	-0.2
CZ	1.3	-0.1	1.5	-0.3	0.2	-0.1	1.4	0.0
DK	0.4	0.0	2.7	0.4	0.8	0.3	0.8	0.5
DE	1.1	-0.3	3.9	0.1	0.4	-0.2	1.6	-0.1
EE	2.8	**0.8**	2.9	**0.7**	0.4	0.3	1.9	**0.8**
IE	0.3	-0.3	5.2	**1.4**	2.8	**1.5**	2.2	**0.6**
EL	6.1	**0.9**	1.2	0.1	0.4	0.1	1.0	-0.1
ES	1.4	0.4	3.5	**1.3**	0.1	0.0	0.9	0.5
FR	1.5	0.4	2.6	0.5	0.3	-0.2	1.5	0.3
IT	2.3	-0.4	2.7	0.1	0.3	0.0	1.4	0.1
CY	2.9	0.4	1.4	0.3	0.3	0.1	0.6	-0.2
LV	7.4	-1.7	1.9	**0.7**	1.0	**0.9**	4.9	**2.7**
LT	5.2	**0.6**	2.1	**0.7**	1.2	**1.0**	2.6	**1.3**
LU	0.3	0.0	2.0	0.4	0.0	0.0	0.1	-0.1
HU	3.3	0.5	1.5	-0.5	1.7	0.2	3.4	**0.7**
MT	1.2	**0.8**	2.8	0.0	0.3	-0.1	1.3	0.1
NL	0.2	0.0	1.8	-0.2	0.7	0.4	0.6	0.1
AT	1.2	-0.1	2.0	0.4	0.2	-0.3	1.2	-0.2
PL	4.3	-0.4	1.5	0.2	0.4	-0.5	1.8	-0.1
PT	2.2	-1.0	2.1	**0.7**	0.4	0.2	1.7	**0.6**
RO	10.9	-0.9	0.8	-0.1	1.1	-0.1	1.7	-0.7
SI	1.5	-0.1	2.1	0.2	0.1	-0.1	1.1	0.0
SK	1.9	-0.3	1.3	0.4	0.7	0.2	2.7	**1.4**
FI	0.6	-0.4	3.2	**0.8**	0.4	0.0	0.9	0.1
SE	0.2	-0.1	2.3	0.5	0.1	-0.1	0.5	0.2
UK	0.6	-0.4	4.4	0.5	1.1	0.3	1.4	0.2

Source: Eurostat, EU-SILC.

Note: Changes above 0.5 pps highlighted in bold.

Chart 27: Change in the population share of all three components AROP, SMD and LWI between 2008 and 2010



Source: Eurostat, EU-SILC.

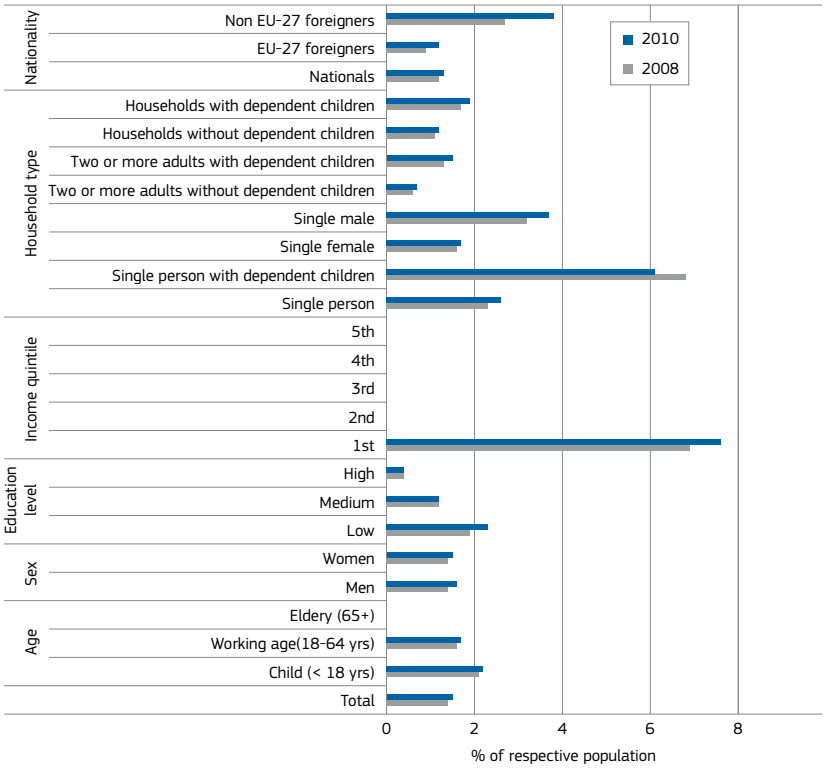
Note: Grey bars indicate declines and blue ones increases.

Table 2: Propensity to be in the multiple disadvantage intersections by various population characteristics for the EU, 2010 (share (%) of respective population subgroups in the identified intersection)

Share of given population group:	In intersection of all 3 (AROP/SMD/LWI i.e. segment 4)			In intersection of AROP and SMD (segments 3 and 4)			In intersection of AROP and LWI (segments 2 and 4)			In intersection of SMD and LWI (segments 4 and 7)			In the union of all 3 (AROPE)		
	2008	2010	*change*	2008	2010	*change*	2008	2010	*change*	2008	2010	*change*	2008	2010	*change*
Total	**1.4**	**1.5**	**0.1**	**3.8**	**3.8**	**0**	**3.9**	**4.3**	**0.4**	**1.9**	**2**	**0.1**	**23.5**	**23.4**	**-0.1**
.....for sub-populations															
Age															
Child (< 18 yrs)	2.1	2.2	***0.1***	5.2	5.1	***-0.1***	5.5	6.3	***0.8***	2.7	2.9	***0.2***	26.1	27	***0.9***
Working age(18-64 yrs)	1.6	1.7	***0.1***	3.7	3.7	***0***	4.5	4.9	***0.4***	2.2	2.3	***0.1***	22.8	23.3	***0.5***
Elderly (65+)	na	na	***0***	3	2.5	***-0.5***	na	na	***0***	na	na	***0***	23.2	19.9	***-3.3***
Sex															
Men	1.4	1.6	***0.2***	3.6	3.8	***0.2***	3.8	4.3	***0.5***	1.9	2.1	***0.2***	22	22.3	***0.3***
Women	1.4	1.5	***0.1***	4	3.9	***-0.1***	4	4.5	***0.5***	2	2	***0***	24.9	24.5	***-0.4***
Education level (population aged 18 and over)															
Low	1.9	2.3	***0.4***	6.1	6.1	***0***	4.7	5.6	***0.9***	2.5	3	***0.5***	33	32.5	***-0.5***
Medium	1.2	1.2	***0***	3	3	***0***	3.5	3.7	***0.2***	1.8	1.7	***-0.1***	21.5	21.5	***0***
High	0.4	0.4	***0***	0.8	0.9	***0.1***	1.9	1.9	***0***	0.6	0.6	***0***	10.5	10.7	***0.2***
Income quintile															
1st	6.9	7.6	***0.7***	18.8	18.8	***0***	19.4	21.8	***2.4***	7.6	8.3	***0.7***	85.4	85.4	***0***
2nd	0	0	***0***	0.5	0.2	***-0.3***	0	0	***0***	1.3	1.4	***0.1***	16.4	15.9	***-0.5***
3rd	0	0	***0***	0	0	***0***	0	0	***0***	0.5	0.4	***-0.1***	8.8	8.6	***-0.2***
4th	0	0	***0***	0	0	***0***	0	0	***0***	0.1	0.2	***0.1***	4.8	4.9	***0.1***
5th	0	0	***0***	0	0	***0***	0	0	***0***	0.1	0	***-0.1***	2.6	2.5	***-0.1***
Household type															
Single person	2.3	2.6	***0.3***	6.1	5.9	***-0.2***	6.4	7.2	***0.8***	3.2	3.5	***0.3***	34.5	33.7	***-0.8***
Single person with dependent children	6.8	6.1	***-0.7***	10.7	9.9	***-0.8***	18.9	20.2	***1.3***	10.2	8.8	***-1.4***	50.5	51.7	***1.2***
Single female	1.6	1.7	***0.1***	6.1	5.3	***-0.8***	4.7	5.1	***0.4***	2.4	2.4	***0***	36.7	34.2	***-2.5***
Single male	3.2	3.7	***0.5***	6	6.5	***0.5***	8.7	9.9	***1.2***	4.2	4.9	***0.7***	31.5	32.9	***1.4***
Two or more adults without dependent children	0.6	0.7	***0.1***	2.1	2	***-0.1***	2.2	2.3	***0.1***	1	1.1	***0.1***	19.1	17.9	***-1.2***
Two or more adults with dependent children	1.3	1.5	***0.2***	4	4.1	***0.1***	3.2	3.7	***0.5***	1.6	1.9	***0.3***	21.7	22.2	***0.5***
Households without dependent children	1.1	1.2	***0.1***	3.2	3	***-0.2***	3.4	3.6	***0.2***	1.7	1.7	***0***	23.1	22.1	***-1.0***
Households with dependent children	1.7	1.9	***0.2***	4.5	4.6	***0.1***	4.4	5.2	***0.8***	2.2	2.5	***0.3***	24.1	24.7	***0.6***
Nationality (population aged 18 and over)															
Nationals	1.2	1.3	***0.1***	3.5	3.3	***-0.2***	3.4	3.7	***0.3***	1.7	1.8	***0.1***	22.5	22	***-0.5***
EU-27 foreigners	0.9	1.2	***0.3***	2.6	3.1	***0.5***	3.2	4.9	***1.7***	1.1	1.7	***0.6***	22.9	25.6	***2.7***
Non EU-27 foreigners	2.7	3.8	***1.1***	7.6	10.2	***2.6***	7.2	10.7	***3.5***	3.2	4.9	***1.7***	39.4	41.8	***2.4***

Source: Eurostat, EU-SILC.

Chart 28: Shares (%) of respective EU population subgroups in the situation of being in all three components of AROPE (poverty, severe material deprivation and living in a very low work intensity household), 2008 and 2010

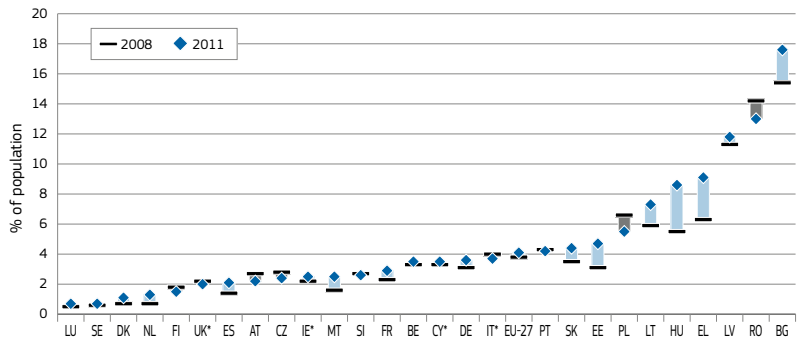


Source: Eurostat, EU-SILC.

Box 2: The intersection of AROP and SMD (a sort of 'Consistent Poverty' measure)

The intersection between the population at-risk-of-poverty – based on the traditional relative income measure – and those suffering from severe material deprivation – based on lack of access to basic resources – is a combined income-deprivation measure of poverty, which focuses on people whose income falls below the relative income poverty line and who also experience severe material deprivation. As such it is similar (but not identical) to the approach used to measure 'consistent poverty' in Ireland(1).

Chart 29: Change in the population share both at-risk-of-poverty and experiencing severe material deprivation between 2008 and 2011



Source: Eurostat, EU-SILC.

Note: Grey bars indicate declines in the poverty gap and blue ones increases. *Figures for CY, IE, IT and UK are for 2010 instead of 2011. 2011 figure for EU-27 is Eurostat estimate.

(1) In Ireland this measure identifies the proportion of people from those with an income below 60% of the median income who are deprived of two or more goods or services considered essential for a basic standard of living.

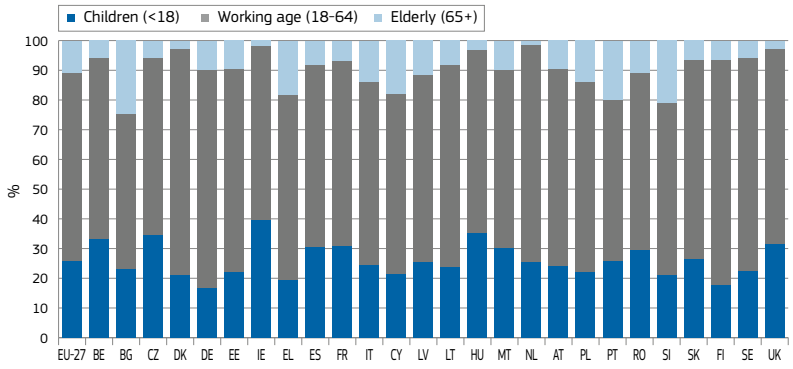
In 2011, the number of people who were both at-risk-of-poverty and suffering severe material deprivation amounted to around 4% of the EU population (or around 20 million people) – a share that had changed little since 2008. For many individual Member States the share also changed little over this period, although there were significant increases in some, with rises of the order of 1 pp or more in Bulgaria, Estonia, Lithuania, Malta and Slovakia, and around 3 pps in Greece and Hungary (Chart 29). In Poland and Romania, on the other hand, the share has declined since 2008. Nevertheless, Romania remains one of the Member States with the highest shares of the population in the combined poverty situation, at around 13%, with Bulgaria (18%) and Latvia (12%) being the only other Member States with a share greater than 10%.

In most individual countries, and at EU level overall, the population in "consistent poverty" is fairly evenly balanced between men and women. However, in 2010, women accounted for considerably more than half of the affected population (between 55% and 60%) in Austria, Bulgaria, Ireland, the Netherlands and Slovakia, but considerably less (only 41%) in Denmark.

The composition by age group also shows marked variation across countries (see Chart 30). At EU level overall, 26% of those suffering both poverty and severe material deprivation were children aged under 18, 63% were people of working age, namely aged 18-64, and 11% categorised as elderly, being 65+. However, children account for around a third of the total in Belgium, the Czech Republic and Hungary, and almost 40% in Ireland, while in Finland, Germany and Greece their shares are below 20%.

In Cyprus, Greece, Portugal and Slovenia the elderly account for 18% or more of the population, while in Bulgaria they make up around 25%. In several Member States (including Denmark, Ireland, Hungary, the Netherlands and the United Kingdom), however, the elderly account for only 3% or less.

Chart 30: Composition of the population at-risk-of-poverty and experiencing severe material deprivation by age group, 2011



Source: Eurostat, EU-SILC.

Box 3: Europe 2020 risk of poverty or social exclusion indicator from a longitudinal perspective

As highlighted in Box 1, the poverty headline target of the Europe 2020 strategy is based on three sub-indicators: the at-risk-of-poverty rate; the severe material deprivation rate; and the rate of very low work intensity. The computation of the two first indicators is possible from a longitudinal perspective, as the variables required are taken over in the longitudinal component of the EU-SILC, but for the third indicator (very low work intensity), the EU-SILC Regulation does not require that part of the information necessary be included in the longitudinal datasets, which hampers the longitudinal analysis of the poverty headline indicator.

Eurostat is currently investigating the possibilities of obtaining the necessary data from the Member States in order to allow the Europe 2020 poverty headline indicator to be monitored from a longitudinal perspective. Meanwhile, social exclusion is approximated in this part of the chapter by the material deprivation dimension in combination with the risk of poverty, as done in many research papers (Korpi, Nelson and Stenberg, 2007, Berthoud, Bryan and Bardasi, 2004, Devicienti and Poggi, 2007, Walker and Tomlinson, 2009).

In this part of the analysis, material deprivation is used in preference to severe material deprivation because it offers a much larger sample size given that these are much smaller in the longitudinal SILC database (see Box 4 on the EU-SILC), and the level of severe material deprivation is very low in some Member States.

4. Dynamics of poverty and deprivation: from short spells of poverty to persistence[14]

The temporal dimension of poverty and social exclusion is a key dimension to better understand the varying nature of poverty and processes leading to it. The time spent in poverty – or deprivation – differs a lot between individuals and countries. Some individuals might be at risk of experiencing a downward spiral and be trapped in a process of long-term exclusion while others might easily get out of poverty.

This section focuses on the diversity of individual trajectories regarding the risk of poverty and deprivation. It focuses on the propensity for individuals to fall into or exit from the risk of poverty or deprivation over a four year period, and more specifically on the time spent in the risk of poverty situation by individuals between one year and another.

First, the value added of a dynamic approach to poverty will be discussed in a background section. Then, a 'long term' approach to the risk of poverty and deprivation will be discussed, although such an approach is limited by the length of the panel (four years). Third, overall evidence of the dynamics of poverty and deprivation across Member States will be presented. Special attention will be paid to the year-to-year transitions in and out of poverty.

The main results show that poverty is a more fluid phenomenon than one might think, although considerable variation is observed between Member States. The risk of falling into poverty or exiting from it from one year to another greatly varies across individuals. As a result of these entries or exits – or non-exits – some individuals might be trapped for a long time in poverty (persistent poverty) while others might escape more easily.

As the risk of poverty or social exclusion indicator is not yet available at EU level from a longitudinal perspective (see Box 3), the focus is placed on exploring the dynamics of poverty and material deprivation. These have very often been used in the literature to proxy the broader notion of 'poverty and social exclusion' (Berthoud et al., 2004).

For the sake of clarity, the results will also be focussing on the working age population only. Indeed, processes affecting the working age population are very different from those affecting the elderly. The working age population has fluctuating incomes depending on factors such as labour market status, child birth or changing household composition. On the other hand, incomes among the elderly population rely on pensions and depend on different factors, such as changes in pensions or the death of partner. Lastly, the situation of children depends directly on the working age adults' situation. For these reasons, it is preferable to look at these populations in a separate manner. Since working age adults' populations have been strongly affected by the crisis in many countries, the emphasis is put on this population. Analyses of the processes for the other parts of the population can be envisaged at a later stage.

The available data refers to the period 2006-2009, which is the latest available. Hence, it does not reflect the impact of the crisis. However, this data contributes to better knowledge of the national structural frameworks just before the crisis.

4.1. Poverty and social exclusion as dynamic events

Analysing the dynamics of poverty is intended to complement the picture derived from cross-sectional data. Information on transitions into and out of poverty can help to identify how exposure to the risk of entering into poverty or the chances of getting out of it varies across Member States and individual profiles. Moreover, longitudinal data is useful to assess how secure the exits from poverty are.

Early studies using longitudinal data appeared in the US during the 1970s based on the Panel Study of Income Dynamics. They contributed largely to testing the hypothesis of an 'underclass' of poor (Harrington, 1962). Based on this survey, several researchers demonstrated that this static representation was misguided (Bane & Elwood (1986); see also Lillard and Willis (1978), Levy (1977), Gottschalk (1982), Coe et al. (1982), Coe (1978) and Rainwater (1982)).

The ins and outs of poverty were analysed by Hill (1981), Levy (1977), Boskin and Nold (1975), Hutchns (1981), Plotnick (1983) and Wiseman (1976). During the last two decades, the growing availability of longitudinal data on incomes has helped to address and develop these issues in the European context with the Living in Ireland survey, the British Household Panel Survey in the United Kingdom, the German Socio-economic Panel, the Scandinavian register data and, at EU level, the European Community Household Panel (ECHP) in the 1990s.

Research based on these surveys has served to demonstrate that the population facing poverty is essentially made up of both a body of permanently poor people and a rotating number of individuals who experience shorter spells of poverty. Another consistent finding from these studies is that earnings play a dominant role regarding entries into and exits from poverty (Fouarge and Layte, 2005). Research based on international surveys such as the ECHP have also highlighted the impacts of different welfare state models (Fouarge and Layte (2003)) while another branch of research has investigated the role of structural factors and trigger events in poverty dynamics (Vandecasteel (2010)).

(14) This part of the Chapter has benefited from the output of a workshop on 'The use of longitudinal EU-SILC data', organised by Statistics Austria on behalf of the Net-SILC 2 network. The authors are grateful to the organisers, and take full responsibility for any potential errors.

Box 4: EU-SILC longitudinal component: a unique tool for understanding poverty at EU level

The EU-SILC (Statistics on Income and Living Conditions) is the reference source at EU level for statistics on income and living conditions and for common indicators for social inclusion in particular. It is a household survey that provides a unique measurement of the risk of poverty, material deprivation and work intensity in Europe. Complementary information at individual and household level is also available and offers the possibility to better understand these dimensions. The sample size exceeds 400 000 individuals a year.

EU-SILC has a cross-sectional and a longitudinal component. The cross-sectional component gathers data on all individuals who have been interviewed during a single year. The longitudinal component refers to repeated observations for identical statistical units. Individuals are traced over four successive years.

The sample is organised following a rotational framework: every year, a quarter of the sample is new (interviewed for the first time), a quarter is interviewed for the second time, a quarter for the third time, and a quarter for the fourth time. This means that longitudinal information for a given four year framework is available only for a quarter of the sample. Longitudinal information for a two-year window is available for three quarters of the sample.

A four-year period is extremely short for fully observing long-term trajectories, such as the recurrence of poverty over time. Another limitation of the short length of the panel is that it does not really allow for left-censoring correction (see Box 5 on left censoring).

An option for coping with these drawbacks is to replace an approach based on trajectories by an approach based on transition. This implies working with a limited time-window, two years for example. This makes it possible to cover a larger number of individuals. However, long-term trajectories such as persistence and recurrence of poverty cannot be considered.

The longitudinal component data is only available some four years after the initial date of its collection, and requires heavy data processing. Currently, the longitudinal component 2006-2009 is the most recently available longitudinal set of data. It follows 75 000 individuals aged 18-64 in 24 Member States over 2006-2009, and 223 000 individuals aged 18-64 in 26 Member States over the 2008-2009 period(1) (see Annex 1 for sample size by Member State).

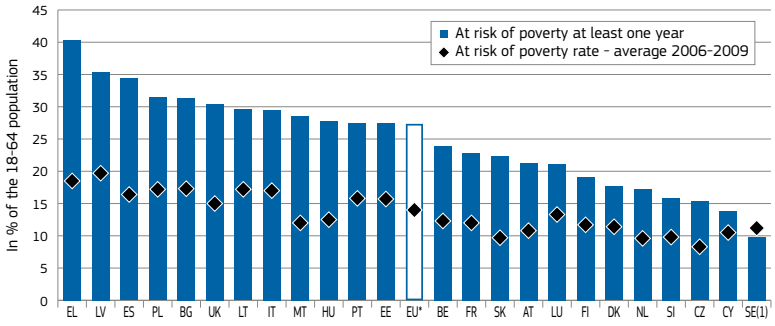
(1) Data for the following Member States is missing for the four-year panel in Romania and Ireland. It is not missing for the two year panel 2008-2009. Longitudinal data for Germany is missing for the whole period.

4.1.1. Experiencing spells of poverty or deprivation for at least one year over a long-term period is common

While considering a pluriannual period instead of a single year, it appears that the share of individuals who have been poor at least one year during the period is much greater than the risk of poverty rate measured in a single year. This means that a large share of people at-risk-of-poverty is poor for only a small period while others might remain poor for a longer period.

Among the working age population (18-64) in the EU-27 Member States for which longitudinal data is available, 27% had been at-risk-of-poverty for at least one year in the period 2006 to 2009, a much higher figure than the annual cross-sectional risk of poverty rate (14% on average between 2006 and 2009 in these same Member States, see Chart 31). Similarly, 28% of the population had been reported as suffering from material deprivation in at least one of the periods, which is, again, much higher than the average material deprivation rate of 17% during the period (see Chart 32).

Chart 31: Share of the population at-risk-of-poverty at least once during the period 2006-2009 and average risk of poverty rate



Source: EU-SILC LONGITUDINAL UDB 2009 – version 3 of August 2012 – DG EMPL calculations.

Note: (1) The average of the at risk of poverty rates is computed as the simple average of the annual risk of poverty rates over the period. For this reason, the average of the annual risks of poverty might be slightly above the rate of those who have been at risk of poverty at least one year, whereas it might be counterintuitive.
EU*: EU average for the 24 Member States for which data is available.

The share of people aged 18-64 who have been poor at least once during the period ranges from 10% in Sweden and 14 to 16% in Cyprus, the Czech Republic and Slovenia, to 30% or more in the United Kingdom, Bulgaria, Poland, Spain, Latvia and Greece. The range is even stronger for material deprivation with more than 80% of the population having been deprived in at least one year during the period in Bulgaria, and 60% in Hungary and Latvia. This compares with the Netherlands, Sweden and Luxembourg, where 10% or less had been deprived at least one year during the four year period.

4.2. The incidence of the risk of poverty over time

Analysis of the risk of poverty of individuals over a four year period enables to measure how the process of poverty evolves over time (appearing, ending, lasting or reappearing).

This section addresses the various types of income trajectories that people might experience over time. Despite there being some limitations due to the data structure, it highlights the extent of these trajectories across the population, and the differences between Member States.

4.2.1. Various income trajectories over time

Income trajectories may follow various patterns. Several situations can occur between the two extreme states of either never being poor or always being poor. An individual can fall into poverty for various reasons – loss of a job or a separation, for example – and the ensuing poverty spell can last for a while (persistent poverty) or be extremely short (transient poverty). Symmetrically, an individual can escape from poverty through finding a job, or because another household member starts work, for example. However the position with regard to the poverty line can also be less clear-cut, with alternative movements above and below the poverty threshold (recurrent poverty, see Chart 33).

Usually, empirical work on income trajectories is based on four types of trajectories (see Muffels et al., 1999, Walker, 1994):

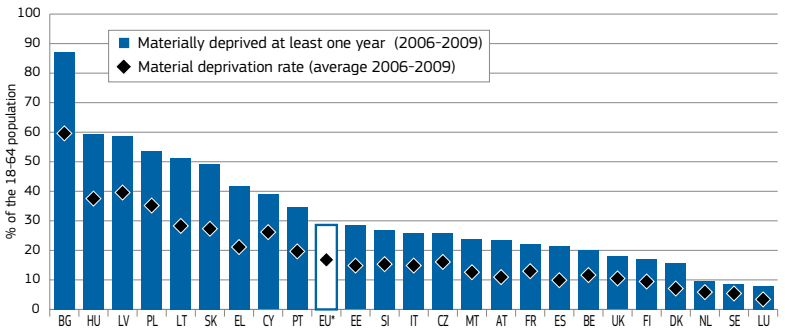
- persistent poverty: trajectories where poverty is experienced during the whole period or almost the whole period;
- recurrent poverty: trajectories where several spells of poverty occur during the period;
- transient poverty: trajectories where poverty is experienced only for a short spell;
- never poor: trajectories where poverty is never experienced over the whole period.

Empirically, in this analysis, four types of trajectories are identified with the EU-SILC longitudinal components, corresponding to mutually exclusive trajectories. The risk of persistent poverty is defined consistently with the definition of the EU-agreed indicator, namely the risk of poverty during the last year of the panel accompanied by at least two other years of poverty among the first three years (see Table 3).

Recurrent poverty is approximated by spells of poverty separated by at least one year out of the risk of poverty. Transient poverty is approximated by trajectories with only one spell of poverty. Trajectories of deprivation can be defined following a similar approach.

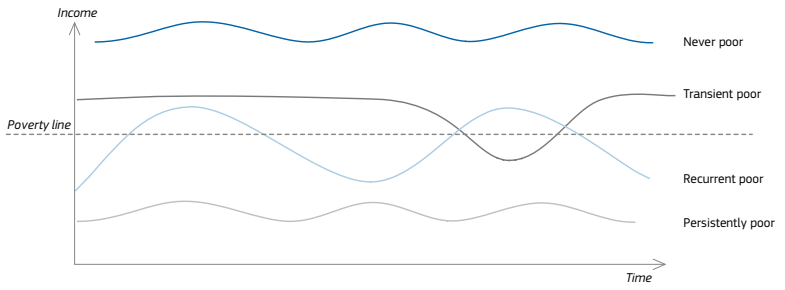
However, one must bear in mind that this typology of trajectories, as obtained from a four-year panel, has weaknesses, especially in the definition of transient and recurrent states (see Box 5 on left censoring).

Chart 32: Share of the population deprived at least once during the period 2006-2009 and average material deprivation rate



Source: EU-SILC LONGITUDINAL UDB 2009 – version-3 of August 2012 - DG EMPL calculations.
Note: EU*: EU average for the 24 Member States for which data is available.

Chart 33: Types of poverty trajectories



Source: DG EMPL.

Table 3: Trajectories of poverty defined with SILC

Poverty type	Trajectory	Illustration
Persistently poor	At-risk-of-poverty during the last year & at least two out of three other years	1-1-1-1
		0-1-1-1
		1-0-1-1
		1-1-0-1
Recurrently poor	Two non-consecutive risk of poverty spells during the period	(0-1-0-1)*
		(1-0-1-0)
		(1-0-0-1)*
Transient poor	At-risk-of-poverty during at least one year out of four	(0-0-0-1)*
		(0-0-1-0)
		(0-1-0-0)
		(1-0-0-0)*
Never poor	Never at-risk-of-poverty	0-0-0-0

Note: 1 stands for poverty spells and 0 for non poverty during the four-year period of observation, from left (first observation) to right (last observation). Trajectories within brackets have to be considered with caution, as they are not robust due to the short length of the period of observation. Trajectories with a star (*) indicate a possible issue of censoring.

Box 5: The tricky treatment of left censoring in a four-year panel

A limitation which is especially problematic when measuring poverty trajectories is the censoring: it is not possible to know if a person who is at-risk-of-poverty during the first year of observation has been poor for a long period, or is experiencing her/his first spell of poverty. Symmetrically, a person not at-risk-of-poverty during the last year of the panel may, or may not, remain out of poverty for a short or long time.

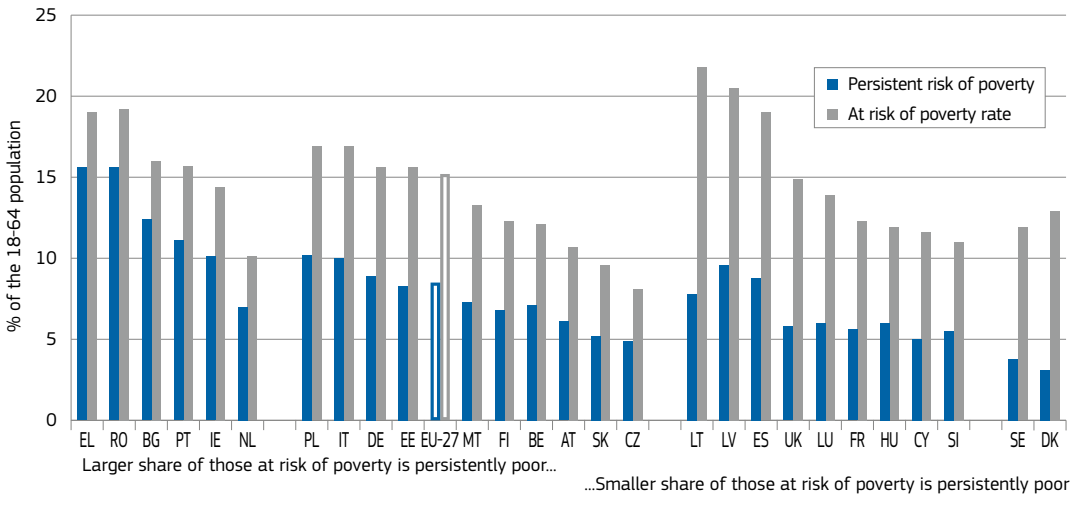
A technical option to limit this drawback is to begin the analysis during a slightly later wave of the survey, and use the first waves to examine information concerning the recent past of the person (see Fouarge and Layte, 2005, for example). However, this is not really possible when the observation period or sample sizes are small, which are two limitations of the EU-SILC. Moreover, many studies comparing the results taking into account the left censoring also often conclude that the results do not change much. The preferred option here has been not to remove these observations from the dataset used for the analysis in order to keep working with sufficient time windows and sufficient sample sizes. Lastly, the left censoring issue does not apply to the year-to-year transition rates.

4.2.2. Persistence of poverty

Short periods of poverty do not have the same long-lasting impact on individuals as long-term poverty. While short-term episodes of poverty can often be dealt with through the temporary use of savings, by borrowing or by reduced consumption, long-lasting poverty is much more likely to damage long-term life chances. Layte and Fouarge (2005) show that the time spent in poverty significantly reduces the chances to escape from it, while Korenman et al. (1994) show that the impact of income poverty over an extended period (13 years) on school outcomes is twice as high as the impact of a single year in poverty. For these reasons, the problems of individuals being persistently poor are of particular concern to policy makers.

In 2010, some 8.5% of the EU working age population was at persistent risk of poverty (see Chart 34). This share ranged from 15.6% in Romania and Greece, 12% in Bulgaria, and 10 to 12% in Italy, Poland, Portugal, Ireland and Latvia, to the lowest prevalence in Denmark (3%), Sweden (4%) and the Czech Republic, Slovakia and Cyprus (5%). However, pairs of Member States with similar cross-sectional risks of poverty, for example Spain and Greece, Portugal and Estonia, or Finland and Sweden, nevertheless have quite different shares of their poor population suffering from persistent poverty (and then suffering from less severe forms of poverty).

Chart 34: How many are persistently poor among those at-risk-of-poverty? Persistent poverty and risk of poverty rates by Member State



Source: Eurostat, EU-SILC, ilc_li21, 2010.

Note: Data for IE, FR are from 2007 and SK from 2009 (latest available).

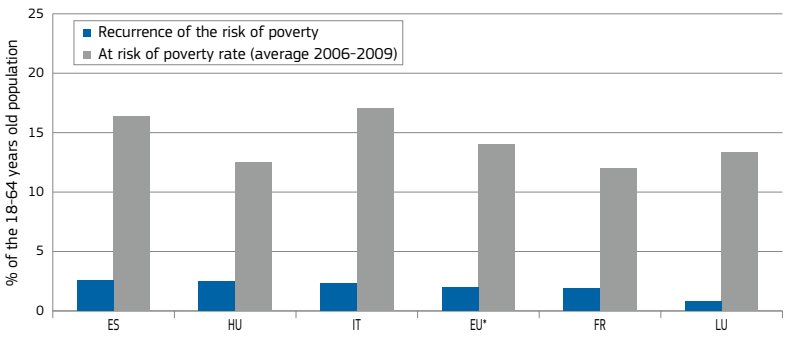
The overlap between persistent poverty and the risk of poverty differs a lot across countries. In some Member States, the overlap is quite high. This is especially the case in Romania, Bulgaria, Greece, Portugal and Ireland, where the risk of poverty itself stands at a high level. In these countries, at least three individuals out of four at-risk-of-poverty are persistently poor, characterising being firmly trapped in precarious situations. The share of persistent poverty among the population at-risk-of-poverty is also relatively high in the Netherlands and Austria, but the risk of poverty stands at a much lower level in these countries. At the opposite end of the scale, in Sweden and Denmark, the share of the population at-risk-of-poverty which is also persistently poor is more limited (from one quarter to one third of those at-risk-of-poverty), indicating a high churning of poverty.

4.2.3. Recurrent poverty: are exits from poverty stable over time?

The former section has contrasted the population subgroups in persistent poverty and those exposed to shorter spells of poverty. However, short spells of poverty are not necessarily a positive outcome. It might be symptomatic of recurrent poverty for a part of the population. Indeed, it might be either the same individuals who are permanently exiting out of poverty at a given time and entering back into it during the next period, or different individuals experiencing short poverty spells and durable exits. The recurrence of poverty is especially problematic as it is symptomatic of a risk of increased social polarisation, with those experiencing hardship being clearly distinct from the rest of society and unable to escape poverty in the long term.

Research work has already often highlighted the recurrence of poverty spells, with the fact of having been poor in the past largely determining the risk of being poor again in the future. Walker (2010) shows, with data from the United Kingdom, that 'people who fall into poverty at one stage in their lives, be it a single spell or repeatedly, are much more prone to experience poverty at a later date even after having taken account of other factors such as education, occupation, family situation and so on'.

Chart 35: Recurrence of the risk of poverty in selected Member States



Source: EU-SILC LONGITUDINAL UDB 2009 – version 3 of August 2012 – DG EMPL calculations.

Note: Due to limited sample sizes, results are available only in some Member States.
EU*: Average of the 24 Member States for which data is available.

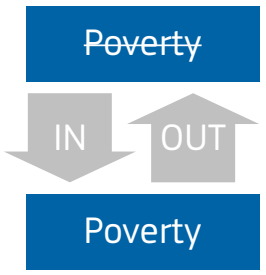
Over the four year period 2006 to 2009, 2% of working age Europeans were recurrently poor (see Chart 35). For those countries where the measurement of recurrence of poverty is possible[15], the risk of recurrent poverty is higher in Spain, Hungary, Italy, France and Luxembourg.

4.3. Ins and outs of poverty: divergent turnover across Member States

Data collected over a four year period provides a better understanding of the extent to which poverty and deprivation are spread among individuals. It also helps to monitor persistent poverty. However, the limited duration of the observation period makes it difficult to picture the recurrence and transience of poverty. A simple and complementary approach to examining the dynamics of poverty consists of analysing the transitions into and out of poverty between one year and another.

This section estimates this risk at national level and shows that there is great divergence across Member States. The risk of falling into poverty is measured as the share of those who were not in poverty one year earlier but fell into poverty in the following year (see Chart 36). Symmetrically, the chance of getting out of poverty is defined as the share of individuals not at-risk-of-poverty among those who were at-risk-of-poverty the year before. Rates of entry to and exit from deprivation can be defined similarly.

Chart 36: Framework to analyse poverty transitions



Source: DG EMPL.

4.3.1. Turnover into and out of the risk of poverty

Between 2008 and 2009, some 6% of the EU population as a whole was likely to have fallen into poverty from one year to another, while 40% of the population at-risk-of-poverty in 2008 had managed to exit from poverty by the following year[16]. These rates have been relatively stable over the period (see Annex 1).

(15) The figures on the recurrence of poverty, as measured through the EU-SILC instrument, have to be used with caution, since measures of the recurrence of poverty are based on limited periods of observation (four consecutive years here) and are more likely to suffer from measurement error than those based on longer panels, as underlined by Berthoud (2004).

(16) The entry rate into poverty (resp. deprivation) at time t is defined as the ratio (A/B) between (A) the number of individuals not at-risk-of-poverty (resp. non deprived) at time t-1 *and* who are at-risk-of-poverty at time t (resp. deprived) and (B) the number of individuals who were not at-risk-of-poverty at time t-1. Symmetrically, the exit rate is defined as the ratio between (A) the number of people who are not at-risk-of-poverty (resp. deprived) at time t *and* who are at-risk-of-poverty (resp. deprived) at time t-1 and (B) the number of individuals who were at-risk-of-poverty (resp. deprived) at time t-1. The value of the exit rate is much higher than the value of the entry rate, because it refers by definition to populations which are of different sizes (the population not at-risk-of-poverty for the first, the population at risk in the second).

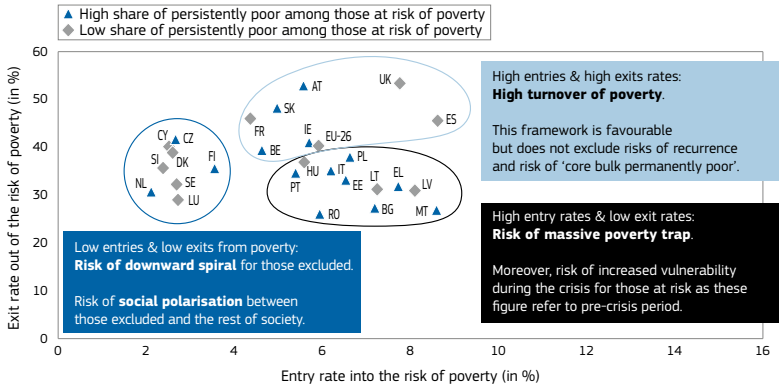
However, the combination of entry and exit rates varies considerably between the Member States. Three main patterns emerge regarding the variation of poverty transitions across Member States (see Chart 37).

In the first group of countries, which is most clearly represented by the United Kingdom and Spain, but also includes to a lesser extent Belgium, France, Ireland, Austria and Slovakia, both entry and exit rates are high. This means that in these countries, the chances of getting into poverty are high, but the chances of getting out of poverty are also high. As the length of poverty spell matters when dealing with issues such as exclusion, this outcome seems relatively positive.

However, it is not enough to conclude that these countries experience good outcomes in dynamically addressing poverty issues. Indeed, poverty can also be recurrent in these countries, with a risk for people repeatedly going in and out of poverty with insecure prospects. Moreover, such a high overall churning in poverty at national level may actually reflect two groups, with one experiencing high rotation, and another remaining in poverty for very long periods. These questions will be addressed later.

The second group of countries (consisting of Bulgaria, Estonia, Greece, Italy, Latvia, Lithuania, Hungary, Malta, Portugal, Romania and Slovakia) shows both a high risk of entering poverty, and low chances of escaping poverty. This situation is problematic from a policy point of view, as it reflects a high risk of being trapped in poverty. Individuals falling into poverty have limited chances to get out of it in the following years. These countries should both address better prevention of poverty, and promote policies aiming at pulling individuals out of poverty. As these figures refer to pre-crisis years, this situation is extremely problematic. It underlines that these countries were already fragile before the shock regarding the ability of their welfare state and labour market to provide individuals with opportunities to escape poverty. Recent figures already available (see section 3-2) already show signs of a strong impact and increased vulnerability among these Member States.

Chart 37: The churning of poverty – Rates of entry to and exit from the risk of poverty among the 18-64 population



Source: EU-SILC LONGITUDINAL UDB 2009 – version 3 of August 2012 – DG EMPL calculations.

The third group of countries (the Czech Republic, Cyprus, Denmark, Luxembourg, the Netherlands, Slovenia, Finland and Sweden) shows signs of both low entry and low exit rates. Despite poverty affecting a smaller part of the population in these countries, the situation remains symptomatic of a poverty trap. In this configuration, persistence of poverty in the mid- to long-term is likely to be high.

This information can be combined with the evidence on persistent poverty. Indeed, among each combination of entry and exits from poverty, different levels of persistence might exist (see Chart 37). In the first group of countries, where high mobility rates prevail, a warning has been advanced against a risk of partial mobility co-existing with a more mobile population. This tends to be the case in Belgium, Austria, Ireland and Slovakia, where a high share of people at-risk-of-poverty are also persistently poor while the rest of those at-risk-of-poverty experience a high churning of poverty. However, this is not the case in the United Kingdom, France and Spain, where persistent poverty represents a smaller part of the population at-risk-of-poverty.

In the second group, where rates of entry into the risk of poverty were high and rates of exit from the risk of poverty were low, there are signs of low mobility and poverty hysteresis in most countries. In Latvia and Lithuania, the share of persistently poor across the population at-risk-of-poverty differs across years. It is lower in 2010 due to numerous entries into poverty after the crisis; the share of persistently poor within the population increased to higher levels in 2008 and 2009.

In the third group, low risks of entering into poverty are combined with low exit rates. In the Czech Republic, Finland and the Netherlands, this turns out to be a sign of social polarisation, as the share of persistent poor is high compared to the risk of poverty. In contrast, there is a greater churning in Cyprus, Denmark, Luxembourg, Slovenia and Sweden.

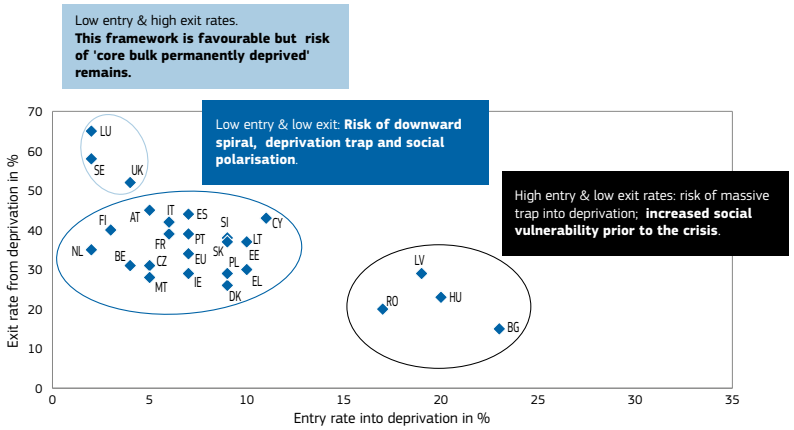
Section 5 will enter into more detail about individual profiles and will put forward some evidence to relate the churning of poverty and size of persistence within the population to individual characteristics.

4.3.2. Turnover into and out of deprivation

The risk of poverty might sometimes be considered as volatile from a temporal perspective. For this reason, it is interesting to cross the results with those regarding transitions into and out of material deprivation, which can play the role of a complementary measure of economic hardship.

In terms of material deprivation, on average, between 2008 and 2009, 7% of the EU population that had not been deprived the year before became deprived and, symmetrically, among those who were deprived in 2008, 34% ceased to be deprived the following year.

Chart 38: Combination of rates of entry and exit from deprivation among the 18-64 population



Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012 – DG EMPL calculations.

With regard to the risk of material deprivation, entry and exits rates can also be presented with a diagram (see Chart 38). The grouping of Member States differs slightly from the one concerning the risk of poverty due to the difference in the reference period for income and deprivation and the fact that the spread of material deprivation rates among the EU is much higher than the spread of the risk of poverty, with generally higher rates of entry (and lower rates of exit) in the new compared with the old Member States. Moreover, material deprivation has decreased markedly in several new Member States in Eastern Europe since 2005, due to rising living standards resulting from high rates of economic growth.

As regards deprivation, the first group (Luxembourg, Sweden and the United Kingdom) is characterised by a strong churning of deprivation, combining a moderate risk of entering into deprivation, and strong probability of exiting. This tends to show moderate chances of hysteresis.

At the opposite end of the scale, the second group (Bulgaria, Hungary, Latvia and Romania) is characterised by a high risk of entering into deprivation combined with only a moderate chance of escape. This tends to show that deprivation in these countries is a more static state. In these countries, there is a risk of being trapped in deprivation when entering into it.

The third group, bringing together the rest of the Member States, combines the low risk of entering into deprivation and low chances of exiting it. In these countries, the deprived population has greater chances of being set apart or excluded from the rest of society.

5. Individual profiles and the dynamics of poverty

The population at-risk-of-poverty (or deprived) at a given point in time is a mixture of different underlying situations in the sense that some individuals will experience short spells of poverty – or deprivation – and others will remain in hardship for longer periods. This has implications for policy response.

This section will examine in detail the characteristics of the individuals at-risk-of-poverty and their relation with the length of time spent in poverty. It begins with a theoretical discussion of the trigger events or risk factors analysed in the literature and the role of the welfare state and labour market institutions in addressing these. Then, profiling of people having experienced poverty will be discussed, with special attention paid to the likelihood of persistent poverty among each of these profiles.

The results show that the profiles of people having experienced poverty at least once over a four year period vary across Member States.

5.1. Individual characteristics and the process of exclusion

The length of time that people spend in poverty is closely associated with their individual characteristics or life circumstances. Spells of poverty have been widely explained in past literature using social stratification models (see Taylor-Gooby). Factors such as gender, social class, education, health status, and labour market characteristics strongly influence the chances of entering or exiting poverty. More recently, a further explanation of poverty has emerged, based on specific individual rather than on social class determinants (see Beck, and further research). Now, current research work is seeking to reconcile both approaches, concluding that the experience of poverty depends on both structural and individual factors which can be mutually reinforcing (Vandecasteel, 2011, Wheelan & Maitre, 2008).

Life events and individual factors increasing the vulnerability of individuals are of four main types (see Chart 39): Family related events such as child birth, partnership dissolution or formation, or departure from the parental home for young adults can result in decreases in income per capita in the household and lead to spells of poverty. Health related events such as spells of inability to work, disability or incapacity can also result in earning losses that need to be compensated. Third, labour market risks including events such as job loss or low job security due to precarious labour markets, might result in sudden loss of earnings or persistently low and irregular incomes. Lastly, loss of human capital can also be considered as a life risk. Skills obsolescence due to labour market structural changes or loss of employability after long spells of unemployment can be drivers of poverty spells.

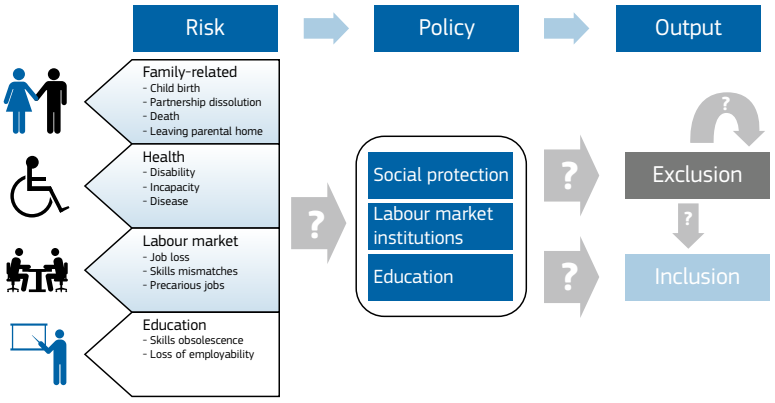
The impact of these various risks can be avoided through well-functioning labour market institutions and social protection schemes. Inclusive labour markets might contribute to limiting entries into poverty and sustaining lasting exits from poverty by providing living wages, sufficient working hours to get an adequate income and adapted workplaces. Welfare provision can prevent the risk of entering into

poverty through well-designed income support schemes, adequate and inclusive unemployment insurance and social assistance. However, welfare provisions can also carry disincentives that may delay the return to employment and lasting exit from poverty. Chapter 1 has illustrated how labour market institutions and welfare state support can help the return to employment of the long-term unemployed. Lastly, providing support services contributes to the fight against poverty by supporting active social participation.

As an illustration of the impact of labour market events, Fouarge and Layte (2003) show that the majority of transitions into and out of poverty are mainly due to decreases or increases in incomes from work rather than to changes in the number of dependant household members. The EU-SILC data on the rates of entry into and exit from poverty broken down by household activity status at the end of the observation period show clear differences regarding the turnover of the risk of poverty (see Chart 40). Households with two working adults, either full time or part time, are much less likely to fall into poverty and have higher chances of getting out of it. In contrast, households with a disabled individual, a single earner, or singles, face a much higher risk of entering into poverty, and low chances of exiting from it. Lastly, households with one unemployed and one working person face a more balanced situation.

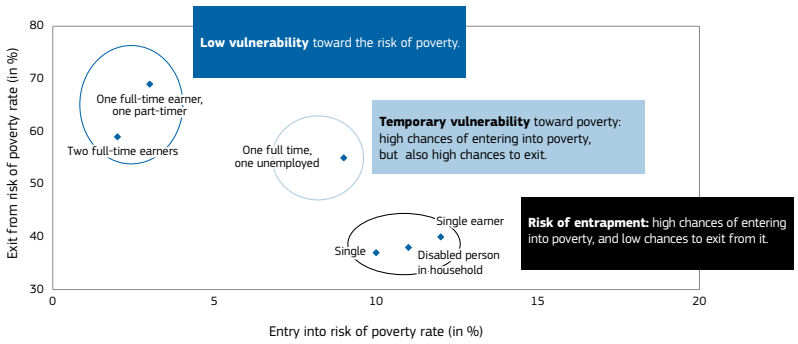
As another illustration, health status is also strongly linked to poverty. Health problems might prevent people from fully participating in the labour market or facing potential discrimination. Even if the direction of causality may be uncertain, a vicious downward cycle linking poverty to health problems has often been highlighted and, while ill health may sometimes be a cause of poverty, evidence suggests that poverty is also often a causal factor of sickness or illness (see Commission on the Social Determinants of Health, 2008; Gordon et al., 1999; Leon & Walt, 2001; Power et al., 1991, 1996; Shaw et al., 1999; Wilkinson 1996, 1999).

Chart 39: Links between life events, the welfare and exclusion



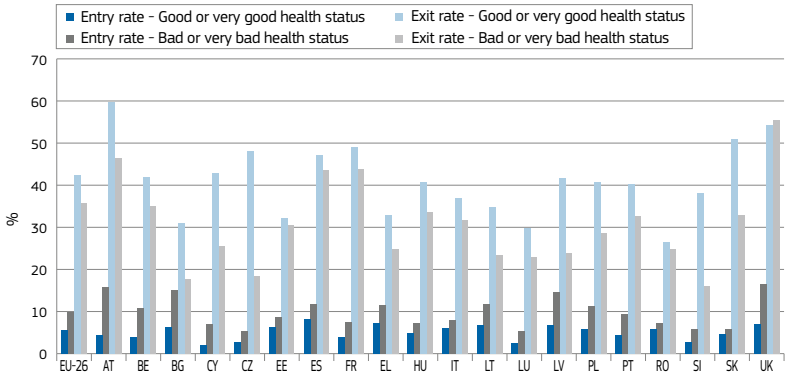
Source: DG EMPL.

Chart 40: Combination of risk of entering and exiting poverty differs across the extent of household labour market participation



Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012 – DG EMPL calculations.

Chart 41: Rates of entry into and exit from the risk of poverty by health status



Source: EU-SILC LONGITUDINAL UDB 2009 – version-3 of August 2012 - DG EMPL calculations.
Note: DK, FI, IE, MT, NL and SE ommitted due to small sample sizes.

People in good health are, in all Member States, at a lower risk of entering into poverty in the following year and have a greater chance of exiting from it once they are at-risk-of-poverty (see Chart 41). This is the case in all countries for which data is available, although the inequality between health groups differs slightly across Member States. In many Member States, especially Austria, Cyprus, Finland, Spain and the United Kingdom, inequalities relating to health status are widely spread. However, in France and Hungary, the inequality is low in that all groups have very similar rates of entering into and exiting from poverty, independent of health status.

All of these characteristics and life events are however not independent and might interact together. As explained by Paugam and Gallie (2004) for example, the process of exclusion begins with the loss of employment (or being trapped in precarious employment) leading to severe cuts in living standards which, in turn, limit job searches. Then the lack of resources, combined with the stigmatic effect of unemployment, leads to a fracturing of people's social ties and growing social isolation, which reinforces labour market marginalisation by cutting people off from regular information about employment opportunities.

5.2. Profiling of the population having experienced poverty

As poverty is multi-dimensional, it is generally difficult to isolate the impact of individual characteristics or life events. To integrate these interactions, the main profiles of the individuals at risk have been established through a multi-dimensional statistical technique (latent class analysis), see Annex 3. Based on this approach, profiles mixing multi-level information on individuals can be extracted to provide a broad view of the main characteristics of the individuals having experienced poverty at least once over the 2006-2009 period. These profiles are represented by bubbles in Chart 42 as the profiles might refer to varying shares of the vulnerable population (i.e. individuals having been poor at least one year over the period), the size of the bubbles also varies to represent their weight at national level.

Furthermore, these different profiles can be ranked according to their average risk of experiencing persistent poverty. The more a bubble representing a profile is located on the right hand side of the graph, the more likely individuals are to experience persistent poverty. Such a representation helps to further explore the results of the transitions in and out of poverty presented in the previous section (see Chart 37). If some profiles appear to be clearly separated from the rest of the population at risk, and experience a stronger risk of persistent poverty, then it can be considered that the profile illustrates the individual characteristics leading to social polarisation.

Data used for this analysis refers to the pre-crisis period, from 2006 to 2009. As the approach requires a tailored treatment, only a few Member States have been explored in this section, namely the Czech Republic, France, Spain, Italy, Latvia, the Netherlands and the United Kingdom. These Member States have been chosen based upon the size of the available sample, and in order to represent examples from each of the groups of entries in and exits out of poverty patterns (see section 4, Chart 37).

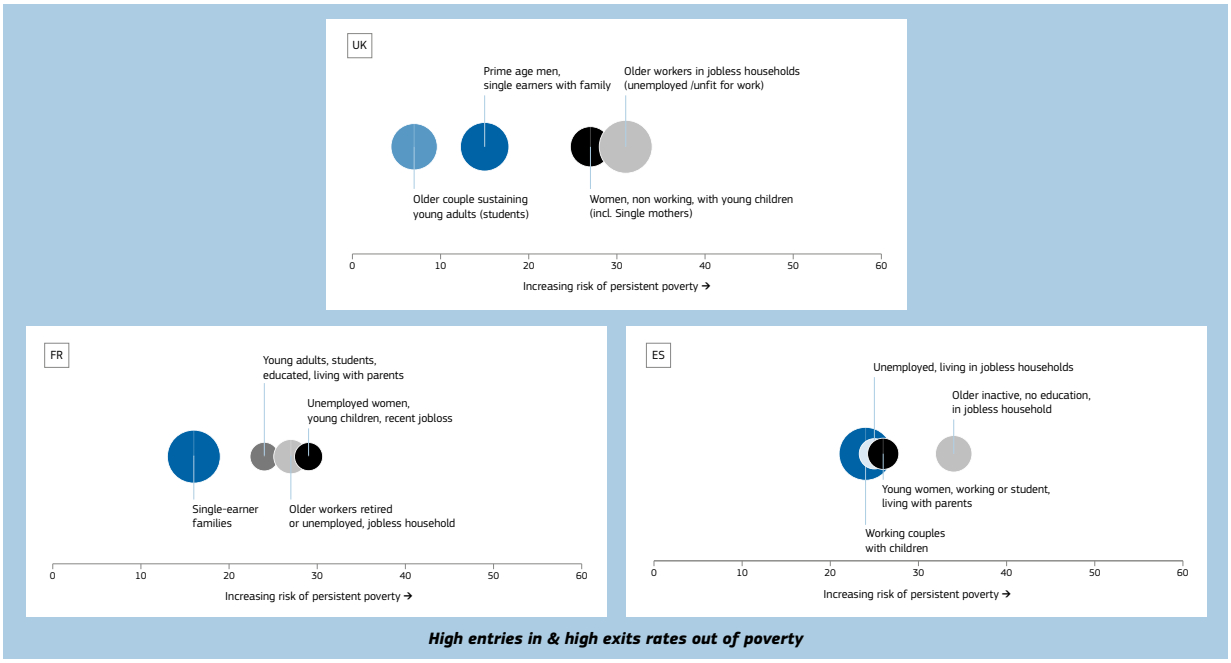
5.2.1. Profiles of individuals at risk of poverty and persistent poverty

France, Spain and the United Kingdom illustrate the case of countries with high entry and exit rates out of poverty. In these three countries, the share of persistent poverty among the population at risk of poverty is lower than the EU average. This result is consistent with the relatively low risk of persistent poverty among the main profiles identified compared to other Member States considered in the exercise.

Italy and Latvia are representatives of the groups with high entries and low exits into poverty (associated with a large share of persistent poverty among the population at risk in the case of Italy). In these Member States, the risk of persistent poverty among the main profiles is also higher than in the previous cases.

Finally, the Czech Republic and the Netherlands illustrate the last group, with low entries into poverty associated with low exits, and a relatively high share of persistently poor among those at-risk-of-poverty. In these two Member States, there are large gaps in the risk of persistent poverty among the profiles identified. Based on this evidence, these profiles could be associated with the part of the population suffering most severely from social polarisation.

Chart 42: Who are the persistently poor, working-age adults? Main profiles among the population that has experienced the risk of poverty at least one year between 2006 and 2009 and its likelihood of being persistently poor



Source: EU-SILC LONGITUDINAL UDB 2009 – version-2 of March 2012 - DG EMPL calculations.

Notes: These profiles are the results of Latent Class Analysis ran at national levels on the individuals aged 18-64 who have been at risk of poverty at least one year over the 2006-2009 period. Profiles described correspond to the characteristics of an average individual in the class. It does not mean that all individuals in that class belong these characteristics. Detailed values are provided in Annex 3.
The size of the bubbles is proportional to the share of individuals who are closest to this profiles among the working age population.

5.2.2. Main profiles of individuals having faced poverty at least once

Regarding the characteristics related to the main profiles identified, one can conclude that:

- the main profiles among the population which was poor at least once over the 2006-2009 period generally differ across Member States;
- some profiles are however common to several countries, with slight variations. Four main profiles appear in a recurrent manner among the Member States investigated: older workers unemployed or out of work for disability reasons, adults (and especially women) with young children, couples with grown-up children, and in-work poor families (typically single earners);
- the risk of persistent poverty differs between profiles, especially in some Member States. This helps to get a better view of the individuals more vulnerable to social polarisation. In other Member States, the picture is however less clear cut and shows a shared vulnerability.

The first profile appearing in a recurrent manner among the Member States investigated corresponds to older workers out of the labour market, unemployed or unfit for work. This is especially the case in the Czech Republic, Spain, the United Kingdom, Latvia, the Netherlands and to a lesser extent, France. In Italy and Spain, this group corresponds largely to women.

The second profile concerns adults with young children, and not participating in the labour market. This profile tends to show up in different countries, under slightly varying forms. In the United Kingdom and the Netherlands, it relates to non-working mothers with young children, including single mothers. In Italy, this profile is more strongly characterised by women fulfilling domestic tasks and living in single-earner households. In France and in the Czech Republic, it relates rather to unemployed women, having lost their job during the 2006-2009 period. Lastly, in Spain and Latvia, it tends to refer to in work parents, especially women.

Another frequent group consists of couples living with grown-up children (older than 18) in France, the United Kingdom, Spain, the Czech Republic, the Netherlands, and Italy. Again, slight differences appear across Member States around this group. In the Czech Republic, and Italy, these young adults are more often living in single-earner families. In Spain, the profile tends to concern more precisely women, and includes young adults already at work. In Italy, the group differs as those young adults living with their parents are not working (unemployed or students). In the United Kingdom and the Netherlands, these groups also correspond to students living with parents. Moreover, in both countries, these groups tend to present greater chances of transient poverty, and lower chances of persistent poverty, than in other countries.

Lastly, another group consists of working poor adults. In the United Kingdom, Italy, Latvia and France, this profile is strongly associated with single-earner families. In this profile, the poverty is also more likely to be transient. In Spain, however, this profile tends to correspond rather to couples with two adult earners.

5.2.3. Tentative diagnosis for policy action: an illustration using the case of women with children

The previous analysis has shown that various profiles emerge across the population having been at risk of poverty at least one year over the 2006-2009 period. One group common to several of the Member States investigated relates to families with young children, and especially women. However, this group shapes differently across Member States, and therefore requires a specific policy response.

Women with young children face specific barriers to accessing the labour market and securing sufficient earnings. In this case, policy actions could rely on actions facilitating access to the labour market and ensuring sufficient earnings. Obstacles to the labour market participation of women include financial disincentives for second earners and a lack of access to services such as childcare. Insufficient participation in the labour market (involuntary part-time jobs, or fixed-term contracts) or low wages including a large gender pay gap often lead to insufficient earnings from the labour market. In some countries, current child benefits do not fully compensate for the cost of raising a child.

As an illustration, table 4 gathers some of the main indicators illustrating the directions for policy actions. It highlights possible reasons for persistent poverty of women with children in European Member States. Obstacles to labour market participation are illustrated by the impact of parenthood on women's employment rates and the share of inactivity or part-time work due to family reasons. Large inactivity traps for the second earner of a couple and use of childcare help to understand the reasons for non-participation: badly designed tax-benefit systems or lack of access to services. Obstacles to sufficient earnings from work are illustrated in the second part of the table. The share of women working under involuntary fixed-term or part-time contracts helps to measure issues related to insufficient quantity of work while the gender pay gap and low wage trap for second earners illustrate issues of unsufficient earnings from work.

Such a framework helps to illustrate the various drivers of poverty among families with young children. For instance, in the United Kingdom and the Netherlands, the share of women inactive or in part-time work due to family reasons stands at a high level, and occurs together with traps for second earners. In the Czech Republic, inactivity traps and lack of access to childcare accumulate to enhance the impact of parenthood on employment.

As concerns income from work, poverty is driven by insufficient earnings from the labour market in Spain, France and Italy due to a large share of involuntary part-time and fixed-term jobs. However, in the Czech Republic, Latvia, the Netherlands and the United Kingdom, the gender pay gap is at a high level and results in insufficient earnings from work.

Beside earnings from work and participation in the labour market, social protection might be a tool to reduce poverty. Table 4 shows that the impact of social benefits to reduce poverty of households with children is particularly low in Italy, Spain and Latvia. Previous

Table 4: Possible drivers of poverty for profiles corresponding to women with children

		CZ	ES	FR	IT	LV	NL	UK
	Employment gender gap (aged 20-64)	18.2	12.1	9.2	22.7	2.9	11.2	11.5
Obstacles to labour market participation	Employment impact of parenthood	36.0	4.1	8.1	4.1	7.9	3.5	18.9
	Inactivity/part time due to familial responsability	10.1	6.3	6.3	11.0	3.7	22.3	19.8
	Inactivity trap for the second member of a couple	41.4	23.0	52.6	30.9	37.2	53.1	60.4
	Use of formal childcare	39.0	50.0	47.0	70.0	59.0	15.0	22.0
Unsufficient earnings from the labour market	Involuntary temporary empl as % of female employees (15-64)	10.1	6.3	6.3	11.0	3.7	22.3	19.8
	Gender pay gap	25.5	16.7	16.0	5.5	17.6	18.5	19.5
	Low wage trap second earner	31.1	28.8	26.6	40.0	32.7	46.9	31.0
	Impact of social transfers in reducing child poverty	45.0	22.7	50.8	24.5	28.1	45.6	54.4
Outcome	Incidence within the population at least once in poverty		+		+	++	++	+
	Risk of persistent poverty	++	+	+	++	+	+	+

Source: Eurostat, EU-LFS, EU-SILC and OECD tax-benefit model.

analysis (European Commission, 2012) has shown that in these Member States, the impact of social transfers on income tends to be regressive and benefit less the lower income quintiles than in other Member States.

Such an analysis framework helps to better understand the various needs to address poverty across Europe in the area of women with young children. Similar analysis could be envisaged to understand the nature of obstacles met by the other main profiles identified among the population, namely older workers out of the labour market, in-work poor people, and families with grown-up children living in the household.

6. Estimating the cost of poverty and social exclusion

This section draws attention to the wider consequences of poverty or exclusion, not just for individuals/households but for society as a whole, focusing on aspects such as the impact in terms of foregone earnings, human capital development and social unrest. While in the EU, there is currently no comprehensive study that quantifies the overall costs of poverty or social exclusion, several studies have evaluated the economic and societal costs of specific situations related to poverty, such as unemployment or NEET for the youth. Such approaches could be mobilised to provide estimates of the cost of poverty in Europe.

6.1. The challenge of measuring the cost of not fighting poverty and social exclusion

Efforts to illustrate, or quantify, the costs of poverty and exclusion mainly rely on the evidence that poverty is consistently linked to poor employment, health status, lower literacy, poor school performance for children, more crime, and greater stress for family members, and often for communities. It is therefore not only poor households but also society as a whole that bears the costs of poverty and social exclusion, notably through higher public health care costs, increased policing and crime costs, foregone economic activity and related lost productivity and lost tax revenues, and the intergenerational costs that flow from the

likelihood that a significant number of children from poor families will also remain poor.

Even if the long-term effects of poverty and social exclusion are difficult to observe, a body of academic research has analysed the consequences of poverty or exclusion for individuals and for society at large, focussing on aspects such as future earnings, and loss of human capital – in terms of knowledge, skills and health status, social unrest, etc. While there is currently no European comprehensive study in the EU in this respect, Canadian studies[17] suggest that the overall negative consequences of poverty can amount to around 5% of GDP even in relatively equal societies. In the UK, the Joseph Rowntree Foundation has estimated that child poverty costs at least 2% of the country's GDP (Hirsch 2008).

Indeed, comprehensive evaluations ideally need to reflect on both the estimation of the costs of fighting poverty and exclusion and the associated gains. The cost of social exclusion programmes and associated services, that can be used to lift people out of poverty, need to be accounted for, such as activation policies or child care policies. However, defining precisely the scope of social protection and inclusion measures to account for is delicate, notably in a context where the balance between prevention (e.g. well-designed social protection systems that prevent people from falling into poverty and provide the right incentives to work), activation measures (such as active labour market policies) and remediation (last resort schemes, food aid programmes, etc.) vary greatly from country to country. Moreover, the gains of reduced poverty levels would ideally need to include not only increases in primary incomes but also increased tax revenue, reduced health care expenditure, preserved human capital, reduced security expenditure, etc. For example, increased expenditure on security and protection by business and households is currently counted positively within national accounting systems, leading to higher GDP estimates.

(17) A study from Ontario (Ontario Association of Food Banks 2008) puts the cost of poverty at 5.5 to 6.6% of GDP and a study from British Columbia estimates that the cost to society is between 4.1 and 4.7% of GDP, 1/4 of which is a direct cost to government alone (Ivanova 2011).

6.2. Some indications based on estimates of the cost of unemployment or of NEET

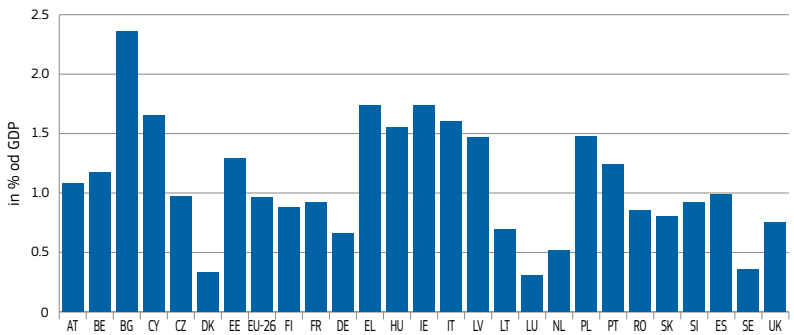
Some indications of the cost of poverty can be obtained from available evaluations in various fields, such as returns on education or the cost of unemployment and NEET.

Since poverty is generally associated with low educational levels, indications can be derived from the extensive literature on returns from improving educational levels. For instance, at European level, De la Fuente and Ciccone (2002) have estimated the return on investment in human capital at the microeconomic and macroeconomic levels and suggest that an additional year of schooling increases wages at the individual level by around 5-6% across European countries. Similarly, in the context of the long tradition of research on the returns on human capital, the OECD (2010) has carried out analysis on the cost of low educational performance and estimated that increasing average PISA scores (as a proxy of learning outcomes) can increase the OECD gross domestic product by USD 115 trillion over the lifetime of the generation born in 2010.

Furthermore, since poverty is generally associated with weak labour market attachment, indications of the cost of poverty can be derived from estimates of the cost of unemployment, which can cover both the short-term impact of becoming unemployed and some lasting effects. For instance, Dao and Loungani (2010) have highlighted the fact that, if past recessions are any guide, the human and social cost to those who have become unemployed during the crisis could be much more far-reaching than simply the immediate and temporary loss of income, since those who become unemployed during a recession face a loss in earnings that can persist 15-20 years. These reflect the potential losses in terms of lifetime earnings, human capital, the discouragement from seeking work, adverse health outcomes, and a general loss of social cohesion. Dao and Loungani also report on compelling evidence that parental job and income loss has a negative and persistent effect on children's well-being in both the short and longer term, underlining the importance of early investment in the education and health of children. Furthermore, various adverse health outcomes associated with unemployment can be highlighted. For instance, Sullivan and von Wachter (2009) found that increased mortality rates due to unemployment can persist up to 20 years after the job loss and lead to an average loss of life expectancy of 1 to 1.5 years. This finding reflects the importance of financial resources as a determinant of individual health, not least by affecting the ability to invest in, or have access to, good health care and develop a healthy lifestyle, while a shortage of resources leads to poor lifestyle choices and can also be the reason for stress and depression.

Along the same lines, there is also evidence that the adverse effects on lifetime earnings are most pronounced for unemployment spells experienced during youth (see Oreopoulos et al., 2008 and Kahn, 2010). Additional indications can also be derived for evaluation of the cost of young people not being in employment, education or training, which has implications, not only for their present situation, but also for their

Chart 43: **Cost of the NEET group in 2008**



Source: Eurofound.

future inclusion in society. These so-called NEETs have mostly dropped out of school early without any qualifications thereby making them much more likely to be marginalised and dependent on social welfare, with substantial societal costs. Eurofound (2012) estimates that the lack of participation in the labour market, of NEETS analysed in the EU, costs 1% of aggregate GDP. These costs are due to foregone earnings and additional social transfers. At country level, Bulgaria, Cyprus, Greece, Ireland, Hungary and Italy face the highest cost at 1.5% or more of GDP, while the cost of NEETs in Luxembourg, Denmark and Sweden is comparatively limited at below 0.5% of GDP (Chart 43).

6.3. Providing partial estimates of the cost of poverty and exclusion

While a comprehensive approach to the cost of poverty and social exclusion would require taking account of a very broad range of effects, a first step is to evaluate the cost of unemployment or NEET by focusing on the *opportunity* cost of poverty (the direct economic cost linked to the situation of poverty of some people, and related additional public resources linked to lower benefits and higher taxes) rather than on the overall general costs (for instance health and crime outcomes, intergenerational transmission of poverty, or lifecycle impacts on children experiencing poverty, etc).

In this context, one can estimate the economic gain that some poor people would benefit from when having better access to the labour market and thus higher labour market incomes. The assessment of the gains can then reflect the general economic impact (higher wages translating into higher GDP), distinguishing between both the private impact (higher net incomes) and the public one (fewer benefits and higher tax revenue). Estimates of the gains of lifting a number of poor people out of poverty can be derived from microdata on incomes and labour market access (EU surveys LFS and SILC), possibly complemented by micro simulation tools and information on the efficiency of active labour market policies to support reintegration in the labour market. It can be noted that such an approach remains however partial. From an economic point of view, it notably disregards the multiplier impact of additional private consumption or additional public investment (demand side); as well as the impact of overall lower taxes (supply side). It also doesn't take account of the expected impact on the take-up of some in-kind benefits – such as child care or health – and on the payments of employers' contributions or indirect taxes such as VAT.

As a first step, evaluations of the gains associated with the return to the labour market of poor people of active age can be derived from EU wide surveys like SILC. This can be obtained either by directly comparing average labour market outcomes (and related benefits and tax levels) of non-poor people having the same characteristics (such as education, age, sex, household type) or by relying on matching methods such as in the recent Eurofound study on the cost of NEETs (Eurofound 2012), thus enabling estimates that better reflect the heterogeneity of situations, as well as actual assessments of the overall impact on poverty rates (linked to possible changes in the median incomes). Relying on micro-simulation tools could also be envisaged, by allowing for changes in the attachment to the labour market, through simulations of employment shocks (for instance among the working poor or unemployed or inactive poor). Micro-simulation models such as Euromod would allow for estimating both the new situation in terms of benefits and taxes and also the general economic gains more accurately.

As a second step, some attempts could be made to compare such estimates of the economic gains of having some categories of poor people back in the labour market to estimates of the corresponding costs, based on some rough estimates of the cost and efficiency of several active labour market policies (possibly disentangling different types of measures).

It can be noted that this type of approach may also be used for other types of social protection and social inclusion policies, for instance, providing estimates on the return of child care facilities, or on changes in marginal tax rates for different types of situation (for instance for pension take-up or second earners).

7. An increasing emphasis on social investment

The focus on social protection and social inclusion policies as an investment in individuals and more generally society has been gaining vigour in Europe since the early 90s notably with the work from Esping Andersen (1992) and more particularly in recent years. In this context, though the social investment approach is not unified in a single proper body, the last two decades have recently been analysed as a period of emergence of a 'Social Investment State' in Europe (Van Kersbergen and Hemerijck, 2012), while the roots of the approach of social investment can be found in the 1930s and the works on social protection as a productive factor developed in Sweden by Alva and Gunnar Myrdal (Morel, Palier and Palme, 2012).

In very broad terms, the social investment approach stresses the case of considering employment, social protection and social inclusion policies – and possibly other policy areas, such as education – as an investment for the future, leading to greater employment and social participation, as well as social cohesion and stability (Van Kersbergen and Hemerijck, 2012), while at the same time acknowledging their key role as a productive factor. In this respect, the social investment approach puts the stress on the long-term benefits for society of current policies and puts the emphasis on a life cycle approach for the individuals. For instance, it has recently been argued that deficits in social investment in recent decades in some Member States can contribute to explaining the current disequilibria observed in EMU (Hemerijck and Vandenbroucke, 2012).

7.1. Social protection and inclusion as a productive factor

The social investment approach draws on social protection as a productive factor, underlining that well-designed social inclusion and social protection policies are efficiency enhancing. These gains are notably related to the efficiency gains of insurance mechanisms (such as health, unemployment or old age insurances) and to the related reduction in uncertainty, not only at the individual level, but also at the macroeconomic level thanks to automatic stabilisation.

For instance, social protection allows for taking higher economic risks, to the extent that some risks (such as sickness, unemployment, old age) are actually covered and do not necessitate specific savings. Furthermore, welfare state provisions, social expenditure, institutions of collective bargaining and worker participation, and job protection regulation, may contribute to a positive investment climate by fostering stability and creating a healthy, well-educated and more productive and mobile work force.

7.2. Social protection and inclusion as an investment

The development of the social investment approach stems notably from socio-economic trends and the related 'new' social risks associated with recent decades. For instance, at the core of the Esping Andersen et al. (2002) approach lies the argument that welfare states need to adapt to the shift away from the prevailing male-breadwinner model which provides increasingly sub-optimal chances in the labour market for large shares of the population. From this perspective, the former welfare models needed to be adapted to provide more adequate answers to skill depletion, the reconciliation of work and family life, caring for frail people or the inadequacy of social protection coverage. A number of other trends can also be considered to be at the root of a more investment oriented approach of social policies, such as developments in the labour markets with higher levels of unemployment and the increase in primary income inequalities, as generally observed in recent decades. The pattern change from unemployment that was mainly cyclical in character to more structural, due notably to shifts in demand (such as intensification of international trade and skill biased technological change) and supply (such as the feminisation of the labour force and family transformations), also requires that standard income guarantees are complemented by capacitating public services (Vandenbroucke et al., 2011) and active labour market strategies. In other words, the social investment approach stems partly from the changing socioeconomic climate in which the emerging knowledge economy has created new social and economic risks (such as lack of skills, long-term unemployment or more generally insufficient access to the labour market) that require more active social welfare policies, which should be seen as complements to existing social policies providing security in the first place. Furthermore, considerations about the financial sustainability of the welfare systems were also present – notably in the context of population ageing – and their capacity not to be a burden on the wellbeing of future generations was questioned (e.g. Esping Andersen, 1996).

In this context, a key underlying principle of social investment is to prevent some social risks from materialising and, through complementary protection strategies, to insure against and compensate for those risks if and when they materialise. A main aspiration of the social investment model is to consider together social and economic policies rather than treating them separately, notably due to economic reasons linked to the positive externalities of social aspects of life – such as education, health or housing. More generally, the social investment model seeks to enhance people's capacity to participate, aiming at empowering citizens as a means of increasing social cohesion and economic growth and standards of living.

As Vandenbroucke et al. (2011) underlined, the focus is on public policies that '*prepare*' individuals, families and societies to adapt to various transformations, such as changing career patterns and working conditions, and the emergence of new social risks, such as population ageing, rather than simply generating responses aimed at '*repairing*' any damage caused by market failure, social misfortune, poor health or prevailing policy inadequacies. In this concept, welfare states should provide complementary enabling social services alongside more traditional social welfare systems.

7.3. Key areas for social investment

Key areas of public policy are directly linked to the social investment approach such as in particular human capital improvement and preservation, the family's relation to the economy and the link to employment (Vandenbroucke et al. 2011).

The social investment approach focuses on building and preserving people's capabilities. In this respect, since in today's economy, qualifications play a greater role than ever, a key element is therefore up-skilling the low-skilled and the unemployed and preserving skills during unemployment spells. In this context, both education and lifelong learning are clearly seen as key factors contributing to the human capital *stock*, but also early childhood education and care. Furthermore, the stress is not only on human capital stocks but also on *flows*: through policies supporting female and lone parent employment, active labour market policies and other activation policies, facilitating access to the labour market for vulnerable groups and the promotion of flexible social protection over the life course (Hemerijck and Vandenbroucke, 2012).

Facilitating the reconciliation between work and family life and reducing child poverty are also key elements, which can be achieved through the promotion of early investment in children, in particular through child care, but also introducing work pay policies and improved cash assistance and cash-benefits for low-income households.

Another fundamental aspect is labour participation as a means of achieving social cohesion and economic competitiveness. As a complement to income transfers and unemployment benefits, the investment approach recommends activation policies and 'making work pay' strategies based on increasing individuals' access to the labour market and thus society. A core element is thus the implementation of active labour market policies (ALMPs), in which, for example, non-employed individuals are provided with education and training, as well as active ageing policies, where older workers are encouraged and provided opportunities to stay longer on the labour market. Extensive literature is available on the effectiveness of ALMPs (see for instance European Commission 2006) and it is commonly recognised that such policies facilitate integration into the labour market, minimise long-term unemployment and decrease the loss of productive human capital. Hence, ALMPs combine social and economic policies as a means to achieve improvements, while it should be recognised that the effectiveness of measures vary and there are complementarities between active and passive labour market policies.

The focus on investment indicates an explicit expectation of a return on social investment, though it should be noted

that actual assessments of the actual returns are difficult, since some effects are meant to be general and actually linked to externalities of policies involved. For instance, while in general, social protection and inclusion systems played an automatic stabilisation role, though to different extents depending on the various risks covered (see Chapter 3), between 2008 and 2010, many European countries also implemented short-term work or temporary lay-off schemes, combined with existing programmes of unemployment compensation alongside further training initiatives, which were consistent with both demand stabilisation and new social investment priorities. The empirical evidence suggests that short-term schemes have been effective in reducing the vulnerability of employment during the global recession, though short-term arrangements need to be supplemented by measures that support employability and ease transitions to new jobs (European Commission 2010). In another area, Nelson (2011) indicates that social investment policies (such as early child education and care, equal opportunity education, active labour market policies) make a difference not only in raising employment levels, but also in allowing the development of highly skilled quality jobs.

7.4. Social investment in practice

The social investment perspective actually covers under the same umbrella different approaches, as underlined by Morel, Palier and Palme (2012) or Van Kersbergen and Hemerijck (2012) and social investment policies have been put into practice to different extents across Member States.

Based on analysis of social expenditure trends by categories, Nikolai (2009 and 2012) identifies two main ways among the various routes to social investment: a Nordic one, which combines traditional social protection with social investment, and an Anglo-Saxon one which tends to somehow substitute traditional compensatory spending with new investments. This echoes Giddens (1998) who referred to social investment as a 'third way' (between neo-liberalism and the post-war welfare state), with public expenditure directed towards investment in human capital as a means of achieving social cohesion and economic growth. To meet these objectives, active labour market policies, education, support to the social economy, family policies and lifelong learning schemes were meant to be prioritised. In essence, the emphasis was put on 'active' social policies, while a Nordic approach put forward for instance by Esping Andersen et al. (2002) and Vandenbroucke and Vleminckx (2011) puts more of an emphasis on the complementarities between an investment strategy and a protection strategy, social protection and social investment being essentially seen as mutually reinforcing. From this perspective, investment in ALMPs, lifelong learning, activation policies and education allowing people to reach their full potential, also need unemployment benefit and social protection policies that can ensure a certain level of protection.

In practice, the countries that display the strongest social investment profile are the Nordic countries. In particular, Nordic countries such as Sweden or Denmark practice a system of universal and broadly egalitarian education and healthcare and childcare, have extensive ALMPs and training policies, are in general gender egalitarian and provide generous income maintenance benefits. In essence, these countries pursue a social policy that fuses educational and caregiving motivations, but also includes a strong focus on gender equality as a means to invest in human capital to achieve greater, and sustainable, economic growth.

A number of other countries across Europe have incorporated elements of social investment into their social policy framework since the 90s (as underlined by Van Kersbergen and Hemerijck, 2012), notably in the United Kingdom (notably through activation policies and training policies, as well as in work benefits), the Netherlands and Germany (notably through training programmes and childcare and parental leave arrangements), and France (notably through a stable and vigorous family policy and putting the emphasis on activation and making work pay). Nevertheless, the social investment approach seems to have reached mixed outcomes in some of these countries, which probably reflects a need for a comprehensive approach (partial implementation leading at best to partial success), as well as the particularly difficult overall economic context in which some reforms were launched or the time lags needed to actually see their impact. For example, despite social reforms to combat child poverty in the UK, rates remain high relative to other EU countries, and educational opportunities remain unequal. In the Netherlands, female activation reforms have increased female work participation, but mostly through part-time work. In Germany, reforms have led to an insignificant increase in fertility rates, while in France, the poverty rate has not shown a significant downward trend.

8. Conclusions

This chapter has reviewed recent developments in poverty and social exclusion in the EU as a whole and in individual Member States. Through an approach based on examining the dynamics of poverty, it aims at showing how addressing and preventing poverty and long-term exclusion needs to take into account its dynamic nature.

The results show that following slow but progressive improvements over the previous decade, there has been little change in the extent of poverty and social exclusion at EU level since 2008, with around 1-in-4 at-risk-of-poverty-or-exclusion in 2011. However, this apparent stability in the risk at EU level hides strong divergence across Member States, with strong rises compared to 2008 observed in some (including Bulgaria, Ireland, Latvia, Lithuania and Spain), while others have seen recent declines (especially Poland and Romania). This highlights the strong polarisation in developments across Member States in terms of the impact of the crisis and its effect on poverty and exclusion.

There are signs of rising poverty in many Member States, while the worsening situation following the crisis is more clearly evident in the trends of severe material deprivation and in jobless or very low work intensity households, which reflect more immediately the impact of the crisis in terms of growing exclusion from the labour market and related poverty developments.

Figures for 2011 indicate that, among different population subgroups, it is the unemployed, the inactive, single parent families and non-EU migrants who face the greatest risks of poverty or exclusion. Among age groups, children and young adults are more at risk than others, while with regard to skill levels it is the low-skilled who face a much higher risk.

Moreover, the crisis has not impacted uniformly across the whole population and has often led to an even worse situation for these groups already at heightened risk before the crisis, notably young people (leading to a sharp rise in young adults not in employment, education or training (NEETs)).

The crisis has clearly had a strong impact on the financial situation of households in many Member States. There has been a significant jump in the number of people in the EU reporting economic strains in their household, with around 1-in-10 reporting their households have great difficulty in making ends meet, and with strong increases in other major factors indicating economic strain in households, such as being in arrears on mortgage or rent payments or being in arrears on utility bills.

The generally worsening financial situation of households has had a clear impact on their ability to cope with unexpected expenses, which raises the potential for unforeseen life events or further economic shocks to significantly impact on their welfare and social situation. Moreover, indications from recent consumer surveys are that the social situation has further deteriorated since 2011 in many Member States, with the poorest quartile being affected more than the average in the majority of cases and within the EU as a whole.

In line with the above, developments in the poverty gap indicate that poverty has generally become more severe since the crisis. In addition, multiple disadvantage has been increasing, with the share of the population both at-risk-of-poverty and living in a household with very low work intensity increasing 0.4 pps, reflecting the more immediate effect of the contraction in the labour market on household work involvement and related poverty developments. Above all, the low-skilled, those living in single parent households, men living alone, third country immigrants, and to some extent children, face considerably greater risks of multiple disadvantage, and apart from single parent households their risks have generally worsened most since the crisis began.

In-depth analysis of the dynamics of poverty among working age adults in Europe provides further evidence to better prepare future action. The results show that the risks of entering into and exiting out of poverty can vary greatly across Member States. Three main groups of countries can be distinguished.

In the first group, rates of entry into and exit from poverty are high. This shows that the churning in and out of the risk of poverty is high. However, in some of these countries, a non-negligible share of those at-risk-of-poverty form a 'core group' of the people at-risk-of-poverty and do not take part in the churning.

The second group consists of Member States with a high risk of entering into poverty, and low chances of getting out of it. This is related to the risk of a massive poverty trap, as those entering into the risk of poverty will have difficulties getting out of it. As this evidence relates to pre-crisis data, the situation is worsening as the future perspectives are gloomy for this subgroup.

The last group of countries consists of Member States with low rates of entry into and exit from poverty. In these Member States, the share of people at risk of persistent poverty is however high. This is a sign of a preoccupying social polarisation in these countries, with a group of people at-risk-of-poverty for which there are few chances to get out of it.

Individual profiles have been estimated and crossed with their risks of persistent poverty. The results show that some broad profiles emerge across the selected Member States, such as adults with young children, couples with grown-up children still in the household, in-work poor families, and older working age adults out of the labour market. However, among these groups, slight national variations appear and require tailored policy action.

One strategy proposed to help avoid long-term poverty and exclusion is a social investment approach, which emphasises the economic and social returns from investing in people's capabilities. The social investment approach seeks to reunite social and economic policies rather than treating them separately, to achieve equality of opportunity and enhance people's capacity to participate in the labour market and improve social cohesion and economic competitiveness. The focus is on public policies that '*prepare*' individuals, families and societies to adapt to various transformations, such as changing career patterns and working conditions or the emergence of new social risks, such as population ageing or more structural unemployment, rather than only generating responses aimed at '*repairing*' any damage caused by market failure, social misfortune, poor health or prevailing policy inadequacies. In this concept, welfare states should provide complementary enabling social services alongside more traditional social welfare systems. Key areas of public policy are directly linked to the social investment approach such as in particular human capital improvement and preservation, the family's relation to the economy and the link to employment.

Annex 1

Table A1: Sample size by Member State for the 18-64 population

Country	Sample size individuals aged 18-64 present 4 consecutive waves (2006-2009)	Sample size individuals aged 18-64 present 2 consecutive waves (2008-2009)
AT	1596	5487
BE	1973	6194
BG	1435	5654
CY	1474	4352
CZ	4623	10936
DK	1336	5156
EE	2318	6496
ES	4867	16459
FI	7267	7267
FR	7925	12777
EL	2039	7292
HU	2997	10080
IE		3389
IT	6714	22506
LT	1856	5700
LU	4077	5149
LV	1484	5801
MT	1300	4315
NL	1955	10032
PL	6239	18378
PT	1604	5310
RO		8932
SE	1778	6658
SI	3550	13366
SK	2339	8100
UK	1964	7274
Total	**74710**	**223060**
Number of countries	24	26

Source: EU-SILC LONGITUDINAL UDB 2009 – version 3 of August 2012 – DG EMPL calculations.

Table A2 : Yearly rates of entry into and exit from the risk of poverty and deprivation; 2007-2009, 18-64 population

	Risk of Poverty															
	Entry rate				Exit rate				Sample size (ins)				Sample size (out)			
	2006-2007	2007-2008	2008-2009	Average	2006-2007	2007-2008	2008-2009	Average	2006-2007	2007-2008	2008-2009	Average	2006-2007	2007-2008	2008-2009	Average
EU-26	5.8%	6.7%	5.7%	**6.1%**	46.0%	39.8%	41.2%	**41.7%**	4256	7923	10365	22544	5154	8347	11629	25130
AT	3.5%	5.1%	5.5%	**5.0%**	51.5%	51.8%	52.6%	**52.1%**	74	166	244	484	127	236	301	664
BE	5.2%	4.6%	4.7%	**4.8%**	41.3%	41.2%	39.4%	**40.4%**	112	189	247	548	128	240	277	645
BG	7.4%	8.3%	7.1%	**7.5%**	34.5%	50.1%	27.5%	**36.7%**	111	228	366	705	105	299	276	680
CY	2.9%	3.6%	2.5%	**2.9%**	26.9%	24.1%	40.1%	**33.0%**	46	100	92	238	39	74	195	308
CZ	3.3%	2.9%	2.7%	**2.8%**	40.7%	41.2%	41.7%	**41.4%**	151	202	252	605	164	284	345	793
DK	2.7%	3.0%	3.8%	**3.4%**	30.6%	51.6%	35.8%	**39.0%**	30	63	95	188	42	73	71	186
EE	6.0%	6.0%	6.5%	**6.2%**	38.4%	34.2%	33.3%	**34.5%**	156	269	357	782	183	290	380	853
ES	10.3%	9.0%	8.8%	**9.1%**	45.0%	42.7%	46.0%	**44.7%**	452	781	1270	2503	451	792	1229	2472
FI	3.9%	4.3%	3.5%	**3.8%**	44.0%	35.2%	36.8%	**37.6%**	105	169	226	500	131	195	243	569
FR	5.2%	7.4%	4.6%	**5.7%**	51.8%	43.1%	44.9%	**46.2%**	467	735	477	1679	587	560	733	1880
GR	7.9%	8.6%	7.7%	**8.0%**	35.0%	32.3%	31.5%	**32.5%**	156	291	436	883	215	308	443	966
HU	6.5%	4.6%	5.3%	**5.3%**	53.2%	37.6%	38.1%	**41.3%**	202	309	472	983	292	324	447	1063
IE	5.5%	5.9%	5.7%	**5.7%**	38.0%	41.9%	41.1%	**40.7%**	26	117	171	314	48	151	201	400
IT	7.9%	5.9%	6.3%	**6.4%**	34.0%	33.4%	35.9%	**34.7%**	451	714	1068	2233	461	843	1329	2633
LT	5.6%	7.3%	7.5%	**7.1%**	38.0%	33.5%	31.6%	**33.4%**	106	246	324	676	111	205	305	621
LU	3.8%	3.9%	2.7%	**3.5%**	32.1%	26.7%	29.0%	**29.3%**	252	240	222	714	294	290	347	931
LV	7.0%	12.0%	7.9%	**9.2%**	41.4%	28.4%	31.6%	**32.6%**	103	351	353	807	138	183	387	708
MT	7.6%	8.1%	8.5%	**8.2%**	47.6%	39.4%	26.2%	**33.4%**	117	237	321	675	109	181	176	466
NL	2.4%	2.7%	2.1%	**2.4%**	49.2%	40.7%	32.9%	**37.7%**	49	126	162	337	59	126	125	310
PL	6.4%	6.8%	6.6%	**6.7%**	36.6%	37.0%	38.1%	**37.4%**	378	788	1119	2285	519	950	1212	2681
PT	3.0%	7.4%	5.6%	**5.8%**	37.8%	31.5%	35.4%	**34.7%**	49	215	243	507	98	166	328	592
RO		6.2%	5.9%	**6.0%**		27.8%	26.1%	**26.9%**		285	420	705		406	480	886
SE	2.3%	2.7%	2.7%	**2.6%**	54.2%	36.0%	32.0%	**36.7%**	46	126	172	344	61	92	126	279
SI	3.4%	3.6%	2.4%	**3.0%**	34.5%	28.6%	36.3%	**33.5%**	161	268	274	703	164	247	472	883
SK	4.7%	3.8%	4.9%	**4.5%**	49.4%	40.0%	48.8%	**46.0%**	112	183	334	629	109	241	399	749
UK	6.9%	7.4%	7.8%	**7.5%**	48.5%	48.4%	53.4%	**50.8%**	168	343	434	945	241	380	569	1190

	Deprivation															
	Entry rate				Exit rate				Sample size (ins)				Sample size (out)			
	2006-2007	2007-2008	2008-2009	Average	2006-2007	2007-2008	2008-2009	Average	2006-2007	2007-2008	2008-2009	Average	2006-2007	2007-2008	2008-2009	Average
EU-26	5.3%	5.9%	6.5%	**6.1%**	38.2%	36.6%	34.3%	**35.8%**	5 154	8 347	11 629	25 130	5 895	11 170	12 982	30 047
AT	4.5%	8.8%	4.4%	**5.9%**	48.9%	47.1%	45.1%	**46.3%**	127	236	301	664	120	157	280	557
BE	3.7%	3.3%	3.7%	**3.5%**	35.8%	38.8%	31.7%	**34.9%**	128	240	277	645	117	184	220	521
BG	38.1%	24.6%	23.0%	**25.1%**	23.2%	46.8%	15.1%	**29.1%**	105	299	276	680	259	841	380	1 480
CY	13.0%	8.2%	10.5%	**10.2%**	30.3%	47.8%	42.6%	**42.6%**	39	74	195	308	138	468	386	992
CZ	3.1%	5.1%	5.2%	**4.8%**	30.5%	32.1%	31.1%	**31.3%**	164	284	345	793	298	396	481	1 175
DK	2.5%	2.0%	8.0%	**5.1%**	65.4%	64.9%	21.5%	**46.6%**	42	73	71	186	42	56	28	126
EE	6.7%	5.4%	10.3%	**8.1%**	48.4%	49.9%	37.5%	**43.9%**	183	290	380	853	168	325	250	743
ES	6.0%	4.8%	7.4%	**6.3%**	54.7%	56.0%	45.2%	**50.8%**	451	792	1 229	2 472	302	632	632	1 566
FI	2.9%	3.3%	3.4%	**3.3%**	39.7%	42.7%	39.7%	**40.6%**	131	195	243	569	79	121	199	399
FR	5.0%	5.0%	5.5%	**5.2%**	41.6%	36.6%	37.8%	**38.4%**	587	560	733	1 880	521	456	588	1 565
GR	8.6%	8.1%	9.6%	**8.9%**	39.8%	29.4%	30.0%	**31.9%**	215	308	443	966	258	274	443	975
HU	18.0%	15.4%	20.4%	**18.3%**	31.7%	30.4%	22.9%	**26.9%**	292	324	447	1 063	436	810	850	2 096
IE	3.6%	6.4%	6.9%	**6.2%**	47.6%	17.7%	29.4%	**28.7%**	48	151	201	400	33	60	148	241
IT	6.3%	7.4%	6.2%	**6.6%**	43.8%	44.9%	42.9%	**43.7%**	461	843	1 329	2 633	447	956	1 328	2 731
LT	9.2%	11.6%	10.1%	**10.5%**	43.2%	35.5%	38.1%	**38.5%**	111	205	305	621	365	419	529	1 313
LU	1.6%	1.9%	2.2%	**1.9%**	61.9%	46.2%	65.5%	**58.8%**	294	290	347	931	138	136	179	453
LV	11.9%	11.5%	17.7%	**14.9%**	24.4%	38.9%	29.3%	**31.5%**	138	183	387	708	204	491	609	1 304
MT	6.4%	4.7%	5.0%	**5.1%**	52.2%	27.5%	27.4%	**31.6%**	109	181	176	466	129	115	163	407
NL	1.9%	1.9%	2.0%	**1.9%**	50.3%	48.3%	37.1%	**42.8%**	59	126	125	310	46	100	119	265
PL	9.3%	7.8%	8.8%	**8.5%**	26.6%	27.6%	29.5%	**28.2%**	519	950	1 212	2681	778	1 365	1755	3898
PT	9.0%	9.0%	7.7%	**8.3%**	32.3%	41.1%	39.4%	**39.0%**	98	166	328	592	90	306	458	854
RO		19.2%	17.4%	**18.0%**		28.3%	20.1%	**23.7%**		406	480	886		970	847	1 817
SE	2.4%	2.1%	2.2%	**2.2%**	59.6%	57.5%	58.7%	**58.4%**	61	92	126	279	64	126	141	331
SI	8.2%	11.1%	8.7%	**9.5%**	43.1%	39.2%	38.0%	**39.1%**	164	247	472	883	203	428	752	1 383
SK	10.7%	9.8%	9.0%	**9.5%**	43.7%	36.9%	37.3%	**38.5%**	109	241	399	749	375	578	771	1 724
UK	3.1%	4.3%	3.9%	**3.9%**	40.1%	38.8%	52.0%	**45.7%**	241	380	569	1 190	134	200	356	690

Source: EU-SILC LONGITUDINAL UDB 2009 – version 3 of August 2012.

Annex 3 – Technical details of Latent Class Analysis

This annex summarizes the results of the Latent Class Analysis (LCA) of individuals in eight European case studies, namely Bulgaria, the Czech Republic, Spain, France, Italy, Latvia, the Netherlands and the United Kingdom. Traditional methods of identifying groups include cross-tabulations of socio-demographic characteristics of individuals at risk one by one. However, more advanced statistical methods can be used, including LCA. The main idea behind the LCA methodology is that, using individuals' observable characteristics, one can construct groups of individuals that are the most likely to be homogeneous among themselves, while each group is as distant as can be from one another. LCA methodology was thus used to identify, within each of the above-mentioned countries, groups of AROPE individuals (their defining characteristics as well as their different sizes).

Latent Class Analysis

Latent Class Analysis (LCA) can be used to reduce a set of several categorically scored variables into a single latent variable with a set of underlying types or 'classes'. Individuals are classified into the class for which they have the highest posterior probability of belonging, given their observed characteristics.

LCA enables characterization of categorical unobserved (*latent*) variables from an analysis of the structure of the relationships among several categorical *observed* variables. LCA is thus 'the classification of similar objects into groups, where the number of groups, as well as their forms are unknown' (Kaufman and Rousseeuw, 1990).

The LCA model can be seen as a probabilistic or model-based variant of traditional non-hierarchical cluster analysis procedures such as the K-means method. Contrary to traditional ad hoc clustering approaches, the LC approach to clustering is model-based. The fundamental assumption underlying LCA is that of *local independence*, which states that observations in the same latent class share a common *joint probability distribution* among the observed variables. Since persons in the same latent class (cluster) cannot be distinguished from each other based on their observed responses, they are similar to each other (homogeneous) with respect to these observed variables.

For this, individuals who were at-risk-of-poverty at least one year over the period 2006-2009 have been clustered in classes in each Member State in each of the 8 case studies and constitute the population of interest. The population was restricted to individuals aged 18 to 64. Age categories, gender, education, economic status, chronic illness, household composition, number of working adults in household, urban/rural breakdown, nature of contract, and whether the individual has ever worked represent the *observed covariates* and are used to predict AROPE status. In addition to these active covariates, exogenous variables were included in the model, such as presence of parents in the household, sector of occupation, unmet need for health, country of birth, poverty status, severely materially deprived status, low work intensity household, and social protection transfers.

Table A3: LCA analysis with longitudinal data (EU-SILC 2006/9)

Country	Number of observations/individuals	Number of groups/clusters
Bulgaria	464	4
Czech Republic	646	4
Spain	1.648	4
France	1.615	4
Italy	1.721	4
Latvia	557	4
Netherlands	156	3
United Kingdom	537	4

Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012– DG EMPL calculations.

Table A4: Czech Republic – Longitudinal data (individuals at-risk-of-poverty at least once)

		Cluster 1	Cluster 2	Cluster 3	Cluster 4
	Cluster Size	0.509	0.192	0.153	0.146
INDICATORS					
AGE	18-24 y.o.	0.148	0.259	0.997	0.013
	25-44 y.o.	0.573	0.446	0.002	0.129
	45-64 y.o.	0.279	0.295	0.002	0.859
GENDER	Female	0.478	0.261	0.602	0.423
	Male	0.522	0.739	0.398	0.577
EDUCATION	Primary	0.147	0.456	0.404	0.338
	Mid level (Upper Secondary)	0.807	0.540	0.569	0.639
	Tertiary	0.046	0.004	0.028	0.023
ECONOMIC STATUS	Working full-time	0.880	0.004	0.363	0.002
	Working part-time	0.064	0.000	0.000	0.000
	Unemployed	0.001	0.655	0.092	0.136
	Pupil, student, trainee	0.000	0.000	0.544	0.008
	Retirement	0.000	0.000	0.000	0.504
	Disabled/unfit for work	0.042	0.018	0.000	0.323
	Domestic tasks	0.014	0.323	0.000	0.003
	Other inactive	0.000	0.000	0.000	0.025
HOUSEHOLD COMPOSITION	One adult	0.111	0.033	0.061	0.556
	Two adults	0.077	0.025	0.050	0.286
	Single parent	0.057	0.159	0.000	0.018
	Two adults, some children	0.339	0.329	0.001	0.044
	Three and more adults, some or no children	0.415	0.455	0.888	0.096
WORKERS	1 working adult	0.398	0.473	0.314	0.073
	2+ working adults	0.602	0.070	0.534	0.001
	No working adult	0.000	0.457	0.152	0.926
CHILD	No	0.919	0.828	0.964	0.987
	Yes	0.078	0.172	0.026	0.013
JOB LOSS	No	0.967	0.585	0.980	0.954
	Yes	0.033	0.416	0.020	0.046
COVARIATES					
POVERTY	Persistent	0.178	0.425	0.274	0.409
	Recurrent	0.061	0.042	0.040	0.072
	Transient	0.760	0.533	0.685	0.519
NUMBER OF YEARS AT-RISK-OF-POVERTY	1 year	0.562	0.298	0.497	0.271
	2 years	0.252	0.261	0.229	0.263
	3 years	0.136	0.151	0.176	0.153
	4 years	0.049	0.290	0.099	0.313
	Mean	1.672	2.432	1.876	2.508

Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012– DG EMPL calculations.

Table A5: Spain – Longitudinal data (individuals at-risk-of-poverty at least once)

		Cluster 1	Cluster 2	Cluster 3	Cluster 4
	Cluster Size	0.471	0.222	0.160	0.147
INDICATORS					
AGE	18-24 y.o.	0.004	0.022	0.981	0.263
	25-44 y.o.	0.529	0.274	0.014	0.457
	45-64 y.o.	0.467	0.704	0.005	0.280
GENDER	Female	0.834	0.484	0.703	0.822
	Male	0.167	0.516	0.298	0.178
EDUCATION	Primary	0.567	0.731	0.421	0.630
	Mid level (Upper Secondary)	0.204	0.189	0.337	0.196
	Tertiary	0.229	0.080	0.243	0.174
ECONOMIC STATUS	Working full-time	0.933	0.001	0.446	0.001
	Working part-time	0.066	0.003	0.078	0.000
	Unemployed	0.000	0.145	0.120	0.967
	Pupil, student, trainee	0.000	0.000	0.350	0.000
	Retirement	0.001	0.166	0.000	0.000
	Disabled/unfit for work	0.000	0.232	0.003	0.000
	Domestic tasks	0.000	0.412	0.000	0.013
	Other inactive	0.000	0.041	0.003	0.018
HOUSEHOLD COMPOSITION	One adult	0.041	0.141	0.011	0.048
	Two adults	0.155	0.185	0.062	0.202
	Single parent	0.008	0.012	0.019	0.012
	Two adults, some children	0.488	0.241	0.267	0.392
	Three and more adults, some or no children	0.308	0.421	0.641	0.347
WORKERS	1 working adult	0.462	0.369	0.347	0.326
	2+ working adults	0.538	0.098	0.551	0.118
	No working adult	0.000	0.533	0.102	0.557
CHILD	No	0.905	0.940	0.986	0.842
	Yes	0.090	0.054	0.013	0.140
JOB LOSS	No	0.965	0.980	0.939	0.101
	Yes	0.035	0.020	0.061	0.899
COVARIATES					
POVERTY	Persistent	0.242	0.336	0.258	0.250
	Recurrent	0.145	0.118	0.173	0.177
	Transient	0.613	0.546	0.570	0.573
NUMBER OF YEARS AT-RISK-OF-POVERTY	1 year	0.411	0.377	0.405	0.438
	2 years	0.277	0.221	0.251	0.244
	3 years	0.207	0.202	0.248	0.175
	4 years	0.106	0.200	0.096	0.143

Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012– DG EMPL calculations.

Table A6: France – Longitudinal data (individuals at-risk-of-poverty at least once)

		Cluster 1	Cluster 2	Cluster 3	Cluster 4
	Cluster Size	0.507	0.209	0.145	0.139
INDICATORS					
AGE	18-24 y.o.	0.294	0.000	0.994	0.193
	25-44 y.o.	0.334	0.103	0.005	0.710
	45-64 y.o.	0.371	0.897	0.001	0.098
GENDER	Male	0.532	0.522	0.480	0.197
	Female	0.468	0.479	0.520	0.803
EDUCATION	Primary	0.341	0.622	0.303	0.457
	Mid level (Upper Secondary)	0.473	0.323	0.452	0.431
	Tertiary	0.186	0.055	0.245	0.112
ECONOMIC STATUS	Working full-time	0.724	0.000	0.001	0.001
	Working part-time	0.258	0.000	0.001	0.039
	Unemployed	0.000	0.263	0.276	0.442
	Pupil, student, trainee	0.000	0.000	0.691	0.022
	Retirement	0.000	0.367	0.000	0.000
	Disabled/unfit for work	0.001	0.197	0.006	0.170
	Domestic tasks	0.010	0.089	0.000	0.283
	Other inactive	0.007	0.083	0.025	0.043
HOUSEHOLD COMPOSITION	One adult	0.184	0.298	0.081	0.080
	Two adults	0.206	0.385	0.187	0.016
	Single parent	0.043	0.002	0.000	0.217
	Two adults, some children	0.295	0.029	0.017	0.553
	Three and more adults, some or no children	0.273	0.287	0.715	0.135
WORKERS	1 working adult	0.530	0.198	0.313	0.393
	2+ working adults	0.470	0.046	0.249	0.001
	No working adult	0.000	0.756	0.438	0.606
CHILD	No	0.910	1.000	0.990	0.710
	Yes	0.084	0.000	0.012	0.291
JOB LOSS	No	0.958	0.898	0.879	0.691
	Yes	0.042	0.102	0.121	0.309
COVARIATES					
POVERTY	Persistent	0.161	0.267	0.244	0.292
	Recurrent	0.125	0.102	0.161	0.214
	Transient	0.714	0.630	0.595	0.494
NUMBER OF YEARS AT-RISK-OF-POVERTY	1 year	0.565	0.459	0.403	0.312
	2 years	0.226	0.245	0.288	0.285
	3 years	0.147	0.114	0.155	0.180
	4 years	0.063	0.181	0.155	0.223

Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012– DG EMPL calculations.

Table A7: Italy – Longitudinal data (individuals at-risk-of-poverty at least once)

		Cluster 1	Cluster 2	Cluster 3	Cluster 4
	Cluster Size	0.363	0.277	0.181	0.180
INDICATORS					
AGE	18-24 y.o.	0.187	0.017	0.891	0.151
	25-44 y.o.	0.391	0.230	0.109	0.833
	45-64 y.o.	0.422	0.753	0.000	0.017
GENDER	Male	0.693	0.278	0.455	0.346
	Female	0.307	0.722	0.545	0.654
EDUCATION	Primary	0.548	0.822	0.236	0.550
	Mid level (Upper Secondary)	0.357	0.140	0.650	0.396
	Tertiary	0.095	0.038	0.114	0.054
ECONOMIC STATUS	Working full-time	0.843	0.000	0.004	0.323
	Working part-time	0.156	0.000	0.033	0.046
	Unemployed	0.000	0.187	0.398	0.125
	Pupil, student, trainee	0.000	0.000	0.498	0.003
	Retirement	0.000	0.143	0.000	0.000
	Disabled/unfit for work	0.000	0.048	0.000	0.005
	Domestic tasks	0.000	0.502	0.027	0.441
	Other inactive	0.000	0.120	0.041	0.058
HOUSEHOLD COMPOSITION	One adult	0.131	0.131	0.072	0.000
	Two adults	0.101	0.234	0.044	0.000
	Single parent	0.012	0.009	0.000	0.096
	Two adults, some children	0.242	0.088	0.002	0.846
	Three and more adults, some or no children	0.514	0.538	0.882	0.058
WORKERS	1 working adult	0.574	0.322	0.508	0.793
	2+ working adults	0.426	0.107	0.231	0.051
	No working adult	0.000	0.571	0.262	0.156
CHILD	No	0.986	0.994	1.000	0.629
	Yes	0.014	0.006	0.000	0.372
JOB LOSS	No	0.962	0.922	0.861	0.896
	Yes	0.038	0.078	0.139	0.104
COVARIATES					
POVERTY	Persistent	0.294	0.435	0.380	0.402
	Recurrent	0.132	0.127	0.172	0.160
	Transient	0.575	0.439	0.448	0.438
NUMBER OF YEARS AT-RISK-OF-POVERTY	1 year	0.395	0.286	0.269	0.289
	2 years	0.256	0.225	0.261	0.238
	3 years	0.181	0.208	0.239	0.211
	4 years	0.169	0.281	0.232	0.261
	Mean	2.124	2.484	2.433	2.444

Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012– DG EMPL calculations.

Table A8: Latvia – Longitudinal data (individuals at-risk-of-poverty at least once)

		Cluster 1	Cluster 2	Cluster 3	Cluster 4
	Cluster Size	0.436	0.213	0.207	0.145
INDICATORS					
AGE	18-24 y.o.	0.038	0.995	0.212	0.013
	25-44 y.o.	0.542	0.003	0.361	0.154
	45-64 y.o.	0.420	0.002	0.427	0.833
GENDER	Male	0.407	0.371	0.535	0.532
	Female	0.593	0.629	0.465	0.468
EDUCATION	Primary	0.242	0.548	0.249	0.269
	Mid level (Upper Secondary)	0.671	0.360	0.667	0.560
	Tertiary	0.088	0.092	0.084	0.171
ECONOMIC STATUS	Working full-time	0.690	0.409	0.002	0.002
	Working part-time	0.092	0.027	0.000	0.000
	Unemployed	0.009	0.161	0.935	0.130
	Pupil, student, trainee	0.000	0.295	0.000	0.000
	Retirement	0.084	0.000	0.000	0.445
	Disabled/unfit for work	0.035	0.000	0.000	0.266
	Domestic tasks	0.042	0.026	0.062	0.012
	Other inactive	0.049	0.082	0.000	0.146
HOUSEHOLD COMPOSITION	One adult	0.092	0.009	0.090	0.313
	Two adults	0.076	0.034	0.040	0.411
	Single parent	0.055	0.007	0.039	0.008
	Two adults, some children	0.186	0.120	0.212	0.044
	Three and more adults, some or no children	0.590	0.830	0.618	0.224
WORKERS	1 working adult	0.588	0.388	0.363	0.077
	2+ working adults	0.412	0.422	0.112	0.001
	No working adult	0.000	0.190	0.524	0.922
CHILD	No	0.883	0.721	0.902	0.988
	Yes	0.117	0.280	0.100	0.012
JOB LOSS	No	0.942	0.994	0.251	0.980
	Yes	0.058	0.006	0.749	0.020
COVARIATES					
POVERTY	Persistent	0.246	0.269	0.323	0.436
	Recurrent	0.188	0.336	0.241	0.228
	Transient	0.566	0.395	0.435	0.336
NUMBER OF YEARS AT-RISK-OF-POVERTY	1 year	0.424	0.277	0.317	0.205
	2 years	0.254	0.224	0.257	0.197
	3 years	0.178	0.342	0.207	0.211
	4 years	0.144	0.157	0.220	0.387
	Mean	2.042	2.379	2.330	2.781

Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012– DG EMPL calculations.

Table A9: Netherlands – Longitudinal data (individuals at-risk-of-poverty at least once)

		Cluster 1	Cluster 2	Cluster 3
	Cluster Size	0.452	0.293	0.255
INDICATORS				
AGE	18-24 y.o.	0.187	0.470	0.439
	25-44 y.o.	0.619	0.026	0.004
	45-64 y.o.	0.195	0.504	0.557
GENDER	Male	0.394	0.595	0.510
	Female	0.606	0.405	0.490
EDUCATION	Primary	0.235	0.377	0.451
	Mid level (Upper Secondary)	0.502	0.500	0.493
	Tertiary	0.264	0.124	0.057
ECONOMIC STATUS	Working full-time	0.362	0.002	0.379
	Working part-time	0.458	0.002	0.419
	Unemployed	0.000	0.126	0.000
	Pupil, student, trainee	0.053	0.337	0.068
	Retirement	0.000	0.083	0.000
	Disabled/unfit for work	0.000	0.215	0.001
	Domestic tasks	0.126	0.212	0.092
	Other inactive	0.000	0.024	0.041
HOUSEHOLD COMPOSITION	One adult	0.225	0.431	0.002
	Two adults	0.161	0.420	0.349
	Single parent	0.278	0.013	0.001
	Two adults, some children	0.335	0.123	0.088
	Three and more adults, some or no children	0.001	0.014	0.559
WORKERS	1 working adult	0.943	0.004	0.184
	2+ working adults	0.055	0.002	0.803
	No working adult	0.003	0.994	0.013
CHILD	No	0.885	1.000	1.000
	Yes	0.110	0.000	0.000
JOB LOSS	No	0.990	1.000	1.000
	Yes	0.010	0.000	0.000
COVARIATES				
POVERTY	Persistent	0.239	0.525	0.175
	Recurrent	0.024	0.172	0.122
	Transient	0.737	0.304	0.702
NUMBER OF YEARS AT-RISK-OF-POVERTY	1 year	0.533	0.230	0.627
	2 years	0.205	0.172	0.185
	3 years	0.165	0.246	0.022
	4 years	0.097	0.352	0.166
	Mean	1.826	2.720	1.728

Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012– DG EMPL calculations.

Table A10: United Kingdom – Longitudinal data (individuals at-risk-of-poverty at least once)

		Cluster 1	Cluster 2	Cluster 3	Cluster 4
	Cluster Size	0.315	0.264	0.240	0.181
INDICATORS					
AGE	18-24 y.o.	0.057	0.051	0.445	0.392
	25-44 y.o.	0.215	0.501	0.088	0.414
	45-64 y.o.	0.728	0.447	0.467	0.195
GENDER	Male	0.565	0.645	0.462	0.072
	Female	0.435	0.355	0.538	0.928
EDUCATION	Primary	0.392	0.204	0.173	0.216
	Mid level (Upper Secondary)	0.447	0.518	0.606	0.663
	Tertiary	0.161	0.278	0.221	0.121
ECONOMIC STATUS	Working full-time	0.001	0.774	0.475	0.002
	Working part-time	0.000	0.216	0.291	0.181
	Unemployed	0.324	0.001	0.049	0.001
	Pupil, student, trainee	0.001	0.000	0.121	0.210
	Retirement	0.206	0.000	0.000	0.000
	Disabled/unfit for work	0.361	0.001	0.019	0.017
	Domestic tasks	0.064	0.000	0.039	0.588
	Other inactive	0.043	0.008	0.006	0.001
HOUSEHOLD COMPOSITION	One adult	0.239	0.161	0.000	0.000
	Two adults	0.344	0.238	0.157	0.069
	Single parent	0.053	0.061	0.000	0.290
	Two adults, some children	0.179	0.492	0.168	0.537
	Three and more adults, some or no children	0.185	0.048	0.675	0.103
WORKERS	1 working adult	0.146	0.670	0.093	0.519
	2+ working adults	0.001	0.330	0.905	0.061
	No working adult	0.853	0.001	0.002	0.420
CHILD	No	0.977	0.891	1.000	0.739
	Yes	0.023	0.109	0.000	0.260
JOB LOSS	No	0.860	0.951	1.000	1.000
	Yes	0.140	0.049	0.000	0.000
COVARIATES					
POVERTY	Persistent	0.314	0.151	0.074	0.272
	Recurrent	0.193	0.082	0.056	0.210
	Transient	0.494	0.767	0.870	0.517
NUMBER OF YEARS AT-RISK-OF-POVERTY	1 year	0.351	0.589	0.681	0.343
	2 years	0.262	0.235	0.245	0.284
	3 years	0.161	0.103	0.049	0.239
	4 years	0.227	0.073	0.026	0.135
	Mean	2.263	1.661	1.420	2.165

Source: EU-SILC LONGITUDINAL UDB 2009 – version 2 of March 2012– DG EMPL calculations.

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Chapter 3

Social protection systems confronting the crisis[1]

1. Introduction

Social protection is at the heart of the so called European Social Model. Social protection expenditure plays a redistributive role over the lifecycle (spending on pensions) and across income groups, and also has a preventive role by insuring individuals and their families against different risks (spending related to the labour market, such as unemployment benefits and childcare, or related to health, such as provision of health care, sickness and disability benefits). This way, it helps to cushion against poverty and the financial implications of social risks. Social transfers and other automatic stabilisers help to maintain household purchasing power and demand in the event of macroeconomic shocks.

In recent years, sluggish economic growth in the EU together with increasing public indebtedness have led a number of Member States to implement fiscal cuts, including in the area of social protection. Following an increase in the overall level of social protection expenditure in the aftermath of the crisis, also linked to the adoption of exceptional fiscal stimulus measures across the EU, between 2009 and 2011 social protection expenditure decreased slightly in real terms on average. This, however, masks significant differences between Member States: while expenditure decreased by up to 14% in real terms in Greece and Lithuania, increases in social protection spending were much more moderate (by up to 6% only in Malta and Cyprus).

Cuts in social protection spending were made in a situation when the economic and labour market conditions, with declines in employment and increasing unemployment, were not favourable for maintaining people's purchasing power. This reopened the debate about the effectiveness and efficiency of social protection spending and its role in smoothing the business cycle.

The purpose of this Chapter is to contribute to the understanding of how EU Member States' welfare systems reacted to the crisis, how social protection spending contributes to smoothing the business cycle thanks to automatic stabilization and discretionary measures and whether social protection benefits are provided in an effective and efficient way.

The analysis shows that there are great differences between the Member States' social protection systems, both in terms of size and composition of spending and in terms of the reaction of spending to the business cycle in general and to the recent crisis in particular. However, on average in the first years of the crisis (2008 and 2009), social protection spending helped to sustain households' disposable incomes.

Regarding the effectiveness and efficiency of spending on social protection, large differences between Member States are also prevalent, both in terms of poverty reduction and labour-market friendliness. Active labour market policies are shown to have a positive influence on employment rates, especially for certain population groups, and the same holds for childcare services and the employment rate of women in particular.

Section 2 provides an overview of the EU Member States' protection systems, tackling the size and composition of social protection spending and also its evolution and sources of financing. Section 3 looks at social protection expenditure from the perspective of its role as a stabilisation tool in the economy, both in general in relation to the business cycle and in the recent crisis. Section 4 investigates whether funds are spent on social protection in an effective and efficient way, both in terms of poverty reduction and in terms of labour-market friendliness.

2. Social protection systems in EU Member States

Social protection systems in EU Member States are very diverse, given their different history, demographic and other socio-economic conditions, level and design/composition of welfare spending and other institutional conditions, also reflecting the different emphasis the respective national social models put on the various elements of social spending. This Section provides a comprehensive overview of the size of welfare states in the EU and the composition of social protection spending (not only by function, but also by type and conditionality of provision). It also groups Member States based on spending evolution and finally provides an insight into the financing of social protection systems.

Information on the data sources used in this Chapter is provided in Box 1.

[1] By Tereza Vyprachticka, Andrea Garnero.

Box 1: Data sources

The two main data sources used in this analysis are the European System of Integrated Social Protection Statistics (ESSPROS) and the Annual Macro-Economic database (AMECO).

The data on social protection expenditure and receipts have been compiled by Eurostat in accordance with the methodology of the European System of Integrated Social Protection Statistics 'ESSPROS Manual 2011'. Social protection is defined as encompassing *'all interventions from public and private bodies intended to relieve households and individuals of the burden of a defined set of risks or needs, provided that there is neither a simultaneous reciprocal nor an individual arrangement involved'*. As such, the field of observation of the ESSPROS goes beyond that of social security (i.e. social protection offered or imposed by government) to include benefits provided by private social protection schemes, in so far as they have similar effects to social security for the beneficiary. Social protection expenditure includes social benefits, classified by function, and administrative and other costs incurred by social protection schemes. These data are currently available for up until 2009 and in gross terms. An exercise to provide net data as well has been the subject of pilot programmes and is now in the regulation process.

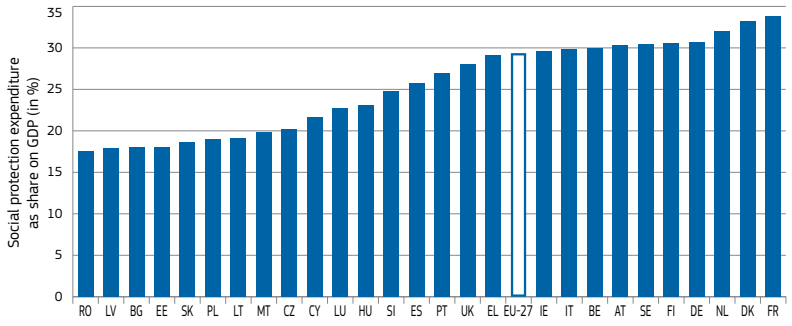
The AMECO database is based on National Accounts. Data on social protection expenditure extracted from this database (available as 'Social transfers in kind' and 'Social benefits other than social transfers in kind') are in accordance with the European System of Accounts 1995 (ESA95). Generally speaking the results for total expenditure on social protection is somewhat higher than in the ESSPROS. The main differences are that, first, National Accounts also include the function of Education in social protection expenditure; second, while the ESSPROS covers both current and capital transfers, National accounts only cover current transfers; third, the treatment of certain reductions on taxes and other obligatory levies payable by households is accounted in a different way by the ESSPROS and National Accounts. For more details on the main differences compared with the European System of Integrated Social Protection Statistics (ESSPROS) in the way social benefits in cash and in kind are distinguished please refer to the Manual on sources and methods for the compilation of COFOG Statistics, page 65-66, Eurostat, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-07-022/EN/KS-RA-07-022-EN.PDF

2.1. Size of social protection spending

The size of social protection spending varies greatly between EU Member States (see Chart 1). Expenditure is the lowest relative to GDP in EU-12[2] countries such as Romania, Latvia and Bulgaria (around 18% in 2010) and the highest in EU-15[3] countries such as France and Denmark (above 33% in 2010). At EU level, social protection expenditure accounts for a little under 30% of GDP. While all EU-15 countries (except Luxembourg) spent at least 25% of their GDP on social protection in 2010 (Spain spent nearly 26%, followed by Portugal, the UK and Greece), all EU-12 countries spent less than this (the highest spending being recorded in Slovenia, Hungary and Cyprus).

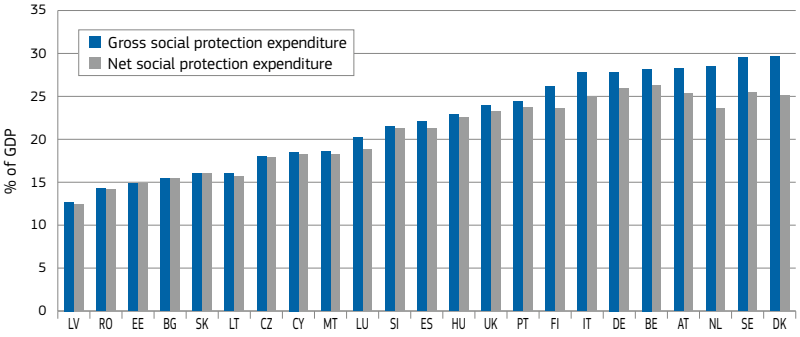
The figures in Chart 1, however, do not take into account taxes levied on social protection benefits or tax breaks with a social purpose. Data provided by Eurostat take account of taxes levied on social protection benefits (not, however, the tax breaks with a social purpose) and, when these are accounted for, the picture changes especially for high-spending countries, with the highest level of social protection expenditure being observed in Belgium, Germany and Sweden (see Chart 2). Net expenditure reached around 26% of GDP in these countries in 2008. Differences between gross and net social protection expenditure in certain Member States need to be taken into account when interpreting the results of the analysis performed in this Chapter given that it is based on data concerning gross expenditure.

Chart 1: Social protection expenditure as share of GDP in EU Member States (2010, percentage of GDP)



Source: ESSPROS.

Chart 2: Gross/net social protection expenditure as share of GDP (2008)



Source: ESSPROS.

Note: Data is not available for: IE, EL, FR, IT, PL. Data is provisional for: EE, LU, SI.

(2) EU-12 are all Member States that joined the European Union in 2004 or later.

(3) EU-15 are all Member States that joined the European Union before 2004.

Details of the composition differences between gross and net expenditure (whether due to the taxation of social protection benefits, or tax breaks with social purposes[4]) are provided for certain EU Member States by the OECD (see Chart 3). Taxation of social protection benefits dominates in Nordic countries (Denmark, Sweden, Finland), in Italy and in Austria. On the other hand, in certain Central European countries (such as Slovenia and the Czech Republic) and in Portugal and Spain it is tax breaks with social purposes that dominate.

Another aspect to be considered is the relative importance of private social protection spending across the EU Member States. While it has almost no role in countries such as Estonia, the Czech Republic, Poland or Spain, it can represent more than 5 % of GDP in others, such as the Netherlands and the United Kingdom. In the United States it is even higher, adding an extra 10 pps of GDP to public social protection expenditure. Differences between EU Member States can be clearly seen in Chart 4.

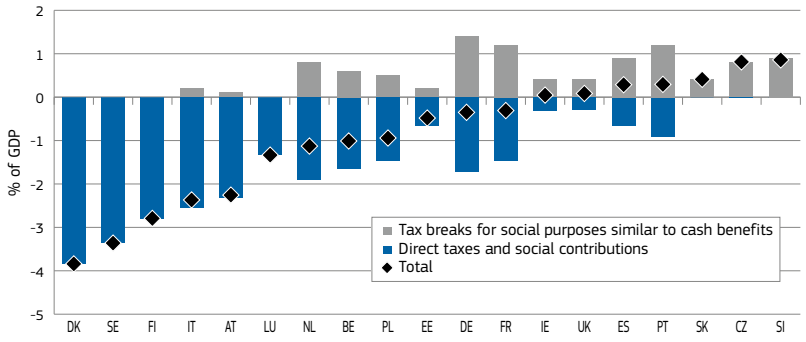
The pattern of social protection expenditure relative to GDP can look quite different however when it is expressed in purchasing power standard[5] (PPS) per inhabitant (see Chart 5), and this needs to be taken into account when drawing conclusions from the analysis of social protection spending as share of GDP.

In effect, countries that have very different levels of social protection expenditure relative to GDP may actually spend similar amounts per capita in PPS terms. For example, while Cyprus, Slovenia and Portugal have varying levels of social protection expenditure relative to GDP, ranging from 21 to 27 %, they all spend slightly more than 5 000 euro in PPS per head. A similar pattern is seen in the case of Germany, France and Belgium, where expenditure ranges from 29 to 34 % of GDP, but they all spend a similar amount, around 8 800 euro, in PPS per head.

(4) Such as child tax allowances or tax breaks stimulating the provision of private benefits (e.g. tax relief towards the provision of private health plans). Pensions-related tax breaks are not taken into account.

(5) Also known as Purchasing Power Parity (PPP). This method takes into account that different amounts of money might be needed in two different countries to purchase the same goods.

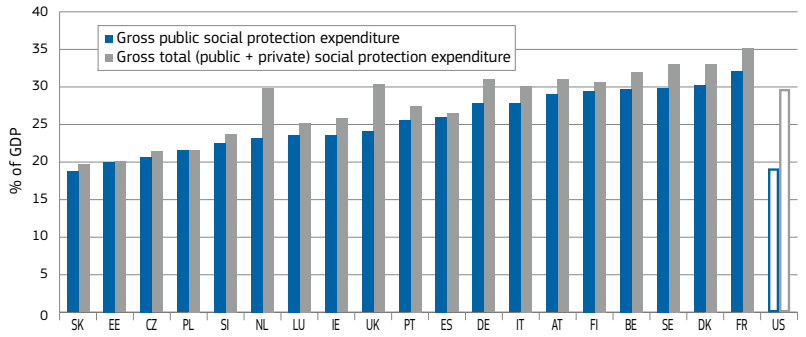
Chart 3: Details of the impact of the tax system on social protection expenditure relative to GDP (2009)



Source: OECD (2012).

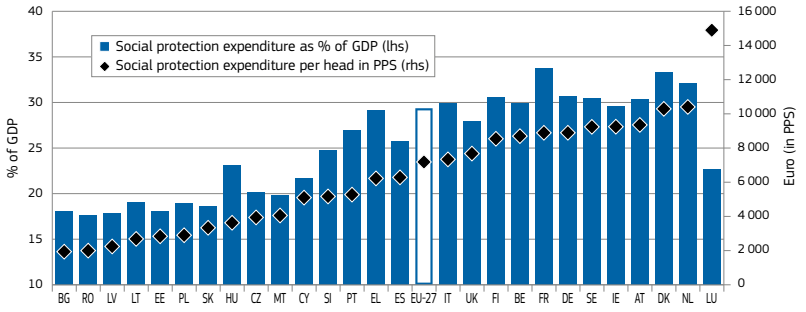
Note: Account is taken of direct taxes and social contributions levied on gross public social expenditure and of tax breaks with social purposes.

Chart 4: Gross public and gross total (public and private) social protection expenditure (2009)



Source: OECD (2012).

Chart 5: Comparison of social protection expenditure expressed relative to GDP and in PPS per inhabitant (2010)



Source: ESSPROS.

Note: Luxembourg has to be considered as an outlier as cross-border workers constitute a large share of the country's labour force and benefit recipients but they are not counted in the denominator of the ratio, as only the resident population is considered.

Other, less extreme, examples include Spain and Greece, where spending is 6 200 euro in PPS per head, but as share of GDP it is 26 and 29%, respectively, and Ireland and Sweden, where spending is around 9 200 euro in PPS per head, but relative to GDP it is 29.6 % and 30.4 %, respectively. In the case of the Netherlands and Denmark, the latter spends over 33 % of GDP on social protection (the second highest in the EU), which is more than 1.2 pp higher than in the Netherlands. However, in the Netherlands, spending is 100 euro higher than in Denmark at 10 400 euro in PPS terms per head (the highest in the EU if the special case of Luxembourg[6] is set aside).

(6) See note to Chart 5.

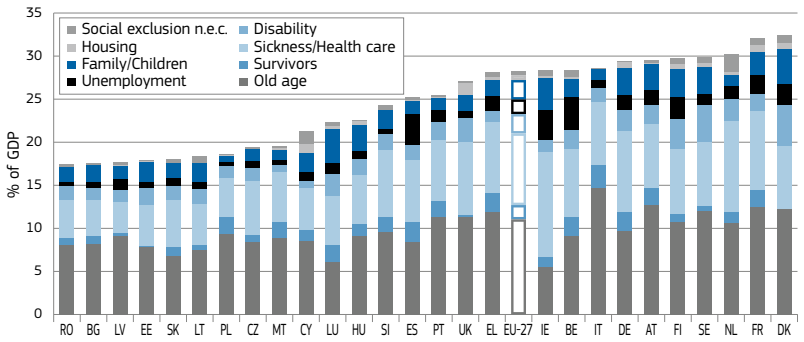
2.2. Composition of social protection spending

Social protection spending can be analysed from different angles. First, in terms of area of spending (i.e. by function); second, in terms of whether given benefits are provided to the recipients in cash or as a service in kind (i.e. by type of provision); and third, in terms of whether the provision of the benefits is universal or targeted to a certain population group or conditional upon the income or wealth of the recipients not exceeding a given amount (i.e. by conditionality of provision). This Sub-section looks at social protection spending from all these points of view.

2.2.1. By function

The composition of social protection spending differs significantly between Member States. First, Box 2 provides an overview and clarification of what are the spending functions of ESSPROS, including some examples of benefits. Then, an analysis follows.

Chart 6: Expenditure on social protection benefits by function relative to GDP (2010)



Source: ESSPROS.

Chart 6 depicts the composition of social protection spending in EU Member States in 2010. On average at EU level, 11 % of GDP, or nearly 40 % of social protection expenditure, is spent on old age pensions. This varies a great deal, however, between Member States. In Ireland and Luxembourg, only around 6 % of GDP is spent on this function (accounting for 20 and 27 % respectively of total social protection benefits), while in Italy it amounts to nearly 15 % of GDP (which is 51 % of all social protection benefits). Part, but not all, of these expenditure differences are explained by differences in the share of population aged over 65, as shown in Chart 7.

In Chart 7 we can see that the higher the share of population aged over 65, the more Member States tend to spend on old-age pensions. However, large differences can be found between them: while in Italy and Germany the share of this population group is similarly high (above 20 %, which is also the highest value in the whole European Union), their spending on old-age pensions relative to GDP differs by nearly 5 pps, Italy spending more than 14 % of its GDP on this expenditure area.

Another country that devotes half of its social protection spending to old age pensions is Poland. These two countries (together with Malta) also spent the relatively highest share of all benefits on survivors' benefits. When old age and survivor benefits are added together, Italy and Poland are seen to devote more than 60 % of social protection expenditure to these ends. Ireland is at the other end of the spectrum, spending only 23 %, with the remaining Member States allocating between 36 % and 55 % of total expenditure on social benefits to these ends.

In the EU as a whole, expenditure on health care accounted for more than 8 % of GDP, or nearly 30 % of social protection expenditure, although it varied from 4 % of GDP in countries such as Latvia, Bulgaria and Romania to 12 % of GDP in Ireland and nearly 11 % of GDP

Box 2: ESSPROS spending functions

The broad functions, or areas of need and expenditure, that are distinguished in the ESSPROS classification system are defined as follows:

Old age: income maintenance and support in cash or kind (except health care) in connection with old age, includes, inter alia, old-age pensions and the provision of goods and services (other than medical care) to the elderly.

Survivors: income maintenance and support in cash or kind in connection with the death of a family member (e.g. survivor's pensions).

Sickness/health care: income maintenance and support in cash in connection with physical or mental illness, excluding disability. Health care intended to maintain, restore or improve health irrespective of the origin of the ailment, includes, inter alia, paid sick leave, medical care and the supply of pharmaceutical products.

Disability: income maintenance and support in cash or kind (except health care) in connection with the inability of people with physical or mental disabilities to engage in economic and social activities, includes, inter alia, disability pensions and the provision of goods and services (other than medical care) to the disabled.

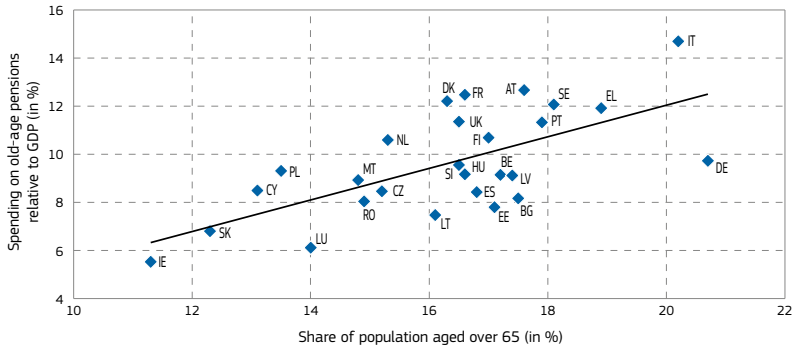
Family/children: support in cash or kind (except health care) in connection with the costs of pregnancy, childbirth and adoption, bringing up children and caring for other family members.

Unemployment: income maintenance and support in cash or kind in connection with unemployment, includes, inter alia, unemployment benefits and vocational training financed by public agencies.

Housing: help towards the cost of housing, includes interventions by public authorities to help households meet the cost of housing.

Social exclusion not elsewhere classified: benefits in cash or kind (except health care) specifically intended to combat social exclusion where they are not covered by one of the other functions, includes income-support benefits, rehabilitation of alcoholics and drug addicts, and various other benefits (other than medical care).

Chart 7: Relation between the share of population aged over 65 and spending on old-age pensions relative to GDP (2010)



Source: EUROSTAT – National data on demography and ESSPROS.

Note: Trend line: y = 0.663x – 1.143, R^2 = 0.442.

in the Netherlands. In terms of the share of health care expenditure relative to total social protection expenditure, however, it was less than 25 % in Latvia and Bulgaria, but also in Denmark, Sweden and Poland. On the other hand, Ireland devoted more than 43 % of its social protection expenditure to health care, followed by countries such as the Netherlands, Slovenia, the Czech Republic and Germany, whose shares ranged between 32 % and 35 %.

Spending on disability amounted to slightly more than 2 % of GDP on average in the EU, which was equivalent to nearly 8 % of all social protection benefits. In Denmark (which, together with Latvia, spends a smaller share of social protection benefits on health care than any other Member State) the share of spending on disability is the highest in the EU (15 %, or nearly 5 % of GDP). On the other hand, in Ireland (where the share of spending on health care is the highest in the EU) the share of expenditure on disability was one of the lowest (less than 5 %, or slightly more than 1 % of GDP, being lower only in Cyprus, Malta and Greece).

Family/child benefits accounted for a little over 2 % of GDP in the EU on average, or 8 % of all social protection benefits. The importance of this benefit varied considerably across Member States, ranging from around 1 % of GDP in Poland, Malta and the Netherlands (as share of all benefits it ranged from 4 to 6 %) to as high as 4 % in Denmark, Luxembourg and Ireland (as share of all benefits it was between 12 and 18 %). Lithuania and Hungary also belong among the Member States that devote a high share of benefits to the family/child function, but, relative to GDP, the size of this benefit was still quite close to the EU average.

Spending on unemployment benefits was below 2 % of GDP in the EU on average, or 6 % of all social protection benefits. It varied from less than 0.6 % of GDP in Poland, Malta and Romania (representing 2 to 3 % of all benefits) to nearly 4 % of GDP in Belgium, Spain and Ireland (representing 12 to 14 % of all benefits).

Spending on housing was a little above 0.5 % of GDP in the EU on average, or 2 % of expenditure on all social protection benefits. It was almost non-existent in Slovakia, Lithuania and Portugal, and the highest in Cyprus and the UK (more than 1 % of GDP, or more than 5 % of all benefits).

Spending on social exclusion remained below 0.5 % of GDP in the EU on average, or less than 1.5 % of all social protection benefits. It was the lowest in Italy, both relative to GDP and to all benefits (below 0.1 % and only 0.3 %, respectively) and the highest in the Netherlands at 2 % of GDP (accounting for 7 % of all benefits). In Cyprus the share of spending on social exclusion also reached more than 7 % of the size of all benefits.

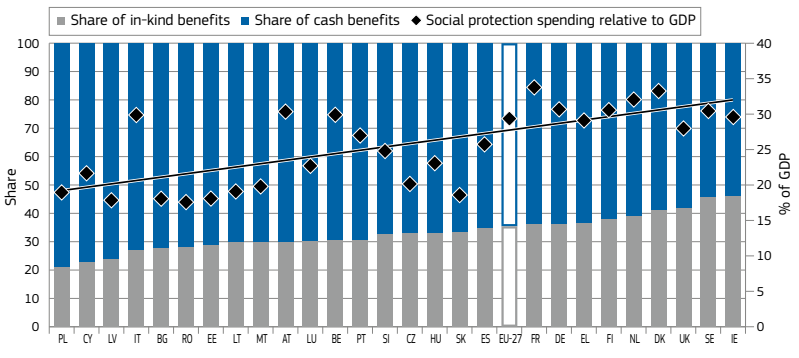
2.2.2. By type of provision

Another important aspect of social protection spending concerns how the given benefits are provided: either in cash or in the form of social services in kind.

In 2010 the average share of benefits provided in kind in the EU as a whole was 35 % (see Chart 8) although it varied greatly, from over 21 % in countries such as Poland, Cyprus and Latvia to more than 40 % in Denmark, the UK, Sweden and Ireland. Chart 8 also shows that it is usually Member States with larger welfare states that provide a higher share of benefits in kind.

It is notable that not all areas of social protection spending have the same composition in terms of their provision in cash and in kind. This is illustrated by Chart 9, which shows that compared to other Member States, Denmark and Sweden provide a significantly higher proportion of their old age and disability benefits relative to GDP in the form of services in kind. In terms of unemployment benefits the highest share provided in kind is in Greece and Austria, while the highest share of funds intended to address social exclusion that are provided in kind is in the Netherlands, Finland, Sweden and Greece.

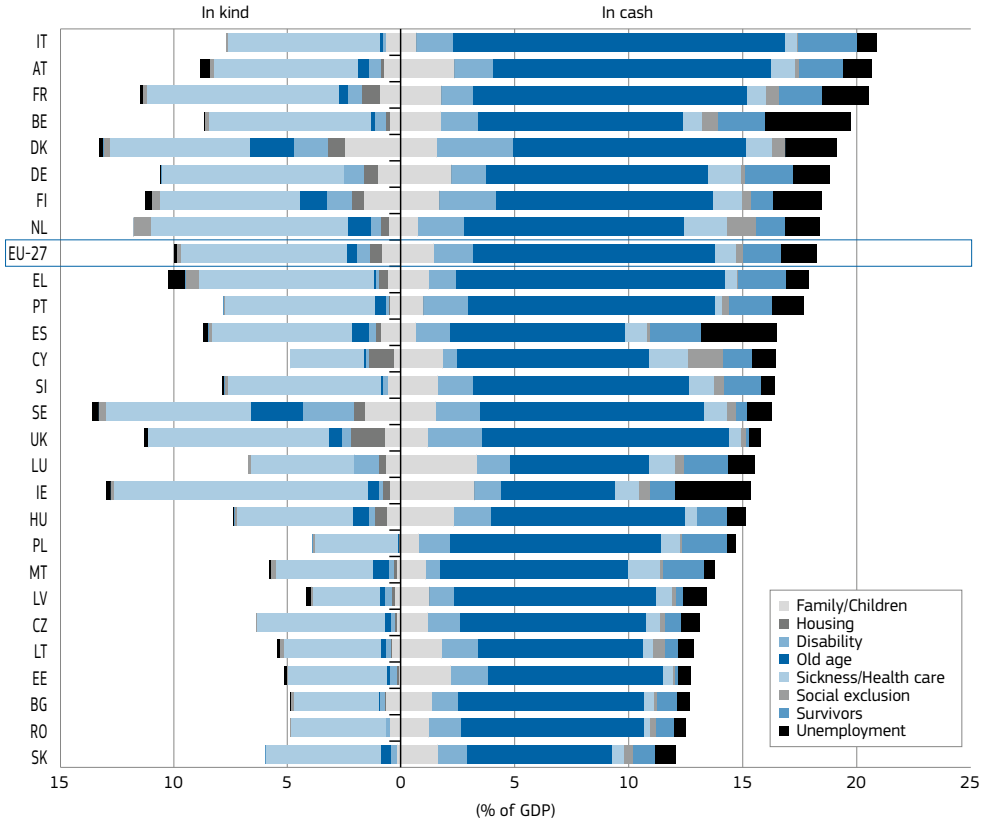
Chart 8: Composition of gross social protection expenditure: share of cash and in-kind benefits and its relation to the size of spending on social protection benefits relative to GDP (2010)



Source: ESSPROS.

Note: Trend line: y = 0.467x + 18.583, R^2 = 0.488.

Chart 9: **Composition of social protection expenditure by function and by type of provision (in cash/in kind) relative to GDP (2010)**



Source: ESSPROS.

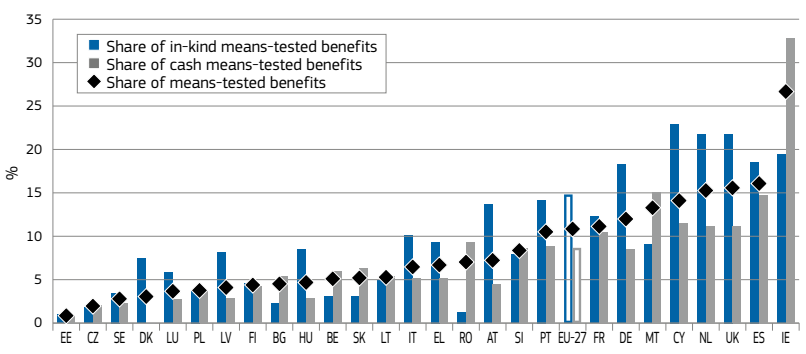
2.2.3. By conditionality of provision

The provision of social protection benefits can be universal or conditional/targeted. In the EU on average nearly 11% of all benefits were means-tested in 2010 (see Chart 10). However, when the distinction is made between in-kind and cash benefits, means-testing is seen to be more common with respect to the provision of in-kind benefits (nearly 15% of these were means-tested, compared to 9% in the case of cash benefits). When comparing Member States in terms of the size of social protection benefits provided after means-testing, one has to bear in mind that different means-tested schemes can correspond to very different levels of targeting, depending on the level of the means test in comparison with average income.

The Member States in which benefits are means-tested the least are Estonia and the Czech Republic, with no great differences between cash and in-kind benefits. At the other end of the spectrum is Ireland where more than 26% of social protection benefits are means-tested.

The countries where the difference in the share of cash and in-kind benefits that are means-tested is highest are Ireland, where the share of cash benefits that are means-tested is 13 pps higher than for in-kind benefits, and Cyprus, the UK and the Netherlands, where the share of in-kind benefits that are means-tested is 11 pps higher than for cash benefits.

Chart 10: **Share of means-tested benefits on total gross expenditure on social protection benefits, also separately for cash and in-kind benefits (2010)**

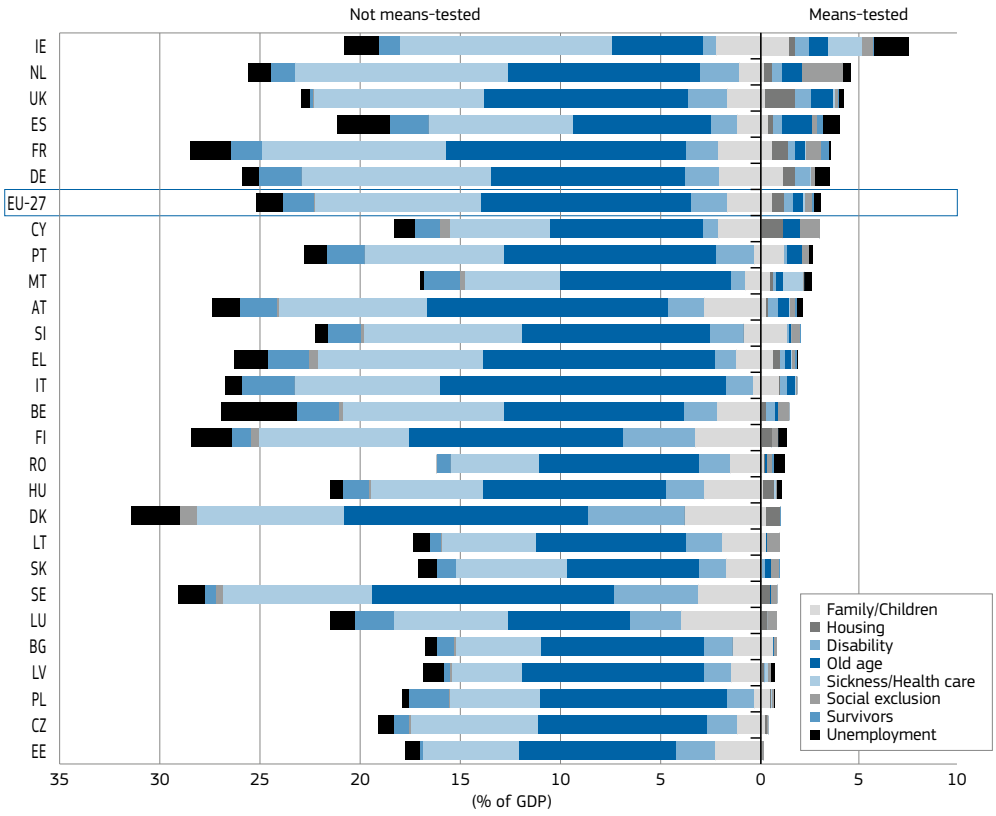


Source: ESSPROS.

Equally large differences in the extent of means-testing can be seen with respect to the different functions of social protection spending (see Chart 11). Some types of social protection benefits are more likely to be provided after means-testing (such as housing benefits in all EU Member States, or social exclusion expenditure in Member States such as the Netherlands, Cyprus, France and Lithuania). However, in the case of most other functions, means-testing tends to be only partial or absent.

In terms of old-age benefits, Spain, the UK and the Netherlands provide benefits

Chart 11: Composition of social protection expenditure by function and conditionality (means-tested/not means-tested) relative to GDP (2010)



Source: ESSPROS.

equivalent to more than 1% of GDP only after means-testing, being closely followed by Ireland. Survivors' benefits are most often means-tested in France and Spain. In terms of health care, Ireland and Malta means test nearly 2 and 1% of GDP of these benefits, respectively. Disability benefits are especially means-tested in the UK, Germany and Ireland (more than 0.7% of GDP).

Ireland provides unemployment benefits equivalent to 1.8% of GDP conditional upon the means of the recipients, followed by Spain and Germany with more than 0.8%. Family benefits are not means-tested in Estonia, Luxembourg and Sweden. Housing benefits are only considered part of social protection when means-tested; therefore this type of benefit is means-tested in all Member States. The country that provides significantly more benefits targeted on social exclusion than any other Member State without means-testing is Denmark (with 0.9% of GDP).

The size of administration expenditure relative to total social protection spending varies a lot across Member States (from 1% in Romania and Estonia to more than 4% in Ireland, France and the Netherlands). Often countries with a higher share of means-tested benefits tend to have relatively higher administration costs.

2.3. Evolution of social protection expenditure in time

This Section considers the evolution of EU Member States' social protection expenditure over time. This reflects many different aspects of economic development: demography (e.g. ageing of populations affects spending on old-age functions), economic cycle (e.g. increase in unemployment affects spending on unemployment benefits) and reforms.

For this purpose countries are grouped based on classification available in the literature (such as Esping-Andersen (1990), Bonoli (1997) or Korpi & Palme (1998)). The five groups are the following:

- Southern Member States (Greece, Italy, Portugal and Spain).
- Nordic and Anglo-Saxon Member States (Denmark, Finland, Sweden, the Netherlands, the United Kingdom and Ireland).
- Western continental Member States (Austria, Belgium, Germany, France and Luxembourg).
- Baltic Member States and South-Eastern Europe (Estonia, Lithuania, Latvia, Bulgaria and Romania).
- The Eastern continental Member States (Cyprus, the Czech Republic, Hungary, Malta, Poland, Slovenia and Slovakia).

Chart 12 shows the development in the size of social protection expenditure relative to GDP of all these groups of Member States. It seems that the recent crisis has speeded up the convergence of the size of social protection expenditure relative to GDP in the EU. Table 9 in the Annex provides a detailed view of this development by spending function. Six of these countries, chosen based on the variation of different spending functions, are depicted in Chart 13.

In the Southern Member States in the 1990s social protection spending was usually lower than 25% of GDP and stayed below the EU average. While in Spain and Italy it was relatively stable during this decade, in Portugal and Greece it was on the increase. Since 2000, spending relative to GDP has grown in all countries and mostly stabilized in 2010. In Italy it has even risen above the EU average.

In all countries in this group old age and survivors' benefits played a significant role both in times of increasing and decreasing overall expenditure. In Italy their role was the most significant. Only in Spain were unemployment benefits even more variable. In the recent years, it was especially spending on pensions and health care that increased the most, except in Spain where a very large increase was in unemployment benefits.

In the Nordic and Anglo-Saxon Member States, after an increase in spending at the beginning of the 1990's, expenditure dropped until 2000. Until 2007 it stayed relatively stable and then it rose during the crisis. In 2010, spending relative to GDP stabilized in Denmark, rose in the Netherlands and Ireland and decreased in Sweden and the UK. Social protection spending was usually higher in these countries than in the EU as a whole, except for Finland and the United Kingdom in 2000's, and Ireland until 2009.

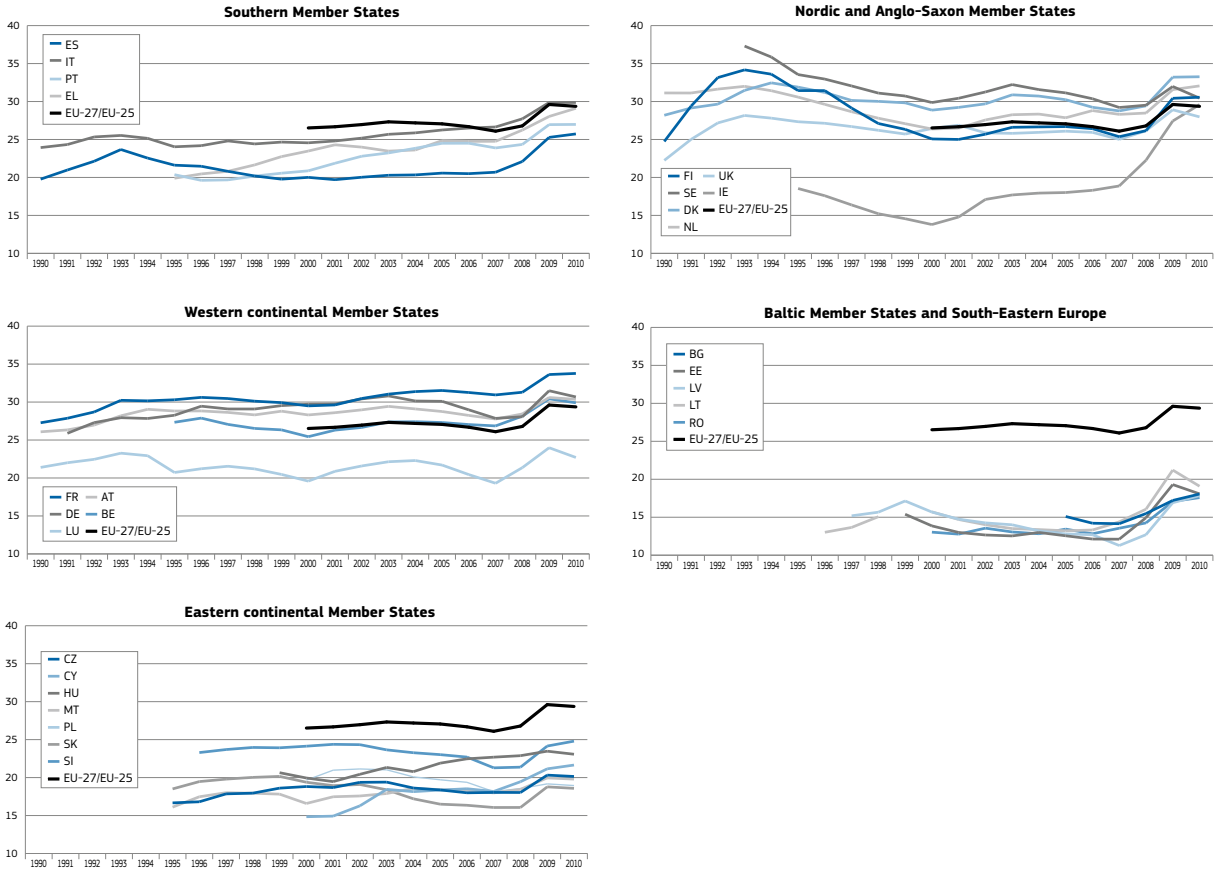
In the Nordic countries, most benefits varied in both directions. In Finland very important changes were in unemployment benefits, followed by changes in old age and survivors' benefits. Also changes in disability benefits were significant. In this country together with Sweden, often there were relative decreases in spending on child benefits. In the UK and Ireland old age and survivors' benefits, together with health care, had a prominent role in changing social protection expenditure. In the crisis years 2008 and 2009 it was spending on pensions and health care that particularly increased (in Ireland health care played a more important role than anywhere else), and the largest increase in unemployment benefits was seen in Finland in 2009 and Ireland in 2010.

In the Western continental Member States, social protection expenditure rose relative to GDP in the 1990's in France, Germany and Austria, while remaining rather stable in Belgium and Luxembourg. Social protection expenditure fell from 2003 until the beginning of the crisis in all countries, except for France where it continued to rise. In 2010, social protection expenditure decreased as a share of GDP in all these countries with the exception of France.

In all Western continental Member States there has been no particularly interesting development in any of the spending functions since the 1990's. Concerning child benefits, given their relatively small share in total spending, their developments had a relatively significant role in Austria. In the crisis years 2008 and 2009 the highest increases were observed in pensions and health care benefits. On the other hand, in 2010 in most countries spending on these functions has decreased, except for France and Luxembourg.

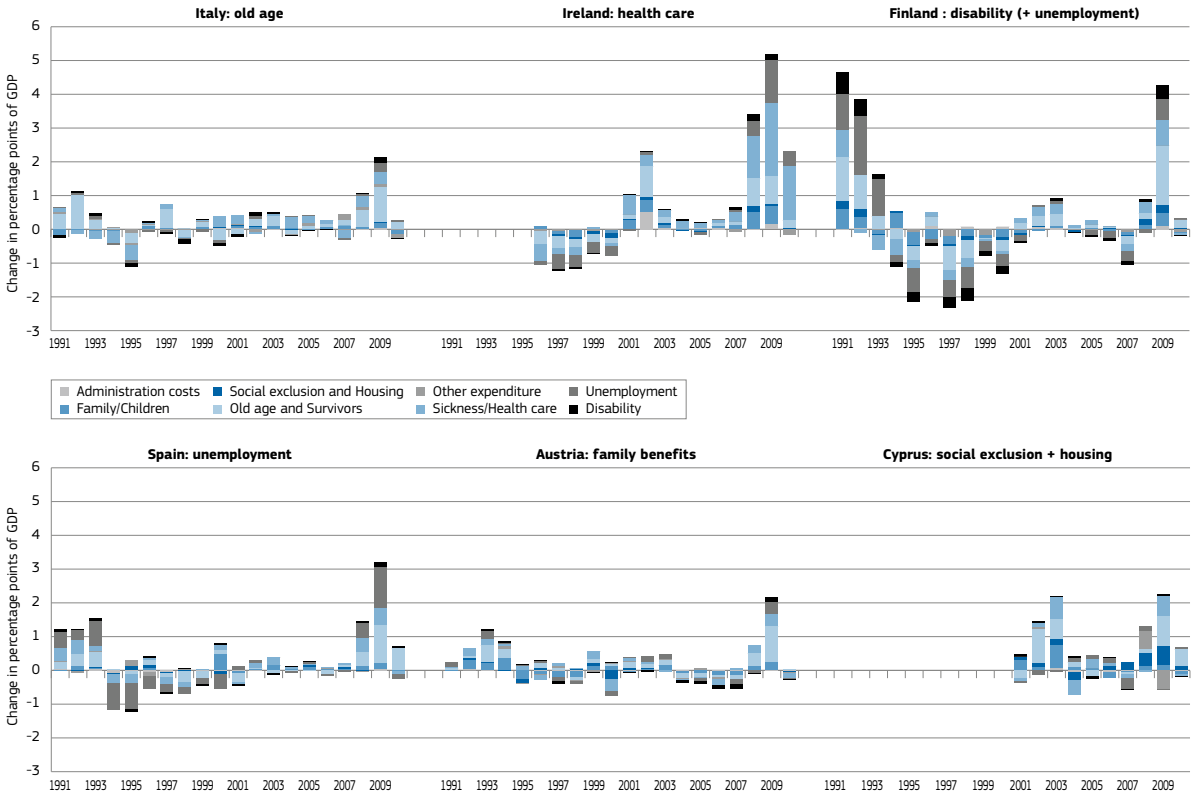
In the Baltic Member States and South-Eastern Europe, although the level of social protection spending relative to GDP was more than 10 pps below the EU average, it did not increase until the

Chart 12: Evolution in social protection expenditure relative to GDP (1990-2010) by groups of Member States



Source: ESSPROS.

Chart 13: Changes in social protection expenditure relative to GDP by function (1990-2010), illustration of Member States with particular changes by function



Source: ESSPROS.

crisis years. On the contrary: in the Baltic states it was actually decreasing in the first half of the 2000's and the very high increase in social protection spending relative to GDP between 2007 and 2009 can largely be attributed to the developments in GDP in these countries (there was a fall in GDP as high as 10-20%). In 2010, social protection spending relative to GDP decreased again in Lithuania and Estonia.

In the Baltic States especially, pensions were the cause of the decrease in expenditure, together with health care expenditure in Estonia and Lithuania. In the Baltic States in the crisis years 2008 and 2009, these areas of expenditure rose significantly, as did unemployment benefits. In 2010, pensions only rose in Latvia, and health care benefits decreased in all the three countries. In Lithuania also pensions fell significantly. In both Bulgaria and Romania there was a rise in pensions and to a lesser extent in health care expenditure in the crisis years. However, unlike Romania, Bulgaria reduced its health care spending in 2009.

While in some of the Eastern continental Member States social protection spending compared to GDP was rising even before the crisis years (in Cyprus, the Czech Republic, Hungary and Malta), it was declining in Poland, Slovenia and Slovakia. However, it also rose in these three countries in 2008 and 2009. In 2010, social protection spending only continued to rise in Slovenia and Cyprus, and for this entire group of countries except for Slovenia, expenditure remained at least 5 pps below the EU average.

In all countries of this group, pensions and health-care expenditure played a significant role, both in causing expenditure to rise and fall. In Cyprus, social exclusion and housing benefits were steadily rising. On the other hand, family benefits were often decreasing in Malta and Slovakia. In Poland this was the case with disability benefits. In the recent years, pensions and health care expenditure increased significantly relative to GDP in most countries in this group. In Cyprus and Slovenia this was complemented by social exclusion benefits, and in the Czech Republic and Slovakia (and to some extent in Slovenia) by unemployment benefits.

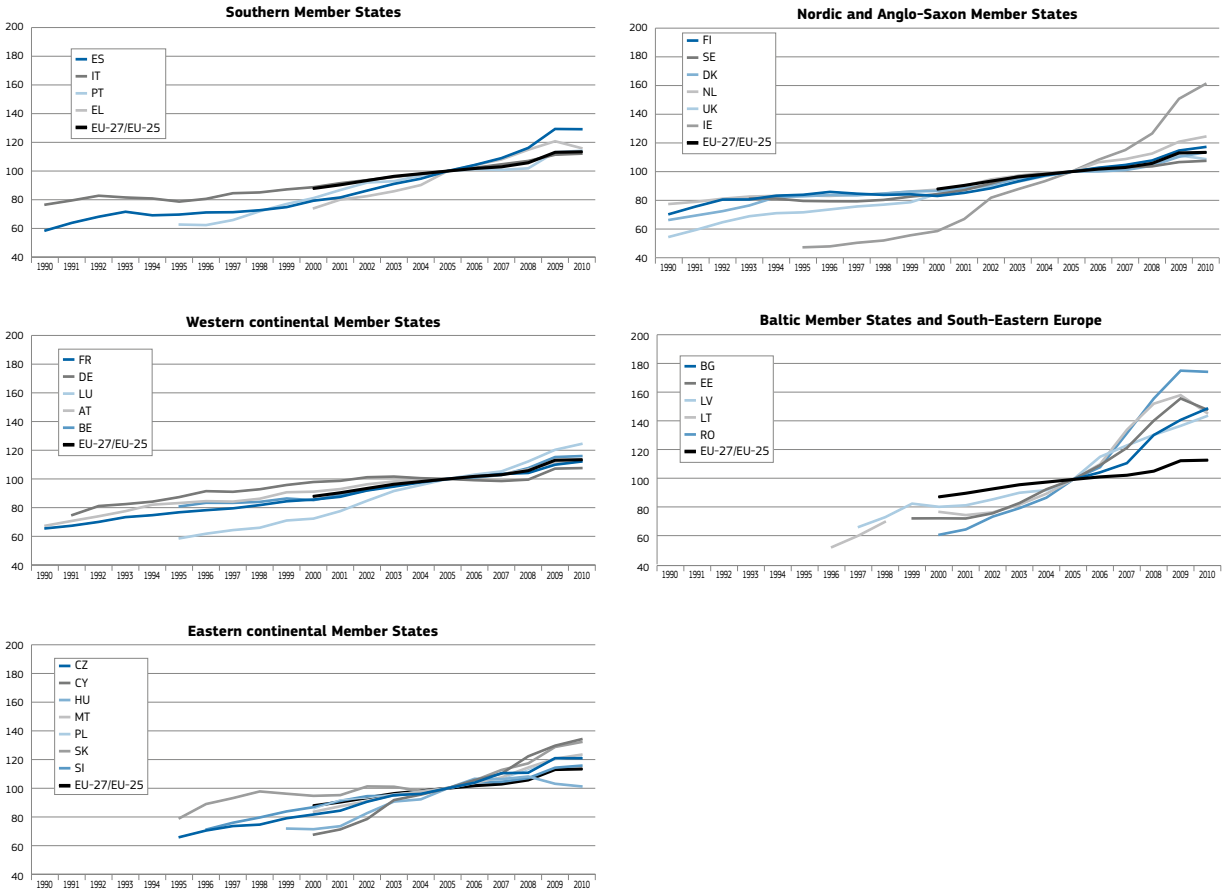
Given that EU Member States had varying growth rates throughout the whole period and had very different GDP shocks during the crisis, it is also important to have a look at the development in real social protection expenditure (Chart 14).

Compared with Chart 12, in the Southern Member States the picture changes particularly for Spain: in real terms social protection expenditure has grown significantly. Relative to GDP, it was not growing significantly from 1990 until the start of the crisis, but this was due to the economic growth in this country. During the crisis the growth in real spending was the highest for Spain, which made it converge closer to the EU average. Real expenditure stayed stable in 2010 in all countries but Greece where it decreased.

The developments in social protection expenditure were very homogenous for the Nordic and Anglo-Saxon Member States, with the exception of Ireland, which has been catching up with the other countries and in 2010 reached the EU average in terms of spending relative to GDP. In most of these countries real social protection expenditure was rising, while relative to GDP there have also been declines. This is most significant in the case of Ireland, which clearly stands out in terms of the growth in real expenditure. The only country where real expenditure decreased in 2010 is the UK.

In the group of Western continental Member States expenditure was rising only slightly relative to GDP and slowly in real terms. Only in Luxembourg was real expenditure growing much more than in the other countries belonging to this group.

Chart 14: Evolution of real social protection expenditure (national currencies in constant prices, indexed (100 in 2005), 1990-2010) by groups of Member States

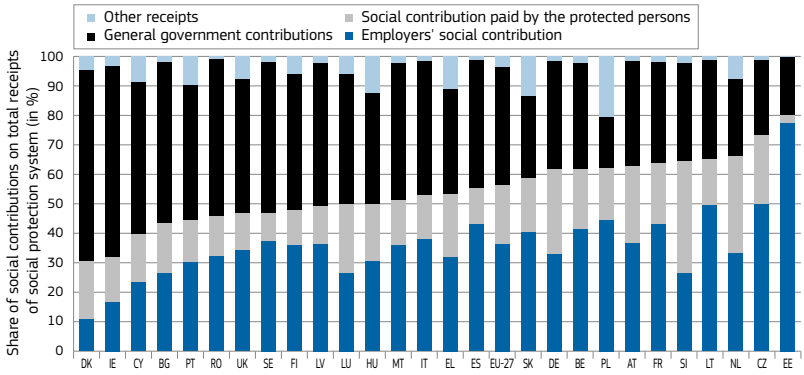


Source: ESSPROS.

Social protection expenditure relative to GDP was stagnating in the Baltic Member States and Bulgaria and Romania, but this was due to their high economic growth. When looked at in real terms, expenditure was rising very steeply in these countries, most quickly in Romania and Lithuania. In 2010 it, however, decreased in Lithuania, Estonia and Romania.

In the Eastern continental Member States, social protection spending also stagnated relative to GDP. However, in real terms it was growing, at a similar pace as in the Southern Member States. In Hungary real expenditure declined in both 2009 and 2010.

Chart 15: The structure of social protection financing by source (2010)



Source: ESSPROS.

Note: Countries are ranked in ascending order by share of social contributions in total receipts.

2.4. Sources of finance

Across the EU, social protection spending is, to a large extent, financed through contributions from wages paid by employers and employees, plus other contributions from other protected people, such as the self-employed and pensioners. In 2010, social contributions accounted for 56% of all social protection receipts (Chart 15); general government contributions financed through taxes represented 40% of the total. The EU average masks large national differences in the structure of social protection funding. Different financing structures obviously can have different economic and redistributive impacts (for more details see Chapter 4); the analysis of these is, however, not in the scope of this Chapter. Denmark and Ireland finance social spending mainly through general taxes; in the remaining countries, social contributions paid by employers and employees play a far more important role, up to more than 65% of total receipts in Lithuania, the Netherlands, the Czech Republic and Estonia.

Other receipts[7] are relatively more important, with a share of 10% in the total or more, in Poland, Slovakia and Greece.

Over the period 2000 to 2010, in the EU as a whole, the share of social contributions in total receipts continued to decline, from 61% in 2000 to 56% in 2010. This drop was particularly evident in Romania, Malta and Latvia (by more than 15 pps). On the other hand, the relative importance of contributions increased over the period by more than 5 pps in Lithuania, where it was counterbalanced by a decrease in the share of general Government contributions.

3. The macroeconomic stabilization role of social protection expenditure

One of the effects of the crisis has been to reopen the debate on the effectiveness and efficiency of social expenditures and fiscal policies as a tool of stabilisation of economic activity, including the relative merits of discretionary action as against automatic stabilisation. This Section looks at how social protection expenditure reacts to the business cycle, analysing in detail the spending functions separately. It also investigates how social spending developed during the crisis and to what extent it helped to maintain household purchasing power.

3.1. Social protection spending in the business cycle

There are two factors influencing the actual change in social protection expenditure: the operation of automatic stabilisers and discretionary measures. While discretionary fiscal policy actions require decisions and time for implementation, which makes them rather ineffective in tackling the immediate effects of a crisis, automatic stabilisers are much more timely and effective[8].

The discussion of the role of social protection and its role in smoothing the business cycle is particularly important in the euro area, where fiscal policy is the only macro-economic tool available to national governments[9] and where the room for discretionary policy is very tight since the new Fiscal Compact[10] sets a legally binding maximum structural deficit of 0.5% of GDP, while the maximum actual deficit cannot exceed 3% of GDP[11].

While automatic stabilisers are an established concept in the fiscal policy literature, there is no real consensus about their actual nature and their effectiveness. In't Veld et al. (2012) argue that differences in the final assessment of the working of automatic stabilizers reflect a basic disagreement over how the budget would look without automatic stabilisers (constant absolute revenues and spending, or constant deficit-to-GDP ratio, etc). Table 1 summarises the literature and shows that, despite different estimation methods and benchmarks used, the estimations lie around 10-20%.

Moreover, measuring the smoothing impact of automatic stabilisers is subject to a number of difficulties, and estimates based on macroeconomic data tend to differ in magnitude depending on the estimation approach chosen. Differences in estimations typically depend on the type of the fiscal stimulus and the selected approach, e.g. whether it is econometric-based (e.g. Gali, 1994; Fatas and Mihov, 1999) or model-based (Van den Noord, 2003, Buti et al., 2003). Estimates also vary across countries, albeit there is some evidence that countries with bigger governments tend to have larger automatic stabilisers (e.g. Baunsgaard and Symansky, 2009).

Dolls et al. (2012) find that, in the case of a proportional income shock, 38% of the shock would be absorbed by automatic stabilisers in the EU (with considerable heterogeneity in the results across Member States: from 25% for Estonia to 56% for Denmark), against 32% in the US. Basso et al. (2011) build on a previous version of Dolls et al. (2012) and simulate an income shock of 5% (proportional decline in household gross income by 5 per cent) and they find the highest stabilisation coefficient in Denmark, where automatic stabilisers cushion 56 per cent of the shock. Equivalent figures in other Member States include Belgium (53 per cent), Germany (48) and, perhaps surprisingly, Hungary (48).

Box 3: What are automatic stabilisers?

Automatic stabilisers are usually considered as those elements of the economy that automatically help balance the business cycle, especially in downturns.

They function as a means of adjusting governmental revenues and expenditures according to the business cycle: for example, in downturns, public revenues decrease while public expenditure increases in terms of unemployment benefits or social benefits. This corresponds to an expansionary policy in the Keynesian sense.

Automatic stabilisers are part of the fiscal and economic structure of a country and therefore do not need any discretionary action to be taken in case of need, avoiding the delay that may occur. The response by automatic stabilisers is timely and helps to directly sustain the economy.

The effect is likely to be limited in time (e.g. unemployment benefits are limited in duration) and therefore cannot help sustain an economy indefinitely. In the event of a major crisis, governments usually respond by changing legislation (e.g. increasing the duration of unemployment benefits).

However, automatic stabilisers not only stabilise incomes and output in the short term, they also have a positive impact on long term prospects, since recent literature seems to indicate that lower volatility of GDP goes together with higher GDP growth potential (see seminal papers by Ramey and Ramey, 1995 and Martin and Rogers, 2000 and for an analysis of the different GDP components see Bisio and Ventura, 2012), which is linked to structural factors such as for instance the human capital.

(7) Such as property income – mainly interest and dividends – and miscellaneous receipts such as proceeds of collections or from private lotteries.

(8) A comprehensive overview of these types of arguments is provided in, for example, Hemming et al. (2002), Taylor (2009), and Cogan et al. (2010).

(9) National governments in the euro area can no longer conduct their own monetary or exchange-rate policy.

(10) Treaty on Stability, Coordination and Governance in the Economic and Monetary Union, signed on 2 March 2012.

(11) It should be noted that the room for manoeuvre depends on the initial budgetary situation which can limit countercyclical policy (in the case of a high actual deficit).

Table 1: Degree of output smoothing - Overview of literature

Paper	Sample	Output smoothing	Benchmark budget
Auerbach and Feenberg (2000)	US	8%	Lump sum revenues
Cohen and Follette (2000)	US	10%	Fixed level of revenues
Van den Noord (2000)	19 OECD countries	25%	Fixed ratios of revenues and expenditure
Buti et al. (2002)	Belgium	14%	Fixed ratio of fiscal balance
	France	22%	
Meyermans (2002)	Eurozone	11%	Fixed deficit-to-GDP ratio
	US	20%	
Barrell et al. (2002)	Eurozone	9%	Fixed levels of revenues and expenditure
Brunilla et al. (2003)	EU	Consumption shock: 20-30%	Fixed level of fiscal balance
		Private investment shock: 3-10%	
Barrell and Pina (2004)	Eurozone	11%	Fixed levels of revenues and expenditure
Tödter et Scharnagl (2004)	Germany	Consumption shock: 18-26%	Fixed level of fiscal balance
		Investment shock: 10-15%	
Follette and Lutz (2010)	US	10% after 4 quarters, 20% after 8 quarters	Fixed levels of revenues and expenditure
Dolls et al. (2012)	US vs. Europe	Income shock: 4-22% (EU); 6-17% (US)	Lump-sum revenues and expenditure
		Unemployment shock: 13-30% (EU); 7-20% (US)	

Source: Table 2 in In't Veld et al. (2012).

The lowest values are found for Estonia (25 per cent), Spain (28) and Greece (29)[12]. In the case of an unemployment shock (some households, not all, become unemployed, so that the unemployment rate increases such that total household income decreases by 5 per cent), the stabilisation coefficients are larger for the majority of countries. Again, the highest value emerges for Denmark (82 per cent), followed by Sweden (68), Germany (62), Belgium (61) and Luxembourg (59).

On the revenue side, taxes are an obvious source of automatic stabilisation with tax revenues increasing in upswings and decreasing in downturns. On the expenditure side, the most prominent automatic stabilisers are unemployment benefits: since unemployment usually increases in downturns, unemployment benefits also tend to increase and the reverse holds during upswings. However, unemployment benefits only account for a very small share of government budgets in most advanced countries. More generally, In't Veld et al. (2012) argue that automatic stabilisation is not necessarily limited to cyclically sensitive items in the budget and Melitz and Darby (2008) argue that age and health related social expenditure also reacts to the cycle in a stabilising manner. In the literature, the size of the government is also associated with automatic stabilisation. Research has shown that the size of government is negatively correlated with the volatility of GDP since the bulk of government discretionary expenditure, such as wages and transfers, is generally not cut during economic downturns or increased during upturns. Also this inertia aspect of government expenditure has a stabilising effect on total output, as we see in the next section.

Estimates of automatic stabilisers generally do not distinguish between various public expenditures and taxes: social protection systems account for a key dimension of overall automatic stabilisation and in standard recessions (translating into increases of unemployment) they represent the major share of automatic stabilisation (as it is clear in case of an 'unemployment shock' in Dolls et al., 2012).

3.1.1. Adjustment of social protection expenditure to the business cycle

Between 2007 and 2009, increases in gross disposable household incomes were recorded in two thirds of EU Member States. These increases ranged from 1% to 8% and include countries that had experienced strong economic and employment shocks. A relatively small decline in income (below 2.5%) was seen in DK, LT and IT with much larger decreases (ranging from 7% to 18%) in HU, EE and LV. In most EU countries, the automatic stabilisers and the stimulus packages adopted at the beginning of the crisis were seen to have contributed to sustaining disposable household income overall. However it is not easy to say how, and by how much, social expenditures smoothed the impact of the crisis.

In this Chapter we focus only on the expenditures side and do not address the impact of automatic stabilisers on tax revenues[13] using a simple framework by computing country-specific correlation coefficients[14] between expenditure as a percentage of GDP and the output gap ($\frac{GDP_t - GDP^*}{GDP^*}$, i.e. the difference between actual and potential[15] GDP as a percentage of potential GDP, see Denis

(12) Basso et al. (2011) also conclude that with the exception of France, taxes seem to have a stronger stabilising role than social security contributions. In France, social security contributions are progressive and therefore have an important role for disposable income stabilisation.

(13) A full analysis of automatic stabilisers should also take into account revenues, i.e. the tax system. Macroeconomic studies on stabilisation effects most often refer to budget balance (revenues-expenditures) in relation to output gap (see European Commission, 2006). We follow this line, but looking only to expenditures, in particular social protection benefits (unemployment benefits, social exclusions, health care, disabilities, pensions, housing benefits, family allowances and other expenditures and administrative costs) and using a simpler framework.

(14) These correlation coefficients by countries are sensitivity parameters of overall social protection expenditure in relation to the output gap, also taking into account possible trends in social protection expenditure and country-specific features.

(15) Potential gross domestic product (GDP) is, according to OECD definition, the level of output that an economy can produce at a constant inflation rate. Although an economy can temporarily produce more than its potential level of output, this comes at the cost of rising inflation. Potential output depends on the capital stock, the potential labour force (which depends on demographic factors and on participation rates), the non-accelerating inflation rate of unemployment (NAIRU), and the level of labour efficiency.

et al. (2006) for details on the computation) using data for 1995-2009 as in equation (1):

$$\left(\frac{expenditure}{GDP}\right)_t = \alpha + \beta\ output\ gap_t \quad (1)$$

where t is time[16].

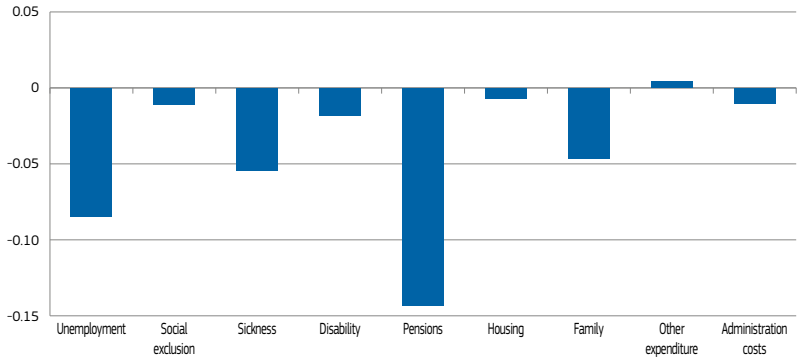
This simple method assumes that expenditures are not cyclical if the ratio of expenditure to GDP remains constant. This choice makes it possible to ensure comparability across countries but it has the drawback that it also depends on GDP. Therefore, without changes in spending we would register a cyclical effect due to the decrease of GDP at the denominator. Still, as discussed before, this inertia of government expenditure has a stabilising effect on total output and it is important to take it into account.

Unemployment benefits, even though they represent only a relatively marginal expenditure, respond quite significantly to the economic cycle. Chart 16 shows that, when the output gap (the difference between actual and potential GDP) increases by one percentage point, the ratio of unemployment benefits to GDP decreases by 0.08 percentage points (which corresponds to a decrease of around 6% of expenditures to GDP as can be seen in Chart 17).

Pensions account for a large share of social expenditures in most Member States and since they do not decrease in a period of crisis (in practice they may even increase if pension schemes are used to support the early exit of older workers from the labour market[17]) they also have an important role in weathering the social consequences. However in percentage terms pensions represent only a 1.46% change in spending as Chart 17 shows.

Sickness and family expenditures can also play a significant role as automatic stabilizers since they too account for a significant share of social expenditures. When the output gap increases by 1 point, sickness expenditures decrease by 0.05 percentage points (or 0.86% of expenditures) and family expenditures by 0.05 percentage points (or 2.19% of expenditures).

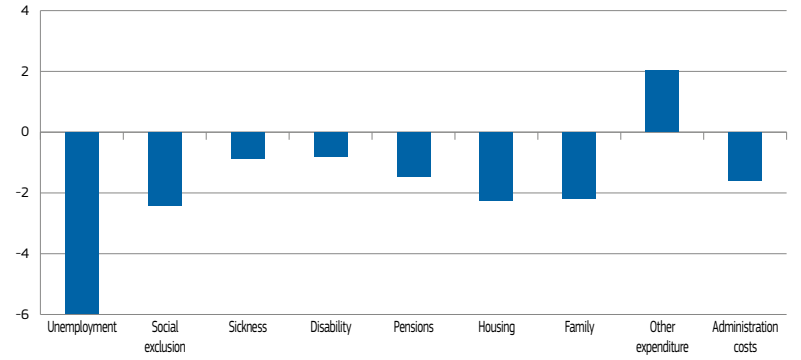
Chart 16: Cyclicality of expenditure on social protection with respect to output gap (beta coefficients, i.e. percentage points)



Sources: DG EMPL calculations. Expenditures from ESSPROS 1995-2009. Data for BG 2005-2009, CY 2000-2009, EE 1999-2009, HU 1999-2009, LT: 1996-2009, LV 1997-2009, PL 2000-2009, RO 2000-2009, SI 1996-2009. Output gap from AMECO.

Note: Average β of all EU countries between 1995 and 2009. The columns represent percentage point changes in expenditure for a 1-point increase of output gap. To obtain percentage changes, one has to divide β by the actual expenditure. See Box 2 for details on the definition of the different functions.

Chart 17: Cyclicality of expenditure on social protection with respect to output gap (percentage increase of expenditure)



Sources: DG EMPL calculations. Expenditures from ESSPROS 1995-2009. Data for BG 2005-2009, CY 2000-2009, EE 1999-2009, HU 1999-2009, LT: 1996-2009, LV 1997-2009, PL 2000-2009, RO 2000-2009, SI 1996-2009. Output gap from AMECO.

Note: The columns represent percentage changes in expenditure for a 1-point increase of output gap. They are obtained dividing average β by the actual expenditure for each function.

Overall, these findings show that social expenditures do react to the business cycle, whether this is measured in terms of the output gap or the unemployment rate, and that they contribute considerably to offsetting the effect of an economic downturn. The scale of the effect is linked to the level of expenditures, with unemployment benefits reacting more strongly, but pension expenditures still representing a bigger cushion in absolute terms.

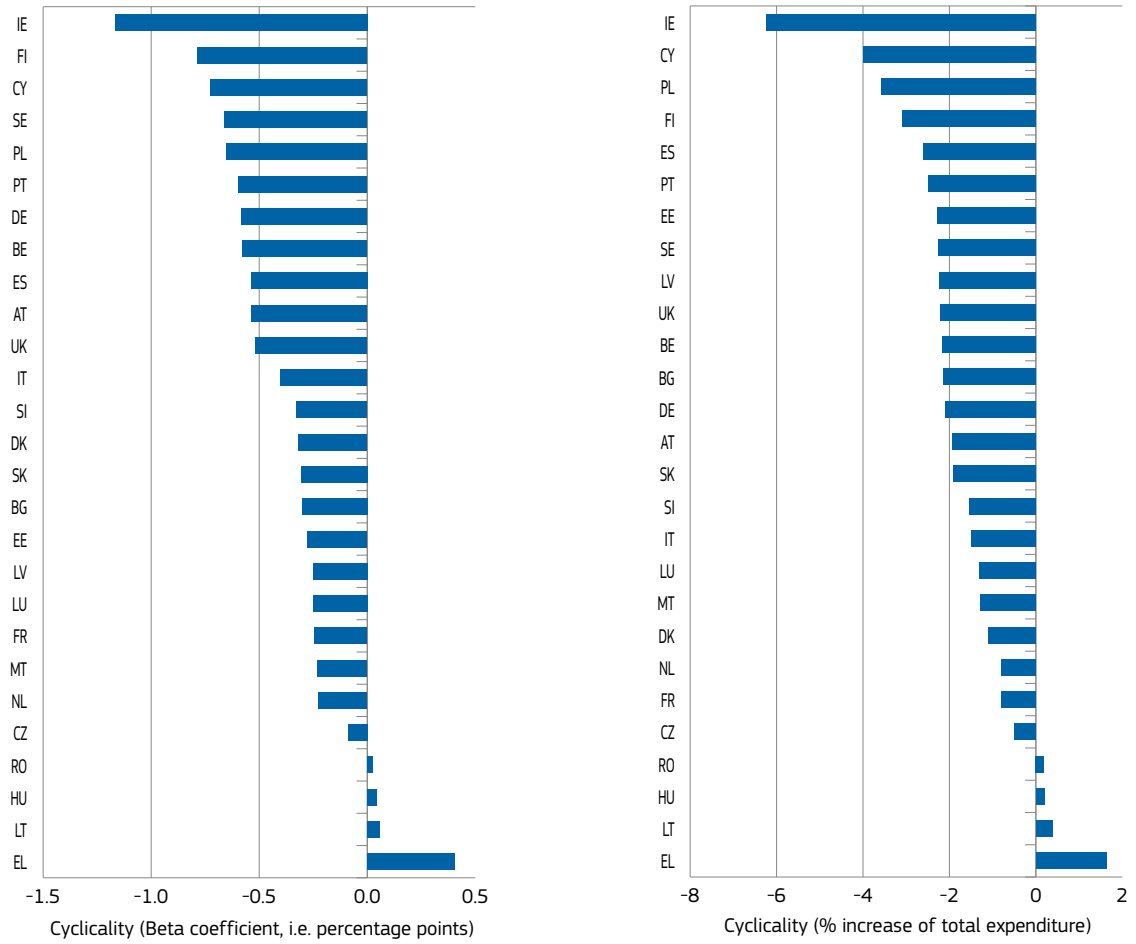
The picture is not the same, however, in all Member States, and varies according to economic and social history as reflected in the characteristics of their welfare systems. Chart 18 shows that Greece is a clear outlier (expenditures to GDP increased quite significantly before the crisis). Eastern European Member States, such as Lithuania, Romania, Hungary, are above zero showing slightly pro-cyclical features of the welfare system. Also Hungary increased expenditures to GDP before the crisis. Contrary to this, Ireland, Finland Cyprus and Sweden show a quite strongly anti-cyclical welfare system[18].

(16) There are no country fixed effects because the β is computed country by country.

(17) As Gruber and Wise (2010) show, the pension reforms in the eighties and nineties were introduced explicitly to provide more jobs for the young, assuming that fewer older persons in the labour force would open up more job opportunities for the young. This is commonly known as the 'lump of labour fallacy'.

(18) The calculations are based on how output gap and expenditures changed between late 1990s and 2000s and therefore conclusions on the anti-cyclicality feature of welfare systems only apply to this period. The current crisis and reforms might change the functioning of the systems and therefore the conclusions of the chapter.

Chart 18: Cyclicality by Member State



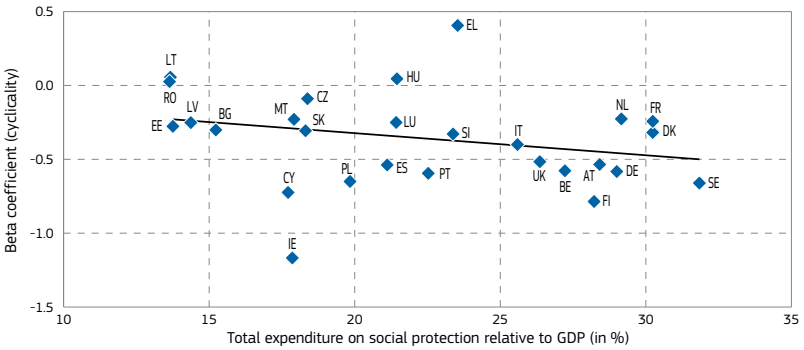
Source: DG EMPL calculations.

Note: Columns in the left graph represent percentage point changes in expenditure for a 1-point increase of output gap. Columns in the right graph represent percentage change. See notes in Chart 16 and in Chart 17 for further details.

Chart 19 also shows a slightly negative correlation between the coefficient of cyclicality and the spending to GDP ratio[19], meaning that the cyclicality of social expenditures depends only in part on the level of expenditures. These results are consistent with previous literature, e.g. they are broadly in line with the conclusions of Dolls et al. 2012 (except for Hungary), although the figures are lower because they only take social expenditures into account.

These estimations should be considered as 'gross estimations' since they include the upward trends of some types of expenditures, typically health care and pensions and mix two effects: on the one hand elasticity of various expenditures to GDP and on the other hand the size of different types of expenditures in GDP.

Chart 19: Cyclicality of total expenditure on social protection with respect to output gap (beta coefficients) by Member States



Source: DG EMPL calculations and ESSPROS.

(19) The regression result is: beta= -0.072 -0.013*expenditure/gdp, R^2=0.06

Box 4: Computing cyclicality using unemployment rate

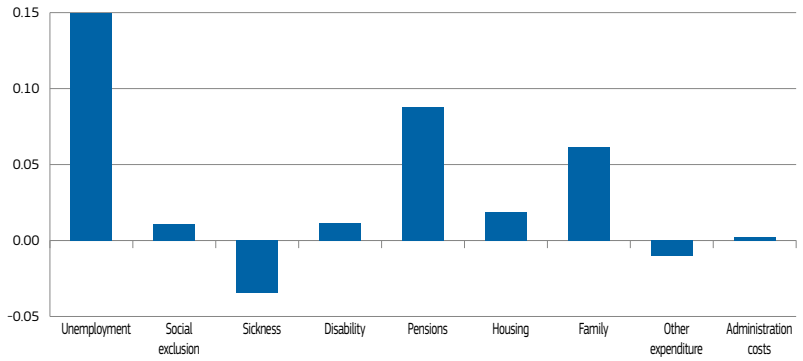
An alternative method to compute the cyclicality of social expenditures would be to use the unemployment rate instead of output gap:

$$\left(\frac{expenditure}{GDP}\right)_t = \alpha + \gamma\ unemployment\ rate_t \quad (2)$$

The results are different, but generally consistent with the previous findings (in this case expenditures will increase when unemployment increases, see Chart 20). Again, expenditures are assumed to be not cyclical if the ratio of expenditure to GDP remains constant with respect to unemployment rate.

In this case, however, unemployment benefits are seen to be the most reactive form of social expenditure relative to a given increase in unemployment (0.15 percentage points when unemployment increases by 1 percentage point, or an increase of 10.6% of unemployment benefits). Pensions also respond to an increase in unemployment rate, but just by 0.96%.

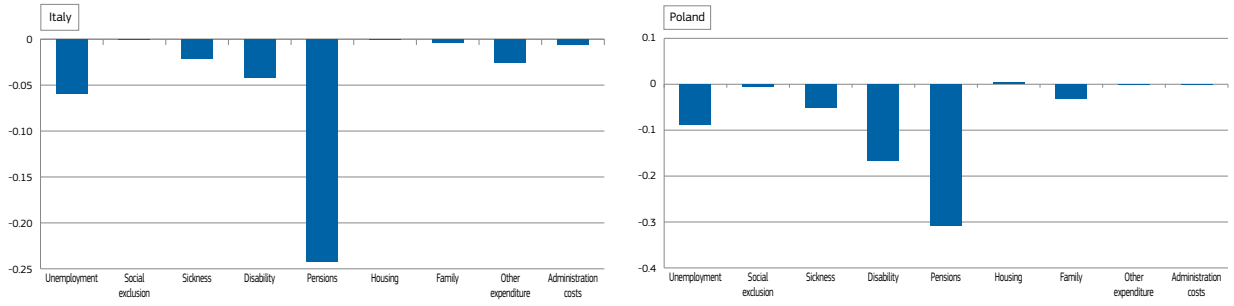
Chart 20: Cyclicality of expenditure on social protection with respect to unemployment rate (gamma coefficients)



Sources: DG EMPL calculations. Expenditures from ESSPROS 1995-2009. Data for BG 2005-2009, CY 2000-2009, EE 1999-2009, HU 1999-2009, LT: 1996-2009, LV 1997-2009, PL 2000-2009, RO 2000-2009, SI 1996-2009. Unemployment rate from Eurostat.

Note: The columns represent percentage point changes in expenditure for a 1-percentage point increase of unemployment rate. To obtain percentage changes, one has to divide γ by the actual expenditure for each function.

Chart 21: Cyclicality of expenditure on social protection with respect to output gap for Italy (left) and Poland (right)



Source: DG EMPL calculations.

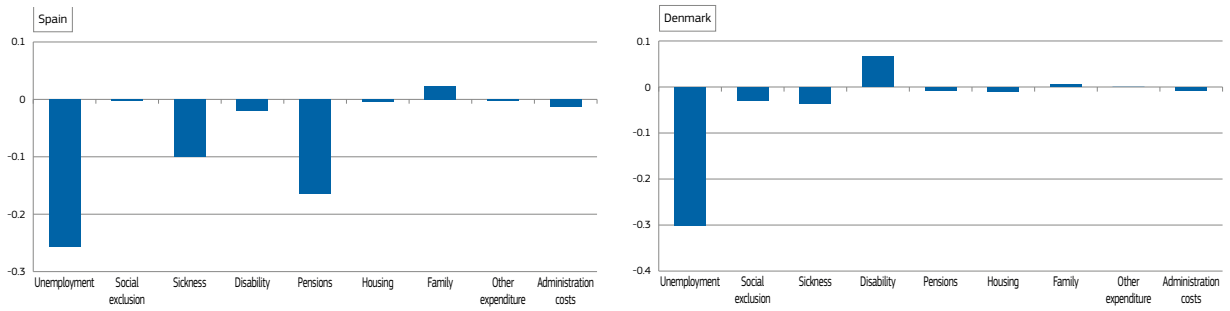
Note: Cyclicality of social expenditures with respect to output gap, i.e. beta coefficients of eq. (1).

The detailed picture also demonstrates the differences in the structure of social expenditures in different countries. Italy, for instance, is known to have a welfare system tilted towards pensions and indeed this is reflected in Chart 21. Also Poland has a similar profile. In these cases, unemployment benefits play a negligible role as automatic stabilisers.

At the other end of the scale, Denmark and Spain (Chart 22) show the strong anti-cyclical effect of unemployment benefits in their systems. In Denmark, a decrease of 1 point in the output gap is reflected in an increase of unemployment benefits as a percentage of GDP of 0.3 percentage points, or 20%, while

in Spain where a similar decrease in the output gap results in a similar increase of unemployment benefits as a percentage of GDP of 0.25 percentage points, or 18%. A third group of countries can be identified in this (Chart 23). In Ireland and Slovakia health represents a bigger income cushion than either unemployment benefits or pensions, although the welfare states in both countries are relatively limited compared to other continental European countries.

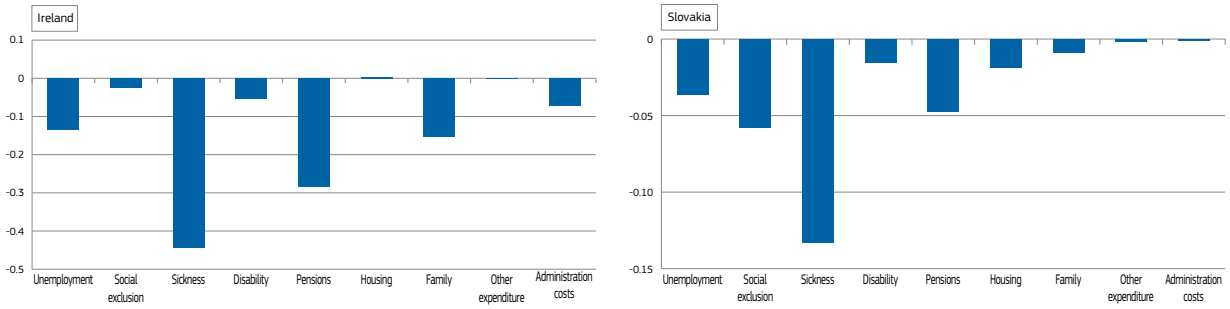
Chart 22: Cyclicality of expenditure on social protection with respect to output gap for Spain (left) and Denmark (right)



Source: DG EMPL calculations.

Note: Cyclicality of social expenditures with respect to output gap, i.e. beta coefficients of eq. (1).

Chart 23: Cyclicality of expenditure on social protection with respect to output gap for Ireland (left) and Slovakia (right)



Source: DG EMPL calculations.

Note: Cyclicality of social expenditures with respect to output gap, i.e. beta coefficients of eq. (1).

3.1.2. Social protection expenditure and fiscal profligacy

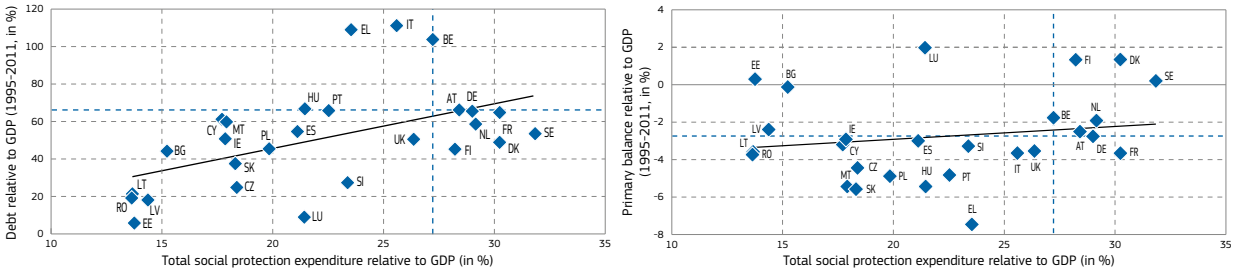
The evidence above appears to show that social expenditures in the EU work as effective automatic stabilisers. However, the crisis, which started as a financial one in 2007 in the US and then became a global economic crisis, and the ensuing debt and fiscal crisis, have put public spending under pressure, especially at the periphery of the EU. In this context, it is reasonable to ask whether social expenditures are a source of fiscal profligacy.

In this respect, the graph on the left in Chart 24 shows that higher social expenditures usually go hand-in-hand with a higher debt level. On the other hand, the link between generous welfare states and primary balance[20] (surplus or deficit) seems to be the opposite: the graph on the right in Chart 24 shows that the surplus is actually higher in countries with higher total expenditures. In particular both graphs show that Member States such as Finland, Denmark and Sweden have relatively high social expenditures (although in net terms they are close to the EU average) and a better fiscal position (both in terms of debt and primary balance) than the overall EU average. While these countries may represent an exception, they also demonstrate that it is possible to combine a relative large welfare state with keeping the accounts in order.

Moreover, no robust correlation (if any, a negative one) can be found between the level of social expenditures and change in debt between 1995 and 2011 as Chart 25, left graph, clearly shows, with the level of total social expenditures between 1995 and 2009 not appearing to be linked with change in the ratio of debt to GDP in the last 15 years. In practice, countries have improved or worsened their fiscal position without there being any clear link between these levels of expenditures and GDP. However, as shown in Chart 25, an increase in social expenditures (in terms of GDP) does reflect an increase of debt relative to GDP and this is especially the case for those countries in the top right part of the graph (EL, PT, IE), although this relationship might be linked to stronger

[20] Government net borrowing or net lending excluding interest payments on consolidated government liabilities.

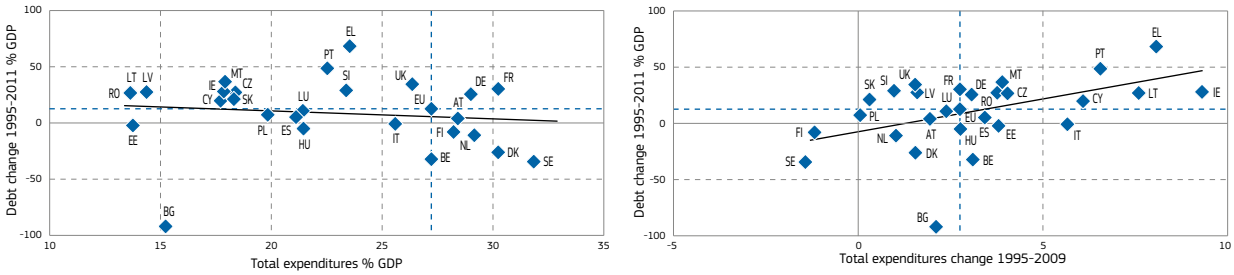
Chart 24: Total expenditure on social protection (% GDP) and debt (left) and deficit (right)



Source: ESSPROS and National accounts.

Note: Dashed blue lines represent EU averages (EU15-25-27).

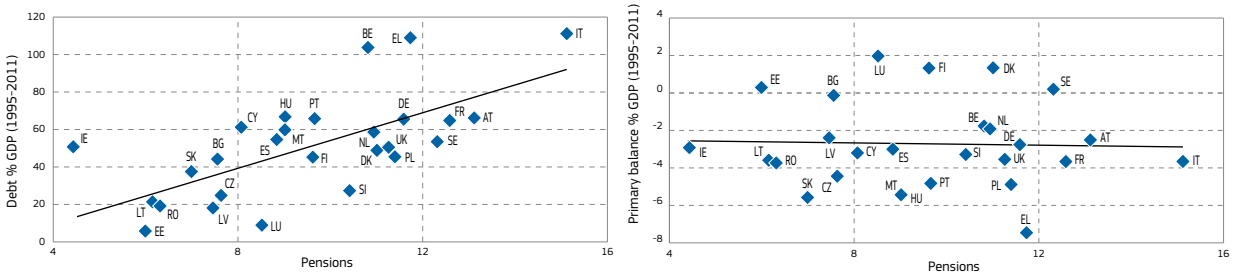
Chart 25: Left: Total expenditure on social protection and debt change (1995-2011); Right: expenditure on social protection change (1995-2009) and debt change (1995-2011)



Source: ESSPROS and National accounts.

Note: Dashed blue lines represent EU averages (EU15-25-27).

Chart 26: Expenditure on pensions (% GDP), debt (left) and primary balance (right)



Source: ESSPROS and National accounts.

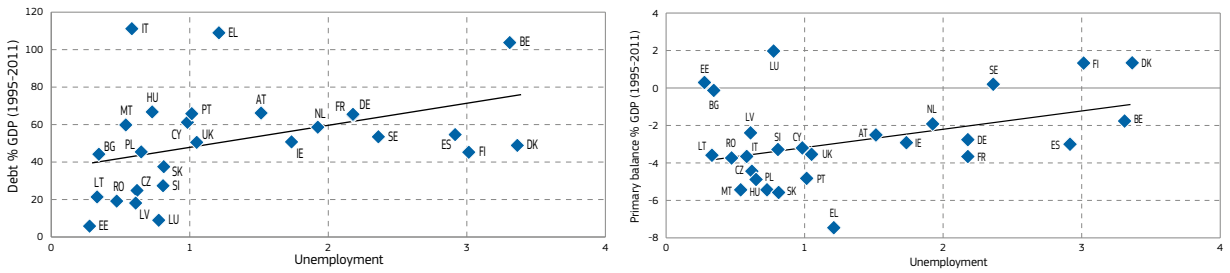
GDP declines in these countries. On the other hand, some Member States managed to reduce debt while also increasing social expenditures as was the case in Belgium, which managed a 'long and successful fiscal consolidation' (IMF, 2011) reducing in debt between 1995 and 2009 while still increasing social expenditures.

It is recognised that the findings will be partially due to the proxy used for the generosity of the welfare state given that total social expenditures also include expenditures that do not depend directly on the business cycle, such as those on health and pensions. Indeed, when looking at pensions alone, it is clear that there is a much stronger relationship between pensions and debt rather than pensions and the current primary balance (see Chart 26).

However, while a truly cyclical social expenditure, such as unemployment benefits, appears to have a significantly lower correlation with debt than pensions, it also has a positive correlation with the primary balance (see Chart 27).

Overall, the link between cyclical social expenditures and the fiscal crisis can be seen as weak with a partial explanation being the positive correlation observed between stronger spending in unemployment and higher employment rates. In other words, Member States with strong welfare states are, in general, those who can afford them. The Scandinavian countries, as well as Germany and Austria, all have high employment rates and high social expenditure. More generally debt, being a stock variable, reflects historical developments and choices in that

Chart 27: **Unemployment benefits (% GDP), debt (left) and primary balance (right)**



Source: ESSPROS and National accounts.

the level of the social expenditure to GDP ratio reflects, to some extent, the national preference in terms of social model, which is likely to be quite stable over time, while the primary balance takes into account only the fiscal policies in recent years.

3.1.3. Improving the role of unemployment benefits as automatic stabilisers

Unemployment benefits are a key part of the welfare state. They insure individual incomes during periods of temporary unemployment and provide assistance during longer-term periods of unemployment.

Benefits systems which relate to unemployment contain two main instruments:

- Unemployment insurance to protect individual incomes during spells of unemployment, being payable to job losers who, within a certain reference period, have completed a minimum period of employment or paid contributions.

- Unemployment assistance to prevent unemployment-related poverty. It is generally means-tested and usually paid either to the long term unemployed with insufficient means who have exhausted their unemployment insurance benefits or to those who failed to qualify for unemployment insurance benefits in the first place.

It is important to distinguish between unemployment insurance and assistance as these two instruments generally have different implications in terms of incentives to take up work[21]. Unemployment benefit systems are greatly debated and studied in economic research because they inevitably involve some degree of trade-off between income smoothing and economic efficiency: the bigger the replacement rate (the amount of benefit paid to an unemployed person relative to this person's previous income) and the higher the duration, the lower the incentive to search and take up a new job. The benefits from the stabilisation of income find their counterpart in the weakening of incentives in the labour market. Reduced work incentives also have macro-economic implications in terms of lower employment rates and lower aggregate labour supply, which results in lower potential output on a permanent basis. This also translates into reduced revenues and may imply fiscal imbalances and possibly into the accumulation of deficits in the external balance as they finance consumption while reducing income, and therefore lowering national savings.

However since the take up of unemployment benefits is higher especially during cyclical downturns and recessions, the unemployment benefit system also plays the role of macroeconomic stabilisation. There is a growing debate on the possibility to adapt the generosity and design of the unemployment benefits systems to the economic cycle in order to increase the anti-cyclical effect of unemployment benefits and improve their functioning in time of needs, and to recover those expenditures in better economic times, as stressed in the European Commission's 2011 Annual Growth Survey. During economic downturns, eligibility conditions and replacement rates need to cater for the increased rate of job destruction and the stronger need for stabilising incomes, and the duration needs to be adapted in line with the reduced chances of finding a job. Conversely, during recoveries, the unemployment benefit system needs to provide stronger incentives to re-enter the labour market in order to prevent cyclical unemployment from becoming structural.

As Chart 28 shows, there is a clear relationship between unemployment spending in proportion to GDP and its anti-cyclical functioning, suggesting that unemployment benefits are elastic to output gap and the reaction is higher when spending is also higher. Therefore there is substantial room to increase the stabilisation and smoothing effect by increasing spending in periods of crisis.

The adaptation of the unemployment benefit system over the cycle may take place as a result of discretionary decisions by policy makers, or in light of automatic triggers contained in the legislation. In the former case, the increase or reduction in unemployment benefit generosity would generally require new legislation to be proposed by governments and approved by parliament. When the adaptation is automatic, the revision in eligibility conditions, replacement rates and duration is the outcome of already existing legislation that defines ex-ante the conditions under which this revision will have to take place.

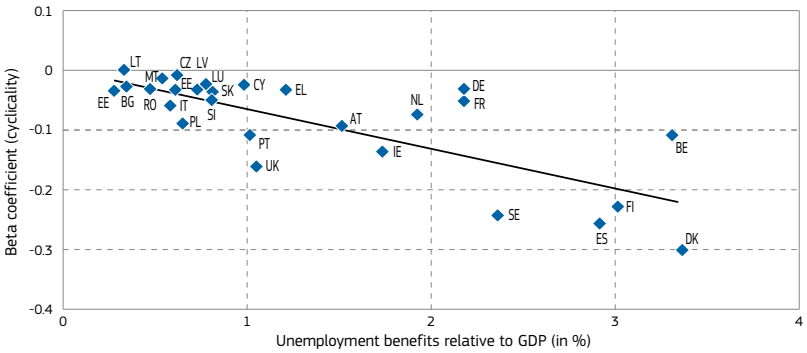
On balance, an automatic adaptation would appear to have the merit of being timely and truly countercyclical both in downturns (by avoiding long legislative delays) and in upturns (by automatically reducing the generosity).

How can unemployment benefits be adapted over the cycle?

This raises the question of whether unemployment benefits can be adapted over the cycle in practice. Here, the literature usually refers to the use of a trigger variable (representing the state of the economic cycle) as it is the case

[21] For a complete benchmarking of unemployment benefits see Stovicek and Turrini (2012).

Chart 28: Cyclicality of expenditure on unemployment benefits with respect to output gap (beta coefficients)



Source: ESSPROS and DG EMPL calculations.

Note: Beta coefficients are the cyclicality indicators computed in eq. (1).
Trend line: $y = -0.066x + 0.005$, $R^2 = 0.588$

Table 2: Pros and cons of an automatic adaptation of unemployment benefits to the cycle

+	-
• more predictable system; • lower risk of hysteresis in unemployment benefit generosity as a result of the constitution of interest groups (once people get accustomed to more generous rules it might be difficult to reverse them); • no risks associated with decision and implementation lags for enacting new legislation.	• low credibility if automatic increases in generosity are likely to clash with budgetary objectives; • need of a careful design to be effective and sustainable without revisions; • additional discretionary legislation may in any case be needed to adapt unemployment benefits in light of structural reforms in the labour market, welfare, and taxation fields.

in the US where the generosity of the unemployment benefits is automatically adjusted over the business cycle on the basis of trigger variables (notably a stable increase in unemployment).

The European Commission (2011) has already discussed the different possibilities presented in the literature concerning the choice of trigger variables and associated changes that would need to take place to ensure a successful implementation of automatic rules for unemployment benefits. Setting a trigger variable requires a choice to be made concerning an appropriate economic indicator, which should ideally move in tandem with labour market conditions, thus reflecting underlying job finding conditions (e.g. Schwartz, 2008). It also requires setting criteria for automatic rules to be turned on or off, usually defined in terms of the level or a relative change of the indicator. Schwartz (2008) proposed a trigger designed on the basis of the average duration of unemployment spells with benefits extended in each quarter following a period of recession, defined as a period of high rates of exhaustion of unemployment insurance benefit and low job finding probabilities. The duration is brought back to the standard one quarter following a recovery.

Wenger and Walters (2006) have suggested two triggers: a first broad trigger requires an increase in the unemployment rate by 20% over the previous two years to activate the extension. This extension is reversed when the unemployment rate has returned to the level of the previous year. The trigger that turns off the automatic extension is increased annually by 10% to avoid benefits being paid for too long as unemployment becomes persistent. Alternatively, a narrow trigger requires a larger increase in the unemployment rate – for example, by 25% over the previous two years – in order to activate the extension of benefits and ensure a faster reversal to the previous duration. The threshold level of the unemployment rate, which brings duration back to normal, is increased over the following years, so that periods of persistent unemployment are not accompanied by too long benefit duration.

Recently, Wenger and Boushey (2010) have proposed a two-tier trigger system for the US. The first-tier extends benefits by 20 weeks when the state unemployment rate is at or above an average of 6.5% over a period of three-months or when it increases by 20%. The extension is withdrawn when state unemployment rate falls below an average of 6.5% over a three-month period *and* when the number of persons claiming unemployment insurance returns to pre-recession level. If state unemployment rate rises above an average of 8.5% over a three-month period, the second tier is activated and benefits are automatically extended by additional 13 weeks (on top of 20 weeks from the first tier). The second tier turns off when state unemployment rate falls below an average of 8.5% over a three-month period. These policy triggers, however, risk staying activated for too long if the unemployment rate becomes persistent.

In practice, the use of sophisticated trigger variables can prove problematic because statistics are not always timely, there can be problems in interpreting labour market data, and there can be a problem in case automatic rules fail to turn on or off. However, the US example shows that the choice of a trigger variable can be simpler than that proposed in the literature[22].

What are the pros and the cons?

Adapting unemployment benefits over the business cycle as indicated above could contribute to improving the smoothing of output and help the unemployed better weather the social consequences of the crisis. Table 2 summarises the pros and cons of an automatic adaptation.

Improvement the effectiveness of automatic stabilisers can also pass through other instruments. For instance, other social expenditures or labour market policies (e.g. short time working schemes) can be indexed to economic developments in order to make them more generous in times of crisis and more stringent in good economic times. In any case, these rules need to be financially balanced over the whole economic cycle.

[22] For a more in depth discussion, see European Commission (2011).

3.2. Role of social protection spending in the recent crisis

The crisis has hit EU Member States in different ways. This has been reflected in the different working of automatic stabilisers, the different measures taken by governments and also the different impacts on different households.

The previous Section showed that social expenditures react to the business cycle. This Section deals with the matter of how social protection spending developed during the crisis, which was influenced by the combination of both long term trends and sensitivity to the cycle, and whether it managed to sustain household incomes. First, an overview is provided of the development of GDP, unemployment rate and hours worked in the period 2007-2009, then the developments in social protection expenditure in the same period are reviewed and then this is linked to the developments in the gross household disposable income.

Table 3 provides a background for the following analysis by illustrating whether in the EU Member States the GDP shock translated or not into a shock in the labour market. While in the Baltic States this shock to the labour market was quite strong, e.g. in Germany, Denmark, Hungary or Slovenia this shock was much milder, particularly compared to the size of the GDP shock.

Between 2007 and 2009 social protection expenditure increased in real terms in all EU Member States except Hungary (see Chart 29). In several countries the largest part of the increase was due to old-age and survivors pensions (e.g. in Romania, Bulgaria, Poland, Latvia, Portugal and the Czech Republic). In some Member States the majority of the increase was due to health care and disability expenditure, such as in the Netherlands and Germany. Unemployment benefits increased most significantly in Latvia, Spain and Estonia, while family benefits rose very significantly in Lithuania, Luxembourg and Bulgaria.

Between 2009 and 2010, however, social protection expenditure decreased in reals terms in more than one third of the Member States. The largest decreases – between 5 and 10% – were seen in Greece, Estonia and Lithuania. In Lithuania, old age and survivors' pensions and health care and disability benefits decreased both by around 4%, child benefits were lowered by 2.6%. In Estonia there were equally large decreases in unemployment benefits and health care and disability – both by 2.4%. On the other hand, child and social exclusion benefits increased. In Greece, pensions and spending on health care and disability both decreased by nearly 2%, and there were falls in spending also in all other areas.

Concerning increases in real spending in 2009-2010, old age and survivors pensions increased the most in Latvia (by nearly 9%), health care and disability benefits by more than 5.6% and unemployment benefits by 1.6% in Ireland, child benefits increased the most in Slovakia and Luxembourg (by 0.6%) and social exclusion benefits rose the most in Lithuania (by 1.7%).

The analysis of the developments in social protection expenditure in 2011 is currently only possible with data from National accounts that only make a distinction between cash and in-kind benefits. Chart 30 provides a basic overview of this, showing for two periods (2007-2009 and 2009-2011) not only changes in real social protection expenditure, but also changes in real gross household disposable income (GHDI), which are significantly influenced by changes in social benefits. In this chart, EU Member States are grouped according to the size of the GDP shock in the first period.

In the first period, while cash benefits increased in real terms in all the countries indicated (with the exception of Hungary), in-kind benefits decreased in three Member States (in Latvia, Hungary and Bulgaria). In spite of this, GHDI decreased in 9 Member States out of 26 for which data is available, the largest declines (between 6% and 15%) being seen in Hungary, Estonia and Latvia.

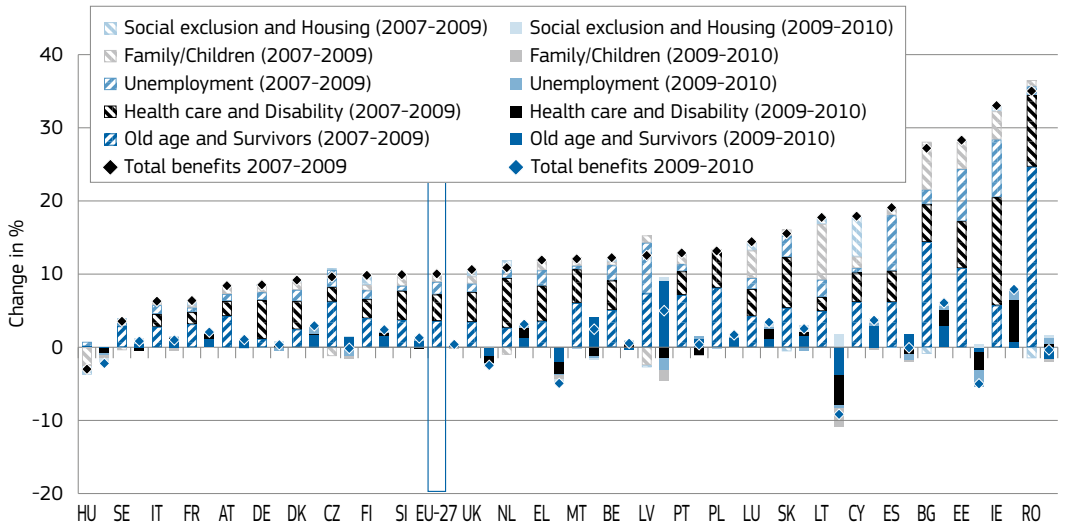
In the second period, due to continuing effects of the crisis and the impact of fiscal consolidation programmes, in-kind benefits decreased in 16 Member States (by 5% or more in Greece, Portugal and Ireland) and cash benefits were lowered in 10 Member States (particularly

Table 3: Development of GDP, unemployment rate and hours worked between 2007 and 2009

	GDP change (in %)	Unemployment rate change (in pps)	Hours worked change (in %)
	2007-2009	2007-2009	2007-2009
AT	-2.5	0.4	-2.7
BE	-1.9	0.4	*n.a.*
BG	0.4	-0.1	*n.a.*
CY	1.7	1.4	0.7
CZ	-1.7	1.4	-0.6
DE	-4.1	-0.9	-1.5
DK	-6.6	2.2	-2.3
EE	-17.4	9.1	-17.3
EL	-3.4	1.2	-1.6
ES	-2.9	9.7	-6.2
FI	-8.1	1.3	-2.1
FR	-2.8	1.1	-1.7
HU	-6.0	2.6	*n.a.*
IE	-9.8	7.3	*n.a.*
IT	-6.6	1.7	-3.8
LT	-12.4	9.4	-8.1
LU	-4.6	0.9	1.3
LV	-20.4	11.7	-18.5
MT	1.3	0.4	*n.a.*
NL	-1.8	0.1	0.4
PL	6.8	-1.4	3.1
PT	-2.9	1.7	-3.0
RO	0.3	0.5	*n.a.*
SE	-5.6	2.2	-1.7
SI	-4.7	1.0	1.7
SK	0.5	0.9	0.6
UK	-5.4	2.3	*n.a.*

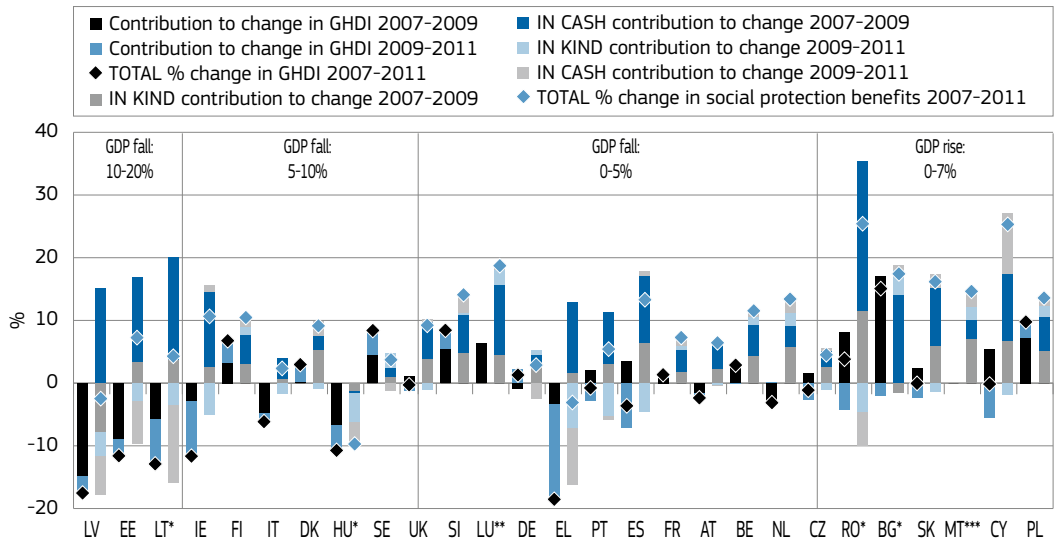
Source: National accounts, Labour Force Survey.

Chart 29: Percentage change in social protection expenditure by function (national currencies in constant 2000 prices, 2007-2009 and 2009-2010)



Source: ESSPROS.

Chart 30: Percentage change in GHDI and social protection expenditure (national currencies, deflated by HICP, 2007-2009 and 2009-2011)



Source: Eurostat (for HICP), National Accounts and European Commission economic forecast – Autumn 2012.

Notes: * – For Lithuania, Romania and Bulgaria, GHDI data is only available until 2010.
** – GHDI data for Luxembourg is not available for 2009-2011.
*** – GHDI data for Malta is not available.
Member States are sorted according to the size of the GDP change in 2007-2009.

in Greece and the Baltic States). In line with this development, GHDI decreased in 17 Member States out of 25 for which data is available, the largest declines (between 7 and 15%) being seen in Cyprus, Spain and Greece.

There are significant differences between countries with similar GDP shocks, not only in the size of the change in social protection expenditure, but also in the change in GHDI. While Italy and Finland had similar GDP shocks and increased their cash social protection benefits in a similar proportion, GHDI increased in Finland while it decreased in Italy. Another example is the Czech Republic where spending on cash benefits increased nearly as much as in the Netherlands, but GHDI only increased in the Czech Republic. Clearly, it is important to look in detail at what causes such differences and what is the role of social benefits.

There are two ways of looking at the role of social protection expenditure in sustaining the GHDI in the crisis. First, combining components of GHDI from different years, it is possible to compare actual change in GHDI with how GHDI would have been if social transfers had not increased or if taxes had not decreased. Second, it is possible to analyse the development in time of the different components of GHDI and identify there the role of social transfers.

3.2.1. Counterfactual scenarios of GHDI development

Jenkins et al. (2011) have looked at the impact of the 2008-2009 crisis years on household income and concluded that although GDP fell, gross household disposable income rose in most

Table 4: Impact of social transfers and taxes on GHDI in 2007-2011

	2009 vs 2007				2011 vs 2009			
	(1a)	(2a)	(3a)	(4a)	(1b)	(2b)	(3b)	(4b)
	Actual change in GHDI (in %)	Contribution of social transfers to change in GHDI (in pps)	Contribution of taxes to change in GHDI (in pps)	Change in GHDI if social transfers and taxes stayed at 2007 value (in %)	Actual change in GHDI (in %)	Contribution of social transfers to change in GHDI (in pps)	Contribution of taxes to change in GHDI (in pps)	Change in GHDI if social transfers and taxes stayed at 2009 value (in %)
EE	**-8.3**	**8.2**	3.0	-19.5	**-4.5**	**-2.1**	-0.3	-2.1
LV	**-14.6**	**7.9**	4.0	-26.6	**-3.0**	**-2.7**	-1.1	0.8
RO*	**8.1**	**6.4**	-0.9	2.5	**-3.9**	**1.7**	6.2	-11.8
IE	**-2.7**	**6.1**	4.3	-13.1	**-6.9**	**2.4**	-2.3	-7.0
BG*	**17.1**	**5.7**	0.4	11.0	**-1.7**	**-7.3**	5.1	0.6
ES	**3.4**	**4.5**	2.0	-3.1	**-8.1**	**1.3**	-0.2	-9.2
LT	**-5.6**	**4.5**	5.4	-15.5	**-1.3**	**-2.6**	0.2	1.1
EL	**-3.1**	**4.5**	-0.3	-7.2	**-20.1**	**-0.8**	1.4	-20.7
SE	**4.2**	**4.5**	3.6	-3.8	**4.6**	**-0.4**	0.0	4.9
CZ	**3.4**	**4.3**	1.5	-2.4	**-2.5**	**-0.7**	-0.1	-1.7
UK	**1.1**	**4.3**	1.5	-4.7	**-0.5**	**-0.6**	0.9	-0.8
DK	**0.1**	**3.2**	0.9	-4.0	**3.8**	**4.6**	-0.6	-0.2
FI	**3.3**	**3.2**	1.6	-1.5	**2.8**	**0.7**	-0.1	2.2
NL	**-3.3**	**3.0**	-2.1	-4.2	**-0.3**	**0.1**	0.7	-1.1
LU	**6.4**	**2.6**	-0.2	3.9	***n.a.***	***n.a.***	*n.a.*	*n.a.*
PT	**2.1**	**2.4**	-0.2	-0.1	**-2.6**	**0.3**	-0.4	-2.6
HU	**-6.4**	**2.4**	0.7	-9.5	**0.0**	**0.9**	4.2	-5.1
SK	**5.9**	**2.1**	0.7	3.1	**2.2**	**0.7**	-0.2	1.8
CY	**5.6**	**2.1**	0.4	3.1	**-3.0**	**1.5**	-1.0	-3.5
PL*	**7.2**	**1.6**	0.4	5.2	**2.4**	**-2.6**	7.7	-2.7
IT	**-5.0**	**1.5**	0.4	-6.8	**-1.4**	**0.7**	0.3	-2.4
FR	**0.7**	**1.4**	0.4	-1.2	**0.6**	**0.1**	-0.6	1.1
BE	**3.0**	**1.4**	0.7	1.0	**-2.6**	**0.0**	-1.0	-1.6
SI	**1.4**	**1.3**	-0.4	0.5	**-1.5**	**1.4**	0.5	-3.4
AT	**0.2**	**1.2**	0.3	-1.3	**-1.2**	**-0.4**	-0.2	-0.5
DE	**-0.6**	**0.4**	0.0	-0.9	**2.6**	**-1.7**	0.3	3.9
MT	***n.a.***	***n.a.***	*n.a.*	*n.a.*	***n.a.***	***n.a.***	*n.a.*	*n.a.*

Source: National Accounts, DG EMPL calculations.

Note: * Data is only available until 2010. *Actual change in GHDI*: GHDI in the last year of the given period is compared with GHDI in the first year of the given period (change is expressed in percentage). *Contribution of social transfers to change in GHDI:* the change in social transfers between the first and last year of the given period is calculated and its contribution to GHDI change is computed. *Contribution of taxes to change in GHDI*: the change in taxes between the first and last year of the given period is calculated and its contribution to GHDI change is computed. *Change in GHDI if social transfers and taxes stayed at 2007/2009 value*: GHDI is computed as the sum of all its components (including social transfers and taxes) with value from the last year of the given period and compared with GHDI calculated with the initial year value of social transfers and taxes and the last year value of all the other components (change is expressed in percentage). Countries are sorted based on the importance of the contribution of social transfers on GHDI change in 2007-2009.
n.a.: not available.

Member States between 2007 and 2009. In effect, the household sector was protected from the impact of the downturn by additional support of governments through their tax and benefit system. In this Section, the same type of analysis is performed for two periods: 2007-2009 and 2009-2011 and special focus is put on the role of social transfers.

Table 4 shows the role of the tax-benefit system during the first part of the crisis (period 2007-2009), driven mostly by the working of automatic stabilisers and fiscal stimulus, and also in the two years afterwards (period 2009-2011), when fiscal cuts and the retrenchment of fiscal stimulus measures were taking place in many countries. The table is split in two parts: 2007-2009 and 2009-2011. Columns (1a) and (1b) show how GHDI changed in these two periods and columns (2a/b) and (3a/b) show the role played by social transfers and by taxes separately[23].

Columns (4a/b) indicate how GHDI would have developed if social benefits and taxes had remained at their value of the initial year of the given period.

Column (1a) shows that in the first period of the crisis in some EU Member States the real GHDI dropped (e.g. in Latvia, Estonia and Hungary) while in others it rose (e.g. Bulgaria, Romania, Poland, Slovakia, Cyprus). In the period 2007-2009, the tax-benefit system had a positive impact on GHDI in all Member States. On average, the positive effect of social transfers was three times higher than the effect of taxes[24]. Social transfers improved GHDI throughout the EU (the most in the Baltic States, Romania, Ireland and Bulgaria) and taxes also

[23] Taking the example of Greece in the period 2007-2009, by changing from the 2007 to the 2009 value, column (2a) shows that social transfers helped to raise GHDI by 4.5 pps and column (3a) shows that taxes had a slightly negative effect on GHDI.

[24] A micro-simulation study in Dolls (2012) confirms that social transfers had a key role for stabilisation of income in the EU.

affected GHDI positively, except for Luxembourg, Portugal, Greece, Slovenia, Romania and the Netherlands.

In the period 2009-2011, although the economic situation did not improve much in the EU, due to increasing budgetary constraints, taxes were increased and benefits were reduced in many countries. Table 4 show that the impact of the tax-benefit system on GHDI was mixed: in eleven Member States (out of 25 for which data is available) it contributed negatively to the change in GHDI. Of these countries, in France, Germany and Sweden the GHDI increased in spite of this. In countries such as Austria, Estonia, the Czech Republic and Belgium, the GHDI would have decreased even without the negative influence of the tax-benefit system.

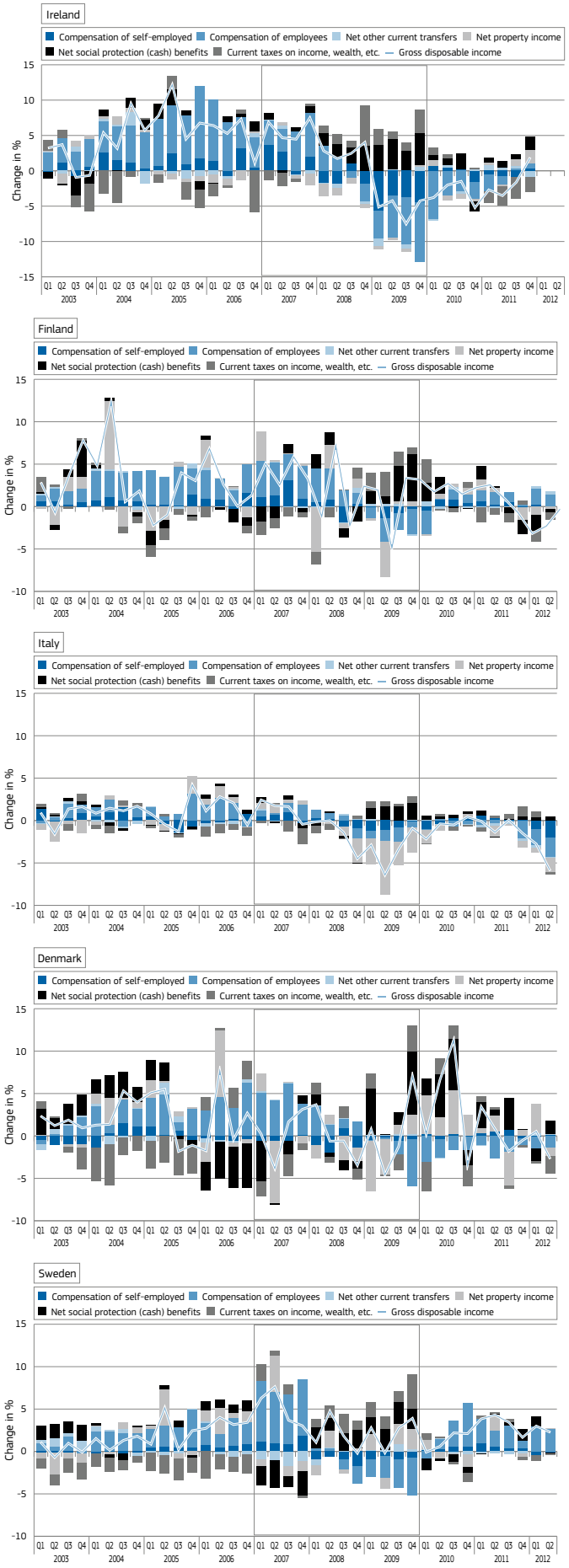
Looking at the effect of social transfers and taxes separately, in this period on average in the EU the effect of taxes was only slightly higher than that of social transfers. While the positive effect of benefits was the highest in Denmark, Ireland and Cyprus, taxes had the biggest positive impact on GHDI in Hungary and Greece. On the other hand, social transfers decreased the most in Lithuania and Latvia.

3.2.2. Development of GHDI components in time

It is possible to identify the role of social protection expenditure in sustaining GHDI by analysing detailed quarterly data on GHDI components. This is, however, only available for Ireland, Finland, Italy, Denmark and Sweden (where GDP fell by 5-10% between 2007 and 2009), and Germany, Greece, Portugal, Spain, France, Austria, the Netherlands and the Czech Republic (where GDP fell by 0-5%).

Chart 30 shows that in the first group of countries (with a GDP fall of 5-10%), Finland and Sweden follow a similar pattern in terms of GHDI development: in both periods, it rises. This is also the case of both categories of social protection expenditure, except for cash social expenditure between 2009 and 2011 in Sweden. The situation is different in Ireland and Italy, where social protection expenditure rises in the first period but GHDI falls. In the second period, GHDI falls in line with reduced social protection expenditure, although further than the reduction in cash benefits.

Chart 31: Evolution of real GHDI by components in Ireland, Finland, Italy, Denmark and Sweden (% change for GHDI (deflated by HICP), contribution to change in pps for the components)



Source: National Accounts.

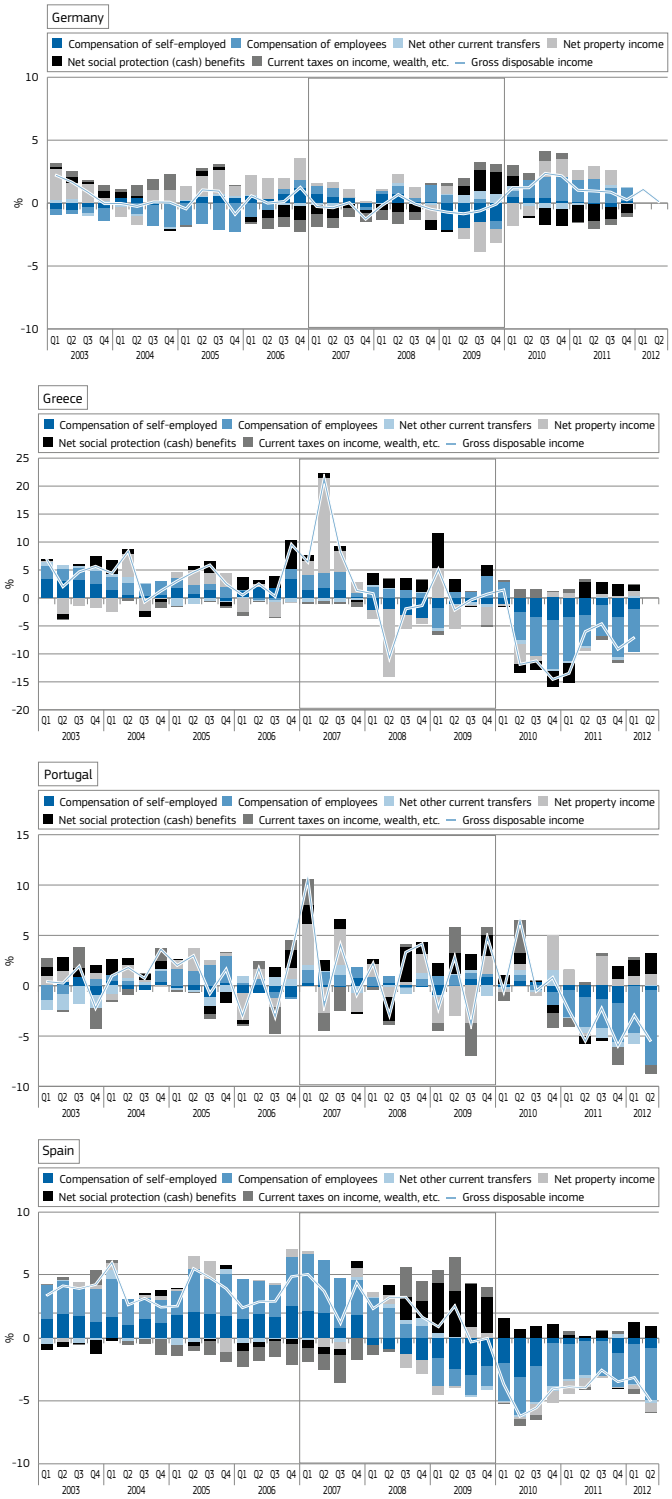
Chart 31 shows the development in real GHDI by component in Ireland, Finland, Italy, Denmark and Sweden. Generally, in this group of countries the positive effect on GHDI of social protection benefits was stronger than the effect of taxes.

While the negative effect of the compensation of employees on GHDI was relatively similar in 2009 in these countries, in some of them GHDI decreased particularly in periods where net property income fell significantly. This was the case in Finland in the second quarter of 2009, in Denmark in the first half of 2009 and in Italy during this whole year (but also at the end of 2008 and at the beginning of 2010). In the case of the latter country while the tax-benefit system was able to outweigh falls in the compensation of employees and the self-employed, falls in property income made GHDI fall much further. On the other hand, property income played nearly no role in Ireland where the fall in GHDI was mainly due to a large decrease in the compensation of both employees and self-employed.

In Sweden GHDI increased in 2010 and 2011 mainly because of increases in the compensation of employees. Only in Finland this component had a similarly positive impact on GHDI, although to a lesser extent. However, when at the end of 2010 it didn't increase, GHDI fell because other components were not growing sufficiently. Also, Finland was the only country in this group that started lowering social benefits and increasing taxes since the second half of 2010. While in the first half of 2012 in Sweden GHDI kept growing, in Finland it only stabilized in the second quarter of 2012.

In Italy, however, the compensation of employees was falling and the social benefits were not increasing fast enough to compensate, resulting in a negative development in GHDI. In Denmark the development was similar, although the compensation of employees was declining more slowly and was, in some quarters, compensated by increases in net property income (such as in most of 2010) or social protection benefits (such as in most of 2011). However, in the first half of 2012, changes in the tax-benefit system had a rather negative effect on GHDI.

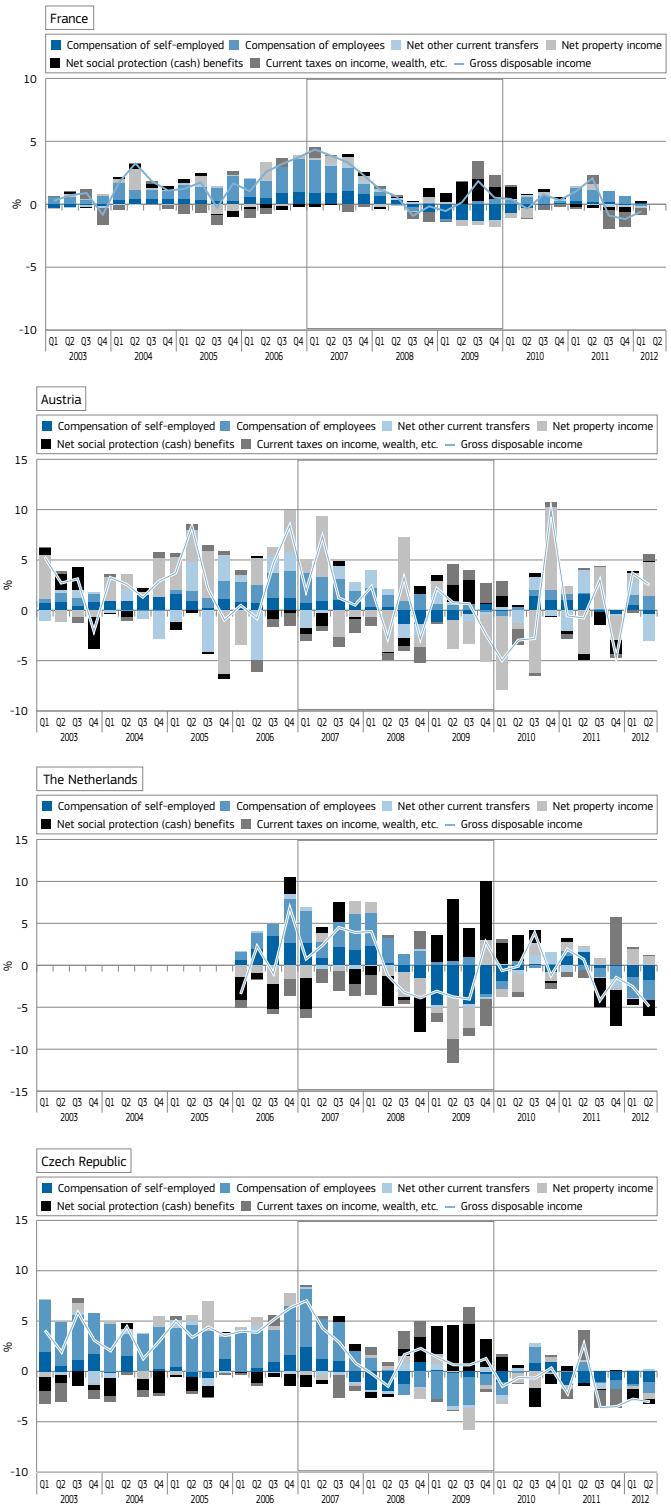
Chart 32: Evolution of real GHDI by components in Germany, Greece, Portugal, Spain, France, Austria, the Netherlands and the Czech Republic (% change for GHDI (deflated by HICP), contribution to change in pps for the components)



Source: National Accounts.

In Ireland, the drop in GHDI continued after 2009, mainly because social protection benefits did not compensate for the further decreasing compensation of employees. In 2011 particularly, increases in social protection benefits were accompanied by increases in taxes, which during most of this year made GHDI continue decreasing. Only at the end of the year GHDI increased.

Chart 30 shows that in the second group of countries (with GDP fall of 0-5 %), Greece, Portugal and Spain follow a similar pattern, as well as Germany and France, and also Austria with the Netherlands and the Czech



Source: National Accounts.

Republic. In the Southern countries, social protection expenditure rose in the first period and GHDI increased in Portugal and Spain. However, in the second period they all decreased their spending on in-kind social protection benefits and Greece and Portugal also on cash benefits. In the three countries, GHDI decreased in this second period.

In Germany and France, changes in GHDI were not very large and only in Germany in the first period GHDI slightly decreased. Spending on both types of benefits increased in both countries in both periods, except for cash benefits in Germany in the second period. In the remaining three countries, social protection expenditure also rose in the first period but GHDI only increased in the Czech Republic. In the second period, cash benefits increased in the Netherlands, stayed nearly stable in the Czech Republic and slightly decreased in Austria. In-kind benefits fell in the Czech Republic, stayed stable in Austria and increased in the Netherlands. While in the Netherlands GHDI stayed nearly stable in the second period, it decreased in Austria and in the Czech Republic.

Chart 32 shows the development in the real GHDI by component in Germany, Greece, Portugal, Spain, France, Austria, the Netherlands and the Czech Republic.

GHDI had rather limited variability in Germany and France. Its changes had a similar development in these two countries, particularly in 2009 and 2010: during the first year, compensation of the self-employed started to fall. Although social protection expenditure increased, in Germany this was not sufficient to maintain GHDI due to a fall in property income. However, in 2010 the compensation of employees increased significantly enough to enable GHDI to resume growth. When in the second half of 2010 also property income also began to increase, GHDI continued growing although social protection benefits started to decrease. In France benefits started to decrease slightly later than in Germany, in the second half of 2011; however, the accompanying increases in taxes translated into a decline in GHDI. In the second half of 2012, nevertheless, GHDI was already close to being stable.

Changes in GHDI in Portugal, Spain and Greece had different causes, especially until 2009. In the first period in Portugal it was mainly the increase in the compensation of employees that was sustaining the growth of GHDI along with social protection benefits. In periods when the net property income grew, GHDI also grew, and vice versa. In Spain, compensation of the self-employed started to decrease already in 2008 and in 2009 was accompanied by falls in the compensation of employees. Higher social protection benefits and lower taxes were able to maintain GHDI until the end of 2009. The development in Greece was similar for the self-employed, however, was better until 2009 for employees. GHDI was relatively stable; only large changes in property income had a significant impact on GHDI.

Since 2010 the development in GHDI has been similar in the three Southern countries: compensation of both employees and self-employed declined

so much that neither social protection benefits, nor increasing property income (in the case of Portugal) were sufficient to maintain GHDI that started to decrease. In the second quarter of 2012, it was at best 5% lower than one year ago in all the three countries.

In Austria the compensation of employees had a positive development until 2009 while net property income was very variable, often causing both positive and negative peaks in GHDI. In 2009 and 2010 especially, GHDI decreased because of this component, and the social protection benefits did not rise enough to compensate. Since 2010 the compensation of employees has again proved a positive development in Austria. In 2012, rises in the compensation of employees, together with increasing property income, lead to an increase in GHDI.

In the Netherlands a significant drop in GHDI between 2007 and 2009 was caused by a simultaneous fall in the compensation of the self-employed, net property income and current taxes. Although social benefits increased significantly, they were not sufficient to maintain GHDI. In 2010 social benefits rose further and, together with less negative development in other components, this led to a slight increase in GHDI. In 2011, however, social benefits fell and GHDI followed. In the first half of 2012, both social protection benefits and compensation of employees and self-employed were decreasing, causing GHDI to fall as well.

In the Czech Republic the compensation of self-employed started to fall already at the end of 2007, i.e. earlier than in Austria or the Netherlands. Then, a decrease in the compensation of employees followed. However, higher social protection benefits and lower taxes helped to sustain GHDI until the end of 2009. Then social benefits decreased significantly and GHDI started to fall. This was also due to higher taxes, particularly since the second half of 2011.

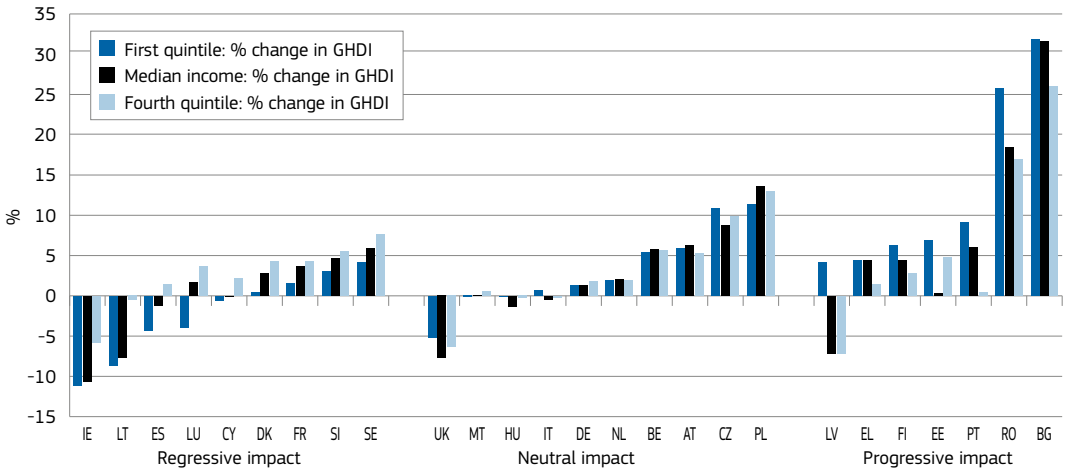
EU-SILC data were used to evaluate the redistributional consequences for citizens in terms of changes in GHDI. Chart 33 shows the changes in GHDI between 2007 and 2009 for the first quintile, fifth decile (to capture the mean income) and the fourth quintile of income distribution.

The size of the change is not always fully consistent with the previous charts that were based on National Accounts. There are a number of reasons for the differences between the two sources. First, in EU-SILC high-earners are under-represented. Second, the survey does not capture the incomes of the self-employed very well. Third, National Accounts take into account imputed rent, while EU-SILC does not. Fourth, National Accounts take account of the property income attributed to insurance policy holders, which is not the case of EU-SILC.

In Chart 33 Member States where GHDI developed by more than 2 pps less favourably for the first quintile than it did for the fourth quintile are categorised as those where economic developments have had a regressive impact on GHDI. Those where this is reversed are grouped as those where the economic developments had a progressive impact on GHDI, and those where the difference is smaller than 2 pps in absolute value are classified as neutral.

Member States where the regressive impact was strongest were Lithuania, Luxembourg and Spain; those where the impact was most neutral were the Netherlands, Hungary and Belgium; and those where the impact was most progressive were Latvia, Romania and Portugal.

Chart 33: Changes in GHDI in different parts of the income distribution (percentage change of national currencies deflated by HICP, reference years 2007-2009); Member States grouped according to the degree of progressivity of the change



Source: EU-SILC, DG EMPL calculations.

4. Efficiency of spending on social protection

Social protection spending is expected to help to prevent and reduce poverty and protect incomes of the population, while supporting their active reintegration in employment and society.

Therefore, this Section looks at social protection spending from two perspectives. First from the social point of view, examining to what extent the Member States manage to prevent/reduce poverty by providing the population with social protection benefits and whether they do so in an efficient way; and second, from the labour-market point of view, examining whether social protection spending is sufficiently employment-friendly, i.e. to what extent benefits create disincentives to participate in the labour market.

4.1. Social protection expenditure and poverty reduction

The shares of the population living in poverty vary significantly across the EU Member States and also the extent to which the countries manage to reduce poverty by providing the population with social benefits is very diverse. In the following analysis, poverty reduction is linked to the size of social protection expenditure and the efficiency of the provision of benefits is assessed.

4.1.1. Poverty reduction effects of social protection spending

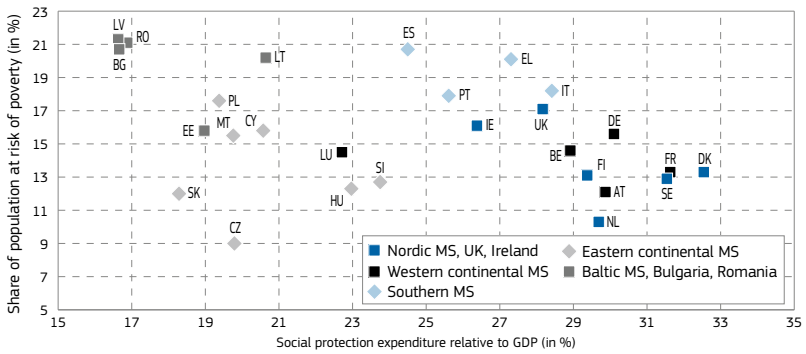
The European Union's main indicator used for tracking poverty in Member States is the share of population at risk of poverty or social exclusion (AROPE). It is composed of three sub-indicators that focus on different aspects of poverty.

The 'at-risk-of-poverty rate' (AROP) measures relative poverty indicating the proportion of people with an income below 60% of the national median income, which varies both among countries and over time. This is the agreed main headline indicator that has long been used to quantify poverty at the EU level. This measure of relative poverty is complemented by two other indicators that capture non-monetary dimensions of poverty and social exclusion: severe material deprivation and the percentage of population living in very low work intensity, or jobless, households.

The analysis performed in this Subsection focuses on the income based measure of poverty because it allows a comparison of the share of the population at risk of poverty before social transfers and after social transfers. The impact of transfers on non-monetary indicators is not directly measurable.

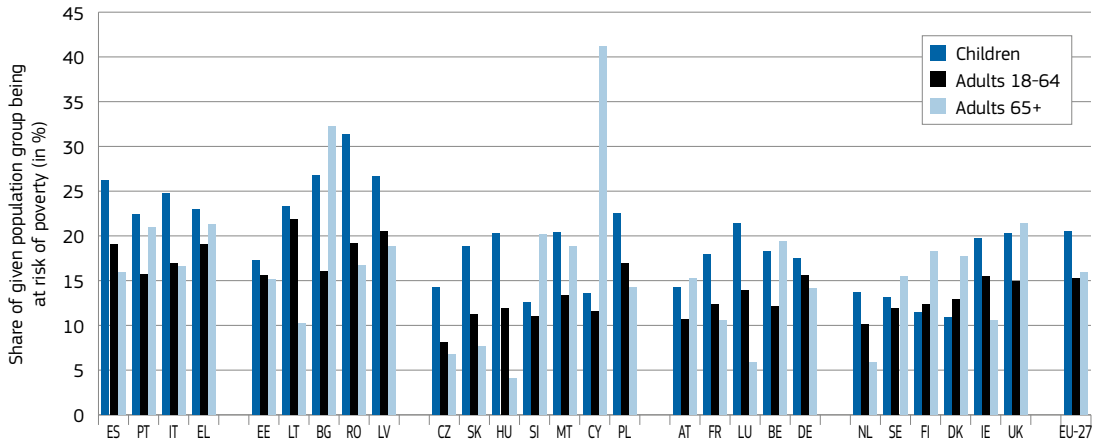
Chart 34 provides an overview of the share of the population at risk of poverty after social transfers and of the size of social protection expenditure in 2009. Member States are grouped by main types of welfare systems as defined

Chart 34: Share of the population at risk of poverty (in percentage) and expenditure on social protection relative to GDP (in percentage); countries grouped as defined in Section 2 (reference year 2009)



Source: ESSPROS and EU-SILC.

Chart 35: Share of population at risk of poverty by age; countries grouped as defined in Section 2 (reference year 2009)



Source: EU-SILC.

in Section 2, and represented by different symbols. As can be seen, countries belonging to the same group are often found close to each other. There is, however, a very weak correlation between the relative size of social protection expenditure and the share of the population at risk of poverty, which indicates that it is not only the size of expenditure relative to GDP that matters.

In 2009, the lowest share of the population at risk of poverty was in the Czech Republic and the Netherlands (noting that the former was spending less than 20% of its GDP on social protection, while the latter was spending nearly 30%). It was the highest in Bulgaria, Romania, Latvia, Lithuania, Spain and Greece, with social protection expenditure ranging from 16% to 27% of GDP.

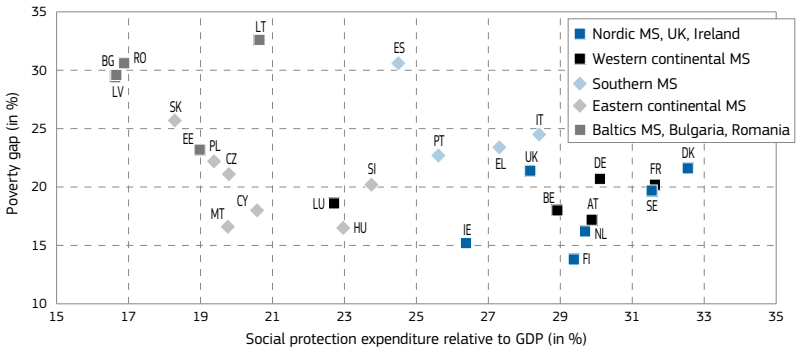
When AROP is viewed by age groups within the Member State groups, the picture is very diverse (see Chart 35). In some countries the situation is quite similar for all age groups (such as in Greece, Estonia or Sweden), while children appear to be worse off than the rest of the population in some countries (Spain, Romania, Slovakia, Hungary or Ireland) and older people in others (Bulgaria and Cyprus).

When investigating the depth of poverty in the EU, we may look at the poverty gap that measures the percentage difference between the median income of the population and the median income of the part of the population that is at risk of poverty (see Chart 36).

The picture does not change much for certain groups of countries (such as the Western continental Member States, or South-Eastern and Baltic Member States), but in others it does: within the Southern Member States, Spain stands out as having not only the highest share of the population at risk of poverty (though still very close to the other states in this group), but also the significantly highest poverty gap.

In the group of Nordic Member States, although Finland belongs to the group of countries with the higher share of population at risk of poverty, the poverty gap in this country is the lowest. In the case of the UK and Ireland, although they have a similar share of population being at risk of poverty, the poverty gap is significantly lower in Ireland.

Chart 36: Poverty gap (in percentage) and expenditure on social protection relative to GDP (in percentage); countries grouped as defined in Section 2 (reference year 2009)



Source: ESSPROS and EU-SILC.

4.1.2. Effectiveness of social protection benefits in poverty reduction

The effectiveness of social protection benefits in poverty reduction can be assessed in several ways. In Box 5 we discuss this issue and we explain which measure of effectiveness is chosen for this analysis and why.

When analysing the effectiveness of social protection benefits in poverty reduction, it is possible to look separately at the effect of pensions and other social transfers (see Chart 38). We can see that, in the groups shown in this chart, the Member States have relatively homogenous at-risk-of-poverty rates before and after social transfers.

In this Chapter, in the analysis of the poverty reduction effects of social transfers there is particular interest in social transfers other than pensions (old age and survivors, as the objective of these is consumption smoothing over the lifetime, rather than purely poverty reduction). Therefore, we continue by excluding spending on pensions and the population aged over 65 years from the analysis.

The effectiveness of transfers in terms of relative poverty reduction varies quite significantly across the EU Member States. The countries that stand out as being the most effective within each group are: Portugal, Lithuania and Estonia; the Czech Republic and Hungary; Austria and Luxembourg; Denmark and Ireland. The two groups below the EU average in terms of effectiveness are the Southern group together with the Baltic Member States and South-Eastern Europe.

Nevertheless, in some countries pensions have a significant poverty reduction effect not only on populations aged over 65, but also on children and working-age adults. Chart 39 shows two Member States (one of EU-15, one of EU-12) where this poverty reduction effect of pensions is significant (Greece, Poland) and a corresponding example of two Member States where this effect is very low (Finland, Estonia).

There is a strong link between the poverty-reduction effect of pensions on children and working-age adults and the prevailing household structures in the Member States (see Chart 40).

Box 5: The most suitable measure of the effectiveness of poverty reduction

To be able to measure to what extent Member States can reduce poverty through social protection spending, it is necessary to use an indicator of poverty that is available both before and after the transfers.

Of the three indicators forming the 'at risk of poverty or social exclusion' indicator, only the 'at risk of poverty' indicator provides such data. Moreover it is available both including and excluding pensions. We can thus measure the poverty reduction effect of social transfers by comparing AROP before social transfers (AROP BST) and AROP after the transfers (AROP). This method suffers from two important drawbacks: it assumes that people would behave in the same way if they were not receiving transfers, and it cannot always distinguish between the different types of benefits or take account of the complexity of the tax-benefit system.

A choice has to be made between poverty reduction in absolute and relative terms, as shown in the following formulas:

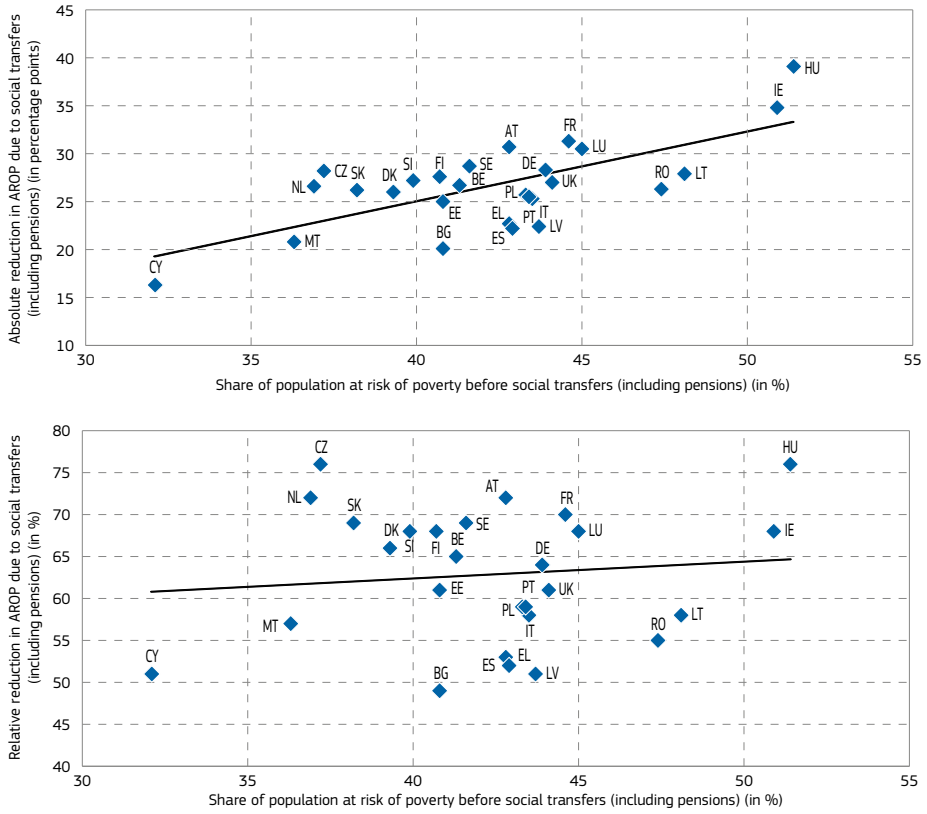
ABSOLUTE EFFECTIVENESS (in percentage points) = AROP BST – AROP

*RELATIVE EFFECTIVENESS (in %) = (AROP BST – AROP) / AROP BST *100*

Both these measures have advantages and disadvantages. The measure of absolute poverty reduction shows how large a part of the population is lifted out of poverty thanks to social transfers; however, it does not indicate if this reduction in poverty is small or large relative to the level of poverty before social transfers. On the other hand, the measure of relative poverty reduction indicates how important the poverty reduction is compared to poverty before transfers, but it does not show how large the part of population lifted out of poverty is.

Chart 37 shows that the relative measure of poverty reduction is more suitable for cross-country analysis: while the absolute reduction in AROP is strongly correlated with the initial share of the population at risk of poverty, the correlation between the relative reduction in AROP and the initial share of population at risk of poverty is almost non-existent.

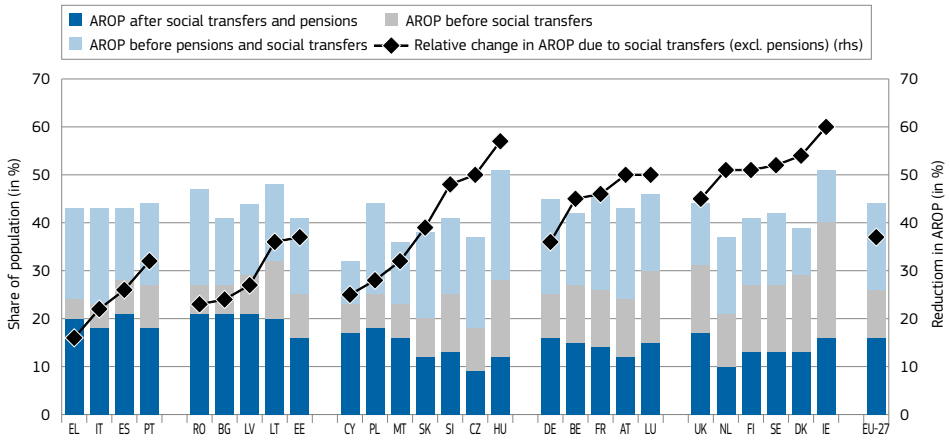
Chart 37: Relation between the share of the population at risk of poverty before transfers and absolute reduction in AROP due to social transfers (top panel) and relative reduction in AROP due to social transfers (bottom panel) (reference year 2009)



Source: EU-SILC.

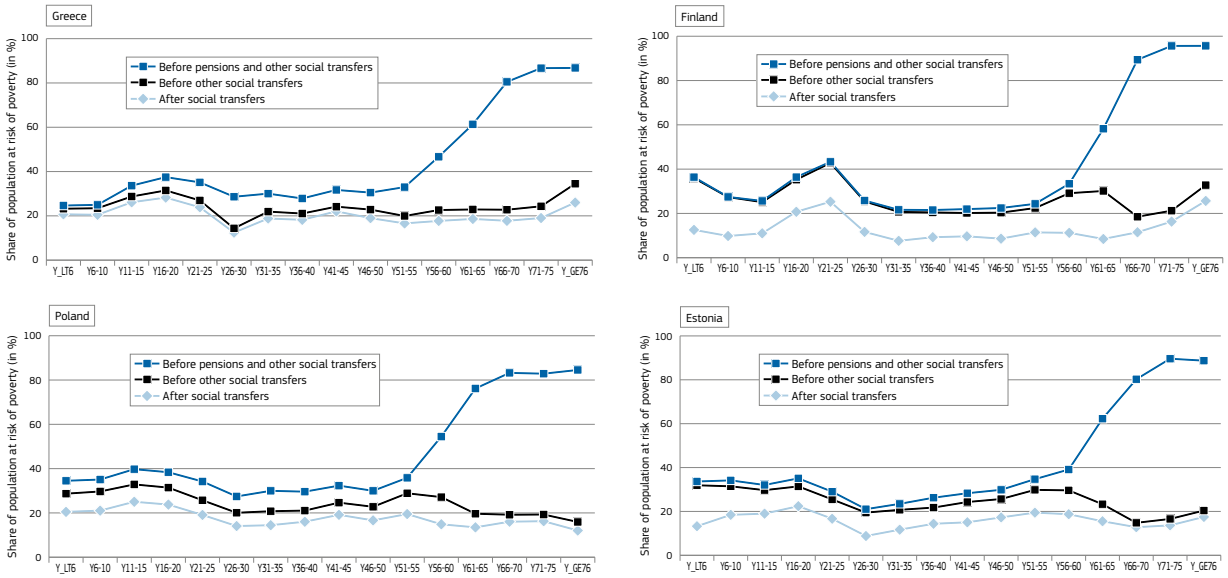
Note: Trend line: 1) Top: $y = 0.725x - 4.065$, $R^2 = 0.471$; 2) Bottom: $y = 0.205x + 54.137$, $R^2 = 0.013$.

Chart 38: Poverty reduction effect of social protection expenditure; countries grouped as defined in Section 2 (reference year 2009)



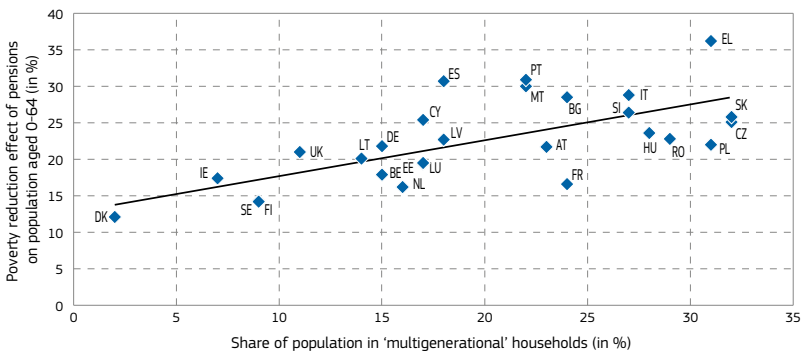
Source: EU-SILC.

Chart 39: Poverty reduction effect of pensions and other social transfers in selected Member States by age (reference year 2009)



Source: EU-SILC.

Chart 40: Relation between the share of population living in 'multigenerational' households and the poverty reduction effect of pensions on the population aged 0-64 (reference year 2009)



Source: EU-SILC.

Note: Trend line: y = 0.479x + 13.043, R^2 = 0.448.

This Chart shows that there is a positive relation between the share of 'multigenerational' households and the poverty reduction effect of pensions on the population aged 0-64. Households defined as 'multigenerational' for this purpose are the following: households with three or more adults with and without dependent children (assuming that the third adult is older than 65) and households with two adults where at least one is older than 65).

As Chart 40 is only showing a correlation, it is not possible to say to what extent social expenditure has been designed so as to reflect household structure, or whether the populations have adjusted their living arrangements to the design of the welfare state.

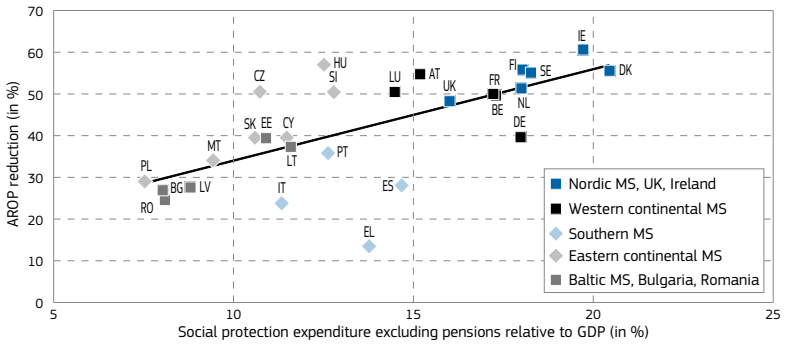
4.1.3. Efficiency of social protection benefits in poverty reduction

By linking the effectiveness of social protection spending to the size of this spending, we can analyse its efficiency[25]. Chart 41 shows that there is a positive correlation between the size of social protection expenditure excluding pensions and the extent to which Member States manage to reduce poverty of the population aged 0-64. However, at the same time, there are major differences in the extent of poverty reduction for the same level of spending (see e.g. Greece and Spain versus Luxembourg and Austria for spending reaching 14-15% of GDP), or in the level of spending used for a given reduction in poverty (see e.g. the Czech Republic and Hungary versus Denmark and the Netherlands).

Although the countries belonging to any one group are placed relatively close to each other in the graph, there are sometimes significant differences in the extent to which they manage to reduce poverty of the population given the size of their spending. While the group of Nordic and Anglo-Saxon countries is the most homogenous, the southern group and the group of EU-12 countries (excluding the Baltic countries and South-Eastern Europe) are the most heterogeneous.

Given that the currently available data do not allow a distinction to be made in terms of the poverty reduction effects of different kinds of spending (by area or means-tested or not), this has had to be approached in a different way. By regressing the poverty reduction effect of social transfers (excluding pensions) on the population aged 0-64 against the size of different kinds of cash spending (expressed relative to GDP), taking into account stable differences among countries (either fixed or random) and also years, it is possible to assess the relative contribution of different spending activities to poverty reduction.

Chart 41: Relation between expenditure on social protection (excluding pensions, relative to GDP) and relative reduction in the share of population (aged 0-64) at risk of poverty (in percentage) (reference year 2009)



Source: ESSPROS and EU-SILC.

Note: Trend line: y = 2.179x + 12.115, R^2 = 0.437.

Table 5: Relative importance of spending functions for poverty reduction of the population aged 0-64

Dependent variable: poverty reduction effect of social transfers (on population 0-64)				
Spending function	**coefficient**		**significance**	
	fixed effects	random effects	fixed effects	random effects
Family/children benefits	0.07	0.07	***	***
Health care/sickness	0.06	0.06	***	***
Disability	0.02	0.05		***
Unemployment benefits	0.05	0.04	***	***
Social exclusion and housing	0.05	0.07	*	***

Source: DG EMPL calculations.

Note: *, **, *** Mean statistical level of significance of 10%, 5% and 1%, respectively.

Table 5 shows the regression results. Most social protection spending functions have a positive and statistically significant effect on poverty reduction. In terms of the size of coefficients, both methods give similar results; however, the second method provides significant coefficients also for disability and social exclusion and housing[26]. Both methods show that family, health care and unemployment benefits all have a positive and significant effect on poverty reduction and that the effect of family benefits is the highest (when spending on this function rises by 1 pp, poverty reduction effect increases by 0.07 pp, *ceteris paribus*). According to the second method, social exclusion benefits have as strong an effect on poverty reduction as family benefits, and disability benefits have a similarly large effect as unemployment benefits. Given the small differences in the sizes of the coefficients, it is not straightforward to give policy recommendations to Member States to start spending more or less on a given function, as they all contribute positively to poverty reduction. For more details see Table 10 in the Annex.

To assess the importance or suitability of means-testing of social protection benefits for the efficiency of social spending, in Chart 42 social protection expenditure (excluding pensions) is plotted against the poverty reduction effect of this spending, indicating the share of means-tested benefits across the Member States.

There is, however, no clear pattern indicating to what extent means-testing of social benefits helps efficiency: we can see that furthest up from the regression line there are countries with various importance of means-tested benefits. This might be caused by the fact that the thresholds in the means-test can be set in such way that two benefits, one with a low limit on income, covering only the poorest quintile of the population, and the other one with a very high limit on income, covering the whole population except for the richest quintile, are both considered as 'means-tested'.

[25] The size of social protection expenditure relative to GDP is used as a proxy for the social transfers received by households (the reduction in the at-risk-of-poverty rate is measured based on these). While cash benefits received by households reduce poverty directly (given the way poverty reduction is calculated in this analysis), the impact of in-kind benefits is more complex to quantify. Taking the example of child-care services, these may influence the employment rate of women by allowing them to take up jobs, thus raising their income but not appearing in data at the micro-level as one of the household's incomes.

[26] Possibly because of more degrees of freedom in this random-effects estimation.

A good way to assess the importance and suitability of means-testing is micro-simulation, such as that performed in Levy et al. (2008). The authors take the example of Poland's tax-benefit system in 2007 and show that, with the same level of expenditure, child poverty risk could be reduced by 5 pps by applying either a tax system more friendly towards single parents and large families (such as in France) or a means-tested benefit system (such as in the UK).

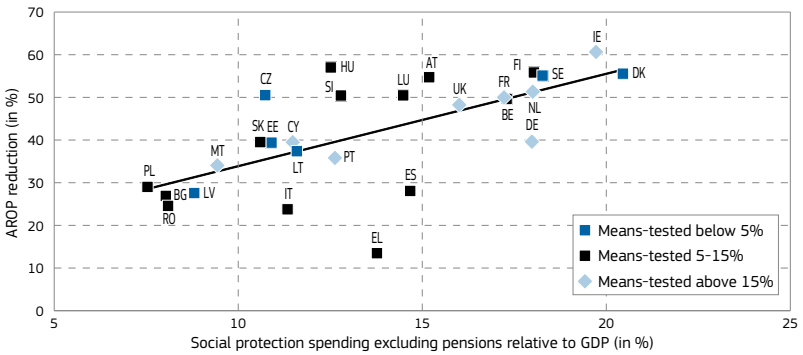
4.1.4. Important factors influencing the effectiveness of poverty reduction

There are several important factors influencing the effectiveness of the poverty reduction effect of social protection spending. First, it is important that a sufficiently large share of the population is covered by benefits. Second, the replacement rate of the given benefits must be sufficient to have an effect on poverty reduction. Third, low take-up, especially of means-tested benefits, can negatively affect the effectiveness of social protection spending in poverty reduction.

Taking the example of unemployment benefits, we look at the (pseudo) coverage rates of unemployment insurance, comparing different sources of these statistics, and of the net replacement rates of unemployment benefits (see Table 6). In most countries the different sources of coverage rates give relatively consistent results, although in some countries they vary significantly (such as Italy, Greece and Belgium with 81–97 pps differences in coverage rates)[27].

The way in which coverage and the height of replacement rates influence the effectiveness of poverty reduction is relatively straightforward. If unemployment benefits only cover a small part of the unemployed, or if the replacement rate is very low, the effect on poverty reduction will be rather limited.

Chart 42: Relationship between expenditure on social protection (excluding pensions, relative to GDP) and the poverty reduction effect of this spending (in percentage); the share of means-tested benefits is indicated (reference year 2009)



Source: ESSPROS and EU-SILC.
Note: Trend line: y = 0.022x + 0.121, R^2 = 0.437.

Table 6: Unemployment insurance pseudo-coverage rates and net replacement rates of unemployment benefits (reference year 2009)

	Coverage rate - administrative sources (in %)	Coverage rate - SILC (in %)	Coverage rate – LFS (in %)	Replacement rate (in %)
Austria	88	74	50	52
Belgium	148	89	67	65
Bulgaria	49	20	12	25
Cyprus	54	n.a.	26	n.a.
Czech Republic	54	50	30	20
Denmark	55	85	51	63
Estonia	33	46	36	26
Finland	94	89	59	44
France	82	69	40	49
Germany	110	85	75	45
Greece	115	30	22	24
Hungary	36	59	44	22
Ireland	62	n.a.	n.a.	58
Italy	103	36	6	24
Latvia	35	41	23	24
Lithuania	31	18	27	21
Luxembourg	33	52	31	29
Malta	46	41	25	46
Netherlands	67	55	n.a.	38
Poland	27	24	15	22
Portugal	n.a.	43	41	55
Romania	45	29	15	25
Slovakia	16	30	10	21
Slovenia	40	31	34	24
Spain	39	57	40	41
Sweden	40	37	31	43
United Kingdom	62	33	n.a.	29

Source: Coverage rates: EC/OECD database on benefit recipients, SILC and LFS; replacement rates: OECD Tax-Benefit Models.

Among the EU Member States, both the coverage and replacement rates vary a lot. In some Member States both are relatively high, such as Belgium or Austria. In some countries the coverage is good, but replacement rates are not very high (below 50%), such as Germany, Finland or France. In the Southern Member States coverage of unemployment benefits is rather low (especially according to the surveys) and the replacement rates are above 50% only in Portugal, 41% in Spain and only 24% in both Italy and Greece.

(27) In SILC and LFS the coverage rates are always below 100% because in these surveys the people identified as unemployed are asked about whether they actually receive benefits (some of them might not be eligible, such as young people or those who have lost their entitlements, and some of them might not be claiming benefits). People that continue receiving benefits when they start to work are not taken into account in the surveys for this purpose. This is different in the administrative sources, which also include those at work but still receiving benefits among the unemployment benefits recipients, and coverage rates thus can exceed 100%.

Table 7: Net income of people living on social assistance relative to the median equivalised income (including cash housing assistance) (2010)

	Single person (in %)	Lone parent with 2 children (in %)	Couple with 2 children (in %)
Greece	0	9	2
Bulgaria	14	26	22
Romania	17	27	26
Slovak Republic	23	33	30
Spain	35	33	25
Hungary	31	39	29
Estonia	32	34	31
Poland	31	41	33
Portugal	26	42	43
France	41	42	36
Slovenia	30	53	44
Czech Republic	50	45	42
Belgium	45	55	39
Latvia	36	50	46
Sweden	56	48	43
Austria	49	50	46
Malta	59	54	44
Luxembourg	51	54	51
Lithuania	27	77	56
Germany	47	60	53
Finland	57	56	50
Netherlands	74	64	52
United Kingdom	66	76	65
Denmark	71	73	71
Ireland	77	71	70

Source: OECD Tax-Benefit model.

Note: Countries are sorted based on the average net income of the 3 family types.

The Baltic States have both low coverage and replacement rates and compared to them, Bulgaria together with Romania perform slightly better in both. Of the other EU-12 countries, some have coverage rates similar to those of Portugal and Spain, but have much lower replacement rates (such as the Czech Republic or Hungary). On the other hand, some other countries, such as Slovakia and Poland, have both very low coverage and replacement rates. Sweden stands somewhat surprisingly among the EU-12 countries, having a similar coverage as these countries, but offering higher replacement rates.

Broadening the scope beyond unemployment benefits only, we can look at the relative size of incomes of people living on social assistance including cash housing benefits. This means comparing what such households are getting in these benefits with the median equivalised income. This is shown in Table 7 for three model household types. In the EU on average, lone parents with two children are getting higher social assistance benefits relative to the median income than singles without children or couples with two children (49% versus 42% for the latter two household types).

Only in three countries do all the three model household types receive sufficiently high social protection benefits to get them above the poverty threshold, i.e. 60% of median income (in Ireland, Denmark and the United Kingdom). On the other side of the spectrum, there are Member States in which households do not even reach 40% of the median income (Greece and Spain; Bulgaria and Romania; Slovakia, Hungary and Estonia). Of the Western continental Member States, in France the net income of people living on social assistance is the lowest (on average for the 3 family types it is 40% of the median income) and of the EU-12 it is the highest in Lithuania (53% of the median income on average).

Matsaganis et al. (2008) explore, using EUROMOD for five chosen Member States, the effect of non-take-up of benefits on the effectiveness of spending on social assistance in terms of poverty reduction. They conclude that imperfect targeting of these benefits can have a significant negative effect both on the reduction in the share of the population at risk of poverty and on poverty gap reduction.

4.1.5. Child poverty reduction

A part of the population that deserves particular attention is children, i.e. the population aged 0-17. As shown in Chart 35, in 2009 the share of children at risk of poverty or social exclusion was in most Member States higher than in the rest of the population (the exceptions being Slovenia, Sweden, Finland and Denmark).

The poverty reduction effect of social transfers on children also differed a great deal between Member States (see Chart 43). First, in some Member States the poverty reduction effect of pensions on children is very high compared to others, as in Romania, Poland, Slovakia and Bulgaria. As illustrated by Chart 44, these are the Member States where the share of households with three or more adults with dependent children is the highest. It is likely that in such countries there are disproportionately more multi-generational households than elsewhere (for cultural or economic reasons). The additional pension income of the eldest household member(s) then also has a poverty reducing impact on children.

The relative efficiency of transfers in terms of poverty reduction (or the percentage change in AROP due to social transfers) also varied greatly among the Member States, even slightly more than when the whole population is taken into account. Usually, the Member States perform worse in terms of child poverty reduction than they do for the whole population. For Lithuania, Estonia and Germany it is quite similar and only in Romania, Bulgaria, Latvia and Cyprus is child poverty being reduced more than poverty of the total population.

We can also take a look at the efficiency of spending on child and family benefits in the poverty reduction of children (see Chart 45). There are enormous differences in the extent to which Member States manage to reduce child poverty with child and family benefits: while both Spain and the Czech Republic spend approximately 1.5% of their GDP on these benefits, the Czech Republic reduces child poverty by more than 30%, but Spain by only 3%.

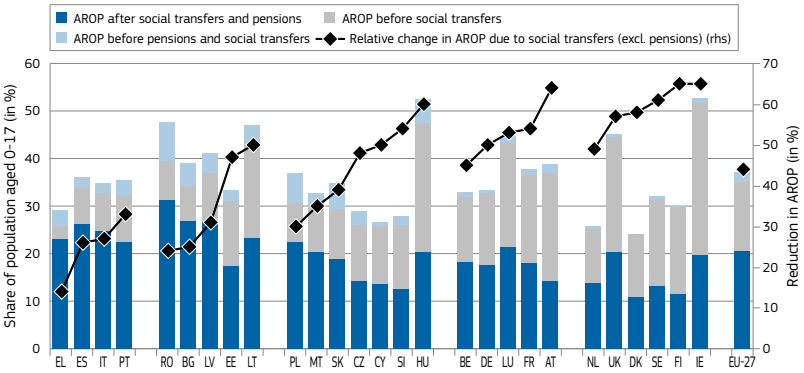
In terms of conditionality of child and family benefits, it seems that there is no clear relationship between a higher or lower share of means-tested benefits and higher efficiency of spending in poverty reduction: when Member States are grouped according to the share of means-tested child/family benefits, we can see that groups are spread relatively evenly around the regression line.

Nevertheless, data allowing the identification of the poverty reduction effects of other spending functions on children is currently not available. Therefore, to compare the poverty reduction effect of child benefits with the remaining spending functions, the same analysis is performed as for the whole population: by regressing the poverty reduction effect of social transfers (excluding pensions) on children against the size of different kinds of cash spending (expressed relative to GDP), taking into account stable differences among countries (either fixed or random) and also years, we can assess which spending areas play a more important role in child poverty reduction.

Table 8 shows the regression results. In terms of the size of coefficients, both methods are similar; however, the second method gives more significant results[28]. As expected, family/child benefits have a higher impact on the reduction of poverty among children relative to other functions: with a 1 pp rise in the size of spending on child benefits, the child poverty reduction effect increases by 0.11 pp, *ceteris paribus*. This suggests that when governments want to reduce child poverty further, it is more effective to concentrate expenditure on family benefits rather than on other social protection spending functions.

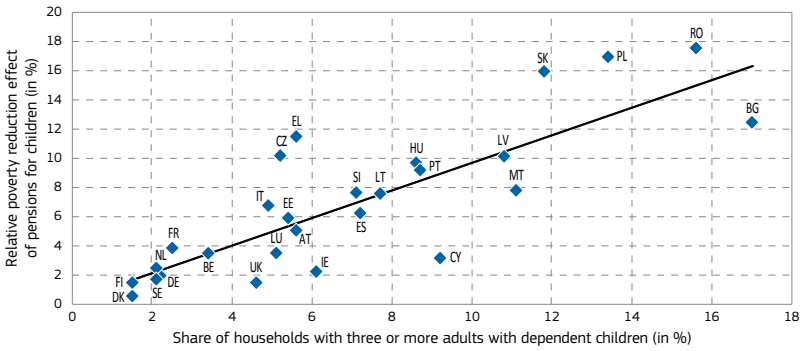
Both methods suggest that health care and unemployment benefits have positive and significant effects on the poverty reduction of children, although lower than family benefits. According to the second method, social exclusion benefits have nearly as strong an effect on poverty reduction as health care benefits, and disability benefits have a similarly large effect as unemployment benefits. For more details see Table 11 in the Annex.

Chart 43: Poverty reduction effect of expenditure on social protection for the population aged 0-17; countries grouped as defined in Section 2 (reference year 2009)



Source: EU-SILC.

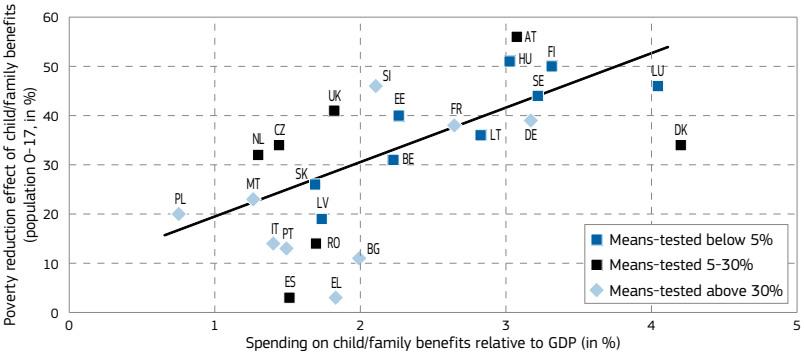
Chart 44: Relation between the share of households with 3 or more adults with dependent children and the poverty reduction effect of pensions on the population aged 0-17 (reference year 2009)



Source: EU-SILC.

Note: Trend line: y = 0.957x + 0.164, R^2 = 0.685.

Chart 45: Relationship between expenditure on child/family benefits (relative to GDP) and the poverty reduction effect of this spending (in percentage) on children; the share of means-tested child/family benefits is indicated (reference year 2009)



Source: ESSPROS and EU-SILC.

Note: Trend line: y = 10.915x + 6.085, R^2 = 0.420.

(28) Possibly because of more degrees of freedom in this random-effects estimation.

Table 8: Relative importance of spending functions for the poverty reduction of children

Dependent variable: poverty reduction effect of social transfers (on population 0-17)				
Spending function	Coefficient		Significance	
	Fixed effects	Random effects	Fixed effects	Random effects
Family/children benefits	0.11	0.11	***	***
Health care/sickness	0.07	0.08	***	***
Disability	0.01	0.04		**
Unemployment benefits	0.03	0.03	***	**
Social exclusion and housing	0.05	0.07		**

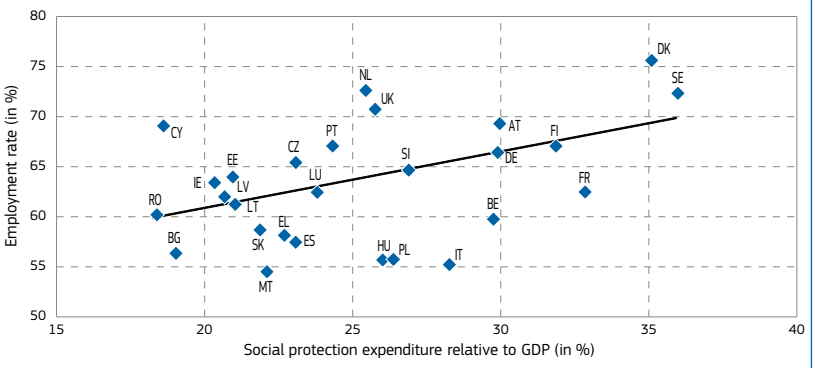
Source: DG EMPL calculations.

4.2. Labour-market friendliness of social protection spending

The efficiency of welfare systems can also be evaluated in terms of their labour market friendliness in order to ensure that the social protection system provides a shield against personal and economic problematic moments, but does not represent a subsidy encouraging people to stay out of the labour market. In that respect, welfare systems should also be designed to activate inactive or unemployed people and minimise disincentives to a return to or entry into work.

How can the labour friendliness of a welfare system be best evaluated? A simple scatter plot of social expenditures and employment rate averages between 1995 and 2010, as in Chart 47, shows that large welfare states usually go hand-in-hand with higher participation in the labour market, not the reverse.

Chart 46: Employment rate and expenditure on social protection (averages 1995-2010)



Source: ESSPROS and Labour Force Survey.
Note: Trend line: y = 0.518x + 50.129, R^2 = 0.189.

4.2.1. Financial disincentives

However, welfare provisions may create some distortions, and may give inefficient or inappropriate incentives to inactive or unemployed people to look for a job and to accept it. In this respect, a widely used method to assess the employment friendliness of welfare systems consists of computing the financial disincentives to work in terms of marginal effective tax rate[29].

The 2011 Annual Growth Survey (AGS) has clearly set as a priority 'to make work more attractive' or 'make work pay'. To make work pay can also be done by linking training and job search more closely to benefits, by shifting taxes away from labour and improving tax benefit systems, and by encouraging the development of flexible work arrangements and childcare facilities in order to encourage more second earners to enter the labour force. In this way welfare systems can be designed to better protect, but also integrate individuals at the lower end of the pay scale, including second earners (primarily women) and the low skilled, into the labour market.

The literature usually refers to three traps: low-wage traps for people who are working but do not have (financial) incentives to work more, the unemployment trap and inactivity trap for people who are on unemployment benefits or outside the labour market, with no incentives to look for a job and/or accept one (see details in Box 6).

These three traps encompass the combined effects of income tax, social security contributions and the withdrawal of welfare benefits on an individual's earnings. In the case of low-wage traps, income taxes and social security contributions are particularly relevant, especially for single persons. Social benefits can also play a key role of disincentive for couples. Chart 47 demonstrates this in terms of social assistance in Luxembourg, Denmark and Lithuania, housing in Finland, Sweden, France, Germany, the Netherlands, the UK and Poland, and family benefits in the UK, the Czech Republic, Italy and Malta)[30].

Concerning inactivity traps (see Chart 48) and unemployment traps (see Chart 49), social benefits play a more important role. Therefore a better design of welfare systems can help reduce the marginal effective tax rate (METR) and increase the incentive to take on work.

[29] The marginal effective tax rate (METR) represents the part of a change in earnings 'taxed away' by the combined operation of taxes, social security contributions (SSCs), and any withdrawal of earnings related social transfers. It is the percentage of an extra euro of income that the recipient loses after beginning to work. Calculating the METR is typically very dependent on individual circumstances and involves a consideration of institutional characteristics and level of revenues and it is computed taking different household types (single, single with children, one earner, two earners, etc) into account.

[30] The charts do not cover the entire variety of households, but all estimations can be found in Carone et al. (2004), OECD (2007) and OECD (2009). The full tax and benefits indicators database can be downloaded here: http://ec.europa.eu/economy_finance/db_indicators/tax_benefits_indicators/index_en.htm.

The policy tools that Member States have used to reduce these traps have been mainly focused on low wage workers. They include reducing the tax wedge (direct labour taxation and social security contributions) on lower wages, increasing minimum wages, reducing the level or duration of unemployment benefits, introducing in-work benefits, and reviewing the design of out-of-work benefits (social assistance, child/family benefits, housing benefits, disability schemes).

In fact, important features of the reforms of benefits do not impact directly on the financial incentives but are rather instrumental in encouraging the return to work of the unemployed and the inactive. While some of these tools have no impact on the adequacy of benefits (in-work benefits, lower tax wedge, increased minimum wage), others may affect adequacy and lead to poverty and exclusion if a return to work fails to result, or does not last.

Member States can focus on smoothing the transition between unemployment or inactivity and work, allowing a rollover of the benefits for a certain period. This is often done through in-work benefits (the example of France which changed the *Revenu Minimum d'Insertion to Revenu de Solidarité Active* can be of some interest). If the unemployed or inactive do not lose all the benefits while taking up work, the METR is reduced. This can be particularly important when the job is only temporary or part-time, but may lead to higher low-wage traps.

Box 6: What are 'low-wage trap/poverty trap', 'unemployment trap' and 'inactivity trap'?

The **'low-wage trap'** (or 'poverty trap') is related to the financial consequences of increasing working hours (or work effort) for those already in (low-paid) work. The 'trap' refers to a situation where an increase in gross in-work earnings fails to translate into a net income increase that is felt by the individual to be a sufficient return for the additional effort. Both taxes and benefits can result in large parts of any additional gross earnings being effectively 'taxed away'. The influence of taxes will be more relevant for earners of higher wages (and low-wage earners with high-wage spouses in joint tax systems). Yet, due to the withdrawal of income-tested benefits and the operation of SSC earnings thresholds above which contributions are sometimes payable on earnings as a whole, the part of an additional working hour that is taxed away at low earnings is often much higher than at average and high income levels.

The term **'unemployment trap'** is frequently used to refer to a situation where benefits paid to the unemployed and their families are high relative to net in-work earnings. While the judgment whether work 'pays' is an individual decision that will depend on many factors, tax-benefit systems will play an important role. Unemployment benefit systems provide income security during unemployment and contribute to more equitable income distribution. By providing income support to liquidity constrained persons during unemployment, they also contribute to a more efficient match between workers and jobs. Yet, at the same time, out-of-work benefits can discourage job search and put upward pressure on wage levels. In theoretical models of imperfect labour markets, unemployment benefits are deemed to increase equilibrium unemployment rate.

The **'inactivity trap'** is a situation similar to the unemployment trap except that it applies to people not receiving any unemployment benefits, including those not considered part of the labour force or 'inactive' as far as paid employment is concerned. For these individuals, a situation where employment is judged not to 'pay' may be brought about by minimum income or other income related benefits which would be lost upon taking up paid work. However, the tax system may also have an important deterrent effect, which can be particularly relevant for partners or spouses of working individuals: if their incomes are taxed jointly, then any potential earnings of the currently 'inactive' partner may be taxed at relatively high rates and may thus reduce the net gain from work. Together, benefits and taxes can effectively create a wage floor below which a transition into employment does not bring any financial gain in the short term.

Source: Carone et al. (2004).

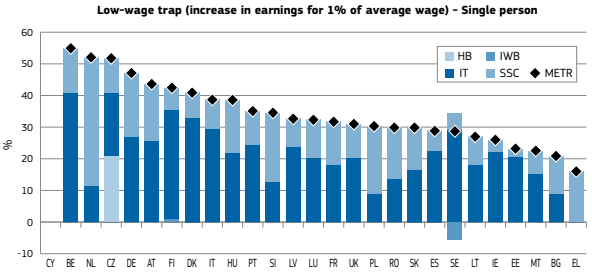
As illustrated in Table 12 in the Annex, between 2001 and 2010, the largest reductions in the unemployment trap were achieved by Denmark, Germany, Greece, France, Austria, Portugal, Finland, Sweden and Slovakia for all types of households. The inactivity trap was also considerably reduced between 2001 and 2010 in a number of countries, in particular in Denmark, France, Austria, Finland, the Czech Republic, Hungary, Poland and Slovakia.

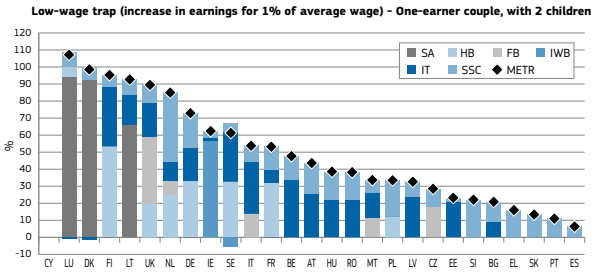
At the present time, a major overhaul of unemployment benefit systems is underway in some countries, while the tax wedge has increased in most countries due to pressing needs to consolidate public finances. Some of these reforms have an impact on METRs (e.g. the level of unemployment benefits but not their duration)[31] and, therefore, on unemployment and inactivity traps.

Concerning unemployment benefits, the objectives are either clearly to address insufficient incentives to take up work while supporting fiscal consolidation plans and employment recovery (as appears to be the case in Belgium, Portugal, the Czech Republic, Slovenia, Finland and Greece), or to improve income stabilisation and income security (as in Italy). Incentive-friendly measures include reduction in the maximum level of benefits (Portugal, Slovenia), adaptation of the design of benefits over the unemployment spell (e.g. Portugal, Belgium, Slovakia, Slovenia, Finland), a cut in benefit duration (Portugal, Hungary, Slovakia, Slovenia, Finland), and stricter eligibility criteria (the Czech Republic). In contrast, measures designed to stabilize consumption include extending benefit coverage to new groups of workers (Italy, Portugal), temporarily lengthening the benefit duration (Denmark), and increasing benefit generosity as part of a comprehensive reform of unemployment benefit system (Italy as of 2017). The possibility of continuing to draw unemployment benefits while working has been introduced to support labour market integration of specific categories of the unemployed in Belgium and France. However, a similar scheme

(31) METRs are also affected by changes in the average wage.

Chart 47: Low-wage trap for a single person and one earner couple with two children (2010)

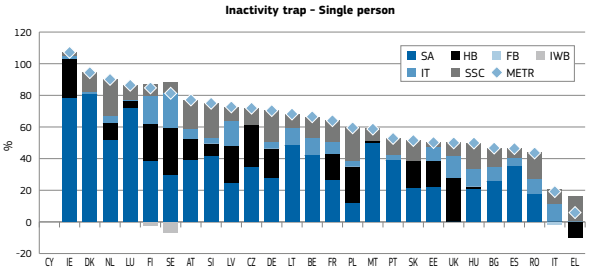


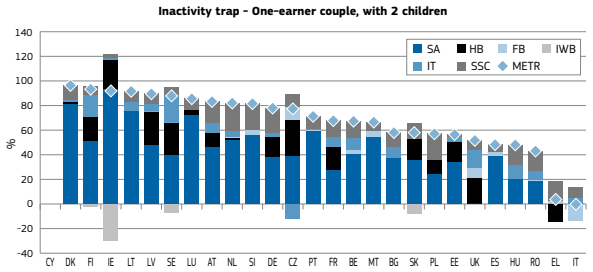


Source: OECD/EC Tax and Benefits database.

Note: METR; Marginal Effective Tax Rate, SA; Social Assistance, HB; Housing Benefits, FB; Family Benefits, IWB; In-work Benefits, IT; Income Tax, SSC; Social Security Contributions.

Chart 48: Inactivity trap for a single person and one earner couple with two children (2010)

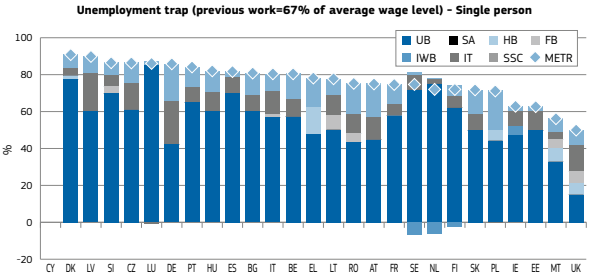


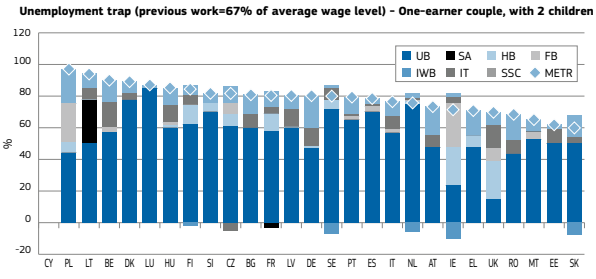


Source: OECD/EC Tax and Benefits database.

Note: METR: Marginal Effective Tax Rate, SA: Social Assistance, HB: Housing Benefits, FB: Family Benefits, IWB: In-work Benefits, IT: Income Tax, SSC: Social Security Contributions.

Chart 49: Unemployment trap for a single person and one earner couple with two children (2010)





Source: OECD/EC Tax and Benefits database.

Note: METR: Marginal Effective Tax Rate, UB: Unemployment Benefits, SA: Social Assistance, HB: Housing Benefits, FB: Family Benefits, IWB: In-work Benefits, IT: Income Tax, SSC: Social Security Contributions.

was abolished for all unemployed persons in order to limit its misuse in the Czech Republic.

Concerning the tax wedge, around half the Member States have changed the structure of their personal income taxes since 2011. In some countries these have been increased, especially in the form of surcharges on high income earners (Belgium, Greece, Italy, Cyprus, Luxembourg, Portugal, Spain), often only on a temporary basis, while in others they have been reduced (e.g. Hungary, Latvia, Finland, Germany), mainly in order to boost work incentives of specific vulnerable groups, notably of parents (Hungary, Malta, Germany) and of low and medium income earners (Belgium, Finland, Ireland, Hungary, the Netherlands). As a result, income tax progressivity has increased, except in the UK where it has been decided to reduce the level of the top rate of income tax. Social security contributions have increased in many countries as a result of a rise in the standard rates (Greece, Latvia, the UK), a rise in the rates for specific groups (Bulgaria, France, Hungary, Poland, Austria, Portugal), and on account of action to broaden the tax base (Cyprus, Slovakia). Targeted cuts in social security contributions were decided on in Spain and other countries to support the employment of young people and the long-term unemployed, while Germany reduced social security contributions across the board.

While these measures are generally designed to support those facing particular difficulties, it has also to be

recognised that the introduction of measures targeted at low wage earners, such as in-work benefits and the reduction of the tax wedge on low wages, may create disincentive effects higher up the earnings distribution, and/or introduce a bias in the setting of wages, which can also impact on the long-term adequacy of social protection by lower overall contributions.

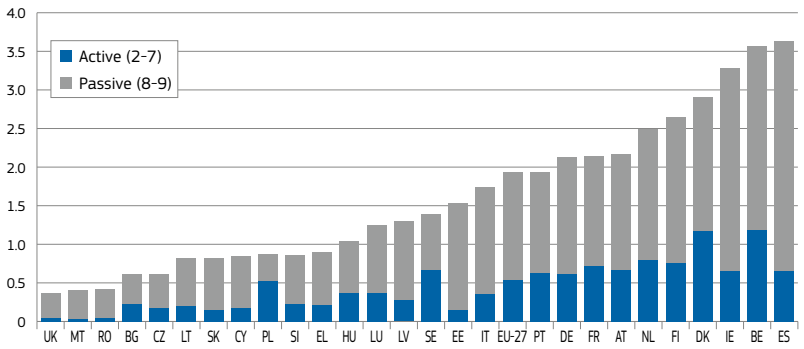
The issue of financial incentives is broader than poverty, unemployment and inactivity traps. Pension system designs, for instance, provide strong (dis)incentives to work or not. Also in-kind services, in particular childcare and health care, can provide incentives or disincentives to work, especially for women. Calculations available generally do not take account of access to in-kind services. We will briefly discuss this issue at the end of this section.

4.2.2. Activation policies and support services

Financial disincentives do not explain the entire picture. The correlation between inactivity traps and the employment rates is 0.44, demonstrating both that financial disincentives are an important factor affecting the decision to work, and the fact that it is clearly not the only one. More generous benefits by definition entail bigger disincentives (there cannot be a disincentive where there is no benefit), although they may also have enabling or capacity maintaining effects through which they contribute to employability. To mitigate their effect as disincentives, they can be accompanied by off-setting activation policies (eligibility and work-availability conditions, participation in activation measures and effective enforcement of the system).

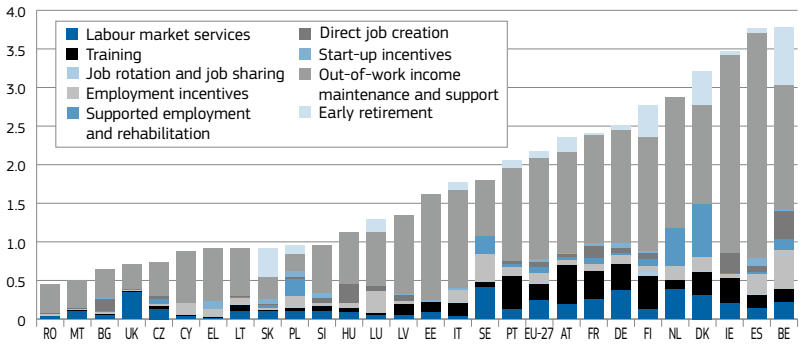
In this context it is to be noted that active labour market policies (ALMPs) account only for a small share of labour market expenditures in all EU Member States (see Chart 50). Poland (55%), Sweden, Denmark (both 37%), Bulgaria (34%), Hungary (32%), Belgium, Portugal (both 31%) and France (30%) had the highest share of ALMPs spending compared to total labour market policy spending in 2009. Sometimes ALMPs go hand in hand with passive labour market policies, as in Denmark, providing an effective tool to provide protection and promote activation. Passive policies often have a more prominent role, as in Spain and Belgium. Most eastern European countries spend little on labour market policies, passive and active. The United Kingdom spends almost as much on active as on passive policies, but both are below the EU average.

Chart 50: Active and passive labour market policies expenditure relative to GDP (2009)



Source: Eurostat – Labour Market Policy database.

Chart 51: Labour market policies expenditures in percentage of GDP by category (2009)



Source: Eurostat – Labour Market Policy database.

Note: Early retirement and out-of-work income maintenance and support belong to passive labour market policies.

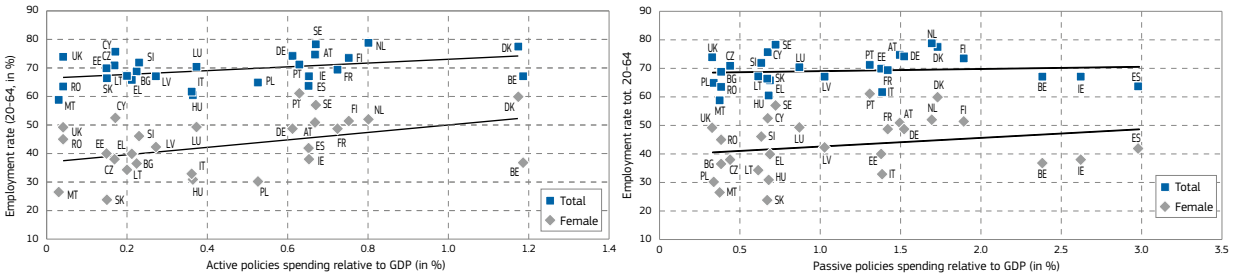
How do active labour market policies work in practice? Boone and Van Ours (2006) presented a theoretical framework to analyse the impact of benefit sanctions as an activation measure to increase job-finding rates of recipients of unemployment benefits. They use a search and matching model in which benefit sanctions affect the intensity with which unemployed workers search for a job both *ex post*, and *ex ante*. In this context, sanctions are seen to increase the search intensity because they reduce the value of being unemployed (*ex post*) while they also increase search intensity because of stricter enforcement of job search requirements and efforts by the non-sanctioned (*ex ante*).

Among EU Member States, ALMPs can be grouped into six categories: start-up incentives; direct job creation; supported employment and rehabilitation; employment incentive; job rotation and job sharing; and training. Chart 51 shows that, among active labour market policies, training accounts for the biggest share.

Among passive labour market policies the biggest share is taken by unemployment benefits (out-of-work income maintenance and support). In some countries, notably, Belgium, Denmark, Finland and Slovakia, early retirement continues to play a significant role, although this is being slowly phased out in order to promote active ageing and reduce costs with the number of people involved becoming quite limited.

Do ALMPs really increase labour market participation? Chapter 1 has already presented the issue in details, with a focus on transitions. A simple scatter plot (Chart 52) shows that there is a strong

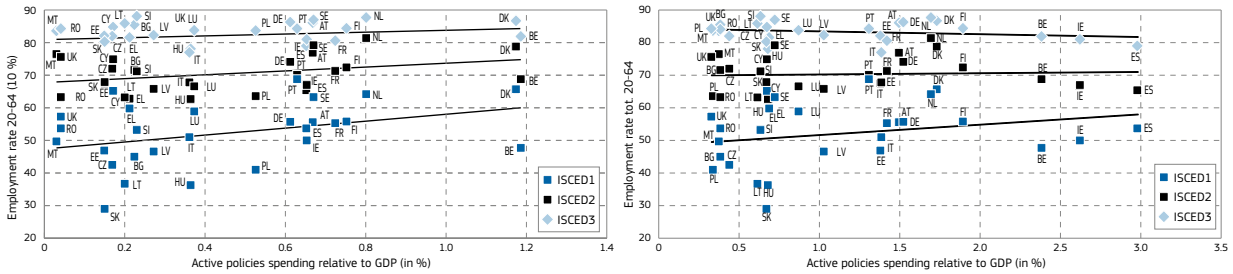
Chart 52: Active and passive labour market policies and employment rate (20-64), 2009



Source: Eurostat – Labour Market Policy database and Labour Force Survey.

Note: trend lines: 1) Left: Total: y = 6.379x + 66.524, R^2 = 0.146; Female: y = 13.240x + 37.203, R^2 = 0.187;
2) Right: Total: y = 0.777x + 68.486, R^2 = 0.011; Female: y = 3.032x + 39.664, R^2 = 0.051.

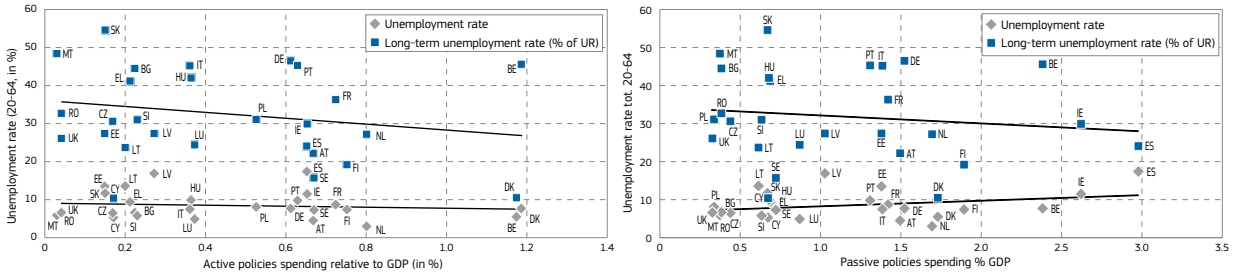
Chart 53: Active and passive labour market policies and employment rate by education level (20-64), 2009



Source: Eurostat – Labour Market Policy database and Labour Force Survey.

Note: ISCED1: Pre-primary, primary and lower secondary education; ISCED2: Upper secondary and post-secondary non-tertiary education; ISCED3: First and second stage of tertiary education.
Trend lines: 1) Left: ISCED1: y = 1.1264x + 82.913, R^2 = 0.0158; ISCED2: y = 10.957x + 47.287, R^2 = 0.1321; ISCED3: = 5.3691x + 67.918, R^2 = 0.1003;
2) Right: ISCED1: y = -0.875x + 84.407, R^2 = 0.049; ISCED2: y = 3.161x + 48.585, R^2 = 0.057; ISCED3: = 0.438x + 69.814, R^2 = 0.003

Chart 54: Unemployment and long term unemployment and LMPs (2009)



Source: Eurostat – Labour Market Policy database and Labour Force Survey.

Note: Trend lines: 1) Left: UR: y = -7.399x + 35.268, R^2 = 0.041; LT UR: y = -1.379x + 9.111, R^2 = 0.015;
2) Right: UR: y = -2.084x + 34.334, R^2 = 0.017; LT UR: y = 1.418x + 6.888, R^2 = 0.084.

correlation between the use of active labour market policies and employment rates (blue squares, left graph), while the correlation with passive policies is much weaker (blue squares, right graph). The same picture can be found when relating the employment rate of women to LMP expenditures (grey diamonds). Moreover the correlation is even higher for ALMPs, partly reflecting the fact that low spending countries such as Italy and Malta have a very low female employment rate compared to countries such as Denmark, Sweden or the Netherlands, which also spend more on ALMPs.

ALMPs also seem more effective in helping promote the employment of the low skilled. Chart 53 shows the correlation of LMPs and employment rate for three education levels (primary, secondary and tertiary) and the relation both for active and passive policies is clearly stronger for the low skilled than it is for the medium skilled, with little obvious impact in the case of the high skilled.

The relation between unemployment and LMPs provides interesting results. The left hand graph in Chart 54 shows a negative correlation between unemployment rate and long term unemployment, on the one hand, and ALMPs on the other, while the graph on the right shows a positive correlation with passive LMPs. In short, these simple correlations confirm that ALMPs

are associated with increased active participation in the labour market while passive policies may appear to reduce incentives to participate, even though they represent a key form of protection and insurance for workers.

The overall impression provided by these figures is confirmed by a large set of empirical studies[32] (both using experimental design on policy reform in one country and non-experimental, mostly cross country studies). The majority of such studies confirm that ALMPs accelerate the re-employment of unemployment benefit recipients and other jobseekers although the effect is not generally found to be very large. As Chapter 1 shows, ALMPs can be effective in supporting positive transitions in the labour market and hence improve the overall employment.

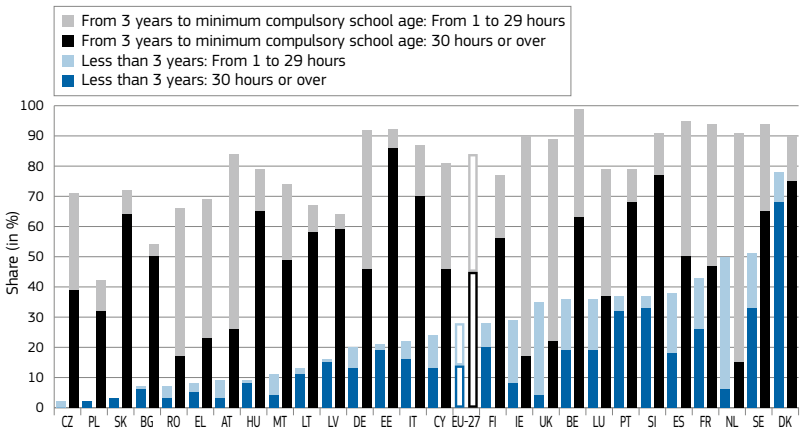
For a summary of empirical literature on ALMPs see Chapter 1.

4.2.3. Can parents afford to work?

Active labour market policies may not be enough to ensure high levels of labour market participation with the lack of enabling services being identified as a particular obstacle to participation, especially for women with care responsibilities. This is also a compounding factor of child poverty. As the OECD report Benefits and Wages 2007 highlighted, both the availability and affordability of childcare play a crucial role in allowing parents, especially those of young children, to take-up a job. Single parents with low prospective wages face the greatest disincentives to work. In some countries (Ireland, Slovakia, the UK), high childcare costs are a powerful financial disincentive for these parents, but inactivity traps deriving from the design of the tax-benefit system may also be a problem where childcare support is well developed, especially with respect to potential second earners.

Efforts of Member States to increase the scale of childcare provision have led to the development of more formal arrangements during the past decade.

Chart 55: Children cared for by formal arrangements in 2010 (share of the population of each age group and by weekly time spent in care)



Source: EU-SILC.

However, progress is slow and uneven. Large differences persist between Member States, with rates of provision ranging from 2 % in the Czech Republic, Poland and Slovakia to more than 50 % in the Netherlands and Denmark and 78 % in Sweden. Across the EU, the so-called Barcelona targets[33] have not been met. Moreover, in many countries the provision of childcare is largely on a part-time basis, which particularly hampers the labour market participation of single parents (see Chart 55).

The more recent economic research confirms this intuition: labour supply responses are found to be substantial for low-skilled women or low-income families, for mothers of younger children and for single parents. Full-time employment rates react significantly more strongly to changes in childcare costs than part-time employment rates (see European Commission and OECD, 2011).

Chart 56 shows that there is a strong correlation between the employment rates of women with young children and the proportion who have access to formal childcare, especially in the first three years of a child's life (left graph)[34].

Childcare provisions are therefore a key factor in enabling female employment and foster labour market participation.

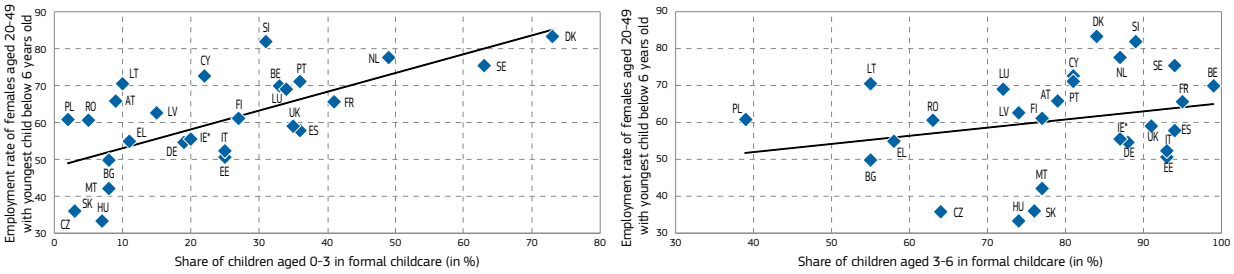
The labour market friendliness of welfare systems is a key element in evaluating their effectiveness and efficiency. Policy makers are increasingly focusing on the possible disincentive effects of welfare systems. Do benefits (both in cash and in kind) entail a financial disincentive to work insofar as they are strictly related to work status and work income? Would a better design allow for a benefits rollover while accepting a new job? Would the provision of in-work benefits coupled with a reduction in the tax wedge decrease financial disincentives and thereby make welfare systems more efficient? Active policies are seen as a key factor in providing incentives to work and are shown to correlate quite strongly with higher participation. However, they still represent a small share of total labour market expenditures. Reducing the level and/or duration of unemployment benefits may appear to be an easy way to reduce financial disincentives and force people to look for a job. However, in countries where benefits are already low and short-term, this could have serious social consequences. Moreover, as this Chapter has shown, in-kind provisions such as childcare are probably much more effective in fostering the labour market participation of women. An efficient welfare state, therefore, does not only provide activating benefits but also creates the material conditions for people to work.

(32) For a complete overview see Boeri and van Ours (2008), Kluve and Schmidt (2002). OECD Employment Outlook 2007 contains an overview on what countries do to activate the unemployed.

(33) In 2002, at the Barcelona Summit, the European Council set the targets of providing childcare by 2010 to at least 90 % of children between 3 years old and the mandatory school age and at least 33 % of children under 3 years of age. Member States have restated their commitment to achieve them in the European Pact for gender equality (2011-2020).

(34) For a child to be considered as being in formal childcare, at least 1 hour per week of formal childcare is required.

Chart 56: Relation between the employment rates of women 20-49 with youngest child below 6 years old and share of children in formal childcare (2010)



Source: EU-SILC and Labour Force Survey.

Note: Trend lines: 1) Left: y = 0.523x + 47.326, R^2 = 0.504; 2) Right: y = 0.121x + 50.914, R^2 = 0.018.

5. Main findings

Deteriorating economic and labour market conditions have brought about declines in employment and increasing unemployment. At the same time, higher budget deficits and debt levels since 2009 have led to an increased focus on fiscal consolidation across the EU. In this situation many observers worry about the risks of creating a vicious circle of declining government revenues and a downward spiral of households' disposable income. As social protection spending typically accounts for a significant fraction of total government expenditures in EU Member States, debate about the effectiveness and efficiency of social protection spending and its multiple roles in smoothing the business cycle, improving income distribution and reducing incentive distortions in the labour market has gained renewed salience since the onset of the crisis. To contribute to this debate, this Chapter looks at how social protection expenditure reacts to the business cycle, to what extent it has managed to sustain household incomes in the crisis, and what are the effects of social spending on policy outcomes, both in terms of poverty reduction and employment friendliness.

Social protection benefits have significantly helped cushion the effects of the crisis and in the EU on average their stabilising role was stronger than that of taxes, in the period 2007-2009. Developments in the Member States have been very diverse, as they went through different GDP shocks and had different transmission mechanisms in relation to the labour market. The resilience and cushioning role of welfare systems differed as well because of their different size and design. The importance of social protection benefits in alleviating the effects of the crisis on households is shown both when comparing the actual change in GHDI with scenarios of how GHDI would have developed if social transfers and taxes had not changed and when the developments of GHDI components are traced over time.

Cyclicality of both total social protection expenditure and different types of benefits vary significantly across Member States. Unemployment benefits respond strongly to the cycle, notably in Spain and Denmark. These are followed by social exclusion, housing and family benefits. Pensions are generally considerably less anti-cyclical, followed by sickness and disability benefits. However, looking at individual countries, pensions are strongly anti-cyclical e.g. in Italy and Poland; in the latter country, disability benefits also have this behaviour. Ireland and Slovakia are examples of countries where the sickness benefits have this effect.

With respect to the poverty reduction effects of social protection spending, there are large differences between Member States both in terms of effectiveness and efficiency. Member States with similar levels of spending achieve significantly different outcomes in terms of poverty reduction and, conversely, similar poverty reduction requires very different levels of spending in different Member States. At the same time, a direct link between means-testing of benefits and efficiency of social protection spending is difficult to establish, lending some support to the view that the efficiency of social protection expenditure depends on the overall design of the spending and interaction between its different elements. The same conclusions hold for the poverty reduction of children, both with respect to all social benefits and child and family benefits only.

In the EU, larger welfare states tend to have higher employment rates. However, also in terms of labour-market friendliness, the efficiency of social protection spending is linked to the design of the whole tax-benefit system and also the extent to which people are incentivised to search for jobs and take them up. One aspect that is shown to facilitate the taking up of jobs, in particular among women, is the provision of childcare services. Also active labour market policies are shown to have a positive effect on employment rates for women and the low-skilled population more than for the whole population on average. However, many Member States spend a very low share of their funds on active labour market policies compared to passive labour market policies.

Table 9: Detailed overview of the development of social protection spending by function relative to GDP (1990-2009, changes in percentage points of GDP)

			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Southern Member States	GREECE	Administration costs						0.12	-0.01	-0.01	0.00	0.01	-0.04	-0.08	0.13	0.00	-0.06	-0.02	-0.02	0.24	-0.19	0.28
		Family/Children						0.01	-0.06	0.06	-0.05	0.03	-0.10	0.06	0.03	-0.08	-0.03	-0.07	0.01	0.10	0.24	-0.04
		Housing and Social exclusion n.e.c.						0.07	0.10	-0.02	0.33	0.02	-0.01	-0.11	-0.05	0.02	0.03	-0.01	-0.04	0.02	0.02	-0.08
		Old age and survivors						0.47	0.09	0.69	0.19	-0.16	0.82	-0.31	-0.28	0.12	0.72	0.00	0.17	0.35	0.68	0.53
		Other expenditure						-0.03	0.00	-0.01	-0.01	0.01	0.00	0.00	0.01	-0.01	0.01	-0.01	0.00	0.00	0.00	0.00
		Sickness/Health care						-0.06	0.12	0.01	0.32	0.64	0.07	0.03	-0.11	0.05	0.64	0.19	-0.12	0.58	0.60	0.25
		Unemployment						-0.04	0.09	0.10	0.25	0.14	0.01	0.07	-0.18	0.06	-0.11	-0.13	-0.02	0.20	0.33	0.10
		Disability						0.02	0.02	0.04	0.06	0.03	0.08	0.04	-0.06	-0.01	0.04	-0.05	0.04	0.00	0.11	0.02
		Total						0.56	0.35	0.85	1.09	0.73	0.82	-0.31	-0.52	0.15	1.23	-0.10	0.01	1.48	1.79	1.07
	SPAIN	Administration costs	0.04	0.02	0.04	-0.07	-0.01	-0.03	-0.03	0.00	-0.01	-0.02	-0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.01	0.04	0.00
		Family/Children	-0.02	0.10	0.02	-0.01	-0.01	0.07	-0.02	0.02	0.00	0.48	-0.05	0.01	0.15	0.03	0.08	0.02	0.05	0.11	0.16	-0.01
		Housing and Social exclusion n.e.c.	0.00	-0.02	0.05	-0.02	0.14	0.08	-0.02	-0.02	-0.01	-0.08	0.01	0.02	0.00	0.00	0.05	0.02	0.03	-0.02	0.02	0.01
		Old age and survivors	0.19	0.35	0.44	0.03	-0.07	0.16	-0.11	-0.30	-0.20	0.12	-0.28	0.02	-0.08	-0.02	-0.01	-0.09	0.07	0.43	1.11	0.65
		Other expenditure	0.04	-0.04	0.02	-0.01	0.15	-0.12	0.01	0.01	0.01	-0.03	0.00	0.00	0.00	0.00	-0.01	0.01	0.00	-0.02	0.00	0.00
		Sickness/Health care	0.38	0.44	0.14	-0.25	-0.28	0.05	-0.22	-0.15	0.03	0.13	-0.04	0.15	0.23	0.08	0.04	0.04	0.06	0.40	0.52	-0.10
		Unemployment	0.49	0.29	0.76	-0.80	-0.75	-0.40	-0.23	-0.21	-0.17	-0.43	0.11	0.08	0.00	-0.05	0.04	-0.07	-0.04	0.45	1.19	-0.14
		Disability	0.08	0.01	0.06	0.00	-0.10	0.05	-0.06	0.04	-0.07	0.07	-0.06	0.02	-0.04	0.01	0.03	-0.01	0.01	0.06	0.15	0.05
		Total	1.21	1.15	1.54	-1.13	-0.93	-0.14	-0.67	-0.61	-0.42	0.23	-0.30	0.32	0.26	0.05	0.24	-0.07	0.19	1.41	3.18	0.46
	ITALY	Administration costs	0.00	0.01	-0.01	-0.01	-0.10	-0.02	0.01	-0.02	0.02	0.03	0.03	-0.02	0.01	0.00	0.01	0.02	-0.01	0.02	0.03	-0.01
		Family/Children	-0.17	-0.02	-0.04	-0.03	0.01	0.08	0.01	0.02	0.03	0.01	0.07	0.07	0.07	0.03	-0.02	0.04	0.10	0.04	0.15	-0.13
		Housing and Social exclusion n.e.c.	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	-0.01	0.00	0.00	0.00	0.00	0.02	0.01
		Old age and survivors	0.45	0.99	0.27	0.04	-0.28	0.05	0.58	-0.19	0.15	-0.30	-0.12	0.23	0.30	-0.11	0.07	0.08	0.15	0.52	1.06	0.20
		Other expenditure	0.06	0.01	0.03	0.01	-0.08	0.01	-0.02	-0.02	0.03	0.00	0.04	-0.05	0.00	-0.04	0.09	0.02	0.19	0.06	0.06	-0.09
		Sickness/Health care	0.10	-0.09	-0.23	-0.36	-0.44	0.05	0.15	-0.01	0.04	0.34	0.28	-0.06	0.05	0.32	0.23	0.09	-0.24	0.33	0.36	0.01
		Unemployment	0.04	0.07	0.08	-0.04	-0.06	-0.05	-0.04	-0.05	-0.06	-0.11	-0.02	0.06	0.02	0.03	0.01	0.00	-0.07	0.06	0.29	0.05
		Disability	-0.08	0.04	0.09	0.01	-0.14	0.04	-0.07	-0.12	0.02	-0.07	-0.06	0.12	0.05	-0.02	-0.02	-0.01	0.02	0.04	0.17	-0.03
		Total	0.40	1.00	0.20	-0.38	-1.11	0.15	0.62	-0.40	0.24	-0.10	0.24	0.37	0.50	0.19	0.38	0.25	0.14	1.08	2.15	0.01
	PORTUGAL	Administration costs						-0.07	-0.01	0.03	0.00	0.01	0.04	0.00	0.00	-0.07	-0.01	-0.01	-0.02	0.01	-0.01	-0.01
		Family/Children						-0.02	-0.01	0.00	0.01	0.08	0.08	0.28	0.05	-0.23	0.00	0.00	0.01	0.09	0.22	-0.03
		Housing and Social exclusion n.e.c.						0.01	0.03	0.13	0.06	-0.03	-0.02	0.09	0.00	-0.11	0.02	0.02	0.01	0.01	0.06	0.00
		Old age and survivors						0.23	-0.11	0.09	0.28	0.25	0.47	0.70	0.47	0.52	0.49	0.33	0.00	0.63	1.05	0.19
		Other expenditure						0.17	0.30	0.20	0.05	-0.32	0.37	-0.78	-0.24	0.01	0.03	-0.11	-0.16	-0.14	0.16	0.16
		Sickness/Health care						-1.14	-0.02	0.12	0.19	0.13	0.05	0.45	-0.24	0.57	0.11	-0.19	-0.31	0.08	0.80	-0.29
		Unemployment						0.04	-0.14	-0.05	-0.16	0.02	0.01	0.12	0.36	0.08	0.07	-0.06	-0.12	-0.10	0.32	0.08
		Disability						0.04	0.03	-0.02	-0.05	0.18	0.00	0.07	0.04	-0.16	-0.06	0.03	-0.02	-0.11	0.02	-0.06
		Total						-0.75	0.06	0.50	0.38	0.31	1.00	0.92	0.44	0.61	0.66	0.01	-0.62	0.46	2.61	0.03

			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Nordic and Anglo-Saxon Memer States	DENMARK	Administration costs	-0.02	0.01	0.02	0.08	-0.01	-0.05	-0.03	0.01	0.01	-0.02	0.03	0.02	0.03	0.00	-0.04	-0.06	-0.02	0.02	0.10	-0.04
		Family/Children	0.07	0.09	0.20	0.27	-0.05	-0.07	-0.07	0.09	-0.01	-0.09	0.08	0.09	0.12	-0.08	-0.09	-0.06	-0.07	0.11	0.40	-0.15
		Housing and Social exclusion n.e.c.	0.21	0.04	0.14	0.08	0.00	-0.16	-0.07	-0.08	-0.04	-0.06	0.00	0.01	0.00	0.03	-0.04	-0.21	-0.07	0.02	0.16	0.02
		Old age and survivors	0.09	0.04	0.37	1.13	-0.02	0.12	-0.25	-0.36	-0.16	-0.35	0.10	0.08	0.30	-0.07	-0.06	-0.25	-0.11	0.32	1.01	0.21
		Other expenditure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Sickness/Health care	0.20	-0.02	0.20	-0.33	-0.02	-0.13	-0.07	0.32	0.04	-0.02	0.09	0.28	0.12	-0.01	-0.05	0.05	0.31	0.23	0.85	-0.22
		Unemployment	0.31	0.32	0.65	-0.33	-0.58	-0.38	-0.49	-0.30	-0.17	-0.28	-0.11	-0.18	0.29	-0.13	-0.30	-0.47	-0.47	-0.19	0.74	0.30
		Disability	0.09	0.03	0.23	0.10	0.11	-0.04	-0.07	0.20	0.14	-0.15	0.19	0.17	0.33	0.10	0.10	0.00	-0.04	0.15	0.53	-0.07
		Total	0.96	0.51	1.81	0.99	-0.56	-0.70	-1.05	-0.12	-0.19	-0.96	0.36	0.47	1.19	-0.17	-0.48	-1.00	-0.48	0.67	3.78	0.05
	FINLAND	Administration costs	0.02	0.03	-0.01	0.04	-0.07	0.08	-0.18	0.07	-0.15	0.07	-0.01	0.06	0.04	-0.02	-0.01	0.01	-0.06	0.01	0.09	-0.06
		Family/Children	0.58	0.34	-0.12	0.43	-0.38	-0.27	-0.24	-0.20	-0.11	-0.22	-0.10	-0.03	0.04	0.01	0.03	-0.04	-0.10	0.09	0.39	-0.03
		Housing and Social exclusion n.e.c.	0.24	0.23	-0.03	0.06	-0.03	0.01	-0.08	-0.09	0.00	-0.09	-0.05	0.03	0.02	-0.03	-0.01	0.02	-0.04	0.20	0.22	0.03
		Old age and survivors	1.28	1.00	0.39	-0.28	-0.42	0.28	-0.70	-0.56	-0.02	-0.31	0.17	0.30	0.35	0.01	0.10	0.04	-0.22	0.18	1.77	0.25
		Other expenditure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Sickness/Health care	0.82	-0.09	-0.45	-0.46	-0.24	0.12	-0.30	-0.26	-0.07	-0.11	0.16	0.25	0.28	0.11	0.12	0.01	-0.22	0.31	0.77	-0.06
		Unemployment	1.06	1.74	1.09	-0.22	-0.72	-0.13	-0.48	-0.62	-0.27	-0.34	-0.17	0.06	0.10	-0.02	-0.13	-0.21	-0.28	-0.10	0.60	0.04
		Disability	0.65	0.51	0.15	-0.15	-0.29	-0.09	-0.33	-0.37	-0.15	-0.26	-0.06	0.02	0.08	-0.02	-0.06	-0.10	-0.14	0.11	0.42	-0.03
		Total	4.66	3.76	1.02	-0.57	-2.16	0.00	-2.30	-2.03	-0.77	-1.26	-0.07	0.69	0.91	0.05	0.04	-0.28	-1.06	0.80	4.26	0.14
	NETHERLANDS	Administration costs	0.01	0.03	0.03	0.27	-0.02	-0.04	-0.09	-0.02	-0.03	0.08	-0.03	-0.02	0.09	0.00	0.04	0.03	-0.14	-0.11	0.23	-0.01
		Family/Children	-0.07	-0.09	-0.02	-0.13	-0.03	-0.08	0.01	-0.08	-0.07	0.04	-0.04	0.13	0.07	-0.01	-0.02	0.21	0.09	-0.38	0.11	-0.06
		Housing and Social exclusion n.e.c.	0.01	-0.04	-0.07	0.73	0.08	-0.11	-0.04	0.19	-0.14	-0.09	0.02	0.00	-0.05	-0.07	-0.01	0.50	0.00	0.05	0.31	0.02
		Old age and survivors	-0.04	0.18	0.12	-0.43	0.07	0.08	-0.11	-0.27	-0.06	-0.13	-0.10	0.35	0.03	0.32	-0.02	-0.14	-0.05	-0.03	0.78	0.21
		Other expenditure	0.02	0.01	0.00	0.03	-0.19	-0.02	0.18	0.03	-0.05	-0.05	0.08	0.04	-0.06	0.13	-0.07	-0.09	-0.05	0.02	0.11	0.00
		Sickness/Health care	0.07	0.38	0.14	-0.54	-0.19	-0.50	-0.36	-0.03	0.08	-0.17	0.27	0.41	0.31	-0.18	-0.09	0.85	-0.18	0.75	1.01	0.23
		Unemployment	-0.01	0.07	0.28	0.18	-0.13	-0.06	-0.39	-0.52	-0.37	-0.26	-0.03	0.11	0.28	0.01	-0.06	-0.23	-0.22	-0.10	0.40	0.13
		Disability	0.00	-0.02	-0.10	-0.69	-0.43	-0.22	-0.17	-0.16	-0.08	-0.11	-0.06	0.04	0.02	-0.12	-0.26	-0.17	0.05	-0.04	0.13	-0.03
		Total	-0.01	0.51	0.37	-0.57	-0.84	-0.95	-0.97	-0.86	-0.72	-0.70	0.11	1.08	0.69	0.08	-0.48	0.95	-0.50	0.18	3.09	0.49
	SWEDEN	Administration costs				0.01	-0.02	-0.01	-0.03	0.03	0.06	0.06	0.16	-0.01	-0.12	-0.01	-0.01	-0.01	0.01	-0.01	0.00	-0.03
		Family/Children				-0.09	-0.53	-0.28	-0.22	-0.37	-0.06	-0.20	0.13	0.07	0.09	-0.03	-0.02	0.10	-0.06	0.10	0.19	-0.10
		Housing and Social exclusion n.e.c.				-0.06	-0.16	-0.13	-0.19	-0.16	-0.14	-0.16	-0.03	-0.04	0.01	-0.06	-0.05	-0.03	-0.04	0.02	0.11	-0.02
		Old age and survivors				-0.39	-0.74	0.25	-0.24	-0.31	-0.35	-0.34	0.08	0.23	0.63	-0.25	-0.02	-0.43	-0.12	0.49	1.07	-0.61
		Other expenditure				0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Sickness/Health care				-0.78	-0.39	-0.02	0.04	0.23	0.20	0.25	0.43	0.39	0.08	-0.52	-0.31	-0.13	-0.28	0.04	0.39	-0.50
		Unemployment				-0.22	-0.43	-0.26	-0.12	-0.36	-0.28	-0.48	-0.29	-0.03	0.05	0.07	-0.07	-0.22	-0.54	-0.21	0.44	0.05
		Disability				0.09	-0.04	-0.14	-0.13	0.01	0.19	0.00	0.09	0.21	0.23	0.12	0.04	-0.04	-0.11	-0.12	0.27	-0.33
		Total				-1.44	-2.31	-0.59	-0.90	-0.94	-0.38	-0.86	0.56	0.83	0.97	-0.66	-0.43	-0.77	-1.15	0.30	2.46	-1.54
	UNITED KINGDOM	Administration costs	-0.03	0.05	0.03	0.00	-0.09	-0.05	-0.06	-0.04	0.00	-0.07	0.02	0.00	-0.32	0.02	0.00	-0.01	-0.09	0.01	0.04	0.01
		Family/Children	0.15	0.20	0.07	-0.01	0.02	-0.01	-0.09	-0.02	-0.26	-0.19	0.00	-0.01	0.02	-0.05	-0.12	-0.08	0.08	0.08	0.25	-0.06
		Housing and Social exclusion n.e.c.	-0.02	0.37	0.20	-0.04	0.02	0.05	-0.13	-0.04	-0.08	-0.11	0.03	0.05	-0.12	0.03	0.00	0.00	-0.25	0.05	0.26	0.04
		Old age and survivors	0.80	0.80	0.22	-0.10	-0.09	0.17	0.30	-0.38	0.09	1.00	-0.44	-0.65	-0.02	0.00	0.20	-0.24	-0.83	0.44	1.02	-0.44
		Other expenditure	0.18	0.03	0.02	0.01	0.01	0.00	0.00	0.00	-0.02	-0.05	0.04	-0.21	0.00	0.00	0.00	0.00	0.58	0.01	-0.21	0.00
		Sickness/Health care	0.85	0.41	0.13	-0.08	-0.17	-0.06	-0.08	0.22	-0.06	0.21	0.65	0.00	0.43	0.18	0.15	0.09	-0.38	0.23	0.95	-0.23
		Unemployment	0.50	0.13	0.03	-0.23	-0.22	-0.19	-0.26	-0.16	-0.01	-0.07	0.14	-0.20	-0.02	-0.03	0.00	-0.04	-0.12	0.08	0.25	-0.11
		Disability	0.32	0.19	0.28	0.10	0.05	-0.12	-0.11	-0.07	-0.15	0.00	0.01	-0.01	-0.04	-0.01	-0.08	0.13	0.09	0.23	0.19	-0.14
		Total	2.76	2.17	0.98	-0.35	-0.48	-0.20	-0.43	-0.49	-0.49	0.73	0.44	-1.01	-0.06	0.13	0.15	-0.16	-0.92	1.13	2.77	-0.93
	IRELAND	Administration costs						-0.03	-0.04	-0.02	-0.03	-0.01	0.02	0.51	0.04	0.02	0.03	0.04	-0.07	0.02	0.14	-0.15
		Family/Children						0.08	-0.10	-0.20	-0.02	-0.08	0.25	0.36	0.08	-0.01	-0.03	0.03	0.11	0.50	0.54	0.02
		Housing and Social exclusion n.e.c.						-0.01	-0.05	-0.05	-0.07	-0.15	0.02	0.08	0.05	-0.02	-0.03	0.00	0.01	0.15	0.08	0.01
		Old age and survivors						-0.38	-0.35	-0.24	-0.26	-0.15	0.14	0.92	0.19	0.00	-0.02	0.09	0.10	0.83	0.81	0.24
		Other expenditure						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
		Sickness/Health care						-0.51	-0.19	-0.25	0.07	-0.11	0.58	0.31	0.19	0.21	0.15	0.09	0.28	1.26	2.16	1.60
		Unemployment						-0.11	-0.42	-0.35	-0.31	-0.27	-0.05	0.10	0.00	0.01	-0.07	0.03	0.08	0.45	1.25	0.44
		Disability						-0.01	-0.07	-0.05	-0.03	0.00	0.04	0.04	0.03	0.05	0.04	0.02	0.06	0.18	0.19	-0.01
		Total						-0.95	-1.21	-1.16	-0.65	-0.77	0.99	2.31	0.59	0.24	0.07	0.29	0.57	3.39	5.17	2.16

			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Western continental Member States	AUSTRIA	Administration costs	0.00	0.05	0.01	0.00	0.00	-0.01	-0.01	-0.01	0.01	0.00	-0.02	0.00	0.01	-0.01	0.00	-0.01	-0.01	0.02	0.01	-0.01
		Family/Children	-0.01	0.25	0.20	0.35	-0.26	-0.10	-0.17	-0.17	0.11	0.13	-0.02	0.05	0.13	-0.06	-0.07	-0.12	-0.12	0.10	0.23	0.01
		Housing and Social exclusion n.e.c.	0.00	0.06	0.02	-0.01	-0.09	0.07	0.01	0.03	0.08	-0.26	0.06	0.01	0.00	0.01	0.00	0.02	0.00	0.02	0.01	-0.02
		Old age and survivors	0.07	0.07	0.52	0.28	0.02	0.12	0.04	-0.09	0.13	0.03	0.19	0.12	0.16	-0.15	-0.13	-0.05	-0.11	0.36	1.05	0.02
		Other expenditure	0.00	-0.02	0.00	0.08	-0.04	-0.02	0.07	-0.04	-0.03	0.05	0.02	0.00	0.02	-0.02	0.06	-0.08	0.02	0.00	0.00	-0.03
		Sickness/Health care	0.03	0.21	0.16	0.07	0.10	-0.15	0.09	0.03	0.23	-0.35	0.08	0.07	-0.03	-0.04	-0.02	-0.15	0.03	0.25	0.37	-0.16
		Unemployment	0.14	0.01	0.24	0.01	0.03	0.06	-0.12	-0.08	0.00	-0.14	0.03	0.16	0.17	0.00	-0.08	-0.02	-0.17	-0.06	0.35	-0.04
		Disability	0.01	0.02	0.07	0.08	0.03	0.05	-0.09	0.00	-0.03	0.04	-0.04	-0.05	-0.01	-0.07	-0.10	-0.12	-0.12	-0.03	0.14	-0.02
		Total	0.25	0.64	1.22	0.85	-0.22	0.01	-0.19	-0.33	0.49	-0.50	0.30	0.37	0.46	-0.34	-0.34	-0.52	-0.47	0.67	2.17	-0.25
	BELGIUM	Administration costs						-0.07	-0.03	0.02	0.00	-0.13	0.20	-0.11	0.01	-0.02	-0.01	0.00	-0.03	0.02	0.05	-0.02
		Family/Children						0.03	0.11	-0.08	-0.06	-0.14	-0.03	-0.02	0.01	-0.05	-0.01	-0.01	0.05	-0.01	0.16	-0.04
		Housing and Social exclusion n.e.c.						0.00	-0.28	-0.01	-0.01	0.06	0.00	0.07	-0.01	-0.01	0.01	0.08	0.29	0.07	0.08	0.01
		Old age and survivors						0.09	-0.28	-0.08	-0.16	-0.33	0.31	0.11	0.01	-0.15	-0.06	-0.01	-0.38	0.59	0.82	-0.38
		Other expenditure						0.09	0.16	-0.28	0.00	0.01	0.15	-0.21	-0.03	0.06	-0.02	0.06	0.07	0.23	-0.14	0.01
		Sickness/Health care						0.36	-0.41	0.01	0.08	-0.20	0.16	0.06	1.13	0.23	-0.05	-0.28	0.03	0.24	0.63	-0.09
		Unemployment						0.03	-0.05	-0.11	-0.14	-0.17	0.02	0.25	0.24	0.02	-0.01	-0.04	-0.15	0.04	0.53	-0.04
		Disability						0.02	-0.06	0.00	0.10	0.00	0.05	0.20	-0.63	-0.05	0.05	-0.07	-0.06	0.10	0.16	0.03
		Total						0.55	-0.83	-0.53	-0.19	-0.90	0.87	0.35	0.73	0.02	-0.10	-0.27	-0.18	1.29	2.28	-0.52
	GERMANY	Administration costs		0.06	0.04	-0.01	0.02	0.03	-0.05	0.00	0.01	-0.01	0.01	0.03	0.02	-0.02	0.05	-0.03	-0.04	0.01	0.17	-0.03
		Family/Children		0.07	0.02	-0.12	-0.02	0.64	0.14	-0.02	0.15	0.12	-0.10	0.18	0.00	-0.06	-0.16	-0.24	-0.10	0.05	0.33	0.04
		Housing and Social exclusion n.e.c.		0.07	0.01	0.08	0.01	0.01	-0.01	-0.01	-0.03	0.00	-0.03	0.02	0.05	0.03	0.24	0.03	-0.04	-0.04	0.08	-0.02
		Old age and survivors		0.30	0.32	0.14	0.25	0.24	0.15	0.14	0.09	0.14	0.11	0.19	0.18	-0.12	-0.04	-0.39	-0.46	-0.01	0.78	-0.36
		Other expenditure		0.00	0.01	0.01	0.00	0.00	-0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.02	0.01	-0.01
		Sickness/Health care		0.53	-0.22	0.07	0.20	0.10	-0.27	-0.06	0.15	0.07	0.07	0.08	0.03	-0.40	0.05	-0.15	-0.07	0.23	1.44	-0.21
		Unemployment		0.40	0.32	-0.31	-0.19	0.12	-0.19	-0.02	0.05	-0.14	-0.03	0.14	0.07	-0.07	-0.16	-0.25	-0.30	-0.11	0.45	-0.20
		Disability		-0.02	0.15	0.04	0.15	0.05	-0.13	-0.02	0.02	-0.01	0.00	0.03	0.04	-0.04	-0.03	-0.10	-0.10	0.05	0.17	-0.03
		Total		1.41	0.65	-0.10	0.42	1.20	-0.37	0.00	0.45	0.18	0.03	0.67	0.39	-0.67	-0.04	-1.13	-1.12	0.21	3.42	-0.81
	FRANCE	Administration costs	0.02	0.02	0.07	0.01	-0.03	0.02	-0.01	-0.01	-0.01	0.06	-0.01	-0.01	0.03	0.00	0.03	0.03	-0.05	-0.02	0.17	0.04
		Family/Children	0.00	0.00	0.18	-0.01	0.04	0.01	0.05	-0.11	-0.01	-0.27	-0.04	0.00	-0.01	0.01	0.03	0.11	-0.05	0.00	0.14	-0.06
		Housing and Social exclusion n.e.c.	0.04	0.07	0.11	0.07	0.03	0.01	0.01	0.01	0.01	-0.01	-0.03	0.03	-0.02	0.01	-0.02	0.10	-0.03	0.03	0.21	0.01
		Old age and survivors	0.27	0.36	0.51	0.12	0.14	0.22	-0.01	-0.13	-0.01	-0.25	0.04	0.21	0.16	0.13	0.18	-0.06	0.09	0.33	0.91	0.11
		Other expenditure	0.02	0.06	0.08	-0.02	0.06	-0.14	0.01	0.03	-0.01	0.19	0.04	0.07	0.00	0.03	-0.06	-0.26	0.01	0.01	-0.05	-0.04
		Sickness/Health care	0.16	0.26	0.33	-0.03	0.06	0.09	-0.11	-0.02	-0.08	-0.02	0.12	0.30	0.27	0.17	0.01	-0.14	-0.12	0.06	0.56	0.03
		Unemployment	0.10	0.07	0.21	-0.22	-0.16	0.07	-0.07	-0.09	-0.07	-0.09	-0.02	0.18	0.15	-0.03	-0.06	-0.17	-0.14	-0.06	0.29	0.05
		Disability	-0.01	-0.02	0.04	0.01	-0.01	0.05	-0.02	-0.02	-0.02	-0.03	0.01	0.08	0.00	0.01	0.03	0.12	-0.03	0.01	0.10	0.02
		Total	0.60	0.83	1.53	-0.07	0.14	0.31	-0.15	-0.35	-0.19	-0.43	0.12	0.85	0.57	0.33	0.14	-0.27	-0.32	0.35	2.33	0.15
	LUXEMBOURG	Administration costs	-0.02	0.02	0.00	0.02	-0.07	-0.01	0.00	-0.03	-0.08	-0.02	-0.12	0.00	0.01	-0.02	0.01	-0.03	-0.01	0.03	0.02	-0.01
		Family/Children	0.04	0.08	0.38	0.20	-0.30	0.04	0.02	0.27	0.14	0.04	0.13	0.27	0.29	-0.04	-0.19	-0.21	-0.24	1.01	0.04	-0.23
		Housing and Social exclusion n.e.c.	0.00	0.00	0.01	0.00	-0.03	0.00	0.04	0.00	-0.07	0.07	0.38	-0.02	-0.02	0.02	-0.05	0.00	-0.04	0.06	0.24	-0.05
		Old age and survivors	0.48	0.09	-0.10	-0.04	-1.02	-0.11	0.17	-0.26	-0.85	-0.46	0.11	0.26	0.17	-0.09	-0.17	-0.45	-0.28	0.50	0.98	-0.48
		Other expenditure	-0.04	0.01	-0.01	0.00	-0.02	0.10	-0.01	0.01	-0.06	0.11	-0.20	0.01	-0.02	0.00	0.02	0.05	-0.07	0.00	0.01	0.00
		Sickness/Health care	0.02	0.32	0.46	-0.60	-0.48	0.34	-0.04	-0.15	-0.02	-0.32	0.46	0.17	0.02	0.11	-0.08	-0.39	-0.14	0.34	0.71	-0.31
		Unemployment	-0.01	-0.01	0.08	0.05	-0.06	0.07	0.04	-0.04	-0.09	0.01	0.13	0.02	0.15	0.11	0.04	-0.08	-0.06	0.03	0.36	-0.07
		Disability	0.14	-0.05	0.00	0.03	-0.23	0.06	0.09	-0.14	0.30	-0.32	0.41	0.00	-0.04	0.06	-0.17	-0.14	-0.31	0.09	0.26	-0.14
		Total	0.61	0.45	0.81	-0.34	-2.21	0.49	0.33	-0.35	-0.73	-0.88	1.29	0.71	0.56	0.16	-0.60	-1.26	-1.14	2.06	2.62	-1.28

			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Baltic Member States and South-Eastern Europe	ESTONIA	Administration costs										-0.02	-0.01	-0.02	-0.01	0.00	0.00	-0.02	-0.02	0.03	0.04	-0.02
		Family/Children										-0.02	-0.16	-0.05	-0.19	0.39	-0.12	-0.05	-0.07	0.39	0.50	0.00
		Housing and Social exclusion n.e.c.										-0.08	-0.01	-0.04	-0.05	-0.09	-0.04	-0.03	-0.02	0.00	0.05	0.05
		Old age and survivors										-0.69	-0.53	-0.06	-0.05	0.06	-0.15	-0.03	-0.17	1.12	1.76	-0.21
		Other expenditure										0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Sickness/Health care										-0.36	-0.30	-0.20	0.06	0.09	-0.08	-0.21	0.26	0.78	0.63	-0.62
		Unemployment										-0.02	0.00	-0.04	0.09	-0.02	-0.04	-0.06	0.03	0.16	0.93	-0.47
		Disability										-0.34	0.15	0.06	0.04	0.02	-0.01	-0.03	-0.02	0.34	0.44	0.05
		Total										-1.53	-0.86	-0.34	-0.12	0.46	-0.44	-0.43	-0.02	2.83	4.37	-1.22
	LITHUANIA	Administration costs							0.03	0.06			-0.02	0.02	0.04	0.00	-0.03	0.02	-0.02	0.06	0.06	-0.07
		Family/Children							0.09	0.28			-0.16	-0.07	-0.08	0.10	0.01	-0.05	0.07	0.67	0.95	-0.59
		Housing and Social exclusion n.e.c.							0.06	-0.11			-0.05	0.01	-0.03	-0.11	-0.12	-0.01	-0.03	0.01	0.19	0.34
		Old age and survivors							0.34	0.49			-0.52	-0.33	-0.24	-0.12	-0.18	-0.19	0.81	0.42	2.08	-0.96
		Other expenditure							0.00	0.01			-0.02	-0.04	-0.01	-0.02	0.00	0.02	-0.03	0.00	0.10	0.24
		Sickness/Health care							0.32	0.59			-0.26	-0.21	-0.19	-0.14	0.12	0.27	0.19	0.32	0.82	-0.74
		Unemployment							-0.02	0.02			0.04	-0.03	0.00	0.07	0.03	0.02	-0.01	0.01	0.50	-0.09
		Disability							-0.19	0.08			-0.02	-0.02	0.01	0.07	0.01	0.02	0.09	0.18	0.46	-0.25
		Total							0.64	1.41			-1.01	-0.69	-0.51	-0.13	-0.16	0.10	1.07	1.67	5.15	-2.12
	LATVIA	Administration costs								0.01	0.04	0.01	-0.05	-0.01	0.01	-0.04	0.00	-0.04	-0.03	0.03	-0.02	0.02
		Family/Children								0.03	0.07	-0.10	-0.06	-0.08	0.02	-0.11	0.02	-0.10	-0.04	0.22	0.34	-0.24
		Housing and Social exclusion n.e.c.								-0.02	-0.01	-0.02	-0.02	0.00	0.01	0.05	-0.03	0.00	0.01	0.05	-0.01	0.11
		Old age and survivors								0.48	0.79	-1.02	-0.88	-0.30	-0.73	-0.70	-0.42	-0.19	-0.75	0.66	2.19	1.54
		Other expenditure								0.00	0.02	0.03	0.03	0.09	0.20	-0.01	-0.11	-0.16	0.00	-0.09	0.00	0.00
		Sickness/Health care								-0.11	0.23	-0.11	0.24	-0.12	0.33	0.03	0.19	0.40	-0.38	0.29	0.24	-0.27
		Unemployment								0.09	0.30	-0.11	-0.13	-0.03	0.00	-0.02	0.03	0.00	-0.10	0.10	1.08	-0.28
		Disability								0.00	0.03	-0.14	-0.06	-0.04	-0.09	-0.02	-0.08	-0.02	-0.13	0.17	0.38	0.05
		Total								0.48	1.47	-1.46	-0.94	-0.49	-0.25	-0.81	-0.39	-0.11	-1.42	1.43	4.21	0.93
	BULGARIA	Administration costs																-0.03	0.01	0.03	0.03	-0.03
		Family/Children																0.03	0.16	0.12	0.69	0.01
		Housing and Social exclusion n.e.c.																-0.05	0.00	0.00	-0.14	0.05
		Old age and survivors																-0.20	-0.21	0.36	1.22	0.41
		Other expenditure																-0.05	0.02	0.02	0.00	-0.02
		Sickness/Health care																-0.64	0.11	0.71	-0.49	0.32
		Unemployment																0.03	-0.03	0.07	0.18	0.08
		Disability																0.03	-0.13	0.02	0.23	0.02
		Total																-0.89	-0.06	1.34	1.73	0.84
	ROMANIA	Administration costs											-0.06	-0.01	0.04	0.04	-0.06	0.14	-0.01	-0.17	0.01	-0.02
		Family/Children											0.00	0.17	-0.23	0.12	0.28	-0.08	-0.08	-0.18	0.21	-0.02
		Housing and Social exclusion n.e.c.											-0.01	0.23	-0.08	0.00	0.08	-0.01	0.14	-0.11	-0.10	0.07
		Old age and survivors											0.09	0.46	-0.63	0.16	-0.08	-0.08	0.29	1.11	1.66	0.04
		Other expenditure											0.00	0.00	-0.01	-0.03	-0.01	-0.01	-0.01	0.00	0.01	0.00
		Sickness/Health care											0.09	0.02	0.16	-0.30	0.48	-0.50	0.28	0.01	0.61	0.29
		Unemployment											-0.41	-0.08	0.10	-0.05	-0.12	-0.08	-0.06	-0.07	0.20	0.16
		Disability											0.04	-0.01	0.15	-0.18	0.03	0.00	0.18	0.12	0.24	-0.03
		Total											-0.26	0.79	-0.50	-0.24	0.62	-0.62	0.73	0.70	2.82	0.50

			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Eastern continental Member States	CYPRUS	Administration costs											0.01	0.02	0.08	-0.03	0.00	-0.03	-0.02	0.00	0.02	-0.02
		Family/Children											0.29	0.07	0.68	0.10	0.05	-0.18	-0.01	0.14	0.12	-0.07
		Housing and Social exclusion n.e.c.											0.10	0.13	0.17	-0.24	0.00	0.12	0.24	0.36	0.59	0.13
		Old age and survivors											-0.23	0.98	0.57	0.12	-0.16	0.00	-0.07	0.13	0.86	0.49
		Other expenditure											0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.54	-0.54	0.00
		Sickness/Health care											-0.07	0.13	0.65	-0.47	0.28	0.10	-0.13	-0.04	0.60	-0.08
		Unemployment											-0.06	-0.12	-0.03	0.13	0.11	0.13	-0.31	0.13	-0.04	0.06
		Disability											0.06	0.07	0.05	0.08	-0.08	0.03	-0.05	0.01	0.08	-0.01
		Total											0.08	1.35	2.17	-0.30	0.21	0.18	-0.36	1.28	1.70	0.50
	CZECH REPUBLIC	Administration costs						-0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.04	0.00	-0.02	-0.01	-0.02	-0.02	0.07	0.01
		Family/Children						-0.14	-0.06	-0.15	0.00	-0.04	-0.05	0.02	-0.08	0.08	-0.17	-0.03	0.29	-0.21	0.04	-0.10
		Housing and Social exclusion n.e.c.						-0.01	0.07	0.13	0.13	0.07	-0.02	0.02	0.04	-0.05	-0.04	-0.01	-0.29	-0.04	0.09	0.03
		Old age and survivors						0.16	0.84	0.22	0.20	0.06	-0.13	0.20	-0.24	-0.31	0.15	-0.05	0.15	0.35	0.99	0.18
		Other expenditure						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Sickness/Health care						0.01	-0.02	-0.16	0.14	0.17	0.08	0.37	0.08	-0.33	-0.07	-0.30	-0.08	-0.09	0.58	-0.07
		Unemployment						0.05	0.08	0.03	0.14	-0.04	-0.04	0.05	0.13	-0.06	-0.08	-0.08	0.05	0.01	0.43	-0.23
		Disability						0.07	0.10	0.02	0.04	-0.02	0.03	0.02	0.05	-0.10	-0.03	0.10	-0.05	-0.01	0.10	0.00
		Total						0.14	1.04	0.10	0.66	0.21	-0.14	0.69	0.03	-0.78	-0.26	-0.37	0.05	-0.01	2.29	-0.18
	HUNGARY	Administration costs										-0.03	-0.01	0.02	0.03	-0.03	0.02	0.03	-0.05	0.01	0.01	0.08
		Family/Children										-0.09	-0.11	0.04	0.21	-0.25	0.06	0.30	0.01	0.02	0.16	-0.10
		Housing and Social exclusion n.e.c.										-0.05	-0.09	0.00	-0.05	-0.07	0.12	0.01	0.38	-0.20	-0.03	-0.18
		Old age and survivors										-0.21	-0.01	0.55	-0.02	0.02	0.46	0.19	0.47	0.42	0.26	0.02
		Other expenditure																				
		Sickness/Health care										-0.09	-0.19	0.33	0.62	-0.19	0.40	-0.06	-0.68	-0.06	0.06	0.01
		Unemployment										-0.14	-0.14	-0.05	0.00	0.00	0.02	0.06	0.09	0.06	0.14	-0.06
		Disability										-0.08	0.08	0.07	0.12	-0.05	0.03	0.04	-0.02	-0.04	-0.02	-0.17
		Total										-0.70	-0.47	0.96	0.90	-0.55	1.12	0.57	0.22	0.20	0.59	-0.40
	MALTA	Administration costs						0.05	0.00	-0.02	0.00	0.00	0.02	-0.01	-0.02	0.00	-0.01	-0.01	0.00	0.01	0.04	-0.02
		Family/Children						-0.01	-0.08	-0.08	-0.13	-0.21	-0.16	-0.04	-0.08	0.00	-0.08	-0.04	-0.06	0.15	0.04	-0.03
		Housing and Social exclusion n.e.c.						0.23	0.03	0.02	-0.11	-0.16	-0.06	0.09	0.07	0.06	-0.11	0.06	0.10	-0.01	-0.04	-0.07
		Old age and survivors						0.70	0.04	0.08	0.12	-0.64	0.81	-0.21	0.05	0.23	0.21	0.14	-0.16	0.16	0.80	0.46
		Other expenditure						0.00	-0.02	-0.01	0.00	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
		Sickness/Health care						-0.51	1.23	-0.12	-0.07	-0.12	0.21	-0.15	0.35	0.35	-0.12	-0.18	-0.04	0.24	0.64	-0.38
		Unemployment						0.06	0.03	-0.01	0.04	-0.06	0.02	0.42	-0.16	-0.04	-0.04	-0.01	-0.11	0.00	0.09	-0.05
		Disability						0.17	-0.18	0.23	0.03	-0.03	0.04	0.02	0.12	0.09	-0.03	-0.05	-0.06	-0.09	-0.05	-0.07
		Total						0.68	1.05	0.11	-0.12	-1.23	0.89	0.10	0.32	0.68	-0.16	-0.10	-0.33	0.46	1.51	-0.16

			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Eastern continental Member States	POLAND	Administration costs											-0.02	-0.04	-0.14	0.10	0.07	-0.06	-0.04	-0.01	-0.01	-0.01
		Family/Children											0.03	-0.01	-0.08	0.00	-0.05	-0.02	-0.03	-0.06	0.02	0.03
		Housing and Social exclusion n.e.c.											0.05	-0.17	0.18	-0.04	0.18	-0.15	-0.08	-0.04	-0.01	-0.01
		Old age and survivors											0.96	0.25	0.20	-0.25	-0.32	0.10	-0.75	0.16	0.50	-0.09
		Other expenditure											-0.02	0.01	0.00	0.01	0.00	-0.01	-0.01	-0.01	0.01	0.00
		Sickness/Health care											0.19	0.27	-0.08	-0.32	-0.01	0.04	0.09	0.52	0.27	-0.21
		Unemployment											0.01	0.00	-0.08	-0.14	-0.04	-0.06	-0.17	-0.04	0.04	0.02
		Disability											0.13	-0.15	-0.12	-0.28	-0.20	-0.17	-0.24	-0.11	-0.20	0.05
		Total											1.31	0.16	-0.11	-0.93	-0.38	-0.33	-1.23	0.41	0.61	-0.22
	SLOVENIA	Administration costs							-0.03	-0.01	0.03	0.10	0.00	-0.01	-0.04	0.00	0.00	0.02	-0.05	-0.02	0.02	0.01
		Family/Children							0.05	-0.06	0.12	0.13	-0.04	-0.09	-0.04	-0.02	-0.03	-0.04	-0.17	0.05	0.31	0.07
		Housing and Social exclusion n.e.c.							0.02	-0.03	-0.02	0.00	0.03	0.05	0.14	0.03	0.01	-0.10	-0.06	-0.06	0.10	0.05
		Old age and survivors							0.06	0.10	-0.12	0.08	0.19	0.23	-0.65	-0.16	-0.25	0.11	-0.37	-0.12	1.28	0.35
		Other expenditure							0.00	0.03	0.05	-0.06	-0.02	-0.01	0.00	-0.02	-0.02	0.01	0.06	-0.02	-0.01	0.00
		Sickness/Health care							0.11	0.12	-0.07	0.03	0.26	-0.03	0.06	-0.16	-0.05	-0.17	-0.45	0.36	0.75	0.08
		Unemployment							0.17	0.11	-0.13	-0.13	-0.13	-0.13	-0.04	0.00	0.03	-0.12	-0.19	-0.05	0.21	0.08
		Disability							0.03	0.01	0.09	0.05	-0.05	-0.04	-0.12	-0.05	0.06	-0.04	-0.19	-0.05	0.11	0.00
		Total							0.40	0.28	-0.05	0.21	0.24	-0.04	-0.68	-0.38	-0.25	-0.32	-1.42	0.09	2.78	0.65
	SLOVAKIA	Administration costs						0.16	0.20	-0.10	-0.11	-0.12	-0.04	0.07	-0.03	0.00	-0.01	0.01	0.04	-0.11	-0.01	0.02
		Family/Children						-0.20	-0.17	-0.02	-0.21	-0.22	-0.17	-0.03	-0.04	0.28	-0.05	-0.02	-0.10	-0.07	0.23	0.04
		Housing and Social exclusion n.e.c.						-0.09	-0.04	0.19	0.29	0.04	0.02	-0.07	-0.30	-0.33						
		Old age and survivors						-0.02	0.04	0.11	0.12	-0.09	0.04	0.07	0.09	-0.17	0.07	-0.18	-0.16	-0.15	1.16	-0.01
		Other expenditure						0.05	0.00	-0.02	0.00	-0.02	0.00	0.00	-0.01	0.02	0.00	0.00	-0.03	0.00	0.02	0.01
		Sickness/Health care						1.08	-0.05	-0.04	-0.31	-0.06	-0.12	-0.11	-0.57	-0.76	-0.23	0.00	0.00	0.33	0.68	-0.20
		Unemployment						0.02	0.28	0.11	0.28	-0.41	-0.24	0.09	0.24	0.03	-0.48	-0.02	0.03	0.04	0.44	-0.12
		Disability						-0.03	0.06	0.00	0.06	0.12	0.06	0.14	-0.07	-0.25	0.00	0.03	-0.02	0.09	0.15	0.02
		Total						0.97	0.33	0.23	0.13	-0.77	-0.45	0.15	-0.70	-1.19	-0.69	-0.18	-0.24	0.13	2.67	-0.24

Source: ESSPROS.

Table 10: Regression output for population aged 0-64

Fixed-effects, using 178 observations
Included 27 cross-sectional units
Time-series length: minimum 4, maximum 8
Dependent variable: Poverty reduction (0-64)
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
Constant	0.143	0.050	2.830	0.005	***
Family/children benefits	0.068	0.022	3.080	0.003	***
Health care/ sickness	0.061	0.021	2.870	0.005	***
Disability	0.025	0.025	0.985	0.327	
Unemployment benefits	0.050	0.009	5.459	0.000	***
Social exclusion and housing	0.049	0.026	1.874	0.063	*
dt_2	-0.007	0.019	-0.374	0.709	
dt_3	-0.005	0.022	-0.222	0.824	
dt_4	0.003	0.023	0.148	0.882	
dt_5	0.011	0.024	0.461	0.646	
dt_6	0.020	0.025	0.828	0.409	
dt_7	0.009	0.025	0.349	0.728	
dt_8	-0.019	0.023	-0.807	0.421	

Mean dependent variable	0.409	S.D. dependent variable	0.146
Sum squared residual	0.129	S.E. of regression	0.030
R-squared	0.966	Adjusted R-squared	0.956
F(38, 139)	103.344	P-value(F)	0.000
Log-likelihood	390.777	Akaike criterion	-703.554
Schwarz criterion	-579.464	Hannan-Quinn	-653.232
rho	0.157	Durbin-Watson	1.328

Test for differing group intercepts -
Null hypothesis: The groups have a common intercept
Test statistic: F(26, 139) = 38.859
with p-value = P(F(26, 139) > 38.859) = 2.89e-051

Wald test for joint significance of time dummies
Asymptotic test statistic: Chi-square(7) = 18.599
with p-value = 0.0095

Random-effects (GLS), using 178 observations
Included 27 cross-sectional units
Time-series length: minimum 4, maximum 8
Dependent variable: Poverty reduction (0-65)

	Coefficient	Std. Error	t-ratio	p-value	
Constant	0.100	0.034	2.937	0.004	***
Family/children benefits	0.073	0.015	4.998	0.000	***
Health care/ sickness	0.063	0.020	3.106	0.002	***
Disability	0.047	0.016	3.029	0.003	***
Unemployment benefits	0.043	0.011	4.035	0.000	***
Social exclusion and housing	0.067	0.025	2.666	0.008	***
dt_2	-0.007	0.016	-0.460	0.646	
dt_3	-0.004	0.015	-0.271	0.787	
dt_4	0.005	0.015	0.331	0.741	
dt_5	0.013	0.015	0.893	0.373	
dt_6	0.023	0.015	1.546	0.124	
dt_7	0.010	0.015	0.668	0.505	
dt_8	-0.020	0.015	-1.304	0.194	

Mean dependent variable	0.409	S.D. dependent variable	0.146
Sum squared residual	1.335	S.E. of regression	0.090
Log-likelihood	182.905	Akaike criterion	-339.810
Schwarz criterion	-298.447	Hannan-Quinn	-323.036

'Within' variance = 0.000929077
'Between' variance = 0.00609981

Breusch-Pagan test -
Null hypothesis: Variance of the unit-specific error = 0
Asymptotic test statistic: Chi-square(1) = 345.046
with p-value = 5.08203e-077

Hausman test -
Null hypothesis: GLS estimates are consistent
Asymptotic test statistic: Chi-square(12) = 17.2004
with p-value = 0.142215

Source: DG EMPL calculations.

Note: The random-effects model provides more coefficients being statistically significant than the fixed-effects model. However, given the length of the time series which is not very high, the test indicating whether the GLS estimation should be used (the Hausman test) has limitations.

Table 11: Regression output for population aged 0-17

Fixed-effects, using 178 observations
Included 27 cross-sectional units
Time-series length: minimum 4, maximum 8
Dependent variable: Poverty reduction (0-17)
Robust (HAC) standard errors

	Coefficient	Std. Error	t-ratio	p-value	
Constant	0.114	0.049	2.317	0.022	**
Family/children benefits	0.115	0.022	5.171	0.000	***
Health care/ sickness	0.074	0.026	2.863	0.005	***
Disability	0.013	0.033	0.401	0.689	
Unemployment benefits	0.031	0.011	2.819	0.006	***
Social exclusion and housing	0.053	0.038	1.393	0.166	
dt_2	-0.021	0.020	-1.048	0.296	
dt_3	-0.021	0.023	-0.918	0.360	
dt_4	-0.013	0.024	-0.546	0.586	
dt_5	-0.003	0.024	-0.116	0.908	
dt_6	0.005	0.024	0.220	0.826	
dt_7	-0.013	0.026	-0.498	0.619	
dt_8	-0.036	0.025	-1.434	0.154	

Mean dependent variable	0.409	S.D. dependent variable	0.161
Sum squared residual	0.172	S.E. of regression	0.035
R-squared	0.962	Adjusted R-squared	0.952
F(38, 139)	93.652	P-value(F)	0.000
Log-likelihood	365.507	Akaike criterion	-653.015
Schwarz criterion	-528.925	Hannan-Quinn	-602.693
rho	0.000	Durbin-Watson	1.630

Test for differing group intercepts -
Null hypothesis: The groups have a common intercept
Test statistic: F(26, 139) = 35.452
with p-value = P(F(26, 139) > 35.4515) = 6.65e-049

Wald test for joint significance of time dummies
Asymptotic test statistic: Chi-square(7) = 19.847
with p-value = 0.006

Random-effects (GLS), using 178 observations
Included 27 cross-sectional units
Time-series length: minimum 4, maximum 8
Dependent variable: Poverty reduction (0-17)

	Coefficient	Std. Error	t-ratio	p-value	
Constant	0.062358	0.03806	1.638	0.1032	
Family/children benefits	0.11404	0.016343	6.978	6.93E-11	***
Health care/ sickness	0.07793	0.022715	3.431	0.0008	***
Disability	0.044595	0.0174	2.563	0.0113	**
Unemployment benefits	0.025882	0.011957	2.165	0.0319	**
Social exclusion and housing	0.071789	0.028424	2.526	0.0125	**
dt_2	-0.0213432	0.01822	-1.171	0.2431	
dt_3	-0.019623	0.017102	-1.147	0.2529	
dt_4	-0.0109644	0.017019	-0.6442	0.5203	
dt_5	0.000211	0.016984	0.01244	0.9901	
dt_6	0.009163	0.017026	0.5382	0.5912	
dt_7	-0.00980458	0.017073	-0.5743	0.5666	
dt_8	-0.0366297	0.017495	-2.094	0.0378	**

Mean dependent variable	0.409	S.D. dependent variable	0.161
Sum squared residual	1.557	S.E. of regression	0.097
Log-likelihood	169.205	Akaike criterion	-312.409
Schwarz criterion	-271.046	Hannan-Quinn	-295.635

'Within' variance = 0.00123413
'Between' variance = 0.00660158

Wald test for joint significance of time dummies
Asymptotic test statistic: Chi-square(7) = 20.6654
with p-value = 0.00429829

Breusch-Pagan test -
Null hypothesis: Variance of the unit-specific error = 0
Asymptotic test statistic: Chi-square(1) = 371.981
with p-value = 6.93314e-083

Hausman test -
Null hypothesis: GLS estimates are consistent
Asymptotic test statistic: Chi-square(12) = 18.3742
with p-value = 0.104791

Source: DG EMPL calculations

Note: The random-effects model provides more coefficients being statistically significant than the fixed-effects model. However, given the length of the time series which is not very high, the test indicating whether the GLS estimation should be used (the Hausman test) has limitations.

Table 12: Structural Indicators on financial incentives to work, 2010

	Low-wage trap				Inactivity trap				Unemployment trap			
67% of AW	Single		One earner couple with 2 children		Single		One earner couple with 2 children		Single		One earner couple with 2 children	
	2010	Change 2001-2010	2010	Change 2001-2010	2010	Change 2001-2010	2010	Change 2001-2010	2010	Change 2001-2010	2010	Change 2001-2010
BE	0.55	1.25	0.48	1.50	0.67	1.14	0.67	0.35	0.93	7.09	0.79	5.83
DK	0.41	-8.19	0.99	-1.85	0.87	-3.01	0.96	-2.28	0.89	-2.14	0.94	-1.71
DE	0.47	-4.41	0.73	3.97	0.66	-0.39	0.78	3.03	0.75	-0.40	0.78	-4.12
GR	0.16	0.10	0.16	0.10	0.06	3.52	0.04	6.19	0.61	-1.39	0.75	-1.16
ES	0.29	-4.32	0.06	0.00	0.45	2.08	0.48	-8.82	0.83	3.26	0.77	-1.34
FR	0.32	-2.18	0.53	3.81	0.61	-2.85	0.68	-12.61	0.77	-4.03	0.73	-11.30
IE	0.26	0.00	0.62	36.40	0.79	12.84	0.92	6.13	0.78	12.50	0.92	6.13
IT	0.39	6.87	0.54	22.01	0.24	3.82	0.00	4.71	0.78	17.69	0.73	17.55
LU	0.32	-3.05	1.07	95.49	0.70	1.95	0.86	-0.76	0.86	-1.01	1.00	5.90
NL	0.52	7.13	0.85	40.05	0.82	1.92	0.82	-4.75	0.84	4.25	0.85	-1.96
AT	0.44	3.36	0.44	3.43	0.65	-1.70	0.83	-0.45	0.67	-0.11	0.83	-0.45
PT	0.35	10.08	0.11	0.00	0.36	-0.15	0.71	-2.29	0.79	-1.96	0.78	-0.04
FI	0.42	1.37	0.95	32.94	0.69	-9.06	0.93	-4.73	0.72	-7.78	0.93	-4.73
SE	0.29	-9.01	0.61	-19.56	0.70	-10.07	0.88	-9.89	0.75	-12.74	0.88	-9.89
UK	0.31	-1.00	0.90	0.21	0.50	-2.22	0.52	20.05	0.50	-2.22	0.52	20.05
CZ	0.52	26.15	0.29	16.04	0.62	-0.69	0.77	-12.68	0.80	12.72	0.77	-12.68
EE	0.23	:	0.23	:	0.46	:	0.57	:	0.63	:	0.57	:
HU	0.39	-1.91	0.39	-1.91	0.50	-0.26	0.48	-8.89	0.82	11.22	0.82	18.42
LT	0.27	:	0.93	:	0.44	:	0.92	:	0.70	:	0.97	:
LV	0.33	:	0.33	:	0.59	:	0.90	:	0.90	:	0.90	:
MT	0.23	:	0.34	:	0.59	:	0.67	:	0.59	:	0.66	:
PL	0.30	-3.83	0.33	-12.68	0.51	-10.74	0.57	-11.15	0.82	-0.41	0.72	-0.19
SK	0.30	6.59	0.13	-106.60	0.40	-41.18	0.58	-66.74	0.68	-5.97	0.58	-52.24
SI	0.35	:	0.22	:	0.60	:	0.82	:	0.83	:	0.82	:
BG	0.21	:	0.21	:	0.38	:	0.58	:	0.81	:	0.81	:
RO	0.30	:	0.38	:	0.37	:	0.43	:	0.71	:	0.67	:

Source: OECD/EC Tax and Benefits database.

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Chapter 4

Taxation in the context of the Europe 2020 strategy on employment and poverty[1]

1. Introduction

1.1. Europe 2020 employment and poverty targets: the role of taxation

Taxation is the main source of funds for government spending in areas ranging from infrastructure to education to social programmes.

The budgetary situation in many EU Member States, along with fiscal consolidation programmes, have heated up the debate on the effects of labour taxation on employment and the distribution of incomes, and the consequences of shifting the tax burden between consumption, capital and labour. Recent policy recommendations were formulated with the primary aims being to correct excessive budget deficits and enhance efficiency. In this chapter, the potential for tax shifts is explored from the point of view of two targets of Europe 2020: an increase in the employment rate and a reduction of (income) poverty and social exclusion. The focus of the chapter does not exclude tax shifts having an equally important impact on aspects such as growth, capital formation and savings and on the behaviour of economic agents[2]. The analysis, specifically in section 3, complements other studies by adding a microeconomic perspective to the policy debate on tax issues.

Among the taxes which could potentially be increased while lowering labour taxation are VAT, housing and environmental taxes which are the focus of special interest in policy recommendations. VAT is relatively important in terms of tax revenues and efficiency, while owner-occupied housing represents the largest share of most households' wealth and currently enjoys favourable tax treatment in most countries.

The analysis of this chapter does not cover other capital taxes than those on owner-occupied housing. Taxes on financial transactions, capital gains and wealth (including financial assets) are not considered specifically in this chapter, since they are not the subject of official policy recommendations and/or their social impact would go beyond the income concept underlying the Europe 2020 targets. Other capital taxes deserve further analysis in other publications, as the focus of our analysis is restricted to income, while wealth has gained importance with respect to income. Top 1% income and wealth shares grew considerably in the last decades and the fairness potential of wealth taxes is similarly discussed at the policy level. The analysis in the chapter will also highlight possible trade-offs, and the interplay of employment and social impacts on selected taxes and tax designs. Indeed, taxes on non-labour income sources are not as progressive as personal income taxes or can even be regressive.

Changes in taxation generate immediate and dynamic effects. In the short-run, economic agents may not have the time to react to tax changes. A new tax regime is applied to the current economic setting. In the long-term, economic agents may search for a new equilibrium, adapting to the tax changes. For instance, depending on the distribution of market power, economic agents may be able to shift the initial tax burden to other economic agents. As a result, the medium- to long-term effects of taxes do not depend on where the revenue is collected, but on the price elasticities of demand and supply in various markets.

The social effects of taxation analysed in this chapter are based on static tax micro-simulation models. Behavioural effects such as changes in consumption patterns (for tax shifts to consumption), investment decisions (for tax shift to property), the probability of tax compliance and life-cycle dynamics are not taken into account. The results should be interpreted as the immediate effects of taxation on the current distribution of income. The analysis of the employment effects of taxation (such as simulations using DG EMPL's Labour Market Model) takes behavioural changes into account. The results often focus on long-term effects, with a horizon of about 20 years.

1.2. Overview of the chapter

The structure of this chapter is as follows: Section 2 illustrates key facts on developments in overall and labour taxation, analysing recent developments in labour taxation within overall taxation, as

(1) By Guy Lejeune, Virginia Maestri, Jörg Peschner.

(2) For an account of tax policies with a focus on efficiency and macroeconomic aspects such as fiscal consolidation and sustained growth see European Commission (2012c).

Box 1: Definitions and statistical sources

Labour taxation definitions

Labour taxes can be broken down into:

1. Social security contributions by employers (SSCR)

2. Social security contributions by employees (SSCE)

3. 'Calculated' personal income taxes (PITC). These are personal income taxes (PIT) allocated to employed labour income (see below).

Other labour taxes paid by employers (mainly payroll taxes) and labour taxes on the non-employed (including all taxes and compulsory social contributions raised on transfer income of non-employed persons) are of minor importance and are not considered in this chapter unless otherwise indicated.

Personal income taxes are typically levied on different sources of income: labour income, as well as social benefits, dividend and interest income and self-employment income. Annex B of European Commission (2012b) explains how taxpayers' data have been used to allocate PIT revenue across different sources of income. On average, PITC is about 70% of PIT, ranging from 96% in the Czech Republic to 49% in Poland in 2010.

Concepts related to the social effects of taxation

Income data reported in Sections 3 and 5 refer to equivalised disposable income (of the household), using the OECD-modified equivalence scale. The OECD-modified equivalence scale assigns a weight of 1 to the first adult of the household, 0.5 to the second and each subsequent person aged 14 and over and 0.3 to each child aged under 14.

Inequality and poverty indicators are based on household income equivalised by using the OECD-modified scale.

Income **inequality** is measured with the Gini coefficient.

The relative income **poverty** line is set at 60% of the national median equivalised disposable income, unless differently specified.

Imputed rent is defined as the income advantage enjoyed by homeowners and tenants who pay rent below market prices. The estimation of imputed rents in EU-SILC data is provided by the national statistical offices of Member States.

Imputed rents can be estimated by using the rental equivalence approach or the capital market approach. The first approach consists of estimating the market rent that homeowners or below-market-rate tenants would pay if they rented their dwelling at full market price. The estimation can be made using either objective (regression/stratification) or subjective methods. The second approach corresponds to potential returns from investing the house value in an alternative portfolio.

Estonia, Slovak Republic and Sweden use the capital market approach, Czech Republic uses the subjective rental equivalence approach, and all other Member States use the objective rental equivalence approach.

The imputed rent values used in this chapter are net of mortgage interest payments.

EU27, EA17 and NMS12 averages reported in Charts of Section 3.2 are weighted averages.

Statistical sources

The main source of statistical data is the European Commission publication, *Taxation trends in the European Union*, 2012 edition, referred to below as European Commission (2012b). This publication provides tax trends by tax type, level of administration, tax base, as a share of GDP and total tax revenues, and implicit tax rates.

Taxation trends are often analysed at the OECD level. However, a comparison with non-EU OECD countries is not carried out here [(1)] for two reasons. The first is to avoid confusion: the data used here are the official data from the above publication, which were approved by the EU Member States. The corresponding data in the OECD database are not always the same. The second reason is that the six EU Member States which are not members of the OECD are not covered in the OECD database. Finally, OECD tax revenue data do not allow for the allocation of personal income taxes to the different sources of economic income (labour, capital and rents). The exact amount of labour taxation according to the OECD data remains, as a result, unknown. The reader who is interested in a comparison with non-EU OECD countries is referred to Econpubblica (2011), pp. 37-50.

Note that for certain concepts related to the tax wedge, data from the OECD publication *Taxing Wages* are used, supplemented by data calculated by the OECD for the six EU Member States which are not members of the OECD [(2)].

(1) Except in sub-section 3.2, on property taxation.

(2) In the framework of the OECD-European Commission co-operation on 'Tax wedge and the effective tax rates on labour'.

well as developments within labour taxation. Section 3 presents key elements of the distributional effect of taxation. It focuses on the equity effects of VAT and property taxes and on the distributional effects of tax shifts away from labour and towards consumption and real estate. The social effects of direct taxation are illustrated in Section 4.

Section 4 deals with the employment aspects of taxation, with the focus on direct taxation. It analyses revenue-neutral tax shifts away from labour. Simulation results for such shifts are presented. Section 5 considers the trade-offs and interplays between social and employment effects of tax shifts, with a focus on shifts to property and consumption. It adds an analysis of green taxes and tax evasion. Section 6 concludes.

2. Key facts on developments in overall and labour taxation

2.1. Trends in labour taxes and other tax revenues

This section focuses on the extent to which taxation is shifting away from labour toward consumption and property in particular, in line with recent reforms in some Member States. It describes the tax developments in the period before the start of the economic crisis (1995-2007), in the subsequent period (2007-2009) as well as the most recent trend visible in the Eurostat data (2009-2010). Recent tax reforms in Member States are described at the end of the section in order to shed some light on expected trends in terms of shifts away from labour taxation after 2010.

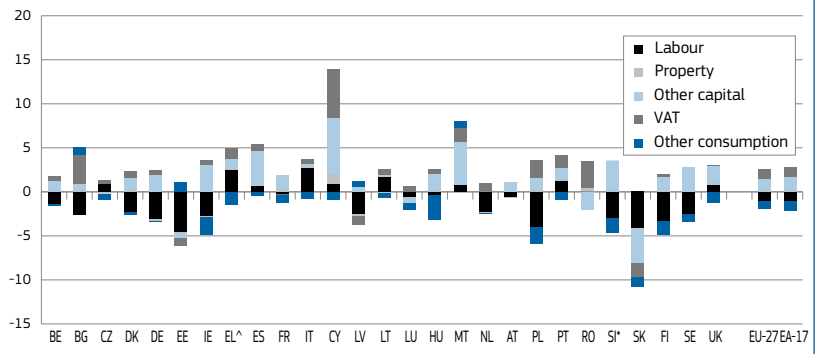
A suitable measure to assess tax shifts away from labour is to compare and assess taxation by tax base (labour, consumption and capital), showing the trend of tax shifts with respect to both GDP and total tax revenues. Implicit tax rates provide a somewhat different overview by showing the burden of taxation for each tax base.

In terms of the specific focus of the chapter, taxes on consumption are split between value added taxes (VAT) and other taxes on consumption, with taxes on capital split between recurrent taxes on immovable property, and other taxes on capital. It was not possible, however, to apply this distinction to implicit tax rates.

The volume of tax revenues is sensitive to the economic cycle, but implicit tax rates express tax revenues of each tax category (consumption, labour and capital) as a share of the corresponding tax base. Thus implicit tax rates are not affected by the cycle through their tax base, but rather through changes in the composition of the tax base (for instance a recession tends to increase the consumption of basic goods that are often taxed at a lower rate).

Short-term changes in tax revenues and implicit tax rates can be affected not only by cyclical factors but also by structural tax reforms. Cyclical factors affect tax revenues and implicit rates temporarily, while structural reforms have an impact on long-term trends in taxation. In the short-term, however, it is generally difficult to distinguish between the effects of cyclical and structural factors.

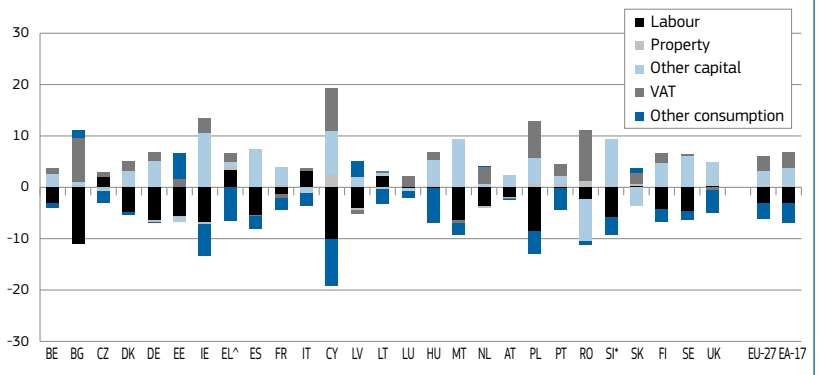
Chart 1: Changes in the taxation of different tax bases (% GDP), 1995-2007



Source: European Commission (2012b).

Notes: * missing data on VAT (introduced in 1999); ^ provisional data for 2007, 2009, 2010; EU-27 and EA-17 are arithmetic averages; property corresponds to recurrent taxes on immovable property.

Chart 2: Changes in the taxation of different tax bases (% total tax revenues), 1995-2007



Source: European Commission (2012b).

Notes: * missing data on VAT (introduced in 1999); ^ provisional data for 2007, 2009, 2010; EU-27 and EA-17 are arithmetic averages; property corresponds to recurrent taxes on immovable property.

2.1.1. Tax trends before the crisis

Before the onset of the recession (1995-2007), most Member States showed a clear shift away from labour taxation, with Chart 1 showing negative changes in labour tax revenues as a share of GDP in most Member States. While revenues from labour taxation were decreasing, however, revenues from capital (other than from recurrent taxes on immovable property), and VAT were increasing for EU-27 as a whole.

EU-27 and EA-17 both experienced a slight overall average increase in recurrent taxes on immovable property over the 1995-2007 period. However, considerable changes in property tax revenues were concentrated in two Member States: Cyprus (+1.1 pps) and Romania (+0.4 pp).

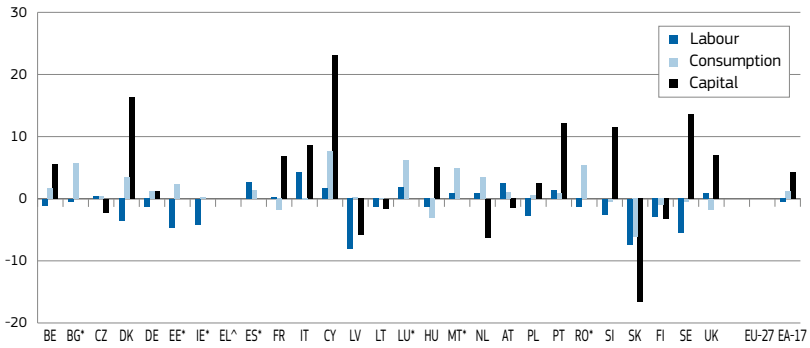
The tax shift away from labour in the 1995-2007 period is confirmed by the changes in taxation as a share of total tax revenues (see Chart 2).

The notable exceptions to the general trend of tax shifts away from labour are the Czech Republic, Greece, Spain, Italy, Cyprus, Lithuania, Malta, Portugal and the United Kingdom, where labour taxation as a share of GDP increased during the 1995-2007 period. In the Czech Republic, Greece, Italy, Lithuania and, to a smaller extent, in the United Kingdom labour taxation as a share of total tax revenues increased as well. This data shows that in the latter group of countries, labour tax revenues increased more than did other taxes.

As shown by Chart 3, the implicit tax rate on labour decreased in most Member States over the period preceding the economic crisis. However, in some countries the burden of taxation on labour increased, these being the same countries for which labour taxation increased as a share of total tax revenues and/or as a share of GDP (plus France, Luxembourg, the Netherlands and Austria). In the latter group of countries this may be explained by the fact that GDP increased proportionally more than tax revenues on labour.

On the other hand, the implicit tax rate on consumption and capital increased. However, the implicit tax rate on consumption includes VAT and other taxes which can move in opposite directions. Likewise, the implicit tax rate on capital includes business, self-employment and wealth/stocks and it is difficult to interpret this data in relation to the issues addressed in this chapter.

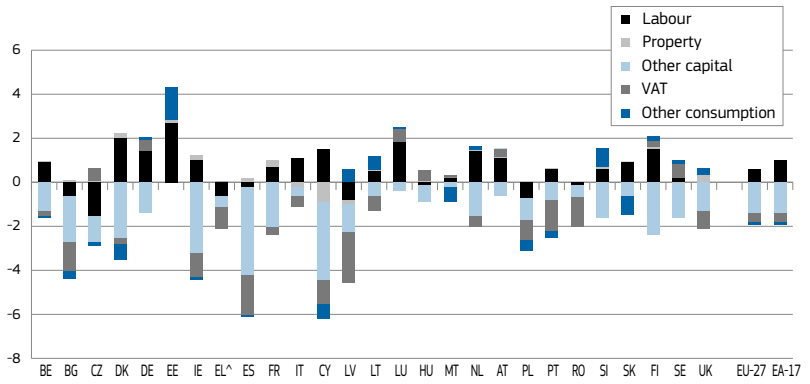
Chart 3: Changes in implicit tax rates by tax base, 1995-07



Source: European Commission (2012b).

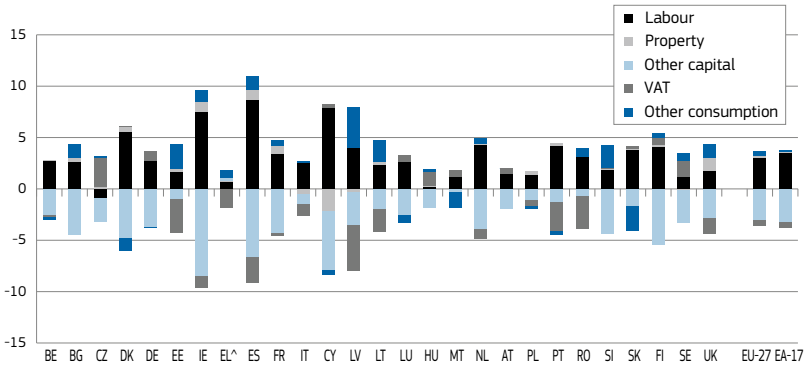
Notes: ^ no ITR data for EL for this period; * missing ITR on capital; ** missing ITR on labour, consumption and capital; *** adjusted average excluding EE, ES, LU from ITR on capital and EL from ITR on labour, consumption and capital; EU-27, EA-17 arithmetic averages.

Chart 4: Changes in the taxation of different tax bases (as % GDP), 2007-2009



Source: European Commission (2012b).

Chart 5: Changes in the taxation of different tax bases (as % total tax revenues), 2007-2009



Source: European Commission (2012b).

2.1.2. Tax trends during 2007-2010

Following the onset of the recession, the trend shift in taxes away from labour came to a halt in most Member States, with the exception of Bulgaria, the Czech Republic, Greece, Spain, Latvia, Hungary, Poland and Romania. Apart from the Czech Republic, where labour tax revenues fell, they fell by no more than other tax revenues (as is reflected in Charts 4 and 5).

The increase in labour tax revenues only partially compensates for the considerable fall in consumption and capital tax revenues between 2007 and 2009. In particular, tax revenues from capital other than property decreased sharply, due to the financial market crash. Recurrent tax revenues on immovable property increased in relative terms, as these taxes are less sensitive to cyclical changes.

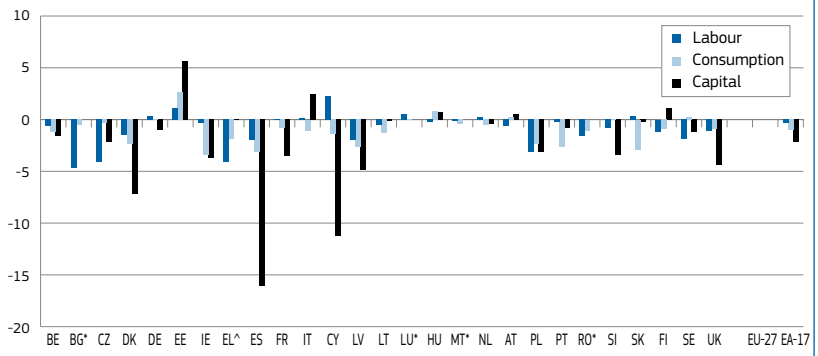
The overall burden of labour taxation decreased in most Member States between 2007 and 2009 but it started to increase again in 2010 (Chart 6 and 9). However, Germany shows an opposing trend with the implicit tax rate on labour increasing in the 2007-2009 period, and decreasing in 2010. In Estonia, Italy, Cyprus, Luxembourg, Netherlands and the Slovak Republic, the increase in the burden of labour taxation in 2010 confirmed an earlier increase between 2007 and 2009.

Contrary to the general trend between 2009 and 2010, there was a fall in the burden of labour taxation in Denmark, France, Lithuania, Poland, Slovenia and, in particular, Bulgaria and Romania (Chart 9).

Between 2007 and 2009, the burden of taxation on both consumption and capital decreased, with the fall in consumption taxes explained by the composition effect, due to a shift in expenditure towards basic goods that are generally subject to lower tax rates.

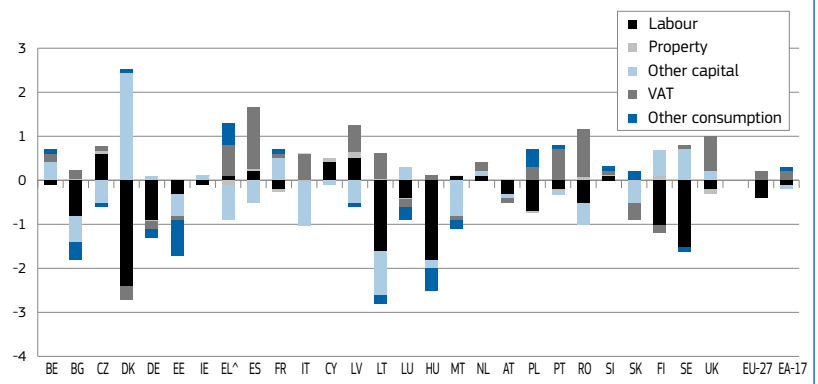
Estonia and Italy increased the tax pressure on consumption and, considerably, on capital.

Chart 6: Changes in the implicit tax rates by tax base, 2007-2009



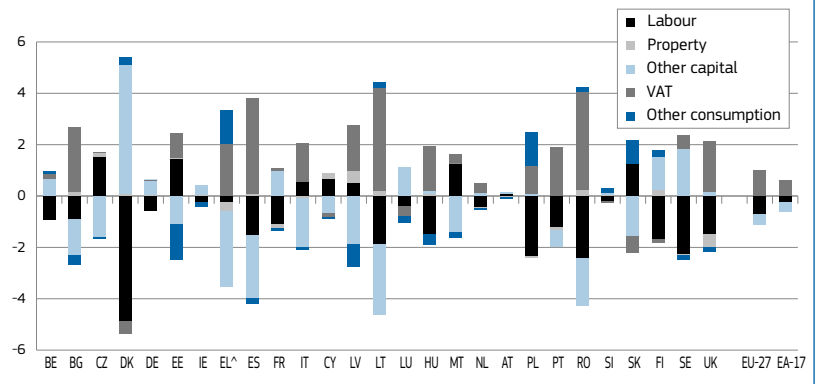
Source: European Commission (2012b).

Chart 7: Changes in the taxation of different tax bases (as % GDP), 2009-2010



Source: European Commission (2012b).

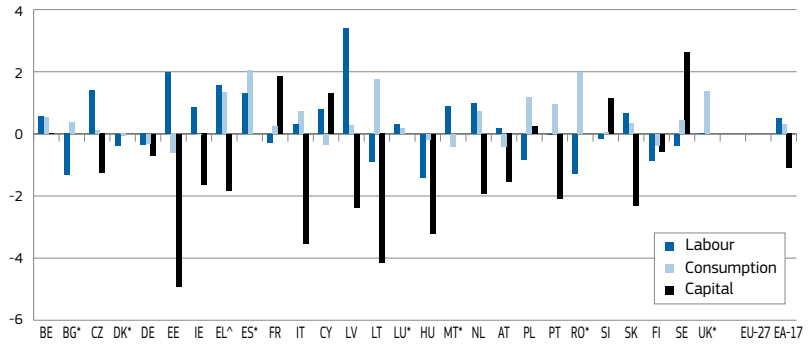
Chart 8: Changes in the taxation of different tax bases (as % total tax revenues), 2009-2010



Source: European Commission (2012b).

Opposite to the change in trend which occurred in 2010 for the implicit tax rate on labour, tax revenues from labour decreased in most Member States, both as a share of GDP and relatively to total tax revenues (Chart 7 and 8). However, the tax burden on labour is still below its pre-crisis level (European Commission, 2012b). Tax revenues from labour had increased in the earlier phases of the crisis (2007-2009) and started to fall afterwards (2009-2010). Indeed, the fall in GDP disproportionately affected the consumption and capital tax bases early in the recession, while the cyclical effects on employment were generally delayed.

Chart 9: Changes in the implicit tax rates by tax base, 2009-2010



Source: European Commission (2012b).

The opposite development in terms of the burden of labour taxation and labour tax revenues in the period 2009-2010 can be explained by the increase in unemployment. Although labour tax revenues decreased due to the rise in unemployment, the burden of labour taxation for those in work did not decrease in most Member States.

A cyclical effect on the implicit tax rate on labour can be expected in a recession if it affects the labour income of those in work (for example by reducing hours of work), since lower incomes are subject to lower marginal tax rates.

In the Member States in which the implicit tax rate on labour decreased considerably in 2010 (Bulgaria, Hungary and Romania), this may be due to structural reforms of the tax system rather than to cyclical factors.

Contrary to the change observed in most Member States in 2010, in the Czech Republic, Cyprus, Latvia and Malta, labour tax revenues increased with respect to both GDP and other tax revenues. In Greece, Spain, Netherlands and Slovenia, labour tax revenues increased as a share of GDP but not with respect to other tax revenues. In Estonia, Italy, Austria and the Slovak Republic, labour tax revenues increased more than revenues from other tax bases, but not with respect to GDP.

The increase in the implicit tax rate on consumption in 2010 in most Member States can be attributed to the rise in VAT rates (European Commission, 2012b). In 2010, Bulgaria, Spain, Greece, Italy, Lithuania, Hungary, Poland, Portugal, Romania and the United Kingdom all witnessed a substantial increase in consumption tax revenues with respect to other tax revenues. In 2010, property taxation was mostly stable relative to other tax revenues.

While the tax burden on consumption started to increase again after 2009, the implicit tax rate on capital has continued to fall.

Table 1 summarizes the tax developments with a focus on tax shifts away from labour. Although all three measures are informative, the implicit tax rate is the most suitable for assessing tax shifts away from labour [3]. The data show a shift away from labour taxation between 1995 and the earliest phases of the recession in the majority of Member States. The burden of taxation shifted towards consumption and capital until the onset of the recession. The increase in capital tax revenues occurred despite the sizeable decline in capital tax rates and, in particular, in corporate income tax rates. Various factors can explain this development: the increasing importance of capital versus labour, the sensitivity to business cycles, the contemporaneous broadening of the corporate income tax base and the measures adopted to limit harmful tax competition [4]. Nonetheless, in 2010 the tax burden on labour started to increase again in several Member States, together with that on consumption (while for capital it kept falling as from the beginning of the crisis). Cyprus, Italy, Luxembourg and the Netherlands did not lower the burden of labour taxation over the entire period.

(3) One caveat is that the implicit tax rate on capital is a less reliable measure, mainly due to the fact that a large part of its tax base is a net flow, with potentially very small outcomes for the tax base and, as a result, very large outcomes for the implicit tax rate.

(4) The level of aggregation used in the above charts for capital tax revenues (that includes corporate income, capital and business income of households and self-employed in the form of rents, dividends, interest, etc.) does not enable us to precisely describe the factors underlying the development of capital tax revenues.

Table 1: Summary of tax shifts away from labour

	1995-2007	2007-2009	2009-2010
As % GDP	Yes, towards capital (other than property) and VAT (exceptions: CZ, ES, EL, IT, CY, LT, MT, PT, UK)	No (cyclical) (exceptions: BG, CZ, EL, ES, LV, HU, PL, RO)	Yes (cyclical), mostly towards VAT (exceptions: CZ, EL, ES, IT, CY, LV, MT, NL, SI, SK)
As % total tax revenues	Yes, towards capital (other than property) and VAT (exceptions: CZ, EL, IT, LT, SK, UK)	No (cyclical) (exceptions: CZ)	Yes (cyclical) (exceptions: CZ, EE, IT, CY, LV, MT, AT, SK)
ITR	Yes (lower burden) (exceptions: CZ, ES, IT, CY, MT, PT, UK, FR, LU, NL, AT)	Yes (lower burden) (exceptions: DE, EE, IT, CY, LU, NL, SK)	No (in 15 MS) (exceptions: BG, DK, DE, FR, LT, HU, PL, PT, RO, SI, FI, SE)

Source: European Commission (2012b).

Notes: ITR 1995-2007: no data for EL for this period.

2.1.3. Reforms after 2010

Following fiscal stimulus measures designed to counter the effects of the crisis in 2009, the years 2010 and 2011 marked a transition in tax policy from broad-based revenue-side support to fiscal consolidation. The consolidation requirements render tax shifts away from income taxes very difficult for the time being.

Consumption taxes, property taxes and green taxes, all deemed less harmful to growth than income taxes [5], have been raised in 2011-2012 in many Member States. However, at the same time, personal income tax was also increased in a majority of Member States, by raising statutory rates and/or measures to broaden the tax base [6].

[5] See 4.4.

[6] See, for example, the reductions in mortgage relief and the other tax expenditure cuts in Tables 2 and 3.

Table 2: Tax reforms in 2011

	PIT	PIT progressivity	VAT standard	VAT reduced	VAT exemptions/ reduced	Environmental	Mortgage relief	Property tax	Tax evasion measures
BE				-		+			
BG				+		-/+			
CZ			+ (1pp)	+ (1pp)		+		+	
DK	$	-			-	+			
DE	-				+	+			
EE						+			
IE	+		-			+			
EL	+ / $	+	+ (4pp)	+ (2-4pp)	-	+		+	+
ES	+		+ (2pp)	- (1pp)			-		
FR	+	+			-	+**		+	
IT						+		+	+
CY					-				+
LV	+		+ (1pp)	+ (2pp)	-	+		+	+
LT					+				
LU	+	+							
HU	- / $		+ (5pp)	1 new		+			
MT						+			
NL					+		-		
AT						+			
PL			+ (1pp)	+ (1pp)		+			
PT	+	+	+ (1pp)	+ (1pp)					
RO			+ (5pp)			+			
SI						+			
SK			+ (1pp)			-/+			
FI	-		+	+	+				
SE									
UK	+	+	+ (2.5pp)			+			

Source: European Commission (2011d).

Notes: This table lists tax changes implemented in 2010 and the first half of 2011 including temporary but significant changes. Minor changes are not included. * some goods are shifted from VAT exemptions to reduced rates and some from reduced rates to standard rates; $ major tax reform; ** compensating measures.

Table 3: **Tax reforms in 2012**

	PIT	PIT progressivity	VAT standard	VAT reduced	VAT exemptions/ reduced	Environmental	Mortgage relief	Property tax	Tax evasion measures
BE	TEC[2]			+	-				
BG				+		+			
CZ	+	+		+ (4pp)					+
DK	TEC[2]				-				
DE									
EE									
IE	+/-		+ (2pp)			+		+**	
EL	+/TEC[2]	+		+/-		+		+ (?)	+ (?)
ES	+	+			-			+	
FR	TEC[2]	+	+ (1.6pp)	+			-		
IT	+	+	+ (1-3pp)			+		+	+
CY	+	+	+ (2pp)	1 new	-/+			+	
LV	-		+ (1pp)	+ (2pp)	-	+		+	+
LT				-		+		+	+
LU	+/-	+							
HU	$	-	+ (2pp)			+			+ (?)
MT	-								+
NL	+/-				-	+/-	-	-/+(IR[3])	
AT	+	+			-	+		+	
PL	+	+	+ (1pp)	+ (1pp)	-	+			
PT	+	+	+ (2pp)		-	+	-	+	
RO						+			
SI						-			
SK						+			+
FI	+/-				-	+	-		
SE									
UK	+/-							+	+

Source: European Commission (2012c).

Notes: This table lists tax changes implemented in 2011 and the first half 2012, including temporary but significant changes. Minor changes are not included. (?) implementation of previous measures?; [2] TEC: tax expenditure cuts; ** from OECD (2012c); [3] IR : imputed rent (under PIT); $: major reform with flat rate.

A more detailed analysis of recent reforms can be found in Chapter 3 of European Commission (2012c).

2.2. Trends within labour taxes

While the previous sub-section dealt with the position of labour taxation within overall taxation, this sub-section deals with the composition of labour taxation [7]. It does so sequentially from three angles: the different shares in labour taxation, as a share of GDP, and finally, in terms of the composition of the (labour) tax wedge.

2.2.1. Shares in labour taxes

In the following analysis, the focus is on the two SSC and PITC, as the two remaining components [8] amount to only about 11% of total labour taxes at the EU level. On average, over 1995-2010, SSCR, SSCE and PITC accounted for, respectively, 37%, 20% and 32% of total labour taxes at the EU level. Table 4 shows that the 2010 GDP-weighted distribution was hardly different from these averages over 1995-2010.

The different distribution of labour taxes for the median values of Member State data is distorted by the United Kingdom data, where the share of PITC exceeds 50% [9], while other large Member States display smaller deviations from the EU averages.

Between 1995 and 2007, the EU weighted averages were heavily influenced by developments in France and the Netherlands, where the PITC share increased dramatically at the expense of the SSCE share. Over the same period, the SSCE share increased in a number of Member States, specifically the New Member States [10], pushing up the median share. The developments between 2007 and 2009 seem to reflect the consequences of the crisis. The share of the 'rest' component increased, mainly because payroll taxes are often not proportional to the wage sum.

Table A1 (in Annex) shows the within-labour-taxes distribution by Member State. The weight of SSCR exceeds 50% in half of the New Member States, while it is zero in Denmark and less than a quarter in the Netherlands. The relatively low SSCR weight in Germany and the United Kingdom drags down the GDP-weighted EU average for SSCR. The weight of SSCE is very small in Denmark, Estonia and Sweden (below 5%), while reaching 40% in Slovenia.

(7) Trends in the distribution of the different labour taxes could partly be due to so-called 'cold progression'. This means that the progressivity of PIT can lead to a disproportionate rise in the tax rate payable when income increases only due to inflation (no change in real terms).

(8) The five components of labour taxes and the relevant corresponding abbreviations are explained in Box 1.

(9) In the United Kingdom and Malta, the social security system is not separate from the central government level from an accounting viewpoint.

(10) These are the ten Member States which joined the EU in 2004 and Bulgaria and Romania, which joined in 2007.

Table 4: EU-27 composition of labour taxes (%)

Component	Method	1995	2007	2009	2010	95 to 07	07 to 09	09 to 10
SSCR	weighted	35.8	37.0	37.1	37.3	1.2	0.1	0.2
SSCE	weighted	22.8	19.3	19.3	19.4	-3.5	0.0	0.1
PITC	weighted	30.6	33.0	32.2	32.1	2.4	-0.7	-0.1
rest	weighted	10.8	10.7	11.4	11.1	-0.1	0.7	-0.2
SSCR	median	39.1	39.8	39.0	40.7	0.7	-0.8	1.7
SSCE	median	18.4	18.8	19.4	19.9	0.4	0.6	0.5
PITC	median	30.7	29.5	27.5	27.7	-1.2	-1.9	0.2
rest	median	11.8	11.9	14.0	11.6	0.1	2.2	-2.4

Source: European Commission (2012b) and own calculations.

Notes: 'weighted' are the GDP-weighted averages of Member State data, 'median' are the median values of Member State data.

Table 5: EU-27 composition of labour taxes (% of GDP)

Component	Method	1995	2007	2009	2010	95 to 07	07 to 09	09 to 10
SSCR	weighted	6.8	6.6	6.9	6.8	-0.2	0.3	-0.1
SSCE	weighted	4.3	3.4	3.5	3.5	-0.9	0.1	0.0
PITC	weighted	5.7	5.8	5.9	5.8	0.1	0.1	-0.1
rest	weighted	2.0	1.8	2.0	2.0	-0.1	0.2	-0.1
total	weighted	18.8	17.7	18.4	18.1	-1.1	0.7	-0.3
SSCR	median	7.5	6.0	6.0	6.0	-1.5	0.1	0.0
SSCE	median	2.3	2.8	2.8	2.8	0.4	0.0	0.1
PITC	median	4.8	5.1	5.0	5.1	0.4	-0.2	0.1
rest	median	0.8	1.0	1.0	1.0	0.2	0.0	-0.1
total	median	16.2	15.6	15.7	15.9	-0.6	0.1	0.2

Source: European Commission (2012b) and own calculations.

Notes: 'weighted' are the GDP-weighted averages of Member State data, 'median' are the median values of data in % of GDP for individual Member States.

Finally, the share of PITC reflects, to some extent, the outliers for the two other components. PITC accounts for over 70 % of labour taxes in Denmark and for more than 40 % in Ireland, Sweden and the United Kingdom. Denmark and Sweden are characterized by high PITC and lower SSC shares, since many social benefits are financed through direct taxation in those Member States. Table A2 (in Annex) shows the changes in within-labour-taxes distribution by Member State.

2.2.2. Labour taxes as shares of GDP

Relative to GDP, average labour taxes in the EU decreased between 1995 and 2007 from 18.8 % to 17.7 %, as set out in Table 5. During the crisis, however, GDP fell more than labour taxes. Median labour taxes in terms of GDP follow the same pattern as the weighted average, but at a lower level. This reflects the differences in this ratio within the EU, with typically higher ratios in Continental and Nordic Member States and low ratios in most New Member States. The drop in the weighted average between 1995 and 2007 was mainly due to lower SSCE, while the movements after 2007 were more even.

The large drop in the median SSCR ratio to GDP between 1995 and 2007 is related to large drops in a majority of (mostly New) Member States, but with little change in most large Member States. The rise in the median SSCE ratio to GDP between 1995 and 2007 reflected such rise in a majority of (mostly New) Member States, while the weighted average was brought down by the opposite development in some large Continental Member States.

European Commission (2012b) analyses the contributions of the different components of labour taxes to the development of the implicit tax rate on labour over time. It concluded that the reduction in the implicit tax rate on labour in most Member States between 2000 and 2010 was mainly due to PITC and SSCR.

2.2.3. Tax wedge

Macro-economic measures of the average tax burden on labour, as presented above, are useful in identifying trends in the overall structure of the tax system. However, the impact of taxes on the decisions of different economic agents depends, not only on the average tax burden, but also on marginal rates. Moreover, family composition and the wage level will also impact the individual tax burden.

An additional tool for analysing the evolution of the tax burden is the tax wedge, which is defined as the difference between labour costs to the employer and the net take-home pay of the employee as a percentage of labour costs. In practice this is equal to the sum of personal income tax, plus

both employee and employer social security contributions, together with any payroll tax (less cash transfers) – all expressed as a percentage of labour costs.

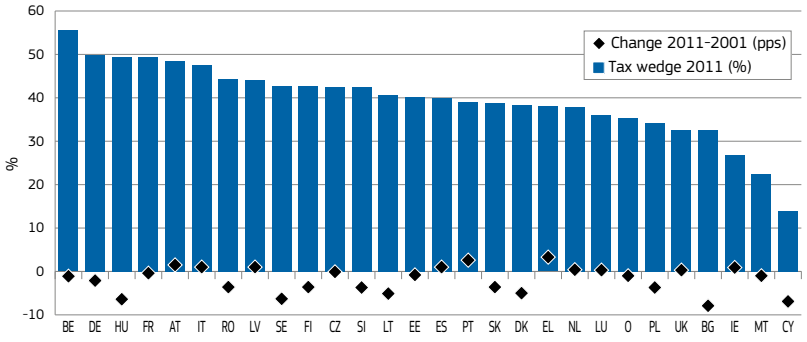
Contrary to the macro-economic measures of the average tax burden, the tax wedge can be calculated for various household types and different representative wage levels [11]. Moreover, the tax wedge is not affected by cyclical factors, as it is not related to actual tax revenue. In fact, the tax wedge result reflects only the rules of the tax and benefit systems which matter for various household types and different representative wage levels. This implies that the tax wedge may not be entirely accurate in so far as it omits specific factors such as special tax reliefs.

The above description shows that the ITR on labour and the tax wedge can be seen as complementary measures in assessing the tax burden on labour.

The EU is seen as an area of high tax wedges in international comparisons of developed economies. According to Chart 10, the tax wedge was below the OECD average in only six EU Member States (Poland, the United Kingdom, Bulgaria, Ireland, Malta and Cyprus). While the OECD average is 35%, the tax wedge exceeds 40% in a majority of EU Member States, with Belgium reaching 55% in this specific case [12]. The EU average and median values are about 40%.

However, tax wedges have converged somewhat to the OECD average over the last decade. In a majority of EU Member States, the tax wedge fell at a faster rate than the OECD average (which fell by 1 pp.). Nevertheless, the tax wedge increased by about 1 pp. or more in seven Member States, of which three were already above the EU average in 2001 (Italy, Latvia and Austria).

Chart 10: Tax wedge for a single person without children, 100% of average wage



Source: OECD, 'Taxing Wages'.

Note: 'O' refers to OECD average; data refer to 2010 for BG LV LT MT RO and to 2007 for CY.

Table 6: Tax wedges for different family compositions and wage levels (averages since 2001, %)

No. of persons	Single person	Single person	Married couple	Married couple
No. of children	0	0	2	2
Wage(s)	67%	100%	100% & 0%	100% & 67%
Belgium	49.7	55.7	40.9	48.7
Bulgaria	34.2	37.1	27.7	30.3
Czech Republic	40.6	42.9	24.0	36.4
Denmark	38.6	40.8	29.0	35.8
Germany	46.7	51.6	34.9	44.1
Estonia	38.7	40.2	31.1	35.8
Ireland	17.0	24.3	5.9	15.6
Greece	34.5	36.4	36.8	36.0
Spain	35.5	38.9	33.1	35.9
France	45.5	49.6	41.6	44.1
Italy	43.1	46.5	37.1	42.1
Cyprus	15.3	16.7	13.9	14.6
Latvia	41.8	42.9	33.8	38.0
Lithuania	41.0	43.4	39.7	40.5
Luxembourg	28.4	34.6	11.3	21.0
Hungary	45.7	52.1	40.8	42.8
Malta	17.7	23.3	12.7	20.1
Netherlands	36.5	38.2	29.5	33.9
Austria	43.6	48.0	36.4	40.1
Poland	35.8	36.9	32.7	34.7
Portugal	32.7	37.5	27.7	32.9
Romania	43.0	44.9	36.3	39.9
Slovenia	41.4	44.4	24.3	36.0
Slovak Republic	37.1	39.8	26.0	33.6
Finland	39.0	44.2	38.2	38.5
Sweden	44.5	46.2	40.4	42.1
United Kingdom	29.7	33.1	27.0	28.5

Source: OECD, 'Taxing Wages'.

[11] See the annual OECD publication *Taxing Wages*, www.oecd.org/ctp/taxingwages. Contrary to the analysis of macro-economic tax burden measures, the analysis of tax wedges starts only in 2000 or 2001. Time series for tax wedges contain a structural break in 2000, as prior data were based on a different definition of average wages.

[12] The case of a single person without children, 100% of average wage, is used for illustrative purposes, other family compositions and other wage levels may yield different results. This issue is dealt with on the next pages.

It should be recognised that the above findings are illustrative rather than universal to the extent that they relate to the case of a single person without children, earning average wages. Results can vary according to family compositions and at other wage levels.

In Table 6, three alternatives are considered. Except for Greece, where all tax wedges are very similar, the tax wedge is always highest for the single person without children earning the average wage, and lowest for the a one-earner married couple with two children, earning the average wage.

Except for Greece, Spain, Malta and Portugal, the tax wedge is always second-highest for a single person without children earning two-thirds of the average wage, and second-lowest for a two-earner married couple with two children, with respective earnings of 100% and 67% of average wage.

The ranking of Member States over these four cases is very similar, confirming the representativeness of the case of a single person without children, 100% of average wage. Except for the correlations involving the one-earner married couple (with two children, 100% of average wage), correlation coefficients [13] between the four respective Member States rankings are always very high (at least 94%). But even the correlations involving the one-earner married couple exceed 76%.

This similarity makes it possible to establish a sort of ranking of Member States according to the level of the tax wedge. High tax wedge levels are found in most continental Member States (Belgium, France, Germany and Austria), most Nordic Member States (Sweden, Finland), Italy and some new Member States (Hungary, Lithuania and Romania). Low tax wedge levels are found in Luxembourg and Anglo-Saxon countries (the United Kingdom and Ireland) together with Malta and Cyprus. Southern and New Member States have, in general, tax wedge levels around the EU average.

Table 7 shows the composition of the tax wedge over income tax and social security contributions. In general, almost half of the tax wedge is due to SSCR, a quarter to SSCE and somewhat above a quarter for PIT [14].

The tax wedge declined significantly (by at least 2 pps.) between 2001 and 2011 in two groups of countries:

[13] Spearman's rank correlation coefficients were calculated. A rank correlation coefficient measures the degree of similarity between two rankings.

[14] Contrary to European Commission (2012b), the OECD data do not include a PIT measure cleaned for non-labour income.

Table 7: Tax wedge (and its components) for a single person without children, 100% of average wage (2011, %)

	Total	Of which			Difference 2001 - 2011			
	Tax wedge	PIT	SSCE	SSCR	Total	PIT	SSCE	SSCR
Belgium	55.5	21.7	10.8	23.1	-1.1	-0.3	0.1	-0.9
Bulgaria	32.5	7.5	10.3	14.7	-7.9	-1.1	4.1	-10.9
Czech Republic	42.5	8.9	8.2	25.4	-0.1	1.5	-1.1	-0.6
Denmark	38.4	28.0	10.7	0.0	-5.0	-4.5	-0.1	0.0
Germany	49.8	15.9	17.4	16.5	-2.1	-1.9	0.4	-0.6
Estonia	40.1	12.5	2.1	25.6	-0.8	-3.7	2.1	0.8
Ireland	26.8	13.5	3.6	9.7	0.9	2.7	-0.8	-1.0
Greece	38.0	3.0	12.8	22.2	3.3	2.5	0.4	0.4
Spain	39.9	12.0	4.9	23.0	1.0	1.4	0.0	-0.4
France	49.4	10.0	9.6	29.7	-0.4	-1.0	0.1	0.5
Italy	47.6	16.1	7.2	24.3	1.0	1.7	0.3	-1.0
Cyprus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Latvia	44.2	17.6	7.3	19.4	1.0	2.1	0.1	-1.3
Lithuania	40.7	10.0	6.9	23.8	-5.1	-9.6	4.6	0.0
Luxembourg	36.0	13.3	11.7	11.0	0.3	-0.4	1.4	-0.8
Hungary	49.4	13.6	13.6	22.2	-6.4	-5.0	4.7	-6.1
Malta	22.4	9.2	6.6	6.6	-1.0	-0.2	-0.4	-0.4
Netherlands	37.8	14.5	14.0	9.2	0.4	4.8	-3.9	-0.5
Austria	48.4	11.9	14.0	22.6	1.5	1.5	0.0	-0.1
Poland	34.3	5.9	15.5	12.9	-3.7	0.5	-2.8	-1.5
Portugal	39.0	10.9	8.9	19.2	2.6	2.6	0.0	0.0
Romania	44.3	9.5	12.9	21.9	-3.6	1.4	3.9	-8.9
Slovenia	42.5	9.6	19.0	13.9	-3.7	-1.5	0.6	-2.7
Slovak Republic	38.9	7.5	10.6	20.8	-3.6	1.8	1.3	-6.8
Finland	42.7	18.5	5.8	18.4	-3.6	-2.6	0.6	-1.6
Sweden	42.8	13.6	5.3	23.9	-6.3	-5.5	0.1	-0.8
United Kingdom	32.5	14.1	8.5	9.9	0.3	-1.6	1.0	0.9

Source: OECD, 'Taxing Wages'.

Note: 2010 data for BG LV LT MT RO.

- One group contained mostly New Member States, who lowered the tax wedge through SSCR (and increasing SSCE) in Bulgaria, Romania and Slovakia, with more mixed changes in Lithuania, Hungary, Poland and Slovenia.

- In a second group, the tax wedge decreased mainly due to a drop in PIT. This was the case for Germany as well as the Nordic countries (Denmark, Finland and Sweden).

By contrast, the tax wedge increased by at least 1 pp. mainly due to a rise in PIT in most programme countries (Greece, Spain, Ireland and Portugal), as well as in three Member States which had already a tax wedge above the EU average in 2001 (Italy, Latvia and Austria).

2.3. Recent policy recommendations

European Commission (2012c), Chapter 5, identifies those Member States which, from an efficiency point of view, are most likely to benefit from a shift of the tax burden away from labour [15]. These Member States, in particular, 'face the challenge of reducing the tax burden on labour (either overall or for specific groups) and at the same time appear to have room to increase taxes less detrimental to growth'.

The policy document also recommends broadening tax bases, which would make room to lower high tax rates which are potentially distortionary. One option to broaden tax bases is by lowering tax expenditures (see 4.1.4 on this topic). To boost tax revenues, tax compliance issues are also important (see 5.4 on tax evasion.

The policy document also pays attention to the redistributive effects of the tax system, pointing out that Member States facing substantial efficiency challenges in the tax-benefit system while achieving an inferior inequality outcome, may have scope for improving efficiency without compromising redistribution policies or for increasing redistribution without hampering efficiency [16].

3. The effects of taxation: key elements of the distributional aspects

This section focuses on the distributional effects of taxation in relation to the Europe 2020 poverty reduction and social inclusion target. The analysis goes beyond this target as such and considers inequality issues more generally.

Although inequality is not part of the Europe 2020 targets of social inclusion as such, it is a useful measure for assessing the burden-sharing impact of potential tax shifts. In this respect, the focus in this analysis is not the level of inequality as such, but the changes induced by taxation.

The analysis of inequality is also important in the context of fiscal consolidation. An increase in income inequality induced by a tax reform means that poorer people carry a higher burden than the rich. Moreover, the levels of poverty and inequality are highly correlated, with an increase in income inequality likely to be translated into an increase in the poverty rate.

In recent years, official recommendations advised Member States to lower taxes on labour and to compensate for this revenue loss by raising VAT revenues (including limiting the use of reduced rates and exemptions) and property taxes. At the same time, the EU-27 governments have committed themselves to reducing poverty and social exclusion by 20 million people.

Given these recommendations, this section focuses on the distributional effects of tax shifts away from labour towards consumption (through VAT) and property.

The social (and employment) effects of direct taxation are illustrated in Section 4, along with the employment aspects of tax shifts away from labour, in particular towards VAT.

Section 5 will consider the trade-offs and interplays between social and employment effects and add an analysis of green taxes and tax evasion.

The data presented in this section are mostly drawn from studies using tax micro-simulation models. These studies have some disadvantages. They do not consider behavioural responses to tax reforms. Moreover, the models are complicated tools that require a comprehensive set of policy rules to be established. In addition, tax micro-simulation studies on consumption taxes require the imputation of expenditures from external data. Information relevant to the scope of this section (such as property values) is missing in most surveys. Hence the country and time coverage of the evidence in this section is somewhat limited.

3.1. The social effects of consumption taxes

3.1.1. Introduction

As indicated in Section 1, several Member States have recently raised VAT rates as part of their tax reforms with the stated aim of contributing to fiscal consolidation and stimulating growth, given that a lower tax burden on labour compensated by an increase in consumption taxes might be expected to have a positive impact on employment and growth, without increasing budget deficits.

VAT (together with excise duties) has been an attractive candidate for tax changes and now contributes a large share of total tax revenues – ranging from 14.7 % in Italy to 33.7 % in Bulgaria [17].

Recent reforms and policy debate about VAT focus on two main issues. The first regards the increase in standard VAT rates. The second concerns the abolition or curtailment of reduced VAT rates and the number of VAT-exempt goods.

However, while tax shifts from labour to consumption may have favourable efficiency and consolidation effects, the rising burden of consumption taxation may have adverse social effects, depending

(15) These Member States are, in particular, Belgium, France, Italy, the Czech Republic, Latvia, Romania and, to a lesser extent, Germany, Austria, Latvia and Hungary. Please note that 'efficient' is synonymous with 'employment-friendly' in this chapter.

(16) The policy document does not identify these Member States.

(17) 2010 data from European Commission (2012b).

on the design of the reform and the conditions in particular Member States.

These adverse social effects are questioned by some observers, however, based on three arguments:

- First, the poorer the household, the higher the proportion of VAT payments as a share of disposable income, although poorer households may spend a lower proportion of their consumption on VAT payments in so far as they consume more goods that are VAT-exempt or taxed at a reduced rate (Econpubblica (2011); Crawford et al. (2010)).
- Second, richer households pay more VAT in absolute terms (Crawford et al. (2010)).
- Third, the distributional objectives could be better achieved by other taxes or benefits (Econpubblica (2011); Crawford et al. (2010)).

The opposite distributional effect found for consumption taxes when using income or expenditure as the relevant welfare concept is confirmed by other studies (Figari and Paulus (2012); Decoster et al. (2010)). However, these studies highlight that the choice of a proper welfare concept is debated.

Expenditure is less volatile than income from a life-cycle point of view, and is a better indicator of an individual's standard of living. On the other hand, to some extent expenditure patterns reflect personal tastes.

The distributional effect of consumption taxes can also be considered in a life-cycle perspective. In theoretical models that assume no bequests at the end of the life-cycle and uniform income and consumption taxes, VAT is thought to be proportional (see Box 2), as all income is eventually consumed. If individuals save more when young and consume more when old, a life-cycle assessment

Box 2: The optimal theory of taxation and indirect taxes

The optimal theory of taxation has long fascinated economists, but the 1970s mark the start of a series of dominant theoretical models on the best tax design to minimize the distortions and economic inefficiencies generated by taxation.

An earlier contribution to the optimal theory of commodity taxation is found in what is known as the Ramsey problem, with the conclusion that excise taxes should be inverse to the price elasticity of demand for the good. However, Ramsey's theory constrains the problem to one tax structure, while subsequent contributions widen the analysis of tax schemes (Mankiw et al. (2009)).

The contributions to the optimal design of a tax system are wide-ranging, while the considerations related to indirect taxation refer to two main aspects:

A) the optimal tax mix of income and consumption taxes

B) the optimal structure of consumption taxes

A) The first point results in the equivalence between income and consumption taxes. In the model, individuals use labour income to finance consumption. A proportional change in consumption taxes is equivalent to a proportional change in the income tax. The equivalence holds under specific conditions:

- taxes are proportional (not progressive);
- taxes are comprehensive (no deductions);
- taxes are uniform (consumption tax = income tax rate);
- there are no bequests, or bequests are taxed at the same rate (Crawford et al. (2010)).

The theoretical equivalence between uniform consumption and income taxes, resulting from the assumptions reported above, implies that shifting taxes from labour towards consumption will have no effect on the labour market (Crawford et al. (2010)). A tax shift from labour to consumption may have employment effects in this set-up if the labour market is regulated through a minimum net wage.

B) Concerning the structure of indirect taxes, the optimal theory of taxation prescribes two main lessons:

1B) intermediate goods should not be taxed (Diamond and Mirrlees (1971)), as this would distort the allocation of factor inputs;

2B) final consumption good should be taxed at a uniform rate (Atkinson and Stiglitz (1976)), as the disincentive effects of after-tax income are minimized when an individual's consumption choices are undistorted (Mankiw et al. (2009)).

Where certain specific goods generate externalities or when goods vary in their complementarity with leisure, differential VAT rates may be optimal.

The first case refers to commodities that generate externalities such as pollution or external costs (such as alcohol and tobacco). A recent view supporting the abolition of a reduced rate of VAT on food suggests obesity as a negative externality (Grueber, 2011).

The second case suggests to tax more heavily those goods that have a stronger complementarity with leisure, such as season tickets to watch football games as opposed to season ticket to commute to work (Crawford et al. (2010)).

of distributional effect of consumption taxes would turn out to be neutral. However, saving rates of individuals do not only depend on age. Indeed, Member States with a similar age structure display different saving patterns across income groups. Individuals do not spend all their income at the end of their lives and they leave bequests to their heirs.

Moreover, savings can be used for investments (housing, education), for renting houses or for in-home services that may not be subject to e.g. VAT. The application of taxes to consumption financed out of debt may further complicate the picture. The distributional effect of consumption taxes over the life-cycle has milder implications when household rather individual income is considered (as in this chapter).

The choice of (yearly household) income for the assessment of the distributional effect of taxes is grounded in the definition of the Europe 2020 targets of employment and poverty. Indeed, the standard measure of economic well-being adopted by the European Union, and included in its poverty-reduction target, is (household yearly) disposable income. The Europe 2020 poverty and social exclusion target has been defined on the basis of the at-risk-of-poverty rate, the index of material deprivation and the percentage of people living in households with very low work intensity. The second indicator is to some extent related to consumption, but only to define situations of severe material deprivation over a one year period. The chapter consistently follows the standard approach of considering (household yearly) income as the proper welfare concept.

3.1.2. Theory

The theoretical literature on indirect taxation provides a considerable contribution to recent reforms and policy debate. Indeed, one of its main findings – final consumption goods should be taxed at a uniform rate – is in line with recent tax reforms and proposals. Between 2011 and 2012, several Member States have increased their VAT standard and reduced rates and/or curtailed the number of goods eligible for reduced rates and exemptions (Tables 2 and 3).

The theoretical optimal mix between (uniform and proportional) income and consumption taxes has received little formal attention. The appropriate mix should depend on the differential administrative and compliance issues between income and consumption taxes (Crawford et al. (2010)). The equivalence between income and consumption taxation (see Box 2) does not hold in the real world mostly because income taxes are not proportional, there are bequests, and these are not taxed at the same rate. The growing interest in tax shifts away from labour toward consumption relies on the assumption that taxing consumption has a less distortive effect on the labour market than taxing labour.

The theoretical literature is more useful in suggesting the optimal structure of consumption taxes. Consumption taxes in the form of VAT are optimal as they do not tax intermediate goods. However, the actual structure of VAT in most European countries is not optimal as exemptions and reduced rates violate the prescription of the optimal tax theory (Mankiw et al. (2009)). From an efficiency point of view VAT exemptions are not optimal as they distort consumption choices, distort competition, create a bias towards imports (as exports are not subject to VAT) and add administrative and compliance burdens (Crawford et al. (2010)).

The theoretical literature privileges the efficiency and macroeconomic aspects of taxation. On the other hand, several empirical studies focus on the distributional aspects of taxation from a microeconomic point of view.

3.1.3. Empirical evidence

The regressive effect of VAT is well known. Households at the bottom of the

Box 3: Inequality and consumption

Standard measures of income inequality do not allow an assessment of the distributional effects of indirect taxes or tax shifts to consumption taxes to be carried out. Indeed, inequality is generally measured as disposable income inequality before expenditures. Therefore, consumption taxes are not included in the standard definition of disposable income.

The reasons for excluding taxes paid on expenditures from the measurement of disposable income are both theoretical and methodological. Firstly, many consider income as the appropriate measure of well-being, as consumption depends on preferences. Second, most surveys include information on income variables but not on detailed expenditures.

Consumption patterns reflect preferences towards, for instance, luxury or basic goods. These types of preferences are generally considered as individual responsibility. On the other hand, progressive taxation aims at reducing differences in endowments for which individuals are not held responsible. Of course, the distinction between what is or is not a personal responsibility is the subject of normative debate (Decoster et al., 2010).

The standard technique used to include consumption taxes in the assessment of the distributional effect of taxes is to use imputed expenditures. The imputation is based on income and other personal characteristics and derived from regressions of expenditure patterns based on expenditure data (see, for instance, Decoster et al. (2010) in Annex 7.2).

Beyond preferences, expenditure size and composition depend on income variables: the poor spend more of their income and, in particular, on basic commodities (taxed at lower rates). The regressive effect of the inclusion of indirect taxes in the disposable income concept is shown in the studies presented above (Figari and Paulus (2012); Decoster et al. (2010); O'Donoghue et al. (2004)) and resizes the conclusions on the progressivity of recent austerity measures (Callan et al. (2011)).

Measures of disposable income inequality that are not adjusted for tax payments on expenditures avoid the criticism of preference dependence. Nonetheless, the inclusion of consumption taxes into disposable income is particularly important when assessing the distributional effects of tax shifts.

income distribution consume a higher share of their income than households at the top. The burden of consumption taxes for the lowest income decile [18] is generally twice that for the top decile (Warren, 2008). Chart 11 shows the pattern of VAT payments as a percentage of disposable income by income decile in five European countries. Across countries, the shares range from 14% (in the UK) to 31% (in Ireland) for the bottom decile, and from 6% (in UK) to 11% (in Greece) for the top decile.

Although the pattern of VAT payments for the top nine deciles is quite similar across countries, the burden for the lowest decile varies considerably. In Ireland and Greece the bottom decile sustains a relatively high burden of VAT payments.

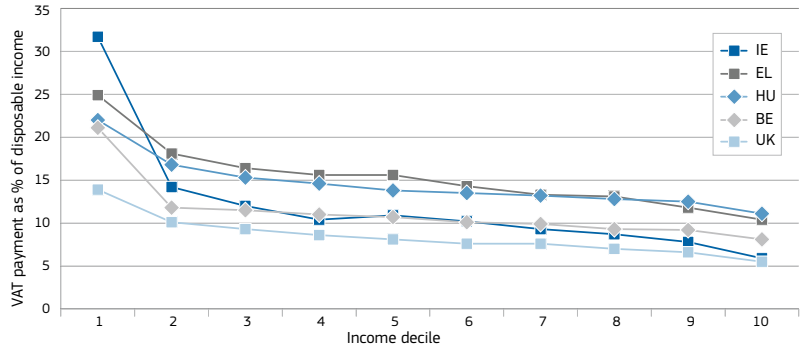
Country differences have implications for the distributional effects of VAT. Indeed, the regressive effect of VAT differs by country, and countries with similar levels of standard VAT rates can still report diverse impacts of indirect taxes on poorer households. Chart 12 shows the increase in inequality due to the deduction of VAT payments from disposable income for a number of European countries.

Considering the initial starting level of inequality, the deduction of VAT payments from disposable income has a relatively high regressive effect in France and Finland (more than a 10% change), a relatively low impact in Belgium, Luxembourg and the Netherlands (less than 5%) and an average effect (between 5-6%) in all the other countries.

Differences in the regressivity of VAT are only partially explained by the standard level of the VAT rate in the different countries. As Chart 13 shows, countries with a higher standard VAT rate are associated with a higher regressive effect from VAT. However, standard rates alone cannot explain why countries with similar VAT rates display large differences in terms of VAT regressivity, as is the case for the Netherlands and the UK (17.5% VAT rate in each case) and France and Belgium (20.6% and 21% VAT rate respectively)[19].

The only 'progressive' characteristic of indirect taxes is provided by reduced VAT rates or exemptions for goods that account

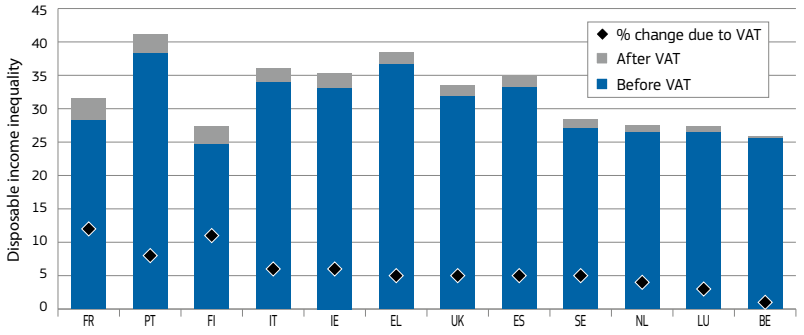
Chart 11: VAT payments as percentage of disposable income, by income decile



Source: Own elaboration from Decoster et al. (2010).

Note: Decoster et al. (2010) is based on 2003 HBS and 2004 EU-SILC for Belgium, 2005 HBS for Greece, 2005 HBS and 2005 EU-SILC for Hungary, 1999 HBS and 2000 Living in Ireland for Ireland, 2003/2004 FES and 2003/2004 FRS for the United Kingdom. For the estimation of VAT payments see Annex 7.2.

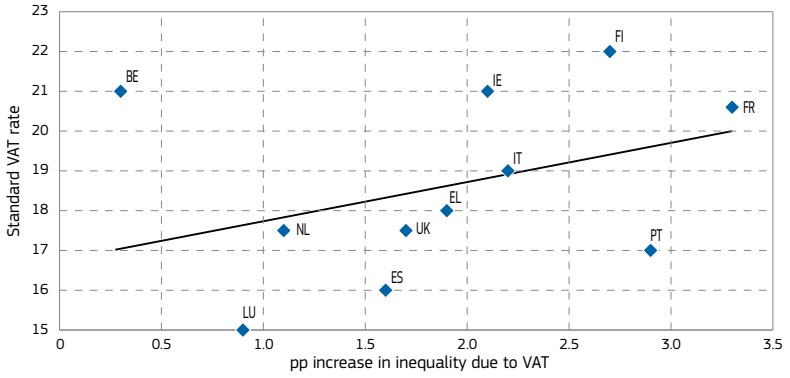
Chart 12: Disposable income inequality before/after VAT payments



Source: Own elaboration from O'Donoghue et al. (2004).

Notes: For the data and tax rules used in O'Donoghue et al. (2004) see Annex 7.2. Countries are ranked in decreasing order of the percentage point increase in disposable income inequality due to VAT. For the estimation of VAT payments see Annex 7.2.

Chart 13: Correlation between standard VAT rates and percentage point increase in inequality due to VAT



Source: Own elaboration based on data from O'Donoghue et al. (2004).

Notes: For the data and tax rules used in O'Donoghue et al. (2004) see Annex 7.2.

$y = 0.7646x + 17.161$
$R^2 = 0.0901$

[18] First, (income) data are sorted according to rising value, then the population is divided into ten equal parts: these are the deciles.

[19] VAT rates refer to the late 1990s.

for a relatively larger share of spending by low income households. In this respect the most important category of reduced VAT rates is represented by food in most Member States, although the level of the reduced VAT rate on food has a relatively weak, albeit positive, correlation with the distributional effect of VAT (Chart 14).

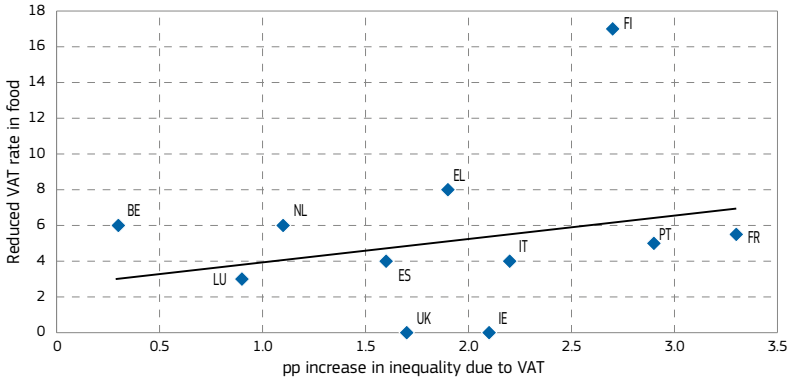
An important factor in explaining differences across countries in terms of the redistributive effect of VAT is the ratio between the saving rate of the top decile and the (dis)saving rate of the bottom decile (O'Donoghue et al. (2004)). Chart 15 suggests that the social impact of increasing VAT may be more regressive the higher is the dissimilarity in saving rates across income groups in each Member State. Dissimilarities in saving rates across income deciles seem to explain differences in the regressive effect of VAT across Members States much better than standard VAT rates.

Consumption taxes are a particular burden for the poorest group of households, with indirect tax payments as a share of disposable income being considerably higher for the bottom decile of the income distribution in most countries (Figari and Paulus (2012); Decoster et al. (2010); O'Donoghue et al. (2004)). Chart 16 presents the VAT payment ratio between the bottom decile and the average, indicating the extent to which the burden of indirect tax payments for the lowest income decile varies across countries.

The proportion of goods that are VAT-exempt, or taxed at a reduced rate, is an important factor in explaining differences in the burden of indirect taxation for the bottom income deciles (Figari and Paulus (2012)). Decoster et al. (2010) measure the importance of this share with the ratio between VAT revenues collected with current VAT structure and VAT revenues that would have been collected if the standard VAT rate had been applied to all goods (C-efficiency factor [20]). The correlation between the C-efficiency

[20] The C-efficiency factor provided by Decoster et al. (2010) is different from the official Charts reported by Eurostat. Decoster et al. (2010) assume full tax compliance and simulate the VAT revenues that would have been collected with the current VAT design and those that would be collected by applying a standard VAT rate to all goods. Eurostat uses official data on VAT revenues actually collected and compares this with the revenues that would have been collected by applying the standard VAT rate to all goods. The C-efficiency factor provided by Eurostat is influenced by VAT compliance and hence would not be useful for this analysis.

Chart 14: Correlation between reduced VAT rate on food and percentage point increase in inequality due to VAT

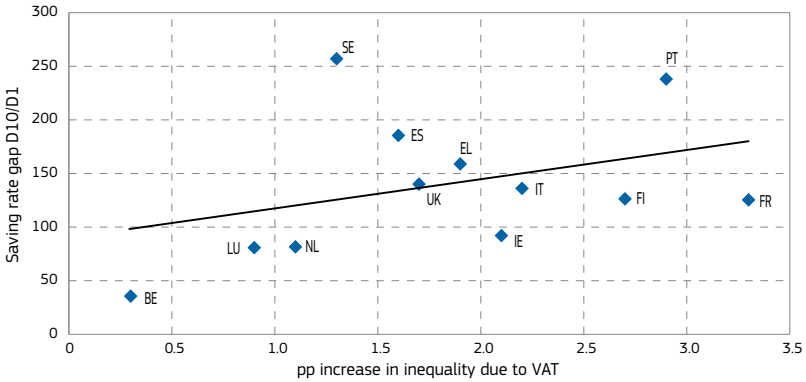


Source: Own elaboration based on data from O'Donoghue et al. (2004).

Notes: For the data and tax rules used in O'Donoghue et al. (2004) see Annex 7.2.

$y = 1.2367x + 2.9909$
$R^2 = 0.0586$

Chart 15: Correlation between dissimilarity in saving rates and percentage point increase in inequality due to VAT

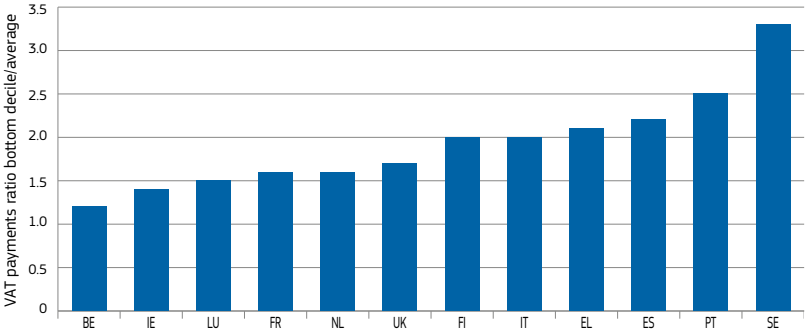


Source: Own elaboration based on data from O'Donoghue et al. (2004).

Notes: For the data and tax rules used in O'Donoghue et al. (2004) see Annex 7.2.
The saving rate gap is defined as the difference between the saving rate of the top income decile and that of the bottom decile. For the estimation of saving rates see Annex 7.2.

$y = 29.102x + 84.78$
$R^2 = 0.532$

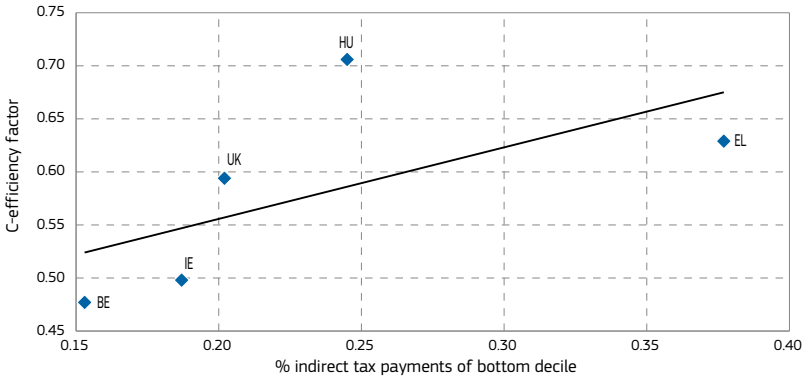
Chart 16: VAT payments ratio between the bottom decile and the average



Source: Own elaboration based on data from O'Donoghue et al. (2004).

Notes: For the data and tax rules used in O'Donoghue et al. (2004) see Annex 7.2. VAT payments are expressed as a share of disposable income. For the estimation of VAT payments, see Annex 7.2.

Chart 17: Correlation between VAT C-efficiency factor and indirect tax burden for the bottom income decile



Source: Own elaboration based on Figari and Paulus (2012) for the share of indirect tax payments as a share of disposable income for the bottom decile and on Decoster et al. (2010) for the C-efficiency factor.

Note: y = 0.6637x + 0.4263
R^2 = 0.3735

factor of VAT and the burden of indirect taxes for the bottom decile is rather high (Chart 17) indicating that the larger the share of goods that are taxed at a reduced or zero rate, the more shielded are the poorest households from any increase in standard VAT rates.

3.1.4. The social effects of tax shifts to consumption

From a theoretical point of view, a shift from labour to indirect taxes implies a broadening of the tax base. Indeed, higher taxes on consumption (and lower taxes on labour) shift the burden of taxation onto (a) those who partly finance their consumption with savings or bequests and, (b) tax evaders, in so far as VAT evasion rates are lower than income tax evasion rates (Econpubblica (2011)).

In a life-cycle perspective, shifting taxation away from labour towards VAT implies spreading taxation over the entire life-cycle rather than concentrating it during the working life. The fact that additional VAT revenues would have been otherwise collected through progressive income taxation and that people may leave different proportions of savings at death plays against the beneficial social effects of a tax shift from labour to consumption.

Beneficiaries of social expenditures (such as the unemployed or the retired) are likely to be adversely affected by such a tax shift, as they would not benefit from a reduction in labour taxes and the increase in consumption taxes would imply a real reduction in their incomes from social benefits [21] (Econpubblica (2011)).

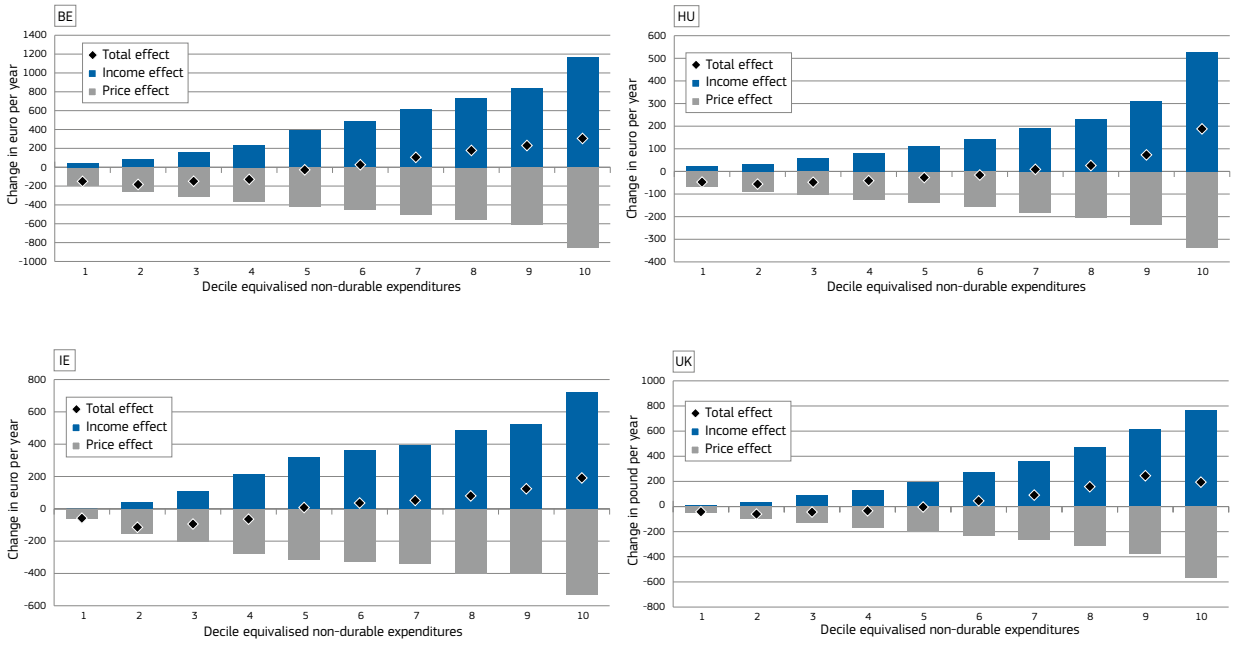
In a static model [22] – one in which changes in taxes do not produce changes in labour market behaviour – the effect of a shift in tax from labour to consumption is divided into two opposite effects:

- one is the increase in disposable income due to the lower tax on labour;
- the other is the price increase induced by the increase in the consumption tax.

[21] The indexation of social benefits and pensions to the consumer price index can partially offset the loss in purchasing power due to an increase in VAT.

[22] A model in which labour market effects generated by changes in taxes are not simulated.

Chart 18: Decomposition of welfare change into income and price effect by expenditure decile and country



Source: Own elaboration from Decoster et al. (2010).

Note: Decoster et al. (2010) is based on 2003 HBS and 2004 EU-SILC for Belgium, 2005 HBS for Greece, 2005 HBS and 2005 EU-SILC for Hungary, 1999 HBS and 2000 Living in Ireland for Ireland, 2003/2004 FES and 2003/2004 FRS for the United Kingdom (see Annex).

The overall redistributive effect depends on the balance between the two effects, and on how this affects those who are high or low on the income scale.

A revenue-neutral shift from social security contributions to VAT has adverse redistributive effects for the bottom income deciles, and a favourable effect on the top deciles since lower income deciles benefit less from a reduction in social security contributions and are more exposed to the increase in prices.

Chart 18 reports the welfare change by decile of equivalised non-durable expenditures generated by a 25% cut in social security contributions in a revenue-neutral context for four countries. The welfare change is decomposed into income and price effects. The price effect dominates the income effect for the bottom four deciles in Ireland, the bottom five deciles in Belgium and the UK, and the bottom six deciles in Hungary as a result of the fact that non-working people – who do not generally pay social contributions but do pay indirect taxes on their purchases – are over-represented at the bottom of the income distribution (Decoster et al. 2010).

This result points to the important conclusion that, while indirect tax payments are progressive with respect to expenditure, a tax shift to a less progressive instrument, such as from SSC to VAT, is regressive (Decoster et al. (2010)).

With respect to the current economic situation, it is relevant to examine the extent to which shifts in taxation will yield additional revenues. Crawford et al. (2010) simulate the effects of the application of the standard VAT rate to all commodities in the UK in order to raise £11 billion of extra tax revenues. This entails eliminating the current reduced VAT rates (including the zero rate on food) which have, as expected, a regressive effect in that the bottom decile loses 8% of its disposable income against 2% for the top income decile.

However, it is possible to introduce compensating measures in order to neutralize the regressive effects of the application of the VAT standard rate to all goods (for the details of the compensating measures simulated in Crawford et al. (2010) see Annex 7.2). On the basis of the compensating measures simulated in Crawford et al. (2010) it is possible to make the bottom three deciles better off (with the second decile gaining more than the first) and the top six deciles worse off (losing a maximum of 3% of their disposable income, while the bottom three deciles gain up to 3% of their disposable income).

Although this simulation was only conducted for the UK, it nevertheless shows that it is possible to increase indirect taxation without necessarily having adverse distributional effects if appropriate compensating measures are taken, as suggested by several authors both on efficiency and equity ground (Crawford et al. (2010); Econpubblica (2011); Decoster et al. (2010)). However, as reported in the Appendix on the Mirrlees simulation, the compensating measures on the income taxation and benefits side may need to be relatively large in order to be effective.

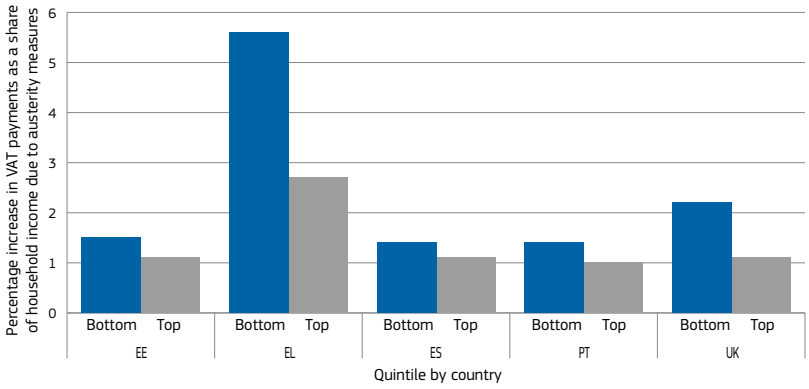
However, in practice, many of the tax and benefit reforms adopted between 2009 and 2011 in different Member States may have not counterbalanced the regressive effect generated by increasing VAT rates.

In the same period, the VAT standard rate was increased by 2 percentage points in Estonia and Spain, by 2.5 pps in the United Kingdom, by 3 pps in Portugal, and by 4 pps in Greece. Reduced VAT rates were increased by 4 percentage points in Estonia, by 1 pp in Spain and Portugal, by 1-2 pps in Greece. Moreover, austerity measures were also taken, including increased social security contributions and increases in top income tax rates (Callan et al. (2011)).

Chart 19 reports the increase in VAT liability as a share of household disposable income for the bottom and top income quintile in each of the countries indicated above. Greece is the only country where the VAT reduced rates were also increased, producing the largest increase in VAT rates and resulting in the bottom quintile suffering the greatest loss of the countries covered. In effect the inclusion of the VAT changes in the assessment of the overall social effects of austerity measures resulted in an increase in the burden sustained by low income households in Estonia, Greece, Spain, Portugal and the United Kingdom [23] (Callan et al. (2011)).

The shift from social security contributions to VAT has implications for the financing and entitlements to social protection. Member States differ in the financing of social protection, with Denmark financing it by more than 50% with general government contributions and Estonia by more than 70% with

Chart 19: Differential effects of austerity measures for the bottom and top of the income distribution



Source: Own elaboration based on data from Callan et al. (2011).

Notes: Callan et al. (2011) is based on Euromod simulations using 2008 EE-SILC, 2008 IE-SILC, 2007 EL-SILC, 2007 ES-SILC, 2007 PT-SILC, and 2008/2009 FRS for the United Kingdom. The increase in VAT payments has been estimated by Callan et al. (2011) using external information on the incidence of VAT by income decile group and assuming no change in pre-tax expenditure or in pre-tax relative prices.

[23] The increase from 5% to 9% (in 2010) of the reduced VAT rate in Estonia, the 30% increase in excise duties on tobacco, alcohol and fuel in Greece, the 1 pp increase in reduced VAT rates in Spain (2010) and Portugal (2011) are not included in the simulation results of austerity measures of Callan et al. (2011). For the United Kingdom, the VAT increase from 15% to 20% followed a reduction from 17.5% to 15%. Callan et al. (2011) define the increase from 17.5% to 20% as austerity measure.

employers' social security contributions [24]. A shift from social security contributions to VAT may have less important implications for social protection entitlements in Member States that finance a large proportion of their social protection with general taxation. However, Member States in which social security contributions finance a large part of social expenditures may have more room for such a shift. The financing of social protection can be preserved by earmarking part of the extra VAT revenues to this aim, as was done, for instance, by Germany in 2007 when it increased the standard VAT by 3 percentage points and consistently with the French proposal of a 'social VAT'. Simulations of the German reform point to a small positive employment effect and a slight increase in inequality (Bach et al., 2006).

3.2. The social effects of property taxation

3.2.1. Introduction

Recently, both the European Commission and the OECD have recommended that Member States increase property taxation as part of the reform of the tax treatment of housing. Table 8 summarizes the European Commission (2011d) and OECD (2012b) recommendations concerning the housing tax treatment.

Among OECD countries, the 'Anglo-Saxon' countries (Australia, Canada, Ireland, New Zealand, United Kingdom, and United States) collect an average of 2.4% of their GDP from recurrent taxes on immovable property, against the OECD and European Union average of only 0.7% [25]. OECD Asian countries (Israel, Korea, and Japan) collect 1.8% while other European OECD countries (Iceland, Norway, Switzerland, Turkey) and OECD South American countries (Chile, Mexico) collect a smaller share of revenues, respectively 0.6% and 0.4% of GDP [26].

In 2010 among EU-27 Member States recurrent tax revenues on immovable property range from 0% in Malta to 3.4% of GDP in the United Kingdom (European Commission, 2012b). France

(24) 2009 ESSPROS data.

(25) The arithmetic averages for EU-27 and EA-17 are 0.7% and 0.6% of GDP, respectively (European Commission, 2012b).

(26) Data refer to 2009 recurrent taxes on immovable property (OECD Revenue Statistics – Comparative Tables).

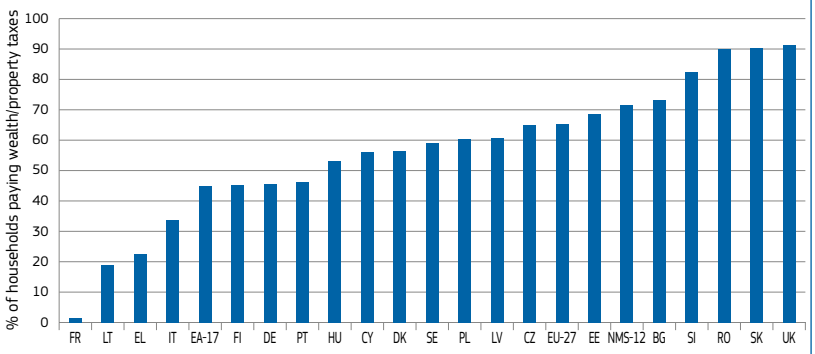
Table 8: Assessments and recommendations on property taxation

	European Commission (2011d)	OECD (2012b)
BE	Debt bias in housing taxation	
DK		Raise housing taxation
EE	Debt bias in housing taxation	
EL	Debt bias in housing taxation	
ES	Debt bias in housing taxation	
FI	Debt bias in housing taxation	Shift from labour to property taxation
DE		Shift from labour to property taxation
IT	Debt bias in housing taxation	Shift from labour to property taxation
LU	Debt bias in housing taxation	
NL	Debt bias in housing taxation	Shift taxation of housing away from purchase to ownership
PT	Debt bias in housing taxation	
SE		Shift from labour to property taxation, reverse the 2008 housing taxation cut

Sources: European Commission (2011d), OECD (2012b).

Notes: European Commission (2011d) only covers the Euro area.

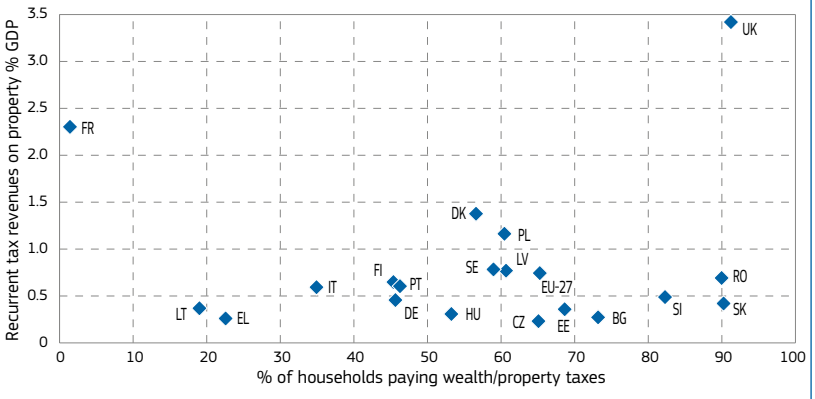
Chart 20: Households paying wealth/property taxes by Member State



Source: Own elaborations based on 2010 EU-SILC data.

Note: Countries are ranked in increasing order of the share of households paying wealth/property taxes.

Chart 21: Correlation between share of households paying wealth/property taxes and recurrent taxes on immovable property



Source: Own elaborations based on 2010 EU-SILC data for the share of households paying wealth/property taxes and European Commission (2012b) for recurrent taxes on immovable property.

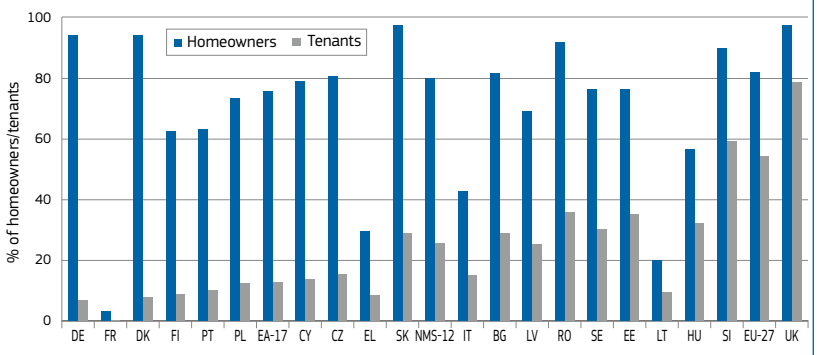
collects 2.3% of recurrent taxes on immovable property, but all other Member States collect less than 1.5% in property taxes [27].

The share of households paying wealth/property taxes also varies widely across Member States, as shown by Chart 20 [28]. However, there is no correlation between the revenues collected on immovable property and the share of households paying property taxes (Chart 21).

Taxes are not always paid by property owners, and over 50% of tenants (of their main residence) also pay property taxes (Chart 22), although the reliability of the wealth/property variable for this purpose is still to be verified [29]. For the United Kingdom, the large share of tenants paying wealth/property taxes is due to the fact that it is based on residency rather than ownership. Most new Member States also report a relatively large share of tenants paying wealth/property taxes.

Revenues from property taxes are low and the effective taxation of housing in many Member States is negative given that the tax treatment of housing allows for the deduction of mortgage interest and the widespread exemption of imputed rent and capital gains from the tax base. Chart 23 shows the effective average tax rates [30] on owner-occupiers.

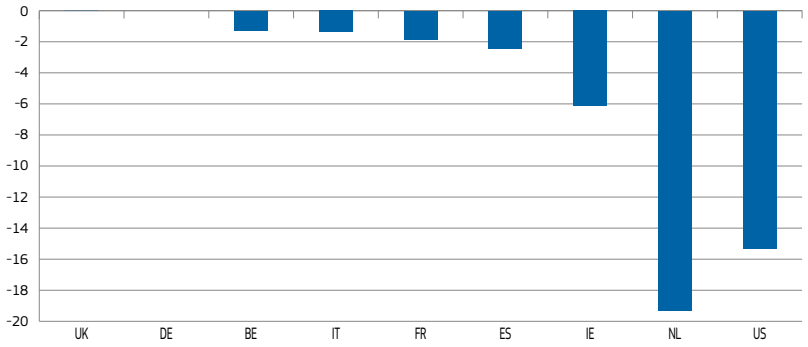
Chart 22: Households paying wealth/property taxes by tenure status



Source: Own elaborations based on 2010 EU-SILC data.

Notes: Shares are calculated for homeowners and tenants separately. Countries are ranked in decreasing order by the ratio between the share of homeowners and the share of tenants paying wealth/property taxes.

Chart 23: The effective taxation of housing in a set of OECD countries



Source: Hemmelgarn et al. (2011).

3.2.2. The social aspects of current forms of property taxation

From a theoretical point of view, fully neutral taxation of investments in owner-occupied housing requires taxation of imputed rent and capital gains, and deductibility of mortgage interest (International Monetary Fund (2009)). In practice, home ownership is tax-favoured in all EU countries, with the possibility to deduct mortgage interest charges and tax exemption on imputed rents and capital gains. Nonetheless, in the two Member States in which imputed rent is taxed [31], the cadastral value is below market value or the tax on the return is considerably lower than for other assets. Property taxes can be regarded as a proxy for taxation on imputed rent, but generally remains too low to ensure a neutral tax treatment of investments in owner-occupied housing. It should be noted that nominal house prices more than doubled in EU-27 between 1999 and 2010, while recurrent property tax revenues decreased slightly over the same period (European Commission (2012a)).

The current tax treatment of housing is seen as inefficient and unfair. The favourable tax treatment of housing creates distortions in investment decisions and can lead to excess investment in housing relative to alternative assets.

From a social point of view, the current design of property taxes is not always progressive, while property tax base has not kept pace with property values.

In France, for instance, property wealth corresponds to about three years of national revenues and grew more than labour income (Landais et al. (2011)).

(27) Taxes on property mainly fall on households or on business. In some Member States, tax revenues levied on the surface of the property occupied by business are substantial. This is the case of the '*taxe professionelle*' in France and the 'business rates' in the United Kingdom. Data on recurrent tax revenues on property provided by *European Commission* (2012b) exclude the first for France but include the second for the United Kingdom. OECD Revenue Statistics data for 2010 confirm that France and the United Kingdom collect the highest amount of recurrent taxes on immovable property as a share of GDP, even taking into account only those paid by households (1.9% and 1.8%, respectively).

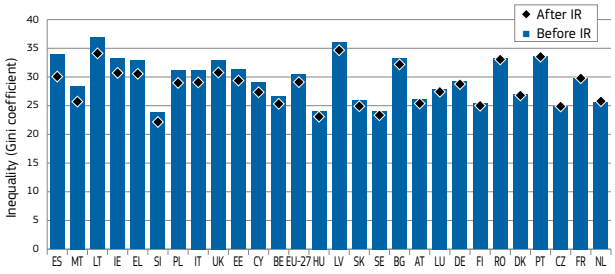
(28) The EU-SILC variable used is 'regular taxes on wealth'. This variable corresponds to property (or land) taxes, apart from France where the solidarity tax on wealth also applies to other types of assets. Eurostat (2008) highlights that five countries do not have taxes on wealth as defined in EU-SILC (Belgium, Ireland, Malta, Netherlands, Austria).

(29) The tenure status in EU-SILC data refer to the main residence, while wealth/property taxes can include taxes paid on secondary residencies. Tenants in shared ownership or beneficial owners may be subject to property tax in some Member States.

(30) Reduced VAT rates for construction on new buildings are not taken into account in this calculation.

(31) Luxembourg and Netherlands tax imputed rents, while Spain, Belgium and Italy apply it for other properties than the primary residence (European Commission, 2012e).

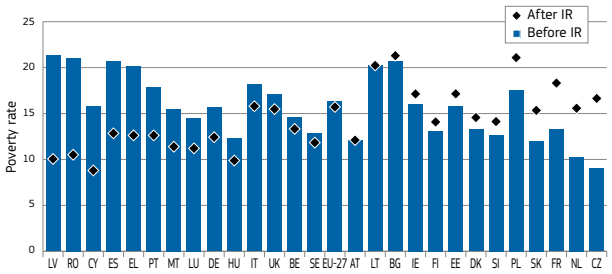
Chart 24: The effect of imputed rent on inequality



Sources: Own elaboration based on 2010 EU-SILC data.

Note: Member States are ranked in descending order of the percentage reduction in inequality.

Chart 25: The effect of imputed rent on the poverty rate



Sources: Own elaboration based on 2010 EU-SILC data.

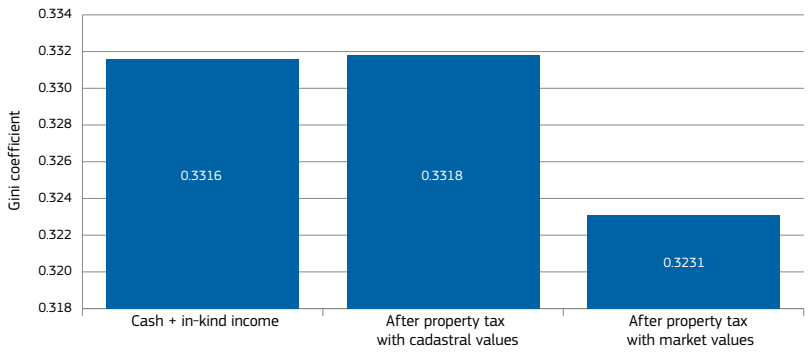
Note: The poverty line is set at 60% of the national median equivalised disposable income. Member States are ranked in descending order of the percentage reduction in the poverty rate.

Box 4: From cadastral to market values – the Italian case

In Italy owner-occupied housing was subject to property taxation until 2008. Imputed income from dwellings was considered as part of the personal income tax base. However, imputed incomes were based on cadastral values last updated in 1990 and main residences were effectively exempted from the personal income tax base. Since 2008 main residences have been completely exempted from the property tax. However, this tax was reintroduced under a 2012 reform.

The inclusion of imputed rent estimated at market rather than cadastral values in the personal income tax base would reduce inequality of economic well-being (cash income plus in-kind income from home-ownership). This reform would increase tax revenues by 20%. In a revenue-neutral setting, the extra revenue could be used to reduce marginal tax rates by 6 percentage points in the first bracket, 5 in the second, 2 in the third and 1 point in the last (Pellegrino et al. (2011)). Chart 26 below shows the level of inequality of disposable income plus in-kind income from owner-occupied dwellings before property taxes, after property taxes applied to cadastral values and after property taxes applied instead to market values.

Chart 26: Distributional effects of a tax reform substituting cadastral values for market values, Italy

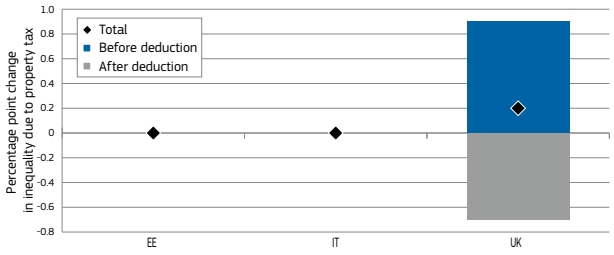


Source: Own elaboration based on data from Pellegrino et al. (2011).

Notes: Pellegrino et al. (2011) is based on the 2008 Italian Survey of Household Income and Wealth. Income and wealth data refer to 2006.

A new property tax was introduced in Italy in 2012 following recommendations on the reduction of favourable tax treatment for housing, and based on the relatively low distortionary effect of property taxes and the low rate of evasion. This tax is also applied to main residences. The new property tax is not added to the personal income tax base, but is taxed separately. The tax base is now closer to market values due to the preliminary 60% increase in all cadastral income values (European Commission (2012c). The reform includes some equity aspects (€200 deduction for the main residence, supplementary deductions for dependent children, a marked difference between the taxation of main and secondary residences). However, other aspects (update of cadastral values, deductions not linked to the income tax capacity of taxpayers, definition of main and secondary residence) could be further improved in order to enhance its progressivity. For instance, a proportional increase in cadastral values is not expected to reduce income inequality. The decrease in inequality expected from a shift from cadastral to market values is explained by a progressive increase in imputed rental values.

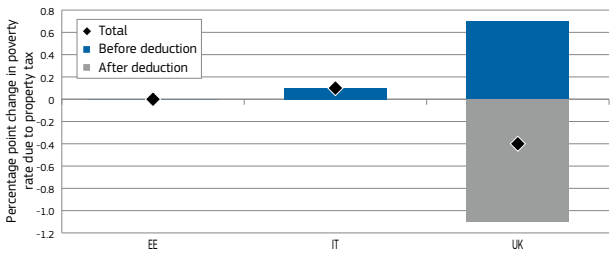
Chart 27: Effects of current property taxes on inequality in Estonia, Italy and United Kingdom



Sources: Own elaboration from Maestri (2012).

Notes: Maestri (2012) is based on Euromod elaborations using 2006 EE-SILC for Estonia, 2006 IT-SILC for Italy, and the 2003 UK Family Resources survey. Income data refer to 2005 for Estonia and Italy. The applied policy year is 2005. Inequality is measured with the Gini coefficient.

Chart 28: Effects of current property taxes on the poverty rate in Estonia, Italy and United Kingdom



Sources: Own elaboration from Maestri (2012).

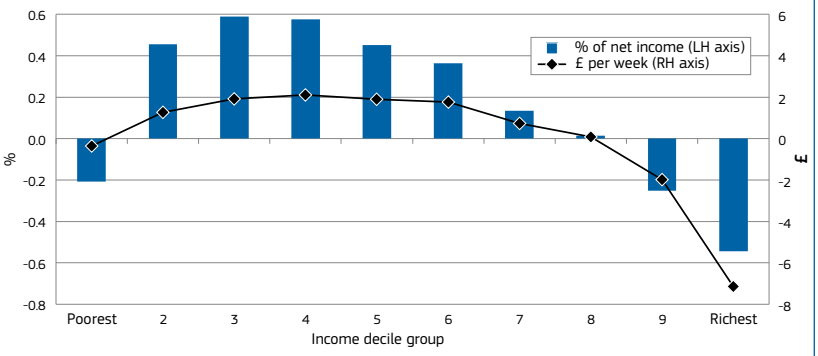
Notes: Maestri (2012) is based on Euromod elaborations using 2006 EE-SILC for Estonia, 2006 IT-SILC for Italy, and the 2003 UK Family Resources survey. Income data refer to 2005 for Estonia and Italy. The applied policy year is 2005. The poverty line is set at 50% of median income (including imputed rent).

The distribution of net wealth is very concentrated in Member States, and non-financial assets, in particular one's principal residence, represent the major component of household wealth (OECD (2008a)).

On the other hand, the income advantage of home ownership [32] reduces income inequality. The simultaneous presence of high levels of wealth inequality and the considerable redistributive effect of imputed rent may be explained by the fact that the first reflects housing investments, while the second reflects housing consumption. Moreover, inequality of net wealth takes into account the indebtedness of households with an outstanding mortgage, while the measurement of imputed rent is generally adjusted for the payment of mortgage interest.

Chart 24 shows that the inclusion of imputed rent (see Box 1 for definition) in the income concept reduces inequality in all Member States apart from the Netherlands [33]. However, in 2010 the reduction in the poverty rate due to imputed rent occurred in only 15 of the EU-27 Member States, with its inclusion increasing the poverty rate in the remaining 12 Member States, as shown by Chart 25. Compared to 2007 [34], the value of imputed rent may have fallen more for poor than for non-poor households.

Chart 29: Redistributive impact of the Mirrlees' proposal on property taxation



Source: Mirrlees et al. (2011a).

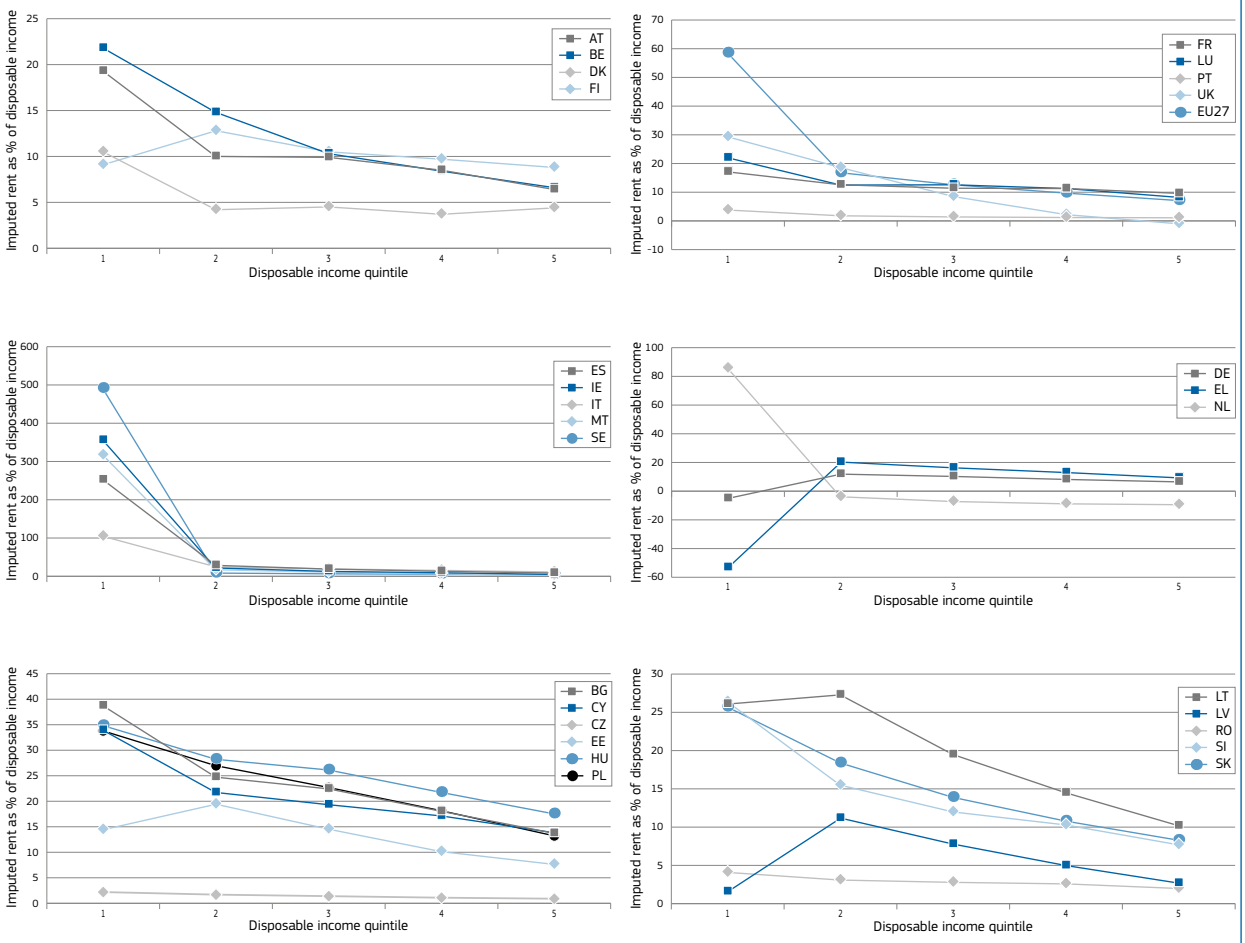
Current forms of property taxation may not be designed to redistribute income. Nonetheless, empirical evidence on the redistributive effect of property taxes is limited by data constraints as the information on property values or paid property taxes and, possibly, on imputed rents is rarely available in surveys. EU-SILC has recently collected information on paid property

[32] Homeownership refers to the main residence.

[33] The Indicators Sub-group of the Social Protection Committee decided that imputed rent should not be included in the standard definition of income underpinning the main indicators of the risk of poverty and inequality, while a separate indicator including imputed rent (with ad-hoc adjustments) should be developed. The main reasons motivating this decision were the lack of comparability of imputed rent across countries (depending on the method of estimation and on the parameters chosen), the problems of availability and reliability of data on housing allowances and after-tax mortgage interest payments, the in-kind nature of imputed rent and the problem of disentangling the consumption and investment portions of the principal mortgage repayment.

[34] See, for instance, Eurostat (2010a) for an assessment of the redistributive effects of imputed rent in 2007. Eurostat (2010b) explains the comparability problems inherent in the measurement of imputed rent in EU-SILC data.

Chart 30: Imputed rent as a share of disposable income, by income quintile



Source: Own elaboration based on 2010 EU-SILC data.

Notes: Imputed rent net of mortgage interest payments. Quintiles are based on disposable income equivalised with the OECD modified scale.

taxes and imputed rent, although there are still concerns about comparability across countries.

While the design of recurrent property tax rates is progressive in general, in the United Kingdom, for example, the design of the property tax (Council tax) is regressive in structure, and charges rose more slowly than property values over time (Mirrlees et al. (2011a). In general, the distributional properties of recurrent property taxation can be attributed to three main factors: the design of tax rates, the calculation of the tax base, and the distribution of home-ownership. On the second point, property taxes are generally applied to outdated cadastral assessments rather than updated market values, which impedes fairness. In many Member States, home-ownership of the main residence is distributed more equally than disposable income. Although relatively wealthy individuals are expected to own more immovable property, data on the distribution of secondary residences are not easily available.

Charts 27 and 28 show the redistributive role played by property taxes in Estonia, Italy and the United Kingdom, by considering cash and in-kind property income. In the United Kingdom property tax before the Council tax deduction [35] is regressive. However, a means-tested Council tax deduction for low income households partially offsets the increase in inequality and helps in reducing the poverty rate. Property taxes have no impact on inequality in Estonia [36] and Italy, and are seen to slightly increase poverty in Italy [37].

[35] Estonia and Italy do not have property tax deductions.

[36] For Estonia property tax refers to the land tax.

[37] Borge and Nyhus (2012) find mixed evidence about the distributional implications of municipal property tax in Norway: regressive in five municipalities, roughly proportional in three and progressive in one municipality.

3.2.3. Property tax reforms: housing as consumption

The policy debate on property taxation is complicated by the fact that housing represents consumption, in-kind income and wealth. Proposals for reforming property taxation rest on the specific nature attributed to households' real estates.

Housing can be thought of as a large consumer durable. Based on this concept of housing, a proposal for tax reform would involve applying VAT to the housing services that are consumed (Mirrlees et al. (2011a)). The Mirrlees' proposal is to introduce a housing service tax levied as a flat percentage of the rental value of each property, whether it is rented or owner-occupied.

In a revenue-neutral context, a rate of 12 % of the value of housing services [38] would collect the same revenues as with the 2009 UK Council Tax. This rate is below the standard VAT rate in the United Kingdom. The Mirrlees proposal of the housing service tax envisages additional changes with respect to the current Council tax framework:

- First, the discount for single occupants and for second empty properties would be abolished in order to encourage an efficient use of the housing stock.
- Second, the proportionality of the housing service tax would allow tax bills to vary within tax bands.
- Third, the new tax would require a full revaluation of properties.
- A housing service tax rebate similar to that in place with the current Council tax would be retained (Mirrlees et al. (2011a)).

A shift from the current regressive UK Council tax to the housing service tax in a revenue-neutral setting, without modifying labour taxes would yield progressive results overall. Chart 29 shows the redistributive impact of the Mirrlees reform proposal. However, the reforms would, of course, create losers and winners. Losers would include low-income households living in expensive houses [39], many of whom are likely to be elderly. Indeed, the regressive effect of the tax reform observed for the poorest income decile reflects the fact that this type of household is overrepresented in the bottom income decile.

It should be recognised that this reform is specific to the United Kingdom situation which is currently characterized by a regressive property tax applied to all occupiers (owners and tenants) and by the highest tax revenues from property among EU Member States. The application of a tax on housing consumption close to standard VAT rates would be expected to bear the same adverse social effects discussed in the previous section.

Chart 30 shows that in 2010 the income advantage of imputed rent was larger at the bottom of the income distribution, with the exceptions of Estonia, Finland, Germany and Greece. The importance of imputed rent for the bottom income quintile is extremely high in Ireland, Italy, Malta, Spain and Sweden [40]. Retired people are often overrepresented in this group of 'income poor' and 'house rich', due to life-cycle dynamics. Indeed, retired people generally have a low disposable income (corresponding to their pension), while they are more likely to be outright owners (with its corresponding in-kind income advantage) than younger adults. The distribution of homeownership, in particular at the bottom of the income distribution, reduces disposable income inequality. The introduction of a proportional housing service tax without other tax instruments would produce regressive results, especially in the latter group of Member States. The application of a housing service tax to tenants would further deteriorate their position.

3.2.4. Property tax reforms: shift from labour to imputed rent

The housing advantage enjoyed by homeowners can be considered as a stream of in-kind income [41]. The taxation of imputed rent is closely related to replacing cadastral with property market values, as shown in Box 4. The idea of taxing imputed rent is to add this in-kind income to the personal income tax base. However, there are several options available for replacing property taxation with an imputed rent that is taxable.

In a revenue-neutral context, one option is to tax imputed rent and to introduce a proportional rebate on personal income tax rates (Reform 1). The extra revenues from taxing imputed rent are used to proportionally reduce the burden on personal income (including imputed rent). This reform increases inequality, as shown in Chart 31 (Reform 1). This result is explained by the fact that the benefit of personal income tax rebates only accrue to taxpayers with a positive personal income tax liability and, specifically, to the top quintile.

On this basis, the largest increase in inequality occurs in Belgium and the Netherlands, a moderate increase occurs in Greece, Italy and the United Kingdom and no effect is found for Germany. For Belgium and the Netherlands, the large social impact of the reform relates to the strong progressivity of the tax system (Figari et al. (2012)). On the other hand, from an efficiency point of view, this reform would lower marginal effective tax rates (METRs).

A further revenue-neutral reform option would be to tax imputed rent and introduce a lump sum tax credit. The additional revenues raised by taxing imputed rents would then be compensated by an equal tax credit for all taxpayers who enjoy a positive personal income. As shown in Chart 31 (Reform 2), this reform reduces inequality.

The share of losers increases with income in all countries and in most countries gainers are concentrated in the middle of the income distribution (Figari et al. (2012)). The largest reduction in inequality is found for the Netherlands, where

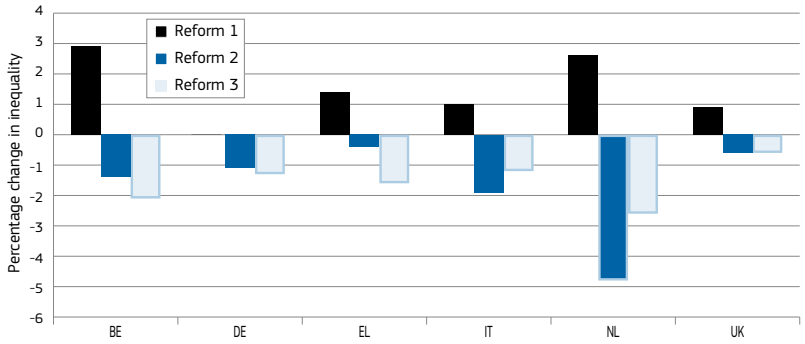
[38] Housing services are calculated as 5 % of capital value (Mirrlees et al. (2011a)).

[39] Low-income households with more than £16 000 of non-pension wealth would not be entitled to the Council tax benefit.

[40] The comparability of imputed rent is still quite limited in EU-SILC data. However, from 2008 EU-SILC some harmonisation across countries has been reached. Most EU-SILC countries use the rental equivalence approach suggested by Eurostat to estimate imputed rent. However, the estimation is based on different parameters and different housing market situations. Estonia, Slovak Republic and Sweden use the user cost method. Czech Republic uses the subjective method (Eurostat (2010c)). With the user cost method, imputed rent is estimated for homeowners only. For a description of imputed rent methods, see Eurostat (2010b).

[41] The concept of imputed rent can also be applied to tenants paying a rent below market values.

Chart 31: Change in inequality due to three different designs for the imputed rent reform



Source: Own elaboration based on data from Figari et al. (2012)

Notes: Figari et al. (2012) is based on Euromod simulations using 2006 EU-SILC data for Belgium, 2002 Socio-economic Panel for Germany, 2004/5 Household Budget Survey for Greece, 2004 IT-SILC for Italy, 2001 Socio-economic Panel for the Netherlands, and 2003/4 Family Resource Survey for the United Kingdom. Blue borders indicate that the reform is associated with an increase in METRs. Inequality is measured with the Gini coefficient and refers to equivalised disposable income including imputed rent. Reforms 1 to 3 are explained in the text.

the reform clearly benefits poorer quintiles and penalizes richer ones (Figari et al. (2012)). In Greece the social impact of this reform is limited. From an efficiency point of view, this reform is associated with a reduction in marginal effective tax rates, except in the Netherlands.

In the context of fiscal consolidation it is worth analysing the social effects of taxing imputed rent (and of abolishing mortgage interest tax relief and current taxation of cadastral income) without lowering the burden on the personal income tax base. Additional tax revenues would be considerable, ranging from 5 percentage points in Germany to 30 points in the Netherlands.

Taxing imputed rent without reducing personal income taxation results in losers in each quintile. Indeed, imputed rent is distributed less unequally than tax liabilities. However, this reform is inequality-reducing in all countries as top quintiles suffer greater losses (Chart 31, Reform 3).

The smallest inequality-reduction impact of this reform is found for the United Kingdom and Italy, where the top quintiles do not lose more than immediately poorer quintiles (Figari et al. (2012)). On the other hand, this reform increases marginal effective tax rates in all countries considered.

In Member States in which imputed rent increases poverty, taxing imputed rent in a revenue-raising set-up would be expected to enhance the redistributive effects of taxing imputed rent.

3.2.5. Property tax reforms: housing as an asset

Housing is also an asset and, as such, can be taxed for its financial returns in the form of capital gains or as wealth. In this light Mirrlees et al. (2011a) propose to tax housing both as consumption and as an asset for its capital gains although, in the Mirrlees proposal (specific to the UK) the tax on capital gains should be only paid on the part that exceeds the returns that the money used to buy the property would normally be expected to finance.

However, the social effects of this tax have not been studied. An alternative proposal (specific to France) would involve replacing the current property tax with a solidarity tax on wealth (Landais et al. (2011)). The social effect of this tax would be expected to be fairer than the current French property tax since it would be based on net wealth (with homeowners with outstanding mortgages paying less tax than outright homeowners (Landais et al. (2011)). A more detailed analysis is left for other studies, as the distribution of wealth goes beyond the scope of this chapter.

4. The effects of taxation: employment aspects

This section focuses on the employment (or efficiency) effects of (labour) taxation in relation to the Europe 2020 employment target. EU-27 governments have committed themselves to employ 75% of their active population by 2020. As a result, Member States have been advised to shift taxes away from labour to taxes which are less detrimental to employment and GDP growth. This section focuses on the employment effects of such tax shifts.

It starts with an overview of the existing theoretical and empirical analysis of the impact of labour taxation on labour market outcomes (labour supply, labour demand, unemployment and labour cost). As the analysis will point to the key role of labour taxes for the labour market outcomes of people at the margins of the labour market (low-income workers, older workers, single parents, second-income earners), the joint role of taxes and benefits is analysed next.

Afterwards attention goes to some equity aspects of direct taxation, with a focus on the progressivity of direct taxation and tax expenditures. Next, an original outside analysis, linking directly past labour tax reforms to subsequent labour market outcomes, is presented.

Sub-section 4.4 starts with a presentation of a widely accepted growth ranking of the different types of taxation. It analyses the pros and cons of property and environmental taxation as possible destinations of a tax shift away from labour.

The section concludes with simulations with the Labour Market Model of DG Employment of the effects of a tax shift from employers' social security contributions to value-added taxes, paying attention to the different impacts for specific groups by Member State.

A final remark is that, while the focus of this section will be on direct taxation, indirect taxation is also likely to affect labour market outcomes. Taxpayers can be considered to work for the consumption they can obtain from the net income they receive. As a result, a consumption tax acts as an equivalent to a labour tax (OECD (2011)). Picos-Sánchez (2011) attempted to calculate a tax wedge which includes consumption taxes and listed the many methodological issues when doing so.

4.1. Impact of direct taxation on employment

4.1.1. Theory

While taxes on capital income, as well as corporate taxes, can affect labour market outcomes [42], the focus of this section is on labour taxation and, specifically, its effects on labour demand and supply [43].

The effects of labour taxation on labour market outcomes can be viewed from many angles, with different forms of labour taxation, and differing effects. Similarly, the notion of labour market outcomes is wide and the effects on different groups need to be considered.

An important starting point is the recognition that labour taxes affect labour supply decisions – from whether or not to participate in the labour market at all to the choice of number of hours worked [44], in so far as that choice is available.

In considering how taxes affect labour supply, the economic literature distinguishes the substitution effect and income effect. Take the example of a labour tax increase. The substitution effect will make the worker work less, as free time allocated to work is remunerated at a lower net income. On the other hand, the income effect will make the worker work more, to maintain the level of total income. In other words, the overall effect on labour supply is uncertain or ambiguous (see also OECD (2011), p. 29).

The exact extent of the effect depends on the relative bargaining power of employees and employers. Consequently, labour-market institutions (wage bargaining, union density, minimum wages, etc.) influence the impact of taxes on labour market performance.

A similar influence comes from the labour demand elasticity and the characteristics of the unemployment benefit system. However, some economists claim that, while the above may be true in situations of full employment or full capacity utilisation, labour tax changes do not work in that way when unemployment is high, the output gap [45] is large and negative and nominal interest rates are close to zero, as at present.

According to Eggertsson (2009), a reduction in labour taxes in these circumstances will deepen a recession in the short run because it increases deflationary pressures (since it stimulates supply instead of demand), boosting real interest rates as a result.

In a perfectly competitive labour market with flexible wages, only the size of the total tax wedge matters since different components of the tax wedge exert identical effects on employment. However, when the labour market is imperfectly competitive, the composition of the tax wedge does become relevant (Econpubblica (2011)). For example, the existence of a minimum wage limits the room for an employer to shift an increase in labour taxes onto its workers.

The analysis of the effects of labour taxes on labour supply can also be extended [46] to other, less obvious, dimensions of labour supply such as long-term decisions on the take-up and supply of training and choice of occupation. Moreover, labour taxes can also induce workers to engage in tax avoidance or evasion (see Section 5 on tax evasion).

4.1.2. Interaction with benefits

Different types [47] of workers react differently to labour tax changes. This is not only due to the sizeable variation in their marginal effective tax rates and labour supply elasticities. Another important factor determining labour supply in conjunction with taxes are benefits, which typically differ a lot between various types of workers. In fact, analysing the employment effects of taxes in isolation, without considering benefits, makes little sense for many groups of workers.

The structure and design of tax and benefit systems can create disincentives to work for several specific groups [48], especially low-income workers, single parents, and second-income earners. Such disincentives would include disincentives for the unemployed to take up a job (the so-called 'unemployment trap'); disincentives to join the labour force in the first place ('inactivity trap'); and disincentive to those who have a low-income job to increase the hours they work ('low-wage trap'). Young workers are often affected by these disincentives. Further analysis on these disincentives can be found in Chapter 3

(42) See Econpubblica (2011) and OECD (2011), p. 23.

(43) The effect on unemployment comes through demand for and/or supply of labour.

(44) These are, respectively, the so-called responses on the extensive and intensive margin.

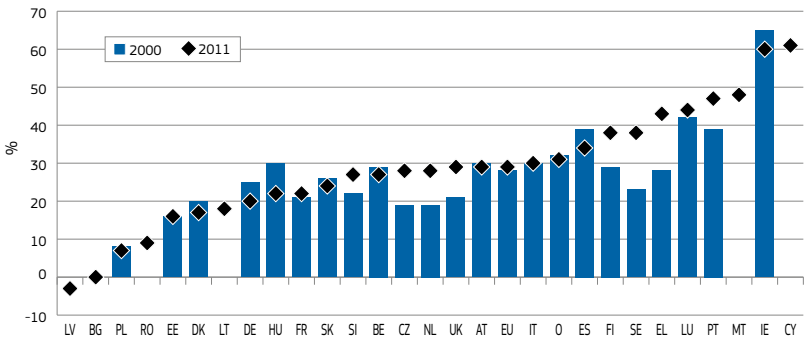
(45) A measure of slack in the economy, defined as the deviation of actual output from potential output, expressed as a percentage of potential GDP.

(46) Beyond the extensive and intensive margin.

(47) With different wage levels, family situation, etc.

(48) As well as incentives to no longer work for older workers.

Chart 32: Progressivity in the average rate of income tax and employees' social security contributions (single person, %)



Source: OECD, 'Taxing Wages' and own calculations

Notes: Progressivity is calculated as the difference between the average rate of income tax and SSCE for a single person (no child) at 67 % of average earnings and the rate for a single person at 167 %, divided by the latter. Data for Greece are for 2010. 'O' represents the OECD average. Data are available until 2010 and missing before 2005 for BG LV LT MT RO. Data until 2010 for EL; until 2007 and missing before 2005 for CY.

of this document, Carone et al. (2009) and OECD (2012a).

As indicated in Chapter 3, however, tax and benefit systems do not only play a role on the supply side, they also have a potentially important role on the demand side, particularly in the present situation of a large negative output gap and high unemployment.

4.1.3. Progressivity

Chart 32 shows the wide variety that exists within the EU in terms of progressivity of labour taxes, defined here as PIT and SSCE taken jointly [49]. In Chart 32, the degree of progressivity is defined by comparing the burden faced by a single person earning 167% of the average wage compared with the burden faced by those earning two-thirds of the average wage.

While progressivity is clearly intended to contribute to equity goals, and is assumed to reduce equilibrium unemployment [50], it can be argued that it typically implies 'other costs, for example reducing labour supply, work effort, human capital accumulation and labour

[49] As SSCE is included, PIT progressivity is attenuated, since SSC are typically due only on incomes below a specific ceiling.

[50] The reason is that, by taxing wage rises, progressive taxes moderate wage gains, see also OECD (2011), Box 1.1.

Box 5: Flat taxes

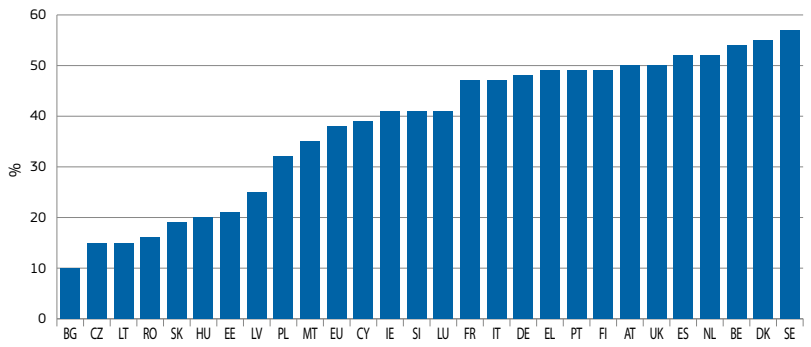
Efficiency, equity and transparency concerns regarding the traditional European tax systems have given an impetus to the consideration and implementation of systems of flat income taxes (1). A flat tax scheme typically consists of a single marginal tax rate that is applied at any income level exceeding some basic tax-free allowance (2). There are substantial differences between the various flat tax regimes proposed (specifically on the tax-free allowance and the tax rate). The main advantages of a flat tax scheme are the low levels of tax rates, increased transparency and lower administrative and compliance costs. The main disadvantages are the distributional effects of the scheme. In general, flat tax reforms tend to favour the lower-end and top-end classes of revenues whilst increasing the tax burden on the middle-income groups.

Keen at al. (2008) studied the effects of such schemes on economic performance but found very limited empirical evidence. They found no sign of Laffer-type behavioural responses (3) generating revenue increases from the tax cut elements of these reforms (4); their impact on compliance is theoretically ambiguous; the distributional effects of flat taxes are not unambiguously regressive, and in some cases, they may have increased progressivity (including through the impact on compliance).

In the EU, eight New Member States apply at present (significantly different) flat-rate systems. As a result of the flat-rate systems, these eight New Member States have the lowest top personal income tax rates in the EU, see Chart 33 below.

Paulus and Peichl (2008) analysed the distributional and efficiency effects of flat-tax scenarios for Western European countries. Their simulations (5) showed that revenue-neutral switches to flat tax rates improve labour supply incentives, but at a cost of higher inequality and polarisation. Inequality-neutral flat rates which still increase efficiency would be possible for Mediterranean Member States, where the distributional effects of a flat tax reform that burdens the middle-income groups would be less adverse. For other Western Member States, they confirmed the findings of Fuest, Peichl and Schaefer (2007) that, 'due to their limited efficiency effects and their problematic distributional impact, flat tax reforms are unlikely to spill over to the welfare states of Western Europe'.

Chart 33: Top personal income tax rates, in% (2012)



Source: European Commission (2012b), Table 1.3.

(1) For an overview of the history of the flat tax idea, see Nicodème (2007). For an extensive discussion of flat taxes, see European Commission and Economic Policy Committee (2009), subsection 5.3, p. 54.

(2) Depending on the regressivity and the weight in overall taxation of the SSC, effective labour taxation is often far from being flat in practice.

(3) The Laffer curve concept states that tax rates and tax collection are linked by an inverted U-curve relationship. If one country is on the right-hand side of the peak, then reducing tax rates will increase revenues, thanks to more economic activity.

(4) Increases in tax revenues may be due to higher compliance rather than to increased labour supply.

(5) Micro-simulations with Euromod.

mobility while stimulating tax avoidance, tax evasion, jobs with substantial non-taxable non-pecuniary benefits, and the informal and black economies' (Bovenberg (2003)). On the other hand, it is possible to conceive of an optimal degree of tax progressivity, which balances the equity gain from reduced unemployment against any potential efficiency costs as indicated above (Sørensen (1999)).

The way in which family income is taxed has also to be considered since, due to progressivity, there can be large disincentives for second earners in systems of joint-income taxation (see also Bettio and Verashchagina (2009)). To tackle this, Member States are increasingly introducing or considering the possibility to either split taxation between family members or simply tax incomes individually.

4.1.4. Tax expenditures

Tax progressivity, as apparent in increasing marginal tax rates, is in reality attenuated by tax expenditures. While there is controversy over the exact definition and measure of tax expenditures [51], it is clear that tax expenditures continue to be significant in many countries. In general, exemptions, deductions, tax credits and lowered rates are seen as tax expenditures. The major tax expenditures consist of provisions for owner-occupied housing, retirement savings, children and families, social benefits, small businesses and R&D expenditures (OECD (2010a) and OECD (2010b)).

Among these tax expenditures, in-work tax credits seem to have a positive net effect on employment. However, the effect is estimated to be small and requires the country to have 'a strong tax administration based on the withholding of tax obligations' (see Box 5 in International Monetary Fund (2012)).

While there may be justifications for tax expenditures (correction of externalities, redistribution of income, etc.), they inevitably shift the tax burden elsewhere and increase the overall complexity of the tax system. This can lead to efficiency and/or equity losses, as well as administrative and compliance costs, but they may also have adverse distributional effects (see also Box 7 on the social effects of mortgage-interest deductions).

In this context, tax reforms that consider both tax rates and tax expenditures make much sense as the latter 'often represent costly second-best options compared with the more direct and efficient ways of achieving their initial objectives, such as direct benefits for those on low incomes' (European Commission (2011d)).

One apparently simple way to reduce the complexity of a tax system is through the introduction of a flat income tax scheme, as addressed and illustrated in Box 5.

4.2. Impact of direct taxation on employment: empirical evidence

The comparatively high tax wedge in the EU has been considered by some observers as one of the main factors behind the comparatively low labour market performance of the EU, as raised by Prescott (2004). However, the effects of taxes [52] are difficult to disentangle from other labour market factors including the effect of a minimum wage, the apparent low levels of flexibility of EU labour markets, and labour market institutions, as outlined by Rogerson (2006 and 2007) and Andersen (2009).

In this sub-section, the impact of direct taxation on employment will be analysed from the supply side and from the cost-demand-unemployment angle.

Labour supply

Labour supply can again be analysed at the intensive (hours worked) or extensive (participation) margin. The following analysis, which is based on the summary of the empirical literature in OECD (2011), focuses on the wage elasticity of labour supply, defined as the percentage change in labour supply in response to a 1% increase in the net-of-tax wage [53]. Labour supply can be expressed in hours worked or participation.

The evidence indicates that male hours of work are almost completely unresponsive to changes in work incentives, as is male participation, except for low-skilled men.

Estimates of the elasticity of weekly hours of work for women are significant [54], however, while the elasticity of female annual hours of work is sometimes estimated to be close to one (Meghir and Phillips (2010)). The hours worked by married women with children and single parents appear to be more responsive than they are for women without children. For women, the participation margin is more responsive than hours worked, with the participation of single mothers being highly responsive to changes in work incentives [55].

Labour cost, labour demand, unemployment

In a review of the empirical literature, Arpaia and Carone (2004) find some evidence of 'wage resistance' [56] and therefore of a significant and long-lasting impact of taxes on labour costs and unemployment in many European countries. They suggest that methodological issues are behind the mixed results found in the empirical literature.

Own estimations [57] by Arpaia and Carone (2004) suggest that there is probably some wage resistance in the short-term but not in the long-term. However, the transition to the long-term can be very long and the short-term impact and the dynamics of adjustment can therefore be long-lasting.

Nevertheless, other multi-country studies have found significant long-run effects of the tax wedge on labour cost (European Commission (2008), p. 180). Arpaia and Carone (2004) also conclude that the short-run effects of the different components of the tax wedge on labour costs do not differ substantially (see also Nickell (2006)).

(51) See OECD (2010a).

(52) As in 4.1, the focus will be on labour taxation.

(53) See also Appendix 4 of International Monetary Fund (2012).

(54) However, the variety in the results of different studies is large.

(55) Two other strands of empirical labour supply analysis focus on, respectively, taxable income elasticities and macro-economic evidence (OECD (2011)). The former estimates the change in taxable income in response to a change in the 'net-of-tax rate' (one minus the marginal tax rate) and finds relatively high elasticities, as it captures a wider range of behavioural responses than hours worked elasticities. The latter uses cross-country macro-data to investigate the impact of various labour market institutions, including the tax wedge, on average hours worked.

(56) This is a situation in which a rise in the tax wedge gives way to a rise of fairly similar size in the real labour cost, because workers manage to protect their living standards. As a result, the rise in the tax wedge falls fully on the firm.

(57) On EU Member States excluding the New Member States.

Unemployment

Recent empirical analysis concludes that labour taxes have a significant impact on unemployment, at least in the 'average' OECD country (OECD (2006a), Bassanini and Duval (2006 and 2009)). The main impact of labour taxes on unemployment comes through their interaction with various institutional features of the labour market, such as unionised bargaining and minimum wage regulations.

Many studies find that non-centralised (i.e. sector-level) unions are more likely to be successful in pushing for higher wages in response to a tax increase compared with centralised unions, who do not seem to create the same wage pressure, possibly because they take the effect of increased unemployment into account.

Specific groups

Previous sections have highlighted the significant effects of labour taxation on the labour supply of specific groups (low-skilled, single parents, second earners). In addition, however, OECD (2011) points to the evidence that the retirement decision of older workers appears to be highly responsive to the retirement incentives that result from the combined effects of taxation arrangements and pension systems (see also Duval (2003)) [58].

4.3. Impact of reforms reducing labour taxation: empirical evidence

While the previous subsection dealt with the evidence on the employment impact of direct tax levels and tax structures, evidence on the employment impact of tax reforms is limited. To analyse the impact of reforms, Econpubblica (2011) collected detailed information on labour tax reforms in EU Member States [59] over the period 1990-2008 and established a catalogue of labour tax reforms which provided the basis for an analysis directly linking labour market outcomes with tax reforms as presented below.

Econpubblica (2011) estimated a dynamic panel data model whereby individual labour market outcomes [60] depend on a mix of reform dummy variables and control variables. The reform dummy equals one in the year of the reform and in the following two years, in order to allow for a lagged effect of the reform [61]. The control variables include, amongst others, the share of highly educated people, the average age of the population, GDP per capita, as well as year-fixed effects, to control for the business cycle.

The impact was analysed in relation to the following labour market outcomes: employment, unemployment and inactivity rates, and hours worked. Labour tax reforms that reduced PIT and/or SSCE and/or SSCR were considered. Besides the effects on the total workforce, two subgroups were analysed: female and young workers (those aged below 30) using similar models.

In general, all the analyses seem to point to, at best, a very weak impact of labour tax reforms on labour market outcomes. Results show that one or two years are needed in order to be able to detect any policy impact and that, when control variables are introduced, the policy impact is even weaker [62].

As the reform dummy does not distinguish between important and marginal reforms [63], additional regressions were run, distinguishing those reforms in which social partners were involved, which seemed to be correlated with better labour market outcomes.

Among the subgroups, no evidence was found that suggested that labour tax reforms targeting the young workforce had any impact on the outcomes considered.

For female workers, however, some policies did seem to affect outcomes, with PIT reforms targeted to women being associated with increased female employment rates (of more than 1 %), longer average hours of work, and reduced inactivity rates [64].

Econpubblica (2011) did accept that the applied analytical approach might possibly suffer from problems of endogeneity [65] due to 'the dual role of taxes and social security contributions: on the one side they generate a tax wedge which, ceteris paribus, is expected to be detrimental for the labour market outcomes; on the other side, they contribute to the financing of specific types of public expenditures which could complement the labour supply' (such as child care services).

Finally, note also that the reforms considered here were labour tax reductions, which are not necessarily tax shifts. These shifts are the topic of the next sub-section.

4.4. Revenue-neutral tax shifts away from labour

The impact of high labour tax wedges on specific labour market problems in the EU has drawn attention to policies which shift the tax burden away from labour, on the grounds that non-labour taxation should be less detrimental to economic and employment growth. Economic theory indeed allows ranking the different forms of taxation according to their (economic) growth impact, with growth linked not just to the tax level, but even more to the tax structure.

The growth ranking of taxes, as derived from Johansson et al. (2008) [66], ranks taxes on corporate income, personal income, consumption and property in decreasing order in terms of their negative impact on growth. The ranking reflects, to a large extent, the degree of mobility of the different tax bases, with corporate income tax the most harmful to growth, due to the high mobility of

(58) Another chapter of OECD (2011) is devoted to mobile high-skilled workers, as estimates of taxable income elasticities suggest that high-income recipients are more responsive than most taxpayers to tax rates.

(59) As well as in Croatia, FYROM, Iceland, Serbia, Japan and United States.

(60) As well as social outcomes: poverty and inequality.

(61) Note, however, that there is a limit to the number of lags that can be introduced since an eventual causality link between reforms and market outcomes inevitably fades away over time.

(62) See tables with estimation results in Annex (Tables A3 and A4).

(63) The study did neither distinguish between reforms target the extensive and the intensive margin, and, on the intensive margin, it did not distinguish between reforms invoking a substitution effect and an income effect, which can have very different impact on labour supply.

(64) See Table A5 with estimation results in Annex.

(65) The problem of endogeneity occurs when the independent variable is correlated with the error term in a regression model. This occurs when there is a loop of causality between the independent and dependent variables of a model.

(66) See also European Commission (2011b), OECD (2010c) and Econpubblica (2011).

capital, and recurrent taxes on immovable property being the least detrimental, especially those levied on households. For additional analyses of the growth impact of different forms of taxation, see Box 6.

In the case of a revenue-neutral shift of labour taxation to consumption taxes, beneficiaries of transfers [67] lose out since they do not benefit from the reduction of labour taxes, but they do pay the higher consumption taxes. They will automatically lose out if benefits (or pensions) are not automatically adjusted to the higher consumption prices that result from the higher consumption taxes. For the unemployed, the tax shift would reduce their replacement rate and increase the incentive to take up work.

In an open-economy perspective, the shift from labour taxation to consumption taxes can be seen as having an effect similar to a devaluation, which could be important within a currency regime such as the euro-area. Imported goods become more expensive, due to higher consumption taxes, while the lower labour costs create room for lower export prices. However, as in the case of a conventional currency devaluation, its effects are likely to be short-lived [68], especially in cases of automatic wage indexation.

In terms of residential property, the political economy aspects make a shift to these taxes quite difficult. Taxpayers 'tend to consider their residence as an essential good that should not be taxed or should be taxed only at a low rate' (Econpubblica (2011), p. 182). Taxpayers typically use the 'double taxation' argument (as used regarding taxation of financial investment returns) on the grounds that such investments can only be made from the income left after first having paid personal income taxes (see also Section 5 on a shift to property taxes).

The rationale of green taxes is to discourage polluting activities and the use of polluting goods. Green taxes could bring a double dividend, both protecting the environment and increasing employment and GDP. The latter could be achieved through specific stimulation of jobs linked to a low-carbon economy or through recycling the additional revenues from environmental taxes. However, as Box 8 in Section 5 shows, the implementation of environmental taxes is fraught with difficulties.

Due to the above difficulties with shifting taxation to residential property taxes or environmental taxes, policy options generally focus on a shift away from labour taxation to broad-base general consumption taxes for which there is a larger tax base since consumption is not only financed by labour income but also by wealth [69] and transfers.

The above analysis deals with the ranking of different forms on taxation according to their impact on economic growth. As economic growth is a key precondition for employment growth, we can reasonably assume that the same ranking is likely to hold true for employment (abstracting from assumptions regarding productivity developments).

Reforms other than revenue-neutral tax shifts?

While the focus in the rest of the chapter is on revenue-neutral tax shifts from labour to consumption, three alternative or complementary reform options can be noted.

A first option questions the revenue-neutral aspect of the shift. Indeed, in view of the present fiscal consolidation challenges, revenue-raising tax shifts would be more valuable. Roeger and In 't Veld (2010), p. 33, point to the potential beneficial effects of combining fiscal consolidation with growth-enhancing tax shifts.

An alternative or complementary option is to reduce the overall complexity of the tax system in order to increase compliance and, as a result, increase tax receipts.

Finally, as the labour market impact of labour taxation is largest for people at the margins of the labour market [70], improving employment incentives through reforms of benefits is seen as a necessary complement to tax shifts.

In view of the difficulties of estimating the effects of previous tax reforms (see previous sub-section), 'simulation methods represent the key technique to assess the potential effects of (such) tax shifting reforms' [71]. This is the subject of the next sub-section.

Box 6: Ranking different forms of taxation according to their impact on economic growth

Johansson et al. (2008) based their growth ranking of taxes on panel data error-correction estimations for 21 OECD countries over 1971-2004, which link GDP per capita to its usual explanatory variables as well as to tax structure variables [1].

However, Xing (2011) challenges these results, arriving at different, mixed results by allowing the long-run coefficients of the model to take different values for each country.

Arachi and Casarico (2012), using a sample of the 27 EU Member States over 1995-2010, estimated models linking GDP and labour market outcomes to tax structure variables [2]. The results suggest that a tax shift from labour to consumption increases long-run GDP per capita. There is also some evidence that a shift of the tax burden from labour to consumption may have a beneficial effect on unemployment, while employment seems to be more influenced by a shift in taxes from capital to consumption.

In view of the short sample [3] and possible endogeneity problems, however, these results have to be interpreted with caution.

(1) See also Arnold (2008) and Arnold et al. (2011).

(2) These variables are ratios of tax revenues and of implicit tax rates for labour, capital and consumption.

(3) The sample only covers 16 years (1995-2010), against more than the double this (1971-2004) in Arnold et al. (2011).

(67) Transfers are pensions, unemployment benefits, and disability benefits.

(68) See Econpubblica (2011), p. 198.

(69) Therefore, an increase in consumption taxes can be seen as a one-off tax on wealth, see Econpubblica (2011), p. 192.

(70) These are low-income workers, older workers, single parents, second-income earners.

(71) European Commission (2008), p. 193. See also Meghir and Phillips (2010), p. 252.

4.5. Simulation results for tax shifts from labour to consumption

Most simulations focus on GDP outcomes rather than labour market outcomes. In order to address this omission, our analysis uses the DG EMPL's Labour Market Model which has a particular focus on the labour market, including the bargaining process, the decision concerning skills acquisition, and the country-specific institutional environment.

In a survey of the findings of simulations with regard to tax shifts away from labour, European Commission (2011b) [72] concludes that the results 'generally find some positive effects of shifts from labour towards property, consumption and environmental taxation. The driving force in the simulations is usually the assumed positive impact of the tax cut on labour taxation on the labour market.'

European Commission (2008) presents a QUEST III simulation of a euro-area-wide shift from labour taxation to VAT of 1% of GDP. The analysis finds positive, but limited, effects on employment and growth. Employment would increase by 0.14% in the first year and by 0.25% in the long run. The effects are seen as larger if the labour supply is more elastic, or if transfer payments are not compensated for the VAT increase [73]. The simulation results do not include the potentially positive effects of bringing undeclared work back into the official economy. Unfortunately, the QUEST III model does not allow for the consideration of more targeted tax shifts.

Evidence from the Labour Market Model: The impact of lowering labour costs

The following analysis takes into account behavioural changes. The results focus on the long-term effects (with a horizon of about 20 years), while initial effects, not presented here, can be different.

In this sub-section, DG EMPL's Labour Market Model (LMM) is used to simulate the long-term impact of a reduction in employers' social security contributions in an attempt to lower the cost of labour [74]. LMM is a dynamic computable general equilibrium model providing an in-depth description of the labour market. LMM distinguishes different age groups and skill levels so that it is possible to show what role those characteristics play in determining the long-run impact of such policy changes. While the full model covers 14 countries in total, a selection of nine [75] is included in this sub-section: Denmark, Germany, Spain, France, Italy, Poland, Slovakia, Sweden and the United Kingdom.

We consider six different scenarios for the lowering of employers' social security contributions:

1. lowering the contributions for all workers (ALL)

2. concentrating the measure on:

   a. low-skilled workers (LOW-SKILL)

   b. young workers, aged between 15 and 24 years (YOUNG)

   c. older workers, aged between 55 and 69 years (OLDER)

   d. young and older workers (YOUNG/OLDER)

   e. workers with an income less than 60% of national median income (INC<60)

For each scenario we assume that the government spends an amount equivalent to 0.1% of GDP, financed by a shift in the value-added tax rate (VAT), in an attempt to shift part of the tax burden away from labour.

However, the scenarios differ in terms of their impact on progressivity. As the reduction in labour taxation is modelled as a proportional reduction in social contribution amounts, the progressivity of the general tax system will decrease unless it is concentrated on special target groups. As high-income earners' wage-dependent social security contributions are higher, so would be a proportional change in absolute terms. On the other hand, concentrating on specific targeted groups such as low-skilled or young people would in itself make the tax system more progressive.

The following describes the general impact on employment, wages, investment, productivity and GDP of lowering employers' social contributions, using the example of France. Thereafter, the employment effect is shown and discussed for all nine countries mentioned above.

The analysis is conducted on a comparative-static basis since the simulation results represent the long-term outcomes of these policy measures. It is assumed that the economy is in a general equilibrium when the measure is being introduced and that a new equilibrium is established following the process of adaptation.

The relative changes in the magnitudes shown below compare the respective initial equilibrium to the new (long-term) equilibrium.

LMM simulation: General long-term impact of lowering employers' social contributions

The simulations show that lowering employers' social contributions would result in lower labour costs which would induce firms to offer more vacancies. In other words, higher labour demand would be the outcome. Higher gross and net wages would follow from the wage bargaining, making it more attractive to work than not to do so. Hence labour market participation would increase, effective retirement ages would shift and unemployment would be reduced. As a result, employment would also increase from the supply side.

Both the supply side and the demand side effect would be lessened to some extent due to the real wage decline caused by the VAT shift which would trigger price changes. The real wage decline would in itself result in lower incentives

[72] This paper focuses on the effect on (long-run) GDP.

[73] European Commission (2010b) found even larger effects when the shift happens over time, as a result of fiscal consolidation through an increase in consumption taxes. The gradually increasing room for fiscal manoeuvre would be used to reduce labour taxation over time.

[74] LMM was developed for the European Commission, DG EMPL, by the Institute for Advanced Studies (Vienna) and the University of St. Gallen. For a technical model description, see Berger et al. (2009), particularly Section 2 of the final report. A non-technical outline of LMM can be found in European Commission (2010a), Annex 2 to Chapter 2. Berger et al. (2012) present an outline of the latest model update and maintenance, also showing a social security reform in Section 4.3. However, the lowering of contribution rates shown is restricted to low-income earners only (unlike the approach taken here).

[75] The selection includes the largest Member States, as well as two New Member States and two Nordic Member States.

to work (lower labour supply) and higher gross wages (lowering labour demand). That is, for groups not targeted by the measure, a negative employment effect would be the outcome.

In principal, these theoretical considerations hold true across all scenarios. There are, however, certain particularities.

Chart 34 shows the proportional change in gross wages and total labour costs (which, in addition to gross wages, include workers' social security contributions).

If the government considered focussing on OLDER workers, it would have to take into account that the resulting wage shift would be more pronounced than it would be under other scenarios, for two main reasons:

1. The age composition effect: On average, older workers have higher wages. For example, within the low-skilled group in France, there is a wage spread of some 60% between the youngest and the oldest age group. Targeting older workers would encourage their greater participation in the labour market, and this would push up the average wage level.

2. The skill composition effect: The more high-skilled workers are affected (and attracted) by the measure, the more favourable will be the impact on labour productivity and hence on wage levels. Given that the share of high-skilled workers affected by the measure is the highest amongst older workers [76], the additional labour demand in the OLDER scenario would include a larger share of high-skilled workers. As a result, concentrating on older workers would be the only scenario that would lead to increased labour productivity, resulting in gross wage shifts so pronounced that the total labour cost would rise despite the initial lowering of social security costs.

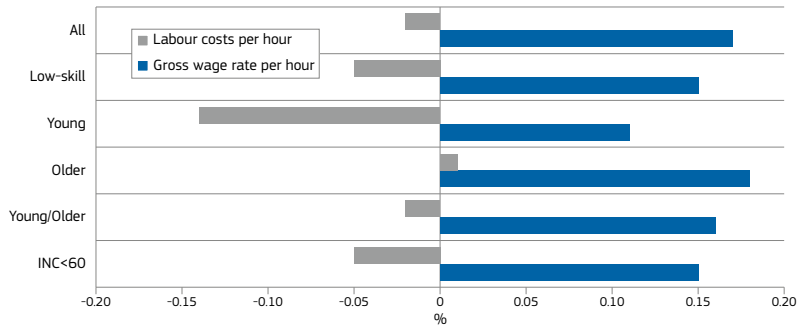
If reductions in social security contributions were concentrated on the YOUNG or the LOW-SKILLED, their employment would shift so that the skills composition effect would result in a higher share of low-skilled persons among all employed persons. This is a result of firms' higher demand for low-skilled persons, as well as to lower investment in education due to improved income prospects for the low-skilled. The shift in gross wages would be the least pronounced because of the decline in productivity and total labour costs would decline most significantly [77].

Chart 35 shows that, following the initial lowering of labour costs, the acceleration in labour demand results in employment gains under all scenarios. However, these gains are also the result of what happens on the supply side. In general, the shift in gross wages would trigger higher net wages which, in turn, would induce more people to join the labour market.

These supply-side employment gains are the most pronounced in the 'low-productivity' scenarios YOUNG and, to a lesser extent, LOW-SKILL and INC<60. As take-home pay improves, more people will wish to take up work, be it from unemployment or inactivity. This incentive effect is the strongest for young workers since their wages are the lowest. For the same reason, the subsidy will reduce firms' labour costs for the young by the largest amount – with a comparably strong push on labour demand.

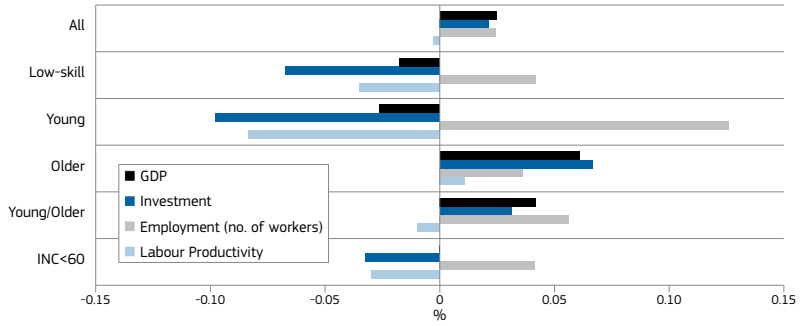
Hence, the strongest employment effect would be expected if the government concentrated the measure on young people in the YOUNG scenario. In this case the pronounced employment gain would result in a slump in labour productivity since young workers' average productivity is well below average, which in turn contributes to the lowest gross wage shifts and the most pronounced decline in labour costs, as was shown in Chart 35.

Chart 34: Lowering employers' social security contributions by 0.1% of GDP – Impact on gross wages and total labour costs, France



Source: Own calculations based on DG EMPL's Labour Market Model.

Chart 35: Lowering employers' social security contributions by 0.1% of GDP – Impact on GDP, investment, employment and productivity, France



Source: Own calculations based on DG EMPL's Labour Market Model.

Note: GDP for INC<60: value not visibly different from zero.

[76] There are three reasons for this. First, we consider the long-term results: among older workers, there will be more high-skilled workers in the future than there are today. Second, 15 to 24 year-old high-skilled are assumed to still be in education, with only the less-educated already at work in this age group. Finally, high-skilled persons retire later, increasing the overall share of high-skilled.

[77] This is also because their wages and hence their labour costs are lower, so that a given absolute decline would result in a higher proportional decrease.

Workforce skill composition also plays an important role in relation to the demand side of the economy. The LMM incorporates a skills-capital complementarity such that high-skilled labour and capital are more complementary than low-skilled labour and capital, in line with empirical evidence [78].

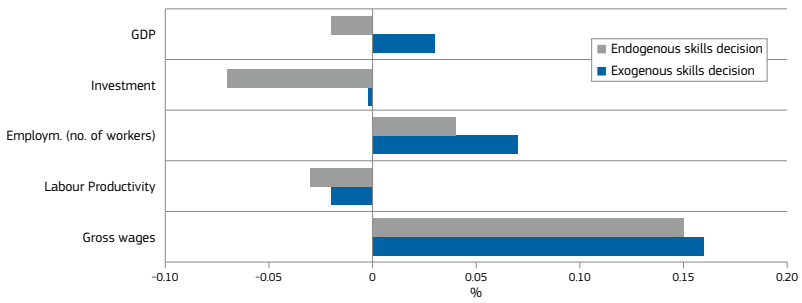
The consequence of this complementarity is that, if more (less) high-skilled workers are employed, this produces higher (lower) investment which will, in the long run, boost (curb) GDP growth. In relation to the scenarios considered here, the skills-composition effect would result in the measure having the most expansive impact on investment and GDP if it targeted OLDER workers, whereas the contraction of investment and GDP would be greatest in the YOUNG scenario, as indicated in Chart 35.

In other words, in the long run, concentrating on more vulnerable groups such as YOUNG or LOW-SKILLED people would result in higher employment gains, but at the expense of a less favourable, less productive structure of the workforce, and hence lower investment and GDP.

One crucial determinant of the outcome is the actual composition of the workforce in terms of skills. Measures affecting the wages of low-skilled people will encourage more low-skilled workers to increase their job search activity or their work intensity. Likewise, reduced labour costs for low-skilled workers will encourage employers to offer more low-skilled vacancies.

The skills composition effect is actually supplemented by a skills redistribution effect implying that agents may take a different skills decision after the policy measure. Employment prospects and wage increases for the low-skilled will make being low-skilled more attractive, as a result of which more people may decide not to invest in further education or training. These considerations are being taken on board by LMM where the skills decision is endogenous [79].

Chart 36: Lowering employers' social security contributions by 0.1 % of GDP for low-skilled workers – Impact (on GDP, investment, employment, productivity and gross wages) with skills decision endogenous or exogenous, France



Source: Own calculations based on DG EMPL's Labour Market Model.

Chart 36 shows the impact of the above process on the simulation results in the case of lowering employers' social contribution cost for the LOW-SKILLED. The blue bars replicate the results shown in Chart 35 whereas the red bars indicate the measure's relative impact with the skills decision being exogenous, i.e., remaining unchanged after the policy measure.

A decision not to pursue higher education or training at the beginning of a career turns a positive result on investment and GDP into a negative one, resulting in a lower productivity shift, less additional employment, and a lower wage increase in the economy, compared with the situation in which the skills decision is not changed. This skills decision effect may even be underestimated to some extent in LMM as the model does not take into account the possibility of a skill upgrade, i.e., achieving a higher education level later in one's career.

Chart 37 confirms the skills composition and skills re-distribution effect, showing that employment for the high-skilled shifts most in the OLDER scenario and that it actually decreases when the measure is concentrated on sub-groups where the share of the high-skilled is low (INC<60) or non-existent by definition (YOUNG [80] and LOW-SKILL).

On the other hand, due to the stronger incentive effect resulting from higher wages, employment gains are the most pronounced when reductions in social contributions are focused on low-skilled and young people (scenario YOUNG), given their low income levels.

However, the negative employment effect for certain groups, shown in Chart 37, is also the result of the VAT shift (via higher prices), which in itself cuts into real wages and increases pressure to bargain for higher gross wages as a partial compensation for the loss of real income. For the groups benefiting from the measure, the effect on wages and employment described above will clearly outweigh the additional consequences of higher prices, and the overall employment effect is positive in all scenarios. But looking at the non-targeted groups, employment losses would be the result, as those groups do not directly benefit from the measure but participate in its funding via higher VAT. This is evident in Chart 37, with the employment situation of medium- and high-skilled people worsening. But the phenomenon occurs in all scenarios for the respective non-targeted groups. More details of the simulation results for France can be found in Annex, Table A6.

LMM simulation: Cross-country comparison

Chart 38 shows how employment (in terms of number of workers) responds to the lowering of employers' social security costs by 0.1 % of GDP financed by higher VAT in the selected nine Member States.

There is a considerable spread across Member States. In general, the extent to which a policy measure of a certain given magnitude has an impact on a certain target group depends greatly on the size

[78] Berger et al. (2009), 2nd part of the final report, p. 3.

[79] It is assumed that agents make a discrete skills decision on what skills level to acquire in the beginning of their career (aged 15 years), with perfect foresight about what this means for their lifetime-income, and with no chance to change their skill level at older ages, see Berger et al (2009), Part II, p. 27 and following.

[80] In LMM's endogenous skills decision process, if an individual decides to invest in medium-level education, it takes place in the 15-19 year-old age range. Higher education is achieved in the 20-24 year-old age period. Hence, this assumes that there are no high-skilled persons in LMM younger than 25.

of the target group (the group size effect) in individual Member States.

For example, if a government were to spend 0.1% of GDP subsidising employers' social contribution costs for OLDER workers, the proportionate employment shift would be stronger the lower the number of older workers in employment simply because a given amount would then be concentrated on fewer people. For example, the older worker employment rate (age group 55 to 64 years) is far below 40% in Italy and Poland – the lowest by far of the countries studied – so that a profound shift in older people's employment due to such a labour cost subsidy comes as no surprise.

In the case of Italy, a high implicit tax on labour [81] contributes to that result. A given trigger (here: the induced wage shift) would induce a higher number of older workers to take up employment where labour taxes were previously (too) high [82]. On the other hand, the employment effect of subsidising labour costs for older workers would be moderate in the United Kingdom as the implicit labour tax there is much lower and therefore a given stimulus to further reduce labour costs would create less additional employment.

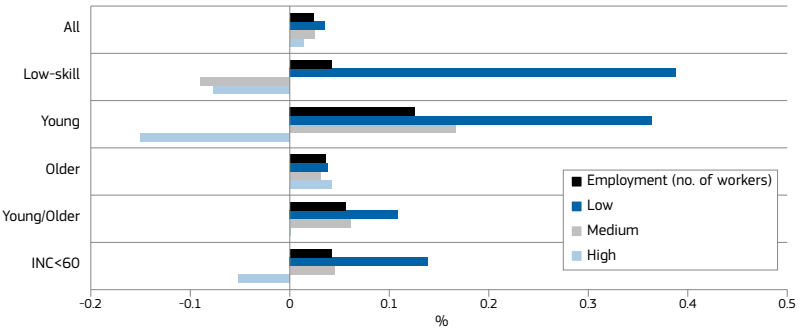
In line with the findings above, all Member States show a pronounced employment impact when money is spent lowering labour taxes for YOUNG workers. The relative impact tends to be more pronounced the lower the wage levels of the youngest (15 to 24 years) relative to other age groups. Average wage levels for young workers in Sweden, for example, are only half the level of low-skilled senior workers (55 years and older) [83]. With relative wage levels that low, a given wage shift would therefore induce more young people to actively participate in the labour market and invest less in education. The same is true, to a lesser extent, in France (60% relative seniority premium) and Spain (70%).

The result for Sweden is also remarkable in that a reduction in the labour costs for LOW-SKILLED workers would actually reduce total employment because of the skills re-distribution effect mentioned above. The subsidy reduces labour costs for the low-skilled and induces firms to hire more low-skilled workers. Their wages shift, so that it becomes more attractive for people not to invest in higher education and training but to stay with low skill levels. The result is a shift to low-skilled employment at the expense of high-skilled and (above all) medium-skilled employment. In Denmark and Sweden the decline in high and medium-skilled employment is the strongest in such a case; in Sweden it is even stronger than the initial intended employment gains for the low-skilled (resulting in a decrease in total employment).

One reason for this finding is that the wage distribution across skill levels is relatively even in the Scandinavian countries. Medium-skilled workers have an implicit skills premium of only around 10% compared to their low-skilled peers in Sweden, 20% in Denmark; but 40% in Poland or Germany [84]. A given wage shift (resulting from the labour cost stimulus) for the low-skilled induces a relatively pronounced shift towards low skills in the Scandinavian countries where the wage premium for skills is low.

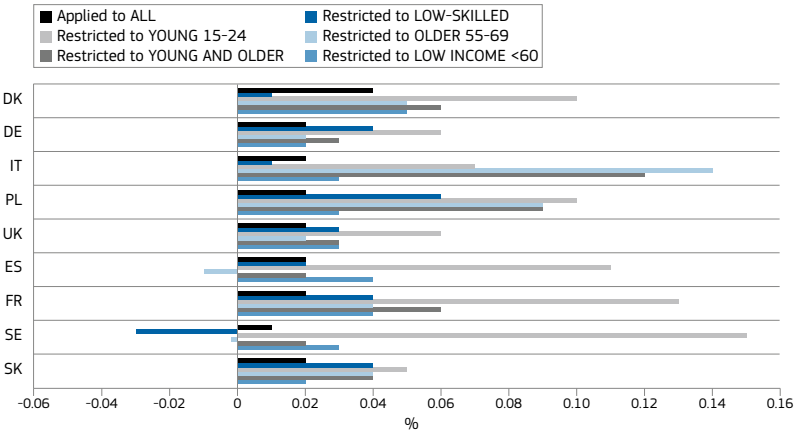
Chart 39 shows the long-run effects on GDP of lowering employers' social contribution costs. The findings confirm those discussed above for France, namely that, in general, the skills composition effect results in higher GDP in the OLDER scenario and where there is no focus on specific groups (ALL). This is because the share of the high-skilled in those scenarios is higher than if the focus is on the YOUNG, LOW-SKILLED, or INC<60, simply because higher productivity is consistent with higher investment and higher GDP. The GDP losses in the Scandinavian countries would be the most pronounced since they would have the greatest loss of high-skilled people in those lower-productivity scenarios. On

Chart 37: Lowering employers' social security contributions by 0.1% of GDP – Impact on employment by skill level, France



Source: Own calculations based on DG EMPL's Labour Market Model.

Chart 38: Lowering employers' social security contributions by 0.1% of GDP – Impact on employment, nine Member States



Source: Own calculations based on DG EMPL's Labour Market Model.

(81) See European Commission (2012b) and European Commission (2011a), Chapter 5, p. 228.

(82) European Commission (2011a), Chapter 5, p. 229.

(83) According to SILC data.

(84) According to SILC data.

the other hand, the positive GDP effect is most pronounced in Italy in the OLDER scenario as Italy would gain the most high-skilled people.

In contrast to the general findings, Slovakia shows a positive shift in GDP in the YOUNGER scenario. This is because the wage shift would be most pronounced in Slovakia (where wages are low), triggering an increase in household income and hence consumption, so that GDP would increase despite declines in investment. In addition, the decline in investment is moderate in Slovakia because the skills composition effect is the least pronounced with by far the largest share of the workforce (75%) being medium-skilled and remaining medium-skilled even after the low-skill wage shift, as there is a 30% wage premium to skill up from low to medium skill levels. More details of the simulation results by Member State can be found in Annex, Table A7.

Conclusion

The simulation results confirm that the outcome of this tax-shift policy measure depends very much on the skills composition of the workforce. As the different target groups' characteristics in terms of relative size, age and skills composition vary greatly across Member States, so too do the simulation results.

There is, however a general message, namely that a measure tailored to the needs of the most vulnerable groups, such as the low-skilled or young people, may prove more effective, as there would be stronger employment gains than those that would result from non-targeted policies. This is because, given their lower productivity and wage levels, a given tax stimulus will constitute a relatively strong positive incentive both from the demand side (lowering labour costs) and the supply side (raising net wages).

On the other hand, it is mainly low-skilled, low-productivity employment that is produced in this way. This may result in an overall reduction in average productivity owing to a shift in the skills mix of the workforce towards lower-skilled and hence less productive jobs. In addition, it must be noted that additional low-skilled employment opportunities may not only draw workers exclusively from the already existing low-skilled workforce, but may also attract other skill groups attracted by the higher wages and better job prospects in the low-skilled sector who might decide not to undertake the costly process of acquiring medium-level skills.

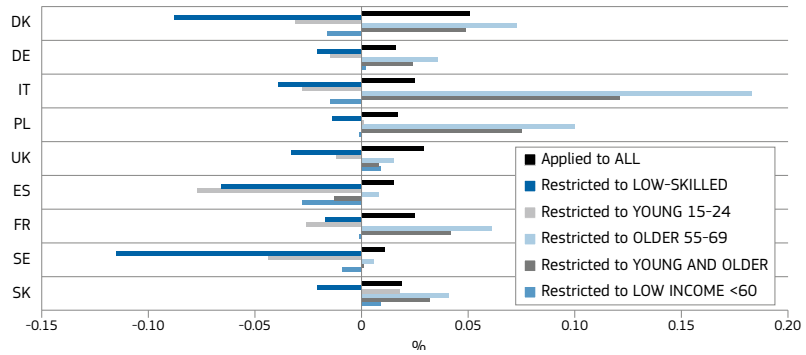
In these respects LMM provides evidence that labour market policy measures focused on those most in need would indeed deliver socially positive results even in the long run.

However, the price to pay could be twofold:

- Lower long-run prospects in terms of investment and economic growth, unless those measures are counter-balanced with effective tools designed to strengthen the overall skill mix of the workforce. This is particularly relevant given that there is strong evidence that future demand for high-skilled workers is likely to increase at the expense of demand for those with low qualifications [85].

- A detrimental consequence for non-targeted groups: individuals not targeted by the measure and hence not subsidized will not benefit, but will still have to pay higher taxes (VAT). This will lead to both a lower supply and demand of labour and to higher unemployment for these groups.

Chart 39: Lowering employers' social security contributions by 0.1% of GDP – Impact on GDP, nine Member States



Source: Own calculations based on DG EMPL's Labour Market Model.

5. TRADE-OFFS BETWEEN THE EMPLOYMENT AND SOCIAL EFFECTS OF TAX SHIFTS

5.1. Introduction

A ranking of taxes in terms of their impact on growth would put taxes on corporate income, personal income, consumption and property in decreasing order in terms of their negative impact. As a result, policies which shift the tax burden away from labour to consumption and/or property would enhance economic and employment growth, at least in the long-run. However, raising property taxes is often politically difficult due to strong voter opposition. On the other hand, as these are often municipal taxes, the revenues are used to finance local public services.

The employment gains associated with increasing consumption taxes (including environmental taxes) and those on property are linked to the extent of the simultaneous reduction in labour taxes. Therefore, different tax reforms in a revenue-neutral or revenue-raising context lead to different results. Generally, revenue-neutral reforms have better social outcomes [86] than revenue-raising measures drawing solely on tax bases other than labour. Moreover, increases in consumption (and environmental) and property taxes can reduce or enhance other market distortions. In general, such tax shifts will always create losers among those who do not work because they are retired or unemployed and do not benefit from a reduction in labour taxes.

[85] See Cedefop, Skills Supply and Demand in Europe – Medium Term Forecast up to 2020, Luxembourg, 2010.

[86] The difference is less clear for employment effects, see Roeger and In't Veld (2010), p. 33.

Differences in the unemployment rate over time and across countries provide some indication of the size of the group that will be disadvantaged by the policy. On the other hand, the creation of new employment could benefit the unemployed. Nonetheless, the social effects of higher employment may not benefit all those hurt by the measure and the timing for the creation of positive employment effects may operate in parallel with a scarring effect for specific groups, such as the young unemployed.

An important conclusion from the above is that the fulfilment of the Europe 2020 employment rate target does not necessarily imply a positive effect in terms of achieving the poverty reduction target (Marx et al., 2011). It should be recalled that over 8 percent of the employed are at risk of poverty and can therefore be qualified as 'working poor' [87].

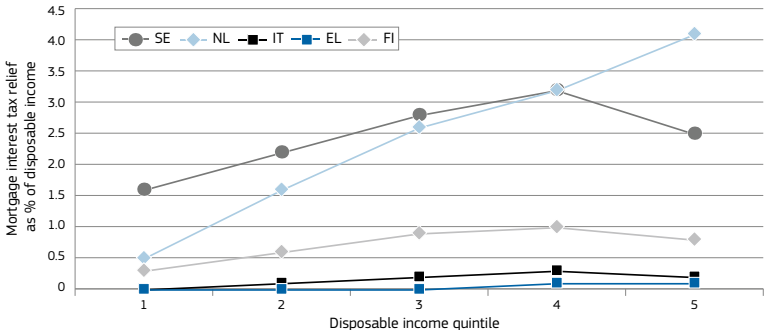
Which of the various labour taxes are reduced matters in terms of equity since, while personal income taxes are progressive in the majority of Member States, social security contributions and payroll taxes are less progressive or fall (initially [88]) on employers. Moreover, tax progressivity is in reality attenuated by tax expenditures, which may have adverse distributional effects. Box 7 illustrates the distributional effects of the most popular form of tax expenditure – mortgage interest tax relief. Accompanying reforms of tax expenditures could have beneficial distributional effects.

Box 7: The social effects of mortgage interest deductions

Tax relief on mortgage interest for owner-occupied housing is a feature of housing taxation in most Member States. In some countries relief on mortgage interest is in the form of a full (as in Belgium, the Netherlands, and the United States) or partial tax deduction from labour income or from capital income (as in Finland and Sweden). In other counties, it takes the form of a labour income tax credit (as in France, Ireland, Italy and Spain). Some Member States follow the consumption approach to housing taxation and provide no mortgage tax relief (as in Germany [1] and the United Kingdom) (European Commission (2011e), Matsaganis and Flevotomou (2007)). As with most tax expenditures, mortgage tax relief increases the tax burden elsewhere and increases the complexity of the tax system. Moreover, there are adverse distributional effects.

Chart 40 shows that the benefit from mortgage tax relief increases with income. However, this effect varies by country. The design of the mortgage tax relief, the size of this relief as a share of total tax expenditures, accessibility to the credit market, the taxation of imputed rent and the distribution of homeowners with an outstanding mortgage in relation to income distribution all influence the social impact of mortgage tax relief within the individual Member States.

Chart 40: Mortgage interest tax relief as a percentage of disposable income



Source: Own elaboration based on data from Matsaganis and Flevotomou (2007).

Notes: Matsaganis and Flevotomou (2007) is based on Euromod simulations using 1995 ECHP for Greece, 1996 Survey of Household Income and Wealth for Italy, 2000 Socio-Economic Panel Survey for the Netherlands, 2001 Income Distribution Survey for Finland and Sweden.

(1) However, in Germany it is possible to deduct mortgage interest from taxable income for houses owned for investment purposes.

5.2. Tax shifts toward property

A number of Member States have recently increased property taxation. However, recent reforms and the current design of property taxes do not always have beneficial social effects due to the uneven distribution of home-ownership across income groups.

Options for reforming and/or increasing taxes depend on whether housing is addressed as a form of consumption, an asset or imputed rent. The distributional effects of taxing housing as consumption are similar to the effect of VAT, with house-rich cash-poor groups (most likely the elderly) likely to be the losers, although the Danish system of accumulating taxes to be paid once the property is sold or inherited is an interesting option (Mirrlees et al. (2011a)).

A tax rebate on housing consumption taxes for low-income households would help to reduce the adverse distributional effects. For instance, in 2012, Ireland introduced a property tax to fund local services for the first time. The design is a lump-sum tax of €100 for each household [89], with clear regressive effects.

The taxation of housing as an asset, in particular on capital gains, could have both efficiency and equity aspects. A general tax on wealth would level off differences among different types of investment and reduce net wealth inequality granting fair treatment to homeowners with an outstanding mortgage.

The taxation of imputed rent as a separate tax base would be expected to have adverse social effects in most Member States. These adverse effects would increase with the relative importance of imputed rent at the bottom of the income distribution. The taxation of imputed rent under the personal income tax base is the preferred option. However, this can be implemented in several ways, as is set out in Section 3.

(87) See also Chapter 4: 'Is working enough to avoid poverty? In-work poverty mechanisms and policies in the EU' of European Commission (2011a).

(88) Beyond the short-term, economic agents may be able to shift the initial tax burden to other economic agents.

(89) The Irish property tax reform is considered as an interim measure pending the design and implementation of a full property tax (OECD, 2012c).

Table 9 summarizes the efficiency and equity effects of the three approaches to taxing imputed rents:

- The revenue-neutral taxation of imputed rent, compensated by a proportional rebate of personal income tax rates, would increase work incentives but increase inequality (Reform 1).
- The revenue-neutral taxation of imputed rent, compensated by an equal lump-sum tax credit, would increase labour participation incentives [90] by shifting the burden of taxation from labour to housing and would reduce inequality (Reform 2).
- The revenue-raising taxation of imputed rent, with no compensating measures, would reduce inequality but also labour incentives (Reform 3).

The conclusion from the above is that the option of taxing imputed rent by introducing a lump-sum tax credit is optimal in terms of achieving beneficial employment and social results.

Table 9: Social and employment effects of three property tax reforms

Taxing imputed rent	Employment	Social (inequality)
Revenue-neutral - proportional rebate PIT	+	-
Revenue-neutral - lump-sum tax credit	+	+
Revenue-raising	-	+

Source: Based on results from Figari et al. (2012).

Table 10: Effects of specific tax reforms

	Shift from labour taxes to ...			Other tax reforms	
	VAT	Green taxes	Property tax	Mortgage relief	Fight tax evasion
Social effects *(static)*	☹	☹	☺ (IR with lump-sum tax credit)	☹	☺
Employment effects *(dynamic)*	☺ (if targeted)	☺ (small)	☺ (IR with lump-sum tax credit)	☺	☺
Other efficiency aspects		☹		☹	

5.3. Tax shifts to consumption

Several Member States report a shift from labour to consumption taxes, in particular towards VAT and more recently towards environmental taxes. Unfortunately, fiscal consolidation measures often resulted in an increase in consumption taxes not accompanied by a lower labour tax burden.

Shifting taxes from labour to consumption can result in significant trade-offs in terms of equity and efficiency. General reductions in labour taxation are seen as significantly inferior to targeted reductions in terms of efficiency effects, with the emphasis being on targeting groups at the margins of the labour market (the low-skilled, single parents, second earners and older workers) who have higher labour supply elasticities. Moreover, it is not only taxes, but tax and benefit systems jointly, that have a large impact on the labour supply of these groups, implying that any proposed tax shift needs to be accompanied by appropriate benefit reforms.

To the extent that low-income groups are major beneficiaries of existing reduced VAT rates, the form taken by any increase in VAT also matters, since any increase could cancel any benefits from lower income taxes.

A revenue-neutral shift from labour taxes to consumption taxes will also be likely to have an adverse effect on groups which do not finance their consumption out of labour income, and would not therefore gain from the reduction of labour taxes. This would affect benefit recipients unless their benefits (or pensions) were automatically adjusted to the higher consumption prices. Hence this loss has to be weighed against the reduction of the replacement rate of the unemployed and the consequent increased incentive to take up work.

The extent to which a tax shift increases employment depends to a large extent on country-specific factors such as labour market institutions. The existence of a minimum wage or automatic adjustments of wages or benefits to price changes will attenuate the beneficial employment effect. Other country-specific factors concern the tax system itself, including such factors as tax levels, the degree of progressivity, the importance of tax expenditures, the efficiency of the VAT collection system, etc.

Our simulations show that tax shifts targeted at the most vulnerable groups, such as low-skilled, may prove effective in terms of employment gains in the long-run. However, the increased employment of these groups will come at the price of lower average productivity. This might curb long-run prospects in terms of investment and economic growth unless accompanying measures are taken to strengthen the skill mix of the workforce.

From a social perspective, the income-regressive effect of VAT varies widely across Member States. However, increases in the standard VAT rates are expected to bring milder regressive effects than the introduction of VAT on previously exempt goods and services, or increases in reduced VAT rates.

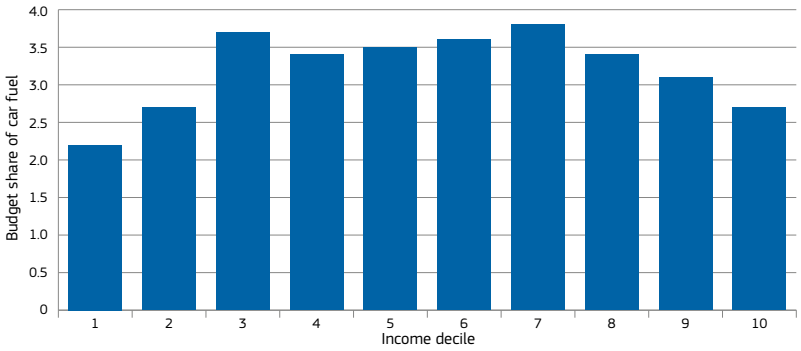
Such changes would have a particularly negative impact on poorer households. Moreover, the adverse distributional effects of an increase in VAT are linked to differential saving possibilities among different income groups. Therefore, the regressive effect of an increase in VAT rates is linked to the absolute (real) income of poorer individuals. In countries where poorer households are able to save relatively more (with respect to other countries), the adverse distributional effect of

[90] However, this tax shift may also imply an income effect reducing the supply of working hours of the already employed.

Box 8: Green taxes

The rationale of green taxes is to discourage polluting activities and the use of polluting goods. Green or environmental taxes are 'generally excise duties levied on environmentally harmful tax bases such as energy products, transport, polluting activities and resource use' (European Commission (2011c)). They include energy, transport, pollution and resource taxes. Green taxes could bring a double dividend, protecting the environment and increasing employment and GDP, although this effect is debated [1]. A shift of labour costs towards green taxes provides, among other effects, incentives to develop environment-friendly goods and for the creation of employment in the green sector, consistent with the Europe 2020 initiative on 'a resource-efficient Europe'. Although the primary aim of green taxes is to discourage pollution, it is worth considering the distributional impact they have on households. From a social point of view, a shift from labour taxation to green taxes may have mixed effects. The goods target of green taxes (mainly fossil fuels) can represent differing shares of the spending of rich and poor households. In the case of rich households, the shift to green taxes may reduce the consumption value of their net labour income and as a result, curb their labour supply. In the case of poor households, the introduction or increase of green taxes has adverse redistributive effects given the higher share of household spending devoted to fuel consumption (Econpubblica (2011)).

Chart 42: Budget share of car fuel expenditures, by income decile – Belgium



Source: Own elaboration based on data from Decoster et al. (2010).

Notes: Decoster et al. (2010) data on car fuel expenditures are based on 2003 Belgian Household Budget Survey.

The distributional impact of green taxes is dependent on the tax base on which it is applied. Nevertheless, the empirical evidence suggests that green taxes are often regressive, as they normally tax necessities and often take the form of excise duties which tend to be regressive even when evaluated as a percentage of expenditure (O'Donoghue et al. (2004)). The regressivity of those environmental taxes is attenuated or exacerbated depending on the consumption elasticity for different income groups and is linked to substitution possibilities (such as the availability and cost of public transport) [2].

As said above, the distributional impact of the shift to green taxes is closely tied to the combination of tax bases to which the reform is applied [3]. Taxes on electricity and heating tend to be particularly regressive, while the impact of green taxes on transport fuel and vehicles is less clear, with considerable differences among Member States. Differences in car ownership among different income groups explain why transport-related taxes tend to be less regressive than other green taxes. Chart 42 shows that the budget share of car fuel expenditure does not increase linearly with income. However, taxes or charges on transports should take into account that when they target commuter trips to work they can have similar effects to labour taxes unless public transport alternatives are provided, possibly financed by those taxes and charges. Taxes or charges on commuting may have a higher incidence on low income workers [4]. Low income workers living in poorly connected suburbs can be more dependent on the use of the car than high income workers and are likely to have older and less energy-efficient vehicles.

The use made of the revenues from green taxes also affects the distributional equation. Simulation results in European Commission (2011c) suggest that both economic efficiency and a distributionally neutral tax reform can be achieved if green tax revenues are recycled in the form of cuts in employers' social security contributions.

From an efficiency point of view, excise duties are not optimal as they tax intermediate goods (such as oil) and, consequently, generate distortions (Mankiw et al. (2009)). Nevertheless, the receipts of green taxes can be used to reduce labour costs, to stimulate overall (or targeted) employment and to stimulate the transition to a low-carbon economy, which has a large job potential. European Commission (2011c) shows that the above recycling can have small but positive effects on employment and GDP.

(1) For a discussion on the 'double dividend' of environmental taxes see, for instance, Fullerton et al. (2010).

(2) For a study on a proper assessment of the distributional effects of environmental taxes, see OECD (2006b).

(3) See European Commission (2012a), Fullerton et al. (2010) and OECD (2006b).

(4) The unemployed and retired people are often over-represented in bottom income deciles. Low income workers can be represented by middle-low income deciles in Chart 42.

An assessment of the scope for and impact of, further increasing green taxes is not straightforward. On the one hand, in the EU in 2010, green taxes only represented 6% to 7% of total taxation [5] and 2½% of GDP (European Commission (2012b)). On the other hand, they are largely concentrated on energy products, which are already quite heavily taxed (6). In particular, the mobile uses of energy are taxed much more (through excise on energy and vehicles) than the stationary uses of it. The starting level of environmental taxation between mobile and stationary uses of energy is an element to be taken into account when proposing tax shifts. Finally, in a longer-term perspective, a tax aimed at correcting externalities is self-defeating if it is successful (by reducing its tax base). However, this is only a medium- to long-term concern as consumption of environmental goods and services seems to have a low elasticity.

Whether green taxes can be used to stimulate (green) employment without overburdening lower income groups will depend on many factors, which differ substantially by Member State. These factors include the pattern and the elasticity of the consumption of the goods and services subject to green taxes for different income groups and the focus of the tax base (electricity and heating versus fuel and vehicles).

Options to increase green taxes while limiting possible adverse redistributive effects include properly targeted energy tax exemptions and reconsidering the taxation of company cars, which often enjoy a favourable tax treatment. The social effects of a larger use of Emission Trading Schemes versus green taxes should be also explored. From an economy-wide perspective, a shift from 'ownership' to 'actual use' environmental taxes would be welcomed. Increasing taxes on the actual polluting activities (such as energy tax, pay-as-you-drive insurance, congestion charges) while lowering or eliminating the fixed costs of ownership (registration tax, annual circulation tax, fixed insurance) would allow greater savings for those who reduce the use of their vehicle, without discouraging the purchase of vehicles.

(5) This is 6.2% as a weighted average, 7.4% non-weighted, ranging from below 5% in Belgium and France to above 10% in the Netherlands and Bulgaria.

(6) Even more so, once the overall charges (taxes and fees) are taken into account, see European Commission (2011b).

higher VAT rates is reduced. However, the regressive effect of an increase in VAT rates can be compensated by increasing the size and progressivity of other taxes/benefits.

The employment and social effects of green taxes are discussed in Box 8.

The employment and social effects of tax evasion and undeclared work are presented in the next subsection.

Table 10 summarises the social, employment and efficiency effects of shifts from labour to other tax bases. The last column adds the effect of a reduction in tax evasion.

- For a labour tax shift towards VAT there seems to be a trade-off between equity and employment aspects.
- Green taxes in many Member States seem to have negative equity and efficiency aspects, although they purse a very specific and different aim.
- A shift from labour to property taxation is optimal from a social and employment perspective if implemented by taxing imputed rent under personal income accompanied by a lump-sum tax credit.
- Mortgage relief has adverse social effects associated with various characteristics of the Member States, but may increase the labour supply. Moreover, contrary to other tax measures that can be adopted in a fiscal consolidation context, mortgage tax reliefs represent a considerable loss in tax revenues.
- The reduction of tax evasion, for the Member States in which it represents a considerable issue, is also optimal from an employment and social point of view.

Finally, there are concerns regarding the timing of the impact of tax shifts away from labour. While the long-run results are beneficial in terms of employment and GDP [91], the negative impact of any VAT or property tax increases will be felt immediately, while it may take time for the positive employment effects to materialise. Moreover, these positive effects are likely to be even slower to materialise in a period of recession or very low growth (as now).

5.4. Tax evasion

The shadow economy includes legal activities on which taxes are not being paid and illegal activities on which taxes cannot be paid. Taxes on legal activities can be evaded or avoided by legal means. Undeclared work refers to legal activities and, in particular, to 'the wages that workers and business do not declare to avoid taxes or documentation' (European Commission (2012d)).

However, taxes can also be evaded or avoided on other tax bases, such as consumption and capital. By reducing the tax base, tax evasion will both limit the scope for fiscal consolidation and the effective financing of social transfers while increasing the burden of taxation on those who do comply.

The transformation of undeclared work into formal work is an important issue for the current employment policy of the European Commission, and represents an important goal in working towards the fulfilment of the employment targets of the Europe 2020 strategy.

Tax evasion and social aspects are closely connected. Higher levels of inequality are associated with a higher probability of tax evasion while tax evasion affects the level of inequality and poverty, as reviewed in Salverda (ed. 2011). Indeed, the probability of tax evasion is seen to vary between different income groups, with those at the bottom and the top of the income distribution having greater opportunities to evade or avoid taxes than those in the middle.

Chart 41 shows the increase in inequality and poverty due to income tax evasion in three Member States that are

(91) In simulation results, a period of at least 20 years is taken as long-run.

considered to have high levels of tax evasion. The bottom and top income deciles in Greece and Hungary are found to under-report income more than the middle deciles, while in Italy under-reporting is higher for the two top deciles. However, in all three countries, under-reporting is disproportionately higher for the top 10, 1 and 0.1 percentiles (Matsaganis et al., 2010 and Salverda (ed. 2011)).

Undeclared work is, by definition, unobservable. Estimates suggest it to be comparatively more widespread in Southern and Eastern Europe [92] than elsewhere in the Union, and to be most prevalent in sectors such as construction and household and care services. This shadow economy is estimated to amount to around one fifth of formally recorded GDP on average across the Union (a value of €2 trillion per year). Undeclared work is cyclical, increasing in times of scarce formal employment opportunities and rising poverty.

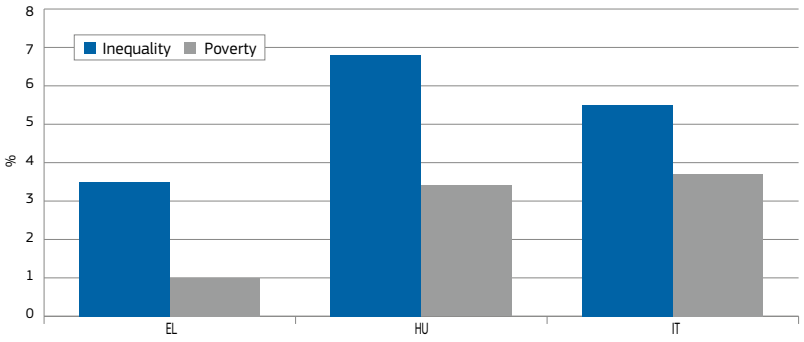
Authors of the empirical literature on the effects of labour taxes on informal employment tend to agree that, while tax rates are important in explaining informal work, the extent to which tax rates are enforced, and the quality of governance, play a crucial role (OECD (2008b), Jensen and Wöhlbier (2012) and Schneider (2012)).

Hazans (2011) finds that the share of non-contracted employees in the labour force across all European countries is associated with higher rates of minimum-to-average wages, greater trade union density, more first and second generation immigrants and higher levels of income inequality.

Moreover, in terms of taxes, it is not only the level of the tax wedge that affects the extent of informal employment. Other aspects of the tax and benefit systems also play a role, such as the marginal effective tax rate for low-wage earners, the relative tax rate on capital compared to labour, and the tax system applied to the self-employed.

[92] See European Commission (2012d). However, one should also note that Eurostat, IMF, OECD, UN and World Bank have jointly cautioned against the use of unofficial estimates of the underground economy, see Inter-secretariat Working Group on National Accounts (2006).

Chart 41: The effect of income tax evasion on inequality and poverty



Source: Own elaboration based on data from Matsaganis et al. (2010).

Notes: Matsaganis et al. (2010) is based on Euromod elaborations using 2004 and 2005 income from the Household Budget Survey, respectively, for Greece and Hungary and 2002 income from the Survey of Household Income and Wealth for Italy.

Undeclared work has significant economic and social consequences. It tends to distort fair competition among firms and to inhibit the creation of regular employment with full social protection. It also causes productive inefficiencies, as informal businesses typically steer clear of formal agencies such as banks and business services, which tends to severely limit their growth potential.

The efficiency and equity gains of shifting taxation from one base to another also depend on the relative level and ease of tax evasion and avoidance of different tax bases. Capital taxes are the easiest to avoid given the high mobility of their tax base, while property taxes seem the most difficult to evade. More generally, the extent and growth of the shadow economy is explained by the 'increasing burden of taxation and social security payments, combined with rising state regulatory activities and labour market restrictions (e.g. forced reductions of working hours)' (Schneider and Enste (2000)) and by high levels of inequality (Salverda, ed. (2011)).

As shown in Tables 2 and 3, certain Southern and New Member States recently introduced additional measures to address the issues of tax evasion. The employment and social benefits of reducing tax evasion in countries where levels of tax evasion are high could be considerable, especially compared to tax shifts and this without the trade-offs in gains of equity and efficiency implied by tax shifts (see Table 10).

6. Conclusions

This chapter has explored the effects of tax shifts from the point of view of two targets of Europe 2020: increase in the employment rate and reduction of poverty and social exclusion.

The effect of labour taxes on employment depends on a host of country-specific factors. Labour-market institutions (wage bargaining, union density, minimum wages, etc.), the labour demand elasticity and the characteristics of the unemployment benefit system all influence the impact of taxes on labour market performance.

Empirical evidence shows that a high level of labour taxation (as well as its design) hampers the labour supply of several groups of workers at the margin of the labour market. Benefits play a crucial role here, as the structure and design of tax and benefit systems can create disincentives to work for these specific groups. These include low-income workers, single parents, second-income earners and, by extension (through pensions), older workers. There is a clear overlap between young workers and some of these groups.

As a result, a shift of taxation away from labour to other tax bases might be an effective instrument to push up the employment rate (of specific groups of workers) towards the Europe 2020 goal.

The employment effects of a tax shift from employers' social security contributions to value added taxes were analysed through simulations with the Labour Market Model of DG Employment. These show that tax

shifts targeted to the most vulnerable groups may give stronger employment gains than horizontal tax reductions. To the extent that these groups have lower productivity and wage levels, the tax reduction translates into a relatively strong positive incentive both from the demand side (lowering labour cost) and the supply side (raising net wages).

On the other hand, it is mainly low-skilled, low-productivity employment that is produced in this way. The outcome of the tax shift depends very much on the skills composition of the workforce and the inactive (those outside that can be drawn into employment). As the different target groups' characteristics in terms of relative size, age and skill composition vary greatly across Member States, so do the simulation results.

One must be aware that although individual productivity might be strengthened through policy measures tailored to lower skilled target groups, overall productivity may well decline. If being low-skilled becomes more attractive after such measures, more people than before will decide not to invest in higher skills but to remain in the low-skilled section. The economy might end up with an unintended skills distribution effect. Another side-effect is the impact on the (real) income distribution: targeting a certain circle of people means excluding other groups. Those not targeted – who might be at risk of labour market exclusion themselves – will not take profit in the measure lowering labour taxes but will have to pay for it anyway through higher VAT.

However, our analysis also shows that distributional concerns urge policy makers to take a cautious approach, to avoid hampering the poverty reduction goal of Europe 2020. For a starter, the fulfilment of the Europe 2020 employment rate target does not, in itself, imply necessarily a positive effect in terms of achieving the poverty and social exclusion reduction target, as seen in the high share of working poor, specifically among the low skilled.

It is also crucial to consider which taxes are augmented and in which way. VAT, green taxes and property taxes are seen as the most obvious candidates to shift taxes to, in view of their less detrimental growth impact (compared to labour taxation). However, increasing those taxes can have unfavourable distributional effects:

- a revenue-neutral shift from labour to consumption taxation has undesirable social effects for the non-working poor (unemployed, retired);
- a revenue-raising shift towards consumption taxation generates undesirable social effects;
- a uniform VAT rate disproportionately penalises poorer households.

Indeed, consumption expenditures represent a larger share of poorer households' income. As a consequence, payments of VAT are a heavier burden for households at the bottom of the income distribution. A tax shift from labour to consumption would adversely affect poorer households, as specific groups of income-poor (retired, unemployed) would not benefit from lower labour taxes. Poorer households are partially shielded from the regressive effect of VAT by the application of reduced VAT rates and exemptions to specific goods, as they spend a larger share of their income for these goods. However, the negative distributional effects of VAT can be compensated by additional income support measures for low-income groups.

Nonetheless, the regressive effect of VAT varies by country and is linked to the dissimilarity in saving rates between richer and poorer households. Therefore, increases in VAT rates are expected to have more socially undesirable effects in those countries where different income deciles have very different saving rates and where the VAT structure is already more regressive.

In an open-economy perspective, the shift from labour taxation to consumption taxes can be seen as having a similar effect to a devaluation, which could be important within a currency regime such as the euro area. Imported goods become more expensive, due to higher consumption taxes, while the lower labour costs create room for lower export prices. However, as in the case of a conventional currency devaluation, its effects can be short-lived, especially in cases of automatic wage indexation.

A shift of labour costs towards green taxes provides incentives to develop environment-friendly goods and create employment in green occupations and sectors, consistent with the Europe 2020 initiative on 'a resource-efficient Europe'. Green taxes are often found to be regressive, as they may be applied on necessity goods and are generally designed as excise duties. However, the primary aim of green taxes is to provide "green" incentives more than to redistribute income. Moreover, the regressivity of green taxes depends on the consumption elasticity of different income groups, substitution possibilities and the complementary with other goods.

Green taxes may also raise efficiency concerns. Excise duties are not optimal as they tax intermediate goods and, consequently, generate distortions.

Notwithstanding these distributional and efficiency concerns, green taxation mechanisms should be designed having in mind a correct application of the polluter pay principle (internalization of externalities) and the user pay principle (financing of construction and maintenance). Possible adverse redistributive effects can be limited by the introduction of properly designed energy tax exemptions and by other alternative measures (ETS, shift from 'ownership' to 'actual use' taxes and charges).

Although widely discussed, the current design of property taxes in several Member States is not a proper tool to redistribute income. The empirical evidence is consistent with the fact that property taxes are generally local taxes used to finance local services. The limited redistributive effect of property taxes depends on the design of the tax rates, the calculation of the tax base (cadastral versus market values) and the distribution of homeownership. Indeed, for poorer households (in particular, the retired), homeownership has traditionally represented an important source of (in-kind) income, although recent data point to a changing pattern.

From an efficiency point of view, housing investment for homeownership is tax-favoured in most European countries. Proposals of property tax reforms include taxing housing as consumption, as imputed income and/or as an asset. Taxing housing as consumption yields more progressive results with respect to the current regressive system in the United Kingdom, if the possibility for low-income households to deduct this tax is preserved. For Member States in which current forms of property taxation are more progressive, a housing service tax is expected to have worse social effects. A

tax on imputed rent may have favourable or unfavourable social effects, depending on how it is designed. The advantage of taxing imputed rent under taxable income is that it allows for consideration of the wider economic situation of individuals (income and in-kind returns from capital). The distributional effects of taxing housing as an asset (capital gains, net wealth tax) are not analysed in the chapter as they are related to the distribution of wealth rather than to the distribution of income (that is the focus of this chapter).

The chapter underlines that simple shifts of taxation away from labour to respectively, VAT, green taxes and most property taxes may not necessarily achieve employment and social targets at the same time. However, appropriate designs of reforms and accompanying measures might increase the social desirability of such shifts:

- increasing standard VAT rates has less socially detrimental effects than curtailing VAT reduced rates and exemptions;
- increasing targeted income support measures and benefits is necessary in order to compensate the loss poor would suffer with a uniform VAT rate;
- increasing taxes on transport and vehicles affects the poor less than increasing taxes on heating and electricity, however transport taxes can have negative employment and social effects on low-income commuter workers;
- updating outdated cadastral values would make property taxation socially fairer and more efficient;
- taxing imputed rent while introducing a lump-sum tax credit would have beneficial social and employment effects.

The first point is explained by the fact that reduced VAT rates and exemptions mostly affect poorer households. The additional measures designed to compensate for increases in VAT should be targeted to the groups that would not benefit from a parallel reduction in labour taxes (unemployed, retired). However, this could have negative effects on the labour supply.

For green taxes, the distributional effects depend on which products are taxed, as green taxes on electricity and heating have a more detrimental effect on the poor than taxes on transport and vehicles, because the latter are linked to car ownership.

As for property, some Member States already have some form of imputed rent taxation. However, even in these countries imputed rent is often based on outdated cadastral values or only a small fraction is subject to personal income taxation or it benefits from large exemptions. Replacing outdated cadastral values with market values would grant existing forms of property taxation a greater redistributive power while at the same time improving the efficiency of the tax system. The inclusion of imputed rent in the personal income tax base accompanied by a lump-sum tax credit, holding tax revenues constant, would achieve both employment and social goals. In fact, such a tax reform results in a lower tax burden on labour and lower inequality.

The taxation of homeownership encounters strong opposition from voters. As a consequence, reforms to the favourable tax treatment of housing are often difficult to implement. Moreover, income-poor house-rich households may have difficulties in paying property taxes, as their housing is illiquid. A feasible solution to the latter problem is the possibility to accumulate a property tax liability and pay it back once the house is sold or inherited, as has already been experimented with in Denmark for pensioners.

A general concern regarding the impact of tax shifts away from labour is timing. The negative impact of any VAT or property tax increases will be felt immediately, while it may take time for the positive employment effects of lower labour taxation to materialise. Moreover, these positive effects are likely to be even slower to materialise in a period of recession or very low growth (as now).

The simultaneous achievement of employment and poverty goals of Europe 2020 could also be pursued through alternative tax reforms, such as the simplification of the tax system and the fight of tax evasion. In particular:

- limiting tax expenditures such as mortgage interest tax reliefs would allow to lower the tax burden on labour and reduce inequality;
- fighting tax evasion would allow the tax burden on labour, productive inefficiency and inequality to be reduced.

A logical avenue for tax simplification would be the reform of tax expenditures. Such reforms, whether standalone or accompanying tax shifts, could have beneficial efficiency and equity effects. In terms of efficiency, they would reduce the overall complexity of the tax system, with likely favourable effects on compliance and, as a result, higher tax receipts. As tax expenditures shift the tax burden elsewhere, a reduction of tax expenditures would create room to lower tax rates, specifically on labour.

Tax expenditures weaken the overall progressivity of taxation and may have, as a result, unfavourable distributional effects. There are certainly cases where direct benefits for low-income earners are simpler and fairer ways to achieve certain social objectives. In case of the most important form of tax expenditure, mortgage interest tax relief, a host of country-specific factors all influence its social impact.

The reduction of tax evasion, specifically for the Member States in which it represents a considerable issue, is also optimal from an employment and social point of view. It increases the tax burden on those who do comply. It distorts fair competition among firms and tends to inhibit the creation of regular employment with full social protection. It also causes productive inefficiencies, as informal businesses limit their growth potential by steering clear of formal agencies such as banks and business services.

Tax evasion and social aspects are closely connected. Higher levels of inequality are associated with a higher probability of tax evasion. Moreover, tax evasion increases income inequality with respect to a situation of full-tax compliance. The efficiency and equity gains of shifting taxation from one base to another also depend on the relative level and ease of tax evasion and avoidance on different tax bases (e.g. labour versus consumption).

Beyond the Europe 2020 primary focus on income and work, other tax options such as on financial transactions, capital gains and wealth could prove to be fair while at the same time efficient in reducing macroeconomic instability.

ANNEXES

Additional tables on developments in taxation

Table A1: Composition of labour taxes at Member State level (in %)

	SSCR	SSCR	SSCR	SSCR	SSCE	SSCE	SSCE	SSCE	PITC	PITC	PITC	PITC
	1995	2007	2009	2010	1995	2007	2009	2010	1995	2007	2009	2010
BE	35.3	35.8	36.5	36.1	18.3	18.3	18.4	18.1	38.0	38.2	37.1	37.7
BG	70.0	53.4	47.5	50.1	0.0	20.5	26.8	22.1	29.3	25.1	24.9	26.8
CZ	54.1	53.6	54.9	55.1	20.2	18.8	17.6	17.5	20.8	20.6	19.9	19.5
DK	0.0	0.1	0.0	0.2	3.9	3.9	3.6	3.9	71.8	75.1	71.1	72.9
DE	31.2	31.3	30.8	31.7	28.1	29.3	28.8	29.5	29.3	26.9	28.2	27.7
EE	59.1	63.7	66.5	66.2	0.0	1.1	2.9	4.4	39.7	33.0	27.2	26.2
IE	21.2	28.4	28.1	27.2	13.8	15.8	19.8	21.2	63.8	55.2	51.5	51.1
EL	40.5	40.2	39.0	40.7	36.6	32.9	31.4	32.9	16.4	19.0	20.4	17.7
ES	50.8	52.9	52.5	51.7	11.7	11.6	11.8	11.6	31.2	31.9	31.1	32.1
FR	50.1	48.9	48.8	49.1	25.6	18.0	17.6	17.6	15.3	24.9	24.8	24.3
IT	46.0	42.5	42.6	41.9	13.3	11.0	11.3	11.1	29.2	27.4	27.5	28.2
CY	43.1	47.3	47.9	48.0	18.4	19.1	19.4	19.4	34.2	24.6	24.0	24.1
LV	67.5	43.0	44.5	42.4	1.8	16.1	16.6	15.8	30.7	40.4	36.8	38.7
LT	53.5	52.4	57.4	57.2	1.7	5.6	17.2	17.4	44.5	40.0	23.2	23.4
LU	29.7	28.7	29.4	29.1	25.7	30.5	31.1	30.8	34.7	32.2	31.0	31.8
HU	58.2	48.7	46.4	42.7	11.2	16.6	16.1	19.9	26.2	29.5	31.4	30.3
MT	31.1	25.5	25.7	25.4	25.8	25.5	25.7	25.4	36.2	40.0	39.4	39.6
NL	9.1	22.9	23.4	23.2	46.2	30.7	27.8	28.3	25.5	34.4	36.8	36.5
AT	31.0	28.8	28.8	28.7	26.6	24.9	25.0	24.9	22.7	25.2	24.2	24.4
PL	34.5	37.0	38.1	41.0	27.5	36.7	34.7	35.4	24.0	18.1	18.5	18.9
PT	34.3	38.4	38.8	40.0	31.1	28.1	28.0	27.3	29.4	26.6	25.9	25.5
RO	64.5	52.5	50.5	50.0	0.0	28.0	27.7	26.3	35.3	18.9	20.4	22.0
SI	36.5	28.3	29.6	29.7	36.9	38.1	39.8	40.0	24.5	24.5	26.5	25.8
SK	62.2	55.8	56.6	56.3	18.5	24.6	24.7	25.9	19.1	19.6	18.7	17.8
FI	39.1	39.8	40.0	39.5	10.5	10.3	10.2	11.6	37.2	39.3	39.1	38.4
SE	34.9	33.4	28.7	31.2	5.4	0.0	0.0	0.0	39.2	41.3	40.7	40.8
UK	23.9	26.4	26.9	26.9	18.4	17.9	18.4	18.4	56.5	54.4	53.4	51.7

Source: European Commission (2012b) and own calculations.

Table A2: Changes in composition of labour taxes at Member State level (in pps.)

	SSCR	SSCR	SSCR	SSCE	SSCE	SSCE	PITC	PITC	PITC
	95 to 07	07 to 09	09 to 10	95 to 07	07 to 09	09 to 10	95 to 07	07 to 09	09 to 10
BE	0.5	0.7	-0.4	-0.1	0.1	-0.3	0.2	-1.1	0.6
BG	-16.5	-6.0	2.6	20.5	6.2	-4.6	-4.2	-0.2	1.9
CZ	-0.5	1.3	0.2	-1.4	-1.2	-0.1	-0.2	-0.7	-0.4
DK	0.1	0.0	0.2	0.0	-0.3	0.3	3.3	-4.1	1.8
DE	0.1	-0.5	1.0	1.2	-0.5	0.7	-2.4	1.3	-0.5
EE	4.6	2.8	-0.3	1.1	1.8	1.5	-6.7	-5.8	-1.0
IE	7.2	-0.3	-1.0	2.0	4.0	1.5	-8.6	-3.7	-0.5
EL	-0.3	-1.2	1.7	-3.7	-1.5	1.5	2.6	1.3	-2.6
ES	2.2	-0.4	-0.9	-0.2	0.3	-0.2	0.7	-0.8	1.0
FR	-1.3	0.0	0.2	-7.6	-0.4	0.0	9.6	-0.1	-0.5
IT	-3.5	0.1	-0.7	-2.3	0.3	-0.2	-1.8	0.1	0.7
CY	4.1	0.6	0.1	0.7	0.3	0.0	-9.7	-0.6	0.1
LV	-24.5	1.5	-2.1	14.2	0.6	-0.8	9.8	-3.6	1.9
LT	-1.1	5.0	-0.2	3.9	11.6	0.2	-4.5	-16.8	0.2
LU	-1.0	0.7	-0.3	4.8	0.7	-0.3	-2.5	-1.2	0.8
HU	-9.6	-2.3	-3.7	5.5	-0.6	3.8	3.3	2.0	-1.1
MT	-5.6	0.2	-0.3	-0.3	0.2	-0.3	3.9	-0.7	0.2
NL	13.9	0.5	-0.2	-15.5	-2.9	0.5	8.9	2.5	-0.3
AT	-2.1	-0.1	-0.1	-1.8	0.1	-0.1	2.5	-1.0	0.2
PL	2.4	1.2	2.8	9.2	-2.1	0.7	-5.9	0.4	0.4
PT	4.1	0.4	1.2	-2.9	-0.1	-0.7	-2.8	-0.8	-0.4
RO	-12.0	-2.0	-0.5	28.0	-0.3	-1.4	-16.4	1.5	1.5
SI	-8.2	1.3	0.2	1.2	1.7	0.2	0.0	2.0	-0.7
SK	-6.3	0.7	-0.3	6.1	0.1	1.2	0.4	-0.8	-0.9
FI	0.7	0.1	-0.5	-0.2	-0.1	1.4	2.1	-0.2	-0.7
SE	-1.5	-4.7	2.5	-5.4	0.0	0.0	2.1	-0.6	0.2
UK	2.5	0.6	0.0	-0.5	0.5	0.0	-2.1	-1.0	-1.7

Source: European Commission (2012b) and own calculations.

Additional information on studies used for VAT (Section 3.1)

O'Donoghue et al. (2004)

Expenditure imputations are based on 1995 Household Budget Survey (HBS) data for France, Greece, Ireland, Luxemburg, Portugal; on 1995 HBS for Italy, Netherlands, United Kingdom; 1994-96 HBS for Finland; 1995-96 HBS for Belgium; 1990 HBS for Spain. Tax rules refer to 1998 for all countries, apart for Luxembourg and Portugal for which 1995 tax rules were used.

In order to simulate indirect taxes, first total expenditure is simulated and then the budget shares for specific groups.

Total expenditure is estimated as a function of disposable income and a set of socio-demographic characteristics (marital status, gender, occupation, employment status, age, region, education, tenure, family composition, number of earners), based on national household budget surveys. The estimated coefficients are used to impute total consumption in the input data of the tax microsimulation model (EUROMOD).

Consumption of particular goods is estimated as budget shares of total consumption based on income and socio-demographic characteristics (as above). The consumption function is estimated separately for car owners and non-car owners. Goods are grouped into 17 Eurostat expenditure definitions (Classification of Individual Consumption by Purpose – COICOP).

VAT payments are calculated as follows:

$$\text{VAT payments} = P * VAT/(1+VAT)$$

where P are post-tax prices and VAT the corresponding VAT rate for each COICOP category.

Saving rates are estimated as the difference between income and estimated expenditures, divided by income.

VAT payments simulated by EUROMOD correspond to 70% to 85% of VAT revenues as reported in official statistics in Finland, France, Greece, Italy, Luxembourg, Portugal, Spain and the United Kingdom, between 60% and 70% in the Netherlands and Sweden, and between 50% and 60% in Belgium and Ireland.

Decoster et al. (2010)

Decoster et al. (2010) is based on 2003 Household Budget Survey and 2004 EU-SILC for Belgium, 2005 Household Budget Survey for Greece, 2005 Household Budget Survey and 2005 EU-SILC for Hungary, 1999 Household Budget Survey and 2000 Living in Ireland for Ireland, 2003/2004 Family Expenditure Survey and 2003/2004 Family Resource Survey for the United Kingdom.

Given the quasi absence of micro-simulation models that combine direct and indirect taxation, Decoster et al. (2010) start by using the input data (EU-SILC and FRS) of the European (direct) tax and benefits micro-simulation model Euromod. However, Euromod input data do not include information on household expenditures. Expenditures per aggregate category are estimated using income and socio-demographic variables common to both the expenditure surveys (HBS and FES) and Euromod input data. Furthermore, they calculate the indirect tax liabilities. The selection of countries is constrained by data availability.

The C-efficiency factors provided in Decoster et al. (2010) are the total VAT received relative to the total VAT that could be raised by applying the standard VAT rate uniformly under constant quantities and producer prices, expressed as a percentage. The C-efficiency factors calculated in Decoster et al. (2010) can differ from official estimates as Decoster et al. (2010) assume no fiscal evasion, with their model only accounting for household expenditures and not official national aggregates.

Decoster et al. (2010) simulate the distributional effects due to a tax shift from social security contributions to VAT. The decrease in the social insurance contributions of the employee by 25% corresponds to an increase in the standard VAT rate of 4 to 5 percentage points in Belgium, Ireland and the United Kingdom and up to 9 percentage points for Hungary.

The assumptions made for the simulation are that the rise in disposable income falls entirely on (non-durable) expenditures, while savings and durable expenditures are kept constant. The simulation is a static micro-simulation and does not consider changes in labour market behaviour.

Crawford et al. (2010)

Crawford et al. (2010) simulate the distributional effect of the application of the standard VAT rate to all commodities except housing and items currently exempt from VAT. This reform entails the application of the standard VAT rate to zero-rated goods, such as food in the United Kingdom. The standard VAT rate considered is the one put in place in the United Kingdom in 2004 (17.5%).

The simulation of the distributional effects of the VAT reform is accompanied by compensating measures. These measures consist of:

- 15% increase in all income support;
- 15% increase in income-based jobseeker's allowance;
- 15% increase in tax credit rates;
- 15% increase in associated housing benefit and council tax benefit thresholds.

The distributional effects of the reform packages are assessed as absolute (£) tax losses and relative (in% of disposable income) tax losses. The first measure departs from the concept of progressivity and corresponds to absolute greater losses for richer households. The second measures correspond to a larger relative (to disposable income) loss for poorer households.

The tax reform is simulated in a revenue-raising set-up (£11 billion) for the United Kingdom. The simulation of the reform package is static and does not take into account potential impacts on the labour supply.

Econpubblica estimations of the impact of reforms

Table A3: Estimation results for the effects of tax reforms on the unemployment rate

Dependent variable ->	urate	urate	urate	urate	urate	urate	urate	urate	urate	urate
	1	2	3	4	5	6	7	8	9	10
urate t-1	0.852	0.848	0.856	0.859	0.859	0.811	0.814	0.814	0.812	0.81
	(20.12)**	(20.96)**	(20.94)**	(19.86)**	(20.63)**	(13.58)**	(14.22)**	(13.40)**	(13.08)**	(13.03)**
dreform_ssceyer	-0.001					0.001				
	(0.48)					(0.24)				
L	-0.001					0.000				
	(1.07)					(0.11)				
L2	-0.004					-0.002				
	(3.18)**					(1.14)				
dreform_ssceyee		-0.003					-0.002			
		(1.71)					(1.15)			
L.		-0.001					-0.001			
		(0.75)					(0.65)			
L2		-0.004					-0.002			
		(3.01)**					(1.27)			
dreform_ssc			-0.001		-0.001			0.000		0.000
			(0.65)		(0.76)			(0.06)		(0.01)
L			-0.001		-0.001			0.000		-0.001
			(0.96)		(1.11)			(0.20)		(0.40)
L2			-0.003		-0.003			-0.002		-0.001
			(3.57)**		(3.35)**			(1.31)		(1.02)
dreform_tax				0.000	0.000				-0.001	-0.001
				(0.36)	(0.36)				(0.41)	(0.57)
L.				0.001	0.001				0.003	0.002
				(1.05)	(1.17)				(1.84)	(1.84)
L2				-0.003	-0.002				-0.001	-0.001
				(1.90)	(1.70)				(0.84)	(0.76)
age						-0.002	-0.002	-0.002	-0.002	-0.002
						(1.31)	(1.37)	(1.29)	(1.38)	(1.35)
sex						0.039	0.064	0.048	0.046	0.068
						(0.27)	(0.41)	(0.33)	(0.33)	(0.48)
highedrate						-0.066	-0.060	-0.063	-0.070	-0.065
						(2.20)*	(1.84)	(2.15)*	(2.19)*	(2.41)*
tenurerate						0.122	0.120	0.121	0.121	0.116
						(1.95)	(2.00)*	(1.94)	(1.92)	(1.87)
immrate						-0.017	-0.022	-0.018	-0.027	-0.030
						(0.40)	(0.54)	(0.42)	(0.63)	(0.73)
GDP						0.000	0.000	0.000	0.000	0.000
						(1.38)	(1.08)	(1.30)	(1.43)	(1.27)
Public						0.001	0.001	0.001	0.001	0.001
						(2.19)*	(1.81)	(2.09)*	(1.99)*	(1.78)
industry						0.000	0.000	0.000	0.000	0.000
						(2.77)**	(2.80)**	(2.75)**	(2.53)*	(2.53)*
Constant	0.017	0.014	0.015	-0.014	0.010	-0.032	-0.028	-0.035	-0.036	-0.036
	(0.24)	(0.17)	(0.21)	(0.18)	(0.14)	(0.49)	(0.39)	(0.49)	(0.48)	(0.47)
Observations	336	336	336	336	336	247	247	247	247	247

Source: Econpubblica (2011)

Notes: Robust z-statistics in parentheses; * significant at 5% level; ** significant at 1% level;

Explanatory Variable Description:

dreform_tax =1 if a tax-reduction reform has been introduced in country j and year t;
dreform_ssceyer =1 if a SSC-employer reduction reform has been introduced in country j and year t;
dreform_ssceyee =1 if a SSC-employee reduction reform has been introduced in country j and year t;
dreform_ssc =1 if a SSC (employer+employee) reduction reform has been introduced in country j and year t;

age: average age in country j and year t; highedrate: proportion of people with high education in country j and year t;

highedrate: proportion of people with high education in country j and year t;

tenurerate: proportion of employed with a permanent position, in country j and year t;

immrate: proportion of immigrants, in country j and year t;

GDP: real Gross Domestic Product per capita, in country j at year t, Euro per inhabitant, 2002 prices;

Public: total general Government expenditure as a percentage of GDP, in country j at year t;

industry: measures real production output (including manufacturing, mining, and utilities) as a percentage of real GDP.

Table A4: Estimation results for the effects of tax reforms on the employment rate

Dependent variable ->	erate	erate	erate	erate	erate	erate	erate	erate	erate	erate
	1	2	3	4	5	6	7	8	9	10
erate t-1	0.869	0.866	0.867	0.873	0.866	0.751	0.722	0.74	0.746	0.741
	(24.87)**	(24.24)**	(24.44)**	(24.16)**	(24.99)**	(10.48)**	(9.57)**	(9.94)**	(10.27)**	(10.14)**
dreform_ssceyer	0					-0.001				
	(0.28)					(0.49)				
L	-0.001					-0.002				
	(0.51)					(0.77)				
L2	0.004					0.003				
	(3.11)**					(1.53)				
dreform_ssceyee		0.003					0.001			
		(1.62)					(0.65)			
L.		0.002					0.001			
		(1.02)					(0.59)			
L2		0.001					-0.001			
		(0.61)					(0.34)			
dreform_ssc			0.001		0.002			0.000		0.000
			(0.84)		(1.14)			(0.15)		(0.39)
L			0.000		0.000			-0.001		0.000
			(0.04)		(0.18)			(0.33)		(0.24)
L2			0.003		0.002			0.002		0.001
			(2.75)**		(2.03)*			(1.31)		(0.83)
dreform_tax				-0.002	-0.002				-0.001	-0.001
				(1.34)	(1.39)				(0.95)	(0.72)
L.				-0.002	-0.002				-0.003	-0.003
				(1.12)	(1.10)				(2.18)*	(1.99)*
L2				0.003	0.002				0.003	0.003
				(1.75)	(1.74)				(1.88)	(1.93)
age						-0.001	-0.001	-0.001	-0.001	-0.001
						(0.58)	(0.59)	(0.48)	(0.61)	(0.73)
sex						-0.128	-0.117	-0.14	-0.114	-0.156
						(0.91)	(0.79)	(1.00)	(0.72)	(1.07)
highedrate						0.052	0.049	0.050	0.065	0.060
						(2.13)*	(1.99)*	(1.95)	(2.74)**	(2.41)*
tenurerate						0.022	0.028	0.021	-0.011	0.013
						(0.39)	(0.51)	(0.36)	(0.21)	(0.23)
immrate						-0.026	-0.010	-0.017	0.008	-0.011
						(0.69)	(0.26)	(0.44)	(0.18)	(0.30)
GDP						0.000	0.000	0.000	0.000	0.000
						(3.68)**	(2.44)*	(3.35)**	(3.05)**	(3.11)**
Public						0.000	-0.001	0.000	-0.001	0.000
						(1.11)	(1.25)	(1.23)	(1.31)	(1.05)
industry						0.000	0.000	0.000	0.000	0.000
						(3.26)**	(3.08)**	(3.17)**	(2.83)**	(2.91)**
Constant	0.213	0.204	0.214	0.208	0.205	0.234	0.25	0.245	0.262	0.266
	(2.73)**	(2.66)**	(2.67)**	(2.73)**	(2.67)**	(2.63)**	(2.56)*	(2.78)**	(2.72)**	(2.84)**
Observations	336	336	336	336	336	247	247	247	247	247

Source: Econpubblica (2011)

Notes: Robust z-statistics in parentheses; * significant at 5% level; ** significant at 1% level;

Explanatory Variable Description:

dreform_tax =1 if a tax-reduction reform has been introduced in country j and year t;
dreform_ssceyer =1 if a SSC-employer reduction reform has been introduced in country j and year t;
dreform_sceyee =1 if a SSC-employee reduction reform has been introduced in country j and year t;
dreform_ssc =1 if a SSC (employer+employee) reduction reform has been introduced in country j and year t;

age: average age in country j and year t;

highedrate: proportion of people with high education in country j and year t;

tenurerate: proportion of employed with a permanent position, in country j and year t;

immrate: proportion of immigrants, in country j and year t;

GDP: real Gross Domestic Product per capita, in country j at year t, Euro per inhabitant, 2002 prices;

Public: total general Government expenditure as a percentage of GDP, in country j at year t;

industry: measures real production output (including manufacturing, mining, and utilities) as a percentage of real GDP.

Table A5: Estimation results for the impact of PIT reforms on female labour market outcomes

	urate	urate	erate	erate	inrate	inrate	HOURS	HOURS
dep t-1	0.811	0.768	0.762	0.600	0.808	0.678	0.785	0.644
	(19.38)**	(13.16)**	(10.23)**	(6.30)**	(15.78)**	(7.59)**	(12.79)**	(7.75)**
dwomen_tax	-0.007	-0.002	0.010	0.007	-0.008	-0.004	0.089	-0.140
	(1.82)	(0.66)	(1.19)	(0.76)	(1.17)	(0.56)	(0.48)	(0.88)
L.	-0.004	-0.001	0.014	0.010	-0.016	-0.010	0.352	0.184
	(0.93)	(0.23)	(2.38)*	(2.62)**	(3.23)**	(2.29)*	(1.97)*	(0.92)
L2.	-0.007	-0.007	0.008	0.012	-0.012	-0.009	-0.125	-0.296
	(0.67)	(0.72)	(1.18)	(1.47)	(2.34)*	(1.95)	(0.45)	(0.98)
age		-0.002		0.000		0.002		0.068
		(1.23)		(0.16)		(0.68)		(1.02)
highedrate		-0.100		0.140		-0.091		-1.146
		(2.91)**		(2.83)**		(1.72)		(1.01)
immrate		-0.022		0.017		0.023		-2.189
		(0.46)		(0.33)		(0.54)		(1.18)
tenurerate		0.078		-0.016		-0.017		3.152
		(1.35)		(0.23)		(0.32)		(2.01)*
GDP		0.000		0.000		0.000		0.000
		(3.08)**		(1.72)		(0.54)		(1.40)
Public		0.001		-0.001		0.000		0.046
		(2.62)**		(1.25)		(0.09)		(3.26)**
industry		0.000		0.000		0.000		0.004
		(1.91)		(1.78)		(0.11)		(0.73)
Constant	0.005	0.008	0.151	0.219	0.065	0.071	7.221	4.664
	(1.19)	(0.10)	(3.24)**	(1.74)	(3.15)**	(0.59)	(3.36)**	(2.17)*
Observations	336	248	336	248	336	248	333	245

Source: Econpubblica (2011)

Notes: Robust z-statistics in parentheses; * significant at 5 % level; ** significant at 1 % level;

Explanatory variable description:

dep t-1: lagged dependent variable;

dwomen_tax =1 if tax-reduction specifically targeting female employment has been introduced in country j and year t;

age: average age in country j and year t;

highedrate: proportion of people with high education in country j and year t;

tenurerate: proportion of employed with a permanent position, in country j and year t;

immrate: proportion of immigrants, in country j and year t;

GDP: real Gross Domestic Product per capita, in country j at year t, Euro per inhabitant, 2002 prices;

Public: total general Government expenditure as a percentage of GDP, in country j at year t;

industry: measures real production output (including manufacturing, mining, and utilities) as a percentage of real GDP.

Simulation results of tax shifts with the Labour Market Model

Table A6: Effects for France of lowering employers' social security contributions (by 0.1 % of GDP) in different scenarios

Long-term (steady state) impact on selected variables (change in % of initial values)						
	Scenario					
	ALL	LOW-SKILL	YOUNG	OLDER	YOUNG / OLDER	INC<60
GDP	0.02 %	-0.02 %	-0.03 %	0.06 %	0.04 %	0.00 %
Investment	0.02 %	-0.07 %	-0.10 %	0.07 %	0.03 %	-0.03 %
Consumption	0.04 %	0.01 %	0.04 %	0.06 %	0.06 %	0.03 %
Average nr. of hours worked per worker	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
- low-skilled	0.01 %	0.04 %	0.01 %	0.00 %	0.00 %	0.01 %
- medium-skilled	0.00 %	-0.01 %	0.01 %	0.00 %	0.00 %	0.00 %
- high-skilled	0.01 %	0.00 %	0.01 %	0.00 %	0.00 %	0.00 %
- age 15-24	0.01 %	0.01 %	0.48 %	-0.01 %	0.10 %	0.06 %
- age 25-39	0.01 %	0.00 %	-0.02 %	-0.01 %	-0.01 %	0.01 %
- age 40-54	0.01 %	0.00 %	-0.02 %	-0.01 %	-0.01 %	0.00 %
- age 55-69	0.01 %	0.00 %	-0.01 %	0.07 %	0.05 %	0.00 %
Employment (no. of workers)	0.02 %	0.04 %	0.13 %	0.04 %	0.06 %	0.04 %
- low-skilled	0.04 %	0.39 %	0.36 %	0.04 %	0.11 %	0.14 %
- medium-skilled	0.02 %	-0.09 %	0.17 %	0.03 %	0.06 %	0.05 %
- high-skilled	0.01 %	-0.08 %	-0.15 %	0.04 %	0.00 %	-0.05 %
- age 15-24	0.05 %	0.20 %	2.02 %	-0.05 %	0.41 %	0.31 %
- age 25-39	0.03 %	0.03 %	-0.07 %	-0.02 %	-0.03 %	0.04 %
- age 40-54	0.02 %	0.02 %	-0.05 %	-0.02 %	-0.02 %	0.00 %
- age 55-69	0.03 %	0.03 %	-0.13 %	0.40 %	0.29 %	-0.02 %
Gross wage rate per hour	0.17 %	0.15 %	0.11 %	0.18 %	0.16 %	0.15 %
- low-skilled	0.16 %	0.57 %	0.18 %	0.13 %	0.14 %	0.24 %
- medium-skilled	0.16 %	0.07 %	0.06 %	0.17 %	0.14 %	0.14 %
- high-skilled	0.18 %	0.08 %	0.24 %	0.22 %	0.22 %	0.15 %
- age 15-24	0.18 %	0.31 %	3.49 %	0.02 %	0.77 %	0.56 %
- age 25-39	0.17 %	0.16 %	-0.03 %	0.01 %	0.00 %	0.21 %
- age 40-54	0.16 %	0.15 %	-0.04 %	0.02 %	0.01 %	0.10 %
- age 55-69	0.17 %	0.11 %	0.03 %	0.90 %	0.70 %	0.09 %
Labour costs per hour	-0.02 %	-0.05 %	-0.14 %	0.01 %	-0.02 %	-0.05 %
- low-skilled	-0.03 %	-0.42 %	-0.37 %	0.01 %	-0.07 %	-0.15 %
- medium-skilled	-0.02 %	0.07 %	-0.29 %	0.02 %	-0.05 %	-0.10 %
- high-skilled	0.00 %	0.08 %	0.24 %	-0.01 %	0.05 %	0.10 %
- age 15-24	-0.02 %	-0.16 %	-0.62 %	0.02 %	-0.12 %	-0.16 %
- age 25-39	-0.02 %	-0.04 %	-0.03 %	0.01 %	0.00 %	-0.04 %
- age 40-54	-0.01 %	-0.04 %	-0.03 %	0.02 %	0.01 %	-0.02 %
- age 55-69	-0.01 %	-0.02 %	0.03 %	-0.13 %	-0.09 %	0.00 %
Labour Productivity	0.00 %	-0.03 %	-0.08 %	0.01 %	-0.01 %	-0.03 %
- low-skilled	-0.01 %	-0.34 %	-0.22 %	0.01 %	-0.04 %	-0.10 %
- medium-skilled	-0.01 %	0.07 %	-0.23 %	0.02 %	-0.03 %	-0.08 %
- high-skilled	0.01 %	0.08 %	0.26 %	0.00 %	0.05 %	0.11 %
- age 15-24	-0.01 %	-0.12 %	-0.21 %	0.01 %	-0.04 %	-0.09 %
- age 25-39	0.00 %	-0.03 %	-0.07 %	0.01 %	-0.01 %	-0.03 %
- age 40-54	0.00 %	-0.03 %	-0.08 %	0.01 %	-0.01 %	-0.03 %
- age 55-69	0.00 %	-0.01 %	-0.03 %	0.01 %	0.00 %	-0.01 %
Increase of value added tax rate in % of previous tax rate	0.63 %	0.82 %	0.83 %	0.56 %	0.61 %	0.71 %

Source: Simulations LMM.

Table A7: Cross-country comparison of the effects of lowering employers' social security contributions (by 0.1 % of GDP) for the low-skilled

Long-term (steady state) impact on selected variables (change in % of initial values)									
	Country								
	DK	DE	IT	PL	UK	ES	FR	SE	SK
GDP	-0.09%	-0.02%	-0.04%	-0.01%	-0.03%	-0.07%	-0.02%	-0.12%	-0.02%
Investment	-0.19%	-0.07%	-0.09%	-0.07%	-0.09%	-0.13%	-0.07%	-0.22%	-0.06%
Consumption	-0.07%	0.00%	-0.02%	0.01%	-0.01%	-0.03%	0.01%	-0.12%	0.01%
Average nr. of hours worked per worker	-0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	-0.01%	0.00%
- low-skilled	0.01%	0.12%	0.01%	0.13%	0.04%	0.01%	0.04%	0.00%	0.40%
- medium-skilled	0.00%	-0.01%	0.00%	-0.01%	0.00%	-0.01%	-0.01%	0.00%	-0.01%
- high-skilled	0.00%	-0.01%	0.00%	0.00%	-0.01%	-0.01%	0.00%	-0.01%	-0.01%
- age 15-24	-0.02%	-0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	-0.02%	0.01%
- age 25-39	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%
- age 40-54	-0.01%	0.00%	0.01%	0.01%	-0.01%	0.00%	0.00%	-0.01%	0.01%
- age 55-69	-0.01%	-0.01%	0.01%	-0.01%	-0.01%	0.00%	0.00%	-0.01%	0.00%
Employment (no. of workers)	0.01%	0.04%	0.01%	0.06%	0.03%	0.02%	0.04%	-0.03%	0.04%
- low-skilled	0.86%	0.90%	0.24%	1.40%	0.50%	0.22%	0.39%	1.09%	2.70%
- medium-skilled	-0.25%	-0.07%	-0.15%	-0.07%	-0.13%	-0.18%	-0.09%	-0.29%	-0.08%
- high-skilled	-0.21%	-0.07%	-0.13%	-0.08%	-0.10%	-0.15%	-0.08%	-0.24%	-0.07%
- age 15-24	0.30%	0.21%	0.09%	0.21%	0.20%	0.17%	0.20%	0.23%	0.15%
- age 25-39	-0.01%	0.03%	0.01%	0.03%	0.01%	0.01%	0.03%	-0.06%	0.01%
- age 40-54	-0.02%	0.02%	-0.01%	0.03%	0.01%	0.00%	0.02%	-0.04%	0.04%
- age 55-69	-0.05%	0.01%	-0.02%	0.14%	0.00%	-0.04%	0.03%	-0.07%	0.04%
Gross wage rate per hour	0.12%	0.13%	0.14%	0.12%	0.13%	0.17%	0.15%	0.13%	0.17%
- low-skilled	0.30%	1.40%	0.28%	1.77%	0.52%	0.33%	0.57%	0.23%	4.29%
- medium-skilled	0.15%	0.06%	0.12%	0.06%	0.10%	0.13%	0.07%	0.18%	0.07%
- high-skilled	0.13%	0.07%	0.12%	0.10%	0.08%	0.14%	0.08%	0.13%	0.10%
- age 15-24	0.20%	0.25%	0.20%	0.25%	0.27%	0.30%	0.31%	0.24%	0.24%
- age 25-39	0.14%	0.14%	0.16%	0.14%	0.14%	0.19%	0.16%	0.16%	0.16%
- age 40-54	0.13%	0.14%	0.14%	0.12%	0.12%	0.17%	0.15%	0.13%	0.20%
- age 55-69	0.12%	0.10%	0.12%	0.04%	0.12%	0.15%	0.11%	0.12%	0.10%
Labour costs per hour	-0.07%	-0.06%	-0.03%	-0.06%	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%
- low-skilled	-0.77%	-1.04%	-0.24%	-1.45%	-0.49%	-0.27%	-0.42%	-0.96%	-3.11%
- medium-skilled	0.15%	0.06%	0.12%	0.06%	0.10%	0.13%	0.07%	0.18%	0.07%
- high-skilled	0.13%	0.07%	0.12%	0.10%	0.08%	0.14%	0.08%	0.13%	0.10%
- age 15-24	-0.30%	-0.18%	-0.11%	-0.19%	-0.19%	-0.18%	-0.16%	-0.24%	-0.13%
- age 25-39	-0.05%	-0.05%	-0.03%	-0.04%	-0.03%	-0.04%	-0.04%	-0.02%	-0.02%
- age 40-54	-0.05%	-0.05%	-0.02%	-0.04%	-0.03%	-0.03%	-0.04%	-0.04%	-0.07%
- age 55-69	-0.01%	-0.02%	0.02%	-0.09%	-0.03%	0.01%	-0.02%	-0.01%	-0.01%
Labour Productivity	-0.04%	-0.04%	-0.02%	-0.04%	-0.04%	-0.03%	-0.03%	-0.03%	-0.03%
- low-skilled	-0.73%	-0.77%	-0.22%	-1.16%	-0.43%	-0.23%	-0.34%	-0.91%	-2.32%
- medium-skilled	0.17%	0.05%	0.11%	0.06%	0.10%	0.13%	0.07%	0.18%	0.06%
- high-skilled	0.14%	0.07%	0.12%	0.09%	0.07%	0.13%	0.08%	0.13%	0.10%
- age 15-24	-0.27%	-0.12%	-0.10%	-0.14%	-0.16%	-0.15%	-0.12%	-0.21%	-0.08%
- age 25-39	-0.02%	-0.03%	-0.03%	-0.04%	-0.02%	-0.03%	-0.03%	-0.01%	-0.01%
- age 40-54	-0.03%	-0.03%	-0.02%	-0.04%	-0.02%	-0.02%	-0.03%	-0.02%	-0.05%
- age 55-69	0.02%	-0.01%	0.03%	-0.02%	-0.03%	0.01%	-0.01%	0.00%	0.02%
Increase of value added tax rate in % of previous tax rate	0.77%	0.93%	1.01%	0.85%	1.07%	1.35%	0.82%	1.13%	1.07%

Source: Simulations LMM.

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Chapter 5

Wage developments in the European Union during a severe economic downturn[1]

1. Introduction

Setting the scene.

In the current severe economic downturn, wage developments are of major concern for policy makers, social partners and the public in general.

There is a general consensus that wage issues matter for the success of the strategy to bring the European economy back to a path of smart, sustainable and inclusive growth.

Much of the current policy debate is focussed on the impact of wages on international competitiveness and aggregate demand, and their potential to contribute to the efforts to reverse rising poverty within the Member States and at the EU level as a whole.

Wage developments affect employment and social cohesion…

This chapter contributes to this debate by assessing wage developments before and during the crisis from a socio-economic perspective, and by highlighting the transmission mechanisms through which they impact the realization of the Europe 2020 targets of reaching a 75 % employment rate among 20-64 year-olds by 2020 and of reducing the number of people in or at risk of poverty and social exclusion by at least 20 million by 2020[2].

Both the demand and supply side of the economy, as well as the differential impact of 'average' national wages and their distribution must be considered when analysing the impact of wages on the Europe 2020 targets related to employment and social cohesion.

… via international cost competitiveness and external aggregate demand…

First, the impact of wages on external aggregate demand via the international cost competitiveness channel will be analysed.

In this analysis the developments in the nominal unit labour cost are the main focus. The nominal unit labour cost is defined as nominal compensation per employee adjusted for productivity in constant prices. Developments in the nominal unit labour cost have an impact on domestic inflationary cost-push pressures which affect international cost competitiveness (if compared with the developments in the nominal unit labour cost of the trading partners – yielding a measure called the 'the real effective exchange rate').

Developments in international cost competitiveness affect net exports which is an important determinant of external aggregate demand and thus also of effective employment.

… the labour income share and domestic aggregate demand…

Second, the impact of wages on domestic aggregate demand will be analysed. In this analysis the developments in the real unit labour cost are the main focus. The real unit labour cost is defined as the nominal unit labour cost deflated by the GDP deflator, which is also an indicator for the labour income share (i.e. the wage share).

Depending on the economic situation an increase in the labour income share (i.e. a decrease in the profit share) may provide stimulus to aggregate domestic demand[3], which is an important determinant of effective employment.

(1) By Eric Meyermans.

(2) More particularly, this chapter provides information on dimensions of the wage developments additional to those considered in the scoreboard of the Macroeconomic Imbalance Procedure (MIP). The policy relevance of these indicators in the context of monitoring the emergence of macroeconomic imbalances is discussed in more detail, for instance, in *European Commission* (2012).

(3) Provided that the marginal propensity to consume disposable household income is higher than the marginal propensity to invest profits.

This analysis also leads into dimensions of social cohesion. First, factor income distribution (measured by the real unit labour cost) is a major determinant of personal income distribution, whereas inflation, which may result from labour cost pressure (measured by the nominal unit labour cost) can have an impact on the purchasing power of non-indexed income, usually of the poor, who do not have the opportunity to diversify their wealth, thereby affecting their relative income situation within the population.

... labour costs and production decisions...

Third, the analysis also takes into consideration that on the supply side firms are willing to hire workers until the cost of producing one more unit of goods or services equals the revenue generated from producing one more unit of goods or services, that is, when real labour costs (i.e. nominal compensation per employee deflated by the producer price) equal productivity levels (which is measured by the real unit labour cost). When productivity increases, wages increase proportionally. However, when real labour costs increase above productivity levels, firms adjust either by increasing prices, if they have market power, decreasing working hours or decreasing headcount – creating involuntary unemployment which will put downward pressure on wages so that wages fall back in line with productivity. As this process takes place at sectoral and company level, the sectoral wage distribution and specificities can be important drivers of the sectoral employment composition, which in turn is an important driver of average national productivity and unit labour costs.

... wage distribution and social cohesion...

Fourth, the study of developments in national average wages described in the previous sections will be complemented by a study of developments in wage distribution along the personal and regional dimension which have an important impact on social cohesion within Member States and the EU as a whole.

Personal income distribution, including distribution along the gender dimension, is to a large extent related to factor income distribution, including both the wage and profit components. Regional income differences are largely determined by the regional concentration of factor income differentials.

... but their net outcomes are not always unambiguous.

The above-mentioned transmission mechanisms of wages on employment and social cohesion do not all point in the same direction and their impact may change with the prevailing macroeconomic environment. Box 1 briefly describes the conditions that affect the net outcome of wage developments.

Chapter outline

This chapter is organised as follows.

- Section 2 investigates how wages, in combination with productivity, affect employment through their impact on international cost competitiveness. In this analysis the focus is on developments in nominal unit labour costs within countries and with their trading partners. The analysis in this section and the following sections covers the period from 2001 until 2012.
- Section 3 examines the impact of wages together with productivity and prices on employment through their impact on the distribution of factor income and on factor demand in the production of goods and services. In this analysis the focus is on the real unit labour cost at the level of the economy.
- Section 4 studies the impact of wage distribution on social cohesion from the personal (i.e. gender) perspective, and from the standpoint of regions and labour market institutions (i.e. the minimum wage).
- Section 5 focuses on the composition of sectoral employment and its impact on 'average' national variables such as productivity and unit labour cost. In this analysis the focus is on nominal and real unit labour costs at the sectoral level.
- Section 6 draws some conclusions and assesses their policy implications.

There are also five annexes. Annex 1 defines various basic concepts used in this chapter. Annex 2 describes the data. Annex 3 sheds some light on the interaction between wages, productivity, prices and employment in imperfect markets. Annex 4 briefly discusses the scope and limitations of the indicators used. Annex 5 provides further details concerning the regional dimension of labour costs and productivity.

Box 1: Conditions affecting the setting and adjustment of wages

The classic theory

According to classical economic theory, firms are willing to hire workers until their marginal product equals their marginal costs, that is, when labour costs equal productivity levels. When productivity increases, wages will increase proportionally. However, when wages increase above productivity levels, firms adjust either by increasing prices (if they have market power), decreasing working hours or decreasing headcounts – creating involuntary unemployment which will put downward pressure on wages so that wages fall back in line with productivity.

Labour market imperfections

Labour market imperfections with respect to competition and information may have an important impact on the level at which wages, productivity and (un)employment reach their equilibrium (determining the so-called 'natural rate of unemployment').

For example, risk-averse workers may prefer to accept a wage that is on average lower than the wage level that would be equivalent to marginal productivity during economic upturns in exchange for the same wage which, during economic downturns, is above marginal productivity; younger workers may accept wages below their actual productivity under the implicit commitment by employers to increase their wages above productivity when they age so that they remain loyal to the firm and firm-specific human capital is not lost. See Annex 3 for other examples yielding similar results with regard to the discrepancy between real wages and productivity, including bargaining power, minimum wages, shirking, etc.

Wage versus employment adjustment

The above-mentioned imperfections may also delay the speed of adjustment, and there are significantly different views on how the equilibrium will be reached.

On the one hand, there is the view that one must focus on the long run, i.e. the period in which prices have cleared the markets. Discipline is needed in order to avoid the creation of obstacles that may hinder a smooth adjustment. This therefore requires the discipline to keep wages in line with productivity growth in the short, medium and long run, i.e. the so-called 'golden rule' for wages.

Other views acknowledge that prices will clear the markets in the long run but stress that it may take a long time before full adjustment has been reached if one leaves it to the self-correcting mechanisms of free markets. During this adjustment process wages and prices will adjust only sluggishly (due to a range of market imperfections, as discussed in Annex 4) so that it is quantities, including the quantity of employment, which will adjust in the short to medium-run. As this involves severe socio-economic costs there is a need to take the necessary measures to address the adjustment burden through appropriate policy measures, which may include wage policies that deviate from the 'golden rule.'

Depending on the scope of the adjustment needed one could give preference to one or the other strategy to resolve the adjustment process. Experience shows that in 'normal times' preference has been given to the first interpretation of adjustment – although it was not always practiced in this way. In such times unemployment is mainly the result of structural factors, not aggregate demand falling short.

Social dialogue

Collective wage bargaining is an important institutional feature that characterises wage setting in the European labour markets, taking place at different levels and with variations in the coverage of collective agreements, and conducted by autonomous social partners, with different national traditions and practices.

At its extremes, bargaining is characterized by complete centralisation with nation-wide determination of all wages, or by complete decentralisation with independent bargaining at the level of individual firms.

Coordination is characterised as horizontal or vertical. Horizontal coordination requires the synchronization of players at the same bargaining level , while vertical coordination refers to the synchronization across different bargaining levels required to achieve a consensus on a joint macroeconomic strategy.

Wage-indexation

Wage-indexation is another important institutional feature that characterizes wage setting in the European Labour markets.

Employers are highly critical of automatic price adjustment mechanisms because they prevent wages from reflecting actual worker productivity and productivity differences across economic sectors and geographical areas.

In contrast, trade unions strongly support wage indexation systems as they protect real wages against increases in the cost of living and guarantee fairness and social cohesion by ensuring a more equal distribution of income (redistribution from employers to workers).

Profit- or wage-led regime

The impact of wages on the demand side points in different directions, i.e. a wage increase (decrease) will increase (decrease) domestic demand, while it will decrease (increase) net exports [1]. If the former effect dominates the latter, the net impact of a wage increase (decrease) will be a rise (fall) in total demand, i.e. a wage-led regime; if the latter effect dominates the former effect, the net effect of a wage increase (decrease) will be a fall (rise) in total demand, i.e. a profit-led regime.

It is an empirical matter to investigate for each specific Member State and the European Union and the euro area overall whether they fall under wage-led or profit-led regimes.

(1) Provided that the marginal propensity to consume disposable household income is higher than the marginal propensity to invest profits.

2. International cost competitiveness: Nominal wages, productivity and derived indicators

The first transmission mechanism through which wages affect employment and social cohesion is the nominal unit labour cost (ULC), which is defined as nominal compensation per employee adjusted for labour productivity. Box 2 provides a brief overview of the main indicators used in this chapter.

Developments in nominal unit labour costs have two major effects:

- they have the potential to generate inflationary (deflationary) cost-push pressures domestically if nominal wages grow at a stronger (weaker) rate than labour productivity, raising the risk of a wage-price spiral effect;
- they affect a country's external balance and international cost competitiveness, which can be measured through the real effective exchange rate, defined as the country's nominal unit labour cost compared with a trade-weighted average of the nominal unit labour costs of its trading partners (adjusted for nominal exchange rate fluctuations).

These two transmission mechanisms of wages on the internal and external balance, and hence on employment and social conditions, will be analysed in relation to nominal unit labour costs and derived indicators of domestic and external economic performance. The reference period will be 2001-12, with a special focus on the period from 2008 until mid-2012.

Annex 4 reflects on the scope and limitations of these indicators.

2.1. Nominal compensation per employee

Nominal compensation per employee refers to total remuneration, including gross wages and salaries (before the deduction of taxes and employee social security contributions), employers' social security contributions, and bonuses and overtime payments paid in cash or in kind by employers to employees in return for work performed by the latter during the accounting period.

Table 1 shows the evolution of nominal compensation per employee in the EU, the euro area and the Member States for the 2001-12 period.

In Table 1 and subsequent tables, quarterly growth rates measure growth compared with the same quarter in the previous year. The compound growth rates measure cumulative growth over the 2001-07 period, i.e. the period covering the run-up to the crisis, the 2008-11 period, i.e. the current economic downturn, and the 2001-11 period.

Box 2: Key indicators of the relationship between wages and employment

Note that when assessing wages (nominal compensation per employee) they should be corrected for:

- labour productivity, yielding the nominal unit labour cost (ULC);
- producer prices, yielding the real labour cost for producers;
- consumer prices and taxes, yielding real disposable labour income for households;
- labour productivity and prices combined, yielding the real unit labour cost (RULC);
- a weighting of average nominal wages of other countries, adjusted for productivity differences (and exchange rate fluctuations), yielding the real effective exchange rate (REER).

For further details see Annex 1.

Strong labour cost growth during the run-up to the crisis…

On average, compensation per employee grew by 20.2% in the European Union over the 2001-07 period. However, there were notable differences across Member States.

The highest growth rate by far was recorded for Romania (+340.5%), followed by the Baltic States (Latvia (+174.1%), Estonia (+130.6%), and Lithuania (+98.8%)). At the other end of the scale was Germany, which showed a very modest increase (+6.6%), followed at some distance by Austria (+15.6%) and Italy (+19.1%).

For most other Member States in the euro area, the growth rate hovered between 20% and 30%. Notable exceptions were Greece and Ireland, where the nominal compensation per employee rose by 41.3% and 47.7% respectively.

Denmark (+28.7%), Sweden (+27.6%) and the United Kingdom (+34.1%), which are outside the euro area, all showed growth rates well above the euro area average (which increased by 17.4%).

Most Member States that acceded to the EU in 2004 or later, except Cyprus and Malta and the countries mentioned above, recorded growth rates between 58% and 100%.

… but notable decreases since the onset of the crisis…

In contrast to the strong growth recorded in previous years, nominal compensation per employee grew by a modest 5.2% over the 2008-11 period.

With the onset of the crisis, growth in nominal compensation per employee decelerated markedly in most Member States. However, Germany, with growth of 6.6% over the 2001-07 period, chalked up growth of 8.3% over the 2008-11 period which was close to the 9.1% euro area average.

Table 1: **Nominal compensation per employee**

	Annual % change				Compound growth rate			% change on previous year					
								2011				2012	
	2008	2009	2010	2011	2001-2007	2008-2011	2001-2011	q1	q2	q3	q4	q1	q2
EU-27	0.7	-1.0	3.3	2.2	20.2	5.2	26.6	2.9	1.9	1.8	2.3	2.4	:
EURO	3.3	1.6	1.7	2.2	17.4	9.1	28.0	2.1	2.2	2.3	2.2	1.9	:
BE	3.6	1.2	1.4	3.1	21.3	9.6	32.9	3.3	2.6	3.5	3.2	3.1	3.0
BG	16.0	9.8	10.9	7.2	72.4	51.4	161.1	:	:	:	:	:	:
CZ	4.2	-1.1	3.8	1.6	58.4	8.7	72.1	2.8	3.0	2.0	2.1	3.6	2.3
DK	3.7	2.1	2.7	1.7	28.7	10.6	42.3	1.9	1.2	1.3	2.2	1.7	1.8
DE	2.2	0.4	2.5	3.0	6.6	8.3	15.4	3.0	3.4	2.9	2.8	2.3	2.3
EE	10.3	-3.1	2.3	-0.2	130.6	9.1	151.6	1.4	1.1	-0.4	3.8	4.8	:
IE	5.6	-1.2	-2.9	:	47.7	:	:	-0.4	-0.1	0.7	1.1	2.0	:
EL	6.2	4.2	-3.4	-3.2	41.3	3.5	46.2	-5.7	:	:	:	:	:
ES	6.6	4.3	0.2	0.5	24.3	12.0	39.2	0.4	-0.2	0.8	1.2	1.4	0.6
FR	2.6	1.8	2.3	2.8	23.3	9.8	35.5	2.7	2.8	2.9	3.0	2.2	1.9
IT	3.1	0.1	2.0	1.1	19.1	6.4	26.7	1.6	1.1	1.1	0.8	0.6	1.3
CY	3.2	5.4	-0.2	2.0	29.9	10.7	43.9	2.3	2.3	1.6	1.9	2.5	:
LV	16.5	-13.2	-5.1	16.9	174.1	12.2	207.5	18.8	16.6	20.9	15.4	2.9	3.0
LT	14.0	-10.0	-0.4	3.6	98.8	5.9	110.5	1.9	1.2	3.6	7.3	7.4	6.4
LU	2.4	2.4	2.5	2.1	23.9	9.7	36.0	4.0	2.0	1.1	1.9	1.5	:
HU	6.7	-1.3	-2.3	5.1	88.3	8.1	103.7	4.5	6.6	5.3	3.9	3.0	2.4
MT	5.0	3.7	-0.3	0.8	27.6	9.4	39.6	1.3	1.7	-0.6	1.1	1.0	1.3
NL	3.3	2.3	1.2	1.5	24.4	8.5	35.0	2.0	1.1	1.8	1.1	1.0	0.9
AT	3.2	1.9	1.2	1.9	15.6	8.4	25.4	1.7	1.9	1.9	2.0	2.5	3.0
PL	8.7	3.4	4.7	5.1	27.3	23.7	57.4	2.5	4.3	5.3	3.5	4.4	:
PT	3.0	2.8	1.5	-0.8	26.1	6.6	34.4	0.2	-1.4	-1.7	-0.7	-0.3	:
RO	30.2	-1.8	7.7	3.7	340.5	42.8	529.0	:	:	:	:	:	:
SI	7.2	2.4	3.9	1.6	65.3	15.9	91.5	2.9	2.4	1.6	0.5	0.4	-1.3
SK	6.8	3.9	4.5	0.9	70.2	17.0	99.2	1.9	0.6	1.0	0.2	1.8	2.7
FI	4.5	2.9	1.8	3.4	25.0	13.2	41.5	3.9	3.6	3.5	2.6	4.3	4.5
SE	1.6	1.7	3.1	0.9	27.6	7.5	37.1	:	:	:	:	:	:
UK	1.6	2.9	2.8	1.8	34.1	9.4	46.7	0.3	0.7	3.0	3.4	4.3	4.9

Source: DG EMPL calculations based on Eurostat National Accounts Labour productivity [nama_aux_lp and namq_aux_lp], and nominal unit labour cost [nama_aux_ulc and namq_aux_ulc].

Note: Break in series of LV, provisional series for EL.

A notable development in the euro area was the sharp deceleration of compensation per employee in Greece and Portugal, down from respective compound growth rates of 41.3% and 26.1% during the 2001-07 period to 3.5% and 6.6% during the 2008-11 period [4].

In the Member States that acceded to the EU in 2004 or later, the deceleration in nominal compensation growth was even more remarkable: down in Romania and Latvia from respective rates of 340.5% and 174.1% over the 2001-07 period to 42.8% and 12.2% over the 2008-11 period.

... that persisted in some Member States during the first half of 2012.

In the first half of 2012, nominal compensation per employee continued to grow in all Member States for which data are available, except Slovenia. High labour cost growth was recorded for Lithuania as well as for Finland and the United Kingdom, albeit to a lesser extent than for the latter Member States. For Greece no data on nominal compensation per employee are available at the time of writing, however, the available data on hourly labour costs confirm that Greece continues its path of sharp decreases in nominal labour costs that started in the second quarter of 2010 [5].

Significant differences in labour costs are seen across Member States

Chart 1 shows the average national compensation per employee (€) in the Member States for which data are available for 2011.

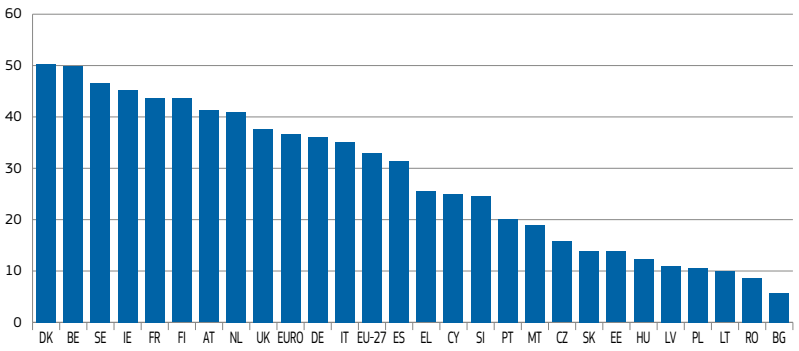
Compared across the EU, the average national compensation per employee is highest in Denmark and Belgium (at about €50 000 per annum), while it is lowest in Bulgaria, Romania and Lithuania (all below €10 000).

Within the euro area, Belgium (about €50 000) and Ireland (about €45 300) list the highest average compensation per employee. Slovakia (about €13 960), Portugal (about €20 130), and Slovenia (about €24 640) record the lowest numbers. Germany is closest to the euro average (about €36 650).

(4) For Ireland, the full range of 2008-2011 data is unavailable.

(5) According to flash GDP estimates for Greece for the 2nd quarter of 2012 published on 13 August 2012, real GDP on a non-seasonally-adjusted basis (NSA) fell by 6.2% year-on-year (YOY); thus, the rate of decline moderated somewhat in comparison to the 1st quarter of 2012 (YOY: -6.5%) and significantly with respect to the 4th quarter of 2011 (YOY: -7.5%). It is also worth noting that nominal GDP fell by 6.6% YOY in 2012-Q2, following a (revised) 6.1% YOY fall in 2012-Q1; this implies that the GDP deflator fell by 0.4% YOY in 2012-Q2, following an average YOY rise of 0.5% in 2012-Q1, 1.4% in 2011-Q4 and 1.6% in 2011.

Chart 1: Compensation per employee across the EU – 2011 (€1 000)



Source: DG EMPL calculations based on Eurostat National Accounts [nama_nace10_c] and [nama_nace10_e] (Annex 2).

Note: IE and PL 2010 values. LU not available.

With the exception of Cyprus and Malta, in the Member States that acceded to the EU in 2004 or later, the average compensation per employee is highest in Slovenia (at about €24 640), and lowest in Bulgaria (about €5 780).

2.2. Productivity per person employed

Table 2 shows developments in labour productivity in the EU over the 2001-11 period.

Labour productivity is the ratio between the real value of output and the input of labour. In this sub-section, the input of labour is measured using the number of employed persons as the denominator [6].

In the long run, productivity (i.e. trend productivity) is determined by the available technology and the way in which resources are organised in the production process. The quality of human capital is of great significance in this process. In this respect it should be noted that wage developments can have an important impact on human capital formation by creating the incentive to acquire skills [7].

In the short run, cyclical deviations from trend productivity may be observed over the business cycle, due to the lag in the response of employment to changes in output levels [8]. In other words, during a downturn output decreases faster than employment and productivity falls. In contrast, during an upturn, output grows faster than employment and productivity increases. The slower adjustment of labour may be due to market rigidities, e.g. employment protection legislation, or to market perceptions that a downturn will be temporary, or to the attempt to limit firing and hiring costs by holding employment stable. In addition, employers may use their employees currently on the payroll with varying intensity (extra hours during peaks, reduced hours in troughs) before considering layoffs or hiring.

Robust productivity growth in the New Member States over the 2001-07 period…

In the EU as a whole labour productivity grew by 9.6% over the 2000-07 period, but differences in performance were notable across the Member States.

Romania (+74.2%) and the Baltic States (Estonia (+48.9%), Latvia (+52.4%) and Lithuania (+57.7%)), had very strong compound productivity growth over the period 2000-07, while the other Member States that acceded to the EU in 2004, apart from Cyprus and Malta, also showed strong labour productivity growth, all close to or within the 30-40% range. This strong growth primarily reflected the catch-up in productivity resulting from ongoing restructuring of the inefficient production structure inherited from the past and the expectation of accession to the EU in 2004.

In the Member States of the euro area – except Slovenia (26.6%) and Slovakia (41.5%) – productivity growth was more subdued, with only Ireland (12.6%), Greece (17.2%) and Finland (15.5%) recording compound growth rates greater than 10% during the 2001-07 period. Also striking was the very low productivity growth in Spain (0.1%) and the decline in Italy (-0.6%).

… but much weaker growth over the 2008-11 period, particularly in the euro area…

The EU as a whole recorded a very low 0.6% increase in productivity over the 2008-11 period.

Most Member States of the euro area saw a decrease in their labour productivity over the 2008-11 period, with Luxembourg topping the list with a decline of 10%, followed by Greece (-5.7%), Italy (-2.8%) and Austria (-1.5%). Nevertheless, notable increases in labour productivity were recorded in Ireland (6.1%), Spain (8.4%) and Slovakia (+6.7%).

With the exception of Malta, the Member States that acceded to the EU in 2004 or later showed positive productivity growth, with Bulgaria (12.3%), Latvia (9.0%) and Poland (9.4%) chalking up very robust productivity growth.

Denmark (-1.3%) and the United Kingdom (-2.3%) saw their labour productivity decrease, while Sweden (2.3%) showed a modest increase.

… followed by further weakening in the first half of 2012.

In the first half of 2012 the decline in labour productivity accelerated in almost all Member States for which data are available. Notable exceptions are Spain and the Baltic States, particularly Latvia and Lithuania, where labour productivity grew at a strong pace.

(6) Although it is considered appropriate to use the number of hours as the labour input indicator, the most common practice is to use the number of employees as the denominator because this data is easier to obtain. This may pose some problems if the number of employees is not expressed in full-time equivalents, and if part-time workers participate in the production process.

(7) See, for instance, Meager and Speckesser (2011).

(8) When analysing developments in productivity it should be recognized that the rule to measure productivity as GDP divided by the number of employed persons is an accounting rule: it does not constitute a behavioural relationship that indicates a direction of causality. I.e., it still allows that causality runs from (predetermined) productivity and GDP to a (endogenous) number of employed persons, from (predetermined) productivity and number of employed persons to (endogenous) GDP, or from (predetermined) GDP and number of employed persons to (endogenous) productivity.

Table 2: **Labour productivity per employed person**

	Annual % change				Compound growth rate			% change on previous year					
								2011				2012	
	2008	2009	2010	2011	2001-2007	2008-2011	2001-2011	q1	q2	q3	q4	q1	q2
EU-27	-0.6	-2.6	2.6	1.3	9.6	0.6	10.3	2.0	1.2	1.2	0.8	0.3	:
EURO	-0.4	-2.6	2.6	1.3	5.9	0.8	6.8	2.2	1.3	1.1	0.8	0.4	:
BE	-0.8	-2.6	1.7	0.4	7.2	-1.3	5.7	1.4	0.5	0.2	-0.2	-0.3	-0.5
BG	3.5	-2.9	5.3	6.1	28.8	12.3	44.6	7.8	6.3	6.4	3.5	2.5	3.1
CZ	0.8	-3.5	4.5	1.4	31.9	3.1	36.0	2.4	1.7	1.1	0.5	-0.6	-1.3
DK	-2.4	-3.5	3.6	1.2	6.3	-1.3	5.0	2.3	1.9	0.1	0.4	0.6	-0.5
DE	-0.1	-5.2	3.6	1.6	8.9	-0.3	8.6	3.3	1.6	1.3	0.6	-0.2	-0.2
EE	-4.3	-4.5	8.5	1.2	48.9	0.4	49.4	2.8	0.3	-0.8	0.3	0.5	:
IE	-1.9	1.2	4.0	2.8	12.6	6.1	19.5	2.2	4.8	3.3	3.9	3.4	:
EL	-0.9	-3.0	-1.7	-0.2	17.2	-5.7	10.6	-0.5	:	:	:	:	:
ES	1.0	3.0	2.2	2.0	0.1	8.4	8.5	1.7	1.3	2.4	2.6	2.9	2.8
FR	-0.6	-1.9	1.7	1.2	7.6	0.4	8.0	1.9	1.1	1.0	0.9	0.1	0.2
IT	-1.4	-3.9	2.5	0.1	-0.6	-2.8	-3.4	1.3	0.4	-0.3	-0.5	-0.8	-2.1
CY	1.4	-1.3	1.1	0.0	4.7	1.2	6.0	0.4	0.5	-0.6	-0.2	0.9	0.5
LV	-4.2	-5.3	4.7	14.8	52.4	9.0	66.2	13.4	14.4	15.9	14.6	3.2	2.7
LT	3.6	-8.6	6.9	3.8	57.7	5.1	65.6	4.4	2.3	4.5	4.2	2.2	1.8
LU	-3.8	-6.2	0.8	-1.1	5.6	-10.0	-5.0	-0.4	-2.0	-0.3	-1.5	-2.3	:
HU	2.4	-4.2	0.9	1.3	29.1	0.3	29.4	1.8	1.5	0.9	1.1	-1.7	-1.9
MT	1.4	-2.1	1.0	-0.5	3.4	-0.2	3.2	0.6	0.5	-0.4	-2.6	-3.4	-0.8
NL	0.3	-3.0	2.0	0.3	8.1	-0.5	7.6	1.2	0.9	0.3	-1.0	-0.9	-0.7
AT	-0.5	-3.1	1.2	1.0	9.4	-1.5	7.8	2.1	1.9	0.3	-0.4	-0.5	-0.6
PL	1.2	1.2	3.4	3.3	26.6	9.4	38.4	2.7	4.0	3.7	3.2	2.8	2.1
PT	-0.5	-0.3	3.0	-0.1	6.2	2.1	8.4	0.9	-0.3	-1.2	0.0	1.9	1.0
RO	7.3	-4.7	-0.2	2.0	74.2	4.1	81.3	:	:	:	:	:	:
SI	0.8	-6.1	3.5	2.2	26.6	0.1	26.7	4.2	3.4	2.7	0.2	0.0	-1.3
SK	2.4	-3.0	5.8	1.5	41.5	6.7	51.0	1.6	1.3	1.3	2.0	2.4	2.6
FI	-2.2	-6.1	3.4	1.6	15.5	-3.5	11.4	3.7	0.7	2.7	-0.7	1.0	-0.1
SE	-1.5	-2.7	5.0	1.7	17.0	2.3	19.8	3.2	2.4	1.8	-0.4	0.9	1.8
UK	-1.7	-2.4	1.6	0.2	15.5	-2.3	12.8	-0.1	-0.3	0.9	0.5	-0.3	-1.4

Source: DG EMPL calculations based on Eurostat, National Accounts, Labour productivity [nama_aux_lp and namq_aux_lp].

Note: Break in series of LV, provisional series for EL.

2.3. Nominal unit labour cost

Table 3 shows the average nominal unit labour costs for each country, measuring nominal compensation per employee, adjusted for labour productivity per employed person over the period from 2001 until mid-2012 [9].

Strong differences in nominal unit labour cost growth across Member States over the 2001-07 period…

In the EU as a whole, the nominal unit labour cost increased by 9.9% over the 2001-07 period, while it increased by 10.9% in the euro area over the same period.

In the euro area, Ireland and Slovenia (both +31.6%) recorded the strongest growth (well above a sustainable rate just under 2% per annum), followed by Spain (+24.2%), Slovakia (+21.3%), Greece (+20.7%) and Portugal (18.8%). In Belgium (13.2%) and France (14.7%) developments were closely in line with a 2% per annum inflation target. In Austria the nominal unit labour cost increased by a modest 5.5%, while in Germany it decreased by -2.2%.

The Member States that acceded to the EU in 2004 or later recorded strong compound increases, with 166.3% in Romania followed by 86.3% in Latvia at the upper end of the scale, a modest 20.8% in the Czech Republic and 21.3% in Slovakia, and the very low increase of 0.5% in Poland at the lower end of the scale.

… modest nominal unit labour cost growth in most Member States during the 2008-11 period…

The overall increase in nominal unit labour costs was modest in most Member States during the 2008-11 period, however Bulgaria and Romania were notable exceptions, with increases exceeding 20% over this period. In Denmark (11.6%), Luxembourg (21.0%), Slovenia (15.2%), Finland (16.5%) and the United Kingdom (11.8%), the increases were in excess of 10%.

Several Member States of the euro area showed a notable decrease in their nominal unit labour costs, particularly in 2010 and 2011. Most notably, negative growth accelerated in Greece from -1.7% in 2010 to -3.0% in 2011. In Germany the notable 8.3% increase over this period was mainly due to the strong upturn (by 5.6%) in 2009,

[9] See Annex 1 for a more detailed discussion of the definition of these basic concepts. Annex 4 provides a discussion of the theoretical limitations of using average productivity as a measure for marginal productivity (to which real wages must be equal according to the classical paradigm).

Table 3: Nominal unit labour cost

	Annual % change				Compound growth rate			% change on previous year					
								2011				2012	
	2008	2009	2010	2011	2001-2007	2008-2011	2001-2011	q1	q2	q3	q4	q1	q2
EU-27	1.3	1.6	0.7	0.9	9.9	4.6	14.9	0.9	0.7	0.6	1.5	2.1	:
EURO	3.7	4.2	-0.9	0.9	10.9	8.0	19.8	-0.1	0.9	1.2	1.4	1.5	:
BE	4.4	3.8	-0.3	2.7	13.2	11.0	25.6	1.9	2.1	3.3	3.4	3.4	3.5
BG	12.5	12.7	5.6	1.1	35.3	35.4	83.2	:	:	:	:	:	:
CZ	3.4	2.4	-0.7	0.2	20.8	5.4	27.2	0.4	1.3	0.9	1.6	4.2	3.6
DK	6.1	5.6	-0.9	0.5	21.1	11.6	35.2	-0.4	-0.7	1.2	1.8	1.1	2.3
DE	2.3	5.6	-1.1	1.4	-2.2	8.3	5.9	-0.3	1.8	1.6	2.2	2.5	2.5
EE	14.6	1.4	-6.2	-1.4	58.7	7.5	70.6	-1.4	0.8	0.4	3.5	4.3	:
IE	7.5	-2.4	-6.9	:	31.6	:	:	-2.6	-4.9	-2.6	-2.8	-1.4	:
EL	7.1	7.2	-1.7	-3.0	20.7	9.5	32.1	-5.2	:	:	:	:	:
ES	5.6	1.3	-2.0	-1.5	24.2	3.3	28.2	-1.3	-1.5	-1.6	-1.4	-1.5	-2.2
FR	3.2	3.7	0.6	1.6	14.7	9.4	25.5	0.8	1.7	1.9	2.1	2.1	1.7
IT	4.5	4.0	-0.5	1.0	19.8	9.2	30.8	0.3	0.7	1.4	1.3	1.4	3.4
CY	1.8	6.7	-1.3	2.0	24.0	9.4	35.6	1.9	1.8	2.2	2.1	1.6	:
LV	20.7	-7.9	-9.8	2.1	86.3	2.4	90.7	5.4	2.2	5.0	0.8	-0.3	0.3
LT	10.4	-1.4	-7.3	-0.2	27.6	0.7	28.5	-2.5	-1.1	-0.9	3.1	5.2	4.6
LU	6.2	8.6	1.7	3.2	17.3	21.0	41.9	4.4	4.0	1.4	3.4	3.8	:
HU	4.3	2.9	-3.2	3.8	47.8	7.8	59.4	2.7	5.1	4.4	2.8	4.7	4.3
MT	3.6	5.8	-1.3	1.3	23.0	9.6	34.8	0.7	1.2	-0.2	3.7	4.4	2.1
NL	3.0	5.3	-0.8	1.2	15.1	8.9	25.3	0.8	0.2	1.5	2.1	1.9	1.6
AT	3.7	5.0	0.0	0.9	5.7	9.9	16.2	-0.4	0.0	1.6	2.4	3.0	3.6
PL	7.5	2.2	1.3	1.8	0.5	13.3	13.8	-0.2	0.3	1.6	0.3	1.6	:
PT	3.5	3.1	-1.5	-0.7	18.8	4.4	24.0	-0.7	-1.1	-0.5	-0.7	-2.2	:
RO	22.9	2.9	7.9	1.7	166.3	38.8	269.6	:	:	:	:	:	:
SI	6.4	8.5	0.4	-0.6	31.6	15.2	51.6	-1.3	-1.0	-1.1	0.3	0.4	0.0
SK	4.4	6.9	-1.3	-0.6	21.3	9.5	32.8	0.3	-0.7	-0.3	-1.8	-0.6	0.1
FI	6.7	9.0	-1.6	1.8	8.3	16.5	26.2	0.2	2.9	0.8	3.3	3.3	4.6
SE	3.1	4.4	-1.9	-0.8	9.0	4.7	14.1	:	:	:	:	:	:
UK	3.3	5.3	1.2	1.6	16.4	11.8	30.2	0.4	1.0	2.1	2.9	4.6	6.3

Source: DG EMPL calculations based on Eurostat, National, Accounts, Unit labour Cost [nama_aux_ulc and namq_aux_ulc].

Note: Break in series of LV, provisional series for EL.

which was only partly offset by the modest decrease (-1.1%) recorded in the following year.

... which continued to weaken in several Member States in the beginning of 2012.

In several Member States for which data are available (at the time of writing) the growth rate for nominal unit labour costs was well below 2% in the second quarter of 2012 (compared with the second quarter of 2011); included among these are Spain (-2.2%), France (1.7%), Latvia (0.3%), the Netherlands (1.6%), Slovenia (0.0%) and Slovakia (0.1%).

For the 10th consecutive quarter, Spain recorded a drop in its nominal unit labour cost, which was down by -2.2% in the second quarter of 2012. In contrast, Slovakia ended a steady decline over the previous four quarters with a modest 0.1% increase in the second quarter of 2012. Nominal unit labour costs in the United Kingdom spiked to 6.3% in the second quarter of 2012, reinforcing the upward cost-push pressures that were observed in the first quarter of 2012.

No data for EU-27 or the euro area as a whole are available for the second quarter of 2012 (at the time of writing). Nevertheless, in the four quarters preceding the second quarter of 2012 the unit labour cost growth in these areas was very modest, i.e. below 2% when compared with the same period in 2011.

2.4. Inflationary cost-push pressures

Average national nominal unit labour cost growth affects domestic price levels...

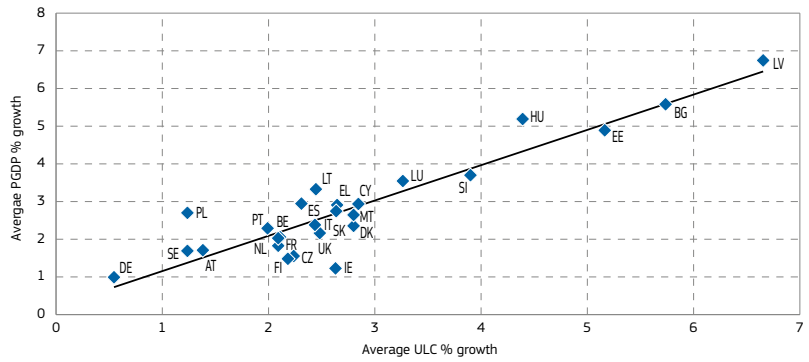
The nominal unit labour cost indicator gives an indication of domestic cost-push inflationary pressures.

When nominal unit labour costs (ULC) increase, it is an indication that nominal wages are increasing faster than productivity. When this occurs, there is the risk that prices may need to increase by more than the sustainable inflation target of just under 2% per annum in the medium run in order to restore the equilibrium between wage costs and output revenue, assuming there are no structural changes which affect equilibrium labour income. In contrast, when nominal labour costs increase much less than productivity, there is the risk of deflationary pressures arising.

Chart 2 shows the strong correlation between ULC growth expressed in the national currency and inflation measured as the change in the GDP price deflator for each country, averaged over the 2001-11 period.

The correlation between the two variables is very high. Nevertheless, it is

Chart 2: ULC and GDP price deflator growth (2001-11 averages)



Source: DG EMPL calculations based on Eurostat, National Accounts, Labour productivity [nama_aux_ulc] and Price indices [nama_gdp_p].

Notes: 1) Outlier Romania omitted. 2) Coefficient of correlation is 0.92.

important to note that this correlation does not necessarily indicate a causal relationship between ULC and inflation as suggested by the classical paradigm – see Annex 4.

… resulting in strong deflationary pressures in Ireland over the 2008-11 period

Table 4 describes developments in the GDP deflator in more detail for the Member States.

Changes in this deflator together with developments in productivity and nominal compensation have a direct impact on the labour income share (i.e. the real unit labour cost), which has a direct impact on employment, as discussed in the following sections.

Moreover, nominal unit labour cost developments generate inflationary pressures that may affect social cohesion within the Member States since inflation affects purchasing power and all nominal income streams that are not indexed to inflation, and this has a direct impact on social cohesion (as may be the case, for example, with minimum wages – see following sections).

Of note are the strong deflationary pressures that emerged in Ireland over the 2008-11 period, i.e. a compound decrease of 9.5%; this was also mirrored in the 2009-10 cost trend for nominal unit labour (see Table 3).

… and affecting purchasing power of wage earners.

Table 5 shows the changes in gross wages and salaries adjusted for changes in the harmonized consumer price index, henceforth labelled 'real wage.' Net of taxes and employee social security contributions, these real wages are an adequate measure of the evolution of the purchasing power of the average worker [10].

Strong real wage growth in the new Member States during the 2001-07 period…

With the exceptions of Cyprus and Malta, the Member States that acceded to the EU in 2004 or later for which data are available showed strong growth in real wages over the 2001-07 period.

The strongest compound growth by far was recorded in the Baltic States, i.e. Latvia (+122.6%), Estonia (+82.0%) and Lithuania (+76.7%).

[10] Employee compensation covers total remuneration – including gross wages and salaries (before deduction of taxes and employee social security contributions), employers social security contributions, as well as bonuses and overtime payments -, that is paid, in cash or in kind, by employers to employees in return for work performed by the latter during the accounting period. Compensation per employee is obtained by dividing compensation of employees by the number of employees.
Wages and salaries are defined as the total remuneration, in cash or in kind, paid to all persons on the payroll (including home workers), in return for work performed during the accounting period regardless of whether it is paid on the basis of working time, output or piecework and whether it is paid regularly or not. Included are taxes and employee social security contributions. See Annex 1 for more details.

The Czech Republic (+38.1%), Hungary (+35.5%) and Bulgaria (+31.5%) showed compound growth rates of between 30% and 40% over the 2001-07 period, while Slovakia (+24.4%) and Slovenia (+18.7%) recorded compound growth between 18% and 25%.

… Germany was the only Member State that recorded a decrease in its real wage over the 2001-07 period…

Among the other Member States, Ireland (18.8%) recorded the strongest increase, followed by the United Kingdom (+16.2%), Finland (+15.2%), Sweden (12.2%), Greece (12.1%) and Denmark (10.4%). The other Member States (except Germany) recorded increases of between 0% and 10%, with Portugal (+0.5%) at the lower end and Malta (9.3%), France (+8.5%) and Cyprus (+8.3%) at the upper end. Germany (-4.5%) was the only Member State that recorded a decrease in real wages over the 2001-07 period.

… and with the onset of the crisis, decreases in the real wages were strong in some Member States…

Over the 2008-11 period, Bulgaria (+25.7%) recorded the strongest increase in real wages by far, followed at some distance by Poland (+7.1%) and Slovakia (6.5%).

Among the other Member States, modest gains in real wages were recorded over the 2008-11 period for one small group which included Germany (+1.5%) and France (+1.7%).

In contrast, 13 Member States recorded decreases in their real wages. The Baltic States (Latvia (-10.5%), Estonia (-11.7%) and Lithuania (-12.7%)) and Greece (-12.0%) registered the most severe decreases by far. In the United Kingdom (-6.3%) and Hungary (-5.9%) the decreases were also sharp.

… yielding a diverse set of outcomes across Member States.

On balance, over the entire 2001-11 period, real wages decreased in Germany (-3.1%), Greece (-1.4%) and Italy -1.2%). The strongest increase was found in Latvia (+99.2%), followed by

Table 4: GDP deflator

	Annual % change				Compound growth rate			% change on previous year					
								2011				2012	
	2008	2009	2010	2011	2001-2007	2008-2011	2001-2011	q1	q2	q3	q4	q1	q2
EU-27	0.2	-1.5	2.3	1.5	15.1	2.5	17.9	0.7	-0.1	0.2	0.3	1.0	0.9
EURO	2.0	1.0	0.8	1.2	16.1	5.1	22.0	0.4	0.3	0.3	0.2	0.3	0.4
BE	2.1	1.2	2.0	2.0	16.3	7.5	25.1	0.5	0.4	0.4	0.4	1.0	0.2
BG	8.4	4.3	2.8	5.0	48.6	22.0	81.3	3.0	0.8	0.4	-7.4	4.2	3.5
CZ	1.9	1.9	-1.7	-0.7	16.7	1.4	18.3	-0.8	0.1	0.6	0.8	0.0	0.0
DK	4.2	1.0	3.9	0.8	17.1	10.2	29.1	0.4	-0.4	-0.3	0.8	1.1	0.4
DE	0.8	1.2	0.9	0.8	7.4	3.8	11.4	0.2	0.3	0.2	0.2	0.4	0.4
EE	5.4	-1.4	0.7	2.9	56.1	7.7	68.1	0.3	1.4	0.5	1.1	0.4	1.3
IE	-3.2	-4.6	-2.2	0.2	25.7	-9.5	13.7	2.2	0.5	-0.2	0.8	1.3	:
EL	4.7	2.8	1.7	1.6	23.2	11.2	37.0	-0.6	:	:	:	:	:
ES	2.4	0.1	0.4	1.0	32.2	3.9	37.4	0.2	0.2	0.1	0.3	-0.1	0.0
FR	2.5	0.7	1.1	1.3	15.4	5.7	22.0	0.3	0.4	0.3	0.5	0.2	0.6
IT	2.5	2.1	0.4	1.3	18.9	6.4	26.5	0.8	0.3	0.2	0.1	0.5	0.1
CY	4.6	0.1	1.7	2.0	26.4	8.6	37.3	-0.7	1.7	0.1	0.6	-1.3	2.7
LV	13.0	-1.2	-1.3	5.9	72.4	16.7	101.2	2.1	1.5	1.8	0.9	-0.8	0.9
LT	9.8	-3.7	2.0	5.3	25.1	13.6	42.1	2.9	1.8	-0.3	1.4	-0.5	2.3
LU	4.4	0.1	4.9	4.7	27.5	14.8	46.4	0.2	0.6	1.4	0.8	0.1	:
HU	5.3	3.6	3.1	3.3	49.7	16.2	74.0	0.0	0.9	2.2	1.0	-0.9	1.1
MT	3.0	2.4	2.9	2.3	20.0	11.0	33.2	0.9	-0.3	1.3	-0.2	1.2	-0.2
NL	2.1	0.1	1.1	1.2	19.1	4.6	24.6	0.4	0.1	0.5	0.6	-0.4	0.3
AT	1.7	1.5	1.6	2.2	12.4	7.2	20.5	0.5	0.4	0.4	0.4	0.5	0.7
PL	3.1	3.7	1.4	3.2	19.7	11.9	34.0	1.2	0.3	1.0	0.8	0.5	0.6
PT	1.6	0.9	1.1	0.7	22.9	4.4	28.2	0.6	-0.8	0.7	-0.2	0.7	-1.4
RO	15.3	4.2	6.0	8.1	239.4	37.7	367.3	3.3	1.0	2.2	1.8	-1.5	2.3
SI	4.1	3.6	-1.1	1.0	37.9	7.7	48.6	1.2	-0.1	0.5	1.1	-0.3	0.6
SK	2.9	-1.2	0.5	1.6	29.5	3.8	34.4	0.3	0.8	0.2	0.4	0.0	0.3
FI	2.9	1.5	0.4	3.1	8.6	8.1	17.5	1.7	0.8	0.0	0.7	1.0	1.2
SE	3.1	2.1	0.8	1.0	12.2	7.2	20.2	:	:	:	:	:	:
UK	3.0	1.3	2.8	2.6	17.7	10.0	29.5	0.9	0.4	0.2	0.7	0.8	0.9

Source: DG EMPL calculations based on Eurostat, National Accounts, Price indices [namq_gdp_p].

Table 5: Gross wages and salaries adjusted for HCPI changes

	Annual % change											Compound growth rate		
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2001-2007	2008-2011	2001-2011
BE	1.3	1.4	0.2	-0.2	-0.4	1.2	1.0	-1.1	0.5	-1.2	-0.2	4.6	-2.0	2.5
BG	7.6	1.0	3.1	3.9	7.4	-2.8	8.3	1.1	9.5	10.6	2.6	31.5	25.7	65.3
CZ	4.3	6.1	7.7	5.9	2.3	3.8	3.0	-1.4	-0.8	2.6	0.2	38.1	0.6	38.9
DK	1.0	0.8	1.2	2.7	1.5	1.2	1.7	0.3	1.0	-0.4	-1.1	10.4	-0.2	10.3
DE	0.0	0.0	0.1	-1.3	-1.6	-1.0	-0.9	-0.5	-0.2	1.2	0.9	-4.5	1.5	-3.1
EE	4.2	4.9	10.2	9.2	6.8	9.6	18.1	-1.3	-4.7	-1.1	-5.1	82.0	-11.7	60.7
IE	3.5	0.6	2.7	2.9	3.3	1.6	2.9	2.2	1.0	-1.6	:	18.8	:	:
EL	-0.4	7.0	2.8	2.0	-1.5	1.4	0.4	-0.7	3.7	-9.7	-5.4	12.1	-12.0	-1.4
ES	:	:	:	:	:	:	:	:	:	:	:	:	:	:
FR	1.3	1.7	0.3	1.3	1.2	1.5	1.0	-0.6	1.4	0.7	0.1	8.5	1.7	10.3
IT	0.7	-0.6	-0.8	1.1	1.0	0.5	0.0	-0.9	-0.7	0.4	-1.9	1.9	-3.1	-1.2
CY	2.2	2.0	4.1	-1.2	0.0	0.8	0.2	-1.1	5.0	-2.8	-1.5	8.3	-0.7	7.5
LV	4.4	0.4	9.3	9.1	20.4	16.6	26.8	2.1	-17.6	-6.0	13.2	122.6	-10.5	99.2
LT	6.0	5.9	10.7	9.1	8.1	12.6	7.0	2.6	-14.3	-0.2	-0.5	76.7	-12.7	54.2
HU	8.1	9.2	6.6	4.2	3.2	1.9	-1.8	0.4	-4.0	-1.2	-1.1	35.5	-5.9	27.6
MT	2.1	0.6	2.4	0.4	-1.4	3.5	1.3	0.7	1.8	-2.5	-1.7	9.3	-1.8	7.3
NL	-0.6	-0.8	0.5	0.8	-0.1	0.8	1.7	0.8	1.1	0.1	-1.2	2.3	0.8	3.1
AT	-0.9	0.6	0.2	-0.3	0.2	1.5	1.1	0.3	1.3	-0.6	-1.7	2.5	-0.8	1.7
PL	:	:	:	:	0.6	0.9	2.3	6.1	-0.9	1.9	0.0	:	7.1	:
PT	0.1	-0.5	-0.1	-0.1	1.1	-1.2	1.3	-0.2	3.7	:	:	0.5	:	:
RO	:	:	:	:	:	:	:	:	-8.1	2.5	-0.7	:	:	:
SI	3.3	0.1	1.7	3.5	3.5	2.8	2.5	1.9	0.7	2.3	-0.5	18.7	4.5	24.0
SK	-1.7	5.0	0.2	1.2	6.6	4.1	7.1	1.5	3.7	3.5	-2.2	24.4	6.5	32.5
FI	1.8	0.1	2.1	3.6	2.7	1.9	2.2	0.5	1.3	0.9	-0.1	15.2	2.6	18.2
SE	0.5	0.9	0.3	2.5	2.4	2.2	2.8	0.9	0.9	0.2	1.6	12.2	3.7	16.4
UK	4.2	1.3	1.9	2.0	0.6	2.0	3.3	-1.9	-0.5	-1.9	-2.2	16.2	-6.3	8.8

Source: DG EMPL calculations on the basis of Eurostat, National Accounts, [nama_nace10_c and nama_nace10_e], Price Indices [prc_hicp_aind].

Bulgaria (+65.3%), Estonia (60.7%) and Lithuania (+54.2%).

2.5. Real effective exchange rates

Table 6 shows developments in the real effective exchange rate over the 2001-12 period. An increase (decrease) in the indicator refers to an appreciation (depreciation) of the real effective exchange rate (REER), i.e. a loss (gain) of international cost competitiveness [11].

In the run-up to the crisis most Member States saw the appreciation of their real effective exchange rate…

All other variables being equal, Member States that experienced a strong increase in their unit labour cost also experienced a strong appreciation of their REER.

The strongest appreciation of the real effective exchange rate was found in Romania (+50.2%), followed by Estonia (+48.8%) and the Czech Republic (+47.8%). In these Member States the strong appreciation over this period to a large extent reflected the ongoing catch-up associated with the restructuring of their economies.

Germany (-4.6%), Poland (-0.5%) and Sweden (-1.8%) were the only Member States to end the 2001-07 period with a compounded depreciation of their real effective exchange rate, i.e. an improvement in their cost competitiveness.

Among the euro area Member States, Slovakia (+41.2%), Ireland (+36.9%) and Malta (+24.9%) showed the strongest compound appreciation over the 2001-07 period. Appreciation within the 15% to 20% bracket was found in Spain (20.2%), Italy (+19.8%), and Cyprus (+18.4%), while increases within the 10% to 20% bracket were found in France (13.3%), the Netherlands (12.6%), Greece (12.6%) and Belgium (10.4%). Austria (+0.3%), Slovenia (+6.2%) and Finland (+8.5%) showed very modest appreciation.

Among the Baltic Member States, Estonia (48.8%) showed the strongest appreciation, followed by Latvia (+38.6%) and Lithuania (+26.9%). Most of the other Member states that acceded to the EU in 2004 or later and that have not joined the euro area in the meantime recorded strong appreciation: Hungary (+45.3%) and Bulgaria (+28.2%).

… but this trend was reversed in several Member States with the onset of the crisis…

In several Member States the real effective exchange rate depreciated over the 2008-11 period. The most notable development was the sharp depreciation recorded in the United Kingdom (-18.6%), Ireland (-12.0%) and Hungary (-9.9%). Other Member States that recorded a depreciation in their real effective exchange rate were Spain (-5.7%), Latvia (-5.5%), Lithuania (-6.7%) and Malta (-0.58).

Germany lost some of the momentum observed over the 2001-07 period, i.e. an appreciation of 0.7% over the 2008-10 period compared to a depreciation of 4.6% over the 2001-07 period.

… which is expected to continue in 2012.

Based on information available as of early 2012, it is expected that the real effective exchange rate will continue to depreciate through 2012 in most Member States, with Greece and Ireland registering the strongest depreciation.

The impact of real effective exchange rates on employment.

The consensus view is that developments in the REER affect the trade balance of a country, i.e. an appreciation (depreciation) leads to a deterioration (improvement) of the trade balance.

Chart 3 shows the correlation between the average real effective exchange rate and the accumulated trade balance divided by GDP for the 2001-11 period. The negative correlation is supportive of the hypothesis that an appreciation (i.e. a rise in the REER) leads to a deterioration of the trade balance.

Changes in the trade balances are associated with changes in exports and imports, both of which have a direct impact on aggregate demand, suggesting that an appreciation of the real effective exchange rate results in a drop in aggregate demand, all other factors being equal. An appreciation therefore leads indirectly to a decline in employment, as employment is conditioned by aggregate demand. Chart 4 shows a negative correlation between employment and the real effective exchange rate.

[11] See Annex 4 for an assessment of the scope and limitations of this indicator.

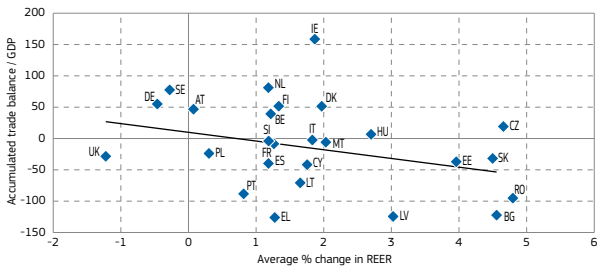
Table 6: Real effective exchange rate

	2008	2009	2010	2011	2012	2001-2007	2008-2011	2001-2011
EU-27	1.7	-3.5	-7.3	1.0	-3.6	38.4	-8.1	17.9
EURO	3.2	4.1	-7.3	0.2	-3.0	19.7	-0.1	10.9
BE	2.7	0.9	-2.0	1.8	-0.1	10.4	3.4	11.8
BG	8.7	10.3	2.9	2.7	0.8	28.2	26.7	67.1
CZ	11.5	-5.5	2.2	2.0	-2.1	47.8	10.0	66.2
DK	4.2	3.9	-4.2	-1.3	-2.8	20.6	2.4	18.2
DE	-0.1	3.2	-4.2	0.5	-0.3	-4.6	-0.7	-9.3
EE	9.4	0.0	-7.0	-0.4	-0.1	48.8	1.5	40.5
IE	8.0	-5.0	-9.8	-4.9	-6.3	36.9	-12.0	8.6
EL	4.2	4.5	-4.0	-3.1	-10.6	12.6	1.2	9.4
ES	3.0	-1.3	-4.7	-2.6	-4.7	20.2	-5.7	8.0
FR	1.4	0.2	-1.5	1.1	-1.2	13.3	1.2	12.9
IT	2.5	1.7	-3.0	0.4	-1.3	19.8	1.5	18.0
CY	-0.8	3.9	-3.2	1.8	-2.9	18.4	1.6	16.3
LV	15.7	-9.2	-11.3	1.5	-1.5	38.5	-5.5	16.1
LT	5.3	-1.9	-8.5	-1.2	-2.4	26.9	-6.7	8.3
HU	0.7	-9.7	-3.3	2.3	-3.9	45.3	-9.9	26.6
MT	2.2	1.3	-3.6	-0.6	-3.4	24.9	-0.8	19.5
NL	1.2	2.6	-2.7	-0.2	-0.8	12.6	0.8	10.4
AT	0.5	1.9	-2.2	0.2	0.2	0.3	0.4	-1.5
PL	12.7	-19.3	9.3	-2.2	-2.6	-0.5	-2.8	5.7
PT	1.2	0.4	-2.6	-1.1	-5.4	11.6	-2.2	6.2
RO	8.0	-12.9	6.5	1.4	-3.4	50.2	1.5	62.3
SI	2.3	6.3	-1.2	-0.4	-2.3	6.2	7.0	12.2
SK	9.0	9.2	-3.0	-1.5	-1.6	41.2	13.8	55.8
FI	4.5	6.5	-4.4	-0.2	-1.3	8.5	6.2	10.1
SE	-3.1	-8.1	6.0	3.5	1.0	-1.8	-2.3	1.7
UK	-13.0	-9.2	3.2	-0.1	3.8	5.5	-18.6	-11.4

Source: DG ECFIN-AMECO; historical values and 2012 forecast.

Notes: 1) Real effective exchange rates, based on unit labour costs (total economy). Performance relative to 35 industrial countries: double export weights. 2) A positive (negative) sign indicates an appreciation (depreciation) of the real effective exchange rate.
3) 2012 DG ECFIN forecast.

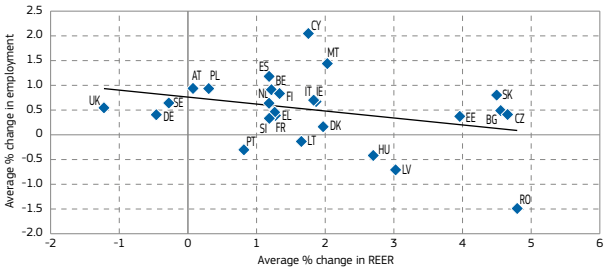
Chart 3: REER growth and cumulative trade balance (2001-11)



Source: EMPL calculations based on DG ECFIN AMECO database (XUNRQ, UMGS, UVGD, UXGS).

Notes: 1) A rise in REER indicates appreciation.
2) 2001-11 average of REER percentage change; cumulative trade balance (exports – imports) divided by GDP in market prices over the period 2001-11.
3) Coefficient of correlation is equal to -0.35.

Chart 4: REER and employment growth (2001-11 averages)



Source: DG EMPL calculations based on Eurostat, National Accounts, Total employment (nama_nace06_e) and DG ECFIN AMECO database (XUNRQ).

Notes: 1) Average annual percentage change over the 2001-11 period.
2) Coefficient of correlation is equal to -0.33.

3. Labour income share affecting demand and supply

3.1. Real unit labour cost

Changes in the real unit labour cost (RULC), which is equal to the nominal unit labour cost divided by the GDP deflator provide an indication of the evolution of [12]:

- the labour income share (or wage share) over time on the demand side;
- the real wage relative to labour productivity on the supply side.

Both dimensions have an important impact on employment and social cohesion as discussed in the following sub-section.

Table 7 shows data on the real unit labour cost for the 2001-12 period.

The real unit labour cost decreased notably during the run-up to the crisis…

Over the 2001-07 period the real unit labour cost showed a strong declining trend in most Member States, indicating that the labour income share was declining and that productivity was growing at a stronger pace than real labour costs.

Strong compound decreases in the real unit labour cost were found in Romania (-21.5%) and Poland (-16.3%), followed by Germany (-9.0%) and Luxembourg (-8.1%). Latvia (+8.0%) recorded the strongest increase, followed by the Czech Republic (+3.7%) and Ireland (+3.5%).

… but it recovered during the 2008-11 period…

During the 2008-11 period the trend reversed and most Member States recorded an increase in the real unit labour cost. Notable exceptions are the Baltic States, i.e. Estonia (-0.2%), Latvia (-10.9%) and Lithuania (-11.2%) as well as Hungary (-7.0%). In Greece (-1.7%), Spain (-0.5%), Malta (-1.2%) and Sweden (-2.5%) the decreases were fairly mild.

This temporary increase in the real unit labour cost reflects the fact that during an economic downturn, the nominal compensation per employee is less responsive to cyclical fluctuations than output or employment. The structural decline observed over a longer period is a reflection of various structural factors, including technological progress and globalisation [13].

… and stagnated in the beginning of 2012

Several Member States for which data were available at the time of writing showed a rise in their real unit labour cost in the beginning of 2012.

The United Kingdom showed the strongest increase, which is in line with the strong decrease in labour productivity and strong wage growth. The Czech Republic and Italy also recorded notable increases.

However, in Spain and Slovakia the real unit labour cost showed negative growth for the tenth consecutive quarter, while it fell for the fifth consecutive quarter in Latvia and the seventh consecutive quarter in Slovenia.

… the labour income share moved in the same direction

Chart 5 shows the adjusted labour income share (based on market prices) observed in 2001 and 2011 across the EU. Developments in the labour income share, based on market prices, correspond to the real unit cost discussed in the previous section. As a consequence, in Chart 5, the percentage differences between the 2001 and 2011 observations correspond with the compound growth rate over the 2001-11 period reported in Table 7.

In 2011 labour income shares above 60% were found in Slovenia (65.15%), the United Kingdom (63.59%) and Belgium (61.70%). The lowest labour income shares are below 50% and were found in Lithuania (+44.01%), Slovakia (+44.65%), Latvia (+47.22%), Poland (47.49%), Luxembourg (48.27%), and Hungary (49.36%).

(12) See Annex 1 for more details on this duality of the real unit labour cost.

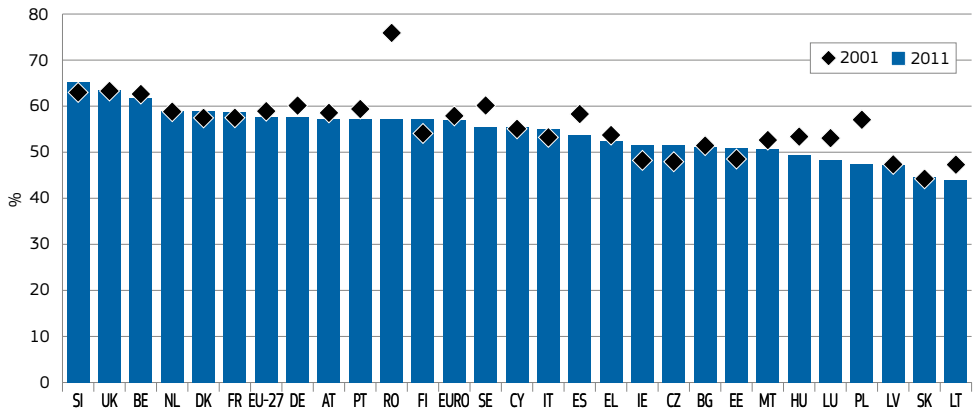
(13) The wage share, which shows a long-term decline in Europe, was extensively discussed in European Commission (2007) and in the ILO (2011.a).

Table 7: Real unit labour cost

	Annual % change				Compound growth rate			% change on previous year					
								2011				2012	
	2008	2009	2010	2011	2001-2007	2008-2011	2001-2011	q1	q2	q3	q4	q1	q2
EU-27	1.1	3.1	-1.6	-0.5	-4.7	2.1	-2.8	-1.6	-0.7	-0.2	0.3	0.7	:
EURO	1.7	3.2	-1.7	-0.3	-4.5	2.9	-1.8	-1.3	-0.3	0.0	0.1	0.3	:
BE	2.2	2.6	-2.3	0.6	-2.5	3.1	0.4	-0.9	0.1	1.6	1.7	1.1	1.4
BG	3.7	8.1	2.7	-3.7	-8.8	10.9	1.2	:	:	:	:	:	:
CZ	1.5	0.5	1.0	0.9	3.7	4.0	7.8	2.1	2.8	1.5	0.8	2.6	2.2
DK	1.8	4.5	-4.6	-0.4	3.4	1.1	4.5	-2.3	-1.4	1.1	1.3	0.0	0.4
DE	1.5	4.4	-2.0	0.6	-9.0	4.5	-4.9	-0.9	0.8	0.7	1.3	1.4	1.3
EE	8.7	2.8	-6.8	-4.2	1.8	-0.2	1.6	-4.8	-3.8	-2.3	-0.5	0.9	:
IE	10.1	1.7	-4.6	:	3.5	:	:	-1.1	-4.3	-2.3	-5.9	-3.6	:
EL	2.2	4.3	-3.4	-4.5	-2.4	-1.7	-4.0	-5.6	:	:	:	:	:
ES	3.2	1.2	-2.4	-2.4	-6.1	-0.5	-6.6	-2.4	-2.6	-2.5	-2.2	-1.9	-2.5
FR	0.7	3.0	-0.4	0.3	-0.8	3.6	2.8	-0.5	0.3	0.6	0.6	0.7	0.1
IT	2.0	1.9	-0.9	-0.3	0.8	2.7	3.5	-1.0	-0.3	-0.1	-0.2	0.1	2.3
CY	-2.7	6.6	-2.9	0.0	-2.2	0.7	-1.5	0.4	-0.7	-0.1	0.4	0.5	:
LV	6.9	-6.7	-7.7	-3.2	8.0	-10.9	-3.8	1.1	-3.7	-1.2	-5.4	-3.9	-2.4
LT	0.6	2.4	-9.1	-5.2	1.7	-11.2	-9.8	-6.0	-6.8	-5.1	-2.7	2.7	1.7
LU	1.7	8.4	-3.0	-1.4	-8.1	5.4	-3.1	-2.2	-1.0	-2.7	0.4	0.8	:
HU	-0.9	-0.6	-6.1	0.5	-1.2	-7.0	-8.2	0.2	2.0	1.0	-1.3	1.4	0.8
MT	0.5	3.4	-4.1	-0.9	2.4	-1.2	1.2	-1.6	-1.6	-2.3	2.0	2.3	0.0
NL	0.9	5.2	-1.8	0.0	-3.5	4.2	0.6	-0.9	-0.5	0.5	0.5	1.1	0.5
AT	2.0	3.4	-1.6	-1.3	-6.1	2.4	-3.8	-2.7	-2.2	-0.5	0.6	1.2	1.6
PL	4.3	-1.4	-0.1	-1.4	-16.3	1.3	-15.2	-3.4	-2.1	-1.7	-2.9	-1.0	:
PT	1.9	2.2	-2.6	-1.4	-3.3	0.0	-3.3	-1.8	-2.0	-0.8	-1.0	-2.6	:
RO	6.6	-1.2	1.8	-5.9	-21.5	0.9	-20.8	:	:	:	:	:	:
SI	2.1	4.7	1.5	-1.6	-4.6	6.8	1.8	-1.6	-1.4	-2.2	-2.4	-0.8	-1.9
SK	1.5	8.2	-1.8	-2.2	-6.3	5.5	-1.2	-1.3	-2.6	-1.6	-3.4	-2.1	-0.8
FI	3.7	7.4	-2.0	-1.3	-0.1	7.7	7.7	-2.1	-1.1	-1.9	0.1	0.8	1.7
SE	-0.1	2.3	-2.9	-1.7	-2.9	-2.5	-5.2	:	:	:	:	:	:
UK	0.2	3.9	-1.6	-1.0	-0.9	1.4	0.5	-2.4	-1.8	-0.5	0.7	2.5	3.7

Source: DG EMPL calculations based on Eurostat, National Accounts, Unit labour Cost, [nama_aux_ulc and namq_aux_ulc].

Chart 5: Adjusted labour income share based on market prices



Source: DG ECFIN AMECO database (ALCDO).

Note: Adjusted wage share: total economy: as percentage of GDP at current market prices (Compensation per employee as percentage of GDP at market prices per person employed).

3.2. Household earnings

The previous sections referred to primary income distribution. For households, this refers to net earnings received after paying taxes and social security contributions which have a direct impact on their standard of living.

Chart 6 shows the net earnings of a single person without children across the EU in 2010. Earnings in the national currency are corrected for price differences across Member States, i.e. the purchasing power standard.

Household income is highest in Luxembourg, about 5.7 times the household income recorded in Bulgaria, which has the lowest level in the EU.

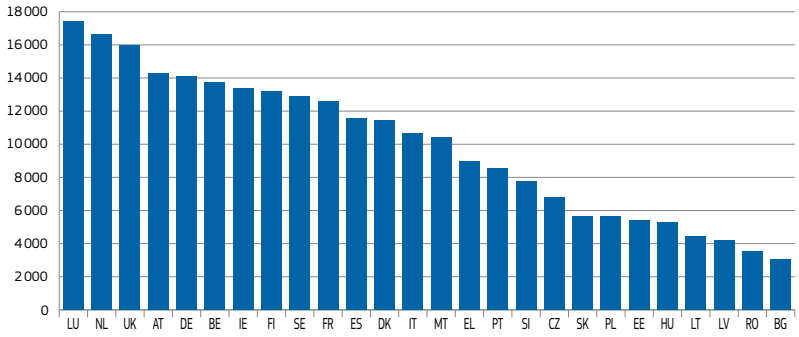
Apart from Cyprus and Malta, Slovenia recorded the highest net earnings of the Member States that joined the EU in 2004 or later, i.e. just over half the earnings of the Member States at the top of the ranking but 2.5 times the earnings recorded for Bulgaria.

Table 8 shows the development in net real earnings of a single person without children over time within the Member States, i.e. the nominal net earnings deflated by the harmonized consumer price index.

Among the Member States for which data are available, households in Slovenia showed the strongest increase in real purchasing power over the 2001-11 period, i.e. an increase of about 65%. In Ireland real net household income for persons without children decreased by 1.7% over the entire 2001-11 period, reflecting a -3.1% decrease over the 2001-07 period not offset by the 1.4% increase during the 2008-11 period.

Greece recorded a 39.1% increase in household income for single person without children over the 2001-07 period, which was counterbalanced by a 17.7% decrease during the 2008-11 period. Estonia (-8.3%), Hungary (-3.9%) and Belgium (-0.3%) also saw decreases in household income during the 2008-11 period.

Chart 6: Net earnings (single person without children, 50% of average wage, in purchasing power standard) – 2010



Source: Eurostat [earn_nt_net].

Notes: 1) Single person without children, 50% of AW.
2) The purchasing power standard, abbreviated as PPS, is an artificial currency unit. Theoretically, one PPS can buy the same amount of goods and services in each country.

Table 8: Real net earnings growth (single parent without children)

					Compound growth rate		
	2008	2009	2010	2011	2001-2007	2008-2011	2001-2011
BE	-0.1	2.3	-1.5	-0.9	11.6	-0.3	11.3
BG	3.1	10.4	1.1	:	29.2	:	:
CZ	6.0	4.1	0.3	-2.2	35.5	8.3	46.7
DK	0.8	2.0	2.4	-1.1	11.4	4.1	15.9
DE	0.2	0.1	2.8	0.0	2.9	3.1	6.1
EE	2.6	-6.2	-2.8	-1.9	82.2	-8.3	67.1
IE	1.3	-1.9	2.5	-0.4	-3.1	1.4	-1.7
EL	-3.2	9.7	5.6	-26.7	39.1	-17.7	14.4
ES	4.1	3.3	-0.6	-2.1	1.9	4.7	6.7
FR	-0.6	1.4	-0.4	-0.4	11.4	0.0	11.4
IT	-0.4	0.9	0.3	-1.1	5.7	-0.4	5.3
CY	:	:	:	:	32.9	:	:
LV	9.6	-5.2	-2.3	:	85.4	:	:
LT	7.0	-8.3	-2.8	:	66.8	:	:
LU	0.0	4.0	-0.7	-3.8	5.8	-0.8	4.9
HU	1.5	-0.4	-2.1	-3.0	42.4	-3.9	36.8
MT	3.2	0.6	2.1	:	5.8	:	:
NL	-0.1	2.1	0.6	-0.5	24.9	2.1	27.5
AT	-1.3	4.4	-0.5	-2.3	5.9	0.1	6.0
PL	4.0	0.1	0.7	2.5	18.0	7.3	26.5
PT	1.2	3.8	-0.1	-2.6	20.6	2.2	23.3
RO	17.1	-1.6	4.0	:	73.4	:	:
SI	8.3	1.2	5.0	-1.1	45.3	13.8	65.3
SK	5.1	5.1	1.8	-3.4	14.7	8.6	24.6
FI	1.5	2.7	1.9	0.3	26.0	6.5	34.1
SE	2.6	2.4	0.8	0.5	24.9	6.3	32.8
UK	-2.0	-1.3	-1.0	-2.6	16.7	-6.7	8.9

Source: DG EMPL calculations based on Eurostat, [earn_nt_net] and Price Indices [prc_hicp_aind].

Note: Net nominal earnings adjusted for changes in HICP.

3.3. Impact of wages on both demand and supply side of employment

As discussed above, various points must be taken into account when assessing the impact on employment of changes in wages.

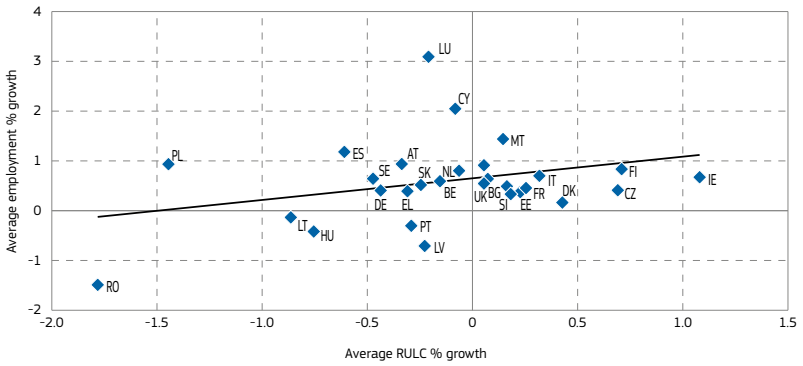
First, due consideration must be given to the specific economic environment that characterises the Member State under investigation. Changes in wages can be expected to result in different outcomes for employment under different economic situations. Box 3 provides an illustrative scenario to sharpen awareness on this problem.

Second, in a multi-country context, spill-over effects may limit the scope for wage adjustment. For instance, if several countries in the same monetary union are hit by the same shock and try to restore their competitiveness by moderating their wages, the policy may lead to a deflationary wage spiral across the countries affected.

Third, wages play a role on the demand as well as the supply side of the economy. The dual role played by wages on both the supply and demand side of the economy is highlighted by the dual role that the real unit labour cost plays in the economy.

On the supply side, the real unit labour cost captures the discrepancy between real wages and productivity (see Annex 1). Under the classical paradigm, firms are willing to hire workers until their marginal product equals their marginal costs, that is, when labour costs equal productivity levels.

Chart 7: RULC and employment growth (2001-11 averages)



Source: DG EMPL calculations based on Eurostat, National Accounts, Unit Labour Cost [nama_aux_ulc] and Price Indices [prc_hicp_aind].

Notes: 1) RULC= real unit labour cost (i.e. adjusted labour income share or real wage relative to labour productivity). 2) Coefficient of correlation is equal to 0.30.

In other words, an increase (decrease) in the real unit cost results in a decrease (increase) in labour demand, all other factors being equal.

On the demand side, the real unit labour cost measures the labour income share (Annex 1). When the labour income share increases (which also implies a decrease in the capital income share), consumer demand can be expected to rise and investment to fall, all other factors being equal. The latter two effects point in opposite directions with respect to their impact on aggregate demand so that a judgement cannot be made a priori as to which effect will dominate.

Nevertheless, in practice, one could argue that the net outcome will depend on the specific characteristics of the economy which are applicable at the time of the impact assessment. For instance, if investment prospects are low because demand is low, an increase in the labour income share should stimulate household demand which in turn will stimulate investment, generating a virtuous circle of mutually reinforcing outcomes yielding a rise in aggregate demand and employment, all other factors being equal. Of course, if household spending is also constrained due to a lack of confidence or high indebtedness despite a rise in the labour income share, then this increase will not be effective in stimulating aggregate demand.

Ultimately, the determination of the net impact of changes in the real unit labour cost on employment is an empirical matter. A first look at the data in Chart 7 shows a positive correlation between the average growth in the real unit labour cost and employment over the 2001-11 period, suggesting that developments in the demand side of real unit labour cost dominated supply side effects over this period [14]. It would be beyond the scope of this chapter to investigate this issue in greater depth.

[14] Technical note: Strictly speaking, such positive correlation may also arise from the supply side. In Annex 4 it is shown that assuming a CES production function, the relationship between labour demand (L) and the real unit labour (RULC) cost can be written as:
ln(L) = ln(Y) - – (1/ ρ) [ln(RULC) - – ln(δ)]
with ρ the substitution parameter,
with -1< ρ< +infinity.
For instance if labour and capital are perfect substitutes so that -1< ρ < 0 then the correlation between labour and RULC becomes positive.

Box 3: Employment outcomes conditioned by economic environment: illustrative scenario

Normally if wages are cut under a wage-led regime while the economy is slightly above its potential for sustainable growth, aggregate demand will fall, and economic activity will converge to its sustainable potential [1].

In a severe economic downturn characterised by a sharp output gap, with nominal interest rates close to their lower bound, limits to the adjustment process must be taken into account when wages are cut if one seeks to assess the total impact on aggregate demand and thus on employment [2].

Indeed, under these circumstances, a cut in wages to restore balance with productivity, for example, will impose downward pressure on expected prices, since prices are determined by the unit labour cost, i.e. nominal labour costs relative to productivity. This will then increase the real interest rate, (equal to the nominal interest rate minus the expected inflation rate), since when nominal interest rates are close to zero there is no room for the monetary authorities to cut nominal interest rates [3].

As a result of this increase in real interest rates, all interest-sensitive expenditures, including those on capital goods and durable consumption goods, will decline further, thereby reinforcing the downward pressure on domestic demand and upward pressure on the real interest rate through deflationary pressures caused by the increasing gap between potential output and actual demand.

In addition, deflationary pressures will also increase the real value of existing nominal debt, and assuming that the marginal propensity of debtors to spend is greater than the marginal propensity of creditors to spend, the downward trend in aggregate demand will be reinforced.

If the country operates under a flexible exchange rate regime, an increase in the real interest rate will lead to an appreciation of the exchange rate, thereby negatively affecting net exports. If the country is part of a monetary union, the exchange rate of the union will be affected to the extent that this member's real interest rate affects the real interest rates of the monetary union as a whole. As a consequence, the net exports of all Member States (whether or not they have cut wages) will be affected by the impact on the exchange rate of wages cut in one Member State. If all Member States of the monetary union cut wages then the impact on demand for the union as a whole will be of the same nature as described in the case of the country under a flexible exchange rate regime. However, at the level of the Member States no competitiveness gains will be made vis-à-vis the other Member States in the monetary union.

Subsequently, the lower total output level may then provide an incentive to invest less in capital goods, strengthening the vicious spiral of decreasing consumption and decreasing investment. These downward pressures will then be reinforced further as falling demand widens the output gap which in turn induces demand-push deflationary pressure.

All in all, it is to be expected that in times of a severe economic downturn under a wage-led regime, a wage cut will induce a drop in output which is stronger than the drop in 'normal times' since nominal interest rates are hitting their lower bound, resulting in reduced employment.

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(1) Under a wage-led regime the positive effects arising from the increase in disposable income of households dominate the negative effects arising from the deterioration in competitiveness. Under a profit-led regime, the competitiveness effect dominates the disposable income effect. It is an empirical matter to investigate for each specific Member States and the euro area as a whole whether it falls under a wage-led or profit-led regime. Nevertheless, it is important here to point to the asymmetry that may occur under a profit-led regime in the time of a severe downturn.

(2) Such scenarios are discussed in more detail in, for instance, Eggerston (2009), Eggerston (2010), and Eggerston and Krugman (2011).

(3) In the case where a risk premium is discounted in the nominal interest rate, as it is the case for some Member States, then the lower bound is equal to the level of the risk premium.

4. Personal wage/ income distribution

4.1. Wage distribution and income inequality

Factor income distribution affects personal income distribution along several channels, including the following:

- the distribution of income between capital and labour arising from production, i.e. the labour income share;
- the distribution of the total wage bill among the different types of workers along various dimensions ranging from personal characteristics to firm-specific characteristics.

A standard measure of income inequality is the Gini coefficient. Table 9 shows the evolution of income inequality over time within Member States and across Member States. A higher Gini coefficient indicates greater income inequality.

Comparing the Gini coefficients from 2005 and 2010 (the last year for which an observation is available for all Member States) it follows that at the EU level as a whole, the degree of income inequality remained more or less stable. However, there are some notable differences in the developments within Member States.

The Gini coefficient is highest in Lithuania (36.9) and Latvia (36.1) and lowest in Slovenia (23.8). Bulgaria recorded the strongest increase, up from 25 in 2005 to 33.2 in 2010, followed by Germany where the coefficient increased from 26.1 to 29.3. The strongest decreases were found in Poland and Portugal, down from 35.6 and 38.1 to 31.1 and 33.7 respectively.

It would be beyond the scope of this chapter to analyse these outcomes in full detail. Nevertheless, it may be useful to have a closer look at the relationship between this coefficient and the labour income share discussed above.

A selected set of drivers of personal income inequality

Chart 8 shows a negative correlation between the Gini coefficient and the labour income share, suggesting that a rise in the labour income share leads to a decrease in income inequality. To understand this outcome, two transmission mechanisms must be recognized. First, if one assumes that capital income is primarily earned by individuals at the top of the income distribution, then it is to be expected that inequality will be reduced when the labour income share is increased (i.e. when the capital income share decreases).

Table 9: Gini coefficient

	1995	2000	2005	2006	2007	2008	2009	2010	2011
EU-27	:	:	30.6	30.2	30.6	30.8	30.4	30.5	:
EURO	:	:	29.2	29.1	29.9	30.2	30.1	30.2	:
BE	29	30	28	27.8	26.3	27.5	26.4	26.6	26.3
BG	:	25	25	31.2	35.3	35.9	33.4	33.2	:
CZ	:	:	26	25.3	25.3	24.7	25.1	24.9	25.2
DK	20	:	23.9	23.7	25.2	25.1	26.9	26.9	27.8
DE	29	25	26.1	26.8	30.4	30.2	29.1	29.3	29.0
EE	:	36	34.1	33.1	33.4	30.9	31.4	31.3	31.9
IE	33	30	31.9	31.9	31.3	29.9	28.8	33.2	:
EL	35	33	33.2	34.3	34.3	33.4	33.1	32.9	:
ES	34	32	31.8	31.2	31.3	31.3	32.3	33.9	34.0
FR	29	28	27.7	27.3	26.6	29.8	29.9	29.8	:
IT	33	29	32.8	32.1	32.2	31	31.5	31.2	:
CY	:	:	28.7	28.8	29.8	28.3	29.1	29.1	:
LV	:	34	36.1	39.2	35.4	37.7	37.4	36.1	35.2
LT	:	31	36.3	35	33.8	34	35.5	36.9	32.9
LU	29	26	26.5	27.8	27.4	27.7	29.2	27.9	27.2
HU	:	26	27.6	33.3	25.6	25.2	24.7	24.1	26.9
MT	:	30	26.9	27	26.3	27.9	27.2	28.4	27.4
NL	29	29	26.9	26.4	27.6	27.6	27.2	25.5	25.8
AT	27	24	26.2	25.3	26.2	26.2	25.7	26.1	26.3
PL	:	30	35.6	33.3	32.2	32	31.4	31.1	31.1
PT	37	36	38.1	37.7	36.8	35.8	35.4	33.7	34.2
RO	:	29	31	33	37.8	36	34.9	33.3	33.2
SI	:	22	23.8	23.7	23.2	23.4	22.7	23.8	23.8
SK	:	:	26.2	28.1	24.5	23.7	24.8	25.9	:
FI	:	24	26	25.9	26.2	26.3	25.9	25.4	25.8
SE	:	:	23.4	24	23.4	24	24.8	24.1	24.4
UK	32	32	34.6	32.5	32.6	33.9	32.4	33	:

Source: Eurostat, SILC [ilc_di12].

Notes: 1) The Gini coefficient is an indicator with a value between 0 and 100. Lower values indicate higher equality. In other words a value equal to 0 indicates that everyone receives the same income, a value equal to 100 indicates that one individual receives all income.
2) PL 2011 provisional.

Second, however, such an outcome implicitly assumes that increases in the labour income share are equally distributed among the different deciles of wage earners – or at least that the redistribution of the labour income share among wage earners does not dominate the changes induced by the overall increase in the labour income share.

Chart 9 shows a positive correlation between the Gini coefficient and a measure of wage dispersion, i.e. the second upper decile of the wage distribution relative to the second lower decile observed in 2007. This positive correlation is in line with expectations, i.e. stronger wage dispersion will generate stronger income inequality, all other factors being equal.

Drivers of wage dispersion cover a range of variables. The next subsections describe the impact of individual characteristics (i.e. gender), geographical characteristics and labour market institutions (i.e. minimum wages).

4.2. Gender pay gap

Table 10 shows the spread in hourly earnings along the gender dimension, based on the latest release of the 2010 Structure of Earnings Survey covering the sectors of industry, construction and services (but excluding public administration, defence, and compulsory social security).

Generally speaking, the hourly earnings of men are higher than those of women and the earnings of older persons are higher than those of younger persons in all Member States. Furthermore, the pay gap between men and women increases with age.

The strongest gender pay gap (i.e. the difference between the earnings of men and women as a percentage of the average earnings of men) is found in Estonia (+27.2%), followed by Austria (23.9%). The lowest gap is found in Slovenia (+0.9%), followed by Poland (4.4%). The gender pay gap in the EU stood at 16.4% in 2010, and though a slight decrease has been observed since the beginning of the crisis (from 17.7% in 2006), it remains high[15].

Closing the gender pay gap is one of the five main priorities in the Women's Charter and also in the Strategy for Equality between Women and Men 2010-2015, which proposes a series of actions to tackle its root causes[16].

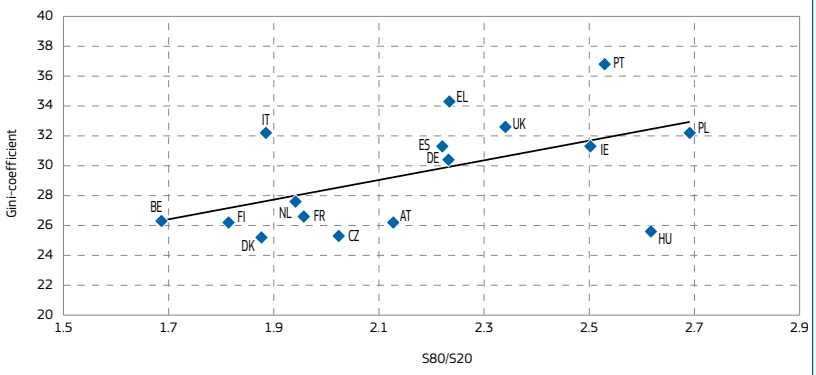
The causes of the gender pay gap derives from direct discrimination, but also segregation in the labour market and the undervaluing of women's work, the lack of transparency in pay policies and the greater difficulties experienced by women in balancing work and private life (resulting in career interruptions, etc.). These difficulties and inequalities accrue through the life cycle.

Chart 8: Labour income share and Gini coefficient (2005-10 averages)



Source: DG EMPL calculations based on Eurostat [ilc_di12 and namq_aux_ulc].
Note: Gini coefficient scaled 0 to 100; 2005-10 period average; coefficient of correlation: -0.12.

Chart 9: Wage distribution and Gini coefficient in 2007



Source: DG EMPL calculations based on Eurostat, [ilc_di12 and namq_aux_ulc] and OECD.
Notes: 1) S80/S20 = gross earnings 8th decile divided by gross earnings 2nd decile. Observations for 2007.
2) Gini coefficient scaled 0 to 100.
3) Coefficient of correlation +0.53.

(15) See http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Gender_pay_gap_statistics.

(16) The gender pay gap has been a Commission priority for several years. It was already present in the Roadmap for Equality between Women and Men 2006-2010 as a sub-priority to 'Achieving Equal Economic Independence for Women and Men'. Tackling the gender pay gap has gained more political relevance over recent years: it became one of the main priorities in the Women's Charter and also in the Strategy for Equality between Women and Men 2010-2015.

Table 10: **Earnings along age and gender dimension – hourly earnings, 2010 (€)**

	Men						Women					
	Total	Less than 30 years	From 30 to 39 years	From 40 to 49 years	From 50 to 59 years	60 years or over	Total	Less than 30 years	From 30 to 39 years	From 40 to 49 years	From 50 to 59 years	60 years or over
BE	19.8	14.4	18.6	21.2	23.4	25.3	17.8	14.2	17.3	18.9	20.2	19.5
BG	2.2	1.9	2.4	2.4	2.2	1.9	1.9	1.8	2.0	1.9	1.9	1.8
CZ	5.8	4.6	6.3	6.4	5.7	5.8	4.6	4.3	4.7	4.6	4.6	4.9
DK	29.6	20.2	29.2	32.6	32.0	31.9	24.7	18.6	24.3	26.1	26.1	26.1
DE	18.8	11.0	18.6	21.5	22.0	21.1	14.6	10.3	15.5	15.8	16.0	15.8
EE	5.7	5.1	6.8	6.2	5.3	4.7	4.2	4.0	4.6	4.4	3.9	3.6
IE	27.7	:	25.0	31.1	33.3	29.6	23.8	:	23.0	26.9	26.7	22.2
ES	12.4	9.1	11.6	13.0	14.5	17.7	10.4	8.5	10.3	10.8	11.6	12.5
FR	17.5	11.8	16.6	18.7	20.1	25.2	14.8	11.8	14.5	15.5	15.9	19.0
IT	14.8	10.0	12.8	15.2	17.8	22.6	14.0	9.6	12.3	14.4	16.9	20.3
CY	13.3	8.0	12.5	15.7	17.5	14.5	11.0	7.6	11.7	12.1	13.0	9.2
LV	4.1	3.8	4.8	4.1	3.8	4.0	3.5	3.4	3.9	3.5	3.3	3.3
LT	3.7	3.3	4.0	3.7	3.6	3.8	3.2	3.2	3.3	3.2	3.2	3.4
LU	22.6	15.4	21.6	25.4	26.8	32.9	20.7	15.9	21.4	22.6	22.9	21.0
HU	5.0	3.9	5.2	5.3	5.0	6.2	4.1	3.9	4.4	4.1	4.1	4.8
MT	8.7	7.1	9.6	9.3	8.8	8.5	8.1	7.2	8.9	8.5	8.3	8.7
NL	18.6	11.2	18.8	21.7	22.6	21.0	15.2	11.0	16.9	17.1	17.0	16.3
AT	16.4	11.0	16.5	18.8	19.8	21.9	12.5	9.9	13.1	13.7	13.6	13.2
PL	5.2	4.0	5.7	5.7	5.2	6.2	5.0	3.9	5.2	5.4	5.0	6.2
PT	8.2	5.3	7.7	9.4	10.4	10.8	7.2	5.0	6.8	7.8	9.2	8.0
RO	2.8	2.3	2.8	2.9	3.0	3.7	2.6	2.3	2.6	2.5	2.7	3.1
SI	9.1	6.8	9.0	9.7	9.8	15.6	9.1	7.4	9.0	9.1	10.0	16.3
SK	5.2	4.3	5.8	5.5	5.1	5.1	4.2	4.0	4.4	4.2	4.2	4.8
FI	20.4	15.2	20.2	22.0	21.9	22.5	16.2	13.6	16.4	17.2	16.7	16.3
SE	18.1	:	17.9	19.8	19.4	:	15.3	:	15.4	16.2	15.9	:
UK	18.7	11.9	19.9	22.2	21.5	17.7	14.7	11.0	18.0	15.4	15.1	13.0

Source: Eurostat, SES 2010 [earn_ses10_13].

4.3. Wage polarization

Making use of EU-LFS data, Hurley and Storrie (2011) analyse employment changes along the following dimensions: sector, worker characteristics and employment status, with a view toward assessing developments in wage polarisation. Key findings of direct relevance to this chapter are as follows:

- the recession strengthened the wage polarization trends observed in the past. Prior to the crisis, polarization was driven by the growth of service jobs at the extremes of the wage distribution. During the current recession, however, it was the massive job loss in manufacturing and construction – and the ensuing collapse of the middle-ranking jobs – that was the dominant driver of increased wage polarisation;

- job growth in the top wage quintile persisted strongly throughout the recession mainly due to an increase in knowledge-intensive services (KIS), including public services (mainly education and health) and in private services (business services);

- there are strong indications that, in the long term, employment creation in the services sector will be characterised mainly by employment growth at the top and bottom, implying that the service sector cannot be relied upon to fill the gap created by the decline in manufacturing. This trend toward further segregation thus intensifies the risk of limiting the career mobility possibilities for those in lower-end employment and exacerbating problems of job-skills mismatches and over-qualification.

4.4. Regional wage dispersion and labour cost trends

Regional income differences (which have an important impact on personal inequality at the level of the countries as a

whole) are to a large extent determined by the regional concentration of factor income differentials.

This section highlights some of the main developments in labour factor income across regions within Member States.

4.4.1. Regional nominal compensation per employee

Chart A.5.1 of Annex 5 shows the regional dispersion of nominal compensation per employee within a select group of Member States.

The national averages of the variables discussed in this section have been discussed in the previous sections.

Table 11 summarizes this chart by showing the upper end and lower bounds of the regional distribution of nominal compensation per employee (measured in euro) in 2001 and 2009.

The sharpest spread is found in the United Kingdom, with the London region listing compensation per employee at about 70% above the national average, while Northern Ireland records a level about 20% below the national average. At the other end of the scale are Greece whose upper bound is about 1% above the national average and lower bound is about 3.5% below the national average, and Ireland with an upper end 3% above national average and lower bound almost 10% below the national average.

Chart A.5.2 of Annex 5 shows the compound growth in nominal compensation per employee for a select group of Member States over the period from 2001 until 2009 (the last year for which observations are available).

Table 12 summarizes the data by showing the upper and lower bound of the regional distribution within a Member State for which sufficient data are available, measured as the ppt. difference between the regional compound growth rate and the national compound growth rate.

By far the strongest divergence was found in Hungary, followed by France (including the Overseas Departments) and Romania.

Table 11: Regional compensation per employee (in €1 000)

		2001	2009
BE	Brussels Hoofdstedelijk Gewest / Région de Bruxelles-Capitale	46 685	57 546
	Belgium	39 087	47 779
	Région wallonne	35 584	43 487
BG	Yugozapadna i yuzhna tsentralna Bulgaria	2 636	5 283
	Bulgaria	2 489	4 846
	Severna i yugoiztochna Bulgaria	2 329	4 282
CZ	Praha	10 532	20 540
	Czech Republic	7 121	13 896
	Severozápad	6 179	11 683
DK	Hovedstaden	40 839	54 161
	Denmark	36 973	48 521
	Nordjylland	34 149	44 645
DE	Hamburg	36 794	40 422
	Germany	31 761	34 181
	Mecklenburg-Vorpommern	24 762	27 078
EE	Estonia	5 696	13 439
IE	Southern and Eastern	33 608	48 231
	Ireland	32 577	46 806
	Border, Midland and Western	29 087	42 269
EL	Attiki	18 734	27 463
	Greece	18 107	27 207
	Nisia Aigaiou, Kriti	17 706	26 237
ES	Comunidad de Madrid	26 647	34 725
	Spain	23 431	31 121
	Canarias (ES)	22 473	28 146
FR	Île de France	46 688	52 649
	France	34 300	41 152
	Ouest (FR)	29 626	35 789
IT	Nord-Ovest	30 258	33 970
	Italy	28 490	32 393
	Sud	25 334	29 509
CY	Cyprus	18 361	24 603
LV	Latvia	4 515	9 989
LT	Lithuania	4 795	7 494
HU	Közép-Magyarország	11 243	13 147
	Hungary	8 076	11 862
	Alföld és Észak	6 211	10 822
MT	Malta	15 187	18 054
NL	West-Nederland	40 150	52 082
	Netherlands	38 814	50 258
	Noord-Nederland	37 240	47 959
AT	Ostösterreich	34 926	41 943
	Austria	32 987	39 657
	Südösterreich	30 998	37 438
PL	Region Centralny	10 580	11 140
	Poland	8 533	9 388
	Region Wschodni	7 202	7 348
PT	Lisboa	19 204	24 355
	Portugal	15 591	20 027
	Norte	13 483	17 386
RO	Macroregiunea trei	4 013	9 621
	Romania	3 245	7 680
	Macroregiunea doi	2 890	6 448
SI	Zahodna Slovenija	17 544	25 067
	Slovenia	15 632	23 157
	Vzhodna Slovenija	13 698	20 969
SK	Bratislavský kraj	6 940	18 477
	Slovakia	5 120	13 250
	Východné Slovensko	4 761	11 702
FI	Åland	32 745	48 481
	Finland	32 405	41 444
	Manner-Suomi	32 384	41 396
SE	Östra Sverige	37 831	30 787
	Sweden	34 756	29 270
	Norra Sverige	32 057	27 686
UK	London	62 760	60 739
	United Kingdom	37 736	35 370
	Northern Ireland (UK)	33 811	28 379

Source: DG EMPL calculations on the basis of Eurostat, Compensation of employees by NUTS 2 regions (NACE Rev. 2) [nama_r_e2remr2].

Note: For each Member State the first line shows the region with the highest average compensation per employee, the second line shows the country average, the third line shows the region with the lowest average compensation per employee.

In Austria, Belgium and Denmark the spreads in the growth of compound nominal compensation per employee across regions were fairly limited.

4.4.2. Regional productivity growth

Chart A.5.3 of Annex 5 shows regional productivity growth per employed person for a select group of Member States over the 2001-07, 2008-09, and 2001-09 periods.

Within most of the Member States for which data are available, the growth in productivity in particular regions all points in the same direction, with all regions either showing gains or all showing losses in productivity. Exceptions to this rule include the Noord-Holland region in the Netherlands which showed a gain in productivity growth over the 2008-09 period, while the other regions of the Netherlands show a decrease and the Pólnocny region in Poland which shows a fall in productivity while the other regions record an increase in the 2008-09 period.

Where sufficient data are available, Table 13 presents a summary showing the spread in the compound productivity growth rates among the different regions within the Member States.

Among the Member States for which the full 2001-09 data range is available, the strongest spread in compound regional productivity growth is found in Portugal, followed by the Czech Republic and Germany. Belgium records the lowest spread among its regions.

Among the Member States for which only the 2001-07 data range is available, Slovakia recorded the strongest dispersion among its regions, followed by Finland. The Netherlands showed the lowest dispersion.

Table 12: **Compensation per employee (in national currency) – Compound growth rate (ppt. difference from national average)**

		Lower end				Upper end			
		2001-2007	2008-2009	2001-2009		2001-2007	2008-2009	2001-2009	Spread
HU	Közép-Magyarország	-3.6	-19.7	-37.8	Alföld és Észak	0.6	19.7	35.5	73.4
FR	Île de France	-6.3	0.3	-6.1	Départements d'outre-mer (FR)	56.4	-3.0	53.3	59.5
RO	Macroregiunea doi	-21.2	-1.9	-36.0	Macroregiunea patru	2.5	3.2	18.3	54.2
PL	Region Wschodni	-12.1	-4.8	-18.5	Region Pólnocno-Zachodni	3.7	4.1	8.9	27.4
UK	Northern Ireland (UK)	-12.8	-1.0	-14.6	South East (UK)	9.7	0.0	10.1	24.7
CZ	Severozápad	-10.1	-0.4	-11.0	Jihovýchod	4.4	4.0	11.2	22.1
FI	Manner-Suomi	0.1	-0.2	-0.1	Åland	-6.0	21.5	19.2	19.3
BG	Severna i yugoiztochna Bulgaria	-10.5	1.1	-11.6	Yugozapadna i yuzhna tsentralna Bulgaria	6.6	-1.7	5.4	16.9
EL	Attiki	-2.2	-1.7	-4.7	Kentriki Ellada	0.3	6.0	8.8	13.6
SI	Zahodna Slovenija	-4.9	0.0	-5.3	Vzhodna Slovenija	4.6	-0.3	4.5	9.8
PT	Lisboa	-1.8	-1.4	-3.6	Região Autónoma da Madeira (PT)	1.4	3.5	6.0	9.6
ES	Canarias (ES)	-3.2	-3.2	-7.4	Centro (ES)	4.2	-2.2	1.9	9.2
DE	Berlin	-4.2	0.6	-3.7	Thüringen	2.5	1.3	4.0	7.7
SE	Östra Sverige	-1.1	-1.8	-3.1	Norra Sverige	1.5	1.5	3.2	6.2
DK	Nordjylland	0.2	-1.7	-2.0	Hovedstaden	0.1	1.0	1.4	3.4
BE	Région wallonne	-1.5	0.9	-0.5	Brussels Hoofdstedelijk Gewest/ Région de Bruxelles-Capitale	0.8	0.3	1.2	1.7
AT	Ostösterreich	-0.6	0.3	-0.3	Südösterreich	2.0	-1.0	1.0	1.3

Source: DG EMPL calculations on basis of Euroststat [nama_r_e2remr2].

Notes: 1) Compound growth in region minus the compound 'average' national growth rate.
2) The spread is the difference between the upper and lower bounds of the 2001-09 compound growth rates in the regions.

Table 13: Productivity per employed person – Compound growth rate (ppt. difference from national average)

		Lower end				Upper end			
		2001-2007	2008-2009	2001-2009		2001-2007	2008-2009	2001-2009	Spread
PT	Algarve	-8.2	-3.4	-11.5	Região Autónoma da Madeira (PT)	7.1	2.9	10.4	22.0
CZ	Moravskoslezsko	-5.9	-4.1	-11.0	Střední Cechy	8.2	1.2	9.7	20.7
DE	Hamburg	-6.3	0.1	-5.9	Sachsen	9.8	2.0	11.6	17.5
DK	Sjælland	-1.1	-4.5	-5.7	Nordjylland	2.3	4.0	6.5	12.2
ES	Comunidad de Madrid	-0.6	-3.9	-4.5	Centro (ES)	4.4	1.9	6.6	11.1
UK	East Midlands (UK)	-1.1	-2.5	-3.8	North West (UK)	3.4	1.9	5.6	9.4
SE	Norra Sverige	-6.6	1.8	-4.3	Östra Sverige	3.7	-0.1	3.4	7.7
BE	Région wallonne	-1.9	0.6	-1.1	Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest	3.8	1.0	4.8	6.0
SK	Bratislavský kraj	-7.7	:	:	Západné Slovensko	7.5	:	:	15.2
FI	Åland	-14.2	:	:	Manner-Suomi	0.1	:	:	14.4
FR	Méditerranée	-5.3	:	:	Départements d'outre-mer (FR)	6.6	:	:	11.9
IE	Border, Midland and Western	-7.4	:	:	Southern and Eastern	2.0	:	:	9.4
SI	Zahodna Slovenija	-7.1	:	:	Vzhodna Slovenija	0.0	:	:	7.1
PL	Region Pólnocny	-3.9	:	:	Region Pólnocno-Zachodni	2.9	:	:	6.8
NL	Zuid-Nederland	-1.9	:	:	Noord-Nederland	4.2	:	:	6.2

Source: DG EMPL calculations on basis of Euroststat [nama_r_e2remr2].

Notes: 1) Compound growth in a region minus the compound 'average' national growth rate.
2) The spread is the difference between the upper and lower bounds of the 2001-09 compound growth rates in the regions.
For Member states for which only the 2001-07 data range is available, 2001-07 compound growth rates are compared.

4.4.3. Regional nominal unit labour cost growth

Chart A.5.4 of Annex 5 shows the growth in regional nominal unit labour costs for a select group of Member States over the 2001-07, 2008-09, and 2001-09 periods.

Table 14 summarizes the data by comparing the spread in compound growth of nominal unit labour costs within the Member States. Among the Member States for which the available data cover the 2001-09 time span, the regions within the Czech Republic show the most extreme differences, followed by Portugal and the United Kingdom.

Among the Member States for which the available data cover only the 2001-07 period, France (including the Overseas Departments) recorded the strongest divergence among its regions in the 2001-07 period.

Table 14: **Nominal unit labour cost (in local currency) – Compound growth rate (ppt. difference with national average)**

		Lower end				Upper end			
		2001-2007	2008-2009	2001-2009		2001-2007	2008-2009	2001-2009	Spread
CZ	Střední Cechy	-14.2	-3.7	-18.9	Praha	5.5	4.3	11.2	30.2
PT	Região Autónoma da Madeira (PT)	-9.3	0.5	-9.2	Algarve	9.2	3.3	13.9	23.1
UK	North West (UK)	-9.9	-0.2	-11.0	South East (UK)	10.1	-0.5	10.4	21.3
DK	Nordjylland	-2.4	-6.0	-10.0	Sjælland	2.4	3.3	6.8	16.8
DE	Sachsen	-6.4	-0.3	-7.2	Hamburg	7.3	1.2	9.2	16.4
SE	Östra Sverige	-4.4	-1.1	-4.8	Norra Sverige	7.7	-1.1	5.2	10.0
ES	Centro (ES)	-1.1	-4.0	-6.0	Sur (ES)	2.8	0.6	3.7	9.7
BE	Région wallonne	-3.3	-0.8	-4.4	Vlaams Gewest	0.9	0.3	1.3	5.7
FR	Île de France	-3.5	:	:	Départements d'outre-mer (FR)	45.3	:	:	48.8
SK	Západné Slovensko	-9.2	:	:	Stredné Slovensko	6.1	:	:	15.3
IE	Southern and Eastern	-1.8	:	:	Border, Midland and Western	7.8	:	:	9.6
FI	Manner-Suomi	0.0	:	:	Åland	9.2	:	:	9.2
NL	Noord-Nederland	-4.6	:	:	Zuid-Nederland	2.3	:	:	6.9
PL	Region Wschodni	-4.7	:	:	Region Poludniowo-Zachodni	1.6	:	:	6.2
SI	Slovenia	0.0	:	:	Vzhodna Slovenija	3.7	:	:	3.7

Source: DG EMPL calculations on the basis of Euroststat [nama_r_e2remr2].

Notes: 1) Compound growth in a region minus the compound 'average' national growth rate.
2) The spread is the difference between the upper and lower bounds of the 2001-09 compound growth rates in the regions.
For Member states for which only the 2001-07 data range is available, the 2001-07 compound growth rates are compared.

4.5. Minimum wages: a demand stabilizer

The policy relevance of minimum wages for the realisation of the Europe 2020 targets with respect to employment and social cohesion can hardly be underestimated. Minimum wages can have an important impact on personal income distribution, but they also risk destroying jobs particularly for the low skilled.

Twenty Member States have a national statutory minimum wage, including Belgium, Bulgaria, Czech Republic, Estonia, France, Greece, Ireland, Hungary, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and the United Kingdom. (See Table 20 in Chapter 1 of this report.)

There are no national statutory minimum wages in Austria, Cyprus, Denmark, Finland, Germany, Italy or Sweden. However, in many of these countries, the social partners in collective bargaining agreements define sector-specific minimum wages, which can be extended by the government to all companies and workers in given sectors (e.g., Germany), or which are de facto minimum wages due to extremely high collective bargaining coverage (e.g., Austria).

Recent developments in minimum wages are described in Chapter 1 of this report. The following sub-sections will focus on the developments in minimum wages over a longer period.

The minimum wage as a percentage of average wages will be used to assess the impact of minimum wages on employment and income distribution. The minimum wage in relation to standard purchasing power will be used to assess developments in minimum wages purchasing power.

4.5.1. Minimum wages: recent developments

Table 15 shows the minimum wage as a percentage of the mean value of the average wage for the period from 2008 until 2010 (i.e. the sample size for which data are available). Over this short time span, the minimum wage represented a fairly stable percentage of the average wage in the Member States that joined the EU before 2004. One notable exception is Greece where the minimum wage was about 50 % of the average wage in 2008, 2009 and 2011, but fell temporarily to 40 % in 2010.

The strongest increase in the minimum wage (as a percentage of the average) was found in Slovenia where it increased from 41.0 % in 2008 to 50.0 % in 2011. The strongest decrease was found in Bulgaria where the minimum wage decreased from 39.5 % of the average wage in 2008 to 33.7 % in 2011.

All in all, in 2011, minimum wages as a percentage of the average wage were highest in Greece and Slovenia at 50 %, while they were lowest in the Czech Republic (32.5 %) and Bulgaria (33.7 %).

Table 15: Monthly minimum wage as a percentage of the mean value of average monthly earnings (%)

	2008	2009	2010	2011
BE	:	:	44.7	:
BG	39.5	38.3	35.8	33.7
CZ	35.2	34	33.3	32.5
DK	:	:	:	:
DE	:	:	:	:
EE	34.9	36.2	35.6	33.8
IE	38.0	41.5	41.8	41.9
EL	48.4	50.7	40.4	50.1
ES	35.2	35.1	35.3	34.6
FR	47.3	47.9	47.4	:
IT	:	:	:	:
CY	:	:	:	:
LV	36.2	40.9	42.2	45.1
LT	39.6	40.5	42	41.1
LU	:	45.4	45.9	46.7
HU	38.5	38.6	38.8	39.1
MT	48.8	45.2	46.2	47.4
NL	44.2	44.1	44.6	:
AT	:	:	:	:
PL	35.7	39.7	40.4	38.3
PT	44.6	43.2	42.8	42.6
RO	30.1	33.3	32.3	35.8
SI	41.0	41.1	47.5	50.0
SK	34.7	36.5	36.6	36.6
FI	:	:	:	:
SE	:	:	:	:
UK	38.1	38.4	38.2	38.5

Source: Eurostat, NACE Rev. 2 (from 2008 onwards) [earn_mw_avgr2].

Note: Average monthly wage refers to NACE sections B-S.

Box 4: Minimum wages and employment

Briefly summarised, minimum wages affect employment through a range of different channels, including the following:

1. Substitution among heterogeneous labour inputs

If one assumes the existence of different skill groups and the fact that the minimum wage only applies to the lowest-skilled employees, then the impact on employment is less clear-cut.

If firms are able to substitute skilled labour for unskilled labour, the demand for unskilled labour declines and the demand for high-skilled labour increases through the so-called substitution effect.

However to understand the full impact of the demand for different skill types, it must be borne in mind that an increase in the minimum wage increases the price of outputs, leading to a decline in demand for the product, and as a consequence, labour demand also declines through the so-called output effect.

For the low-skilled the substitution effect and the output effect both unambiguously reduce labour demand.

However, it is an empirical matter to determine whether in the case of higher skilled workers the substitution effect will supersede the output effect, i.e. whether employment of these workers will increase or decrease.

2. Monopsony in the labour market

Under perfect competition, market equilibrium is attained at the point where demand meets supply and the wage is equal to the marginal product. Under monopsony the firm is free to set wages and the equilibrium is attained when wages are lower than marginal productivity yielding maximum profit for the monopsonist.

Imposing a minimum wage, the marginal cost to the firm becomes fixed at the point where new workers are attracted only by providing higher wages, yielding employment which is greater than the level which is reached without a minimum wage. Nevertheless, if the minimum wage is greater than the competitive free-market wage, involuntary unemployment will exist.

Monopsony may arise, for example, when a firm is the sole provider of employment and employees are immobile.

3. Stimulus of aggregate demand during a severe economic downturn

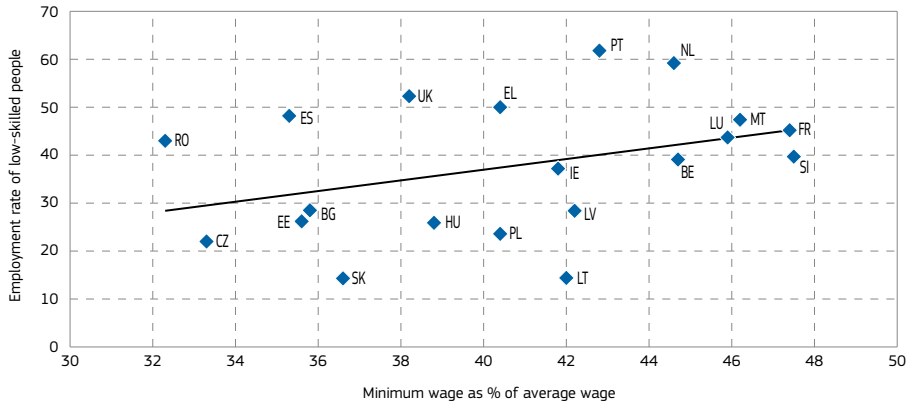
During a severe economic downturn, minimum wages:

- buoy prices, thereby reducing the risk of deflation during economic downturns;
- help to sustain aggregate demand;
- help to boost wage equality during a recession by maintaining an adequate standard of living for the most vulnerable workers.

These transmission mechanisms point in different directions and require a more rigorous examination to assess their net outcome.

Chart 10 shows a positive correlation between the minimum wage and the employment rate of the low skilled for the year 2010. The evidence suggests that the last two transmission mechanisms dominated the first in 2010. Nevertheless, this positive correlation could also be interpreted as meaning that in times of severe economic crisis, minimum wages are lowered when employment rates are falling.

Chart 10: Minimum wage (as % of average wage) and employment rate of low-skilled workers – 2010



Source: DG EMPL calculations on the basis of Eurostat, minimum wage (earn_mw_avgr2) and employment rate [lfsa_ergaed].

4.5.2. The employment dimension

Minimum wages have an impact on the earnings of workers and their employment opportunities (see, for instance, Her et al. (2009)).

Box 4 highlights three transmission mechanisms that may affect the impact of minimum wages on employment in the case of imperfect labour markets.

4.5.3. The social cohesion dimension

The minimum wage as a percentage of the average wage is an appropriate version of the minimum wage indicator to assess the impact of minimum wages on the labour income share and wage distribution between different groups of workers, both of which are important drivers of social cohesion via their impact on income distribution.

Minimum wages affect the distribution of total factor income

The impact of minimum wages on the labour income share is not unambiguous. On the one hand, it raises the wage of the low-wage earners, on the other hand it carries the risk (under the classical paradigm) of reducing the demand for low-skilled workers – all other factors being equal. Both effects point in opposite directions.

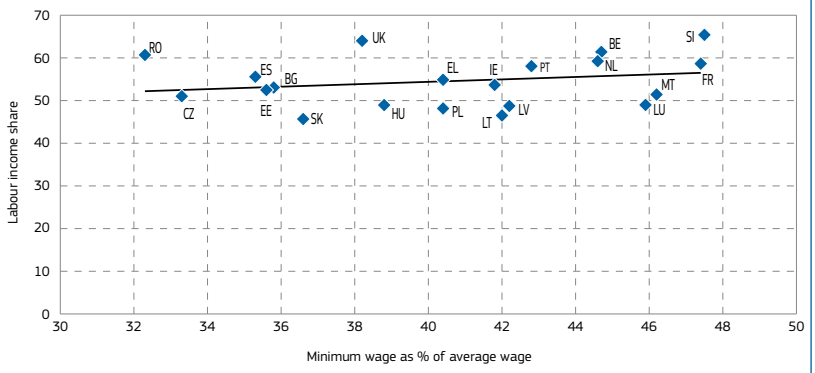
Chart 11 shows a moderate positive correlation between the minimum wage as a percentage of the average wage and the labour income share across the Member States for the year 2010. This indicates that minimum wages supported the labour income share in 2010.

Minimum wages affect wage distribution

Focusing on the distribution of wages between workers, Chart 12 shows a negative correlation between the minimum wage (as a percentage of the average wage) and the spread between the average earnings and the earnings of workers in the lowest pay decile in 2007, indicating that increases in minimum wages may narrow the gap between the low- and average-paid workers – all other factors being equal[17].

[17] It would be beyond the scope of this chapter to investigate how these effects of minimum wages on relative wages affect productivity (including via investment in human capital and effort) and employment.

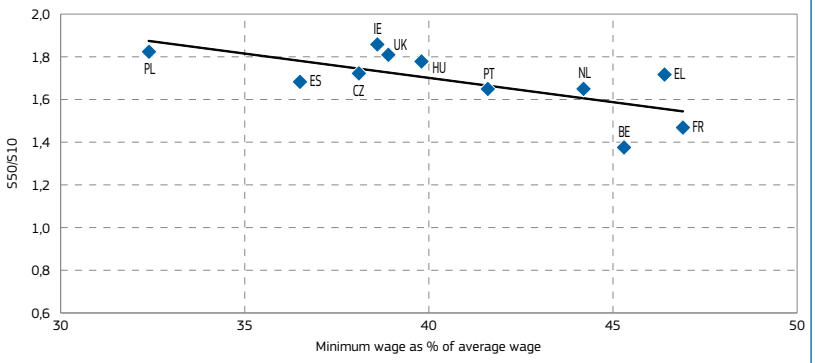
Chart 11: Labour income share and minimum wage (as % of average wage) - 2010



Source: DG EMPL calculations on the basis of Eurostat, minimum wage as a percentage of average wage (earn_mw_avgr2) and DG ECFIN AMECO database, adjusted wage share (ALCDO).

Note: Coefficient of correlation is equal to 0.19.

Chart 12: Minimum wage and S50-S10 pay differential – 2007



Source: DG EMPL calculations based on Eurostat (earn_mw_avgr2) and OECD.

Notes: 1) S50/S10 = gross earnings 5th decile divided by gross earnings 1st decile. Observations for 2007. 2) Coefficient of correlation is equal to -0.69.

Minimum wages narrow the gender pay gap

As women are more likely than men to be employed in sectors with low wages, such as cleaning, minimum wages may also have an impact on the gender pay gap (which was briefly discussed in section 4.2).

Chart 13.a shows a negative correlation between the gender pay gap and the minimum wage in 2010. In other words, Member States with a high-level minimum wage relative to average earnings are more likely to enjoy a narrow gap between average earnings of men and women in employment.

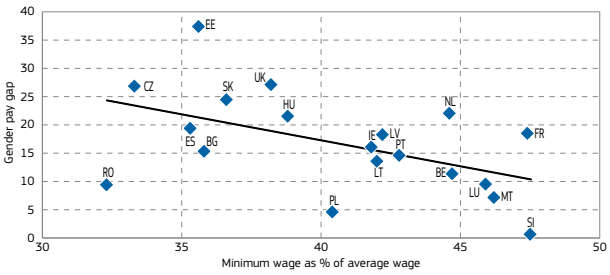
Chart 13.b shows a similar outcome by relating the minimum wage to the risk of women (relative to men) being employed in a low-paid job in 2008. This chart shows that in all Member States women have a higher likelihood of being in low-paid jobs than men, but that this probability decreases with the rise of minimum wages.

Minimum wages affect income distribution

The previous analysis shows that minimum wages have the potential to temper wage dispersion, causing a reduction in income inequality. Nevertheless, classical economic theory also suggests that a rise in the minimum wage will lead to an increase in unemployment, particularly for those at the lower end of the wage distribution. As unemployment benefits are lower than the minimum wage, one could expect an increase in income inequality, partly offsetting the positive effect described above.

Chart 14 shows a negative correlation between the minimum wage as a percentage of the average wage and the Gini coefficient (using 2010 data), indicating that on balance the former effect dominated the latter effect in 2010.

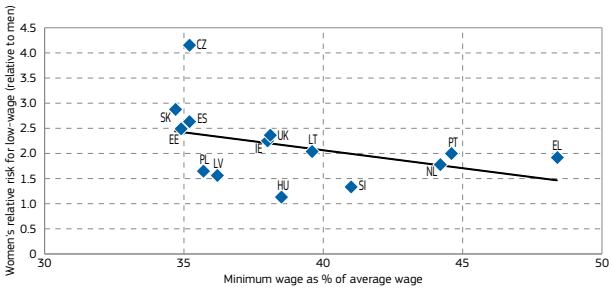
Chart 13a: Minimum wage and gender pay gap - 2010



Source: DG EMPL calculations based on Eurostat [earn_mw_avgr2] and earn_ses10_13.

Note: Coefficient of correlation -0.50.

Chart 13b: Minimum wage and women's incidence of low-wage employment - 2008



Source: DG EMPL calculations based on Eurostat [earn_mw_avgr2] and calculations by the European Network of Experts on Gender Equality.

Note: Coefficient of correlation is equal to -0.41.

Minimum wage in purchasing power standard remained fairly stable

The minimum wage measured in terms of purchasing power standard (PPS) is the most appropriate indicator to assess the impact of minimum wages on poverty.

Table 16 shows developments in national monthly minimum wages in the European Union measured in purchasing power standard, i.e. exchange rates adjusted for differences in the prices of goods and services across Member States.

Luxembourg shows the highest minimum wage by far over the entire period for which data are available, followed by the Netherlands, Belgium, France and Ireland.

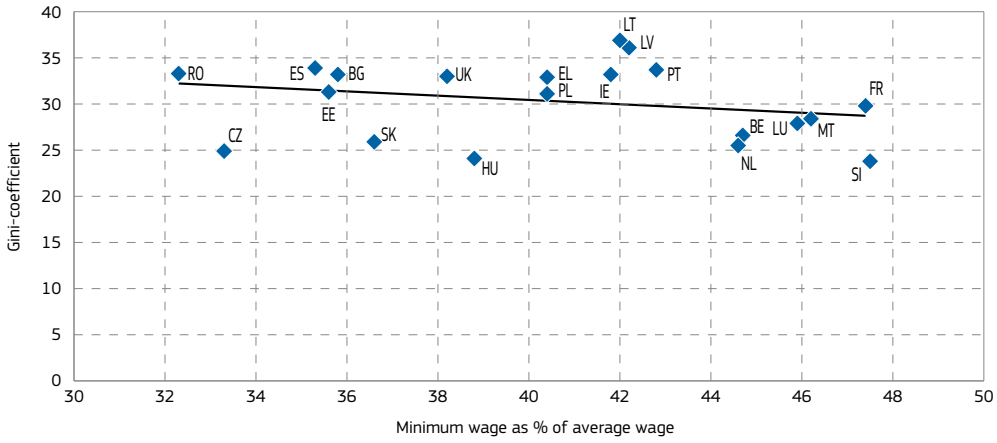
With the exception of Malta and Slovenia, the Member States that joined the EU in 2004 or later show lower minimum wages (measured in PPS), with the lowest minimum wages recorded in Romania and Bulgaria.

In terms of purchasing power, the minimum wage at the top (i.e. Luxembourg) is more than five times the minimum wage at the bottom.

Eleven Member States have a minimum wage (in terms of PPS) that is less than half the minimum wage of Luxembourg, among them Greece and Portugal.

All in all, minimum wages in purchasing power standard remained fairly stable over the 2001-11 period, despite the high inflation rates in some of the Member States that joined the EU in 2004 or later.

Chart 14: Minimum wage (as % of average wage) and Gini coefficient - 2010



Source: DG EMPL calculations based on Eurostat, Monthly minimum wage as a percentage of average wage [earn_mw_avgr2] and Gini coefficient, SILC [ilc_di12].

Note: Gini coefficient scaled 0 to 100.

Table 16: **Minimum wage in purchasing power standard - First half of year**

	2001S1	2002S1	2003S1	2004S1	2005S1	2006S1	2007S1	2008S1	2009S1	2010S1	2011S1	2012S1
BE	1083.0	1122.9	1091.1	1110.8	1136.7	1145.6	1171.8	1186.9	1235.4	1245.5	1265.5	1290.8
BG	99.0	125.6	138.6	146.2	177.3	182.3	201.9	227.8	239.2	241.6	240.8	270.9
CZ	293.4	324.2	356.7	379.0	414.8	435.4	461.7	415.1	414.0	420.7	424.4	424.4
DK	:	:	:	:	:	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:	:	:	:	:	:
EE	167.4	194.3	222.4	251.3	265.8	279.8	313.6	362.7	363.3	371.7	352.3	367.4
IE	791.1	805.4	848.4	851.9	957.9	1038.3	1130.6	1127.4	1154.0	1227.0	1252.3	1252.3
EL	660.1	712.5	705.8	719.6	756.2	796.8	813.4	865.8	861.3	907.1	907.0	921.5
ES	592.1	609.4	595.4	590.3	656.6	687.5	716.9	736.4	744.5	761.3	768.5	768.5
FR	1040.4	1088.8	1048.9	1104.5	1188.1	1121.9	1160.7	1156.1	1175.7	1212.7	1232.7	1262.9
IT	:	:	:	:	:	:	:	:	:	:	:	:
CY	:	:	:	:	:	:	:	:	:	:	:	:
LV	151.2	181.2	200.8	214.2	201.5	212.8	257.4	303.5	335.4	351.6	381.9	381.9
LT	221.7	229.4	237.9	243.4	263.9	277.7	289.6	351.3	343.9	355.9	353.2	353.2
LU	1215.0	1263.0	1325.0	1361.0	1313.8	1349.9	1368.1	1340.1	1358.1	1396.0	1441.7	1477.8
HU	294.2	358.1	338.2	339.5	362.6	390.0	390.6	395.3	402.1	410.9	434.5	518.1
MT	717.0	729.9	750.1	744.8	768.1	781.1	797.5	797.8	810.1	846.4	852.9	872.1
NL	1120.6	1172.4	1158.4	1191.1	1207.9	1223.0	1275.1	1282.6	1281.2	1308.3	1319.0	1339.6
AT	:	:	:	:	:	:	:	:	:	:	:	:
PL	319.3	322.0	334.0	341.8	345.4	369.5	400.7	463.0	506.4	532.8	559.9	606.0
PT	461.9	470.1	483.3	487.3	513.7	529.6	548.6	565.7	588.7	628.5	647.0	647.0
RO	92.1	104.2	153.3	159.5	157.2	162.4	183.4	215.2	245.7	242.2	264.5	276.4
SI	523.6	562.7	580.9	617.2	644.9	667.2	661.4	650.5	688.4	706.4	895.8	913.7
SK	233.9	257.4	264.7	276.6	304.0	319.3	355.9	371.0	401.3	429.4	437.6	451.4
FI	:	:	:	:	:	:	:	:	:	:	:	:
SE	:	:	:	:	:	:	:	:	:	:	:	:
UK	839.5	916.5	927.0	1008.8	1065.6	1102.1	1132.3	1111.2	1101.7	1111.6	1108.4	1137.8

Source: Eurostat, Monthly minimum wages - bi-annual data [earn_mw_cur].

Note: The purchasing power standard, abbreviated as PPS, is an artificial currency unit. Theoretically, one PPS can buy the same amount of goods and services in each country.

4.6. Who earns minimum wages in Europe?

In a 2012 report by Rycx and Kampelmann based on large, representative surveys containing micro-data for a set of European countries conducted by the European Union Survey on Income and Living Conditions (EU-SILC) and the German Socio-economic panel (GSOEP), it is stated that:

> 'Compared to the rest of the population, the empirical results show that this group is characterised by a lower average age; on average more female employment; lower levels of educational attainment than workers with higher wages; a considerably higher share of employees with temporary work contracts; and a higher share of part-time employment than the subpopulation with higher wages.
>
> Even more important in terms of the affected individuals' wellbeing is the finding that in all countries in the sample minimum wage earners live in bigger households that dispose of significantly lower income and that are at a higher risk of living in poverty.'

5. Sectoral wage distribution affects macro-economic outcomes

Sectoral employment composition also has an important impact on achievement of the Europe 2020 targets since the 'average' national compensation per employee and the productivity level are the weighted averages of their corresponding values at the sectoral level.

Box 5 provides an illustrative scenario underlining the importance of sectoral employment composition.

Several factors determine the composition of a country's sectoral output including sectoral wages in relation to sectoral prices and productivity, output demand, access to international markets etc. It would be beyond the scope of the current chapter to provide a rigorous analysis of the determinants of sectoral employment composition. Nevertheless, certain insights can be gained by glancing at the data.

First, wage dispersion will be explored in six sectors: agriculture, industry, construction, basic services, finance and business support, and public services. (See Annex 2 for more details on this classification.)

Second, developments in sectoral productivity will be studied and related to nominal compensation per employee, yielding the sectoral nominal unit labour cost. The policy relevance of nominal unit labour cost developments are of particular relevance for the sectors that supply goods and services subject to international competition, such as industry.

Box 5: The sectoral composition affects 'average' national productivity

Chart 15 illustrates the impact of changes in sectoral employment shares on average national productivity between 2000 and 2010 based on the sectoral productivity levels observed in 2010 (for which harmonised sectoral data are available, i.e. all EU Member States except Malta, Cyprus and United Kingdom). Sectors considered are agriculture, industry, construction, basic services, finance and business support and public services [1]. In other words, average national productivity in 2010 has been re-calculated using the sectoral employment shares observed in 2000.

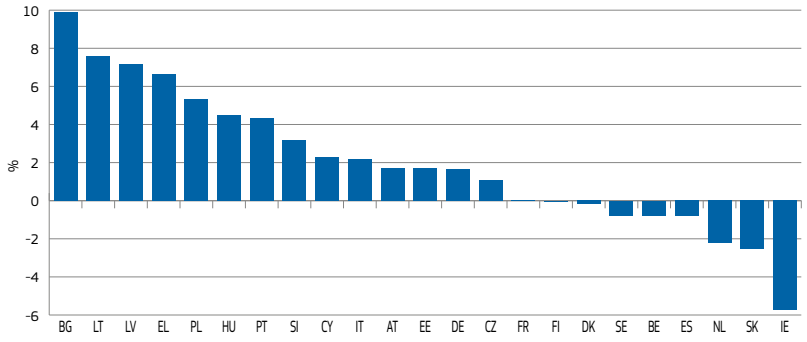
This exercise shows that most Member States shifted activity towards sectors with higher productivity, yielding a higher average national productivity level. This was particularly the case for Member States who joined the EU in 2004 or later since all (with the exception of Slovakia) would have had a lower average national productivity level (compared with the observed level in 2010) if they had maintained the same employment composition as observed in 2000, all other factors being equal.

For the other Member States – except for Germany, Greece, Italy, Austria and Portugal – Chart 16 indicates that the 'average' national productivity level would have been higher if the 2000 employment shares had prevailed in 2010, all other factors being equal. This means that in these Member States employment was reallocated from sectors with a relatively high productivity level to sectors with relatively low productivity levels, partly driven by divergent wage trends among sectors. [2]

A case in point of the latter development is Ireland. The sharp drop in the 'average' national productivity level in Ireland was caused by the reallocation of employment from sectors with relatively high productivity levels, such as industry and finance/ business support, to sectors with relative low productivity levels, such as the public service and agriculture sectors. In Ireland, this reallocation was to a large extent brought about by changes in the sectors' relative real compensation per employee, i.e., the nominal compensation per employee deflated by the sectoral price, particularly in the public service sector, where changes in output prices were not in line with nominal compensation per employee.

In the Member States that joined the EU in 2004 or later, the gains follow primarily from a reallocation from the agricultural sector to the service sector, including finance/ business support. This gain in productivity was made despite the notable decrease in the industrial sector's share of employment. Among the drivers of the changes in these Member States was the increased openness of their economies to international markets and, to a lesser extent, changes in real wages.

Chart 15: Sectoral composition effect on average national labour productivity, 2000-10



Source: DG EMPL calculations based on Eurostat; more details in Annex 2.

Note: Percentage difference between average national productivity level observed in 2010 and the average national productivity level calculated on the basis of 2000 employment shares, assuming predetermined sectoral productivity levels. A positive (negative) sign indicates that average national productivity observed in 2010 is higher (lower) than the productivity level that would have been reached if the sectoral employment shares observed in 2000 had been maintained in 2010, all other factors being equal. PL evaluated for 2004, instead of 2000. Data provisional for IE and EL.

(1) It should be noted that these sectors can be grouped into three groups with respect to the order of magnitude of their productivity level (measured as gross value added in basic prices per person employed). At the lower end is agriculture, at the middle there is the group consisting of construction, basic services and public services, at the upper end there is the group consisting of industry and sector providing finance and business support. Within the last two groups the ordering may vary across the Member States.

(2) A more detailed assessment of the impact of sectoral wages on sectoral employment composition will be discussed in a forthcoming working paper in a recently launched series of analytical working papers. See also ECORYS and Cambridge Econometrics (2011), Applica and WIIW (2012), and Darvas (2012).

However, it should also be noted that nominal unit labour costs within sectors affect not only the international competitiveness of the sector, they also affect domestic demand since divergent developments in domestic sectoral nominal unit labour costs (for both tradable and non-tradable goods and services) result in divergent developments in output prices. Relative sectoral output prices are one of the factors that determine the demand for goods and services and influence the prices of downstream sectors.

Third, developments in sectoral real unit labour costs, i.e. nominal compensation per employee adjusted for productivity and prices will be explored. As discussed in the sections on 'average' national RULC, the sectoral real unit labour cost is subject to double interpretation, i.e. as a measure of labour income share (affecting the demand side) and as a measure of the discrepancy between real wages and productivity (affecting the supply side).

5.1. Sectoral compensation per employee

Tables 17 and 18 summarize the main developments in nominal compensation per employee relative to average national nominal compensation per employee in six main sectors.

The main empirical features over the 2001-11 period are summarized below.

The lowest nominal compensation per employee was found in the agricultural sector in all Member States (see Table 17). The largest gap between the average compensation per employee in the agricultural sector and the average national compensation per employee was found in Spain where agricultural wages were only 34% of the average over the 2001-07 period and just above 33% in the 2008-11 period. The smallest gap was found in Sweden at about 87% in the 2001-07 period but this fell to just below 85% during the 2008-11 period. The strongest increase in compensation per employee in the agricultural sector relative to the average compensation per employee was recorded in Latvia at +31.7 ppt. over the 2001-07 period compared with the national average, and at +28.3 ppt. over the 2008-11 period, with the sharpest fall in relative terms in Germany at -13.3 ppt. in the 2001-07 period and -0.9 ppt. in the 2008-11 period (see Table 18).

In most EU Member States the nominal compensation per employee in industry was above the national average compensation per employee: the highest relative compensation per employee in industry was in Germany at 29% above the average in the 2001-07 period and at 31% higher in the 2008-11 period; the lowest was found in Portugal at 82% of the average (see Table 17). The strongest increase in relative terms over the 2001-11 period was found in Slovakia where the increase was 20 ppt. greater than the rise in the 'average' national compensation per employee in the 2008-11 period, while the strongest decrease was observed in Latvia, down by almost 20 ppt. in the 2001-08 period, but up by 15.6 ppt. in the 2008-11 period (see Table 18).

Compensation per employee in the construction sector ranges from 23% above the national average in Ireland to 30% below the national average in Greece. Very large increases relative to average compensation per employee were recorded in Latvia, at 46.4 ppt. above the national average in the 2001-07 period, followed by a decrease of 6.7 ppt. in the 2008-11 period. The increases in Estonia were 27.1 ppt. and 8.1 ppt. respectively, and in Spain were 4.9 ppt. and 18.0 ppt., while the strongest decreases were recorded in Hungary at -16 ppt. and -0.7 ppt. respectively.

Except for Slovakia, nominal compensation per employee in the basic services sector is below the national average compensation per employee in all Member States. The highest relative compensation per employee in this sector was recorded in Slovakia at 100.3% the average in the 2001-07 period, but this fell to 86.9% in the 2008-11 period, and was lowest in Ireland which had respective rates of 73.3% and 74.8%.

Nominal compensation per employee in the finance and business support sector is, on average, higher than the national average compensation per employee in all Member States with the exception of Germany where average compensation per employee is higher in industry than in finance. The highest relative compensation per employee was recorded in Hungary at 61% above the average in the 2001-07 period and 52.8% above the average in the 2008-11 period and the lowest was in Germany at 97.5% and 95.6% respectively.

Compensation per employee in the public service sector is higher than the national average in most Member States, with the highest relative compensation per employee found in Portugal at 45.8% above the national average compensation per employee during the 2001-07 period and 41.3% during the 2008-11 period, while the lowest was found in Sweden at about 11% below the average.

Table 17: Relationship of nominal employee compensation within sectors to national average compensation (%)

	Agriculture		Industry		Construction		Basic services		Finance and business support		Public services	
	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011
BE	40.0	41.6	118.6	119.4	89.1	89.9	89.3	91.6	107.0	101.6	96.9	98.6
BG	59.5	63.3	96.6	93.0	81.8	80.2	91.2	87.6	139.5	134.4	111.1	121.5
CZ	77.6	77.9	101.2	102.0	86.5	84.6	88.0	85.8	120.9	121.1	111.6	112.9
DK	59.7	58.0	108.6	110.1	112.6	108.4	88.0	84.8	111.0	110.6	100.2	103.5
DE	57.8	56.1	128.7	131.2	97.1	99.1	77.1	76.7	97.5	95.6	99.6	100.0
EE	66.1	74.2	91.0	86.2	98.1	106.7	97.6	92.8	163.8	158.2	97.3	100.5
IE	63.8	72.1	95.7	98.0	123.7	123.2	73.3	74.8	112.6	115.4	117.0	112.6
EL	54.7	55.4	103.3	106.5	69.7	69.7	83.8	82.6	137.4	126.2	115.9	116.4
ES	34.3	33.2	107.5	109.3	90.0	100.6	89.7	86.0	108.0	99.5	116.7	118.5
FR	54.4	57.3	109.6	111.3	100.8	100.6	88.7	88.8	116.5	115.8	96.5	96.1
IT	48.0	47.8	99.6	99.7	79.3	82.6	93.6	91.2	108.4	105.6	114.2	117.2
LV	49.1	70.2	93.5	90.4	91.0	110.1	89.6	89.8	142.0	125.9	118.7	111.2
LT	61.5	67.1	105.7	102.0	94.7	98.7	97.9	97.9	128.0	113.7	97.9	101.7
HU	61.7	64.0	89.7	91.8	74.2	67.8	91.8	91.0	161.0	152.8	112.2	109.0
NL	66.0	70.2	120.6	122.3	117.9	121.5	81.2	79.6	107.7	108.5	100.2	100.3
AT	55.2	52.1	114.3	117.8	100.7	96.0	78.8	78.6	110.0	108.5	108.6	108.3
PT	53.4	52.1	81.9	83.2	71.4	74.1	86.2	85.6	121.7	118.2	145.8	141.3
SI	78.6	74.6	92.5	94.9	81.0	80.2	94.0	94.2	110.9	108.2	120.1	116.8
SK	72.4	86.2	102.1	110.8	107.7	108.4	100.3	86.9	116.7	104.6	94.6	101.0
FI	65.5	62.3	116.9	110.2	107.1	110.8	86.1	87.3	113.9	114.4	94.6	97.1
SE	87.3	84.8	115.2	115.0	113.6	107.9	97.1	95.2	111.1	111.1	88.6	90.7

Source: DG EMPL calculations on the basis of Eurostat, National Accounts. See also Annex 2.

Table 18: Rate of compound growth in nominal employee compensation within sectors in relation to national average compound growth (%)

	Agriculture		Industry		Construction		Basic services		Finance and business support		Public services	
	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011
BE	8.8	-1.1	2.8	-0.2	-2.1	3.3	1.4	2.2	-2.3	-5.6	0.6	2.3
BG	-17.0	18.0	-14.9	6.1	-18.2	12.2	7.6	-4.6	27.9	-15.6	8.4	0.9
CZ	-4.9	-2.6	-0.5	1.0	-8.0	-4.8	-4.2	-1.2	2.0	1.3	6.8	0.6
DK	-2.9	-3.7	4.1	0.3	-4.2	-3.9	-2.0	-4.0	1.3	-0.1	-0.8	4.7
DE	-13.3	-0.9	5.8	-0.2	1.2	1.3	-1.1	-1.5	-3.6	0.0	-1.5	2.3
EE	14.2	2.2	-1.1	-3.9	27.1	8.1	-0.9	-6.6	18.3	-2.4	-18.6	7.0
IE	-1.9	14.2	-0.6	3.8	-2.5	1.3	-8.4	1.1	5.9	3.9	-1.0	-2.9
EL	66.3	-5.5	15.9	-4.9	-5.1	-2.9	-10.9	0.0	-3.6	0.6	-1.3	-0.7
ES	-1.8	-4.9	8.3	-2.9	4.9	18.0	-6.4	1.4	-15.8	-5.1	7.5	-4.2
FR	18.2	3.8	-0.1	2.3	-0.3	-0.4	-0.8	0.0	-0.2	-2.0	0.2	0.5
IT	-0.9	0.8	0.5	0.1	-0.1	5.4	-4.8	-0.5	-7.4	-2.7	7.4	0.2
LV	31.7	28.3	-19.7	15.6	46.4	-6.7	-5.6	14.1	-5.9	-15.8	8.4	-15.0
LT	39.5	11.7	-8.1	5.5	11.8	-0.8	9.5	-3.5	6.3	-20.7	-11.5	7.3
HU	-7.4	7.4	-3.2	2.0	-15.9	-0.7	-2.3	-1.2	-6.0	-3.9	7.3	-3.7
NL	-3.8	8.8	2.0	1.9	4.1	2.0	-2.5	-1.6	2.0	2.4	-0.3	-1.0
AT	-5.7	-3.7	3.4	2.5	-2.0	-3.3	0.5	-0.6	-1.7	-1.3	-2.2	0.8
PT	-5.9	:	3.6	:	8.2	:	-5.0	:	-4.8	:	-1.9	:
SI	-2.7	-4.7	4.9	3.0	2.7	-6.4	3.6	-3.2	-7.9	-2.3	-8.1	0.3
SK	5.3	33.7	0.8	19.8	-7.1	8.2	-1.7	-24.2	-10.2	-15.1	1.4	9.6
FI	-9.4	2.6	2.7	-5.9	-0.3	2.4	-3.5	3.7	-0.9	-0.5	1.8	1.7
SE	1.0	-3.9	2.2	-0.9	-2.4	-4.4	-2.8	-1.8	-0.6	-0.9	1.4	3.3

Source: DG EMPL calculations on the basis of Eurostat, National Accounts. See also Annex 2.

5.2. Sectoral productivity

Table 19 shows the compound growth in sectoral productivity relative to 'average' national productivity growth. (See Box 6 for a discussion of the calculation of productivity at the sectoral level.)

During the 2001-07 period, labour productivity in industry grew at a stronger pace than 'average' national productivity in all Member States except Latvia, and most of the Member States that joined the EU in 2004 or later recorded strong growth. During the 2008-11 period productivity growth remained robust in comparison with productivity growth in other sectors. Notable exceptions were Greece, Italy and Finland where the productivity of industry decreased at a stronger pace than the national 'average': as shown in Table 2 above, compound 'average' national productivity growth in these Member States was negative over the 2008-11 period.

Labour productivity in the construction sector grew at a slower pace than 'average' national productivity in all Member States except Belgium and Lithuania during the 2001-07 period. Nevertheless, in several Member States, including Spain and Estonia, there was a strong reversal in productivity growth during the 2008-11 period, reflecting a greater decrease in employment rather than a decrease in gross value added for the sector. In Spain and Estonia, productivity in the construction sector grew at a rate 30 ppt. higher than the national 'average' from 2008 until 2011.

Labour productivity in the basic service sector behaved in a rather different way across Member States when compared with the national 'average' during the 2001-07 period. Most notable were the sharp decreases in Ireland (-22.4 ppt) and Slovakia (-27.1 ppt.). Labour productivity in basic services decreased in most Member States during the 2008-11 period in comparison with 'average' national productivity growth. Notable exceptions were Germany and Finland where productivity in this sector continued to grow at a robust pace in comparison with the 'average' national productivity level, up by 6.0 ppt. and 10.3 ppt. respectively.

Productivity in the finance/ business support sector grew at a slower pace than average national productivity during the 2001-07 period. A notable exception was Ireland where productivity increased at a rate 42 % higher than the national average. Some Member States recorded a notable recovery in the productivity of their finance/ business support sectors compared with the national average, e.g. Denmark which recorded compound growth at a rate 9.4 ppt. higher than the national average over the 2008-11 period.

Productivity in the public services sector progressed at a slower pace than the national average in all Member

Table 19: Compound growth in sectoral productivity relative to compound growth of national average

	Agriculture		Industry		Construction		Basic services		Finance and business support		Public services	
	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011
BE	-1.6	36.3	9.8	6.3	9.3	-0.5	4.4	2.8	-3.8	-5.3	-10.2	-1.2
BG	-39.5	6.0	13.0	8.7	-29.2	5.3	2.7	-7.1	-15.9	-10.6	-8.6	-3.2
CZ	-12.7	-4.7	23.7	9.1	-16.4	-8.6	0.2	-9.7	-18.5	4.2	-25.1	-3.3
DK	-4.1	4.3	5.9	0.8	-14.7	-0.8	0.5	-7.8	-5.0	9.4	-1.4	1.5
DE	54.8	-13.8	14.6	1.3	-11.3	3.0	4.7	6.0	-13.4	-7.6	-11.0	3.6
EE	-6.6	12.7	16.2	6.7	-28.3	32.5	7.8	-17.5	9.4	-9.5	-31.6	0.7
IE	-20.4	15.9	24.5	31.5	-27.5	-10.5	-22.4	-17.5	42.7	-11.0	-48.2	-28.0
EL	-9.9	11.6	4.7	-1.3	-17.8	7.2	24.6	-5.7	-35.9	3.3	-14.4	2.3
ES	14.1	5.4	15.9	2.6	-5.7	32.6	-7.0	-2.5	-15.6	-8.8	3.9	-4.4
FR	5.4	21.1	16.7	0.0	-11.1	-13.4	-2.3	0.5	-4.6	0.1	-3.4	2.2
IT	4.9	5.6	4.2	-0.9	-5.0	-9.1	-4.1	-2.7	-10.2	-0.1	7.4	4.2
LV	7.5	16.3	-4.4	17.7	-24.0	-6.2	9.5	1.9	-16.3	-9.9	-22.2	-19.6
LT	11.8	24.1	8.4	14.3	0.4	7.1	-8.3	-6.6	-27.6	-23.6	-25.4	-4.0
HU	36.0	50.6	18.6	4.3	-31.6	-12.6	4.3	-14.6	-25.8	-13.4	-18.2	4.7
NL	8.6	11.6	15.5	4.6	-4.4	-6.6	8.2	-2.4	-5.7	3.9	-9.6	0.0
AT	9.9	13.8	14.4	5.6	-1.3	-14.7	-4.5	-3.5	-7.1	1.8	-12.2	-1.0
PT	-6.5	6.4	13.5	1.5	-11.8	-12.8	-11.4	2.5	3.4	-4.0	-7.9	-7.3
SI	5.2	8.0	18.1	8.8	-4.5	-26.5	2.8	-2.0	-26.9	-1.2	-17.3	-1.5
SK	72.6	-30.0	47.1	33.2	-23.5	-1.3	-27.1	-30.8	-28.8	-21.0	-19.9	-1.8
FI	8.6	15.7	33.3	-4.9	-14.4	6.7	-2.0	10.3	-19.8	-4.4	-20.3	2.9
SE	50.7	-12.1	25.6	8.0	-15.6	-14.2	5.2	-2.0	-12.4	-5.0	-15.7	4.8

Source: DG EMPL calculations on the basis of Eurostat, National Accounts. See also Annex 2.

States during the 2001-07 period, with Ireland recording the strongest decrease by far (48.2 ppt. below the national average). Several Member states recorded compound growth in productivity in the public services sector higher than the compound growth at the national level during the 2008-11 period, including Sweden at +4.8 ppt., and Hungary at +4.7 ppt.

5.3. Sectoral nominal unit labour cost

Table 20 shows the compound growth rates in nominal unit labour costs (ULC) compared with the compound growth rates of the national average for the 2001-07 and 2008-11 periods.

The main characteristics of the compound growth rates in sectoral nominal unit labour costs [18] across Member States for the 2001-07 period are:

- strong decreases in industry relative to national average compound ULC growth in all Member States except Greece, where compound ULC growth in industry was 10.6 ppt. above the national average compound growth rate;
- strong increases in the construction sector in all Member States except Belgium and Austria;
- strong increases in the public services sector, with Ireland recording the strongest increase by far, up by 90 ppt.

No other common patterns across Member States were readily identified. It should be further noted that the magnitude of the compound growth was notably higher in the Member States that joined the EU in 2004 or later.

Developments in sectoral nominal ULCs over the 2008-11 period are characterised by:

- apart from France and Italy, continued strong decreases in industry in all Member states, including Greece;
- a sharp reversal in the ULC in construction in several Member States, with particularly strong decreases in Estonia, Greece, Spain and Lithuania;
- stronger increases in the ULC of basic services in most Member States;
- a modest reversal in the ULC of the public sector in a few Member States including decreases in Germany, Greece, France, Italy and Hungary;

Among the various sectors, it is particularly in the industrial, agricultural and certain of the private services sectors that changes in nominal ULCs have the greatest direct impact on international cost competitiveness. It would nevertheless be beyond the scope of this chapter to make a precise assessment of the above-described developments on the international cost competitiveness of the Member States' sectors) [19].

Box 6: Sectoral labour productivity

The following factors should be taken into account when using productivity data calculated as gross value added (GVA) at basic prices divided by the number of employed persons at the aggregate and sectoral levels.

First, the rule that productivity is calculated as GVA divided by the number of employed persons is an accounting rule: it does not constitute a behavioural relationship showing causality. I.e., it still states that causality runs either from (predetermined) productivity and GVA to an (endogenous) number of employed persons, from (predetermined) productivity and number of employed persons to (endogenous) GVA, or from (predetermined) GVA and number of employed persons to (endogenous) productivity.

Second, productivity by persons employed in the public services sector is difficult to measure because gross value added in this sector is often unpriced and public services are often consumed collectively [1], (see, for instance, Boyle (2006)).

Third, financial costs and depreciation are not considered in the calculation of gross value added or GDP. However, these costs may constitute the main costs faced in some parts of the real estate sector and telecommunications sector. As such, productivity (i.e. GVA per employed person) tends to be particularly high for these sectors [2]. In addition, gross value added in the real estate sector covers imputed rent for owner-occupied dwellings. This component of gross value added stems from the use by employed persons or households of stocks of dwellings, and as such it does not correspond with observed paid labour input in the real estate sector.

All in all, not taking into account the previous considerations can lead to overestimation of labour productivity in the real estate and telecommunications sector, and underestimation of labour productivity in the public services sector. This is of particular relevance if one seeks to compare total productivity levels across Member States. For instance, Member States whose employment levels in the public services sector are higher than in other Member States but with productivity levels in other sectors which are equivalent to other Member States will for 'statistical' reasons report a lower productivity level. But this bias will be less pronounced if developments in productivity levels within Member States are considered.

(1) To measure the flows of non-market services see, for instance: http://circa.europa.eu/irc/dsis/nfaccount/info/data/esa95/en/een00454.htm

(2) For further details, see: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Real_estate_activity_statistics_-_NACE_Rev._2 and http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Real_estate_statistics_-_NACE_Rev._1.1#Expenditure_and_productivityhttp://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Real_estate_statistics_-_NACE_Rev._1.1#Expenditure_and_productivity

(18) Nominal unit labour is the sectoral nominal compensation per employee adjusted for productivity gains.

(19) See, for instance, ECORYS and Cambridge Econometrics (2011) and Darvas (2012).

Table 20: **Sectoral nominal ULC compound growth relative to national average compound growth**

	Agriculture		Industry		Construction		Basic services		Finance and business support		Public services	
	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011
BE	10.6	-27.4	-6.4	-6.1	-10.4	3.8	-2.9	-0.6	1.5	-0.3	12.0	3.6
BG	37.2	11.3	-24.7	-2.5	15.5	6.6	4.8	2.7	52.1	-5.6	18.6	4.2
CZ	8.9	2.2	-19.6	-7.5	10.1	4.1	-4.3	9.4	25.2	-2.8	42.6	4.1
DK	1.2	-7.7	-1.6	-0.4	12.3	-3.2	-2.5	4.1	6.6	-8.6	0.6	3.1
DE	-44.0	14.9	-7.7	-1.4	14.1	-1.7	-5.6	-7.0	11.4	8.2	10.7	-1.3
EE	22.2	-9.3	-14.9	-10.0	77.3	-18.4	-8.0	13.2	8.1	7.8	19.0	6.3
IE	23.3	-1.5	-20.2	-21.1	34.5	13.1	18.0	22.5	-25.8	16.8	91.1	34.9
EL	84.5	-15.3	10.6	-3.7	15.5	-9.5	-28.5	6.0	50.4	-2.6	15.2	-2.9
ES	-13.9	-9.8	-6.5	-5.3	11.2	-11.0	0.6	4.0	-0.3	4.0	3.5	0.2
FR	12.2	-14.2	-14.3	2.3	12.2	14.9	1.6	-0.5	4.6	-2.1	3.8	-1.7
IT	-5.6	-4.5	-3.5	1.0	5.2	15.9	-0.6	2.2	3.1	-2.6	0.1	-3.8
LV	22.4	10.3	-16.0	-1.8	92.7	-0.6	-13.8	11.9	12.3	-6.5	39.2	5.6
LT	24.8	-10.0	-15.2	-7.7	11.4	-7.4	19.4	3.4	46.9	3.9	18.7	11.7
HU	-31.9	-28.7	-18.4	-2.2	23.0	13.6	-6.3	15.7	26.8	11.0	31.2	-8.0
NL	-11.5	-2.5	-11.7	-2.6	8.9	9.2	-10.0	0.9	8.2	-1.4	10.2	-1.0
AT	-14.2	-15.4	-9.7	-3.0	-0.7	13.4	5.2	3.0	5.8	-3.0	11.5	1.8
PT	0.7	:	-8.7	:	22.7	:	7.1	:	-7.9	:	6.5	:
SI	-7.5	-11.8	-11.1	-5.4	7.6	27.3	0.7	-1.1	25.9	-1.1	11.1	1.8
SK	-39.0	91.0	-31.5	-10.1	21.5	9.6	34.8	9.6	26.1	7.5	26.7	11.6
FI	-16.6	-11.3	-22.9	-1.0	16.6	-4.0	-1.4	-5.9	23.5	4.1	27.6	-1.2
SE	-33.0	9.4	-18.7	-8.3	15.6	11.5	-7.6	0.2	13.6	4.3	20.3	-1.4

Source: DG EMPL calculations on the basis of Eurostat, National Accounts. See also Annex 2.

5.4. Sectoral prices

To gauge changes in the distribution of total factor income between labour and capital at the sectoral level, sectoral nominal unit labour costs must be deflated by sectoral output prices.

Table 21 summarizes the main developments in sectoral prices relative to average price movements in the Member States for the 2001 to 2011 period.

The main features of sectoral price developments over the 2001-07 period are that in all Member States except Bulgaria, average prices in the public service sector grew at a stronger pace than did the average national price level, and that prices in the agricultural sector grew at a slower pace than the average price in all Member States except Estonia and the Czech Republic. By far the largest increases in the public services sector were recorded in Ireland, with a compound growth of 129 ppt. above the compound growth in national average price, reflecting the strong price increases in public services, including health services and education, over the 2001-07 period. During the 2008-11 period some Member States, including Latvia, Lithuania and Hungary, showed compound growth rates in the prices of the public sector that were below the compound growth rate of the national average price level.

In the industrial sector prices rose less than average prices in most Member States, except in Bulgaria, Denmark, Greece, Spain, and the Netherlands where output prices in industry increased at a faster pace than the national average.

Prices in the construction sector rose in most Member States except Latvia and Lithuania at a faster pace than average prices in the 2001-07 period. However, output prices in the construction sector decreased sharply in the Baltic States, Ireland, Spain, Greece and Finland during the 2008-11 period.

5.5. Sectoral real unit labour cost

Table 22 shows developments in the sectoral real unit labour cost. The sectoral real unit labour cost is obtained by deflating the sectoral nominal unit cost by sectoral prices.

As discussed in the text above and in Annex 1, the real unit labour cost at the level of the economy as a whole can be associated with two transmission mechanisms, with one related to aggregate demand as a measure of the adjusted national labour income share, and the other related to aggregate supply as a measure of the wedge between average national real wages and average national labour productivity.

At the sectoral level, the two above-mentioned transmission mechanisms differ in their relevance to policy. Indeed, for any particular sector, an increase in real unit labour costs (i.e. the sectoral labour income share, which represents household income that will be spent on a variety of goods and services including those of the sector concerned) generates externalities. Among these are increased aggregate demand, the benefits of which will trickle down to all sectors of the economy, therefore, these sectors do not have an incentive to take these externalities into account in their decisions.

Table 21: Compound growth in sectoral prices relative to national average compound growth

	Agriculture		Industry		Construction		Basic services		Finance and business support		Public services	
	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011
BE	-18.7	-23.2	-6.2	-0.5	0.8	4.7	11.3	1.2	-2.4	-0.1	12.1	9.3
BG	-14.6	:	0.5	:	31.6	:	-17.4	:	-9.1	:	-2.8	:
CZ	8.4	0.8	-14.8	-5.6	25.2	7.4	-9.7	1.3	18.8	5.3	37.1	10.5
DK	-43.1	28.6	7.1	-0.2	12.1	0.0	0.9	1.4	-4.6	0.1	6.5	3.8
DE	-42.2	27.4	-1.4	1.9	7.8	9.9	-5.4	-5.3	3.0	-0.9	3.6	0.5
EE	18.3	-6.1	-7.5	5.8	49.2	-31.3	-7.9	12.0	-12.1	-7.1	24.2	6.1
IE	-12.0	43.4	-4.2	-3.4	53.7	-55.2	37.8	18.4	-24.4	2.8	129.1	38.3
EL	-7.0	-22.9	2.6	13.8	4.1	-11.8	-17.3	-1.3	27.3	-3.6	14.7	3.7
ES	-8.5	-10.5	6.3	7.6	33.4	-0.2	11.6	8.2	-5.7	-0.7	9.7	3.5
FR	-7.5	-9.0	-14.2	-2.8	27.7	14.6	4.3	3.0	5.9	-2.1	11.2	4.1
IT	-13.4	-6.4	-1.1	-2.7	18.2	10.1	1.2	3.4	3.7	2.4	6.8	1.3
LV	-3.2	22.8	-11.1	4.0	-6.2	-15.1	-23.7	-2.5	10.1	-17.5	18.8	-10.3
LT	-5.7	-24.0	-16.0	-6.0	-7.0	-21.2	-8.2	-1.2	35.8	-15.7	5.1	-8.8
HU	-15.4	-10.3	-13.4	5.6	2.2	1.7	-2.6	1.8	9.8	0.7	14.6	-8.9
NL	-14.5	-19.0	4.5	5.3	15.5	7.0	-9.1	-1.9	1.1	-0.5	12.1	4.1
AT	-1.5	-6.3	-2.6	-3.4	6.8	9.8	6.8	4.9	1.6	-3.5	10.5	3.7
PT	-19.3	-13.0	-4.9	0.0	18.1	15.0	4.7	4.7	-1.6	-5.3	13.3	-1.3
SI	-4.0	2.7	-8.8	-2.8	10.0	11.6	3.5	1.4	4.7	0.2	5.0	8.2
SK	-15.5	34.9	-25.6	-7.8	19.7	6.4	14.1	18.5	30.0	3.9	15.8	15.8
FI	-3.0	-9.8	-18.7	-5.7	20.7	-8.2	0.5	-1.3	11.0	0.4	30.1	10.4
SE	-19.8	23.6	-13.1	-0.9	28.6	13.3	3.2	3.2	0.8	-1.3	22.2	3.9

Source: DG EMPL calculations on the basis of Eurostat, National Accounts. See also Annex 2.

Table 22: Compound growth of sectoral real unit labour cost relative to compound growth of national average

	Agriculture		Industry		Construction		Basic services		Finance and business support		Public services	
	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011	2001-2007	2008-2011
BE	35.9	-5.4	-0.2	-5.7	-11.1	-0.8	-12.7	-1.7	4.1	-0.2	-0.1	-5.2
BG	60.6	:	-25.1	:	-12.2	:	26.9	:	67.3	:	22.0	:
CZ	0.5	1.4	-5.7	-2.0	-12.0	-3.0	5.9	8.0	5.4	-7.7	4.0	-5.8
DK	77.7	-28.2	-8.2	-0.2	0.2	-3.1	-3.4	2.7	11.7	-8.7	-5.5	-0.6
DE	-3.2	-9.8	-6.4	-3.3	5.9	-10.5	-0.2	-1.8	8.2	9.2	6.9	-1.8
EE	3.3	-3.4	-8.0	-14.9	18.8	18.8	-0.1	1.1	22.9	16.1	-4.2	0.1
IE	40.1	-31.3	-16.7	-18.3	-12.5	152.3	-14.4	3.4	-1.9	13.6	-16.6	-2.5
EL	98.4	9.8	7.8	-15.4	10.9	2.6	-13.5	7.4	18.1	1.1	0.4	-6.4
ES	-5.9	0.7	-12.0	-12.0	-16.6	-10.8	-9.8	-3.9	5.7	4.7	-5.7	-3.2
FR	21.3	-5.8	-0.1	5.2	-12.1	0.3	-2.6	-3.4	-1.2	0.0	-6.6	-5.6
IT	9.0	1.9	-2.4	3.8	-11.1	5.3	-1.8	-1.1	-0.6	-4.8	-6.3	-5.0
LV	26.5	-10.2	-5.5	-5.6	105.5	17.1	13.0	14.8	2.0	13.4	17.2	17.8
LT	32.3	18.5	0.9	-1.9	19.7	17.5	30.0	4.6	8.2	23.2	13.0	22.5
HU	-19.6	-20.5	-5.7	-7.4	20.4	11.7	-3.8	13.7	15.4	10.2	14.5	0.9
NL	3.5	20.4	-15.5	-7.5	-5.7	2.0	-1.0	2.8	7.0	-1.0	-1.6	-4.9
AT	-12.9	-9.8	-7.2	0.4	-7.0	3.2	-1.4	-1.8	4.2	0.4	0.9	-1.9
PT	24.7	:	-4.0	:	3.9	:	2.4	:	-6.4	:	-6.0	:
SI	-3.6	-14.0	-2.5	-2.7	-2.3	14.0	-2.7	-2.5	20.3	-1.4	5.8	-5.9
SK	-27.8	41.5	-7.9	-2.5	1.6	3.0	18.1	-7.5	-3.0	3.5	9.4	-3.6
FI	-13.9	-1.7	-5.2	4.9	-3.4	4.7	-1.9	-4.7	11.3	3.7	-1.9	-10.6
SE	-16.4	-11.5	-6.4	-7.4	-10.1	-1.6	-10.5	-3.0	12.7	5.7	-1.6	-5.2

Source: DG EMPL calculations on the basis of Eurostat, National Accounts. See also Annex 2.

This is in sharp contrast with increases in the national labour income share of the economy as a whole, particularly in closed economies without leakage to the rest of the world, in which case the economy as a whole benefits.

The following observations can be made about compound growth rates in sectoral real unit labour costs relative to the compound growth rate of the national average for the 2001-07 period:

- compound growth in industry was below the national average in all Member States except Greece and Lithuania;
- significantly different patterns were seen in the compound growth of agriculture across Member States, with very sharp increases in Greece and Denmark and notable decreases in Portugal;
- the compound growth rate in the finance/ business support sector increased in all Member states except Ireland, France, Italy, Portugal and Slovakia;
- the compound growth in real unit labour costs in the public services sector compared with the compound growth rate of the national average differed markedly across Member States with sharp increases relative to the national average in Bulgaria at +22 ppt. and Latvia at +17.2 ppt. and a sharp decrease in Ireland at -16.6 ppt.

Observations with regard to the real unit labour cost over the 2008-11 period:

- industry displayed a pattern similar to that observed in the 2001-07 period;
- in some Member States, particularly Ireland and Latvia, construction displayed reverse patterns in comparison with the 2001-07 period, rising in Member States where it had previously fallen and falling where it had previously risen;
- with the exception of the Baltic States and Hungary, the real unit labour cost of the public services sector returned a lower compound growth rate than the national average.

6. Main findings and conclusions

An analysis of various indicators has highlighted a number of developments that have marked the last decade and may be relevant in the pursuit of the Europe 2020 targets of reaching an employment rate of 75% of 20-64 year-olds by 2020 and of reducing the number of people in or at risk of poverty and social exclusion by at least 20 million by 2020:

- labour costs grew significantly during the run-up to the crisis in the Member States that joined the EU before 2004, but have decelerated markedly since the crisis, notably in Greece, Portugal and Ireland and since 2010 in Spain, i.e. Member States where growth in nominal compensation was well above productivity growth during the run-up to the crisis;
- labour costs grew significantly in new Member States before the crisis, but so too did growth in productivity – mainly reflecting the ongoing restructuring of their economies;
- productivity growth started to weaken significantly in all Member States by the end of 2011, resulting in negative productivity growth in several Member States in the first half of 2012, including Belgium, the Czech Republic, Germany, Italy, Hungary and the United Kingdom. (No data is available for Greece);
- nominal unit labour cost growth developed in an asymmetric manner across the Member States of the euro area over the 2001-07 period; it was negative in Germany, but positive and often substantially so in the other members, with compound growth rates between 5.7% in Austria and 31.6% in Ireland;
- nominal unit labour costs began to converge moderately with the onset of the crisis, as Greece, Portugal and Spain started to show a declining trend in nominal unit labour costs as a result of productivity increases, while in Germany costs continued to increase;
- in the run-up to the crisis most Member States (with the notable exception of Germany) showed an appreciation of their real effective exchange rate and a loss of international cost competitiveness, but this trend was reversed in several Member States with the onset of the crisis. Exchange rate movements overall had a limited impact on employment over the 2001-12 period;
- the adjusted labour income share or real unit labour cost decreased notably during the run-up to the crisis, but recovered in most Member States during the 2008-11 period. However, in Spain and Slovakia the real unit labour cost showed a negative growth rate for the 10th consecutive quarter in the second quarter of 2012;
- strong differences were seen among Member States and between time periods in the development of real wages, i.e. gross wage growth adjusted for consumer price inflation. The Baltic Member Sates experienced sharp increases over the 2001-07 period, but strong decreases over the 2008-11 period. Germany recorded a fall during the 2001-07 period, which was only partly offset during the 2008-11 period;
- the purchasing power of minimum wages remained fairly stable during the 2001-12 period. There is only weak evidence that minimum wages impact jobs negatively especially in a severe economic downturn as they support employment in several respects. First, they help to sustain aggregate demand; second, they boost wage equality by maintaining an adequate living standard for the most vulnerable workers; and third they buoy prices, thereby reducing the risk of deflation;
- the gender pay gap fell in some Member States but remained quite high in others, whereby minimum wages seem to have the potential to narrow the gender pay gap;
- strong wage dispersion still existed at the regional level in some Member States, and the spread increased in some countries after 2008;
- changes in sectoral real wages brought about a reallocation of

sectoral employment with notable effects on average national productivity and the nominal unit labour cost in some Member States.

The previous analysis highlighted the relevance of indicators related to the monitoring of wage developments in reaching the Europe 2020 targets of employment of 75% of 20-64 year-olds by 2020 and reduction by at least 20 million of those at risk of poverty and social exclusion by 2020.

The analysis tends to suggest that the interactions between the different channels through which wages affect employment and social cohesion call for attention to be paid to a broad socio-economic spectrum of indicators, including the nominal and real unit labour cost at the national and sectoral level as well as their respective optimal lower and upper bounds. Nevertheless, more research is needed to derive firm policy conclusions.

Annex 1: Basic definitions

This annex provides definitions for some of the basic concepts used in this chapter including the wage-related indicators. Annex 4 assesses the scope and limitations of these indicators.

A.1.1. Labour cost

Total labour costs encompasses employee compensation as well as the cost of vocational training, recruitment costs, expenditure on work clothes etc., from which any subsidies received may be deducted.

Employee compensation refers to total remuneration including gross wages and salaries (before deduction of taxes and employee social security contributions), employer social security contributions, bonuses and overtime payments paid in cash or in kind, by employers to employees in return for work performed during the accounting period. Compensation per employee is obtained by dividing total compensation of employees by the number of employees.

Wages and salaries are defined as total remuneration, in cash or in kind, paid to all persons counted on the payroll including home workers, in return for work performed during the accounting period regardless of whether it is paid on the basis of working time, output or piecework and whether or not it is paid regularly.

Monthly gross earnings in the reference month cover remuneration in cash paid before tax deductions and social security contributions owed by wage earners and retained by the employer, and are restricted to gross earnings disbursed in each pay period during the reference month.

Mean annual gross earnings also cover 'non-standard payments', i.e. payments not occurring in each pay period, such as 13th or 14th month payments, holiday bonuses, quarterly or annual company bonuses and annual payments in kind.

A.1.2. Labour productivity

Labour productivity is the ratio of the real value of output to the input of labour. Although it is considered appropriate to use the number of hours as the labour input indicator, it is most common to use the number of employed persons as the denominator since this data is easier to obtain. This may pose problems if the number of employees is not expressed in full-time equivalents and if part-time workers participate in the production process.

A.1.3. Nominal unit labour cost

Labour cost, compensation per employee, and wages and salaries are nominal concepts and are difficult to interpret in absolute terms, therefore nominal compensation per employee (or any other labour cost measure) is usually related to another variable.

The nominal compensation per employee deflated by a price index yields the real compensation per employee, while the nominal compensation per employee divided by labour productivity yields the (nominal) unit labour cost (ULC).

Alternative definitions of nominal unit labour cost

Other definitions of the unit labour costs include the following:

- OECD: Unit labour costs measure the average cost of labour per unit of output and are calculated as the ratio of total labour costs to real output. See: http://stats.oecd.org/glossary/detail.asp?ID=2809;
- ILO: Labour cost per unit of output (in short, unit labour cost) is defined as nominal labour compensation divided by real value added. See: http://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_142286.pdf;
- US BLS: Unit labour costs can be computed by dividing employer labour costs (payments made directly to workers plus employer payments into funds for the benefit of workers) by real value added output. Unit labour costs can also be computed by dividing hourly labour costs by output per hour. See: http://www.bls.gov/fls/fls-faqs.htm#unitlaborcosts.

Interpreting the nominal unit labour cost

More formally, the unit labour cost (ULC) used in this note is defined as

ULC = (Compensation of employees at current prices / no. of employees) / (GDP in volume / no. of persons employed)

which can be rewritten as

= (Compensation of employees at current prices) / (GDP in volume) * (no. of persons employed/ no. of employees)

whereby the first term is equal to the ULC concept defined by the OECD and ILO and whereby the ratio (no. of persons employed/ no. of employees) is the so-called adjustment for the self-employed in the total wage bill, assuming that wages earned by the self-employed are similar to the wages earned by employees. In other words, the indicator used in this note provides a correction for the self-employed whose labour cost are not available in the national statistics.

A.1.4. Real unit labour cost

The real unit labour cost (RULC) is obtained by dividing the nominal unit labour cost (ULC) by the GDP deflator (PGDP).

Interpreting the real unit labour cost

The real unit labour cost can be interpreted in two ways. First, it is a measure of labour income share. Second, it is a measure of the discrepancy between real wages and productivity.

Some arithmetic to clarify this statement:

RULC = ULC / PGDP
= [(Compensation of employees at current prices / No. of employees) / (GDP in volume / No. of persons employed)] / PGDP)
= [(Compensation of employees at current prices) / (GDP in value)] * (No. of persons employed/ No. of employees)
= Adjusted labour income share

The first term, (Compensation of employees at current prices) / (GDP in value), captures the income share of the employees. The second term, (No. of persons employed/ No. of employees), adjusts the share to include the self-employed. This is done because, while data for the

compensation of employees is usually readily available for the EU Member States, the remuneration of the self-employed is not readily available in the statistics. However, data on the income of the self-employed must be estimated and a common practice is to assume that the wage rates of employees and the self-employed are the same and adjust the labour income share accordingly.

The real unit labour cost thus gives an indication of the changes in the wage share (or labour income share) over time.

By further rearranging the terms one obtains:

RULC = [(Compensation of employees at current prices / No. of employees) / PGDP] / (GDP in volume / No. of persons employed)

i.e. the real wage relative to productivity. In other words, the RULC also provides an indication as to the extent to which real wage growth keeps up with productivity growth.

A.1.5. The real effective exchange rate

The nominal unit labour cost indicator is also the basis for assessing the development of a country's international cost and price competitiveness, if it is compared with the nominal unit labour cost in other countries. Since relative costs/prices between countries are subject to monetary fluctuations, relative competitiveness is measured using the real effective exchange rate (REER) defined as:

REER = NEER * weighted average (ULC / ULCf)

where:

NEER = the nominal effective exchange, defined as the weighted average of bilateral exchange rates
ULC = the domestic unit labour cost
ULCf = the unit labour cost of trading partners.

A rise in the index means a loss of competitiveness.

The scoreboard for monitoring the sustainability of macro-economic developments endorses the REER based on the Harmonized Indices of Consumer Prices (HICP) deflator.

Annex 2: Data sources

Harmonised data have been used throughout this chapter. The main sources are the Eurostat databases and the DG ECFIN AMECO database.

Data on the 'distribution of gross earnings of full-time employees and the 'gender wage gap' are obtained from the Online OECD Employment database [20].

The notes to the tables and charts provide the exact references for the data used in the tables.

A.2.1. The sectoral data

Sectoral ('Branches') variables were retrieved from the Eurostat database: 'National Accounts detailed breakdowns' (by industry, by product, by consumption purpose) (nama_brk) along the following units:

- gross value added (at basic prices): Chain linked volumes, reference year 2005, national currency (including 'euro fixed' series for euro area countries);
- gross value added (at basic prices): Millions of national currency (including 'euro fixed' series for euro area countries);
- compensation of employees: Millions of national currency (including 'euro fixed' series for euro area countries);
- total employment – domestic concept: 1000 persons;
- employees – domestic concept: 1000 persons.

For the sectors

- A: Agriculture, forestry and fishing;
- B-E: Industry, including manufacturing;
- F: Construction;
- G-J: Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities; information and communication;
- K-N: Financial, real estate, renting and business activities;
- O-Q: Public administration and defence; compulsory social security; education; human health and social work activities.

Not covered are the sectors R-U Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies.

A.2.2. Data transformation

Nominal compensation per employee is derived by dividing the nominal compensation of employees by the number of employees. The compensation of the self-employed is assumed to be equal to the compensation per employee.

The deflator for the nominal compensation per employee is derived by dividing gross value added (at basic prices) by gross value added (at basic prices), chain linked volumes, reference year 2005, national currency –neither adjusted seasonally or by working day– in case they are not readily available from the EUROSTAT database.

Sectoral labour productivity is derived by dividing gross value added (at basic prices), chain linked volumes, reference year 2005, by total employment. It should be noted that in national accounts, gross value added (GVA) is the difference between the value of goods and services produced and the cost of raw materials and other inputs used to produce them. As such,

GVA + taxes on products - subsidies on products = GDP

with GDP gross domestic product. In other words, GVA does not take into account indirect taxes and subsidies.

[20] Available at: http://www.oecd.org/els/employmentpoliciesanddata/onlineoecdemploymentdatabase.htm#deciles

Annex 3: Wages, productivity and employment in imperfect markets

Assuming, inter alia, perfect competition and perfect information, classic economic theory posits that workers are hired until their marginal product equals their marginal costs (i.e. wages). However, changing these assumptions may have some important implications for the interaction between wages, productivity and employment.

Efficiency-wage theory

Yellen (1984), and Shapiro and Stiglitz (1984) show that in the case of imperfect information, where the productivity, i.e. the effort, of workers cannot be observed directly, an interaction between wages and productivity exists that captures effects that go beyond the classical findings.

In such an environment, workers may be tempted to shirk, i.e. make less effort than expected in return for their paycheck. To give workers an incentive not to shirk, employers pay a wage above the free market wage which is reflective of productivity, so that when a worker is caught shirking she or he is fired and must return to the free market wage. If only one firm were to apply this rule, workers would only choose to work for the firm that paid wages above marginal productivity. As a consequence, all firms must raise their wage above the free market wage, so that real equilibrium wage remains above productivity. At the same time, however, there will be involuntary unemployment as some persons will be willing to work but unable to find a job at the prevailing wage.

Following similar lines of reasoning are other theories which state that wages above productivity lead to higher personal income (and to the extent that this is related to health, to better health and thus to higher productivity), and to lowering turnover costs, attracting higher quality employees, improving morale, and creating greater feelings of loyalty to the firm (see for instance Katz (1986)).

Implicit wage contracts

Assuming different attitudes toward risk, i.e. that workers are risk-averse with regard to their wage income and firms are risk neutral with regard to labour cost, firms may have an incentive to protect their workers' wages against risks associated with stochastic productivity shocks throughout the duration of the contract. As a consequence, risk-averse workers will be prepared to accept a non-stochastic wage lower than the expected value of a stochastic wage that moves in line with productivity. (See Newberry and Stiglitz (1987)).

As a consequence, a fall in productivity and thus a fall in labour demand which would lead in a classical model to a decline in wages, is now offset by firms laying off redundant workers while keeping the wage unchanged for the rest of the workforce. Arnott, Hosios and Stiglitz (1988) show that the overall employment effects of such an arrangements depend on assumptions regarding the mobility of workers and the way in which a reduction in labour demand is translated into a lower number of employees employed or a lower number of hours worked.

Labour turnover costs: insiders – outsiders

Labour turnover costs, i.e. costs related to the hiring, training and firing of employees affect the inflow and outflow of employees and give employed workers bargaining power. If outsiders are not considered competitive enough (either because they have been out of work for a long time or do not have the necessary skill levels), then naturally their role in pushing down the wages of insiders is diminished. As a consequence, insiders can negotiate wages that are above productivity, and employment will be lower and show stronger adjustment inertia in the sense that the current employment is to a large extent determined by the employment in the previous period. (Lindbeck and Snower (2002)).

The minimum wage

Minimum wages can be set above the productivity level. Employment effects depend first on the degree of substitution between workers for whom the minimum wage is binding and other workers, and second, on the structure of labour demand (perfect competition or monopsony).

Annex 4: Scope and limitations of wage indicators

This annex reflects on the scope and limitations of the nominal and real unit labour cost and the real effective exchange rate (based on unit labour costs).

A.4.1. Measuring the nominal unit labour cost

In practice, the change in marginal labour productivity is measured as the change in average labour productivity (i.e. the change in output per unit of labour input – where labour input is usually measured as the amount of labour, as opposed to the number of hours worked).

This approach to measuring the change in marginal labour productivity is based implicitly on several assumptions, including:

- a Cobb-Douglass production function with constant returns to scale
- perfect competition in the goods market, i.e. where producers are price takers;
- existence of markets for public goods and services;
- homogeneity of employees;
- homogeneity of employers;
- symmetric information about an employee's effort;
- same risk preference between employers and employees.

The following sub-sections will investigate the implications of changing these assumptions for the relationship between marginal labour productivity, average labour productivity and real wages.

The elasticity of substitution between labour and capital

The implicit assumption of the type of underlying production function has important implications for the interpretation of labour productivity and the unit labour cost indicator. Indeed, if one assumes that the cross-price substitution between capital and labour differ from zero, as is the case for the constant elasticity of substitution (CES) production function, then one can show that the change in marginal productivity will be larger, equal to or smaller than the

Box A1: Elasticity of substitution

The more general case

It can be shown that for the class of CES production functions, the marginal equilibrium condition for labour demand (in its most simple form, making abstraction of technical progress) reads as:

(1) Marginal labour productivity = δ (Y/L) ** (1+ρ) = real wage

with

δ: distribution parameter between 0 and 1,
Y: output
L: labour input
ρ: substitution parameter, with -1< ρ< +infinity
**: exponent operator

and with (Y/L) measuring the average labour productivity.

Note that σ = 1/(1+ ρ) is the elasticity of substitution between labour and capital, which is in the case when the Cobb-Douglass production function is equal to 1. See, for example, Layard and Walters (1978).

Equation (1) can be rewritten in terms of percentage growth rates, assuming constant parameters, as:

% change in marginal labour productivity = (1+ρ) % change in (Y/L)

In other words, marginal productivity increases at a higher or lower pace than average productivity depending on whether ρ is lower than or greater than 0, i.e. whether labour and capital are substitutes (<0) or complements (>0). The case of substitution is likely to occur when one considers the interaction between low-skilled labour and capital, while the case of complementarity is likely to occur when one considers the interaction between high-skilled labour and capital.

The limiting case of factor substitution

In the case of a Cobb-Douglas function the substitution parameter between labour and capital is equal to zero (i.e. ρ = 0), the marginal labour productivity is, on inserting ρ = 0 into equation (1):

marginal labour productivity = δ (Y/L)

i.e. the marginal labour productivity is proportional to the average labour productivity, with the degree of proportionality determined by a constant parameter of the production function.

In growth rates, taking into account that δ is constant, one obtains:

% change in marginal labour productivity = % change in (Y/L)

In other words, the change in marginal productivity is equal to the change in average productivity.

change in average productivity depending on the value of the elasticity of substitution between the production factors labour and capital.

Box A1 shows some arithmetic to clarify the point.

Imperfect competition in the goods market

Apart from assuming perfect competition in the labour market, the classical theory also assumes perfect competition in the product markets, i.e. that producers can sell an unlimited quantity of goods at a fixed market price. If competition in product markets is imperfect, changes in output (produced by a changed labour input) will change the market price of the output for a given demand for the product. In other words the real wage (i.e. the nominal wage deflated by the price of output) is changed, interfering with the direct link between productivity and wages.

Absence of markets for public good and services

The productivity of employees in the public sector is difficult to measure because the output of public services is often unpriced and because some public services are consumed collectively. See also Box 6 in the main text and Boyle (2006).

Employee heterogeneity

The composition of a heterogeneous labour force may also affect the average labour productivity and unit labour cost.

For example, if restructuring of a firm results in a reduction in low-productivity employees then the observed average productivity level of the firm will increase (Lehment (2000)).

Another example, if in a country economic activity is reallocated – for instance due to increased international competition – from sectors with high unit labour costs to lower unit labour costs, the unit labour cost of the economy as a whole will decrease.

Firm heterogeneity

Altomonte et al. (2011) analyse competitiveness at the level of the firm, explicitly recognizing the heterogeneity of firms. Heterogeneity may arise for many reasons, including firm size, etc. Given this heterogeneity, the performance of firms will differ.

The literature shows that whatever measure of competitiveness for firms is used (e.g. unit labour cost, productivity, etc.), the performance index of the firms is Pareto distributed (i.e. it is skewed to the left from the mean), and not normal (i.e. symmetric around the mean). Both distributions have the same average, but a noticeably different spread.

Given the skewed nature of the distribution of the firms, only a select group of firms will be able to compete, i.e. the firms in which performance exceeds the global 'cut-off' rate. The policy implication is that policies aimed at promoting the competitiveness of firms should not be aimed toward the 'average,' but rather toward the group of firms that meet the level of performance required to be competitive, a group well above the average. Even so, the measure of competitiveness is not the unit labour cost of the average firm, but the unit labour cost at the end of the distribution.

From a dynamic perspective it should be noted that as trade policy barriers or

transportation costs fall, exporters will have more opportunities to compete in other markets, while firms that previously produced only for the domestic market will now experience stronger competition from foreign exporters and their profitability will come under threat. As a consequence, high-productivity exporting firms will survive and expand while lower-productivity non-exporting firms will shrink or exit. This reallocation of economic activity across firms raises average national productivity. See, for instance, Melitz (2003).

A.4.2. Interpreting the nominal unit labour cost

Underlying the interpretation of the percentage change in nominal unit labour cost as domestic (cost-push) inflationary pressure is the equation

(2) $L\,W = \delta\,P\,Y$

where:

L = labour input
W = nominal wage
P = price level
Y = output

and where the distribution parameter δ is between 0 and 1.

Equation (2) is a first order condition for labour market equilibrium (assuming profit maximization with perfect goods and labour markets under a Cobb-Douglass production function with constant returns to scale). See, for instance, Layard and Walters (1978).

As such equation (2) does not indicate a line of causality between the variables!

Depending on the economic paradigm, this equilibrium condition can be interpreted in several ways, see Box A2.

A.4.3. Interpreting the real unit labour cost

Section 4 of Annex 1 showed the dual interpretation that can be given to the real unit labour cost. Depending on the paradigm, the real unit labour cost will be interpreted as real wages relative to productivity under the classical paradigm and labour income share under the Keynesian paradigm. In both cases the transmission mechanisms through which the RULC affects employment differ, see Box A3.

Box A2: The nominal unit labour cost

The Classical paradigm

Under the classical paradigm, equation (2) is rewritten as

$P = (1/\delta)\,W / (Y/L) = ULC$

i.e. there runs a causality from nominal wages (W) and labour productivity (Y/L) to prices (P). In other words, nominal wages and productivity are predetermined and prices adjust to maintain equilibrium.

Taking growth rates yields an equation for inflation, i.e. (approximately)

% change(P) = -% change(δ) + % change(W) – % change(Y/L) = % change(ULC)

In practice it is usually assumed that the parameter δ does not change, assuming no structural changes that affect the equilibrium labour income share, so that growth (δ)=0, i.e. inflation is determined by the average increase in nominal wages minus the average increase in labour productivity – with the emphasis on 'average.'

The Keynesian paradigm

Under the Keynesian paradigm, equation (2) can be rewritten as

$L = \delta\,Y/\,(W/P)$

i.e. labour input (and thus not prices as in the case of the classical paradigm) adjust to maintain a balance between predetermined output Y and real wages (W/P).

Taking the growth rates, the previous equation yields an equation for labour input growth, i.e.

% change(L) = % change(δ) + % change(Y) – % change(W/P)

A further refinement would be to distinguish labour input as its component hours worked (H) and the number of employed people (N), i.e.

% change(H) = -% change(N) + % change(δ) + % change(Y) – % change(W/P)

assuming the number of employed persons is predetermined so that the number of hours worked adjust.

A.4.4. Interpreting the real effective exchange rate

This section of the annex reflects on the real effective exchange rate as an indicator to assess international cost competitiveness depending on a partial or general equilibrium approach to the issue.

Real effective exchange rates as drivers of external imbalances: a partial equilibrium approach

The limitations of the REER indicator are that the REER based on ULC does not reflect all costs, such as capital costs, R&D expenditure, or distribution costs. Neither does this indicator take into account 'pricing-to-market behaviour' whereby firms (partly) offset variations in the exchange rate by adjusting their profit margins, instead of instantly passing the movement in the exchange rate on to prices charged to foreign customers.

In other words, REER based on unit labour costs (or on HICP/CPI deflators – as is the case in the MIP scoreboard) provides a useful insight into the developments in international competitiveness in the short run, i.e. when, for instance, the capital stock is a predetermined variable. In the medium term, as capital stocks adjust, a broader definition is required to guide policy making.

Moreover, economic theory posits that in the long run, trade between countries is conducted on the basis of comparative advantages, not absolute advantages. As such, the real effective exchange rate affects the efficiency of the economy and in that sense the allocation of labour (across tradable and non-tradable sectors) and not its level, which is determined

Box A3: The real unit labour cost

The Classical paradigm

It can be shown that for the class of CES production functions the marginal equilibrium condition for labour demand reads (in its most simple form making abstraction of technical progress) [1]:

Marginal labour productivity = δ (Y/L) ** (1+ρ) = W/P = real wage

see equation (1) above.

Taking the natural logarithm to simplify further calculations, we find that

ln(δ) + (1+ρ) * ln(Y/L) = ln(W/P)

which yields – on rearranging terms - for a predetermined output level and real unit labour cost, an employment level determined as

ln(L) = ln(Y) – (1/ ρ) [ln(RULC) – ln(δ)]

with the real unit labour cost defined as RULC = (W/P) / (Y/L).

In other words, employment is determined by output and the (predetermined) real unit labour cost.

The Keynesian paradigm

The Keynesian paradigm starts from the demand side and recognizes that the RULC is a measure of labour income distribution, and that the capital income share is one minus the labour income share.

In other words, the real unit labour cost is a channel that operates via the demand side of the economy by affecting factor income distribution, which affects private consumption and investment.

Generally speaking, it is not possible a priori to identify in which direction the net outcome will evolve as this will depend on a variety of conditions – including the ones discussed in Box 1 of the main text. It would be beyond the scope of this chapter to explore this issue in more depth. See, for instance, Storm and Naastepad (2012) for an empirical analysis of demand regimes in OECD countries covering a period prior to the current crisis. See also ILO (2011.b).

[1] See, for example, Layard and Walters (1978).

by more structural labour market conditions, including mismatching, insufficient training, high reservation wages, employment protection legislation etc. See, for instance, Krugman (1993).

However, absolute advantages are (in the long run) important at the level of individual enterprises or sectors. But as only a small fraction of firms are involved in international trade, the interpretation of competitiveness in terms of the average ULC becomes less straightforward. This implies then that REER should focus on the competitiveness of the firms at the cutting edge of tradable sectors. See, for instance, Altomonte et al. (2011).

Finally, it also should be noted that measuring the real effective exchange rate as the relative nominal unit labour cost (denominated in local currency) adjusted for the nominal exchange rate is an accounting identity which could also be interpreted as a measure of the extent to which the nominal exchange rate deviates from its purchasing power value. Such deviations in nominal exchange rates are to a large extent indications of (non-linear) developments in money markets – rather than labour markets. See, for instance, Taylor (2005).

External imbalances and endogenous real effective exchange rates: a general equilibrium approach

Two additional important remarks must be made concerning the debate on international cost competitiveness.

First, international cost competitiveness indicators are often interpreted from the perspective that international trade constitutes a zero-sum game with some countries winning and others losing –such as for instance in the case of athletes in the Olympic arena. See, for instance, De Grauwe (2011).

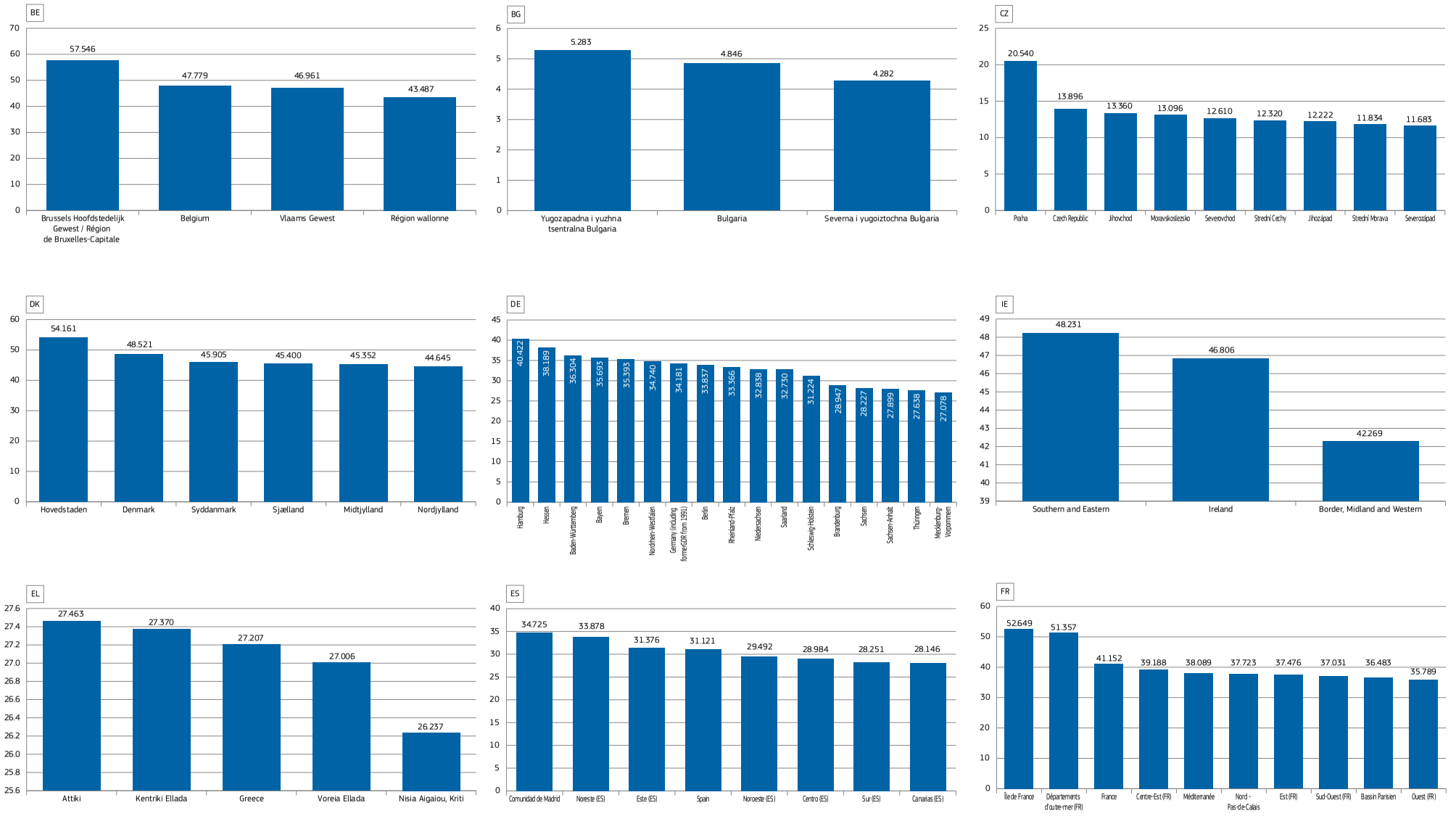
When analysing international competitiveness at the level of countries it is important to recognize that running a current account deficit/surplus is part of an inter-temporal optimization process depending on the local population's calculation of current and future needs. A case in point is Japan which is characterized by high current account surpluses over recent decades, reflecting an ageing population that seeks to accumulate foreign assets to be used as the population becomes older (and less active). See, for instance, Lane (2011).

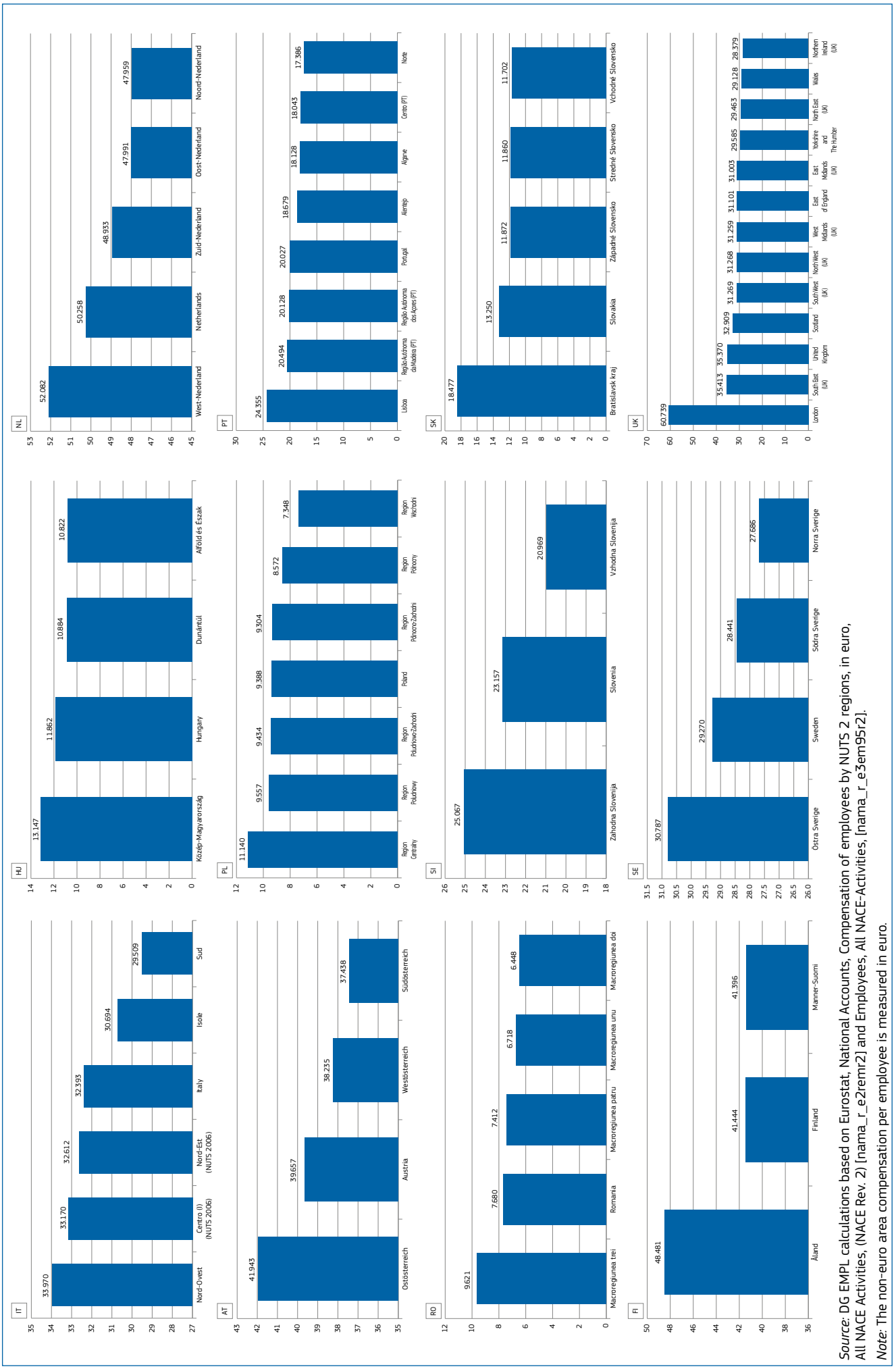
Taking such general equilibrium considerations into account, fluctuation in the real effective exchange rate is a transmission mechanism to establish the long-run reallocation of goods and services by a country.

Second, the causality between international competitiveness and external imbalances does not always run in one direction, i.e. a loss of competitiveness caused by wage developments can lead to external imbalances. The interaction between them can also run in the opposite direction, i.e. external imbalances (i.e. fuelled by cheap credit from abroad) can lead to excess domestic demand that raises wages.

For example, Gros (2010) argues that the loss of competitiveness in southern Europe was primarily due to booms in domestic demand, fuelled mainly by the easy availability of cheap credit for consumption (Greece) and construction (Spain, Ireland). This, and not 'a lack of structural reforms or unreasonable trade unions,' led to an excess demand for labour, particularly in protected sectors like services, and caused sharp increases in wage costs.

Chart A.5.1: Regional compensation per annum – select group of Member States (in €): 2009

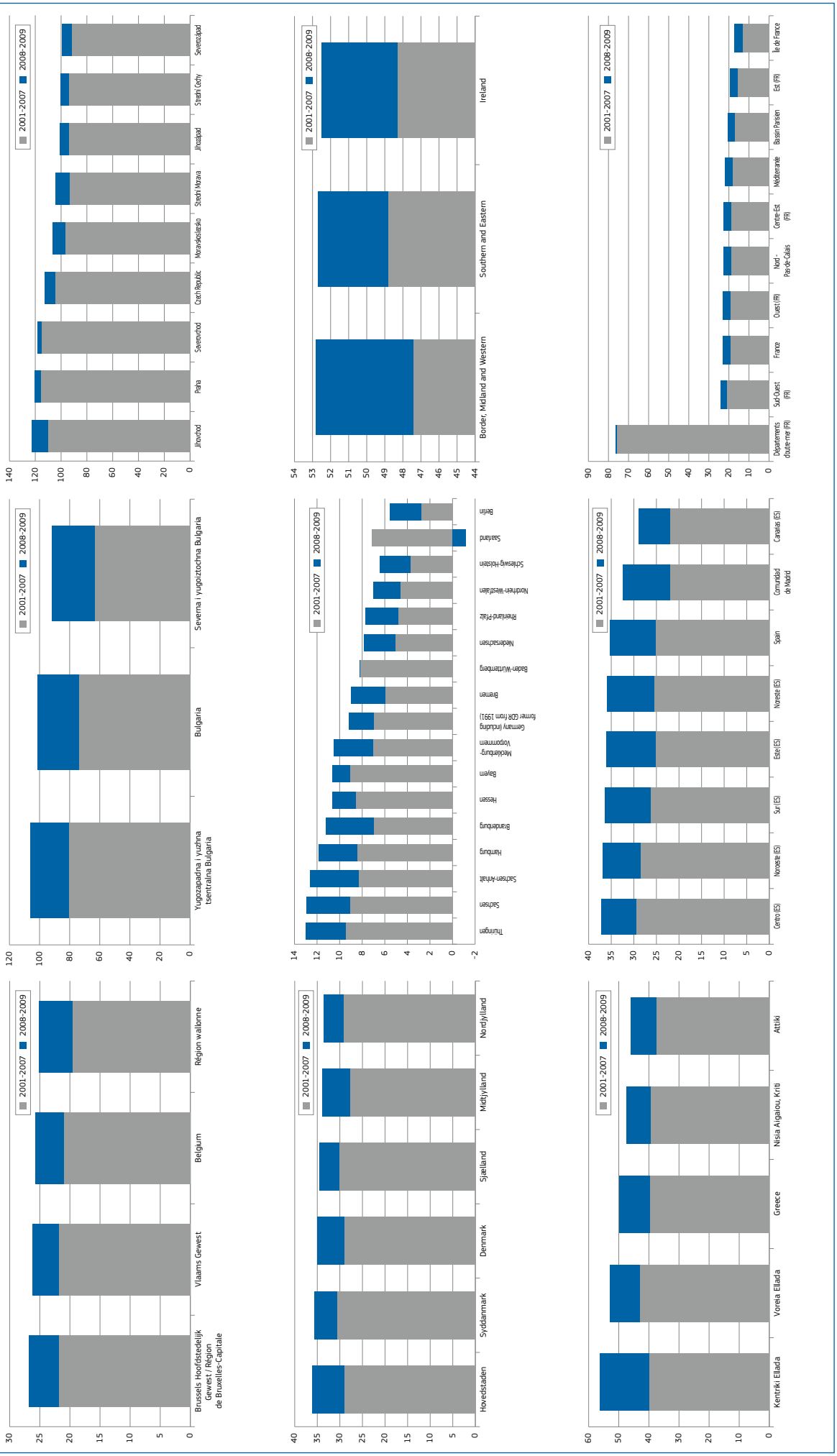


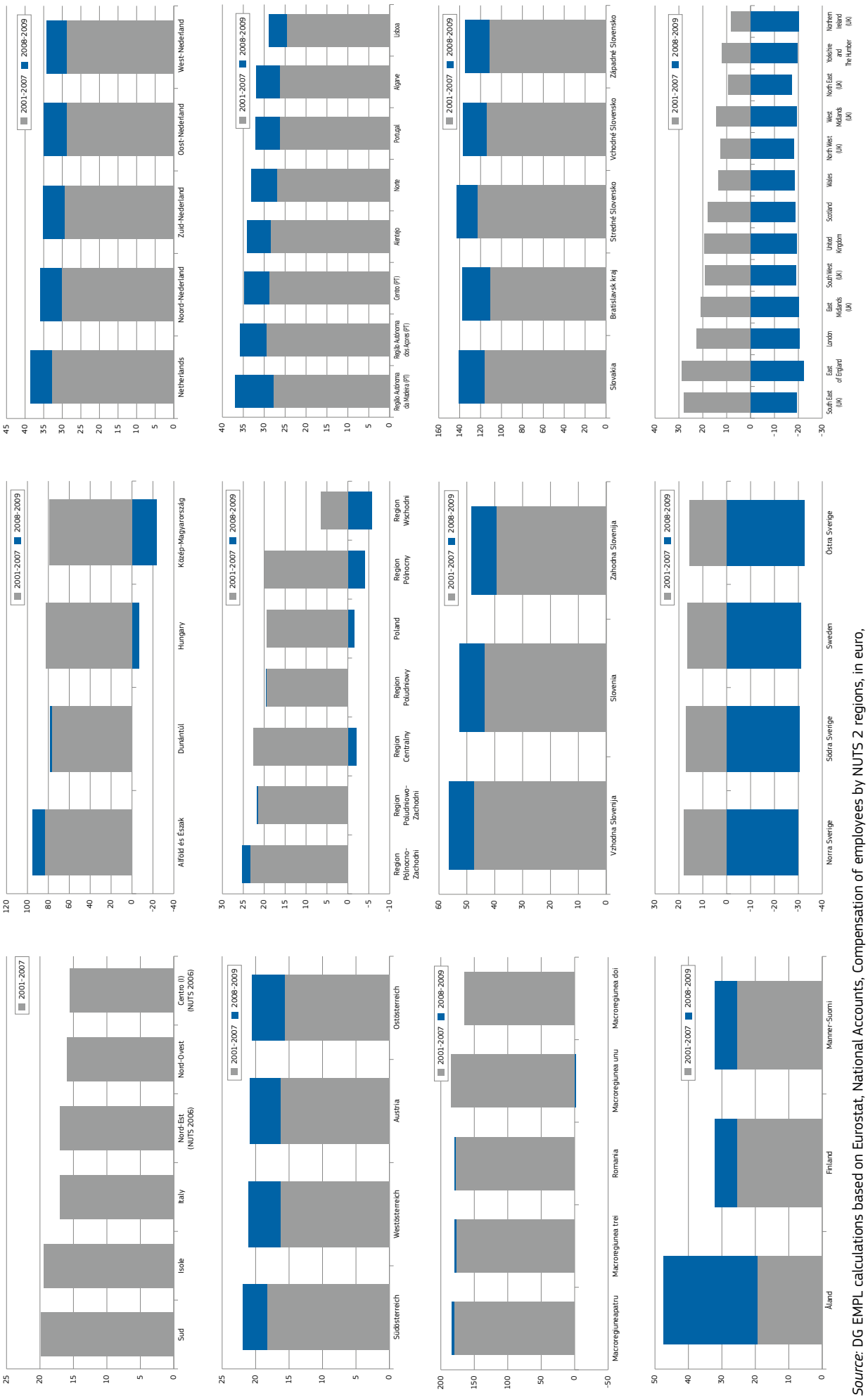


Source: DG EMPL calculations based on Eurostat, National Accounts, Compensation of employees by NUTS 2 regions, in euro, All NACE Activities, (NACE Rev. 2) [nama_r_e2remr2] and Employees, All NACE-Activities, [nama_r_e3em95r2].

Note: The non-euro area compensation per employee is measured in euro.

Table A.5.2: Regional compound growth in compensation per employee (in €)

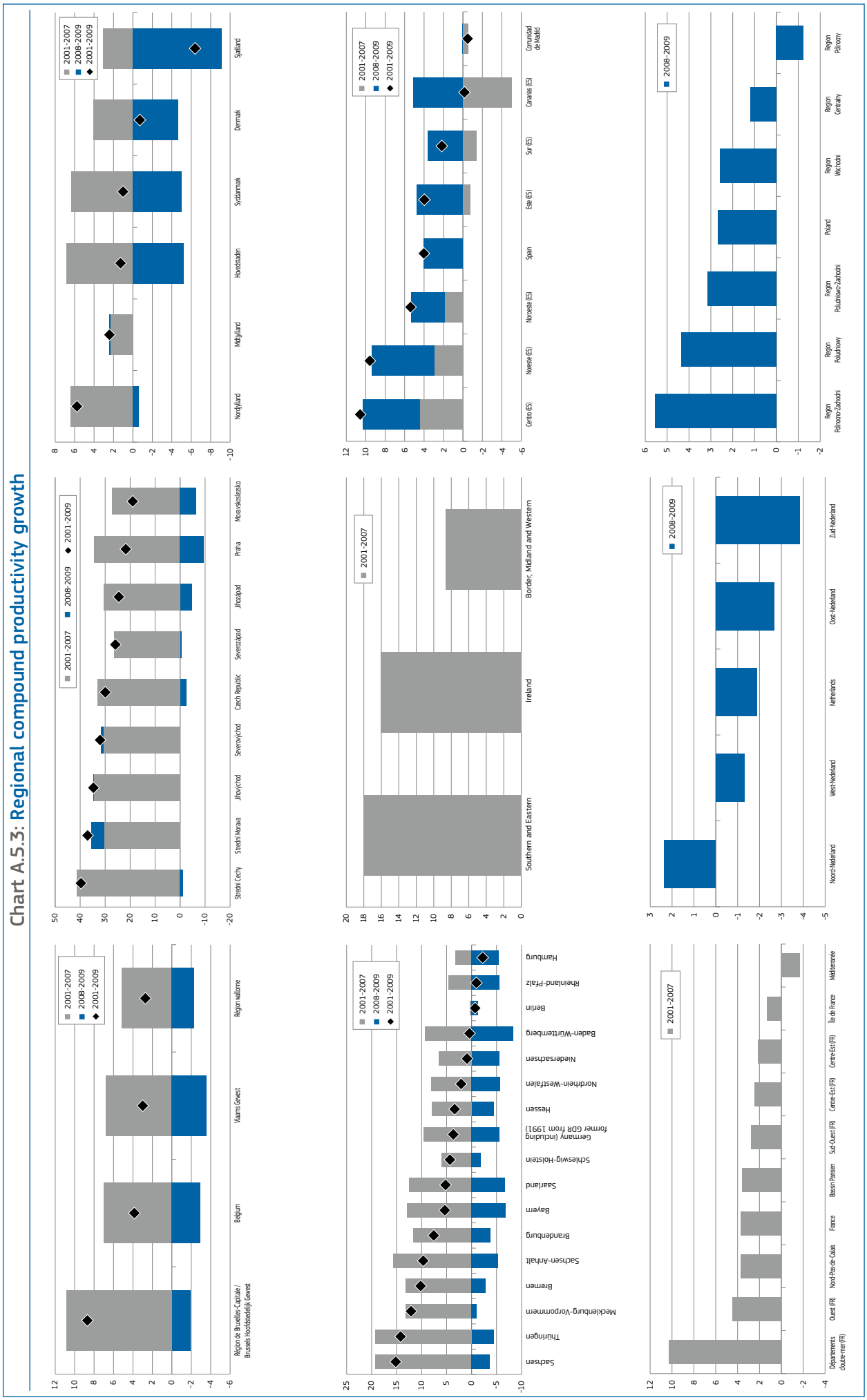


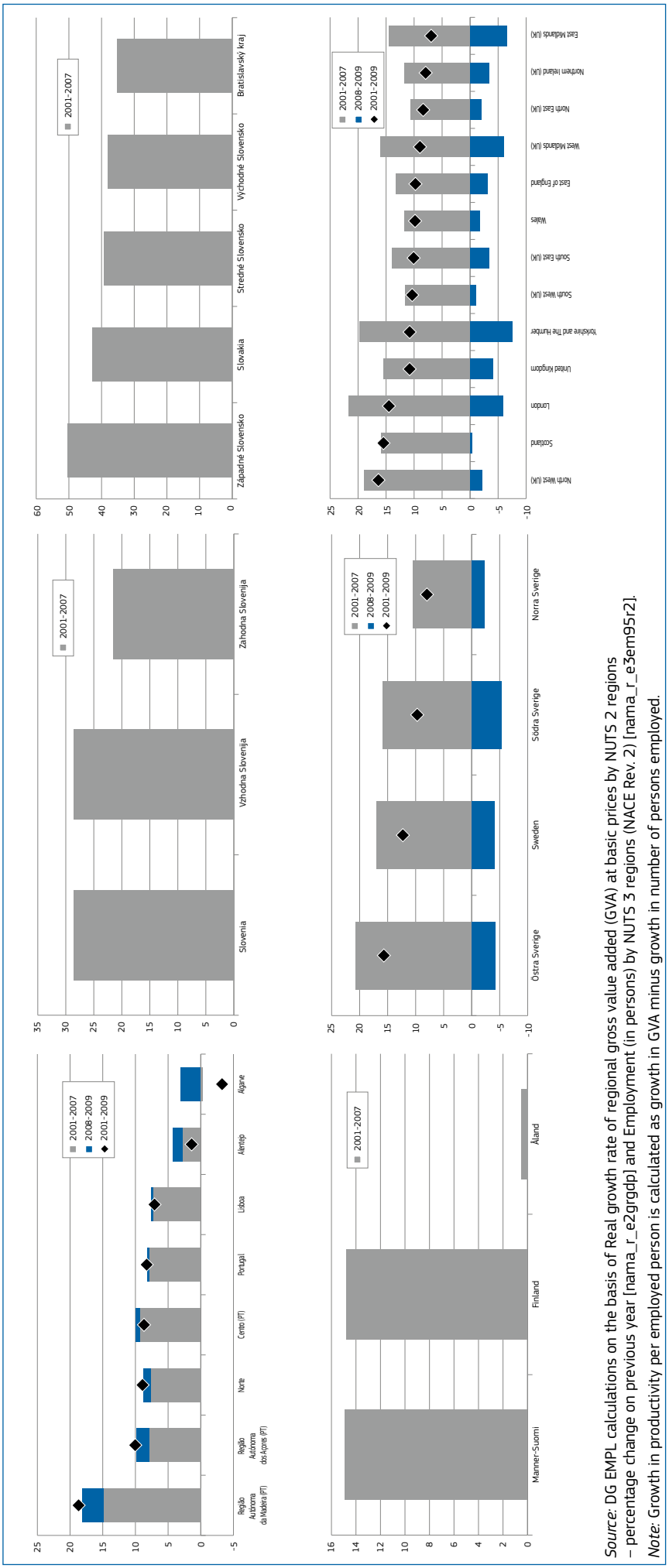


Source: DG EMPL calculations based on Eurostat, National Accounts, Compensation of employees by NUTS 2 regions, in euro, All NACE Activities, (NACE Rev. 2) [nama_r_e2remr2] and Employees, All NACE-Activities, [nama_r_e3em95r2].

Note: The non-euro area compensation per employee is measured in euro.

Chart A.5.3: Regional compound productivity growth

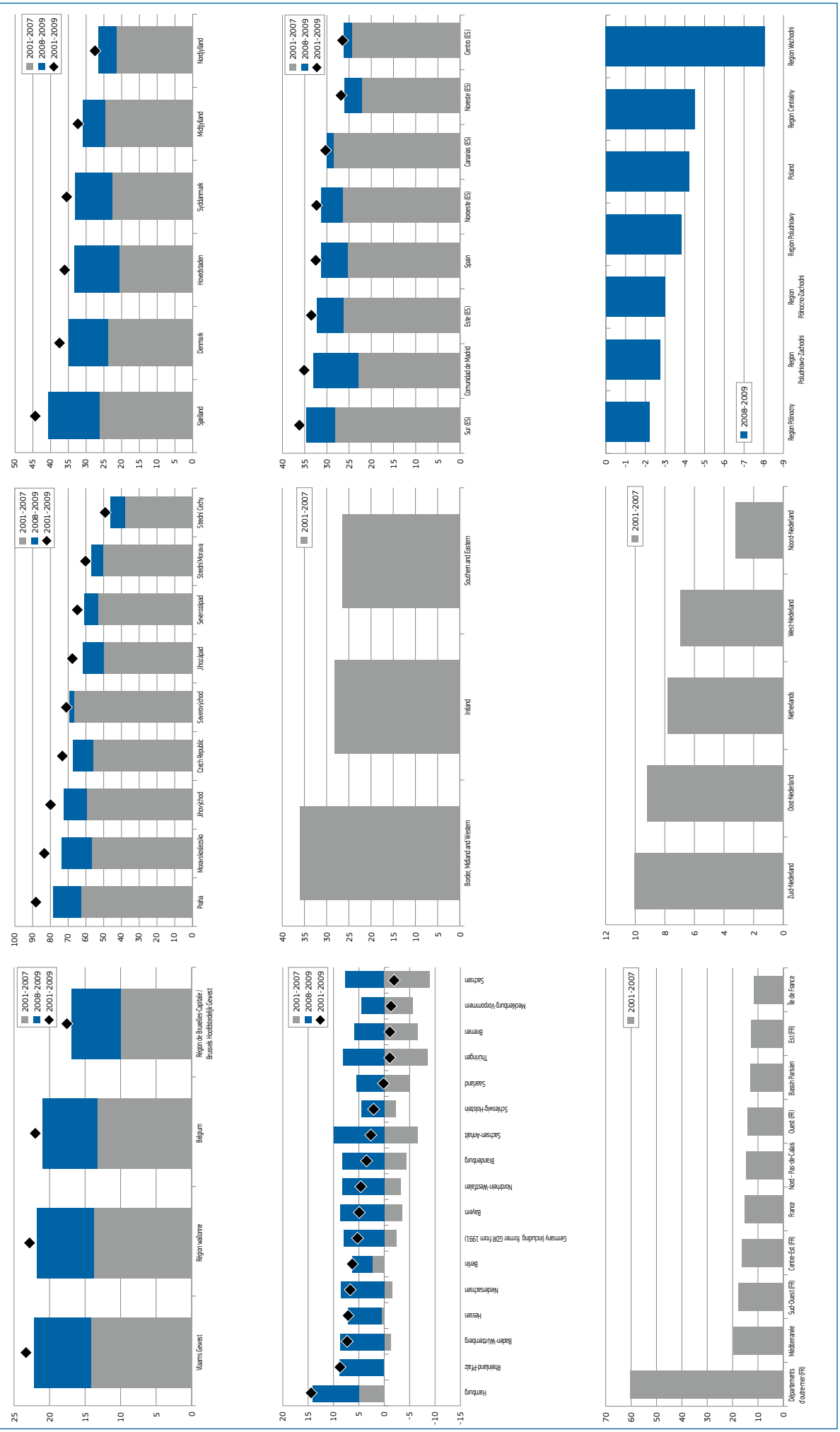


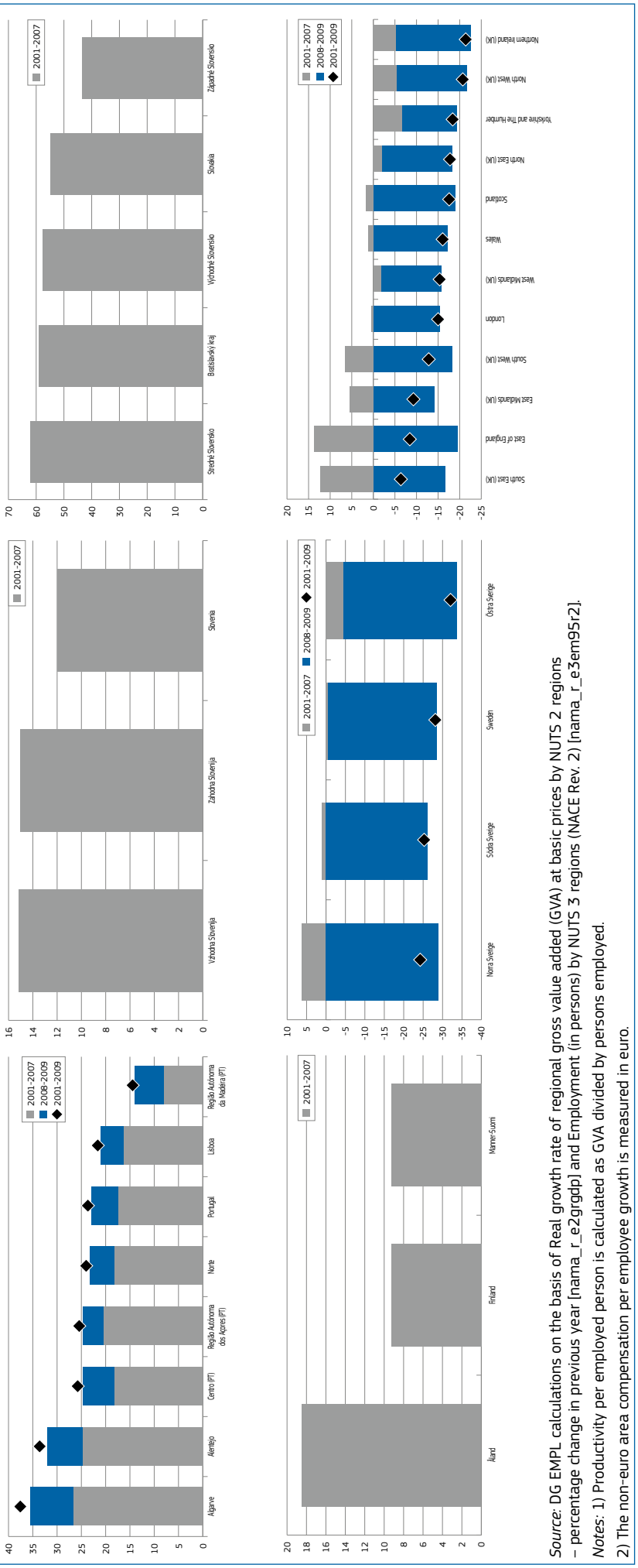


Source: DG EMPL calculations on the basis of Real growth rate of regional gross value added (GVA) at basic prices by NUTS 2 regions – percentage change on previous year [nama_r_e2grgdp] and Employment (in persons) by NUTS 3 regions (NACE Rev. 2) [nama_r_e3em95r2].

Note: Growth in productivity per employed person is calculated as growth in GVA minus growth in number of persons employed.

Chart A.5.4: Regional compound ULC growth in the regions of a select group of EU Member States – (in €)





Source: DG EMPL calculations on the basis of Real growth rate of regional gross value added (GVA) at basic prices by NUTS 2 regions – percentage change in previous year [nama_r_e2grgdp] and Employment (in persons) by NUTS 3 regions (NACE Rev. 2) [nama_r_e3em95r2].

Notes: 1) Productivity per employed person is calculated as GVA divided by persons employed.

2) The non-euro area compensation per employee growth is measured in euro.

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Chapter 6

The skill mismatch challenge in Europe[1]

1. Skill mismatch, a waste of human capital and productivity

The financial and economic crisis has increased unemployment in the EU but, despite that, enterprises in particular regions and sectors cannot meet their labour demand and skill needs. In the fourth quarter of 2011, there were more than six unemployed persons for each available vacancy in Europe, ranging from only two to four unemployed workers per vacancy in Austria, Germany, Belgium and Finland to over 20 unemployed persons per vacancy in Spain and Greece[2]. Skill mismatch – the discrepancy between the qualifications and skills that individuals possess and those needed by the labour market – negatively affects economic competitiveness and growth, increases unemployment, undermines social inclusion, and generates significant economic and social costs.

Skill mismatch in the EU is increasing. This has manifested itself in terms of both a collapse in demand for low-skilled workers and a greater number of higher-educated people taking up jobs that are not commensurate with their skills and competences. One out of three European employees is either over- or under-qualified, with the mismatch especially high in Mediterranean countries. The results show that countries with higher-skill mismatches share some common characteristics. They tend to have lower levels of public investment in education and training, which might reduce their quality and ability to respond to changing labour market needs. They also have lower expenditure on labour market programmes and more rigid and segmented labour markets, as the qualification mismatch predominantly affects younger male workers on non-standard contracts. Young people and immigrants suffer more from over-qualification, while ageing workers are more prone to skills obsolescence.

Skill mismatch can take various forms. Even in the case of an overall balance between aggregate labour supply and demand (i.e. macro-level quantitative balance), micro-level qualitative mismatches can still occur due to frictions, barriers to mobility within and across countries, regions, sectors and occupations and asymmetric information between employers and employees (Pissarides, 2000; Sattinger, 2012). Whether people constitute a good 'fit' for their jobs given the wide-ranging heterogeneity in job tasks and workers' preferences and talents requires acknowledgement that the traditional focus on education or qualification mismatch provides only a partial and sometimes misleading picture of reality. A good match in terms of educational qualifications does not necessarily imply that individuals possess the skills that are required by their jobs, or that skill mismatches will not materialise over time due to insufficient training, skills obsolescence or emerging job requirements.

The EU has to overcome any skill mismatch in order to make effective use of its talent and to prevent the waste of its human capital. Adaptation of education and training to the changing requirements of the world of work by increasing transparency and recognition of skills supply is a prerequisite for preventing current and future labour market imbalances, as argued in the Communication of the European Commission *Re-thinking Education* (European Commission, 2012d). This is especially true given that the relation between skills formation and labour market needs can be self-reinforcing in that a greater availability of appropriate skills in the economy will stimulate labour demand and strengthen long-term economic growth. However, tackling skill mismatch also requires demand side policies. The European Commission's *Employment Package* rightly emphasized that more high-skilled jobs have to be created to bring the supply of skills in closer alignment with the needs of the economy (European Commission, 2012a).

The analysis in this chapter estimates the incidence of both macro- and micro-level mismatches in both qualifications

(1) Mr Konstantinos Pouliakas (CEDEFOP Expert), author of the chapter, undertook the data and empirical analysis with the invaluable contribution of Cedefop experts Mr Giovanni Russo, Mr Alex Stimpson, Mr Jasper van Loo, Ms Rena Psifidou, and under supervision of Ms. Pascaline Descy (Head of Area, Research and Policy Analysis at CEDEFOP).

(2) See European Vacancy Monitor (EVM), a monitoring tool of short-term labour market needs of the European Commission's Directorate-General for Employment, Social Affairs and Inclusion (http://ec.europa.eu/social/main.jsp?catId=955&langId=en).

and skills in the EU and across Member States. It explores their variation across important determinants such as sectors and various socio-economic groups and, on this basis, considers successful policies to tackle skill mismatch. The chapter emphasises the important advantages of policy measures that focus not only on education or qualification mismatch but also on the match between individuals' skills in relation to their job requirements.

The chapter is composed of sections as follows. **Section 2** focuses on macroeconomic labour market imbalances, paying close attention to the incidence of skill shortages among European enterprises and the rising trend of aggregate mismatch as a result of the economic crisis. **Section 3** considers different forms and the incidence of micro-level qualitative skill mismatches among European Member States. **Section 4** discusses the negative labour market implications of both qualification and skill mismatch for all labour market actors, economies and societies. **Section 5** explores the determinants of educational and skill mismatch among European employees and between countries. **Section 6** focuses on recent evidence on mismatch in skills for important target groups of the population, such as young and ageing workers and migrants. **Section 7** summarises the results of recent skills forecasting exercises concerning the anticipated trends of skill mismatch in Europe in the next decade. **Section 8** suggests various preventive skills policies, focusing on education and training, human resource strategies of enterprises, active labour market policies as well as employment and innovation policies. **Section 9** concludes.

The analysis reported in the chapter is based on detailed analysis of the EU Labour Force Survey (EU-LFS), European Working Conditions Survey (EWCS) and European Company Survey (ECS).

2. Aggregate skill imbalances in the European labour market

2.1. Aggregate imbalances reflect the dynamic interplay of skill supply and demand

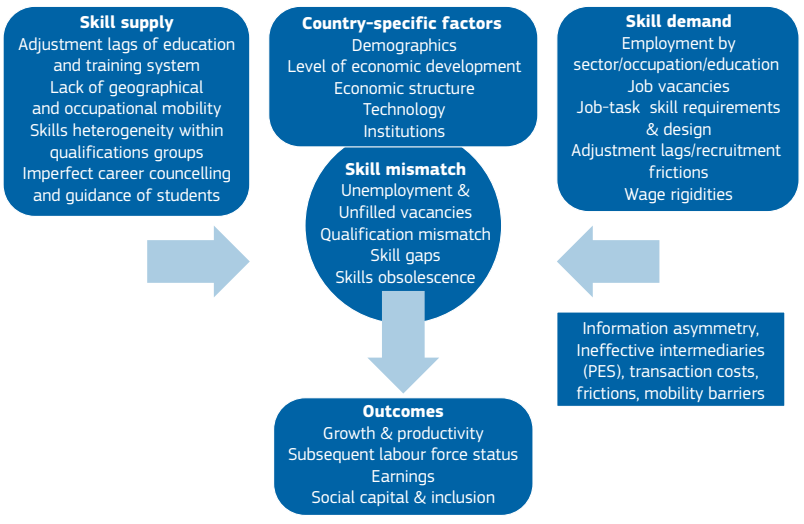
Skill mismatch is the outcome of the complex interplay between the supply and demand of skills within a market economy, both of which are constantly affected by adjustment lags and market failures and are shaped by the contextual conditions prevailing (e.g. demographics, technological progress, institutional settings) (Chart 1).

Aggregate labour market imbalances are caused by discrepancies between the labour needs of the economy and the available supply of manpower. Aggregate labour demand is usually approximated by the available job openings (both new jobs and replacement ones) in the economy, reflecting the diverse needs of the different sectors and/or occupations across the labour market. On the other side of the labour market, the size of the active labour force is typically used as a proxy of the aggregate labour supply in an economy. In practice, discrepancies between aggregate labour demand and supply often arise because of large flows of job creation and job destruction taking place in emerging or declining sectors and occupations, respectively, coupled with long-term demographic evolutionary patterns (see Box 1). Significant inertia and limited flexibility of education and training systems, for instance due to inadequate skills guidance, insufficient validation of non-formal and informal learning and inadequate continuing training at company and sector level, may also contribute to the emergence and perpetuation of skill mismatches in an economy.

Skill supply and demand interact dynamically rather than statically. In practice the demand for skills is intrinsically linked to the pace of change in the economy, while the supply of skills is driven by shifting economic and social incentives that affect the cost and benefits of human capital investments. Skill mismatch might also be influenced by the different phases of the economic cycle (Cedefop, 2010a) in that, in times of economic prosperity, mismatches arise mainly due to there being insufficient numbers of people available with the specific skills needed to satisfy demand[3]. On the other hand, the onset of the recession has resulted in a slowdown in job growth that has encouraged individuals to remain longer in the education system.

The reconciliation of demand and supply for skills in an economy is subject to complex feedback mechanisms and interactions. First, in the face of genuine skill shortages for higher-skilled workers that cannot be addressed by paying at or above the market rate of pay, employers may be forced over the short term to adjust their skill demand by, for example, hiring less qualified workers for the tasks required and seeking to upgrade them to the required skill level through training. In the long term, though, employers may adjust their recruitment, training and overall human resource strategy, or

Chart 1: **Components and dynamics of skill mismatch**



(3) For example, during the 'dot.com' boom in the late 1990s and early 2000s, firms had trouble recruiting the information technology specialists they needed, while in recent years there is particular concern for skill shortages among professionals and technicians possessing Science, Technology, Engineering and Mathematics (STEM) skills.

Box 1: Trends in skill supply and demand in European job markets

Over recent decades the industrial and occupational structures of most developed economies have undergone significant changes. A steady shift in employment and skill demand towards knowledge-intensive activities (e.g. ICT, insurance, consultancy) has taken place, mostly in the services sector, along with smaller, yet positive, growth for lower-skilled elementary occupations (e.g. restaurants, hotels, retail, etc.) (European Commission, 2011).

The shift towards increased demand for skills in modern labour markets has been primarily attributed to the spread of information and communication technologies (ICT), which have resulted in an acceleration in demand for skilled workers that outweighs the available supply (known as *skill-biased technological change*) (Katz and Autor, 1999; Acemoglu and Autor, 2011). Closely related to and partially driven by technological advances of the knowledge-based economy is the shift in organisational practices from 'Tayloristic' or lean methods of production to new flexible forms of workplace practices (Caroli and Van Reenen, 2001). International trade, in particular, is thought to have played a key role in reshaping the optimal product mix of the European economy, as it involved the outsourcing of domestic production of low-skill-intensive goods to less developed countries facing lower unit labour costs (Machin and van Reenen, 2007). Additionally, trade in services across the globe, made possible by rapid declines in information transmission and communication costs, has become an increasingly prominent phenomenon in the form of off-shoring (Blinder, 2009).

The adoption of new technologies has resulted in a reduction in demand for routine cognitive and manual tasks and an increased reliance of production on non-routine tasks that cannot be easily substituted by technological automation (Autor et al., 2003). This has led to a polarisation (*hollowing out*) of employment in the years preceding the recession (Autor et al., 2006; Goos et al. 2009; Cedefop, 2010b; European Commission, 2011).

Shifts in labour demand and supply are also reflected in the wage distribution trends observed in many advanced Western economies. Rising wage inequality in the 1980s-1990s between individuals of different skill types (e.g. highly vs. lowly educated) and an observed compression in the lower half of the wage distribution is believed by some to be an outcome of institutional changes and of market forces. Recent studies have also emphasised the substantial increase in inequality that is increasingly observed within skill groups (e.g. between individuals possessing similar education credentials). A large part of this widening within-group variation in earnings has been attributed to the growing importance of ability, skills, competences and attitudes as driving forces of individual labour market success (Katz and Autor, 1999). Others have shown that more centralised wage-setting institutions, rather than a smaller dispersion in skills, can account for the slower growth in wage inequality in Western European countries than in the US (Devroye and Freeman, 2001).

Recent and anticipated demographic trends affecting the size and age structure of the European workforce highlight the need for lifelong learning policies that will maintain and raise the skills of an ageing population. In Europe, the population of working age has been shrinking in the past four decades due to declining fertility rates in many Member States. By 2014, the overall EU workforce will start declining, and only the segments of the population aged over 45 years are anticipated to grow. Over the coming years the ageing of the European population will thus constitute an additional barrier to the efficient matching between labour supply and demand. For this reason, more open and flexible learning pathways have become a necessity to allow the ageing workforce to react to changing skill needs, building on the transversal competences acquired in formal education and training.

On top of these long-term sectoral and demographic changes, the economic crisis has had a dramatic impact on the European job market. Between mid-2008 and the first quarter of 2011 the EU lost around 5 million jobs due to the economic slowdown, and only about a fifth of those lost jobs (0.9 million) have since been recovered. Despite this economic downturn, the historical trend towards an increasing demand for high-level skills has been robust. Higher-skilled individuals (i.e. those possessing a degree at first or second stage of tertiary education, or above EQF level 5) increased their share of employment during the years of economic turmoil. In contrast, the recession hit the low-skilled (up to lower secondary education) the hardest, particularly the younger age group.

invest in a different mix of technology, capital and labour, so as to overcome the skill deficiencies – in effect embodying the skills in the capital equipment rather than in people. Equally, educational requirements may rise over time as jobs become more complex and as employers demand more highly qualified labour for jobs that were previously considered to be low-skilled.

Second, with weak demand in the job market, in particular during recessionary periods, high-skilled workers may be induced to take up jobs requiring a lower qualification than the one they have in the face of intensifying competition, thereby *crowding out* lower-qualified individuals from the labour market. While this may provide the more highly skilled with work, the evidence indicates that many such individuals can get trapped for a long time in unsatisfying lower level jobs (Cedefop, forthcoming[a]). This also has implications for skills obsolescence in general since the rate of skills depreciation is greater among those who work in a non-challenging job that does not exploit their full potential, as well as among those who are kept out of the labour market for long periods of time.

Concerns that the supply of higher-educated labour in Europe is rising faster than demand has been supported by evidence pointing to decreasing wage returns for recent cohorts of university graduates (McGuinness et al., 2009). This seems to be particularly the case in countries that have experienced a rapid expansion of their tertiary education systems in relatively short periods of time (e.g. UK, Ireland). Several studies have pointed to further market inefficiencies associated with the increasing supply of university graduates, such as an over-emphasis on credentials – sometimes termed 'credentialism' – and a tendency by firms to inflate qualification requirements at the time of hiring (Dolton and Silles, 2003).

In this sense it has been asserted that the expansion of higher education systems has served to diminish the value of a university degree as a 'signal' of higher individual productivity. Employers have subsequently responded by placing more value on other indicators of individual ability, such as the type of institution and the class/level of degree (Battu et al., 1999). For instance, some researchers have found that individuals who have been awarded higher final marks as part of their degree and graduates of higher esteemed universities are less likely to be over-qualified (Dolton and Vignoles, 2000; McGuinness, 2003; Green and Zhu, 2010).

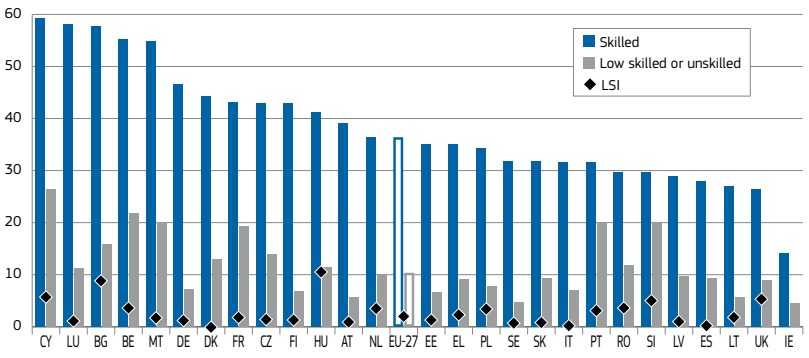
Although the aforementioned channels may lead to a misallocation of resources, to some extent labour demand is also a reflection of labour supply (Acemoglu, 2002). When work is organised in a manner that best takes advantage of, and complements, the skills and education of the available workforce, a well-educated and highly skilled workforce will have the effect of encouraging and enabling the adoption of new technologies. Work organisation can also be modified so that it can increase productivity which will, in turn, reinforce the demand for high skills in successful companies and industries. Upgrading the education of the workforce may thus, in itself, be a factor leading to increased demand for high skills. Bresnahan et al. (2002) have shown that firms could not have profited from the significant benefits of the ICT revolution unless there had been an appropriate increase in the supply of skilled workers who could cope with these new technologies. It is in this regard that the EU is developing common strategies, tools and principles to increase the link between the world of work and education systems.

Some economists and sociologists believe, however, that it is changes in the quality of jobs and segmented, or two-tier, labour markets, rather than shortages of human capital, that drive skill shortages and skill under-utilisation (Handel, 2003; 2005). They argue that the real causes of labour or skill imbalances are factors such as the decline of unionised manufacturing jobs, more competitive product markets, changing wage norms, the declining real value of the minimum wage, the increasing use of contingent work, outsourcing and offshore production and cheaper immigrant labour, all of which have served to compromise the pay and working conditions of jobs relative to the past. Others have emphasised that 'part of the problem is that employers are indeed searching for unicorns: 'perfect' fits for what are often imperfectly described and listed jobs' (Cappelli, 2012). From this perspective the deep-rooted skill deficiencies are seen to be the outcome of free-market government policies and management's shortcomings with respect to such issues as product quality, capital investment, work organisation and worker training. Discussions focused on the deficiency or non-responsiveness of education and training systems thus diverts attention away from the demand side of the economy, which is the true source of the problem.

2.2. Skill shortages are prevalent among European firms and sectors

A common sign of aggregate skill imbalances are skill shortages or the presence of hard-to-fill vacancies as a result of a discrepancy between the skills sought by enterprises and those available in the workforce. Skill shortages are regularly reported by European firms. According to data from the European Company Survey (ECS) (see Chart 2), about 36 % of firms in the EU-27 experienced difficulties in hiring staff for skilled jobs in 2009. This figure ranged from above 50 % in Belgium, Luxembourg, Bulgaria, Malta and Cyprus to below 20 % in Ireland. 11 % of enterprises faced difficulties in recruiting workers for low-skilled or unskilled jobs[4]. The aforementioned figures, even when focusing only on the manufacturing sector, exceed by a significant margin an alternative indicator

Chart 2: Skill and labour shortages in European firms, 2009, EU-27



Source: ECS (2009) and Eurostat EUROIND database.

Notes: Proportion of establishments replying affirmatively to the question 'Did your establishment encounter any of the following problems related to personnel: (i) Difficulties in finding staff for skilled jobs; (ii) Difficulties in finding staff for low-skilled or unskilled jobs. ◆ LSI = 2009 annual average of labour shortage indicator, derived from the EU business surveys (% of manufacturing firms pointing to labour shortage as a factor limiting production). No data for IE.

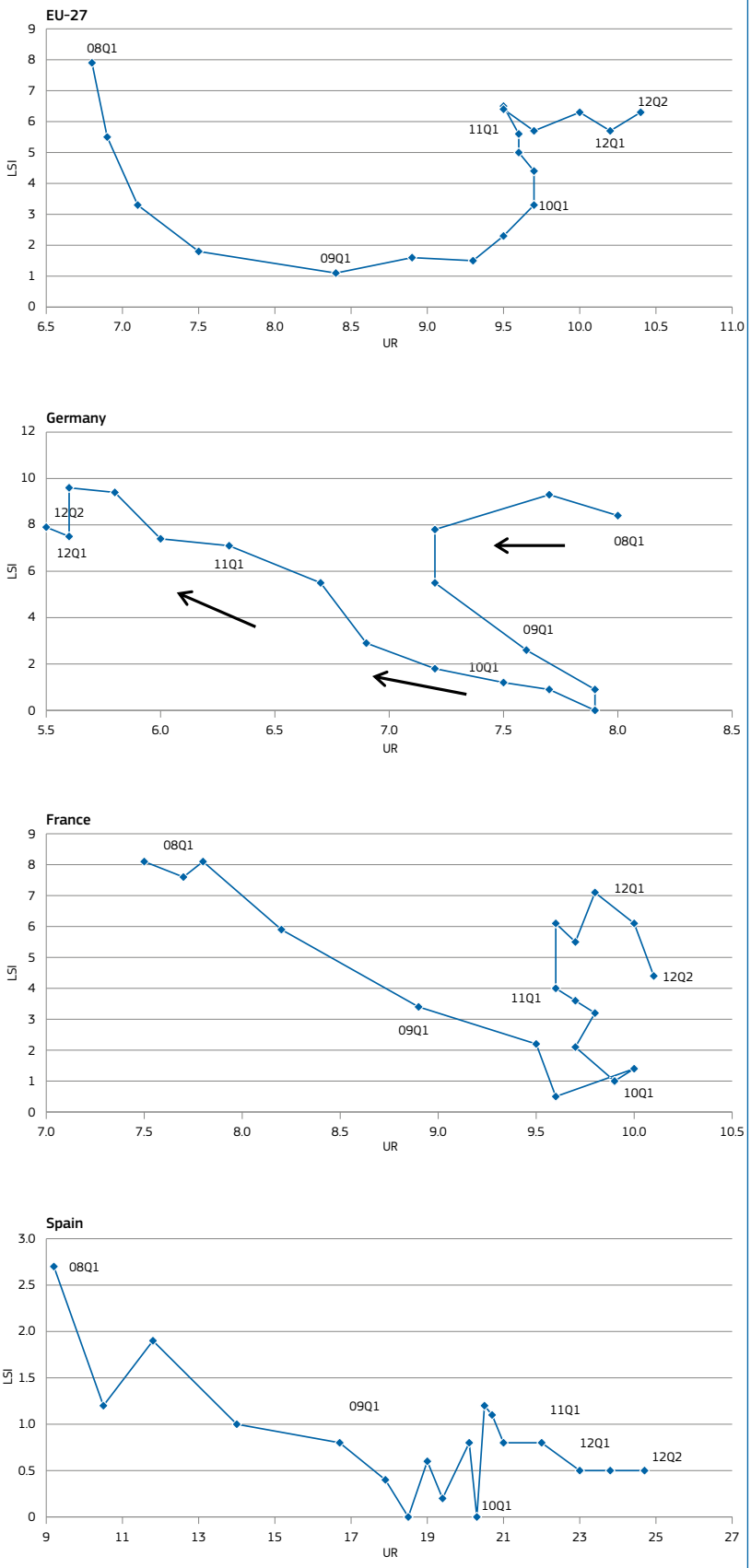
(4) Similar skill shortages are also evident in the latest wave of Manpower's Talent Shortage survey, which took place in 2012 (http://www.manpowergroup.com/index.cfm). Many national employer surveys further highlight the prevalence of skill shortages in European Member States. For instance, according to the English National Employer Skills Survey (NESS), about 3-6 % of establishments reported skill-shortage vacancies between 2003 and 2009, defined as hard-to-fill vacancies which are attributable to a lack of skills, qualifications and/or work experience.

of short-term labour market pressure in the EU, namely the so-called labour shortage indicator (LSI). Derived from the European Commission's Business surveys, the LSI highlights that, in 2009, only about 2% of EU manufacturing firms considered that labour shortages were a factor limiting their production. This percentage was well below the 8% level that existed in the years preceding the economic crisis, but it has since increased to an EU average of around 5-6% in 2012 reflecting the upturn in overall economic activity.

The co-existence between job vacancies or skill shortages, on the one hand, and unemployment rates, on the other, is typically described and depicted by the Beveridge curve. As shown in Chart 3, in the years following the onset of the crisis the EU-27 Beveridge curve is characterised by an outward movement towards higher levels of both labour shortages and unemployment. This suggests an increasing risk of mismatch and of higher levels of structural unemployment in the European labour market in the post-crisis period if the outward *movement* in the curve disguises an outward *shift*. The EU pattern disguises important country differences reflecting the differential nature of the shocks and of previous macro-economic imbalances affecting the different economies. For example, some Member States, notably Germany, experienced a leftward movement in the Beveridge curve, indicating a tightening of the labour market, while Southern European countries such as Spain, Greece, Cyprus or Portugal have experienced marked increases in unemployment rates along with declining numbers of available vacancies, which is reflective of their decent into deep and protracted recessions.

The inability of employers to fill their open vacancies might also be an outcome of extended hiring times on their behalf as they can now afford to be more selective given the larger pool of unemployed workers on offer, without necessarily offering better wages or work conditions (Cappelli, 2012). Nonetheless, in the face of a considerable increase in unemployment rates, particularly among the low-skilled and the young, and given the acceleration of sectoral restructuring and downsizing that has been observed during the crisis in several countries (particularly in construction and manufacturing sectors), increasing skill mismatch

Chart 3: Beveridge curves of the EU-27 and selected Member States



Source: Eurostat. UR = unemployment rate (%), quarterly average seasonally adjusted. LSI = labour shortage indicator, derived from EU business survey results (% manufacturing firms pointing to labour shortage as a factor limiting production).

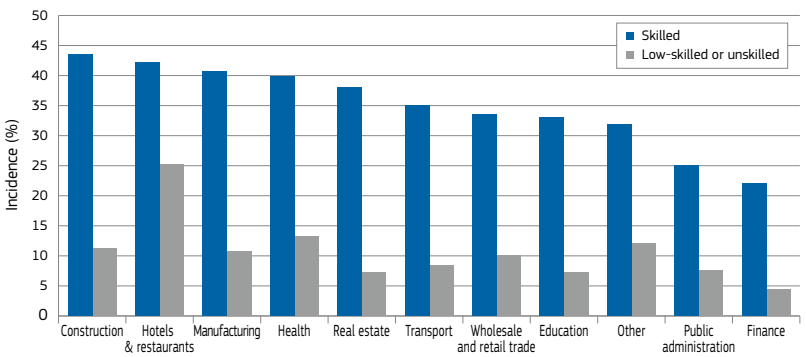
has been identified as one of the biggest challenges facing Europe in the post-crisis era (ECB, 2012). In particular, the rising duration of joblessness since the crisis, which has led to long-term unemployment accounting for over 45 % of the share of total EU unemployment, has raised the risk of so-called *hysteresis effects* prevailing. Unemployment may increase the risk of persistent unemployment in the future due to both discouragement of the individuals concerned and their skills becoming obsolete after prolonged periods of inactivity. Indeed, skill mismatch has been found to be positively related to the increase in the structural component of unemployment in European countries in the post-recessionary years (ECB, 2012).

Skill shortages may arise due to an inability on behalf of employers to find suitably qualified or skilled staff, but they may also reflect sectoral and regional reallocation of economic activity. The reallocation of the labour force from territories or sectors characterised by declining economic activities towards those in which jobs are expanding constitutes a major challenge for policy-making. High disparities in regional employment rates have always characterised many EU economies and the available evidence for the time period 2007-11 points to an increasing dispersion of regional employment rates in some EU countries (e.g. Italy, Spain, Bulgaria, Belgium, France, Romania, the Czech Republic, Portugal, Slovenia, the Netherlands and the UK). Sectoral employment shifts, particularly in the sectors of construction and in finance and business, have also been found to be important determinants of the observed Beveridge curve shifts across EU countries (ECB, 2012).

Chart 4 illustrates that in the midst of the crisis (in 2009) a significant share of European employers encountered difficulties in finding suitably skilled staff mostly in those sectors that were more affected by the crisis (e.g. construction, hotels and restaurants, manufacturing). The contribution of different sectors to the overall incidence of skill or labour shortages varies considerably across the Member States, reflecting their diversity in terms of economic structure, education and training systems and the nature of shocks and imbalances in the years before the crisis (see Annex 1). For example, in the UK and the Netherlands the greatest share of shortages of skilled labour is observed in the financial and non-market services sectors, whereas in Italy, Portugal and the Eastern and Central European countries skill and labour shortages are more pronounced in the manufacturing sector. For many countries, between a third and a half of the shortages of skilled and unskilled workers can be found in the wholesale and retail trade and transport and storage sectors.

Key sectors in terms of their importance for European innovation and sustainability are often identified as suffering from skill shortages. Cedefop (2011a) has recently highlighted that some 'green occupations' (e.g. energy auditors, photovoltaic installers, insulation workers, environmental engineers, sheet metal workers) are facing skill gaps in practical and technical (STEM) skills. Skill shortages are likely to occur not only due to the fact that many occupations and skills related to the sustainable economy are new or emerging, but also because of difficulties in recognition and portability of new 'green' qualifications and in attracting young people into what are perceived as 'dirty' jobs with poor working conditions and low pay. Most Member States also do not yet have explicit national skill strategies or programmes integrated with their environment policies to develop low-carbon economies. Different policy domains often remain separate, hindering policy cooperation and coherence between environment and energy policies and skill and employment policies. A growing shortage of ICT professionals in Europe has also been predicted, resulting in an estimated shortfall of as many as 700 000 professionals by 2015 (European Commission, 2010c). Furthermore, about 1.5 million new 'white jobs' have been forecast to be generated in the health care sector by 2020, even though a shortage of both new technology and social intercultural skills has been identified in a sector traditionally seen to have both poor work conditions and low pay (Eurofound, 2006). Shortages of technical skills are often reported by micro and small enterprises too, although this can sometimes reflect bad working conditions in some specific sectors rather than a real lack of skills in the workforce as a whole (European Commission, 2008a). Finally, qualitative studies of the commerce and tourism sectors have revealed that employers in these sectors are likely to face shortages unless they improve the overall work conditions and address the geographical limitations that affect local markets (Cedefop, 2005).

Chart 4: Skill and labour shortages by economic sector, 2009, EU-27



Source: ECS (2009).

Notes: Proportion of establishments replying affirmatively to the question 'Did your establishment encounter any of the following problems related to personnel: (i) Difficulties in finding staff for skilled jobs'; (ii) Difficulties in finding staff for low-skilled or unskilled jobs'.

2.3. Aggregate skill mismatch is increasing in Europe

Skill mismatch arises because of a discrepancy in the distribution of skill demand and supply, where the dispersion of skills is typically approximated by the variation of educational qualifications within an economy (e.g. high-, medium- and low-level qualifications). On the supply side, the steady growth of individuals with tertiary education qualifications as a share of the active EU workforce (from 21 % in 2000 to 29 % in 2011) is well-documented, reflecting the gradual retirement of older and less qualified cohorts and the process of educational upgrading. In contrast, the share of active lower-skilled workers (i.e. pre-primary,

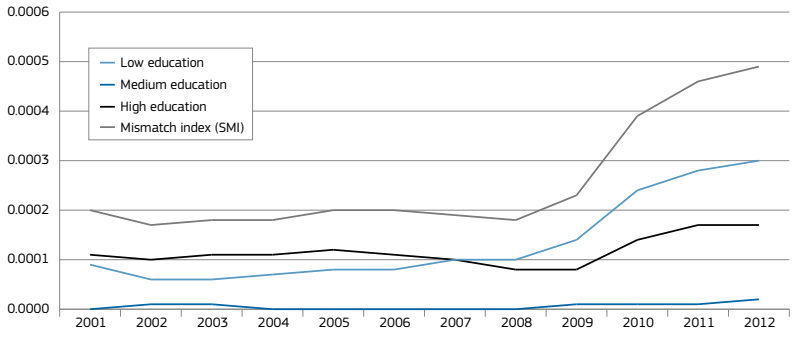
primary and lower secondary education graduates) has decreased (from 30% in 2000 to 22.5% in 2011), while those with medium-level qualifications (upper secondary and post-secondary non-tertiary) has remained stable at about 48%.

A similar trend has also taken place in the past decade on the demand side. Specifically, higher-skilled workers have increased their share in the overall pool of EU employment from 22% in 2000 to 30% in 2011, while the proportion of low-skilled workers decreased over the same time period (from 29% to 21%, respectively). The employment of lower-skilled workers, in particular, was more severely hit as a result of the economic crisis, and their relative unemployment rose faster during this period, while high-skilled employment continued to increase, albeit at a slower pace. Indeed, it has been estimated that EU countries that had a greater proportion of low-skilled workers in their labour force during the past decade had a greater probability of experiencing an outward shift in their Beveridge curves (ECB, 2012).

Due to the intense job destruction and its concentration in certain branches of economic activity a strong increase in structural mismatch has taken place since the start of the crisis, as evidenced by the so-called skill mismatch index (SMI). The skill mismatch index measures the distance between the relative demand and supply of a given skill *j*, where demand is captured by the share of employed persons with skill *j* in the EU economy/country/region at a given time period and supply is approximated by the share of the active workforce in possession of a given skill level (or, similarly, the stock of unemployed workers with skill level *j*) (Estevao and Tsounta, 2011). Confirming the analysis of the ECB (2012) for the euro area, Chart 5 exhibits a marked increase in the overall EU-27 SMI during the period of the crisis. Breaking down the SMI according to the individual components of skills, it becomes apparent that the intensification of skill mismatch during this era can be attributed primarily to the collapse in the demand for low-educated workers (by about 6.8 million workers). Another driver of the overall rise in the SMI is the increasing imbalance for high-educated workers since 2008. However, in this latter case it is the relative growth in demand for high-skilled workers (by about 5.6 million workers) in relation to their supply that lies behind the growing mismatch.

About three quarters of the increasing share of higher-educated employment during the crisis took place in so-called knowledge-intensive service industries and in high-skill occupations (managers, professionals and associate professionals and technicians). However, as observed in Chart 6 the number of higher-educated workers employed in skilled non-manual occupations (clerical support workers and service and market sales) also rose by 26.5% between 2007 and 2011, raising concerns about a potential increase in the incidence of over-qualification, i.e. university graduates accepting jobs that require lower qualifications than their own. In contrast, the significant fall in the employment of low-educated individuals in high-skill occupations (by about 26% during the period of the crisis) signals that such workers may have been dismissed faster during the economic downturn due to their lower productivity. In this case the

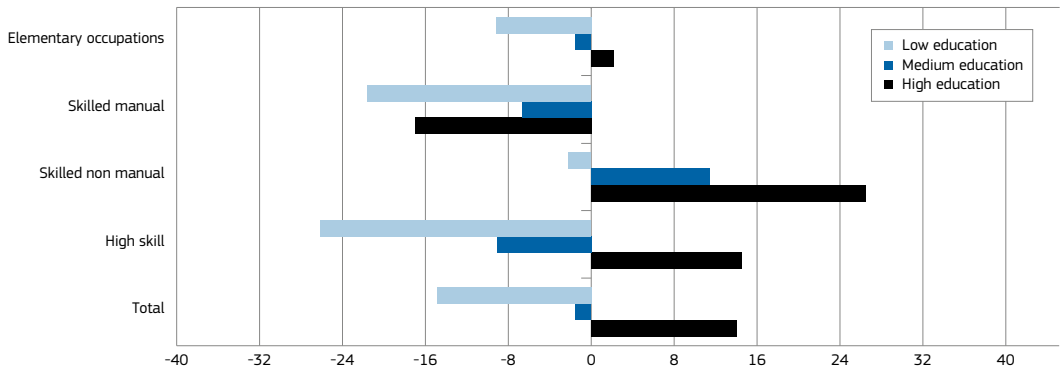
Chart 5: Skill mismatch index (SMI) by level of educational attainment, EU-27



Source: Cedefop calculations based on Eurostat data.

Notes: The SMI has been derived following the methodology of Estevao and Tsounta (2011) and the ECB (2012). The education levels are separated according to the ISCED classification i.e. *High education:* ISCED 5-6; *Medium education:* ISCED 3-4; *Low education:* ISCED 0-2.

Chart 6: Change (%) in employment by occupational group and skill level, EU-27, 2007-11



Source: Cedefop calculations based on Eurostat data.

Notes: The occupations are separated according to the ISCO classification i.e. *High skill:* Managers, professionals, technicians and associate professionals; *Skilled non-manual:* clerical support workers and service and sales workers; *Skilled manual:* Skilled agricultural, forestry and fishery, craft and related trades and plant and machine operators and assemblers. The education levels are separated according to the ISCED classification i.e. *High education:* ISCED 5-6; *Medium education:* ISCED 3-4; *Low education:* ISCED 0-2.

overall incidence of under-qualification in the EU economy (i.e. workers employed in jobs requiring higher qualifications than the ones they hold) is expected to have declined in recent years.

3. Qualitative skill mismatch in Europe

3.1. Qualitative skill mismatch takes many forms

Given that the SMI measures imbalances of labour demand and supply using educational attainment as a proxy of skills, it can only provide a partial picture of the nature of skill mismatch. Despite the strong correlation between formal education and skills, the SMI and other similar measures of mismatch fail to take into account the dynamic process of skill accumulation and obsolescence over individuals' working lives. They also do not account for the quality of the match between employees' skills and the required skill profiles of their jobs. For this reason, a comprehensive analysis of skill mismatch in Europe requires in-depth analysis of the qualitative mismatches between individuals' skills and job requirements.

Even if imbalances between the aggregate labour demand and supply of European states were adequately addressed via appropriate market signals and/or policy regulation, skill mismatches would not disappear completely. 'Qualitative' mismatches at the individual level arise because of the inevitable heterogeneity in job tasks and workers' talents. These interact in imperfect job markets characterized by substantial asymmetries in the information available to labour market agents, imperfect mobility and inevitable frictions (Pissarides, 2000; Sattinger, 2012) (Box 2).

Table 1: Definitions and types of qualitative skill mismatch

Vertical (qualification) mismatch	A situation in which the level of an individual's education is less or more than the level of education required by his/her current job. *General causes*: business cycle effects, heterogeneity among individuals and jobs, information asymmetry between employers and employees, incomplete mobility, transaction costs, slow responsiveness of education and training to labour market needs.
Over-qualification	A situation in which an individual has more education (in terms of qualifications) than the current job requires. *Specific causes*: lack of suitable jobs in the labour market, inflexibility of education and training system, heterogeneity of skills and/or ability within levels of education, inadequate career guidance, ineffective intermediaries, recruitment frictions.
Under-qualification	A situation in which an individual has less education (in terms of qualifications) than the current job requires. *Specific causes*: skill shortages, heterogeneity of skills and/or ability within level of education, cohort effects, availability of firm-specific training and skills accumulation (Sloane et al., 1996).
Horizontal (qualification) mismatch	A situation in which the level of education matches job requirements, but the type of education (e.g. field of study) is inappropriate for the current job. *Specific causes*: occupational specificity of field of study (Wolbers, 2003), occupational regulation, signalling value of respective field (Reimer et al., 2008), existence of multiple 'pathways' for entry into employment (European Commission, 2008b).
Skill mismatch	A situation in which the level and/or type of skills and abilities of an individual is less or more than the required level of skills and abilities in the job. *Specific causes*: diffusion of new technologies, changing work organisation, job design, career development, provision of continuous training, inflexibility of education and training systems.
Over-skilling	A situation in which an individual is not able to fully utilise his or her skills and abilities in the current job.
Under-skilling	A situation in which an individual lacks the skills and abilities necessary to perform the current job to acceptable standards.
Skills obsolescence	A situation in which the level of skills and abilities of an individual required to maintain effective performance in his or her job deteriorates or becomes outdated over time (Kaufman, 1974). *Specific causes*: ageing, lack of use of skills at work (atrophy), diffusion of new technologies, changing forms of work organisation, career interruptions (De Grip and van Loo, 2007).
Economic skills obsolescence	A situation in which skills previously utilised in a job are no longer required or have diminished in importance.
Physical (technical) obsolescence	A situation in which physical or mental skills and abilities deteriorate due to atrophy or wear and tear.

Source: Cedefop (2010a).

Notes: (a) Confusion is sometimes caused by the unfortunate use in the literature of the term 'skill mismatch' both as the narrow concept described in the table, and as an encompassing term that may encapsulate qualification mismatch (i.e. vertical and horizontal);

(b) According to the official definitions adopted in the context of the European Qualifications Framework:

- **'qualification'** means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards;
- **'skills'** means the ability to apply knowledge and use know-how to complete tasks and solve problems (cognitive and practical);
- **'competence'** means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development (e.g. responsibility, autonomy).

Box 2: Search theory and active labour market policies

Short run qualitative mismatches arise as a consequence of extensive job and worker heterogeneity combined with imperfect information and frictions in the labour market that require workers and employers to engage in costly search to establish employment. 'Search' theory (Mortensen and Pissarides, 1999; Petrongolo and Pissarides, 2001) refers to the study of how workers go about finding a job, and how firms recruit workers. When looking for a job, a worker does not know which firms would be willing to hire him or her. When the worker gets an offer from a possible employer, the worker needs to decide whether to accept the offer or continue looking. Search theory describes the optimal strategy for a worker looking for a job, and has been extended to describe how firms look for workers. Since the wage offer that a worker could get at different employers varies according to the relation between the worker's characteristics and the characteristics of the job, a continued search by the worker can generate a higher wage.

However, since searching is costly, the worker at some point will decide to stop searching and accept a job that pays less than the maximum attainable wage. Similarly, the productivity of a worker at a particular job varies depending on the worker's characteristics, but the employer fills the job before finding the ideal worker because it would be costly to leave the job vacant for too long. As a consequence of this search, the characteristics of the worker and firm are not perfectly matched compared to the best assignment determined with perfect and costless information.

These short-run qualitative mismatches are an inevitable consequence of the operation of the labour market in the presence of costly information obtained through search. Although inevitable, the short-run qualitative mismatches cause losses to both workers and firms. Workers lose because they spend time unemployed, are paid less than they could potentially earn, and must perhaps engage in on-the-job searches to obtain further advancement in their careers. Employers lose because a job may remain vacant until they can find someone to fill it, they may get less production from the worker than they could hope for, and the worker may leave for a better job, generating a costly separation.

The prevention of losses from qualitative mismatches in the short run depends on active labour market policies that promote efficient matching. This assumes greater importance given the lags of the education and training system in terms of addressing short-term labour demand needs. Labour market intermediaries and temporary help agencies can potentially reduce short-run qualitative mismatches by placing workers in jobs more efficiently than the rest of the labour market. However, the efficiency of such policies can be compromised by the fact that employers tend to attach a negative stigma to previously mismatched employees.

Source: Sattinger (2012).

As described in Table 1, qualitative mismatch manifests in many different forms (in particular, vertical qualification mismatch, horizontal qualification mismatch, skill mismatch and skills obsolescence) and has different causes, implying that markedly different policy responses may be needed in each case (Cedefop, 2010a).

3.2. Qualification mismatch is widespread in EU Member States

Vertical (qualification) mismatch, when the level of an individual's qualification differs from that required by his/her job, is a widespread phenomenon in Europe, although it tends to vary widely across countries. Meta-analyses of several studies that have taken place since the 1980s, which mostly rely on datasets of graduate cohorts and on samples drawn from particular countries (e.g. the US, UK, Netherlands, Germany, Sweden, Belgium, Portugal), have found that over-qualification typically affects around 25-30 % of the population (Groot and Maasen van den Brink, 2000; McGuinness, 2006; Leuven and Oosterbeek, 2011). The respective figure for under-qualification is slightly higher at 31 %. When compared to other areas of the world, however, Europe appears to be characterised by a higher incidence of under-qualification, with a share of over-qualified workers that is lower than in the US/Canada but higher than in Asia, Australia and Latin America (Table 2).

According to OECD (2011) estimates for the year 2005, which cover a wide range of OECD countries and examine a representative sample of the entire workforce, some 25 % of workers were over-qualified on average, and 22 % under-qualified. Taking better account of the degrees of severity of skill mismatch, the OECD also reports that over 17 % of workers are 'severely over-qualified' and nearly 9 % suffer from 'severe under-qualification'[5].

Using comparable data from the European Labour Force Survey (EU-LFS) the average incidence of vertical mismatch over the past decade (2001-11) is found to vary significantly across European

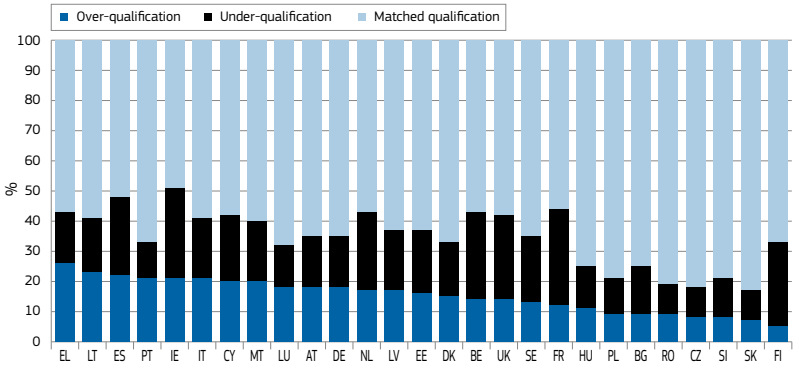
Table 2: Incidence of vertical mismatch by continent

	Under-qualification (% employed)	Over-qualification (% employed)
Asia	21	26
Australia	n/a	8
Europe	31	30
Latin America	21	24
US/Canada	16	37

Source: Leuven and Oosterbeek (2011); Figures estimated by the authors using meta-analytical methods of (unweighted) means of the reported shares of skill mismatch in a database constructed from a number of existing studies. The European sources mostly focus on the following countries: NL, ES, PT, UK, DE, BE, AT, CZ, SE.

[5] Individuals are classified as severely mismatched if their qualification level is more than one step away from the required qualification in their job on the five-point ISCED scale. For example, if an individual holds a tertiary education degree (ISCED 5), he/she is classified as severely over-qualified only if he/she is employed in an occupation with a required educational level equivalent to upper secondary qualifications (ISCED 3) or below.

Chart 7: Average incidence of vertical mismatch (2001-11) in EU-27 countries, % of employees (aged 25-64)



Source: Cedefop, based on EU-LFS data.

Notes: Over-qualified (or under-qualified) workers are those whose highest level of qualification attained is greater than (or lower than) the qualification requirement of their occupation. The modal qualification in each occupational group at the two-digit level is used to measure qualification requirements. The appropriate EU-LFS weighting variable (COEFF) is used in the calculation of the modal qualification.

Member States[6]. Chart 7 illustrates that nearly 15% of European employees are over-qualified, on average, while 21% are under-qualified, implying a total incidence of vertical mismatch in the EU of about 36%. Some 8-9% of European workers are found, on average, to be either 'severely over-qualified' or 'severely under-qualified' (see Annex 2)[7].

The EU average masks significant variation between EU countries, with more than one in five employees experiencing over-qualification in Greece (26%), Lithuania (23%), Spain (22%), Portugal (21%), Italy (21%) and Ireland (21%). In contrast, the incidence of over-qualification is much lower (7-9%) in Eastern and Central European countries (Poland, Czech Republic, Slovakia, Slovenia, Bulgaria, Romania) and in Finland (5%). Similarly, the proportion of under-qualified workers ranges from as high as 32% in France to as low as 10% in Slovakia, Romania and the Czech Republic.

The magnitude of vertical mismatch differs significantly between individuals with different levels of qualifications and skills. About 30% of tertiary education graduates in the EU are found to have been over-qualified in 2009, a figure which corresponds closely to estimates of mismatch based on studies that rely on data of higher education graduates[8]. The corresponding rate falls to around 12% for medium-educated graduates (i.e. those with at least upper secondary education). In other words, over-qualification disproportionately affects graduates with tertiary education.

For Europe as a whole almost two thirds of its over-qualification can be characterised as 'severe' (see Annex 2 and 3). In some countries (Bulgaria, Finland, France, Slovenia, Slovakia) the entire qualification mismatch is of the severe type by default, given that the post-secondary non-tertiary educational classification (ISCED 4) is not recorded or forms a very small group. In these cases the majority of the rate of over-qualification can be explained by university graduates (ISCED 5) taking up jobs requiring only upper secondary education diplomas or below (ISCED 1-3). Under-qualification arises instead primarily because of lower-secondary or primary school graduates who are employed in jobs requiring an upper secondary qualification, while a quarter of it is also due to upper secondary graduates working in jobs that require a university diploma.

Greece and Cyprus remain at the top of the mismatch ladder even when comparing the countries in terms of the severity of their mismatch. However, in some of the other high mismatch countries (Spain, Ireland, Portugal) a significant share of their overall mismatch is 'moderate'. For example, almost half of the over-qualification rate in Spain can be attributed to upper secondary graduates (ISCED 3) taking up jobs that are mostly performed by lower secondary graduates (ISCED 2). A sizeable 41% of the Spanish over-qualification rate, however, also arises because of the fact that university graduates take up jobs at upper secondary level or below. For Lithuania only about a fifth of its over-qualification rate can be classified as severe, given that most of the mismatch in that country arises because of university graduates (ISCED 5) and post-secondary non-tertiary graduates (ISCED 4) taking up jobs requiring a qualification level that is only one step below their own (ISCED 4 and 3, respectively)[9].

Considering the evolution of the EU-wide rate of qualification mismatch over time (Chart 8), it is apparent that both types of vertical mismatch (over- and under-qualification) exhibit a relatively stable time series. However, in the period in which the economic crisis unfolded (2007-09), the under-qualification rate fell by about 1%, whereas the over-qualification rate has risen consistently by about 1% in total.

The relative stability of the over-qualification rate, as estimated by the empirical method employed in this chapter, is an outcome of two underlying forces. First, as argued in section 2.3, almost 59% of the increase in employment of high-educated workers in recent years has taken place in managerial and professional occupations,

(6) Although aggregated data files including information on all EU-27 countries for the years 2000-11 were provided to Cedefop by Eurostat, at the time of writing Cedefop only had access to the anonymised micro data files of the EU-LFS survey up to the year 2009 (excluding MT and DE). For the purposes of the empirical analysis the final sample includes six years of data (2003-08), due to the need to retain homogeneity in the empirical specification for all countries and in order to respect Eurostat guidelines on several key variables.

(7) Chart 7 reports the average incidence of qualification mismatch over the past decade, instead of the most recent annual estimate, as the former provides an indication of the 'natural' rate of mismatch characterising the EU Member States. The average incidence of mismatch over several years is also unaffected by any measurement error related to yearly fluctuations in the modal qualification of specific two-digit occupations.

(8) According to the Bologna process for higher education (http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=EC-30-12-534) roughly one fifth (20.6%) of young people (aged 25-34) with tertiary education can be regarded as over-qualified for the job they occupy, thus are employed in occupations not requiring tertiary qualifications. This percentage remained quite stable between 2000 and 2010, despite the growing participation rates and the 'massification' of higher education. This suggests that over-qualification rates are influenced more by labour market structures and innovation than by the growing number of students. The median over-qualification rate is 18.1%. A similar cross-country pattern of vertical mismatch is found, as there are six countires with an over-qualification rate around or above 30%: Bulgaria (30%), Greece (30.1%), Italy (30.4%), Ireland (37%), Cyprus (37.6%) and Spain (38%). The seven countries with over-qualification rates under 15% are Slovenia (14.1%), Iceland (13.9%), Romania (13.2%), Slovakia (11.6%), Croatia (11%), Czech Republic (9.2%) and Luxembourg (5.1%).

(9) The very small over-qualification rate in Finland is an outcome of the fact that about 87% of its population has an educational qualification that exceeds upper secondary level (ISCED 3 and above), while the mode educational requirement even of low-skilled occupations corresponds to an upper secondary qualification (ISCED 3).

Box 3: Methods of measuring vertical mismatch

The underlying rationale behind measuring vertical mismatch is to compare individuals' attained years of schooling/level of educational qualifications and the educational requirement of their job or occupation.

Three alternative methods have been used in the literature:

(*i*) the *systematic job evaluation method*, which is an objective measure. The job evaluation method is based on information that is included in formal job descriptions (e.g. the Dictionary of Occupational Titles). Although the required level of education in this case is calculated using a more objective approach, updates are infrequent and sometimes are not so accurate (Hartog, 2000);

(*ii*) the *worker self-assessment method*, which is a subjective measure. The worker self-assessment method relies on the subjective response of workers about the educational requirement of their job. However, differences in the phrasing and framing of the question can cause differences in the measured level of required education. It can also be ambiguous with respect to whether the question captures the required level of formal, non-formal or informal learning for being hired for a job or for adequately performing the job;

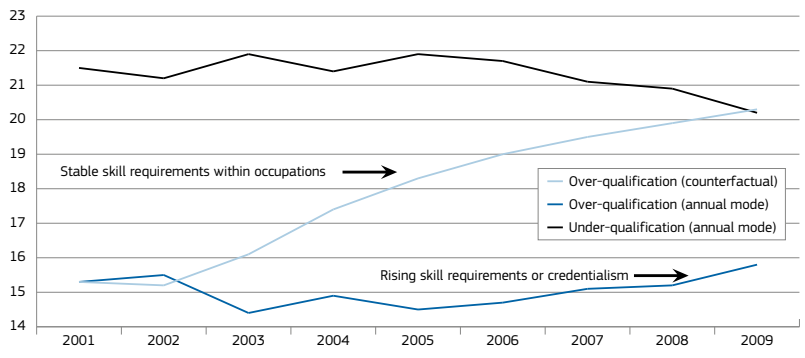
(*iii*) the *empirical method*, which constitutes an indirect method of calculating vertical mismatch when data sets do not contain a direct question on mismatch. The empirical method acknowledges that there is a distribution of schooling levels across a given occupation and calculates the required educational level on the basis of the mean or modal qualification possessed by workers in each occupational group. Comparing this estimated required education level to the worker's actual qualification level yields an indicator of skill mismatch. The major critique of the empirical method is that the required education level within an occupation is an outcome of supply and demand forces, and thus is likely to change over time.

Each method has its own virtues and weaknesses, but data on the incidence of vertical mismatch should always be considered in relation to the respective method used. Subjective measures of the incidence of over-qualification are typically found to exceed those obtained via objective (e.g. dictionary-based or empirical method) measures (Groot and van den Brink, 2000). Nevertheless, the various approaches to estimating the incidence and returns to over-qualification tend to yield broadly consistent conclusions (McGuinness, 2006).

Other less popular methods have also been suggested. Gottschalk and Hansen (2003) classified occupations in the US as graduate and non-graduate on a different basis: whether 90% or more of workers in a given occupation are graduates or, failing that, if there is a significant graduate pay premium of 10% or more in that occupation. They found that the probability of a graduate being employed in a non-graduate job in the US actually fell between 1983 and 1996, a result 'which stands in stark contrast to those in previous studies' (Gottschalk and Hansen, p. 450). Similar findings were obtained by Cardoso (2007) for Portugal and by Grazier et al. (2008) for the UK, while Boheim et al. (2008) performed a related exercise at European level using data from Eurostat's Structure of Earnings Survey (a data source that, unfortunately, only allows for infrequent calculations of mismatch using this particular methodology).

From the above it is apparent that conventional data on the incidence of skill mismatch should always be treated with caution and in relation to the selected measure of skill mismatch. Given the data sources used in this chapter (EU-LFS and the EWCS), which do not contain direct questions on the educational requirement of jobs or on the respondent's perceived level of vertical mismatch, the empirical method has been adopted.

Chart 8: Incidence of vertical mismatch over time (2001-09), % of employees, EU-25



Source: Cedefop, based on EU-LFS data (data for MT and DE not available).

Notes: The dark blue blue and black lines depict the average EU-25 rates of over-qualification and under-qualification where the modal educational requirement is derived using the annual EU-LFS population within each 2-digit ISCO occupation. The light blue line is derived using the counterfactual hypothesis that the educational requirement within each 2-digit ISCO occupation has not changed since 2001.

so a significant share of high-skilled workers has potentially found employment in jobs that demand qualifications commensurate with their own. Second, the increasing share of higher-educated workers in the total pool of employment has contributed to an increase in the modal educational requirement in some occupations, and hence in a declining tendency of over-qualification over time. This is particularly evident in some technician and associate professional occupations (where the mode has generally risen from upper secondary level in 2001 to university diploma in 2009) and in elementary jobs (where the mode has increased from primary/lower secondary level to upper secondary level).

If it is assumed that the process of rising skill requirements and/or of credentialism did not take place in the past decade, so

that the modal educational requirement of occupations remained the same throughout the years as in 2001, it is possible to envisage an upper bound estimate of the extent of over-qualification in Europe. If indeed the 'true' nature of skill demand within occupations did not change over the years, the light blue line illustrating the counterfactual over-qualification rate in Chart 8 indicates that there has been a substantial increase of about 5% in over-qualification during this time period (rising from 15% in 2001 to over 20% in 2009). This corresponds to about 6.4 million employees in Europe who have taken up jobs in the past decade where the demand for skills is potentially lower than the level that would be expected on the basis of their qualifications.

Similar time trends are also evident when comparing the rates of vertical mismatch using the European social surveys (ESS). The ESS data reveals that while the level of education of workers has markedly increased between the years 2004/5 and 2010/11, qualification requirements (based on the subjective evaluations of respondents about the education required by their job) have increased only a little. This has implied that over this time period the rate of under-qualification has declined from 24% to 18% of the employed population, whereas the rate of over-qualification has risen from 11% to 16%.

Moreover, an examination of the composition of the EU-wide vertical mismatch (see Annex 3) reveals further that in the period 2001-09 there was a large increase in the share of severe over-qualification. Whereas in 2001 the phenomenon of university graduates taking up jobs that require upper secondary graduates accounted for 38% of the entire incidence of over-qualification in Europe, by 2009 it had risen to more than a half (53%).

Finally, it needs to be pointed out that the EU vertical mismatch rates disguise significant country variations over time. For instance, an upward trend in over-qualification can be observed not only in Greece and Portugal, the two countries with the highest rates of mismatch, but also in countries with the lowest mismatch, such as the Czech Republic and Slovakia. In some Member States (e.g. Finland, Italy, Slovenia) there has also been a decline in under-qualification rates over time.

3.3. Horizontal mismatch reflects heterogeneity of skills within education levels

Another form of qualification mismatch, namely horizontal mismatch, occurs when there are discrepancies between the number of workers within a given field of study and the available jobs to accommodate graduates from that field. Horizontal mismatch may lead to vertical mismatch, while vertically mismatched workers may or may not be horizontally mismatched (OECD, 2011). Measurement of horizontal mismatch depends on the identification of occupations that are considered to correspond to each field of study. For example, individuals with a science degree may be judged to be perfectly matched if they find a science-related job, but they may also be sufficiently matched in engineering posts. In a recent analysis along these lines, commissioned by Randstat (2012), some 23% of workers in the EU-27 are found to have been affected by horizontal mismatch in 2009 (Chart 9), with Ireland having the lowest level of horizontal mismatch, and Poland the highest.

3.4. Qualification and skill mismatch are weakly related

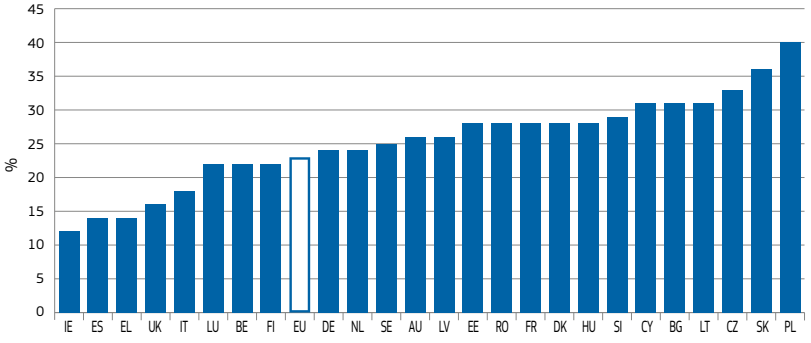
Educational qualifications are an imperfect proxy of the skills and competences possessed by individuals and supplied in the workplace. Qualifications fail to account for the dynamic process of skill gains and losses over the working lifetime (Desjardins and Rubenson, 2011) or for the differential quality and orientation of different education and training systems (OECD, 2012). For this reason, a new strand of the literature has questioned the validity of using *qualification mismatch* as an indicator of *skill mismatch* (e.g. Allen and van der Velden, 2001; Green and McIntosh, 2007; Mavromaras et al. 2009).

Ideally it would be good to know the extent of (objectively-measured) mismatches in various types of skills and their trend over time, but suitable datasets allowing for such measurements are scarce[10]. The 5th wave of the European Working Conditions Survey (2010) provides a recent, yet broad, picture of (self-reported) mismatch in skills, by asking a question about current skills and job matching. In this respect, only 56% of workers declare that '*their duties correspond well to their present skills*'; 13% '*need further training to cope well with their duties*' while 31% estimate that they '*have the skills to cope with more demanding duties*'.

As with the incidence of qualification mismatch, important differences between countries are observed (Chart 10). Romania, Greece, Cyprus, Slovenia and the UK are ranked highest in terms of skill mismatch with about 40% over-skilling rates, while Austria, Lithuania, the Czech Republic, Finland and Portugal are at the other end of the spectrum. Austria, Germany, Estonia, Lithuania and Slovakia record the highest rates of under-skilling while Ireland, Portugal, Bulgaria, UK and Romania have the lowest.

Further evidence of mismatch in skills is available from recent studies that use surveys of graduates (e.g. the REFLEX survey). Some 10% of higher education graduates in European countries indicate that their own competence level is lower than that required in their job (*under-skilled*) and around 15% report that it exceeds it (*over-skilled*). Desjardins and Rubenson (2011) also use direct measures of individuals' cognitive foundation skills (such as literacy and numeracy skills) and compare these to the level of

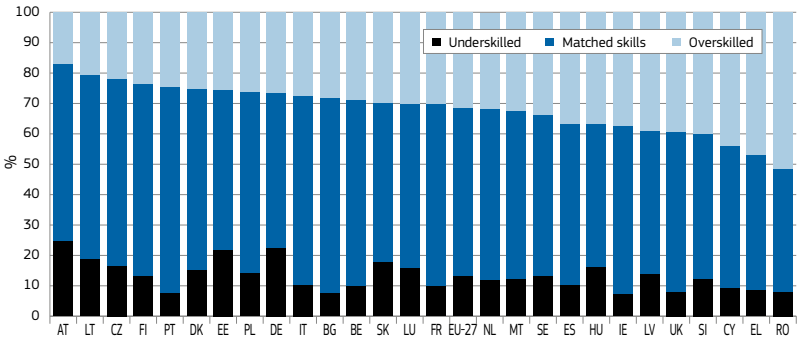
Chart 9: Incidence of horizontal mismatch in Europe, % of employed, 2009, EU-27



Source: SEO calculations based on Eurostat, Randstat (2012).

[10] New surveys currently undertaken by international organisations such as the OECD, the European Commission and Cedefop, including PIACC, the first European Employer survey and the pan-European skill mismatch and obsolescence survey, constitute promising attempts to provide insight into the nature of skill supply and demand in advanced economies.

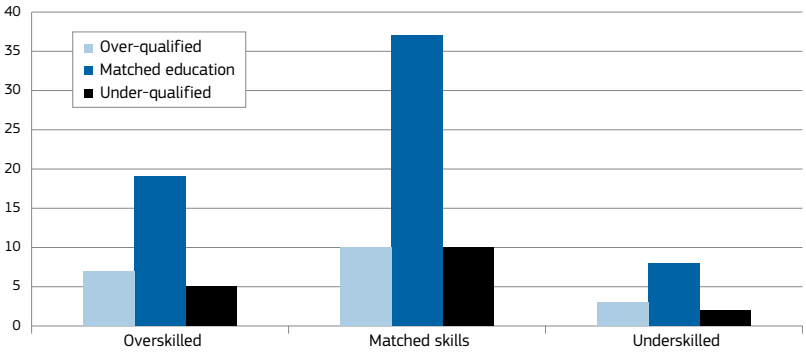
Chart 10: Incidence of self-reported skill mismatch in Europe, % of employees, 2010, EU-27



Source: EWCS (2010).

Notes: Responses to the question 'Which of the following alternatives would best describe your skills in your own work? The over-skilled are the share of the employed who replied affirmatively to the option 'I have the skills to cope with more demanding duties'; Under-skilled are those who replied affirmatively to the option 'I need further training to cope well with my duties'; Matched in skills are those who replied affirmatively to the option 'My present skills correspond well with my duties'.

Chart 11: Qualification mismatch versus skill mismatch, % of employees, 2010, EU-27



Source: EWCS (2010).

the same skills required within the job. They find that literacy and numeracy mismatch, manifested either as skill deficits or as skill surpluses, is a widespread phenomenon, affecting around a third to a half of workers in different countries.

Although a good match in terms of educational qualifications is expected to improve the likelihood of a worker having a good match in skills, this relation can be relatively weak (see Chart 11). Among the entire sample of employees in the EU-27, only 37 % of workers are matched in terms of both qualifications and skills[11]. For only 7 % of workers in the sample, the incidence of over-qualification is also accompanied by over-skilling, while only 2 % are both under-qualified and under-skilled. Some 10 % of workers are over-qualified but feel that their skills are well-matched despite their educational mismatch. 3 % of the European workforce comprises of over-qualified workers who are nonetheless under-skilled, while 15 % of employees have skills that are matched to, or exceed, the requirements of their job despite being under-qualified[12].

4. The economic and welfare cost of skill mismatch

It is unrealistic to assume that labour markets can ever operate without any temporary imbalances, but persistent skill mismatch implies real economic and social losses. In the long term any imbalances between labour demand and supply might be expected to be addressed through market force mechanisms such as changing wage premiums, geographical and/or job mobility, and the adjustment of firms' production technologies and training policies. For this reason it has been argued that skill mismatch, and particularly over-qualification, 'can only be a serious, long-run problem, if changes in the relative supplies of different types of education have little or no effect on the skill composition of labour demand, implying production technologies with fixed skill requirements. Production is not redesigned, jobs are not upgraded, and some workers end up in a job below their skill level...producing and earning the same as workers with less schooling in the same job' (Leuven and Oosterbeek, 2011, p.7). However, even though automatic adjustment mechanisms in the labour market play an important role, labour market mismatches may still persist or remain unresolved due to significant market failures[13].

Table 3 and the discussion below distinguish the economic and welfare cost of skill mismatch for the aggregate macro-economy and society and also for enterprises and individuals.

4.1. Skill mismatch is costly for economies and societies

Imbalances between skill supply and demand across different territories and sectors may hinder a country's long-term growth prospects (Sianesi and van Reenen, 2003). At the macro-economic level, skill mismatch is seen to increase equilibrium unemployment and reduces GDP growth via the loss of human capital and/or productivity-related skill bottlenecks (Manacorda

(11) As before, vertical mismatch using the EWCS dataset has been defined as deviations from the country-specific modal level of education in a respondent's occupational group. However, due to the limited number of observations per country within the cells of two-digit occupational groups, vertical mismatch has been calculated with reference to the 1-digit ISCO grouping in this case.

(12) This supports the idea that under-qualified workers may have acquired further skills outside formal education allowing them to hold more complex jobs than their qualifications would suggest. It also highlights the importance of recognition of the non-formal learning of such workers as a means of enhancing their careers and facilitating mobility within the job market, in line with the recent *Proposal for a Council Recommendation on the validation of non-formal and informal learning* (European Commission, 2012e).

(13) Such market failures include the lagged nature of skill supply relative to demand; positive spillovers ('externalities') in human capital outcomes; disincentives to investment in training by enterprises and recruitment deficiencies; missing insurance markets for skills investment; intergenerational transmission of education and training.

Table 3: **Costs and consequences of skill mismatch**

	Individuals	Employers	Society
Direct costs	loss of earnings	higher recruitment costs	unemployment benefits
	higher turnover and absenteeism	lower productivity	public expenses for training and other ALMPs
		lower product quality	
		higher-skilled workers' wages	
		higher turnover costs	
Indirect, long-run and non-monetary costs	loss of skills/skill obsolescence	lower innovation capacity	under-investment in training
	loss of self-confidence	lower competitiveness	low-skills-bad jobs-low wages equilibrium
	lower levels of trust in government		higher equilibrium/structural unemployment
	lower job satisfaction		loss of potential output and employment
	lower participation in training		lower long-run growth

Source: Cedefop review of available literature on skill mismatch.

and Petrongolo, 1998). Skill shortages in particular may be conducive to the perpetuation of a low-skills equilibrium in the labour market, particularly if firms react to the shortage of skills by investing in low-skill cost-cutting strategies (Finegold and Soskice, 1988; Haskel and Martin, 1996). Skill mismatch has also been identified as a potential explanation of higher wage dispersion and inequality among groups of workers with similar qualifications (Ingram and Neumann, 2006). For society as a whole skill mismatch entails a potential waste and misallocation of scarce public funds, particularly those spent on initial education and training. Society loses the output that could have been generated by reallocating genuinely mismatched workers to higher productivity jobs.

4.2. Skill mismatch can lower enterprise productivity

Skill gaps and shortages can lead to a loss of competitiveness and hamper enterprise productivity. Particularly in growing economic sectors, skill shortages can result in rising wage costs. Firms facing skill pressures might also be forced to employ or place lower-skilled workers in skilled positions, at a cost of lower productivity. For example, Haskel and Martin (1996) suggested that skill shortages reduced annual productivity growth in the UK by 0.4 percentage points over the period 1983-99, while Bennett and McGuinness (2009) reported that output per worker was lower in high-tech firms experiencing both hard-to-fill and unfilled vacancies.

Skill mismatch has been linked to a number of adverse outcomes related to productivity at the firm level, such as a higher level of absenteeism and turnover of the workforce (Tsang and Levin, 1985; Tsang, 1987; Sicherman, 1991; Robst, 1995; Sloane et al., 1999). Yet despite the negative effects of skill mismatch outlined above, the implications for firm productivity are somewhat ambiguous. Over-qualified workers are found to enjoy a wage premium relative to matched colleagues, suggesting that (in a competitive labour market) this might be a reward for their higher productivity within the firm. Over-qualified workers may also have beneficial (spillover) effects in the workplace, as their excess knowledge and skills may allow them to enrich not only their own jobs but also those of colleagues in ways that employers may not have anticipated (Battu et al., 2003). It has also been suggested that the recruitment of over-qualified workers sometimes constitutes a deliberate strategy on behalf of firms, as they exploit cyclical downturns to improve the average skills level of their workforce, and thereby ensure an uninterrupted supply of high skills in times of tight labour markets (Bulmahn and Krakel, 2002). Indeed, recent studies using firm-level data have shown that there is a positive relationship between the proportion of over-qualified/over-skilled workers within the workforce and the productivity of the firm (Jones et al., 2009; Kampelmann and Rycx, 2012). On the other hand, if these positive outcomes are outweighed by the lower productivity of mismatched workers due to de-motivation or higher quit rates, the under-utilisation of skills can result in an overall waste of talent and lower than potential rates of productivity growth.

4.3. Qualification mismatches entail economic and welfare costs for individuals

It is well-documented that those individuals possessing superior qualifications and skills in the labour market are recipients of greater economic returns, are better shielded from joblessness than the low-skilled, and are more likely to enjoy significant non-material benefits such as better health outcomes, life satisfaction and social capital (OECD, 2012). However, individuals suffering from qualification mismatch, particularly the over-qualified, are more likely to endure wage penalties, lower job satisfaction and higher turnover than individuals with similar qualifications who are well-matched. Over-qualification can be a manifestation of lower individual ability, one's own preferences or a firm's recruitment policies, but it can also result from a lack of availability of suitable jobs or family or other mobility constraints. It can be persistent as it sends a negative signal to future employers and/or induces skills obsolescence, thus increasing job insecurity and reducing the long-term employability of individuals concerned.

The over-qualified (e.g. tertiary graduates in non-graduate jobs) are typically found to suffer from an average wage penalty of 15% relative to those with the same qualifications who are well-matched (e.g. tertiary graduates in graduate jobs),

ranging from -8% to -27% (Cedefop, 2010a). However, they are usually paid more than their matched colleagues in the same job (e.g. non-tertiary graduates in non-graduate jobs) despite the fact that both face similar working conditions. The reverse is observed for the under-qualified, who suffer from a pay penalty relative to their matched colleagues in the same job, but earn more than if they were properly matched to a lower-level job (McGuinness, 2006). Wage differentials are also found in the case of horizontal mismatch (Nordin et al., 2008; Kelly et al., 2008), and are accentuated if an individual's job is only partially or completely unrelated to the field of study (Robst, 2008).

The over-qualified are also typically found to be less satisfied with their jobs relative to matched workers with the same qualifications, as well as in relation to colleagues in the same job (Tsang et al., 1991; Battu et al., 2000; Verhaest and Omey, 2006). Moreover, their participation in on-the-job-training tends to be lower compared to well-matched, similarly-qualified workers (Büchel and Mertens, 2004), but the effect is positive in comparison to well-matched colleagues in the same job (Büchel and Battu, 2003).

Overall, the evidence suggests that the over-qualified work below their potential in their current jobs due to some form of productivity ceiling. Nonetheless, there is still some benefit to be enjoyed from the extra years of education (Rumberger, 1987), provided that the wage premium of over-qualified workers relative to their matched colleagues reflects a higher level of productivity and not 'sheepskin effects' (McGuinness, 2003)[14]. Similarly, there is scope for upskilling under-qualified workers, despite their generally favourable labour market situation, as their productivity is found to lag behind that of matched colleagues in the same job. The wage effects are usually found to vary depending on different individual and job characteristics, such as age, level of education (e.g. VET vs. general education), labour market experience and ethnicity (Battu et al., 1999; Dolton and Vignoles, 2000; Battu and Sloane, 2004).

(14) Sheepskin effects are defined as a situation where the initial pay of workers is determined solely on the basis of their educational certificate, which may turn out to be an imperfect signal of productivity.

4.4. Skill mismatch can be more costly than qualification mismatch

A key concern regarding the cost of educational mismatch is that the consequences of such mismatch have been mostly inferred from cross-sectional household datasets or from short time-series of graduate cohorts. It has been argued that qualification mismatches obtained on the basis of such data are partly a statistical artefact that may reflect any of the following three mechanisms:

- the sorting of individuals with the same academic credentials into jobs according to differences in their abilities or skills (Bauer, 2002; McGuinness, 2003);
- variation of their human capital across different fields of study (Wolbers, 2003);
- heterogeneity in task requirements within the same broad occupational or job title (OECD, 2011).

Over-qualification may therefore not be genuinely related to the under-utilisation of skills within jobs (i.e. ***over-skilling***), but may simply reflect the lower ability or preferences of individuals who appear to be mismatched.

In order to examine the above hypothesis, researchers have disaggregated the proportion of individuals who are over-qualified according to their level of job satisfaction or their concurrent under-utilisation of skills. In particular, Chevalier (2003) has distinguished between *apparently* and *genuinely overeducated graduates* in the UK based on their answers to questions on job satisfaction. Graduates in graduate jobs are defined as 'matched', whatever their level of satisfaction. Those individuals who are in non-graduate jobs but satisfied are described as 'apparently mismatched' (comprising of 10% of the sample) and those in non-graduate jobs who are also dissatisfied are classified as 'genuinely mismatched' (6% of the sample). Within the over-qualified group, the apparently over-qualified are found to have better capabilities than the genuinely over-qualified, a finding which is also consistent with Chevalier and Lindley's (2009) recent evidence that workers in the latter group lack graduate skills such as management and leadership.

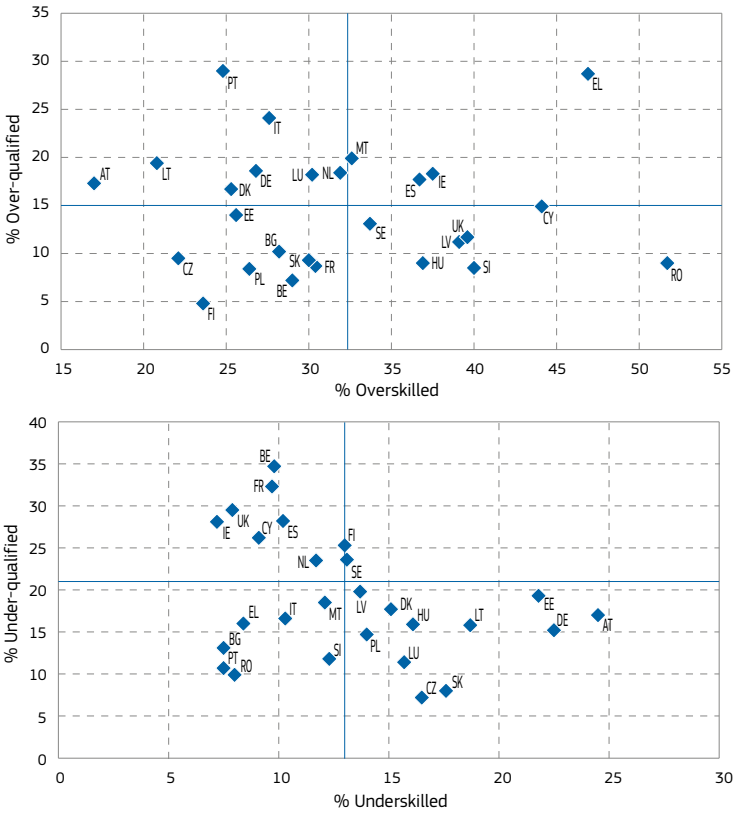
Allen and van der Velden (2001) and Green and Zhu (2010) have argued further that the 'true' cost of over-qualification hinges critically on whether it is accompanied by under-utilisation of skills and abilities, in which case it constitutes a *real mismatch* as opposed to a *formal mismatch*. Focusing on a cohort of young Dutch graduates, the former authors found that about 15% of their sample experienced skills under-utilisation, where their current job offered sufficient scope to use their acquired knowledge and skills. About half of the graduates also had skills deficits that were weakly related to their educational mismatch, as they believed that they would perform better in their current job if additional knowledge and skills had been acquired.

In terms of the impact of skill mismatch rather than qualification mismatch on labour market outcomes, a wage penalty of 26% for *genuinely over-qualified* graduates is found, in contrast to 7% among those who are *apparently over-qualified* (Chevalier, 2003). Allen and van der Velden (2001) and Cedefop (2010a) have showed that skill mismatches are much better predictors of job satisfaction than qualification mismatches, although the effect of over-qualification on wages is only slightly reduced when skill under-utilisation is also taken into account.

In a similar spirit, examination of the 2010 wave of the EWCS data reveals that about 35% of over-qualified workers in the EU-27 are also over-skilled, so that about a third of the overall incidence of over-qualification can be classified as *real skill mismatch*. Similarly, only about 11% of the individuals in the sample of under-qualified workers are simultaneously under-skilled. Less than a fifth (16-18%) of both over-qualified and under-qualified workers state that they are not very, or at all, satisfied with the working conditions in their main job. This implies a genuine skill mismatch that affects about 3% of all employees in the EU-27 area.

Plotting the average incidence of qualification and of skill mismatch at the country level reveals further that employees in some countries (e.g. Greece, Spain, Ireland, Cyprus, Malta) are more likely

Chart 12: Average qualification mismatch vs. skill mismatch, EU-27, % of employees, 2010



Source: EU-LFS; EWCS (2010).

Notes: The average incidence of qualification mismatch by country has been derived using 2010 EU-LFS data, while the mean rates of skill mismatch are derived from the 2010 wave of the EWCS dataset. The blue lines correspond to the mean levels of qualification or skill mismatch, respectively.

to suffer from a double cost of mismatch (see Chart 12). In this group of countries not only is there a weak correspondence between the qualifications of employees and the demands of the job market, but a considerable proportion of the workforce also feels that their skills are under-utilised, presumably because of the poor quality of their jobs. Furthermore, there is a strong negative correlation between the incidence of under-qualification and of under-skilling in the data.

Cedefop (forthcoming[a]) confirms that the magnitude of many empirical estimates that have used qualifications as proxies of skills, and which are based on cross-sectional data, may be questionable. Using panel data methods that control for the unobserved heterogeneity of individuals among different educational categories, it is found that the adverse effects of over-qualification on some labour market outcomes are, in many instances, a statistical fallacy. Taken together, these results imply that the label of over-qualification partly masks unmeasured skills or ability traits of individuals, and/or other compensating factors (e.g. geographical barriers or preferences for specific job amenities). Far from implying inefficiencies in the labour market, this evidence suggests that it is functioning effectively in allocating workers to jobs that match their skills, abilities and preferences.

4.5. Skill mismatch can have lasting effects on welfare

The previous section highlights the importance for policymaking to focus on skills rather than qualification mismatch, given that the former affects a much broader proportion of the labour force than over-qualification, which is typically concentrated among tertiary graduates (Quintini, 2011). However, the cost of skill mismatch largely depends on the extent to which it is temporary or permanent. Several researchers have stressed the so-called *career mobility hypothesis,* according to which skill mismatch is a temporary phenomenon that gradually dissipates as workers' labour market prospects improve with age and experience or as a result of career or occupational mobility (Sicherman, 1991; Alba-Ramirez, 1993; Robst, 1995).

Nevertheless, using longitudinal data that enables individual work histories to be traced, Cedefop (forthcoming, [a]), Mavromaras and McGuiness (2012) and Mavromaras et al. (2012) find strong evidence of persistence in the mismatch of different types including those categorised as real (over-qualified and over-skilled) or genuine (over-qualified and

Table 4: Persistence of different types of skill mismatch among university degree holders, employed individuals, 2001-10

Mismatch status in previous 3 years	Over-skilled	Over-qualified	Real mismatch (Over-skilled & over-qualified)	Genuine mismatch (Over-qualified & dissatisfied)
Not mismatched in previous 3 years	0.05	0.03	0.006	0.01
Mismatched in the previous year, but not in previous two years	0.20	0.26	0.05	0.07
Mismatched in previous 2 years but not 3 years ago	0.34	0.54	0.14	0.16
Mismatched in previous 3 years	0.45	0.68	0.24	0.36

Source: Mavromaras et al. (2012) and Cedefop (forthcoming[a]).

Notes: The figures are predicted probabilities that an individual employee experiences a particular status of skill mismatch in the present period given several possible patterns of mismatch in the last three years. They follow from the estimation of a dynamic random effects probit model with the inclusion of Mundlak correction terms on a sample of employees from the Australian Household Income and Labour Dynamics (HILDA) survey.

dissatisfied)[15]. Table 4 illustrates that the lagged mismatch status in previous years is invariably and strongly related to the probability of present mismatch. University degree holders who spent the last three years mismatched in terms of education have a quite high probability (0.68) of also being mismatched in the current year. This is in contrast to those who were never mismatched in the last three years, who are only 3% more likely to be mismatched in the present year.

Similar patterns are observed for those who are over-skilled, indicating that workers who have been mismatched for a long time are not very likely to escape from that situation. However, the probability of a current mismatch falls by about a half when focusing only on the portion of workers who suffer from real or genuine mismatch. This tends to confirm that workers who are the most likely to be harmed by mismatch will respond by doing whatever is necessary to quit their job. Nevertheless, even those workers who are affected by real mismatch have a significantly high probability (0.24-0.36) of remaining mismatched if they had been in that position in previous years.

5. Drivers and determinants of skill mismatch in Europe

5.1. Sectoral restructuring and job quality affect skill shortages

As shown in section 2.2 skill and labour shortages even when the labour market is slack are a common feature in European economies and tend to be more prevalent in certain regions and economic sectors.

Table 5 examines the effects of several characteristics of EU-27 firms on the probability that they will experience a shortage of either skilled or low-skilled/unskilled labour. It is evident that a significant contributing factor to the possibility of firms encountering skill shortages is the dynamic changes and restructuring that takes place over time within firms. Firms that increased in size in previous years, or which experienced changes in their remuneration system, organisation of work processes or working time arrangements, are found to be more likely to face skill or labour shortages.

Table 5: Determinants of skill shortages in European firms, 2009, EU-27
Probit regression, marginal effects of independent variables

Establishment characteristics	High-skill shortages (1)	Low-skill or unskilled shortages (2)
Private sector	0.072***	0.025**
Firm has temporary agency workers in last year	0.023*	0.037**
% of employees who worked overtime in last year	0.001***	0.000***
% of employees covered by collective wage agreement	-0.000	-0.000***
Employees regularly required to work on Sundays	0.037***	0.028***
Training: - Training offered for vocational adjustment of new employees	0.033**	0.014*
- Training offered to prepare employees for new tasks	0.034***	-0.005
- Training offered after long absence	-0.016	-0.012*
(reference: no training offered in last year)		
Major changes in past 3 years: - Remuneration system	0.049	0.016***
- Organisation of work processes	0.033***	0.017**
- Working time arrangements	0.020	0.018**
Rating of general work climate in firm: - Quite good	0.076***	0.013
- Somewhat strained	0.149***	-0.003
- Very strained	0.164***	0.012
(reference: very good)		
Sector: - Construction	0.012	0.018**
- Wholesale and retail trade	-0.074***	-0.006
- Hotels and restaurants	0.043	0.057*
- Transport	-0.087*	-0.032***
- Finance	-0.165***	-0.018
- Real estate	-0.022	-0.022**
- Public administration	-0.103***	-0.005
- Education	-0.042	0.006
- Health	0.068***	-0.010
- Other	-0.074***	0.021
(reference: manufacturing)		
Observations	16543	16411

Source: European Company Survey (2009); Cedefop's estimations.

Notes: (a) ***, **, *; statistically significant at 1%, 5% and 10%, respectively;

(b) Robust standard errors (not shown here but available upon request), adjusted for clustering of establishments within countries.

(c) The dependent variable is the probability that an establishment faces difficulties in finding staff for skilled (column 1) or low-skilled/unskilled jobs (column 2).

(d) Marginal effects at the variable mean for continuous variables and for discrete changes of categorical variables.

(e) Other control variables include country dummies, firm size (smaller-sized firms +effect on both high- and low-skill shortages); if the firm has employees with fixed-term contracts or freelancers (insignificant); if profit sharing scheme (insignificant); needs for further training periodically checked at irregular intervals (insignificant); subjective rating of labour productivity compared to firms in same sector (firms with below average productivity +effect on high-skill shortage); subjective rating of comparison of labour productivity to three years ago (considerable rise in productivity +effect on low-skill shortages).

[15] A number of studies from the UK, Germany, Belgium and Australia have also shown that over-qualification is likely to be persistent, that the wage and job satisfaction penalties suffered by over-qualified workers relative to those in matched jobs remain stable over time and that the over-qualified experience less upward mobility relative to those who are well-matched (Sloane et al., 1999; Dolton and Vignoles, 2000; Battu et al., 2000; Büchel and Mertens, 2004). Verhaest and van der Velden (2010) find important country differences in the persistence of over-qualification among university graduates.

Box 4: Investigating skill needs and mismatches in European enterprises

The pilot *Employer survey on skills needs in Europe*, a project launched in 2009 by Cedefop with financial support from the European Commission, aims to investigate the current and future skill needs of enterprises in countries and sectors and within different occupations in Europe. The survey provides a unique view of the dynamics of the importance of tasks and the preparedness of the workforce for emerging tasks.

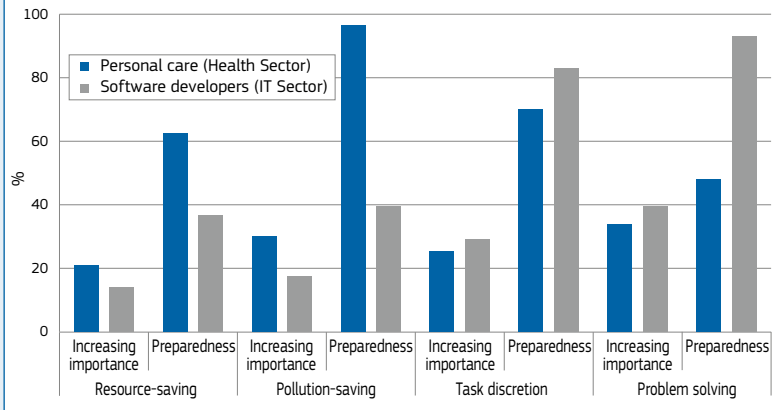
Questions on 17 generic tasks are asked, as well as on occupation-specific tasks. Further, a number of open-ended items on newly emerging tasks address future skills needs and possibly related training needs. Drivers of change questions explore differences among employers with respect to innovation and the adaptation of products, processes and services due to environmental awareness or standards/regulations. Further background questions look at establishments' review of skill and training needs, training establishments, hard-to-fill vacancies, as well as establishment size.

A pilot data collection took place in nine European countries (Czech Republic, Germany, Ireland, Spain, France, Italy, Hungary, Poland, Finland) in 2012. About 1 000 local establishments per country (IE 500) were surveyed. Chart B4 uses pilot survey results to provide an example of anticipated skill needs and mismatches (as given by the increase in importance and preparedness of the workforce) of selected generic tasks for two particular occupational groups of interest: Personal care workers in health services (in sector 86 Human health services), and software and applications developers and analysts (in Sector 62 IT and other information services).

Green skills are found to be more important for personal care workers and their importance is increasing at a faster pace when compared to software developers (in the IT sector). A reverse pattern is observed for 'problem solving' and 'task discretion'. For software developers, the percentage of employers reporting that the workforce is prepared for the increasingly important tasks of 'task discretion' is 83 %, as opposed to below 40 % for 'resource saving' and 'limiting pollution'. So it appears that there are skills gaps in green skills among software developers, while personal care workers are not well prepared for the increasingly important task of problem solving.

The project has received financial support from the European Commission, Directorate-General for Employment, Social Affairs and Equal Opportunities.

Chart B4: Percentage of establishments reporting that selected tasks are increasing in importance and preparedness of the workforce, two occupations from two different sectors



Source: Cedefop pilot Employer survey (2011).

The sectoral dimension of skill shortages is also very important. Firms operating in the health and social care sector are more likely to experience shortages of skilled workers relative to firms in the manufacturing sector once other differences in the characteristics of firms in the two different industries are taken into account. On average firms that operate in the finance, wholesale and retail trade and in the public administration industries in the EU-27 have a lower probability of facing a high-skill bottleneck. Firms in the hotels and restaurants sector, on the other hand, have a 6 % greater likelihood of facing a shortage of low-skilled or unskilled workers than manufacturing establishments, as is also the case for construction firms.

The significant impact of collective wage bargaining in mitigating the chances of firms facing low-skill shortages is also evident. By setting a lower threshold of pay and by widening the coverage of compensation particularly of lower-paid jobs, the chances that companies will face a shortage of labour in low-skilled or unskilled positions decrease[16]. Inferior working conditions (working on Sundays, shifts, overtime) are also conducive to difficulties in hiring low-skilled staff. This supports the argument that low wages and poor job quality lie behind the labour shortages that employers face in particular sectors.

Firms with a strained or difficult working climate are found to be 16 % more likely to face shortages of skilled workers. Private sector firms and those that rely more heavily on temporary agency workers are also faced more often with difficulties in finding suitably skilled staff. Furthermore, the coefficients on some of the variables in Table 5 are indicative of the optimal responses that some firms adopt as a means of avoiding or tackling the incidence of skill shortages. For instance, those affected by high-skill shortages are more likely to use the option of overtime work to overcome production constraints, to offer various job amenities (e.g. time flexibility, employee representation) and to utilise performance-related pay as a sorting device that will attract skilled workers

[16] This significant effect arises particularly when the collective wage agreement is negotiated at a higher level than the company (not shown in the estimates of Table 5).

to the company. The important role of continuing training is also apparent, since firms that face skill shortages are more likely to engage in appropriate vocational training measures.

Finally, a positive association is found between firms that face a negative economic situation and the likelihood of high-skill shortages. It is plausible that this finding reflects a self-reinforcing cycle; on the one hand firms with bad economic performance are more likely to have difficulties in attracting skilled workers. On the other hand, the lack of a suitably skilled workforce is also more likely to contribute to an inferior overall economic outlook for the firm.

5.2. Different demographic and socioeconomic factors explain vertical mismatch

A number of demographic and socio-economic characteristics have been identified as potential determinants of the likelihood of vertical mismatch, with age, gender, marital status, ethnicity, work experience, type of contract, economic sector and occupation all having been found to be significantly correlated with qualification mismatch. However, their impact tends to vary depending on the type of vertical mismatch, the country examined, and the particular sample of interest.

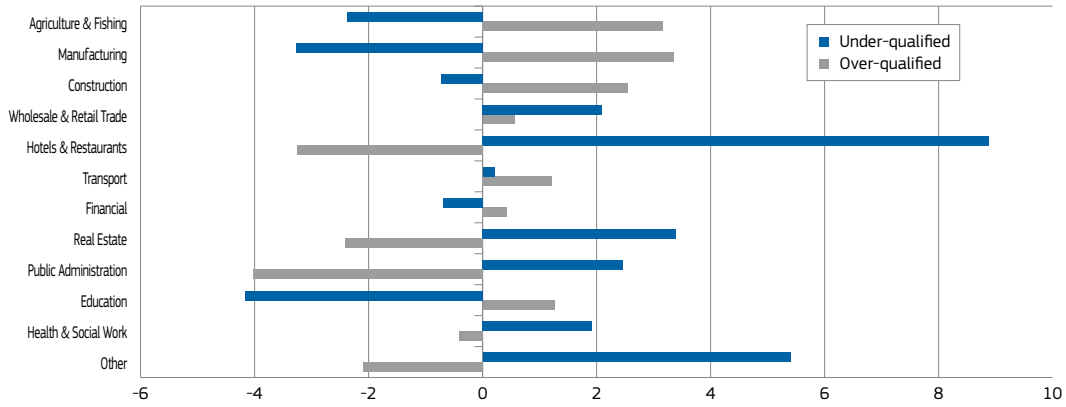
Chart 13 illustrates that there are differences in the incidence of vertical mismatch between sectors and that important sectoral changes in mismatch took place over time. Overall, non-marketed services (public administration, education, health and social work) are found to have a lower average rate of over-qualification relative to other sectors in the economy. In these industries and in the real estate and hotels and restaurants sectors there was a decrease in over-qualification during the period 2001-08. A positive trend is observed instead in the sectors of agriculture and fishing, construction and manufacturing. In these industries their approximately 2-3 % rise in mismatch over the previous decade can be explained mainly by upper secondary graduates taking up jobs requiring lower secondary diplomas but also because of university graduates increasingly accepting jobs that would typically need graduates at upper or lower secondary level.

Similarly, marked changes over time in the incidence of under-qualification can be observed across the sectors, with a notable fall in education and manufacturing and significant increases in the hotels and restaurants, real estate, public administration and 'other' sectors. However, the underlying reason for the increase in under-qualification in these latter sectors differs. Whereas in hotels and restaurants the increasing rate is mostly driven by a growing share of lower secondary graduates taking up jobs requiring upper secondary diplomas, in the real estate industry the rise is mostly underpinned by a greater proportion of upper secondary graduates finding jobs that would normally require a university degree.

Chart 14 illustrates how the incidence of vertical mismatch varies across occupational groups (also see Annex 5 for a detailed breakdown at the two-digit occupational level). The incidence of over-qualification is higher among technicians and associate professionals, clerks and elementary occupations (though in this latter group the over-qualification rate dropped considerably over time). A sizeable 23 % of managers of small enterprises are also over-qualified. Over the past decade, and particularly during the years of the economic recession, there has been an increase in the share of over-qualified workers in skilled non-manual occupations (technicians and associate professionals and clerks), which is indicative of the unfolding of the crowding out effect.

With around 43 % of those employed in legislative, senior official or managerial positions not having a tertiary education qualification, a significant rate of under-qualification (38 %) is observed given that, in this broad occupational group, the educational requirement tends to be a university diploma or above. High rates of under-qualification are also evident in skilled agriculture and fishery and elementary occupations, while it was only in these latter occupations that the incidence of under-qualification has risen during the past decade. This is consistent with the robust growth in employment that took place at the lower end of the occupational spectrum during the last decade in Europe, as it encouraged an increasing share of lower secondary graduates finding jobs that require upper secondary degrees (see Annex 3). During the years of the crisis, the incidence of under-qualification fell mostly in high-skill and skilled non-manual occupations.

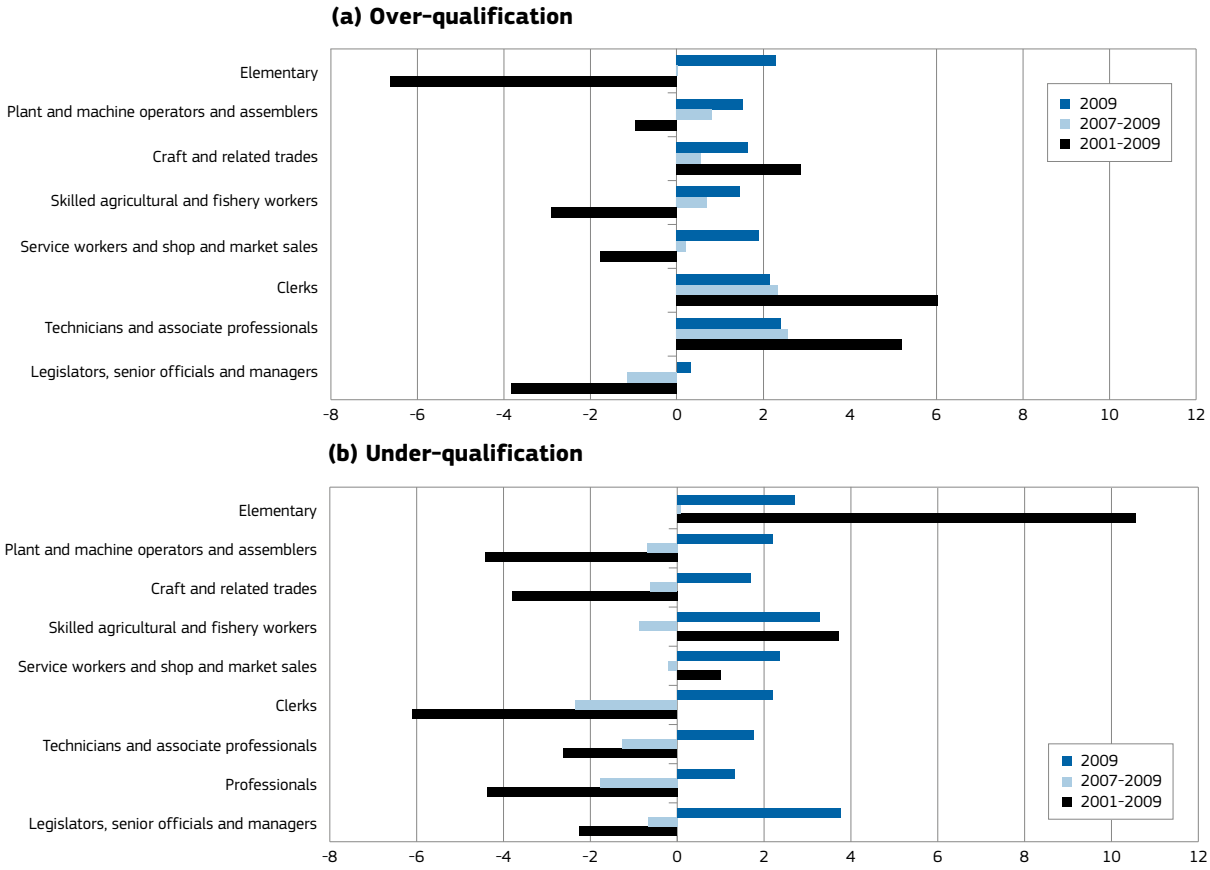
Chart 13: Change (%) in incidence of vertical mismatch by economic sector, 2001-08, EU-25



Source: Cedefop, based on EU-LFS data (data for MT and DE not available).

Notes: Data up to the year 2008 are displayed as this is the last year before the change in the official definition of the industrial classification (from NACE Rev. 1.1 to NACE Rev. 2). Appropriate weights used (COEFF).

Chart 14: Incidence and change (%) in vertical mismatch by occupation, 2001-09, EU-25



Source: Cedefop, based on EU-LFS data (data for MT and DE not available).

Notes: The bars for 2009 depict the average incidence of mismatch per occupation (for illustration purposes the figures have been divided by 10 e.g. the average over-qualification for technicians and associate professional is 24%, shown in the graph as 2.4). Appropriate weights used (COEFF).

Box 5: Empirical methodology of a micro-econometric model of vertical mismatch

Probit regressions are estimated to identify the determinants of the probability that an individual employee is affected by a particular type of vertical mismatch (a binary outcome e.g. the individual is either mismatched or not). The probability of an individual being either over- or under-qualified is modelled on the basis of a latent variable model, where it is assumed that an individual's unobserved propensity to be in a particular state of qualification mismatch is determined by the equation:

$$m_{it}^{*} = \beta_0 + \mathbf{x}_{it}\boldsymbol{\beta} + T_t + C_i + u_{it},\ m = 1[m^{*} > 0]\ (1)$$

where m, individual i's mismatch status in time period t, takes the value one if $m^{*} > 0$ and zero if $m^{*} \leq 0$. $\mathbf{x}$ is a vector of explanatory variables, including demographic, socioeconomic and job-related characteristics of the respondents, while u, the disturbance term, is assumed to follow a normal distribution and to be independent of $\mathbf{x}$. The estimated parameters, β, denote the effect of each explanatory variable on the probability of a positive response i.e. P(m = 1/$\mathbf{x}$). In all regressions, country- and time-specific conditions (e.g. differences in labour market institutions and the business cycle) are taken into account via the inclusion in the empirical specification of country (C) and time (T) dummies. The reported marginal effects *mfx* can be interpreted in the following way: an increase in variable x_1 by one unit (similarly, if x_1 is a dummy/indicator variable, then if x_1 changes from 0 to 1) leads to an increase of *mfx* units of the outcome variable. So the values of the estimated coefficients in Table 6 can be interpreted as the change in the probability of an individual being vertically mismatched in relation to a particular characteristic (e.g. gender).

To identify the impact of observable individual and job-related factors on vertical mismatch (either over- or under-qualification), estimates have been obtained from an econometric model using European Labour Force Survey (EU-LFS) micro data for a sample of 25 EU countries spanning six years (2003-08) (Box 5). Table 6 illustrates the marginal effects of these variables.

On average, male employees are found to be slightly more likely to be over-qualified relative to females in Europe, though this effect is statistically weak and there is a significant degree of underlying country heterogeneity[17]. The chances of over-qualification are also lower for married individuals. As predicted by the career mobility and search hypotheses, the incidence of over-qualification is significantly lower among older age groups, as well as for employees who have longer job tenure. No significant association is found between non-standard employment contracts and over-qualification, which may be due to the various factors affecting the individual choice of part-time and/or temporary contracts. Further analysis of the data reveals that, relative to full-time/permanent employees, the propensity for over-qualification is significantly greater for those workers who voluntarily take up atypical contracts (e.g. because of training in an apprenticeship or internship, own illness, child-care and/or other family or personal reasons).

Over-qualification is also found to be significantly higher in larger-sized firms, while the important differences in mismatch between sectors, even after keeping constant a host of important demographic and socioeconomic determinants, are confirmed. Specifically, individuals who are employed in the financial services, real estate and public administration sectors are more likely to be over-qualified relative to those employed in the mining, manufacturing and electricity sector. The reverse is true for employees working in agriculture and fishing, and less so for the wholesale and retail and hotels and restaurants sectors.

Consistent with the rising pattern displayed in Chart 8 and Annex 3, the empirical evidence also confirms that there was a statistically significant increase in the likelihood of severe over-qualification taking place within the EU in the years preceding the economic crisis.

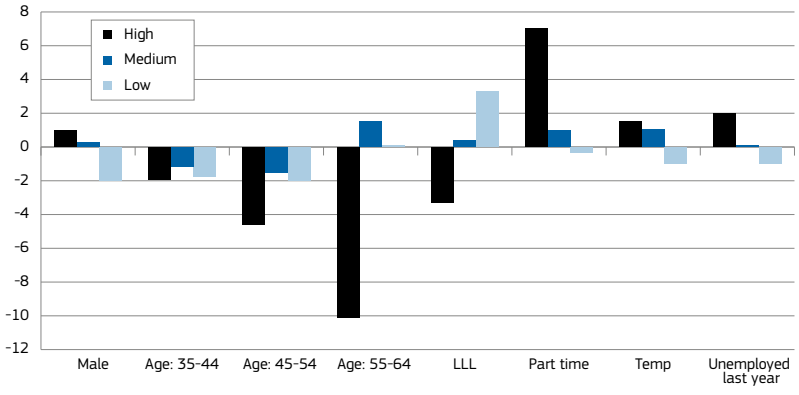
In contrast to the positive effect of age on over-qualification, column (2) of Table 6 shows that under-qualification is more likely to be observed among older age groups, possibly because workers who are under-qualified for their jobs compensate for this mismatch with additional years of work experience and the skills acquired during their working life. It may also be a reflection of rising educational requirements in certain occupations such that workers of older cohorts may now appear to be under-qualified for these jobs. Important sectoral differences are again detected, with employees in the manufacturing sector more likely to be under-qualified than those in transport, financial services, real estate, public administration and education.

A notable difference between the correlates of over- and under-qualification is that while there is a positive relation between over-qualification and participation in lifelong learning, there is a negative relation with respect to under-qualification. Indeed, the inverse relation of under-qualification and lifelong learning participation may reflect the superior job experience and work-based skills of under-qualified workers. However, to the extent that under-qualified employees are found to be generally less productive than their matched colleagues in the same job (McGuinness, 2006), their lower likelihood of participation in lifelong learning can be seen as an issue of concern.

5.3. Over-qualification is a reflection of segmented labour markets

The estimated effects shown in Table 6 conceal important country differences concerning the impact of the explanatory variables on qualification mismatch. Chart 15 displays the effect of the most important factors on the likelihood of over-qualification across three aggregated clusters of countries (characterised by high, medium and low mismatch). These clusters have been defined on the

Chart 15: Probability of over-qualification by cluster of countries, EU-25, 2003-08



Source: Cedefop, based on EU-LFS data (data for MT and DE not available).

Notes: The reported probabilities represent marginal effects of each explanatory variable on the status of over-qualification (obtained via probit regressions). The reported effects are the median of the individual country-specific effects of the countries belonging to each cluster, as obtained via separate country regressions. The effects of Age are relative to the reference category (25-34). The estimates for those Unemployed last year (but employed in the current year) have been obtained from a sample of new job finders only (i.e. those with less than 1 year of tenure), so that the reference category is individuals who were employed but changed job in the preceding year.

(17) The overall empirical evidence on the differences in qualification mismatch by gender has been mixed (Quintini, 2011). Theoretically, it has been argued that women face a greater chance of mismatch than men since they tend to be 'tied movers or stayers', they regularly experience intermittent labour-force participation because of child-breeding/rearing, they tend to choose fields of studies that are more loosely tied to the job market and because of historical reasons related to discrimination which might have affected female perceptions regarding the extent of feeling under-skilled for a job. The gender gap in the probability of qualification mismatch varies markedly across EU Member States too. According to a country-specific empirical analysis of the EU-LFS data (Box 5), males in AT, CZ, DK, ES, EL, IT, LU, NL, PT, RO, SE and SK are found to have a greater chance of over-qualification than women, whereas the opposite holds in BE, BG, CY, EE, FI, FR, HU, IE, LV, PL and SI. Similarly, a positive chance of under-qualification is detected for males in BE, CY, DK, FR, EL, IE, IT, LV and SE, in contrast to those in AT, BG, CZ, EE, ES, FI, HU, LT, PL, RO, SI, SK and UK. In some countries there is a statistically insignificant difference in the chance of vertical mismatch by gender.

Table 6: Determinants of vertical mismatch, employees (aged 25-64), EU-25, 2003-08

Probit regression, marginal effects of independent variables

	Over-qualification	Under-qualification	Severe Over-qualification	Severe Under-qualification
Explanatory variables	**(1)**	**(2)**	**(3)**	**(4)**
Male	0.010*	-0.013	0.006*	0.005
Age group: - 35-44	-0.020***	0.049***	-0.009***	0.008**
- 45-54	-0.026***	0.138***	-0.013***	0.031***
- 55-64	-0.023***	0.212***	-0.008***	0.083***
(reference: 25-34)				
Married	-0.006***	-0.007	-0.004***	0.001
Tenure	-0.002***	-0.003***	-0.002***	-0.000
Participation in LLL	0.023***	-0.050***	0.014***	-0.003
Part time	-0.007	0.000	-0.005	0.001
Temporary contract	0.005	0.026***	0.003	0.003
Ln (hours)	0.000	-0.010	-0.001	-0.003
Firm size: - 11-49	-0.001	0.002	0.000	0.002
- 50+	0.010**	-0.008	0.007**	-0.003
(reference: 0-10)				
Industry: - Agriculture & fishing	-0.017***	0.018	-0.004	-0.009**
- Construction	-0.014*	0.004	-0.005	0.004
- Wholesale & retail trade	-0.009*	-0.013	-0.007***	0.005
- Hotels & restaurants	-0.007*	0.021	-0.004	0.022**
- Transport, storage & communications	0.005	-0.038**	0.001	-0.002
- Financial intermediation	0.033***	-0.087***	0.027***	-0.003
- Real estate, renting and business	0.016***	-0.030**	0.010***	-0.000
- Public administration	0.023***	-0.058***	0.018***	-0.006
- Education	0.008	-0.078**	0.009	-0.004
- Health & social work	-0.011	-0.009	-0.007	0.006
- Other community activities	0.010	-0.014	0.014***	0.008
(reference: Mining, manufacturing & electricity)				
Observations	4 416 480	3 697 764	4 416 480	3 697 764
Pseudo R^2	0.15	0.20	0.16	0.44

Source: Cedefop, based on EU-LFS data (data for MT and DE not available).

Notes: (a) ***, **, *; statistically significant at 1%, 5% and 10%, respectively;

(b) Robust standard errors (not shown in table, but available upon request), adjusted for clustering of individuals within countries.

(c) The dependent variable is the probability that an employee faces a particular type of skill mismatch. The omitted category is well-matched individuals. Columns (1) and (3) exclude under-qualified workers; columns (2) and (4) exclude the over-qualified and those with tertiary education attainment (who cannot be under-qualified).

(d) Marginal effects calculated at the variable mean for continuous variables and for discrete changes of categorical variables.

(e) Other control variables not reported here include 25 country dummies, 6 time dummies, 8 1-digit occupational dummies (managers and professionals are aggregated together as the reference category), a quadratic tenure term (insignificant) and if the individual holds an additional/second job (positively related with severe over-qualification).

Box 6: Empirical methodology of macro-economic panel model of vertical mismatch

A fixed effects panel econometric technique is employed to relate the deviation of each country's over-qualification rate from its average mismatch throughout the years (i.e. the dependent variable = [$\dot{OQ} = OQ_{ct} - \overline{OQ}_c$]) to the within-country variation observed in several explanatory variables ([$\dot{x}_{ct} = x_{ct} - \overline{x}_c$]). A parsimonious set of explanatory variables is chosen to reflect the interplay between market forces (labour demand and supply of different skill types), labour market regulations (e.g. percentage of GDP invested in labour market programmes, strictness of employment protection legislation) and attitudes towards skills within countries (e.g. whether attracting and retaining talent is a priority in companies). Their independent effect on the incidence of over-qualification is estimated taking into account the different levels and rates of economic growth between the countries and after holding constant any unobserved time-invariant factors within countries (e.g. infrastructure) and other macro-economic shocks that have commonly affected EU countries over time. Specifically, the following equation has been estimated:

$$OQ_{ct} = \beta_0 + \mathbf{x}_{ct}\boldsymbol{\beta} + T_t + \varepsilon_c + u_{ct} \quad (2)$$

where *OQ*, the average rate of over-qualification of country *c* in time period *t*, is explained by a vector **x** of explanatory variables, while u_{ct} is assumed to be a random error term. The specification also allows for a number of country-specific, time-invariant unobserved factors to be taken into account, in the form of the error term ε_c in equation (2). The estimated parameters, β, capture the impact of an increase in each explanatory variable on the average incidence of over-qualification, holding constant any country-specific fixed effects and other observed determinants. In the regressions, time dummies are included to account for aggregate time effects.

basis of the countries' over-qualification rates. The high-mismatch group (which exhibits over-qualification rates of over 20%) mostly includes the countries of the Southern Mediterranean basin. The low-mismatch group (with over-qualification rates between 7 and 11%) include countries from Eastern and Central Europe. The medium-mismatch group (characterised by over-qualification rates between 12 and 18%) is mostly made up of Western and Northern European Member States[18].

Based on this classification, important differences exist between the country clusters with respect to the estimated effect of the explanatory variables on over-qualification. In high-mismatch countries, the chance of over-qualification is higher for males and for employees on part-time/temporary contracts than it is in the medium- and low-mismatch clusters. The likelihood of over-qualification is also markedly greater for younger age groups and for new job-finders (those with less than 1 year of job tenure) who were unemployed in the previous year. Furthermore, while over-qualified workers are positively inclined to invest in lifelong learning in medium- and low-mismatch countries, the relationship is negative in the high-mismatch group.

These patterns suggest that a significant part of the qualification mismatch observed in specific countries may be attributable to the segmented nature of their labour markets (European Commission, 2010b). In the high-mismatch countries, for example, young male workers, particularly those who are unemployed, appear to be inclined to take up part-time and/or temporary jobs which demand lower qualifications than the ones they possess. In these labour markets, workers taking up lower-level jobs are also less likely to invest in lifelong learning. This is again an issue of concern as adult learning can potentially lead to a closer alignment of a worker's skills with job demands as well as foster job and occupational mobility.

5.4. Lowering over-qualification depends on high-skilled job creation

Differences in the macro-economic environment, nature of labour market institutions and regulations across the Member States are not taken into account in the above analysis, but they may help explain the different patterns of vertical mismatch. Furthermore, it is not possible on the basis of the pooled cross-sectional estimates reported in Table 6 to draw robust conclusions regarding the causal relations between the various determinants and the incidence of vertical mismatch.

To address the above issues, a longitudinal econometric analysis is undertaken in order to explain the average incidence of vertical mismatch in European countries (see Box 6)[19]. A macro-economic panel database was compiled by aggregating the EU-LFS micro data to summarise time series information of the average rate of vertical mismatch per country over the nine years 2001-09. Important macro-economic variables, labour market institutions and regulatory factors were also incorporated into the database. Moreover, in order to capture elements of each country's infrastructure and attitudes towards skills, subjective indicators of the availability of skills within their labour markets and of their orientation towards skills development and utilisation were also taken into account (see Box 7)[20].

As indicated by the coefficients of the explanatory variables in Table 7, economies with increasing levels of GDP and those which exhibited robust demand for high-skilled labour (as shown by an increasing share of employment of tertiary education graduates within a country over time) have experienced falling rates of over-qualification. In fact an increase of 1% in the share of employment of high-skilled individuals within a country has led to a fall in the average over-qualification

(18) The country clusters are defined as follows: High over-qualification cluster = (EL, IT, PT, CY, LT, IE, ES); Medium = (AT, BE, DK, EE, FR, LU, LV, NL, SE, UK); Low = (BG, CZ, HU, PL, RO, SI, SK). FI is not included in the low mismatch cluster as it is an outlier relative to the remaining Eastern/Central European countries in the group.

(19) Although the analysis has also been done for under-qualification, the output for over-qualification only is presented in this section due to space limitations but also because of the seemingly larger cost of the latter type of vertical mismatch for individual and societal welfare. Nine years of data (2001-09) are used for the analysis.

(20) These indicators are obtained from the IMD World Competitiveness Yearbook (http://www.imd.org/research/publications/wcy/index.cfm), and are based on the subjective opinions of a panel of 5 000 executives, who comprise a representative cross-section of the business community in each country analysed. No information is available for LV and CY, so the analysis in this section has been constrained to 23 EU countries.

Table 7: Relationship of macroeconomic indicators with incidence of over-qualification, EU-23, 2001-09

Explanatory variables	Fixed effects: Simple	Fixed effects: Augmented
	(1)	(2)
Economic level and growth		
GDP (PPP) per capita (000s)	-0.162**	-0.144**
Real GDP growth (% change p.a.)	0.182***	0.174***
Labour/skill supply		
Share of high-educated (ISCED 5-6) labour (% of active workforce)	0.093	0.309
Share of medium-educated (ISCED 3-4) labour (% of active workforce)	-0.174	-0.284
Labour/skill demand		
Share of employment of medium-educated (ISCED 3-4) graduates (% of all employees)	-0.181	-0.204
Share of employment of high-educated (ISCED 5-6) graduates (% of all employees)	-0.454**	-0.819***
Dynamics of labour market		
Job mobility (% of employees < 1 year of job tenure)		0.116*
Youth unemployment rate		0.087**
Attitudes and labour regulations affecting skill supply/demand		
Index: Labour regulations		-0.431**
Attractive and retaining talents is a priority in companies		-0.686***
Constant	44.254***	53.498***
Observations	206	206
R^2 within	0.230	0.322
R^2 between	0.174	0.175
R^2 overall	0.175	0.177
corr(u_i, Xb)	-0.3901	-0.6193

Source: Cedefop, based on EU-LFS, Eurostat, OECD and IMD World Competitiveness yearbook data.

Notes: (a) ***, **, *; statistically significant at 1%, 5% and 10%, respectively; standard errors available upon request.

(b) The dependent variable is the average proportion of over-qualified employees as a share of all employees.

(c) Estimates of fixed effects (within-country) regressions. Cronbach's alpha measure is used to generate an index from a subset of subjective variables obtained from the World Competitiveness yearbook describing the state of labour regulations within countries as follows: (i) Labour regulations (hiring, firing, minimum wages, etc.) do not hinder business activities; (ii) Unemployment legislation provides an incentive to look for work; (iii) Immigration laws do not prevent your company from employing foreign labour. 9 time dummies are also included (coefficients indicate a significant positive trend of qualification mismatch over time).

(d) Countries not included: DE, MT, LV and CY.

rate of between 0.5 and 0.8 percentage points, a sizeable effect. In contrast, there is no evidence that an increasing supply of higher-educated labour is associated with greater vertical mismatch, provided that this greater supply is also met by a corresponding demand in the form of high-skilled jobs.

The rate of over-qualification is also found to rise in response to increasing rates of youth unemployment. This is indicative of the greater pressure exerted on individuals' job search efforts during an economic downturn, leading them to accept jobs with lower educational requirements relative to their own qualifications. Job creation of high-skill jobs (i.e. stimulating the growth in demand) therefore seems to be the most relevant response to mitigating the prevalence of over-qualification within EU economies. This is an important finding in view of the high current rates of youth unemployment experienced in Europe and the growth in the supply of high-skilled labour that is anticipated to take place in most Member States in the next decade (in line with the Europe 2020 education targets).

However, the positive impact on over-qualification of increasing real GDP growth rates and of increased job mobility (defined as the percentage of employees with less than one year's employment in the same job), as shown by the coefficients of the respective variables in Table 7, underlines that, in dynamic labour markets, a certain degree of qualification mismatch may occur because of restructuring and turmoil within the job market. In this case, higher rates of job creation and job destruction facilitate greater churning and labour turnover. At the same time, while a flexible and dynamic labour market is important in enabling an efficient allocation of productive human capital, excessive job mobility can be conducive to qualification mismatch if it is associated with non-stable and short-term employment relationships.

Finally, the empirical evidence highlights the influential role that labour regulations and talent management can play in terms of moderating the incidence of over-qualification in European labour markets. Countries where employment protection regulations do not hinder business activities, and those that have instituted greater incentives to nurture the supply and utilisation of skills and talent (including the supply of foreign labour), are found to have lower rates of over-qualification over time.

5.5. Challenging jobs are needed to mitigate skill mismatch

As highlighted by the OECD (2011), a potential explanation for the weak

Box 7: Explaining differences in mismatch status between countries using economic indicators

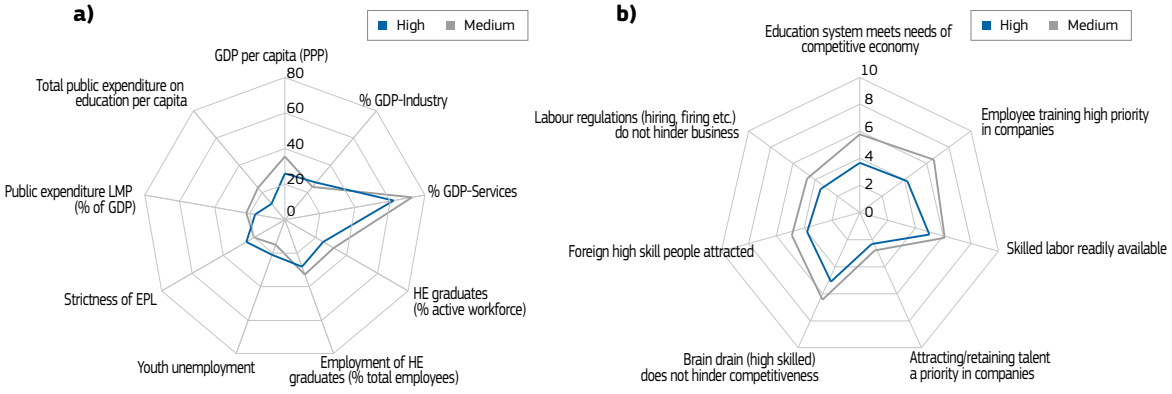
A number of factors describing the macro-economic and institutional conditions of countries may potentially account for the differences in the incidence of vertical mismatch between EU Member States. However, drawing comparisons across a diverse set of countries on the basis of indicators of macro-economic, labour market and skills performance is potentially misleading. The level of qualification/skill mismatch within an economy is likely to be highly influenced by the differential degree of economic development between economies, as well as by their long-term education and training infrastructure and their regulatory structure.

With this caveat in mind, Charts B7(a) and B7(b) compare the performance of the high- and the medium-mismatch clusters of countries, as defined in section 5.3, on the basis of selected economic indicators. Contrasting these two similar groups of countries in terms of historical stages of economic advancement and common exposure to market and regulatory forces, allows for more reliable inferences to be drawn regarding the relation between the selected indicators and observed country differences in vertical mismatch. The low-mismatch group is instead omitted from this particular analysis, as it is populated by Eastern/Central European countries that have faced markedly different trajectories of economic growth in the past decade.

From the spider diagrams below it is evident that countries with high levels of over-qualification tend to be less wealthy, whilst a greater exposure of the economy to the services sector does not necessarily imply higher levels of vertical mismatch. An important observation is that a greater supply of higher education (HE) graduates in the economy is also not necessarily conducive to higher mismatch, provided that this greater supply is also met by a corresponding demand in the form of graduate employment and available high-skilled jobs. The higher levels of youth unemployment consistently encountered by the high-mismatch group of countries during the last decade may also be a factor accounting for their greater mismatch, given that in slack labour markets many young graduates are forced into over-qualification (Randstat, 2012). Moreover, the high-mismatch countries are found to have lower expenditure in labour market programmes and more rigid labour markets (as approximated by the strictness of employment protection legislation, but also by a subjective assessment of the negative impact of labour regulations on business activities). Their lower levels of public investment in education and training might also hinder the quality and ability of their education systems to respond to the ever-changing needs of economies and societies. Indeed, business executives in the high-mismatch countries believe that the educational systems of their countries are failing to adequately meet the needs of a competitive economy.

As with the greater supply of HE graduates, a greater availability of skilled labour in the job market is not necessarily correlated with higher mismatch. Instead, countries which are more geared towards the attraction and retention of skilled individuals (including the attraction of foreign high-skilled labour) are likely to benefit from lower over-qualification rates. Finally, the countries in which a brain-drain of their well-educated and high-skilled workforce hinders competitiveness are more likely to exhibit higher rates of over-qualification. This correlation potentially reflects the lower rate of creation of innovative and high-skilled jobs within the economies that experience a flight of their brightest minds, which can subsequently foster their regression to a low skill-low productivity equilibrium.

Chart B7: Comparison of economic (a) and skills (b) indicators between clusters of countries with high vs. medium over-qualification rates, mean value of indicators within each cluster (2001-09)



Source: Cedefop, based on Eurostat, OECD and IMD World Competitiveness yearbook data.

Notes: High over-qualification cluster = (EL, IT, PT, CY, LT, IE, ES); Medium = (AT, BE, DK, EE, FR, LU, LV, NL, SE, UK).

relationship between qualification and skill mismatch is the variation in job tasks that are required within occupations. Individuals who take up jobs that demand a lower qualification than the one they possess may still hold challenging and skill-intensive jobs, which may use a significant part of their skill set and yield job satisfaction. Though no such information is available in the EU-LFS, the EWCS dataset contains a wealth of job-related variables pertaining to the tasks performed by workers in their jobs.

Table 8 presents the empirical estimates of the impact of several important characteristics of the job, such as the nature of working conditions, the extent of job discretion and complexity, the degree of job latitude and job training and the extent to which this is likely to affect the likelihood of an individual facing qualification or skill mismatch.

The important role of task heterogeneity for both educational and skill mismatch, even after taking account of differences between individuals in their occupational groups, is clearly shown. Over-qualified workers are found to be more likely to work in jobs with better working conditions, complex tasks, frequent demand for IT skills, and offering greater ability to apply one's own ideas and to learn new things. Under-qualified workers are, instead, less likely to be in task-challenging jobs, which may also be related to their lower propensity to participate in training. Furthermore, over-skilled workers are found to be in less demanding jobs, in contrast to those who are under-skilled – all of which is reasonable enough given that the skill mismatch of individuals is based on the subjective opinion of individuals regarding the correspondence between their skills and the requirements of their jobs.

6. Skill mismatch among specific population groups

6.1. Young individuals: difficult integration into the job market

Many EU economies, particularly those with segmented labour markets, experience difficulties in successfully integrating young people into the labour market, not only in terms of getting them out of unemployment but also in terms of matching their qualifications and skills with suitable jobs. There is extensive evidence indicating that younger workers, as new entrants into the labour market, tend to experience a higher degree of skill mismatch. Typically, younger employees are more likely to be formally over-qualified (as shown in Table 6), yet their skills are less likely to be matched to their jobs

Table 8: Determinants of skill mismatch among employees (aged 25-64), 2010, EU-27
Probit regression, marginal effects of independent variables

Explanatory variables	Over-qualified (1)	Under-qualified (2)	Over-skilled (3)	Under-skilled (4)
Over-skilled	0.033***	-0.024		
Under-skilled	0.020	-0.014		
Over-qualified			0.035**	0.043***
Under-qualified			-0.028	-0.001
Male	0.024*	0.014	0.024***	-0.001
Tenure	-0.007***	0.000	-0.002	-0.006***
Training paid by employer	0.019*	-0.023	-0.001	0.101***
Training paid by self	-0.003	-0.035*	0.100***	0.123***
On the job training	0.002	-0.020**	-0.033**	0.042***
Substantial restructuring at workplace in last 3 years	0.021***	0.024***	0.050***	-0.006
Index: Bad working conditions – exposure	-0.017	0.012	0.016	0.032***
Index: Bad working conditions – ergonomics	-0.051***	0.021**	0.031**	-0.014
Working with computers	0.041***	-0.052***	0.030***	0.040***
Job involves: complex tasks	0.029***	-0.027*	0.037**	0.028**
Job involves: Learning new things	0.032**	-0.022	-0.027**	0.073***
Always able to apply own ideas	0.045***	0.009	0.029**	-0.013
Index: Bad hours	0.005	0.018	0.014**	0.011
Index: Inflexible hours	-0.019***	0.007	0.009	-0.011
Index: Job latitude	-0.008	-0.009	0.016**	0.008
Observations	17546	12515	19277	15025

Source: Cedefop, based on EWCS (2010) data.

Notes: (a) ***, **, *; statistically significant at 1%, 5% and 10%, respectively;

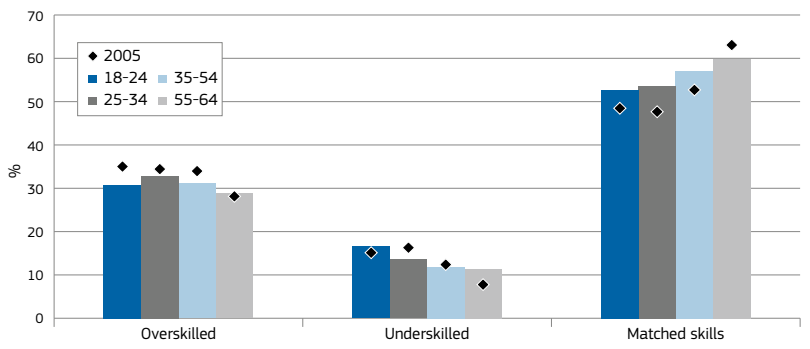
(b) Robust standard errors (not shown but available upon request), adjusted for clustering of individuals within countries.

(c) The dependent variable is the probability that an employee faces a particular type of skill mismatch. The omitted category is well-matched individuals. Column (1) excludes under-qualified workers; column (2) excludes over-qualified and tertiary education graduates; column (3) excludes the under-skilled; column (4) excludes the over-skilled.

(d) Marginal effects calculated at the variable mean for continuous variables and for discrete changes of categorical variables.

(e) Other control variables not reported here include country dummies, 1-digit occupation dummies, NACE Rev.2 economic sectors, firm size dummies, hours of work, if born in the country, past employment status, type of contract, private sector, supervisory duties, work with people, work in teams. Cronbach's alpha measure is used to generate indices of a large number of similar variables (see Annex 4).

Chart 16: Skill mismatch by age groups, employees (aged 18-64), EU-27 (2005, 2010)



Source: EWCS (2005 & 2010).

compared to older workers (Chart 16). Young workers lack experience or relevant information about the opportunities available in the labour market. For this reason, it is often argued that any qualification and skill mismatch tends to become eroded as they become older (Alba-Ramirez, 1993).

Nevertheless, Cedefop (forthcoming[a]) finds that a scarring effect is likely to be associated with skill mismatch. Being over-qualified in the first job may send a negative productivity signal to employers, making it difficult for younger over-qualified workers to achieve a substantial improvement in job quality when they change jobs. A long job tenure in a non-challenging job, in which those concerned lack the possibility of fully utilising or further advancing their skills, is also likely to lead to skills obsolescence. Young people who come from a poor or disadvantaged background (especially if they lack upper secondary education, are early school leavers, or are not in either education or training) are particularly susceptible to underskilling, and need vocational training if they are to improve their prospects during the initial phases of their working lives.

Vocational education and training (VET) programmes that are work-based (as opposed to school-based), and closer to the needs of the job market, can play a crucial role in facilitating the transition from school to work (Cedefop, 2012e, Cedefop forthcoming [b]). The European Commission has stressed the need to reinforce the attractiveness of VET as a learning option, and as a strategy for ensuring a closer link between people's skills and their relevance to labour market needs[21],[22]. Almost three quarters of young VET graduates aged 18-24 – in particular those graduating from a workplace-based VET programme[23] – leave formal education in order to seek entry into the labour market. This contrasts with individuals with a general education, who are more likely to continue studying.

The decision to continue studying at tertiary education level is obviously a rational choice for young people who have the opportunity to do so considering that a higher education degree carries a clear employability and wage premium over medium-educated individuals. However, when comparing young graduates with medium-level qualifications (ISCED 3-4) against a different education orientation (general vs. VET), it is apparent that VET is more successful at getting individuals into work in the short to medium-term (Cedefop, 2012e)[24]. In fact VET graduates from the youngest age groups (18-24) are more likely to be employed (63% vs. 34%, respectively), to be actively seeking work (12% vs. 7%, respectively) and to be enjoying a relative wage premium than medium-level general education graduates.

However, the type of VET programme is also found to have a significant influence on the probability of successful entry into the job market, as the share of employed graduates from workplace-based (or combined with school-based activities) medium-level education is noticeably higher (78% vs. 53%, respectively) than VET that is mainly school-based (see Chart 17). Thus, VET with higher workplace content leads to stronger labour market outcomes in the youngest age group.

(21) Several EC initiatives refer to the important role that VET can have in this regard, including the Europe 2020 flagship initiative *New Skills and Jobs*, the Bruges communiqué and *A new impetus for European cooperation in education and training to support the EU2020 strategy* (European Commission, 2010a; 2010d).

(22) Around 35.2 million people (60%) of the 58.5 million people holding a medium-level qualification have a VET-oriented education in Europe. Significant variability exists among EU Member States with respect to VET intensity and different types of VET programmes (e.g. mainly or solely school-based, workplace-based or a combination of the two), which reflects historical VET traditions but is also related to different demand and supply factors. VET systems are more popular in the Czech Republic, Austria and Slovakia but less popular in Iceland, Ireland and Portugal.

(23) General education is defined as a programme with less than 25% of its content as vocational, whereas vocational (and pre-vocational) education and training refers to programmes where at least 25% of the content is oriented towards a specific category of occupations or trades leading to a relevant qualification. Mainly workplace-based VET is when at least 75% of the education/training hours are spent in a working environment and the balance in a school, college or training centre.

(24) These findings are based on data from the 2009 ad hoc module of the EU-LFS, which focused on young individuals' (aged 15-34) transition from education to work. They hold even after considering differences in gender (males are more likely to enter into a VET stream than women) and in years of work experience, while they are robust even when restricting the analysis to young adults who are no longer in education or to 25-34 years olds who have completed their education.

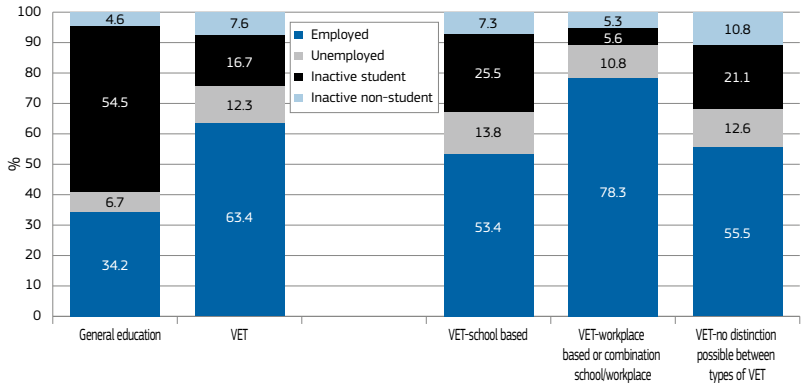
Table 9: Effect of level of education and type of academic orientation on indicators of labour market matching, 20-34 year olds, 2009, EU-27

	Job search duration	Job duration	Skilled manual job	Skilled non-manual job	High-skilled job	Over-qualification	Under-qualification	Job search duration	Job duration	Skilled manual job	Skilled non-manual job	High-skilled job	Over-qualification	Under-qualification
	First job							Current job						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Secondary - VET premium	-0.16**	0.13	0.93**	0.03	-0.07	-0.27**	-0.83**	-0.10	4.10**	0.74**	-0.09	-0.27**	-0.01	-0.98**
Secondary - VET	-0.60**	0.34	0.99**	1.13**	1.69**	1.80**	-4.01**	-0.39**	1.44*	0.66**	0.94**	1.48**	1.73**	-3.69**
Secondary - General	-0.44**	0.21	0.06	1.10**	1.76**	2.07**	-3.17**	-0.29**	-2.66**	-0.08	1.03**	1.76**	1.74**	-2.71**
Tertiary - VET premium	0.29**	3.50**	0.94**	-0.14	-0.93**	0.83**	-0.21**	0.05	12.31**	0.92**	-0.11	-1.09**	1.15**	-0.33**
Tertiary - VET	-0.92**	-0.55	0.90**	1.71**	3.68**	4.19**	-6.89**	-0.57**	-3.60**	1.03**	1.84**	3.60**	3.98**	-7.02**
Tertiary - General	-1.21**	-4.05**	-0.04	1.84**	4.61**	3.36**	-6.68**	-0.62**	-15.91**	0.11	1.95**	4.69**	2.82**	-6.69**
Observations	97743	75609	75317	75317	75317	73983	73983	24444	131144	130172	130172	130172	123438	123438

Source: 2009 AHM EU-LFS; Cedefop (forthcoming[c]).

Notes: * p<0.05, ** p<0.01; Duration measured in months; Columns: 1, 2, 9: OLS estimates; Column 8: Ordered logit estimates; Columns 3-7, 10-14: Multinomial logit estimates; all regressions include country-specific dummies and individual-level control variables; robust standard errors (not shown in table, but available upon request); High skilled job: ISCO 1-3; Skilled non-manual job: ISCO 4-5; Skilled manual job: ISCO 6-8. The reference (omitted) education level is 'no secondary education'. The reference group for the dependent variable is 'unskilled' in columns 3-5 and 10-12, and 'matched' in columns 6-7 and 13-14.

Chart 17: Labour market status (%) of medium level graduates by orientation, 18-24 year olds, 2009, EU-27



Source: 2009 Ad Hoc module, EU-LFS.

Note: Medium level education means upper secondary and post secondary (non tertiary) (ISCED 3-4).

Looking more closely at the nature of the school-to-work transition of young adults, and the quality of their first job match, several indicators suggest that VET is more successful than general education programmes in this respect. The empirical estimates of Table 9 compare the effects of different levels of education (e.g. secondary vs. tertiary) according to their academic orientation (VET vs. General) on the basis of various indicators of labour market outcomes. Examining the difference between the coefficients of VET and general education (the so-called 'VET premium'), it is clear that the speed of transition (the length of time that elapses between completing formal education and starting a first significant job) is generally faster for secondary (but not tertiary) VET graduates.

The duration of the first job is also significantly greater for graduates from VET tertiary education programmes. As these programmes tend to develop job-specific skills, the probability of finding a more suitable match in terms of skills is potentially higher, even though VET tertiary graduates are more likely to find employment in skilled manual jobs and, hence, have a greater likelihood of being over-qualified. In contrast, the probability of job separation tends to be higher for tertiary general education graduates who, having more generic skills, tend to be in a better position to exploit the option of job mobility in search of a better job.

VET programmes can make the transition to a first job fast and effective, yet graduates of VET programmes are also likely to have significantly longer job tenure in their current employment than those from general education. Although this may reflect a lower capability of VET graduates to engage in job mobility, their greater job tenure might also arise because their job-specific skills are matched to the requirements of their current job and since they are more likely to enjoy stable employment relationships in so far as they work in full-time jobs with permanent contracts (not shown in Table 9). Both secondary and tertiary VET graduates are more likely to be employed in skilled manual jobs, decreasing the chances of the former being over-qualified as opposed to the greater propensity of over-qualification among the latter. In contrast, both secondary and tertiary general education graduates are employed mostly in high-skilled occupations. This is consistent with the lower relative propensity of VET graduates being under-qualified in both first and current jobs. Efficient matching therefore seems to be taking place within the labour market with respect to the skill profiles of young VET graduates.

Blending learning and work as part of initial vocational education and training (IVET) and by using the workplace as a learning place (via schemes such as job shadowing, internships, voluntary work and apprenticeships) may thus facilitate the school-to-work transition of younger-aged medium-qualified workers by placing them in jobs that match their skills. However, as VET graduates are more likely to be employed in medium-skilled occupations (mainly craft and related trades), they are also at greater risk of exposure to declining future labour demand (Cedefop, 2012b).

Apprenticeship programmes in which the quality of provision and social security is not guaranteed can also degenerate into cheap labour schemes involving narrow/menial skills (European Commission, 2012c). General programmes may also contribute to a better matching of skills with job needs beyond the first entry into the labour market, as the greater adaptability and mobility of graduates from general orientation programmes are conducive to finding a better job match over time (Verhaest and van der Velden, 2010). In other words there may be a trade-off for VET systems, with the short-term benefits of easy entry to the labour market being outweighed in the longer run by the fact that specific skills may be at greater risk of becoming obsolete at a faster pace (Hanushek et al., 2011).

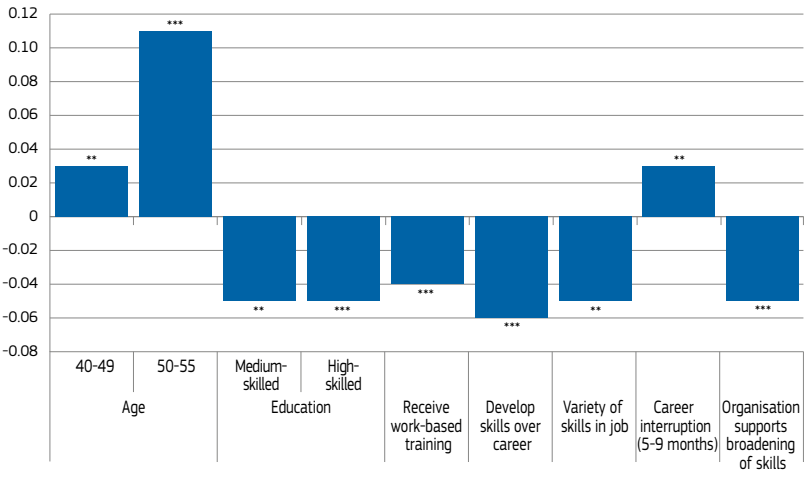
6.2. Ageing workers face the risk of skills obsolescence

The continued employment of older workers has become a major issue in most European countries given their generally ageing populations. Raising the activity rates for older people is one way of addressing the challenge, but this is dependent on being able to exploit their skills and experience and preventing the obsolescence of their skills as technological progress and the ageing process unfold (OECD, 2011). In this respect, older workers are generally believed to have greater difficulty in assimilating new skills following technological and organisational innovations (e.g. computerisation) and therefore need more retraining. However, as Eurofound (2008) has pointed out, ageing workers are generally less involved in new organisational work arrangements, training and acquiring new skills, all of which may be associated with a higher degree of obsolescence and skill mismatch.

In 2011 Cedefop carried out a pilot survey (see Box 8) that showed that a significant share of workers is affected by skills obsolescence. About 12% of the respondents believe that the current match of their skills to the requirements of their job is worse than what it was when they first started their current line of work[25]. Skills obsolescence affects not only older individuals, but also prime-age workers, many of whom still have many years of working life ahead.

[25] According to a Dutch survey, 30% of the skills of individuals in their sample had become obsolete with a half-life for competences in the range of 10 to 15 years (Allen and van der Velden, 2007).

Chart 18: Probability of skills obsolescence by groups of workers, 4 EU countries, 2011
Probit regression, marginal effects of significant variables



Source: Cedefop pilot skills obsolescence survey (2011).

Notes: ***, **; statistically significant at 1% and 5%, respectively; Omitted groups: *Age:* 30-39; *Education:* Low-skilled; *Receive work-based training:* No; *Chances to develop his/her skills over his/her career:* No; *Use of variety of skills in job:* No; *Career interruption:* less than 1 month; *Organisation supports me to broaden my skills:* No. Marginal probabilities that an individual's skills necessary to optimally perform his/her job are currently lower than or equal to when they started their current line of work.

Specific groups of the population are found to face a greater risk of skills obsolescence, such as lower-skilled workers, older individuals, those without opportunities to develop their skills throughout their careers, and individuals who have had lengthy career interruptions (e.g. because of unemployment, child rearing or other responsibilities) (Chart 18). Even highly skilled workers are not immune, with 9% of tertiary education graduates reported as facing skills obsolescence. 15% of workers who did not receive any work-based training in the previous year were affected by skill obsolescence, in contrast to 10% of those who participated in training. Likewise some 15% facing such challenges are employed by organisations that do not encourage them to broaden their skills compared to 9% where the enterprise does do so. The findings of the pilot survey thus underline the importance of fostering a learning culture within the workplace, and of providing training and good working conditions as appropriate policy tools to combat skills obsolescence.

6.3. Third-country nationals are susceptible to skill mismatch

Migration of both third-country nationals and of mobile EU citizens can influence a country's skill mismatch in several ways. Emigration may result in shortages of highly skilled labour in the countries of origin (brain-drain), while immigration can sometimes create labour surpluses (particularly in lower-skilled occupations) in host countries. Cedefop (2011b) examined the issue of skill mismatch among migrants and ethnic minorities and their labour market performance in 15 European countries based on data from the European social surveys. Third-country nationals, as opposed to mobile EU citizens and ethnic minorities, were found to have a 5% greater probability of being over-qualified relative to their native counterparts. Those educated in the country of origin are more likely to suffer from vertical mismatch than those educated in the host country. They tend to be employed in both jobs requiring tertiary education, which match their skills, and, in large numbers, elementary occupations, consistent with job polarisation. The under-utilisation of the human capital potential of third-country nationals, in particular of migrant women who suffer from a higher incidence of over-qualification[26], tends to be a persistent phenomenon in many countries, particularly since the qualifications obtained in their own country tend not to be recognised in the host country and because of insufficient language skills. Studies of skill mismatch among ethnic minorities in the UK have also confirmed that over-qualification tends to be higher for non-whites than for whites, with more severe consequences in terms of the wage and welfare outcomes of the former (Battu and Sloane, 2004; Lindley, 2009).

Box 8: Exploring new terrain - Cedefop's pilot survey on skills obsolescence

Cedefop carried out a pilot survey on skills obsolescence in four EU Member States in 2011: Finland, Germany, Hungary and the Netherlands. The target population of the study was employed persons, aged 30 to 55 years and working 30 hours per week or more. Existing panels were used and the data was collected by online interviewing. Data for around 4 000 employed persons was eventually collected. The survey allows for the construction of subjective measures of skills obsolescence and contains information on the employment situation of respondents, their demographic characteristics and the development of their skills and knowledge over time. The survey helps to identify appropriate policy measures aimed at mitigating the diminishing capability of individuals to remain up to date in an ever-changing workplace.

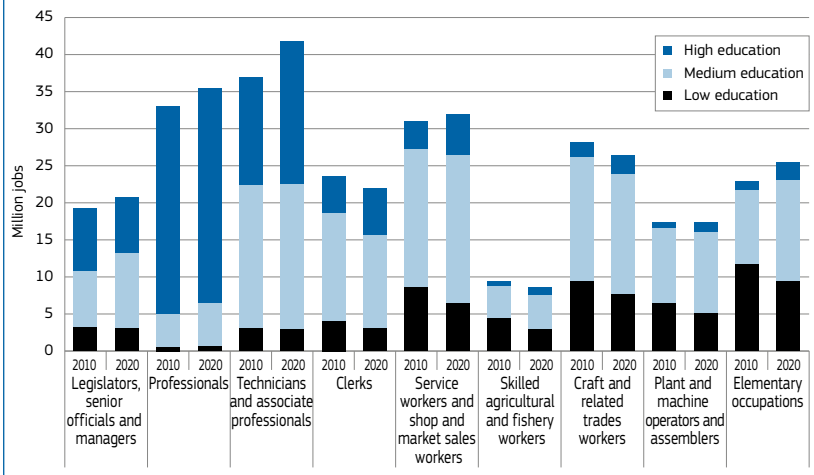
Skills obsolescence can be measured in several ways, but little consensus exists on which method is the most appropriate. Few data sets in general contain appropriate questions that can be used to assess skills obsolescence. To address this deficiency, Cedefop is launching in 2013 a skills obsolescence and skill mismatch survey that will cover all EU-27 Member States.

7. Future trends in skill mismatch in the European labour market

Anticipating and matching skill needs and supply is at the forefront of the European Commission's strategy *New Skills for New Jobs* and the *Agenda for New Skills and Jobs* (European Commission, 2008a;

[26] According to the Eurostat (2011) indicator of over-qualification, 36% of migrant women are found to be over-qualified as compared to 30% of males.

Chart 19: Changing skill composition of the occupational structure of employment, EU-27, 2010-20



Source: Cedefop country workbooks (2012).

2010a). Significant initiatives have been undertaken both at the international and at the national level in an attempt to identify the sectors, occupations and countries that are most likely to experience skill shortages in coming years, including the pan-European forecasting model of labour demand and labour supply developed by Cedefop (see Box 9).

According to the Cedefop forecasting model, the ongoing trend towards rising 'skill intensity' of jobs is likely to continue in the next decade. Although a substantial number of jobs that will be available in the future job market do not yet exist, the proliferation of new path-breaking technologies (e.g. mechatronics, nanotechnology, biotechnology) across a wide variety of sectors and jobs, even those that were in the past reliant on medium- or lower-skilled labour, is indicative of a universal trend towards rising skill requirements within jobs (see Chart 19). Even in 'declining', relatively medium-skilled occupational groups, the trend is towards increasing skill demands as customer expectations rise, as technology accelerates (e.g. 'digitalisation' of the manufacturing sector), and as more complex forms of work organisation become more commonplace.

Despite the increasing share of high-skilled jobs in total employment, almost 70% of jobs will continue to be those requiring workers possessing only medium or lower level qualifications. An estimated 75 million job openings are predicted in all types of occupations in order to replace workers who retire or leave the workforce (*replacement demand*). In recent years, lower-skilled occupations have accounted for the largest share of job-finders in the European labour market, despite the fact that the fastest growing occupational groups depend on high-skilled labour (European Commission, 2012b).

Although the demand for more elementary occupations, especially in personal and household services and in care, is expected to remain strong, many of the traditional manual or routine jobs that can most easily be replaced by new technologies (such as craft and related trades workers, clerks, plant and machine operators) are likely to decline. Such changes indicate a continued risk of job polarisation in the future European job market, with increased demand at both the upper and lower ends of occupations, and decreases or stagnation in the middle.

On the supply side, EU Member States have seen educational upgrading as the best way of addressing current and anticipated needs in the labour market. However, some have also been investing strongly in lifelong learning (notably Denmark, Sweden, UK, Norway, Iceland)

Box 9: The Cedefop Pan-European forecasting model of skill demand and supply

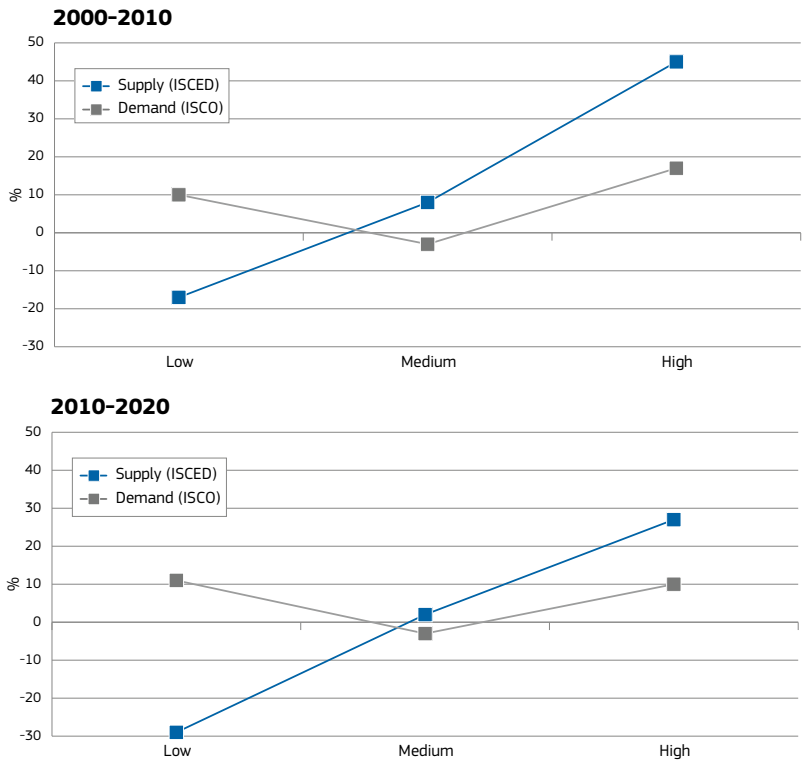
Regular and comparable skill supply and demand forecasts are produced and published by Cedefop on a bi-annual basis using harmonised data for 33 countries (EU-27 + Norway, Switzerland, Croatia, Turkey, the former Yugoslav Republic of Macedonia, and Iceland) (Cedefop, 2010c; 2012b). The model uses a modular approach in generating skill supply and demand estimates. On the basis of a long time-series of macro-economic data spanning back to the 1970s, an augmented version of an existing multi-sectoral macro-economic model is used to produce country-specific estimates of employment by 41 economic sectors. Within two separate modules, occupational and education qualification distributions within sectors are then exploited to break down the industrial level of employment into predictions of labour demand by 27 occupational groups and 3 broad levels of educational attainment (low, medium and high). The replacement demand by occupation and qualification level, the number of job openings due to the need to replace the workforce that will retire or leave the labour market, are both integral components of the model. Together, the level of expansion and replacement demand provides an estimate of the total number of job openings by skill level (as approximated by occupational groups and education qualifications).

The model also provides medium-term projections of overall labour and skill supply broken down by 5 year age bands, gender and 3 educational qualification levels, derived on the basis of a historical analysis of demographic and labour supply trends in European countries. In particular, an analysis of EU-LFS micro data is used to predict the probabilities of the labour force achieving different levels of educational attainment. Together these country-specific skill supply and demand forecasts provide estimations of trends that are anticipated to prevail in the next decade. They constitute a powerful tool of labour market intelligence and are offered as a publicly available good at a web-interface maintained by Cedefop, which can be assessed at the following address:

http://www.cedefop.europa.eu/EN/about-cedefop/projects/forecasting-skill-demand-and-supply/skills-forecasts.aspx

The project has received financial support from the Progress Programme managed by the European Commission, Directorate-General for Employment, Social Affairs and Equal Opportunities. Cedefop's skill supply and demand forecasts form one of the key building blocks of the EU Skills Panorama.

Chart 20: **Historical and anticipated change in demand and supply of labour of different skill types, EU-27, 2000-20**



Source: Cedefop country workbooks (2012).

Notes: Figures on supply represent the % change in supply between workers with different qualifications (Low: ISCED 0-2; Medium: ISCED 3-4; High: ISCED 5-6); Figures on demand show the % change in demand for workers of different occupational types (High-skilled: ISCO 1-3; Medium-skilled: ISCO 4-8; Low-skilled: ISCO 9).

in order to upgrade skills within their existing workforce. Assuming that these trends will continue, the Cedefop forecast model projects a clear rise in the proportion of people with medium- and high-level qualifications in the next decade as younger cohorts with higher qualifications replace older workers with lower qualifications.

The proportion of people with high-level qualifications is predicted to rise to more than a third of the workforce in the next decade, while people with medium-level qualifications will continue to account for about half of the workforce. The relatively high proportion of low-qualified individuals in Europe today – accounting for nearly a quarter of the working age population – will decline to about 16%, mainly as a result of the retirement of older, less qualified, cohorts. Also influencing these supply changes is the fact that a higher proportion of females are now obtaining higher education qualifications than men, which is expected to result in women increasing their share of employment within traditionally male-dominated jobs at the higher end of the skills distribution.

The forecasts also show that the share of workers possessing higher qualifications will increase among prime-aged workers, making them more highly qualified in 2020 than the same cohorts today. Higher levels of human capital among older age groups are likewise expected to increase their labour market participation rates, as the ability and desire to remain in employment tends to increase with higher skill levels.

Chart 20 uses the currently available data from the Cedefop model to illustrate the evolution of skill supply and demand in the EU-27 over the previous decade (2000-10) and next (2010-20). The potential for skill mismatch in Europe by 2020 appears to be substantial, as the well-documented labour market trends of past years – namely job polarisation on the demand side and upskilling on the supply side – are expected to continue unabated into the future. In the face of continuous demand for some elementary occupations, however, shortages of low-skilled workers may also unfold in the European economy by 2020. The predictions likewise suggest that the growth in the supply of high-skilled workers is expected to outpace the growth in demand, a trend that has become more pronounced since the economic crisis began[27].

Governments will thus need to consider how best to stimulate employers' skill demand and encourage innovation and the creation of high level jobs in order to absorb and fully utilise the human capital potential of Europe's increasingly talented workforce.

8. Policies to combat skill mismatch

When market failures result in structural labour market imbalances, appropriate policies are called for across relevant policy domains (education and training, employment and social security, migration, industrial and regional development) in order to prevent or mitigate the significant economic and social costs of skill mismatch. Investing in such policies at a time when fiscal consolidation and the economic slowdown are exerting strong pressures on public finances is nevertheless seen as a sound strategy, considering that improvements in the matching of skills can reduce structural levels of unemployment, promote the competitiveness of European enterprises, and prevent the waste of public resources invested in education and training systems. Forward-looking initial and continuing training, improvements in the efficiency of labour markets, the promotion of innovative and high performance workplaces, and labour mobility are all necessary ingredients for overcoming skill mismatch.

8.1. Enhancing the responsiveness of education and training to labour market needs

8.1.1. Education and training systems should cater to diversity

In the new world of work, increasing numbers of people are required to possess a range of skills that lie outside the narrow

[27] Although inferring the exact nature and magnitude of skill shortages or surpluses would require a comparison of the differences in the levels of demand and supply of individuals of different educational types, Chart 20 focuses on the underlying trends in the labour market. This is a reflection of the widely accepted view in the recent academic discourse that the value added of skill forecasting exercises lies in the identification of the underlying dynamics and changes within particular sectors, occupations and skill types, rather than in a direct comparison of the absolute numbers of employment demand and supply, which can be subject to measurement error.

occupational skill profiles of the past. Communication skills and a combination of problem-solving, analytical and linguistic abilities, along with the capacity to self-manage and work in teams, are just some examples of 'transversal' skills that have become increasingly valued in the labour market. Along with individuals' basic knowledge (numeracy, literacy) and attitudes ('soft skills'), these are seen to represent the type of key competences that are crucial to personal fulfilment and success in the knowledge economy and represent the foundation for 21st century skills (European Commission, 2007, 2012d).

Changing skill requirements highlight the need for more open, flexible, responsive and diverse education and training systems, focused on learning outcomes throughout the whole process. The evidence regarding the impact of different forms of academic orientation (general vs. VET) on skill mismatch does not yet allow for definitive conclusions to be drawn. It is clear that vocational streams contribute to the acquirement of occupation-specific skills, whereas general systems support the acquisition of generic skills. VET programmes with higher workplace content can also be more effective at getting the youngest age groups with medium-qualifications, who do not wish to or are unable to continue their studies, into work. Bringing workplace-based training into the education domain through apprenticeships can be particularly valuable (European Commission, 2012c), as workplace training provides skills that are difficult to replicate with traditional teaching methods[28].

In contrast to VET graduates, those graduating from a generally oriented programme are found to have a lower likelihood of finding a good match in their first job and of staying in that job. However, their education can provide the kinds of transferable skills that serve as stepping stones towards better matched and higher-skilled jobs in the long term. This underlines the necessity for education and training systems that avoid developing curricula that are overly specific and which are useful in only a limited range of occupations. The learning outcomes approach to curriculum design that is now being implemented across Europe is helping to reconcile the interests of those from the education and the labour market worlds, and identify pathways towards an accommodation of specific skills alongside more generic skills and key competences (European Commission, 2012d, Cedefop, forthcoming[d]).

Education and training policies have a particularly crucial role to play with respect to overcoming the skill mismatch problems of migrants and other vulnerable groups, who are more prone to unemployment, inactivity and mismatch relative to the native population. Two factors are particularly important here: the recognition of qualifications obtained abroad, and the role of domestic employers in providing migrants with greater training opportunities, including language training.

8.1.2. Who should bear the cost of further [continuing] training?

Striking the right balance in terms of sharing the cost of continuous education and training between institutions and individuals (who pays for what, when and where?) is a complex issue and a difficult one for policymakers to address. Both individuals and firms face disincentives with respect to investing in further education and training[29]. Companies are discouraged by the fear that they will not be able to benefit from the potential return from training due to turnover or poaching of employees by other competitors (who may be able to pay higher wages as they have not had to bear the costs of training) (Booth and Snower, 1996). Individuals may, likewise, under-invest due to a perceived threat of being fired and, thus, of losing any firm-specific capital, but also because of high perceived training costs, including foregone earnings and family or time constraints. Both parties of the employment relationship also tend to fail to recognise the (joint) benefits when deciding how much to invest in training (Redding, 1996)[30].

For older workers in particular, the incentive to upgrade skills is reduced because of higher opportunity costs, a shorter time period within which they can expect to recoup the benefits of their investment and lack of recognition of non-formal or informal learning. Workers on precarious employment contracts, migrants and those employed in the secondary sector are generally less involved in workplace learning, in stark contrast to high-skilled adults ('skills beget skills') (Cedefop, 2011c). Adult training therefore tends to reinforce existing educational inequalities, perpetuating the risk of a divided skills base of the workforce (Carneiro and Heckman, 2003; Desjardins and Rubenson, 2011). A key challenge for public policy therefore lies in better targeting the participation of low-qualified groups in in-company training and in other forms of adult learning.

The above constraints highlight the necessity for collective national training or apprenticeship schemes as a strategy for encouraging the provision of an efficient level of training in the labour market. Yet such policies have met with strong resistance in the past (e.g. the 1970 UK training levy scheme). In line with the influential theory of Gary Becker (1964), which drew a distinction between firm-specific and general training, employers have argued against the provision of transferable training on the grounds that workers can renege on their commitment once the firm has borne the cost. However, this line of thinking is at odds with the reality of firms providing a mix of both general and specific training (Lazear and Oyer, 2009). General training is sometimes in the interest of firms, as this can provide

[28] In particular, the use of up-to-date equipment as well as practical/soft skills such as customer relations, working in a team and complying with workplace requirements. Such schemes may also establish good relations between employer and employee, thereby improving a young employee's chances of being offered a matched job.

[29] As evidenced by the fact that nearly two thirds of the adult population in the EU did not participate in (formal or non-formal) learning in 2007 (Adult Education survey data). Similarly, a sizeable 38% of European companies (mostly smaller-sized firms and those in Southern European countries) did not provide any training at all in 2009. Cedefop's (2010d, p. 23) analysis of the results of the third Continuing Vocational Training Survey (CVTS) categorises EU Member States according to whether they are high , average or low performers in terms of CVT performance. The benchmarking exercise reveals that the countries which have high skill mismatch (e.g. EL, IT, PT, ES) also tend to perform poorly among the EU Member States in terms of the incidence of training enterprises, participation of employees in CVT courses, intensity of training (in relation to total hours of CVT courses attended by employees) and total costs of CVT courses as a share of the total labour costs of enterprises, a phenomenon closely related to the economic structure of these economies (e.g. higher concentration of small- and medium-sized enterprises). However, the association between CVT performance and skill mismatch is imperfect, as the low CVT performance group also contains Baltic and Central European countries with generally lower rates of skill mismatch than the Southern Mediterranean ones e.g. SI, LV, HU, BG, PL, LT, RO.

[30] Other important deterrents to the provision of training include: the preference of firms to provide only limited training if they operate in seasonal markets (such as tourism); and the fact that enterprises in decentralised or remote locations often face a shortage of suitable trainers as well as higher costs, which negatively impacts on the cost-effectiveness of courses.

them with an informational advantage over their competitors and serve a useful screening purpose (Autor, 2001). Given imperfectly competitive labour markets, employers may also benefit from general training (Acemoglu and Pischke, 1999).

Public policies and company training often serve contradictory goals, with governments wishing to aid the employability and mobility of workers in the labour market, while companies may be more inclined to narrowly invest in the careers of their most talented workers according to their specific production needs. Nevertheless, public policy has an important role to play with respect to reducing the risks of investment in training for companies. Instruments that promote investment in human capital within the firm include so-called 'payback clauses' (Cedefop, 2012c). By requesting that part of the cost of training is paid back to the employer in the case of employee turnover, such clauses may provide an incentive to firms to offer training (though the implications of such clauses for individual freedom and mobility are an issue of concern).

Given well-documented lags and/or errors in the recruitment and training practices of firms with respect to addressing skill needs (Freeman, 1971), public authorities can also assist enterprises in the assessment and elaboration of training plans, the accreditation of training providers and the evaluation of the outcomes of training. Furthermore, many countries lack the necessary public or joint public-private institutional arrangements, such as sector skills councils, which can act as mediators between the labour market and the education and training sector. The European Commission Communication *Re-thinking education* has strongly called for education and training partnerships between public and private institutions, not only concerning funding but also as an opportunity for mutual learning and joint policy action (European Commission, 2012d).

8.2. Promoting high performance workplaces

Analyses of patterns of skill mismatch within and between countries frequently reveal that a significant proportion of skill mismatch remains unexplained, even after taking account of different demographic and socioeconomic characteristics of individuals. This is mainly due to the limited availability of appropriate data sources which contain detailed information on individuals' job demands or task requirements within their occupations.

Recent research has started to focus on the important role of firms' human resource (HR) policies (e.g. recruitment, training, job design, compensation and competency development policies, etc.) in terms of fostering a better match between jobs and skills (Cedefop, 2012a). HR practices and the overall management strategy of firms can potentially account for the differences in skill mismatch observed between individuals working in similar jobs. Belfield (2010), for instance, has found that firm attributes are driving one quarter to one half of the overqualification wage penalty in UK firms.

As shown in section 5.5, differences in job tasks can be an important factor in fostering skill mismatches between individuals[31], but this can be mitigated by adjusting organisational practices in ways that optimise the use of the skills that are available. Organisations that use high performance workplace practices, in particular, often have skill induction programmes and skill development policies that are tailored to both their business strategy and the personal development needs of their workforce. For policymakers this implies that more attention should be paid to improving workplace and job design rather than just focusing on the perceived inadequacies of the education and training systems (Weststar, 2009).

8.3. Anticipation and identification of skill needs and supply

Identifying emerging skill needs is key to achieving a better balance between skill supply and demand. European and national forecasting exercises can help align education and training with labour market needs, but enterprises also need cost-effective tools to anticipate their own skill needs[32]. Employers may fail to recognise productivity-related deficiencies among staff because of poor management or inadequate HR policies. Additionally, the formal education system is often relied upon too much as a means of addressing skill deficiencies, and this can explain the persistently low levels of continuous vocational training offered by firms in several EU countries. As a result there is scope for policy interventions that seek to inform labour market actors about the potential sectoral and occupational mismatches that may develop in the future job market.

In this respect, the EU Skills Panorama offers unique access to data on anticipated short- and medium-term skill needs and mismatches across different occupations and sectors in Europe and raises awareness about the benefits of skill needs identification. It is then the task of education and training systems to increase the levels, quality and relevance of skills supply, responding to identified skill needs – a challenge that is the main focus of the European Commission Communication *Re-thinking education* (European Commission, 2012d).

8.4. Targeting labour market institutions and regulations

Differences between countries in terms of skill mismatch can result both from structural differences in demand and supply and from cyclical fluctuations. However, the evidence available often fails to identify the current unemployment rate as a decisive factor affecting cross-country differences in skill mismatch. However, when focusing on graduates that first enter the labour market during a recession, and on individuals who are in search of a new job following a redundancy or business closure, it is observed that they are more likely to be over-qualified due to fierce competition from other highly educated individuals (Verhaest and van der Velden, 2010; OECD, 2011). Likewise those who experience a prolonged period of unemployment and/or labour market inactivity also face a greater risk of skills obsolescence (Cedefop, forthcoming[f]).

Tackling skill mismatch and skills atrophy through the provision of efficient job placement services and ALMPs targeted at unemployed individuals can thus be seen as a priority strategy for policymakers. There is also a need for policies that reduce labour market frictions associated with imperfect information

[31] Desjardins and Rubenson (2011) also show that the possession of skills by workers does not guarantee a reward in the labour market unless workers engage in tasks within their job that require those skills.

[32] The significance of this is seen in the latest Continuing Vocational Training Survey (CVTS 2005) which shows that the most common reason given by enterprises for not providing training is that they see no need, with only a quarter of firms actually assessing their future manpower/skill needs (Cedefop, 2010d).

on behalf of employees and employers, including the provision of better labour market information. Young people in particular need access to information about likely future job needs, the related qualifications that will be required and the risks they face in particular occupations. In these respects, current systems of career guidance in European countries are seen as poor and, even when labour market intelligence exists, labour market actors are not trained to use it in the most appropriate manner (OECD, 2011).

Institutional factors and labour market rigidity may also contribute to skill mismatch, as discussed in section 5.4. Collective wage bargaining systems may be unable to take account of sectoral or regionally-based changes in demand, although they may be useful in mitigating shortages of low-skilled labour (as shown in Table 5). Some authors argue that more stringent labour regulations and segmented labour markets can increase skill mismatch by making it harder for individuals to obtain their best matched job (Di Pietro (2002), Brunello et al. (2007)) while others have failed to find a significant association between employment protection legislation and the incidence of over-qualification (Verhaest and van der Velden, 2010).

8.5. Reaping the benefits of innovation

Innovation and skills development should go hand-in-hand and recent evidence on the relation between innovation, work-based learning and work organisation practices suggests that skill shortages in firms may hinder the introduction of new products and processes (Cedefop, forthcoming[c]). In countries and firms where traditional Tayloristic production practices are most common, performance on the European Innovation Scoreboard tends to be lower than in cases where more learning-intensive forms of work organisation exist. Task complexity, in particular, a key characteristic of learning-intensive forms of work organisation, is found to have a strong relation to innovation performance.

When there are under-utilised skills in the labour force, increasing the pace of innovative activity in the economy is expected to provide the right kind of market incentives for mismatched workers to find suitable job opportunities that utilise their skills. On the other hand, if there is a lack of skills in the economy, a fast pace of innovation might, in the short term at least, increase the frequency of skill shortages, and rapidly expanding firms may find it difficult to maintain an adequate skill base. However, evidence from the UK and Australia has suggested that skill shortages do not operate as constraints on product strategy (UKCES, 2011; Healy et al., 2012). Rather they appear to be indicators of a more dynamic approach to skills resourcing, with fast-growing firms more likely to be pursuing 'high-end' skill- and innovation-intensive product strategies.

Policy needs to support and encourage employers with high-skill product market strategies applying new methods of production, although the success of these policies is dependent on investment in skill formation. Recent case studies of high-value industries operating in European regional labour markets show that successful clusters can be developed around high-value added activities and high-performance work practices[33]. This can be achieved through the coordinated introduction of measures aimed at supporting innovation through research and development activities, ensuring at the same time that the vocational education and training systems (both public and private) provide the possibilities for the acquisition of the necessary skills, which calls for a partnership approach (Cedefop, 2012d, European Commission, 2012d). Hence, supporting the promotion of innovation and the adoption of technologies which correspond to the available skills base can be a beneficial strategy for tackling skill mismatch.

9. Conclusion – Europe has no room for complacency

The path to sustainable and socially inclusive growth in Europe is dependent on the availability of a skilled and talented workforce. High levels of education and skills are needed to meet the long-term challenges of the economy and to facilitate the necessary labour market and work process adaptations required by rapid technical change and fierce global competition. With the share of older workers in the European job market continuing to increase, it is essential to increase the available supply of labour by activation policies and to tackle skills obsolescence via continued investment in high-quality initial and continuing education. The recent European Commission Communication *Re-thinking education* has provided guidance on reforms of the education and training systems to tackle the skills challenge.

However, as Europe struggles to overcome the biggest economic crisis in its recent history, it has become ever more imperative to acknowledge that converting skills into job-rich growth is only attainable if effective use is made of the available talents. Along with a substantial pool of idle workers finding it difficult to get a job, the skills of about a third of the European workforce are underutilised. At the same time, employers in Europe continually draw attention to skill gaps and shortages that constrain their productivity and competitiveness.

Skill mismatch affects economic productivity and growth, increases structural unemployment and generates significant economic and social costs. Skill mismatch takes the form of quantitative imbalances between aggregate labour demand and supply, thus resulting in shortages or surpluses in particular sectors or occupations in the economy (e.g. health and social care, hotels and restaurants), but it can also reflect an inadequate fit between individuals' skills and their jobs' requirements.

Though much of the early literature focused on education mismatch, recent evidence has highlighted that it can be weakly correlated with skill mismatch. Educational credentials cannot provide a full picture of the quality of individuals' human capital, in particular their skill gain and skill loss over their careers. Labour market persistence found in cases where there is real skill mismatch (i.e. workers mismatched in both their qualifications and skills) or genuine skill mismatch (i.e. mismatched employees who are simultaneously dissatisfied with their jobs) draws attention to the fact that employees can get trapped in non-challenging employment, leading to a continued under-use and obsolescence of their skills and competences.

[33] This conclusion is based on recent Cedefop research examining various case studies from European industries and regions, such as the textile sector in Flanders (BE), medical technologies in Baden-Württemberg (DE), wind power engineering in Jutland (DK) and hi-tech manufacturing in Brabant (NL) (Cedefop, 2012d).

Cedefop's most recent projections of skill needs and supply shows that as a result of the crisis the potential for skill mismatch, at least in the short- to medium-term, is considerable. The continued trend towards the upskilling of the European population raises significant concerns about the ability of European economies to use the available skills to create growth, as this requires improving the quality of jobs to match the available supply.

Exploiting the potential and talent of an increasingly higher-skilled workforce is inevitably linked to the creation and availability of high-skilled jobs, though important adjustment lags in labour demand often hinder the capacity of European economies to create high-skilled jobs. When no such jobs are available, those with higher qualifications may end up over-skilled. In times of high unemployment, they will tend to take up lower-skilled occupations, crowding out those with lower education and skills. Nonetheless, along with the important positive social benefits of having a highly educated population, employing workers with surplus skills has been found to sometimes entail significant (though not yet fully measured) positive spillover effects on the productivity of enterprises.

It is also argued that over-skilling will in the long run lead to innovation and growth, but organisational innovation and high-performance work practices are necessary for providing challenging employment to a higher-skilled workforce. When higher-educated workers are offered jobs that entail complex tasks, work autonomy and continuous learning, this will raise firm productivity, support innovation and provide job satisfaction even to those who are formally over-qualified. Given the significant variation in human resource practices observed across firms in the European economy, which is related to differences in production functions and adjustment costs faced in different labour and product markets, public policy has a key role to play in informing and in supporting the adoption of high-performance workplace practices by uncompetitive firms and in enabling firms to more rapidly overcome regulatory or other lags during the adjustment process.

Evidence indicates that under-qualified workers may be able to compensate for their labour market weakness through work experience and additional skills acquired on the job. This points to using work-based learning as a more widespread strategy in education and training to increase the match between young graduates' skills and workplace demand – not only in order to place the significant share of medium- and lower-skilled youth in matched jobs, but as an overall strategy to improve the responsiveness and relevance of labour supply to labour market needs.

Skill mismatch is an endemic feature of imperfectly competitive labour markets, yet public policies, in conjunction with the committed support of social partners, have a key role to play with respect to tackling long adjustment lags and failures in the market mechanism by:

- facilitating mobility in the labour market and strengthening active labour market policies and the role of public employment and guidance services in promoting efficient matching and qualification accessibility;
- providing early intervention in career guidance, assisting students with respect to having realistic labour market aspirations and making informed choices about learning pathways, skills development and careers;
- ensuring that education and training systems provide opportunities to develop high-quality transversal as well as vocational job-specific skills, which allow for easier adaptation to changing needs;
- stimulating employers' skill demand, spurring innovation and the creation of high-level jobs in order to absorb and fully utilise the human capital potential of Europe's increasingly talented workforce;
- promoting high-performance workplace practices and challenging job design and supporting firms that rely on high skill-high productivity product strategies;
- exploiting synergies between skills and high productivity firms by facilitating, in close cooperation with local authorities and social partners, the growth of industrial clusters (e.g. through publicly funded training agencies catering to the specific needs of the industrial cluster);
- emphasizing job quality as an instrument for the mitigation of labour shortages, particularly among low-skilled jobs and sectors;
- promoting diversity in education and training, by allowing for a variety of routes and fields for qualifications, by strengthening pathways between VET and general education systems and encouraging the institution of validation and recognition systems of informal and non-formal learning;
- providing efficient incentives to firms to increase the provision of work-based training and encouraging adult and lifelong learning, particularly targeted towards vulnerable and disadvantaged groups of the population;
- raising awareness of anticipated mismatches in different sectors and occupations in the European economy and focusing on skill mismatch in addition to qualification mismatch.

In modern economies, skills have become the key to labour market success (OECD, 2012), ensuring employability, higher wages and employment security. In the design of appropriate skill and employment policies it is important to bear in mind that when the skills of individuals are matched to the most appropriate job within the labour market, '*economic value is created of a magnitude that few other economic processes can*' (Lazear and Oyer, 2009).

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Annex 1

Chart A1(a): Shortages of staff for skilled jobs by broad economic sector, EU-27, 2009

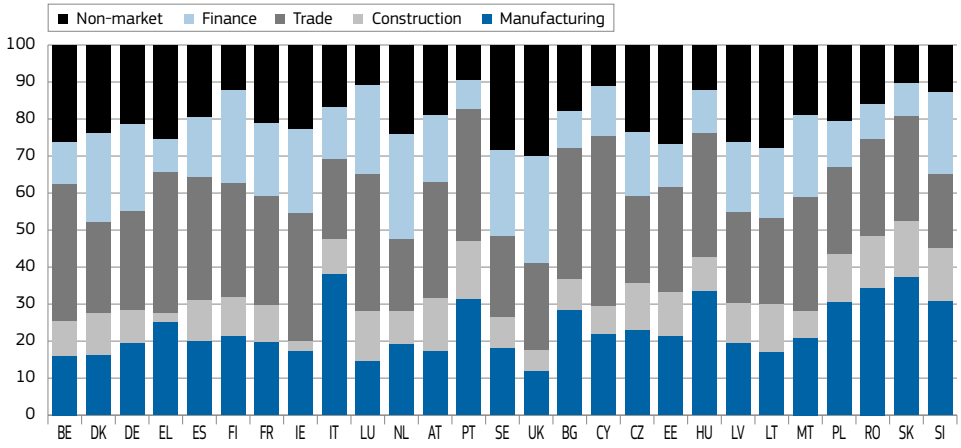
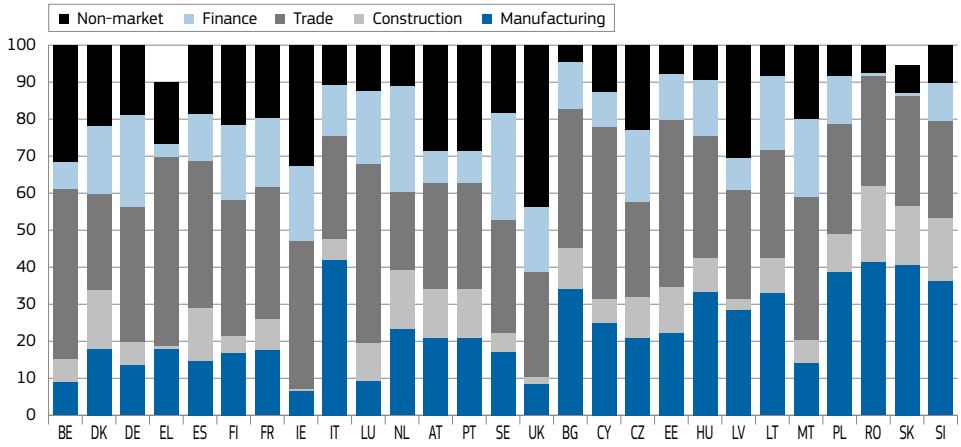


Chart A1(b): Shortages of staff for low-skilled/unskilled jobs by broad economic sector, EU-27, 2009



Source: ECS (2009).

Notes: The broad sector 'Trade' includes retail and wholesale trade, hotels and restaurants and transportation; 'Finance' includes financial and real estate services; 'Non-market services' include public administration, education and health care.

Annex 2

Table A.2: Average incidence of vertical mismatch among 25-64 year olds, % of employees, 2001-11, EU-27

	Ordinary		Severe	
EU MS	Under-qualified	Over-qualified	Under-qualified	Over-qualified
AT	17%	18%	3%	8%
BE	29%	14%	14%	11%
BG	16%	9%	4%	9%
CY	22%	20%	15%	16%
CZ	10%	8%	3%	7%
DE	17%	18%	5%	11%
DK	18%	15%	7%	10%
EE	21%	16%	12%	10%
ES	26%	22%	13%	9%
FI	28%	5%	22%	4%
FR	32%	12%	16%	11%
EL	17%	26%	8%	15%
HU	14%	11%	4%	6%
IE	30%	21%	16%	11%
IT	20%	21%	4%	8%
LT	18%	23%	4%	5%
LU	14%	18%	5%	10%
LV	20%	17%	8%	8%
MT	20%	20%	6%	11%
NL	26%	17%	11%	11%
PL	12%	9%	4%	6%
PT	12%	21%	5%	10%
RO	10%	9%	2%	4%
SE	22%	13%	9%	9%
SI	13%	8%	3%	6%
SK	10%	7%	4%	7%
UK	28%	14%	15%	8%
EU	21%	15%	8%	9%

Source: Cedefop, based on EU-LFS data (2001-11).

Notes: Over-qualified (under-qualified) workers are those whose highest level of qualification attained is higher than (is lower than) the qualification requirement of their occupation. Individuals are classified as severely mismatched if their qualification level is more than one step away from the required qualification in their job on the five-point ISCED scale. The modal qualification in each occupational group at the two-digit level is used to measure qualification requirements.

Annex 3

Chart A3(a): Distribution of over-qualification by underlying type of mismatch, EU-25, 2001-09

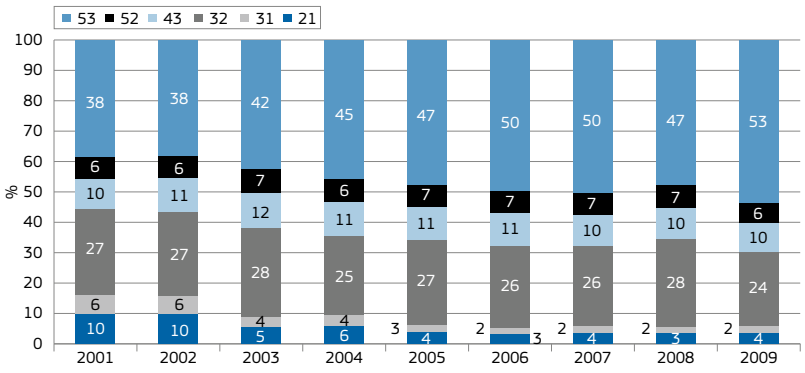
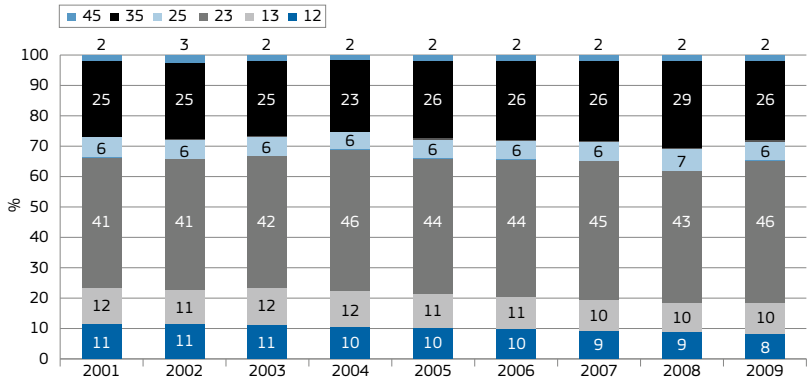


Chart A3(b): Distribution of under-qualification by underlying type of mismatch, EU-25, 2001-09



Source: Cedefop, based on EU-LFS data (data for MT and DE not available).

Notes: The incidence of vertical mismatch is decomposed in each year according to the underlying type of the mismatch as follows: [Education level of individual (ISCED level), Modal educational requirement of occupation] e.g. 53 denotes over-qualification caused by individuals with an education level ISCED 5 or above (higher education graduates) who are employed in jobs requiring upper secondary graduates (ISCED 3). The figures within the bars denote the % contribution of each category to the total annual level of mismatch e.g. 53% of the total level of EU over-qualification in 2009 can be attributed to the type of mismatch '53'. Appropriate weights used (COEFF).

Annex 4

In the empirical estimations shown in Table 8, Cronbach's alpha measure is used to generate indices of a large number of similar variables that are contained within the EWCS (2010) dataset. The various indices are defined as follows: *Bad working conditions - exposure*: whether the individual is exposed at work to vibrations, loud noise, high and low temperatures, breathing in fumes and vapours such as solvents, handling or being in direct contact with chemical products and/or infectious material, tobacco smoke from other people. *Bad working conditions – ergonomics*: whether the main job involves tiring or painful positions, carrying or moving heavy loads, standing, repetitive hand or arm movements, working at very high speed and working to tight deadlines. *Bad hours:* How many times a month do you work at night, in the evening for at least two hours from 6-10pm, on Sundays, on Saturdays, shifts and more than 10 hours a day. *Inflexible hours:* Do you work the same number of hours per day, the same number of days per week, the same number of hours per week, fixed starting and finishing times. *Job latitude*: Are you able to choose your order of tasks, your methods of work, your speed or rate of work.

Annex 5

Table A5: Incidence of vertical mismatch by occupational group (1 and 2-digit), 2009, EU-25

Occupational group	Over-qualification	Under-qualification	Educational requirement
	(1)	(2)	(3)
LEGISLATORS, SENIOR OFFICIALS AND MANAGERS	**3%**	**38%**	**5 (1-5)**
Legislator and senior officials	5.4%	32.8%	5 (3,5)
Corporate managers	0%	39.5%	5
Managers of small enterprises	22.9%	27.1%	3 (1,3,5)
PROFESSIONALS	**0%**	**13%**	**5**
Physical, mathematical and engineering science professionals	0%	16.5%	5
Life science and health professionals	0%	12.5%	5
Teaching professionals	0%	6.9%	5
Other professionals	0%	18.8%	5
TECHNICIANS AND ASSOCIATE PROFESSIONALS	**24%**	**18%**	**5 (3-5)**
Physical and engineering science associate professionals	26.9%	15.2%	3 (3-5)
Life science and health associate professionals	13.7%	16.9%	5 (3-5)
Teaching associate professionals	17.3%	18.9%	5 (3,5)
Other associate professionals	27.3%	18.8%	3 (3,5)
CLERKS	**22%**	**22%**	**3 (3-5)**
Office clerks	21.5%	21.8%	3 (3,5)
Customer services clerks	22.3%	22.2%	3 (3,5)
SERVICE WORKERS AND SHOP AND MARKET SALES WORKERS	**19%**	**24%**	**3 (1-5)**
Personal and protective services workers	16.2%	27.8%	3 (1,3,5)
Models, salespersons and demonstrators	24.6%	15.6%	3 (2,3)
SKILLED AGRICULTURAL AND FISHERY WORKERS	**15%**	**33%**	**3 (1-3)**
Skilled agricultural and fishery workers	14.7%	32.9%	3 (1-3)
CRAFT AND RELATED TRADES WORKERS	**17%**	**17%**	**3 (1-4)**
Extraction and building trades workers	15.3%	21.2%	3 (1-4)
Metal, machinery and related trades workers	18.9%	13%	3 (1-4)
Precision, handicraft, craft printing and related trades workers	22%	13%	3 (1-3)
Other craft and related trades workers	13.3%	15%	3 (1-3)
PLANT AND MACHINE OPERATORS AND ASSEMBLERS	**15%**	**22%**	**3 (1-3)**
Stationary plant and related operators	19.2%	19%	3 (1-3)
Machine operators and assemblers	16%	22.4%	3 (1-3)
Drivers and mobile plant operators	14.3%	21.7%	3 (1-3)
ELEMENTARY OCCUPATIONS	**23%**	**27%**	**2 (1-3)**
Sales and services elementary occupations	24.6%	26.9%	2 (1-3)
Agricultural, fishery and related labourers	31.2%	17.5%	2 (1-3)
Labourers in mining, construction, manufacturing and transport	17%	29.6%	3 (1-3)

Source: Cedefop, based on EU-LFS data (data for MT and DE not available).

Notes: The EU-wide educational requirement (column 3) refers to the most frequently observed ISCED value within the range of modal qualifications for each occupational group observed across the EU-25 countries (range shown in parenthesis). Appropriate weights used (COEFF).

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Statistical annex

1. Macro economic indicators

Macro economic indicators: **Annual percentage growth**

European Union (27 countries)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	2.1	1.3	1.5	2.5	2.1	3.3	3.2	0.3	-4.3	2.0	1.5
Total employment	0.9	0.4	0.4	0.6	1.0	1.6	1.8	1.0	-1.8	-0.5	0.2
Labour productivity	1.2	0.9	1.1	1.8	1.1	1.6	1.4	-0.6	-2.6	2.5	1.3
Annual average hours worked	-0.6	-0.8	-0.5	0.2	-0.1	-0.4	-0.1	-0.1	-1.3	0.3	-0.1
Productivity per hour worked	1.9	2.2	1.6	1.7	1.1	2.1	1.4	-0.5	-1.3	2.3	1.4
Harmonized CPI	3.2	2.5	2.1	2.3	2.3	2.3	2.4	3.7	1.0	2.1	3.1
Price deflator GDP	2.0	2.3	0.2	2.4	2.3	2.3	2.7	0.2	-1.6	2.3	1.5
Nominal compensation per employee	3.3	2.9	1.0	2.6	2.6	2.7	3.3	0.6	-1.3	3.1	2.0
Real compensation per employee (GDP deflator)	1.3	0.6	0.8	0.3	0.3	0.4	0.5	0.4	0.2	0.8	0.5
Real compensation per employee (private consumption deflator)	1.5	1.4	1.2	0.3	0.2	0.3	0.7	0.1	1.4	-0.1	-0.7
Nominal unit labour costs	2.1	2.0	-0.1	0.8	1.5	1.1	1.8	1.3	1.3	0.6	0.8
Real unit labour costs	0.1	-0.4	-0.3	-1.5	-0.8	-1.2	-0.9	1.0	2.9	-1.6	-0.6

European Union (15 countries)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	2.1	1.2	1.3	2.4	1.9	3.1	3.0	0.0	-4.4	2.0	1.4
Total employment	1.3	0.7	0.5	0.8	1.0	1.5	1.6	0.7	-1.8	-0.4	0.2
Labour productivity	0.7	0.5	0.8	1.6	0.9	1.6	1.4	-0.7	-2.6	2.3	1.2
Annual average hours worked	-0.5	-0.9	-0.4	0.2	-0.2	-0.5	-0.1	-0.2	-1.4	0.3	0.0
Productivity per hour worked	1.3	1.4	1.2	1.4	1.0	2.2	1.5	-0.5	-1.2	2.1	1.2
Harmonized CPI	2.2	2.1	2.0	2.0	2.1	2.2	2.2	3.3	0.7	1.9	3.0
Price deflator GDP	1.6	2.3	0.5	2.3	1.8	2.1	2.2	-0.5	-1.0	2.0	1.4
Nominal compensation per employee	2.5	2.5	1.0	2.8	2.1	2.8	2.9	-0.1	-0.6	2.8	1.9
Real compensation per employee (GDP deflator)	0.8	0.3	0.5	0.5	0.3	0.7	0.7	0.4	0.3	0.8	0.5
Real compensation per employee (private consumption deflator)	1.0	1.1	0.9	0.5	0.2	0.5	0.8	0.1	1.5	-0.1	-0.8
Nominal unit labour costs	1.8	2.0	0.1	1.2	1.1	1.2	1.5	0.7	2.1	0.5	0.9
Real unit labour costs	0.1	-0.3	-0.3	-1.0	-0.6	-0.9	-0.7	1.1	3.0	-1.5	-0.5

Euro area (17 countries)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	2.0	0.9	0.7	2.2	1.7	3.3	3.0	0.4	-4.4	2.0	1.5
Total employment	1.4	0.7	0.5	0.8	1.0	1.6	1.8	0.8	-1.8	-0.6	0.1
Labour productivity	0.5	0.2	0.3	1.4	0.7	1.5	1.2	-0.4	-2.6	2.4	1.3
Annual average hours worked	-0.6	-0.8	-0.3	0.2	-0.3	-0.6	-0.1	0.0	-1.7	0.5	0.1
Productivity per hour worked	1.2	1.0	0.6	1.2	0.9	2.2	1.3	-0.4	-0.9	2.0	1.2
Harmonized CPI	2.4	2.3	2.1	2.2	2.2	2.2	2.1	3.3	0.3	1.6	2.7
Price deflator GDP	2.4	2.5	2.2	1.9	1.9	1.8	2.4	2.0	0.9	0.8	1.2
Nominal compensation per employee	2.6	2.6	2.4	2.2	1.9	2.3	2.6	3.3	1.4	1.6	2.1
Real compensation per employee (GDP deflator)	0.2	0.0	0.1	0.2	0.0	0.4	0.2	1.3	0.5	0.9	0.8
Real compensation per employee (private consumption deflator)	0.2	0.7	0.2	0.1	-0.1	0.1	0.3	0.6	1.8	-0.1	-0.4
Nominal unit labour costs	2.1	2.3	2.1	0.8	1.2	0.7	1.4	3.7	4.1	-0.8	0.8
Real unit labour costs	-0.3	-0.2	-0.1	-1.1	-0.7	-1.1	-1.0	1.7	3.2	-1.5	-0.4

United States	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	1.1	1.8	2.5	3.5	3.1	2.7	1.9	-0.3	-3.5	3.0	1.7
Total employment	0.0	-0.3	0.9	1.1	1.7	1.9	1.1	-0.4	-3.7	-0.6	0.6
Labour productivity	1.0	2.1	1.6	2.4	1.3	0.8	0.8	0.1	0.2	3.6	1.2
Annual average hours worked	-1.3	-1.0	-1.4	0.1	-0.2	0.0	-0.4	-0.6	-1.9	0.5	:
Productivity per hour worked	2.3	3.2	3.1	2.3	1.5	0.8	1.2	0.7	2.1	3.1	:
Harmonized CPI	2.8	1.6	2.3	2.7	3.4	3.2	2.8	3.8	-0.4	1.6	3.2
Price deflator GDP	2.3	1.6	2.1	2.8	3.3	3.2	2.9	2.2	1.1	1.1	2.1
Nominal compensation per employee	3.0	3.2	4.9	3.9	3.6	3.9	3.9	3.3	2.1	2.7	3.2
Real compensation per employee (GDP deflator)	0.7	1.5	2.7	1.0	0.3	0.7	1.0	1.0	1.0	1.5	1.0
Real compensation per employee (private consumption deflator)	1.1	1.8	2.8	1.3	0.7	1.2	1.2	0.0	1.8	0.9	0.7
Nominal unit labour costs	2.1	0.3	2.1	1.4	2.3	3.0	2.9	2.9	0.5	-0.9	2.0
Real unit labour costs	-0.2	-1.3	0.0	-1.4	-1.0	-0.2	0.0	0.7	-0.6	-2.1	-0.1

Japan	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	0.4	0.3	1.7	2.4	1.3	1.7	2.2	-1.0	-5.5	4.4	-0.7
Total employment	-0.8	-1.6	-0.3	0.2	0.4	0.4	0.4	-0.3	-1.5	-0.4	-0.2
Labour productivity	1.1	1.9	2.0	2.1	0.9	1.2	1.8	-0.7	-4.0	5.5	-0.5
Annual average hours worked	-0.7	-0.6	0.0	-0.7	-0.6	0.5	0.0	-0.7	-3.3	1.1	:
Productivity per hour worked	1.8	2.5	2.0	2.8	1.6	0.7	1.8	0.1	-0.9	3.7	:
Harmonized CPI	-0.7	-0.9	-0.3	0.0	-0.3	0.3	0.0	1.4	-1.4	-0.7	-0.3
Price deflator GDP	-1.2	-1.6	-1.7	-1.4	-1.3	-1.1	-0.9	-1.3	-0.5	-2.1	-2.1
Nominal compensation per employee	-0.5	-1.9	-1.8	-1.4	-0.4	-1.0	-1.0	0.2	-3.8	0.2	1.0
Real compensation per employee (GDP deflator)	0.7	-0.3	-0.1	0.0	0.9	0.2	-0.1	1.5	-3.3	2.4	3.1
Real compensation per employee (private consumption deflator)	0.5	-0.4	-0.8	-0.6	0.3	-0.6	-0.3	0.0	-1.3	1.9	2.1
Nominal unit labour costs	-1.6	-3.7	-3.7	-3.4	-1.3	-2.2	-2.7	0.9	0.4	-4.4	1.6
Real unit labour costs	-0.4	-2.2	-2.1	-2.1	0.0	-1.1	-1.8	2.2	0.9	-2.4	3.7

Belgium	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	0.8	1.4	0.8	3.3	1.8	2.7	2.9	1.0	-2.8	2.2	1.9
Total employment	1.4	-0.1	-0.1	1.1	1.4	1.1	1.6	1.8	-0.2	0.8	1.4
Labour productivity	-0.5	1.5	0.9	2.2	0.3	1.6	1.3	-0.8	-2.6	1.4	0.5
Annual average hours worked	2.1	0.2	-0.2	-1.8	1.0	0.1	-0.4	0.4	-1.3	0.4	0.5
Productivity per hour worked	-2.6	1.3	1.1	4.0	-0.7	1.4	1.7	-1.3	-1.3	1.0	0.0
Harmonized CPI	2.4	1.6	1.5	1.9	2.5	2.3	1.8	4.5	0.0	2.3	3.5
Price deflator GDP	2.1	2.0	2.0	2.1	2.4	2.3	2.3	2.2	1.2	1.8	1.9
Nominal compensation per employee	3.7	3.8	2.0	1.5	1.7	3.6	3.4	3.5	1.1	1.4	3.2
Real compensation per employee (GDP deflator)	1.6	1.8	0.0	-0.6	-0.6	1.2	1.0	1.4	-0.1	-0.4	1.3
Real compensation per employee (private consumption deflator)	1.8	2.6	0.5	-0.7	-0.9	0.5	0.5	0.3	2.0	-0.4	-0.1
Nominal unit labour costs	4.2	2.3	1.0	-0.6	1.4	2.0	2.1	4.4	3.8	0.0	2.5
Real unit labour costs	2.2	0.3	-0.9	-2.7	-0.9	-0.3	-0.2	2.2	2.6	-1.7	0.6

Bulgaria	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	4.2	4.7	5.5	6.7	6.4	6.5	6.4	6.2	-5.5	0.4	1.7
Total employment	-0.8	0.2	3.0	2.6	2.7	3.3	3.2	2.6	-2.6	-4.7	-4.2
Labour productivity	4.9	4.4	2.5	4.1	3.6	3.1	3.2	3.5	-2.9	5.3	6.1
Annual average hours worked	0.7	0.0	-0.7	1.4	-0.3	-0.3	0.0	0.1	-0.1	-0.1	0.0
Productivity per hour worked	4.2	4.4	3.1	2.6	3.9	3.4	3.1	3.4	-2.9	5.4	6.2
Harmonized CPI	7.4	5.8	2.3	6.1	6.0	7.4	7.6	12.0	2.5	3.0	3.4
Price deflator GDP	6.2	4.7	2.3	4.2	7.4	6.9	9.2	8.4	4.3	2.8	5.0
Nominal compensation per employee	13.4	6.0	4.2	6.2	9.3	6.3	12.7	16.3	9.4	13.0	6.1
Real compensation per employee (GDP deflator)	6.8	1.2	1.8	1.9	1.8	-0.6	3.2	7.3	4.9	9.9	1.0
Real compensation per employee (private consumption deflator)	7.5	1.4	3.4	2.7	2.3	4.0	3.4	8.6	7.8	10.3	2.2
Nominal unit labour costs	8.1	1.5	1.6	2.0	5.6	3.1	9.3	12.5	12.7	5.6	1.1
Real unit labour costs	1.8	-3.0	-0.6	-2.1	-1.7	-3.5	0.1	3.7	8.1	2.7	-3.7

Czech Republic	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	3.1	2.1	3.8	4.7	6.8	7.0	5.7	3.1	-4.7	2.7	1.7
Total employment	-0.3	0.6	-0.8	-0.3	2.1	1.3	2.1	2.3	-1.2	-1.7	0.3
Labour productivity	3.4	1.5	4.6	5.1	4.6	5.6	3.5	0.8	-3.5	4.5	1.4
Annual average hours worked	-4.1	-0.1	-0.6	0.7	0.0	-1.0	-0.8	0.4	-2.0	1.7	-1.1
Productivity per hour worked	7.8	1.6	5.2	4.4	4.6	6.7	4.4	0.4	-1.6	2.7	2.6
Harmonized CPI	4.5	1.4	-0.1	2.6	1.6	2.1	3.0	6.3	0.6	1.2	2.1
Price deflator GDP	4.6	2.7	0.9	4.0	-0.3	0.5	3.3	1.9	1.9	-1.7	-0.7
Nominal compensation per employee	8.4	7.8	7.9	8.2	3.8	6.0	6.3	4.2	-1.2	3.7	1.0
Real compensation per employee (GDP deflator)	3.6	5.0	6.9	4.0	4.1	5.5	2.8	2.2	-3.1	5.6	1.8
Real compensation per employee (private consumption deflator)	4.5	6.4	8.1	4.4	2.9	4.5	3.2	-0.6	-1.4	3.3	-0.8
Nominal unit labour costs	4.8	6.2	3.1	2.9	-0.7	0.4	2.6	3.4	2.4	-0.7	0.2
Real unit labour costs	0.2	3.5	2.2	-1.0	-0.4	-0.1	-0.7	1.5	0.5	1.0	0.9

Denmark	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	0.7	0.5	0.4	2.3	2.4	3.4	1.6	-0.8	-5.8	1.3	0.8
Total employment	0.9	0.0	-1.1	-0.6	1.0	2.1	2.8	1.7	-2.4	-2.3	-0.4
Labour productivity	-0.2	0.4	1.5	2.9	1.4	1.3	-1.1	-2.4	-3.5	3.6	1.2
Annual average hours worked	0.3	-0.5	-0.2	0.2	0.0	0.4	-1.0	0.0	-0.7	0.0	0.3
Productivity per hour worked	-0.5	0.9	1.7	2.7	1.4	0.9	-0.2	-2.5	-2.0	3.6	1.2
Harmonized CPI	2.3	2.4	2.0	0.9	1.7	1.9	1.7	3.6	1.1	2.2	2.7
Price deflator GDP	2.5	2.3	1.6	2.3	2.9	2.1	2.3	4.2	1.0	3.9	0.8
Nominal compensation per employee	4.2	3.8	3.7	3.3	3.6	3.5	3.6	3.5	2.8	2.5	1.9
Real compensation per employee (GDP deflator)	1.7	1.4	2.0	1.0	0.7	1.4	1.3	-0.7	1.8	-1.3	1.1
Real compensation per employee (private consumption deflator)	1.8	2.0	2.4	2.1	2.1	1.5	2.3	0.8	1.5	0.0	-0.5
Nominal unit labour costs	4.4	3.3	2.2	0.4	2.2	2.2	4.8	6.1	5.6	-0.9	0.5
Real unit labour costs	1.9	1.0	0.6	-1.9	-0.7	0.1	2.4	1.8	4.5	-4.6	-0.4

Germany	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	1.5	0.0	-0.4	1.2	0.7	3.7	3.3	1.1	-5.1	3.7	3.0
Total employment	0.3	-0.6	-0.9	0.3	-0.1	0.6	1.7	1.2	0.0	0.5	1.3
Labour productivity	1.2	0.6	0.5	0.9	0.8	3.1	1.5	-0.1	-5.2	3.2	1.6
Annual average hours worked	-1.2	-0.8	-0.4	0.0	-0.4	-0.5	-0.1	0.0	-2.7	1.8	0.3
Productivity per hour worked	2.5	1.4	0.9	0.8	1.2	3.6	1.7	-0.1	-2.5	1.4	1.3
Harmonized CPI	1.9	1.4	1.0	1.8	1.9	1.8	2.3	2.8	0.2	1.2	2.5
Price deflator GDP	1.1	1.4	1.1	1.1	0.6	0.3	1.6	0.8	1.2	0.6	0.8
Nominal compensation per employee	1.7	1.3	1.4	0.3	-0.1	1.0	0.8	2.1	0.0	2.0	3.0
Real compensation per employee (GDP deflator)	0.5	-0.1	0.3	-0.7	-0.7	0.7	-0.8	1.3	-1.1	1.4	2.2
Real compensation per employee (private consumption deflator)	-0.2	0.1	-0.2	-0.8	-1.7	0.0	-0.7	0.4	0.0	0.1	0.9
Nominal unit labour costs	0.4	0.7	0.9	-0.5	-0.9	-2.0	-0.8	2.3	5.5	-1.1	1.4
Real unit labour costs	-0.7	-0.7	-0.2	-1.6	-1.5	-2.3	-2.3	1.5	4.2	-1.7	0.6

Estonia	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	6.3	6.6	7.8	6.3	8.9	10.1	7.5	-3.7	-14.3	2.3	7.6
Total employment	0.8	1.4	1.4	0.0	2.0	5.4	0.8	0.2	-10.0	-4.8	7.0
Labour productivity	5.4	5.1	6.3	6.4	6.7	4.5	6.6	-3.8	-4.7	7.4	0.6
Annual average hours worked	-0.4	0.2	0.2	0.6	0.7	-0.5	-0.2	-1.5	-6.9	2.6	2.3
Productivity per hour worked	5.9	5.0	6.1	5.8	6.0	5.0	6.8	-2.4	2.3	4.7	-1.7
Harmonized CPI	5.6	3.6	1.4	3.0	4.1	4.4	6.7	10.6	0.2	2.7	5.1
Price deflator GDP	6.5	4.7	4.0	4.5	6.1	8.8	11.6	5.3	-1.0	1.1	3.7
Nominal compensation per employee	9.6	9.1	11.6	12.3	10.8	14.0	25.0	9.7	-3.4	1.4	4.2
Real compensation per employee (GDP deflator)	3.0	4.2	7.3	7.5	4.5	4.8	12.0	4.2	-2.4	0.3	0.5
Real compensation per employee (private consumption deflator)	3.1	5.5	9.9	8.7	6.6	8.4	15.8	1.1	-2.5	-0.8	-0.5
Nominal unit labour costs	4.0	3.8	5.0	5.5	3.8	9.1	17.2	14.1	1.4	-5.6	0.8
Real unit labour costs	-2.3	-0.8	0.9	1.0	-2.1	0.3	5.0	8.3	2.4	-6.6	-2.8

Ireland	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	4.8	5.9	4.2	4.5	5.3	5.3	5.2	-3.0	-7.0	-0.4	0.7
Total employment	3.1	1.6	1.9	3.4	4.9	4.4	3.6	-1.1	-8.1	-4.2	-2.1
Labour productivity	1.6	4.2	2.3	1.1	0.4	0.9	1.5	-1.9	1.2	4.0	:
Annual average hours worked	-0.5	-1.0	-0.9	-0.6	0.4	-0.2	-0.7	-1.1	-2.0	-0.2	-0.1
Productivity per hour worked	2.1	5.3	3.2	1.7	0.0	1.1	2.2	-0.8	3.3	4.2	2.9
Harmonized CPI	4.0	4.7	4.0	2.3	2.2	2.7	2.9	3.1	-1.7	-1.6	1.2
Price deflator GDP	6.5	5.0	3.1	2.2	3.1	3.6	1.3	-2.3	-4.1	-2.4	-0.4
Nominal compensation per employee	7.5	5.0	5.9	5.2	6.1	5.0	5.8	5.4	-1.2	-3.2	-0.1
Real compensation per employee (GDP deflator)	1.0	0.0	2.8	2.9	2.9	1.4	4.5	8.0	3.0	-0.8	0.3
Real compensation per employee (private consumption deflator)	3.0	-0.4	1.8	3.3	4.2	2.5	2.5	2.4	3.1	-1.1	-1.1
Nominal unit labour costs	5.8	0.8	3.6	4.0	5.6	4.0	4.3	7.5	-2.4	-6.9	:
Real unit labour costs	-0.6	-4.0	0.5	1.8	2.5	0.5	2.9	10.1	1.7	-4.6	:

Greece	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	4.2	3.4	5.9	4.4	2.3	5.5	3.0	-0.2	-3.3	-3.5	-6.9
Total employment	0.1	2.3	1.2	2.4	3.0	1.8	1.6	0.8	-0.2	-1.9	-6.7
Labour productivity	4.1	1.2	4.7	1.9	-0.7	3.6	1.4	-0.9	-3.0	-1.7	-0.2
Annual average hours worked	0.0	-0.6	-0.3	-1.0	0.6	-1.4	-1.4	0.6	-2.7	1.1	0.7
Productivity per hour worked	4.0	1.7	5.0	2.9	-1.3	5.1	2.8	-1.5	-0.3	-2.7	-0.9
Harmonized CPI	3.7	3.9	3.4	3.0	3.5	3.3	3.0	4.2	1.3	4.7	3.1
Price deflator GDP	3.1	3.4	3.9	2.9	1.9	2.5	3.5	4.7	2.8	1.7	1.6
Nominal compensation per employee	3.7	11.4	6.3	4.2	3.7	1.4	5.0	6.1	4.0	-3.3	-7.4
Real compensation per employee (GDP deflator)	0.6	7.8	2.3	1.2	1.7	-1.1	1.4	1.3	1.1	-5.0	-8.9
Real compensation per employee (private consumption deflator)	1.0	8.6	2.8	1.2	4.7	-2.0	1.6	1.7	3.2	-7.5	-10.3
Nominal unit labour costs	-0.3	10.2	1.5	2.2	4.4	-2.1	3.6	7.1	7.2	-1.7	-3.0
Real unit labour costs	-3.4	6.5	-2.3	-0.7	2.5	-4.6	0.0	2.2	4.3	-3.4	-4.5

Spain	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	3.7	2.7	3.1	3.3	3.6	4.1	3.5	0.9	-3.7	-0.1	0.7
Total employment	3.2	2.5	3.2	3.6	4.1	4.0	3.0	-0.2	-6.7	-2.6	-2.0
Labour productivity	0.4	0.2	-0.1	-0.4	-0.5	0.1	0.4	1.1	3.2	2.6	2.8
Annual average hours worked	0.3	-0.1	-0.8	-0.9	-1.1	-0.8	-0.9	0.3	0.4	0.3	1.0
Productivity per hour worked	0.1	0.4	0.7	0.5	0.6	0.9	1.3	0.8	2.7	2.3	1.7
Harmonized CPI	2.8	3.6	3.1	3.1	3.4	3.6	2.8	4.1	-0.2	2.0	3.1
Price deflator GDP	4.2	4.4	4.2	4.0	4.3	4.1	3.3	2.4	0.1	0.4	1.4
Nominal compensation per employee	3.6	3.4	2.6	2.1	2.8	3.2	4.6	5.9	4.5	-0.1	0.8
Real compensation per employee (GDP deflator)	-0.6	-1.0	-1.5	-1.9	-1.5	-0.9	1.3	3.4	4.4	-0.5	-0.6
Real compensation per employee (private consumption deflator)	0.2	0.5	-0.5	-1.5	-0.7	-0.4	1.4	2.3	5.7	-2.4	-2.3
Nominal unit labour costs	3.2	3.1	2.7	2.5	3.3	3.1	4.1	4.8	1.3	-2.6	-1.9
Real unit labour costs	-1.0	-1.2	-1.4	-1.5	-1.0	-1.0	0.8	2.4	1.2	-3.0	-3.2

France	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	1.8	0.9	0.9	2.5	1.8	2.5	2.3	-0.1	-3.1	1.7	1.7
Total employment	1.5	0.5	0.1	0.1	0.7	1.1	1.4	0.5	-1.3	-0.1	0.5
Labour productivity	0.3	0.4	0.8	2.4	1.2	1.4	0.9	-0.6	-1.9	1.7	1.2
Annual average hours worked	-0.6	-2.5	-0.2	1.9	-0.4	-1.5	0.5	1.1	-1.4	-0.4	0.1
Productivity per hour worked	0.9	2.9	1.0	0.5	1.5	2.9	0.3	-1.7	-0.2	1.7	0.9
Harmonized CPI	1.8	1.9	2.2	2.3	1.9	1.9	1.6	3.2	0.1	1.7	2.3
Price deflator GDP	2.0	2.2	2.0	1.7	1.9	2.1	2.6	2.5	0.7	1.1	1.3
Nominal compensation per employee	2.7	3.5	2.8	3.5	3.0	3.2	2.5	2.6	1.6	2.2	2.8
Real compensation per employee (GDP deflator)	0.7	1.2	0.7	1.8	1.1	1.0	-0.1	0.1	0.9	1.1	1.5
Real compensation per employee (private consumption deflator)	0.6	2.4	0.8	1.3	1.2	1.1	0.4	-0.3	2.3	1.1	0.7
Nominal unit labour costs	2.4	3.1	2.0	1.0	1.9	1.8	1.7	3.2	3.7	0.6	1.6
Real unit labour costs	0.3	0.8	0.0	-0.7	0.0	-0.3	-0.9	0.7	3.0	-0.4	0.3

Italy	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	1.9	0.5	0.0	1.7	0.9	2.2	1.7	-1.2	-5.5	1.8	0.4
Total employment	2.0	1.7	1.5	0.4	0.6	2.0	1.3	0.3	-1.6	-0.7	0.3
Labour productivity	-0.2	-1.2	-1.5	1.3	0.4	0.2	0.4	-1.4	-3.9	2.5	0.1
Annual average hours worked	-1.0	-0.7	-0.3	0.0	-0.4	-0.2	0.1	-0.7	-1.7	0.2	-0.1
Productivity per hour worked	0.8	-0.6	-1.2	1.3	0.8	0.4	0.3	-0.7	-2.2	2.3	0.2
Harmonized CPI	2.3	2.6	2.8	2.3	2.2	2.2	2.0	3.5	0.8	1.6	2.9
Price deflator GDP	2.9	3.2	3.1	2.4	1.8	1.7	2.4	2.5	2.1	0.4	1.3
Nominal compensation per employee	2.7	2.2	2.5	3.3	2.7	2.2	2.0	3.0	-0.1	2.0	1.4
Real compensation per employee (GDP deflator)	-0.2	-1.0	-0.6	0.9	0.9	0.5	-0.3	0.5	-2.1	1.6	0.1
Real compensation per employee (private consumption deflator)	0.1	-0.7	-0.3	0.7	0.5	-0.4	-0.2	-0.1	0.0	0.4	-1.3
Nominal unit labour costs	2.8	3.4	4.1	2.0	2.4	2.0	1.6	4.5	4.0	-0.5	1.0
Real unit labour costs	0.0	0.2	0.9	-0.4	0.6	0.2	-0.7	2.0	1.9	-0.9	-0.3

Cyprus	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	4.0	2.1	1.9	4.2	3.9	4.1	5.1	3.6	-1.9	1.1	0.5
Total employment	2.2	2.1	3.8	3.8	3.6	1.8	3.2	2.1	-0.5	0.0	0.5
Labour productivity	1.8	0.0	-1.9	0.4	0.3	2.3	1.8	1.4	-1.3	1.1	-0.1
Annual average hours worked	1.3	-1.4	-0.4	-1.9	-1.6	0.9	-0.5	-0.5	-0.3	0.0	-0.2
Productivity per hour worked	0.5	1.5	-1.5	2.4	1.9	1.4	2.3	1.9	-1.0	1.1	0.1
Harmonized CPI	2.0	2.8	4.0	1.9	2.0	2.2	2.2	4.4	0.2	2.6	3.5
Price deflator GDP	3.9	1.1	4.8	3.3	3.0	3.4	4.4	4.6	0.1	1.7	2.0
Nominal compensation per employee	3.7	4.8	7.6	2.4	1.9	3.3	3.0	3.2	5.3	-0.2	3.6
Real compensation per employee (GDP deflator)	-0.2	3.7	2.7	-0.9	-1.1	-0.1	-1.3	-1.3	5.2	-1.9	1.6
Real compensation per employee (private consumption deflator)	0.6	2.5	3.9	0.6	-1.5	0.4	-0.3	-1.1	4.6	-2.3	0.5
Nominal unit labour costs	1.9	4.8	9.7	2.0	1.6	0.9	1.2	1.8	6.7	-1.3	2.0
Real unit labour costs	-2.0	3.6	4.6	-1.3	-1.4	-2.4	-3.0	-2.7	6.6	-2.9	0.0

Latvia	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	7.3	7.2	7.6	8.9	10.1	11.2	9.6	-3.3	-17.7	-0.3	5.5
Total employment	1.2	2.9	1.9	1.2	1.6	4.9	3.6	0.9	-13.2	-4.8	-8.1
Labour productivity	6.1	4.2	5.5	7.6	8.4	5.9	5.8	-4.2	-5.3	4.7	14.8
Annual average hours worked	-0.4	-2.0	-0.6	-1.6	1.7	-0.9	-1.3	-4.3	-2.9	-0.8	1.0
Productivity per hour worked	6.5	6.3	6.2	9.3	6.6	6.9	7.2	0.1	-2.4	5.5	1.0
Harmonized CPI	2.5	2.0	2.9	6.2	6.9	6.6	10.1	15.3	3.3	-1.2	4.2
Price deflator GDP	2.0	3.0	3.8	7.0	10.1	11.2	20.7	13.0	-1.2	-2.2	5.4
Nominal compensation per employee	4.3	2.8	11.0	14.5	25.1	23.2	35.1	15.7	-12.7	-5.5	5.4
Real compensation per employee (GDP deflator)	2.3	-0.2	7.0	7.0	13.5	10.8	11.9	2.4	-11.6	-3.4	0.0
Real compensation per employee (private consumption deflator)	2.6	1.2	6.6	6.4	14.9	16.4	22.9	-0.4	-15.5	-5.0	0.5
Nominal unit labour costs	-1.6	-1.3	5.2	6.4	15.3	16.4	27.7	20.7	-7.9	-9.8	2.1
Real unit labour costs	-3.5	-4.2	1.3	-0.5	4.7	4.6	5.8	6.9	-6.7	-7.7	-3.2

Lithuania	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	6.7	6.8	10.3	7.4	7.8	7.8	9.8	2.9	-14.8	1.4	5.9
Total employment	-3.8	3.6	2.2	0.0	2.5	1.8	2.8	-0.7	-6.8	-5.1	2.0
Labour productivity	10.9	3.1	7.9	7.4	5.2	5.9	6.8	3.6	-8.6	6.9	3.8
Annual average hours worked	-0.8	-1.6	-0.9	1.3	3.4	-0.8	1.1	1.6	-2.3	1.0	-1.3
Productivity per hour worked	11.8	4.8	8.9	6.0	1.7	6.7	5.7	1.9	-6.5	5.8	5.2
Harmonized CPI	1.6	0.3	-1.1	1.2	2.7	3.8	5.8	11.1	4.2	1.2	4.1
Price deflator GDP	-0.4	0.2	-0.9	2.5	6.6	6.6	8.6	9.8	-3.7	2.0	5.3
Nominal compensation per employee	7.1	5.0	8.9	10.9	11.5	16.7	13.9	14.3	-9.9	-1.0	2.4
Real compensation per employee (GDP deflator)	7.5	4.7	9.9	8.2	4.6	9.4	4.8	4.2	-6.4	-2.9	-2.8
Real compensation per employee (private consumption deflator)	4.6	5.4	10.6	11.1	9.0	11.4	7.5	3.1	-13.8	-2.3	-1.7
Nominal unit labour costs	-3.5	1.8	1.0	3.3	6.0	10.2	6.6	10.4	-1.4	-7.3	-0.2
Real unit labour costs	-3.1	1.5	1.8	0.8	-0.6	3.3	-1.9	0.6	2.4	-9.1	-5.2

Luxembourg	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	2.5	4.1	1.5	4.4	5.4	5.0	6.6	0.8	-5.3	2.7	1.6
Total employment	5.5	3.2	1.8	2.2	2.9	3.6	4.5	4.7	1.0	1.8	2.7
Labour productivity	-2.9	0.8	-0.3	2.1	2.4	1.4	2.1	-3.8	-6.2	0.8	-1.1
Annual average hours worked	-0.9	-0.6	-1.6	-0.1	-1.2	-0.1	0.5	0.0	-4.2	0.3	-0.2
Productivity per hour worked	-2.0	1.4	1.3	2.2	3.7	1.4	1.6	-3.8	-2.1	0.6	-1.0
Harmonized CPI	2.4	2.1	2.5	3.2	3.8	3.0	2.7	4.1	0.0	2.8	3.7
Price deflator GDP	0.1	2.1	6.0	1.8	4.6	6.7	3.6	4.4	0.1	4.9	4.7
Nominal compensation per employee	3.5	3.1	1.1	3.3	4.6	2.6	3.7	2.2	1.8	2.6	2.0
Real compensation per employee (GDP deflator)	3.4	0.9	-4.6	1.5	0.0	-3.9	0.1	-2.1	1.7	-2.2	-2.6
Real compensation per employee (private consumption deflator)	1.5	2.5	-1.0	0.9	1.7	0.2	1.5	-0.7	0.8	1.2	-1.9
Nominal unit labour costs	6.5	2.2	1.4	1.2	2.1	1.2	1.6	6.2	8.6	1.7	3.2
Real unit labour costs	6.4	0.1	-4.4	-0.6	-2.4	-5.1	-2.0	1.7	8.4	-3.0	-1.4

Hungary	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	3.7	4.5	3.9	4.8	4.0	3.9	0.1	0.9	-6.8	1.3	1.6
Total employment	-0.2	-0.1	0.0	-1.0	-0.3	0.4	0.0	-1.4	-2.8	0.3	0.3
Labour productivity	3.9	4.6	3.9	5.8	4.3	3.5	0.1	2.4	-4.2	0.9	1.3
Annual average hours worked	-1.8	0.6	-1.4	0.6	0.0	-0.2	-0.2	0.2	-0.9	-0.3	0.9
Productivity per hour worked	5.7	3.9	5.4	5.2	4.3	3.7	0.3	2.2	-3.2	1.3	0.5
Harmonized CPI	9.1	5.2	4.7	6.8	3.5	4.0	7.9	6.0	4.0	4.7	3.9
Price deflator GDP	11.3	8.5	5.4	5.2	2.5	3.5	5.4	5.3	3.6	3.1	3.3
Nominal compensation per employee	15.2	13.6	9.9	10.3	7.1	5.6	6.4	6.8	-1.4	-2.3	4.7
Real compensation per employee (GDP deflator)	3.5	4.7	4.3	4.8	4.5	2.0	0.9	1.5	-4.8	-5.3	1.3
Real compensation per employee (private consumption deflator)	5.3	7.4	5.4	4.4	3.4	2.0	-0.5	1.4	-4.8	-6.3	0.2
Nominal unit labour costs	10.9	8.6	5.8	4.2	2.7	2.0	6.3	4.3	2.9	-3.2	3.8
Real unit labour costs	-0.4	0.1	0.4	-0.9	0.2	-1.4	0.8	-0.9	-0.6	-6.1	0.5

Malta	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	-1.5	2.8	0.1	-0.5	3.7	3.1	4.4	4.1	-2.6	2.5	2.1
Total employment	1.8	0.6	1.0	-0.7	1.5	1.3	3.2	2.6	-0.3	2.4	2.4
Labour productivity	-3.2	2.2	-0.9	0.2	2.1	1.8	1.2	1.5	-2.3	0.1	-0.4
Annual average hours worked	-16.0	15.9	-3.6	3.7	-0.7	-1.5	1.0	0.3	-3.1	-1.3	-1.3
Productivity per hour worked	15.1	-11.8	2.8	-3.5	2.9	3.0	0.1	1.2	0.7	1.3	1.0
Harmonized CPI	2.5	2.6	1.9	2.7	2.5	2.6	0.7	4.7	1.8	2.0	2.4
Price deflator GDP	3.3	2.8	3.5	1.2	2.6	2.0	2.9	3.1	2.4	3.0	2.3
Nominal compensation per employee	5.5	2.9	5.2	2.2	1.3	5.9	1.7	4.8	3.3	-0.3	2.4
Real compensation per employee (GDP deflator)	2.2	0.1	1.6	0.9	-1.2	3.8	-1.1	1.7	0.8	-3.2	0.1
Real compensation per employee (private consumption deflator)	3.1	0.7	4.4	0.0	-1.4	5.0	-0.4	2.0	0.6	-3.0	1.5
Nominal unit labour costs	9.0	0.6	6.1	2.0	-0.7	4.0	0.5	3.2	5.7	-0.5	1.1
Real unit labour costs	5.6	-2.1	2.5	0.7	-3.2	1.9	-2.3	0.2	3.2	-3.4	-1.2

Netherlands	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	1.9	0.1	0.3	2.2	2.0	3.4	3.9	1.8	-3.5	1.7	1.2
Total employment	2.1	0.5	-0.5	-0.9	0.5	1.7	2.6	1.5	-0.7	-0.4	0.7
Labour productivity	-0.1	-0.4	0.8	3.1	1.5	1.7	1.3	0.3	-2.8	2.1	0.5
Annual average hours worked	-0.8	-1.1	-0.5	-0.1	-0.4	-0.1	-0.2	0.2	-0.6	-0.2	-0.1
Productivity per hour worked	0.7	0.7	1.4	3.3	2.0	1.8	1.6	0.1	-2.3	2.2	1.0
Harmonized CPI	5.1	3.9	2.2	1.4	1.5	1.7	1.6	2.2	1.0	0.9	2.5
Price deflator GDP	5.1	3.8	2.2	0.7	2.4	1.8	1.8	2.1	-0.4	1.3	1.1
Nominal compensation per employee	4.9	4.3	3.4	3.4	1.1	2.3	3.0	3.4	2.2	1.1	2.4
Real compensation per employee (GDP deflator)	-0.2	0.5	1.2	2.6	-1.3	0.5	1.1	1.2	2.6	-0.2	1.2
Real compensation per employee (private consumption deflator)	0.4	1.3	1.0	2.4	-1.0	0.1	1.1	2.3	2.7	-0.4	0.1
Nominal unit labour costs	5.0	4.8	2.5	0.2	-0.4	0.6	1.6	3.0	5.1	-0.8	1.0
Real unit labour costs	-0.1	0.9	0.3	-0.5	-2.8	-1.1	-0.2	0.9	5.6	-2.1	-0.1

Austria	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	0.9	1.7	0.9	2.6	2.4	3.7	3.7	1.4	-3.8	2.3	3.0
Total employment	0.7	-0.1	0.6	0.6	1.2	1.7	1.8	2.0	-0.8	0.9	1.4
Labour productivity	0.1	1.8	0.2	2.0	1.2	1.9	1.9	-0.6	-3.0	1.4	1.5
Annual average hours worked	-0.7	-0.1	-0.5	0.3	-1.0	-1.3	-0.3	-1.0	-2.6	-0.7	0.3
Productivity per hour worked	0.9	1.9	0.7	1.6	2.2	3.3	2.2	0.4	-0.5	2.1	1.4
Harmonized CPI	2.3	1.7	1.3	2.0	2.1	1.7	2.2	3.2	0.4	1.7	3.6
Price deflator GDP	1.9	1.2	1.1	1.7	2.0	1.9	2.0	1.8	1.0	1.8	1.9
Nominal compensation per employee	1.2	1.9	1.6	1.5	2.4	3.0	3.1	3.2	1.7	1.4	3.0
Real compensation per employee (GDP deflator)	-0.7	0.6	0.5	-0.2	0.4	1.1	1.0	1.4	0.7	-0.4	1.1
Real compensation per employee (private consumption deflator)	-0.6	1.2	0.0	-0.4	-0.2	0.9	0.6	1.1	1.1	-0.6	0.1
Nominal unit labour costs	1.1	0.1	1.4	-0.4	1.2	1.1	1.2	3.8	4.9	0.0	1.5
Real unit labour costs	-0.8	-1.1	0.3	-2.1	-0.8	-0.8	-0.8	2.0	3.8	-1.8	-0.4

Poland	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	1.2	1.4	3.9	5.3	3.6	6.2	6.8	5.1	1.6	3.9	4.3
Total employment	-2.2	-3.0	-1.2	1.1	2.2	3.2	4.5	3.9	0.4	0.5	1.0
Labour productivity	3.5	4.6	5.1	4.2	1.4	3.0	2.2	1.2	1.2	3.4	3.3
Annual average hours worked	0.1	-0.3	0.3	0.0	-0.3	0.1	-0.1	-0.2	-0.9	-0.2	-0.4
Productivity per hour worked	3.4	4.9	4.8	4.1	1.7	2.9	2.3	1.4	2.2	3.6	3.8
Harmonized CPI	5.3	1.9	0.7	3.6	2.2	1.3	2.6	4.2	4.0	2.7	3.9
Price deflator GDP	3.5	2.2	0.4	4.1	2.6	1.5	4.0	3.1	3.7	1.4	3.2
Nominal compensation per employee	10.2	2.3	1.6	1.9	1.7	1.8	4.9	8.9	3.5	4.8	5.3
Real compensation per employee (GDP deflator)	6.5	0.0	1.2	-2.1	-0.9	0.3	0.9	5.7	-0.2	3.3	2.0
Real compensation per employee (private consumption deflator)	6.2	-1.0	1.2	-1.1	-0.4	0.6	2.4	4.4	0.9	2.2	0.8
Nominal unit labour costs	6.5	-2.2	-3.3	-2.1	0.3	-1.0	2.6	7.5	2.2	1.3	1.8
Real unit labour costs	2.9	-4.4	-3.7	-6.0	-2.3	-2.5	-1.3	4.3	-1.4	-0.1	-1.4

Portugal	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	2.0	0.8	-0.9	1.6	0.8	1.4	2.4	0.0	-2.9	1.4	-1.6
Total employment	1.8	0.6	-0.6	-0.1	-0.3	0.5	0.0	0.5	-2.6	-1.5	-1.5
Labour productivity	0.2	0.2	-0.3	1.6	1.1	0.9	2.4	-0.5	-0.3	3.0	-0.1
Annual average hours worked	-1.0	-0.5	-0.3	0.3	0.0	-0.5	0.7	-0.7	-0.2	0.9	-0.5
Productivity per hour worked	1.1	0.7	0.0	1.3	1.1	1.4	1.7	0.2	-0.2	2.1	0.5
Harmonized CPI	4.4	3.7	3.3	2.5	2.1	3.0	2.4	2.7	-0.9	1.4	3.6
Price deflator GDP	3.6	3.7	3.0	2.5	2.5	2.8	2.8	1.6	0.9	1.1	0.7
Nominal compensation per employee	4.0	3.4	3.5	2.6	4.7	1.8	3.6	3.0	2.8	1.4	-1.0
Real compensation per employee (GDP deflator)	0.5	-0.4	0.5	0.2	2.1	-0.9	0.7	1.4	1.9	0.3	-1.7
Real compensation per employee (private consumption deflator)	0.5	0.6	0.5	0.1	1.9	-1.2	0.5	0.4	5.1	-0.2	-4.5
Nominal unit labour costs	3.9	3.2	3.8	1.0	3.6	0.9	1.1	3.5	3.1	-1.5	-0.8
Real unit labour costs	0.3	-0.5	0.8	-1.5	1.0	-1.8	-1.6	1.9	2.2	-2.6	-1.4

Romania	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	5.7	5.1	5.2	8.5	4.2	7.9	6.3	7.3	-6.6	-1.6	2.5
Total employment	-1.1	-10.2	0.0	-1.7	-1.5	0.7	0.4	0.0	-2.0	-1.4	0.4
Labour productivity	6.8	17.0	5.3	10.3	5.8	7.1	5.9	7.3	-4.7	-0.2	2.0
Annual average hours worked	0.0	0.8	-1.6	0.5	0.4	0.9	0.5	0.0	0.4	-0.2	-1.3
Productivity per hour worked	6.8	16.0	7.0	9.8	5.4	6.2	5.4	7.3	-5.1	-0.1	3.4
Harmonized CPI	34.5	22.5	15.3	11.9	9.1	6.6	4.9	7.9	5.6	6.1	5.8
Price deflator GDP	37.8	22.7	23.4	15.5	12.2	10.6	13.5	15.3	4.2	6.0	8.1
Nominal compensation per employee	55.0	16.7	27.4	13.8	29.1	12.4	22.0	31.9	-1.9	-3.6	3.6
Real compensation per employee (GDP deflator)	12.5	-4.8	3.2	-1.5	15.1	1.7	7.5	14.5	-5.9	-9.0	-4.1
Real compensation per employee (private consumption deflator)	15.2	-3.0	10.0	0.9	20.8	7.2	16.5	19.9	-5.4	-10.6	-2.1
Nominal unit labour costs	45.1	-0.2	21.0	3.1	22.0	4.9	15.2	22.9	2.9	7.9	1.7
Real unit labour costs	5.3	-18.7	-2.0	-10.7	8.8	-5.1	1.5	6.6	-1.2	1.8	-5.9

Slovenia	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	2.9	3.8	2.9	4.4	4.0	5.8	6.9	3.6	-8.0	1.4	-0.2
Total employment	0.6	1.6	-0.3	0.4	-0.5	1.6	3.3	2.6	-1.8	-2.5	-1.7
Labour productivity	2.4	2.2	3.2	4.0	4.5	4.2	3.4	1.0	-6.3	4.0	1.6
Annual average hours worked	-0.8	1.4	0.2	0.8	-2.3	-1.7	-0.8	0.9	0.0	0.3	-0.8
Productivity per hour worked	3.2	0.8	3.0	3.2	6.9	6.1	4.2	0.1	-6.3	3.7	2.4
Harmonized CPI	8.6	7.5	5.7	3.7	2.5	2.5	3.8	5.5	0.9	2.1	2.1
Price deflator GDP	8.7	7.6	5.5	3.3	1.7	2.1	4.2	4.1	3.0	-1.1	0.8
Nominal compensation per employee	11.6	8.3	7.8	7.7	6.0	5.4	6.2	7.2	1.8	4.3	1.8
Real compensation per employee (GDP deflator)	2.7	0.7	2.2	4.3	4.3	3.2	1.9	3.0	-1.1	5.4	1.0
Real compensation per employee (private consumption deflator)	3.8	0.7	2.5	4.6	3.7	2.9	2.0	1.7	2.3	2.9	-0.4
Nominal unit labour costs	9.0	6.0	4.4	3.6	1.5	1.1	2.6	6.2	8.7	0.3	0.4
Real unit labour costs	0.3	-1.5	-1.0	0.3	-0.2	-1.0	-1.5	2.0	5.6	1.4	-0.4

Slovakia	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	3.5	4.6	4.8	5.1	6.7	8.3	10.5	5.8	-4.9	4.2	3.3
Total employment	0.6	0.1	1.1	-0.2	1.6	2.1	2.1	3.2	-2.0	-1.5	1.8
Labour productivity	2.9	4.5	3.7	5.3	5.0	6.1	8.2	2.4	-3.0	5.8	1.5
Annual average hours worked	-0.8	-2.6	-3.2	2.6	1.6	0.3	0.9	0.1	-0.7	1.5	-0.8
Productivity per hour worked	3.7	7.3	7.1	2.6	3.3	5.8	7.2	2.3	-2.3	4.2	2.4
Harmonized CPI	7.2	3.5	8.4	7.5	2.8	4.3	1.9	3.9	0.9	0.7	4.1
Price deflator GDP	5.0	3.9	5.3	5.8	2.4	2.9	1.1	2.9	-1.2	0.5	1.6
Nominal compensation per employee	5.6	8.9	7.8	8.1	9.1	7.9	8.7	7.0	3.6	4.4	1.8
Real compensation per employee (GDP deflator)	0.6	4.8	2.4	2.1	6.6	4.8	7.5	4.0	4.9	3.9	0.2
Real compensation per employee (private consumption deflator)	0.0	5.8	1.2	0.7	6.3	2.9	5.9	2.4	3.6	3.4	-1.8
Nominal unit labour costs	2.7	4.2	4.0	2.6	3.9	1.7	0.5	4.4	6.9	-1.3	-0.6
Real unit labour costs	-2.2	0.3	-1.2	-3.0	1.5	-1.2	-0.6	1.5	8.2	-1.8	-2.2

Finland	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	2.3	1.8	2.0	4.1	2.9	4.4	5.3	0.3	-8.5	3.3	2.7
Total employment	1.3	0.9	0.1	0.4	1.4	1.8	2.2	2.6	-2.6	-0.1	1.1
Labour productivity	0.9	0.9	2.0	3.7	1.5	2.5	3.1	-2.2	-6.1	3.4	1.6
Annual average hours worked	-1.0	-0.4	-0.4	0.3	-0.4	-0.4	-0.1	-1.0	-1.0	0.7	0.0
Productivity per hour worked	2.0	1.3	2.4	3.4	2.0	2.9	3.2	-1.2	-4.9	4.2	1.6
Harmonized CPI	2.7	2.0	1.3	0.1	0.8	1.3	1.6	3.9	1.6	1.7	3.3
Price deflator GDP	3.0	1.3	-0.7	0.5	0.5	0.8	3.0	2.9	1.5	0.4	3.1
Nominal compensation per employee	4.6	1.7	2.7	3.7	3.7	2.9	3.7	4.4	2.4	3.1	3.3
Real compensation per employee (GDP deflator)	1.5	0.4	3.4	3.2	3.3	2.0	0.6	1.4	1.0	2.6	0.2
Real compensation per employee (private consumption deflator)	2.1	-0.4	3.3	3.3	2.9	1.4	1.4	0.9	1.0	1.0	-0.1
Nominal unit labour costs	3.6	0.8	0.8	-0.1	2.2	0.3	0.5	6.7	9.0	-1.6	1.8
Real unit labour costs	0.6	-0.4	1.5	-0.5	1.7	-0.5	-2.4	3.7	7.4	-2.0	-1.3

Sweden	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	1.3	2.5	2.3	4.2	3.2	4.3	3.3	-0.6	-5.0	6.2	3.9
Total employment	2.1	0.0	-0.6	-0.7	0.3	1.7	2.3	0.9	-2.4	1.1	2.2
Labour productivity	-0.8	2.4	2.9	5.0	2.9	2.6	1.0	-1.5	-2.7	5.0	1.7
Annual average hours worked	-1.5	-1.4	-0.8	1.5	0.0	-0.4	0.8	0.3	-0.5	2.1	0.1
Productivity per hour worked	0.6	3.9	3.8	3.4	2.9	2.9	0.2	-1.8	-2.2	2.8	1.6
Harmonized CPI	2.7	1.9	2.3	1.0	0.8	1.5	1.7	3.3	1.9	1.9	1.4
Price deflator GDP	2.4	1.5	1.8	0.3	0.9	1.9	2.8	3.1	2.1	1.0	0.9
Nominal compensation per employee	4.3	2.9	3.2	4.0	3.1	2.1	5.2	1.5	1.1	2.9	1.1
Real compensation per employee (GDP deflator)	1.9	1.3	1.4	3.7	2.2	0.1	2.4	-1.6	-0.9	1.9	0.2
Real compensation per employee (private consumption deflator)	2.1	1.3	1.5	3.2	2.0	0.8	3.8	-1.5	-1.0	1.5	-0.2
Nominal unit labour costs	5.2	0.4	0.2	-0.9	0.2	-0.5	4.2	3.1	4.4	-1.9	-0.8
Real unit labour costs	2.7	-1.1	-1.5	-1.2	-0.7	-2.4	1.4	-0.1	2.3	-2.9	-1.7

United Kingdom	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	2.9	2.4	3.8	2.9	2.8	2.6	3.6	-1.0	-4.0	1.8	0.8
Total employment	0.8	0.8	1.0	1.1	1.0	0.9	0.7	0.7	-1.6	0.2	0.4
Labour productivity	2.0	1.7	2.8	1.8	1.7	1.7	2.9	-1.7	-2.4	1.6	0.3
Annual average hours worked	0.2	-1.1	-1.1	-0.3	0.2	-0.3	0.1	-1.3	-0.4	-0.6	-0.7
Productivity per hour worked	2.1	3.0	3.7	2.2	0.8	2.0	2.6	-0.6	-2.5	2.5	0.9
Harmonized CPI	1.2	1.3	1.4	1.3	2.1	2.3	2.3	3.6	2.2	3.3	4.5
Price deflator GDP	1.6	2.3	2.5	2.6	2.4	2.9	2.2	3.0	1.3	2.8	2.6
Nominal compensation per employee	5.2	3.1	4.7	3.9	3.7	4.6	5.2	1.5	2.7	2.7	2.0
Real compensation per employee (GDP deflator)	3.5	0.8	2.2	1.3	1.3	1.7	2.9	-1.5	1.4	0.0	-0.6
Real compensation per employee (private consumption deflator)	4.2	2.4	3.0	2.0	1.2	1.9	2.5	-1.9	1.3	-0.9	-2.4
Nominal unit labour costs	3.1	1.5	1.8	2.0	1.9	2.9	2.2	3.2	5.3	1.2	1.7
Real unit labour costs	1.4	-0.8	-0.6	-0.5	-0.4	0.0	0.0	0.2	3.9	-1.6	-0.9

Croatia	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	3.7	4.9	5.4	4.1	4.3	4.9	5.1	2.1	-6.9	-1.4	0.0
Total employment	0.5	0.8	3.9	1.5	0.7	3.9	3.5	1.1	-1.8	-4.0	-3.2
Labour productivity	9.6	0.7	4.8	2.4	3.5	5.6	1.5	1.0	-5.2	2.7	3.3
Annual average hours worked	:	:	:	:	:	:	:	:	:	:	:
Productivity per hour worked	:	:	:	:	:	:	:	:	:	:	:
Harmonized CPI	4.3	2.5	2.4	2.1	3.0	3.3	2.7	5.8	2.2	1.1	2.2
Price deflator GDP	4.1	3.5	4.1	3.8	3.3	4.0	4.1	5.7	2.9	0.9	2.1
Nominal compensation per employee	9.4	5.6	10.6	3.1	6.5	-2.7	5.7	6.9	1.6	4.1	5.9
Real compensation per employee (GDP deflator)	5.1	1.9	6.3	-0.6	3.0	-6.5	1.5	1.1	-1.2	3.1	3.6
Real compensation per employee (private consumption deflator)	4.6	3.2	8.1	1.0	3.1	-5.9	2.7	1.2	-1.6	2.9	3.4
Nominal unit labour costs	-0.2	4.8	5.5	0.7	2.9	-7.9	4.1	5.8	6.6	2.6	1.6
Real unit labour costs	-4.1	1.3	1.4	-3.0	-0.5	-11.4	0.0	0.1	3.6	1.7	-0.6

Macedonia FYR	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	-4.5	0.9	2.8	4.6	4.4	5.0	6.1	5.0	-0.9	2.9	3.0
Total employment	:	:	:	:	4.3	4.6	3.5	3.2	3.4	0.8	1.0
Labour productivity	-2.9	1.4	4.8	6.9	2.2	1.8	1.8	-1.2	-3.4	1.4	1.9
Annual average hours worked	:	:	:	:	:	:	:	:	:	:	:
Productivity per hour worked	:	:	:	:	:	:	:	:	:	:	:
Harmonized CPI	5.5	1.8	1.2	-0.4	0.5	3.2	2.3	8.3	-0.8	1.6	3.9
Price deflator GDP	3.6	3.4	3.0	0.8	3.8	3.3	7.4	7.5	0.7	2.7	0.6
Nominal compensation per employee	-0.2	4.5	7.9	-2.8	-3.3	11.7	-4.8	9.0	6.9	5.3	1.1
Real compensation per employee (GDP deflator)	-3.7	1.0	4.8	-3.6	-6.8	8.1	-11.4	1.4	6.2	2.6	0.5
Real compensation per employee (private consumption deflator)	-5.2	2.3	0.6	-1.4	-3.9	9.3	-8.0	-0.8	7.1	4.3	-1.6
Nominal unit labour costs	2.7	3.1	3.0	-9.2	-5.4	9.7	-6.5	10.3	10.6	4.6	0.5
Real unit labour costs	-0.8	-0.4	0.0	-9.9	-8.8	6.2	-12.9	2.6	9.9	1.8	-0.1

Turkey	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	-5.7	6.2	5.3	9.4	8.4	6.9	4.7	0.7	-4.8	9.0	8.5
Total employment	-0.3	-0.8	-1.0	-7.2	2.2	1.8	1.5	2.2	0.4	6.2	6.7
Labour productivity	-4.7	8.1	6.3	6.1	6.9	5.5	3.5	-1.5	3.5	2.7	1.7
Annual average hours worked	:	:	:	:	:	:	:	:	:	:	:
Productivity per hour worked	:	:	:	:	:	:	:	:	:	:	:
Harmonized CPI	56.8	47.0	25.3	10.1	8.1	9.3	8.8	10.4	6.3	8.6	6.5
Price deflator GDP	52.9	37.4	23.3	12.4	7.1	9.3	6.2	12.0	5.3	5.8	8.6
Nominal compensation per employee	43.6	37.9	27.9	16.5	7.1	10.8	9.4	7.5	4.7	7.0	-3.8
Real compensation per employee (GDP deflator)	-6.1	0.3	3.7	3.6	0.0	1.4	3.0	-4.0	-0.6	1.3	-11.4
Real compensation per employee (private consumption deflator)	-4.1	-0.5	3.7	5.1	-1.1	0.9	2.7	-2.9	-0.3	-1.3	-11.4
Nominal unit labour costs	51.8	28.8	20.3	-1.1	1.0	5.5	6.1	9.2	10.4	4.1	-5.4
Real unit labour costs	-0.7	-6.3	-2.4	-12.0	-5.7	-3.5	-0.1	-2.5	4.8	-1.5	-12.9

Iceland	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real GDP	3.9	0.1	2.4	7.8	7.2	4.7	6.0	1.3	-6.8	-4.0	3.1
Total employment	1.7	-1.4	0.1	-0.5	3.3	5.1	4.5	0.8	-6.0	-0.3	0.0
Labour productivity	2.2	1.6	2.3	8.3	3.8	-0.4	1.4	0.5	-0.8	-3.7	3.0
Annual average hours worked	-2.0	-2.0	-0.1	0.2	-1.2	0.0	0.7	0.1	-5.1	-1.4	:
Productivity per hour worked	4.3	3.7	2.4	8.2	5.0	-0.5	0.7	0.3	4.5	-2.3	:
Harmonized CPI	6.6	5.3	1.4	2.3	1.4	4.6	3.6	12.8	16.3	7.5	4.2
Price deflator GDP	8.6	5.6	0.6	2.5	2.8	8.8	5.7	11.8	8.3	6.9	3.1
Nominal compensation per employee	7.4	8.8	2.0	10.3	8.9	12.4	9.5	4.4	-2.2	4.2	7.7
Real compensation per employee (GDP deflator)	-1.1	3.0	1.4	7.6	5.9	3.3	3.6	-6.6	-9.7	-2.5	4.4
Real compensation per employee (private consumption deflator)	-0.3	3.8	0.7	7.1	6.9	4.4	4.7	-8.5	-14.0	0.8	3.5
Nominal unit labour costs	5.1	7.1	-0.3	1.8	4.9	12.9	7.9	3.9	-1.4	8.3	4.5
Real unit labour costs	-3.3	1.4	-0.9	-0.7	2.0	3.7	2.2	-7.1	-9.0	1.3	1.4

Source: Eurostat.

Indicator 1: EL: break in series 2005; LV: break in series 2001; MK, TR: forecast 2011.

Indicator 2: EL: break in series 2005; LV: break in series 2001, 2011.

Indicator 3: EU27, EU15, EA17, MK, US: forecast 2011; EL, PL: break in series 2005; LV: break in series 2001, 2011; HR: forecast 2005-2011; TR: forecast 2001-2011; JP: forecast 2009-2011; IS: forecast 2006-2011.

Indicator 7: EL: break in series 2005; LV: break in series 2001; MK, TR: forecast 2011.

Indicator 8, 9, 10: EU27, EU15, EA17, BE, BG, CZ, EE, IE, EL, ES, FR, IT, CY, LV, LT, LU, HU, MT, NL, PL, PT, RO, SI, SK, SE, US: forecast 2011; HR: forecast 2005-2011; TR: forecast 2007-2011; MK: forecast 2010, 2011; EL, PL: break in series 2005; LV: break in series 2001.

Indicator 11: EU27, EU15, EA17, PL, MK: forecast 2011; EL, PL: break in series 2005; LV: break in series 2001, 2011; HR: forecast 2005-2011.

Indicator 12: EU27, EU15, EA17, PL, MK: forecast 2011; EL, PL: break in series 2005; LV: break in series 2001, 2011; HR: forecast 2005-2011.

2. Labour market indicators

Labour market indicators: Euro area 17

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	310834	312409	314467	315967	318046	319849	321714	323405	324479	325394	326421
2. Population aged 15-64	209116	209847	211103	211530	213213	214221	215245	216137	216363	216443	216674
3. Total employment (000)	139743	140714	141401	142496	143974	146329	148955	150117	147367	146552	146746
4. Population in employment aged 15-64	129847	130754	132181	133375	135503	138292	140992	142335	139641	138844	139211
5. Employment rate (% population aged 15-64)	62.1	62.3	62.6	63.1	63.6	64.6	65.5	65.9	64.5	64.1	64.2
6. Employment rate (% population aged 15-24)	37.2	36.9	36.4	36.3	36.3	36.9	37.7	37.5	35.0	33.8	33.5
7. Employment rate (% population aged 25-54)	76.1	76.1	76.4	76.9	77.1	78.2	79.0	79.3	77.7	77.3	77.2
8. Employment rate (% population aged 55-64)	35.0	36.3	37.7	38.6	40.4	41.6	43.2	44.3	45.1	45.8	47.1
9. FTE employment rate (% population aged 15-64)	57.6	57.8	57.8	57.6	57.9	58.7	59.6	59.9	58.6	58.1	58.0
10. Self-employed (% total employment)	15.0	14.9	15.0	15.1	15.0	14.9	14.7	14.5	14.5	14.5	14.3
11. Part-time employment (% total employment)	15.8	16.0	16.4	17.4	18.6	19.1	19.3	19.4	20.0	20.4	20.9
12. Fixed term contracts (% total employees)	14.7	14.4	14.5	15.2	16.0	16.7	16.6	16.3	15.4	15.6	15.8
13. Employment in Services (% total employment)	69.1	69.6	70.1	70.6	71.0	71.4	71.6	72.1	73.0	73.7	74.1
14. Employment in Industry (% total employment)	26.5	26.1	25.7	25.4	25.1	24.8	24.7	24.4	23.5	22.8	22.5
15. Employment in Agriculture (% total employment)	4.4	4.3	4.2	4.0	3.9	3.8	3.7	3.6	3.5	3.5	3.4
16. Activity rate (% population aged 15-64)	67.7	68.3	68.8	69.4	69.9	70.5	70.9	71.3	71.4	71.4	71.5
17. Activity rate (% of population aged 15-24)	44.3	44.2	44.0	44.0	44.2	44.3	44.4	44.4	43.6	42.5	42.2
18. Activity rate (% of population aged 25-54)	82.0	82.5	83.1	83.8	83.9	84.5	84.7	85.0	85.1	85.2	85.2
19. Activity rate (% of population aged 55-64)	37.8	39.2	40.7	41.8	43.7	44.9	46.1	47.1	48.4	49.4	50.8
20. Total unemployment (000)	11766	12445	13321	13874	13932	13014	11766	11947	15048	15941	16027
21. Unemployment rate (% labour force 15+)	8.1	8.5	9.0	9.3	9.2	8.5	7.6	7.6	9.6	10.1	10.2
22. Youth unemployment rate (% labour force 15-24)	15.3	15.9	17.3	18.2	18.3	17.0	15.5	16.0	20.2	20.9	20.8
23. Long term unemployment rate (% labour force)	3.8	3.8	4.1	4.3	4.2	3.9	3.4	3.0	3.4	4.3	4.6
24. Youth unemployment ratio (% population aged 15-24)	7.1	7.4	7.6	7.7	7.9	7.4	6.7	6.9	8.7	8.7	8.7

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	151555	152431	153447	154152	155262	156268	157255	158102	158650	159064	159584
2. Population aged 15-64	104515	104907	105516	105714	106554	107158	107677	108110	108181	108160	108233
3. Total employment (000)	80864	80886	80801	80928	81443	82460	83600	83753	81365	80595	80449
4. Population in employment aged 15-64	75026	75056	75400	75562	76465	77742	78939	79204	76891	76158	76091
5. Employment rate (% population aged 15-64)	71.8	71.5	71.5	71.5	71.8	72.5	73.3	73.3	71.1	70.4	70.3
6. Employment rate (% population aged 15-24)	40.9	40.3	39.6	39.6	39.6	40.3	41.0	40.5	37.1	35.9	35.6
7. Employment rate (% population aged 25-54)	87.1	86.6	86.3	86.2	86.3	87.1	87.7	87.4	84.9	84.1	83.9
8. Employment rate (% population aged 55-64)	45.5	46.7	48.0	48.7	49.9	50.8	52.3	53.3	53.5	53.8	54.6
9. FTE employment rate (% population aged 15-64)	70.6	70.5	70.0	69.6	69.8	70.4	71.2	71.1	68.8	68.1	67.7
10. Self-employed (% total employment)	17.6	17.6	17.7	17.9	17.8	17.7	17.6	17.5	17.7	17.8	17.6
11. Part-time employment (% total employment)	5.4	5.6	5.8	6.2	6.9	7.3	7.4	7.5	8.0	8.4	8.9
12. Fixed term contracts (% total employees)	13.7	13.4	13.5	14.3	15.3	15.8	15.8	15.2	14.3	14.8	15.1
13. Employment in Services (% total employment)	59.0	59.4	59.7	60.0	60.3	60.5	60.6	60.8	61.7	62.5	63.1
14. Employment in Industry (% total employment)	35.9	35.6	35.4	35.2	35.0	35.0	35.0	34.9	33.9	33.1	32.6
15. Employment in Agriculture (% total employment)	5.1	5.0	4.9	4.8	4.7	4.6	4.4	4.3	4.3	4.4	4.3
16. Activity rate (% population aged 15-64)	77.3	77.5	77.7	77.8	78.2	78.4	78.6	78.7	78.4	78.2	78.1
17. Activity rate (% of population aged 15-24)	48.1	47.8	47.7	47.5	47.8	47.9	47.8	47.8	46.7	45.5	44.9
18. Activity rate (% of population aged 25-54)	92.7	92.7	92.8	92.8	92.9	93.1	93.0	93.0	92.6	92.4	92.2
19. Activity rate (% of population aged 55-64)	48.9	50.2	51.7	52.6	53.8	54.6	55.6	56.5	57.5	58.2	59.0
20. Total unemployment (000)	5707	6161	6667	6952	7045	6462	5798	6038	8128	8601	8535
21. Unemployment rate (% labour force 15+)	6.9	7.4	8.0	8.3	8.3	7.6	6.7	7.0	9.4	10.0	9.9
22. Youth unemployment rate (% labour force 15-24)	14.0	15.1	16.7	17.3	17.6	16.1	14.7	15.6	20.9	21.4	20.9
23. Long term unemployment rate (% labour force)	3.1	3.2	3.5	3.8	3.7	3.5	3.0	2.7	3.2	4.2	4.5
24. Youth unemployment ratio (% population aged 15-24)	7.1	7.6	8.0	7.9	8.2	7.5	6.8	7.3	9.6	9.6	9.3

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	159279	159978	161020	161815	162784	163582	164459	165303	165829	166330	166837
2. Population aged 15-64	104602	104940	105588	105816	106658	107062	107568	108028	108181	108283	108440
3. Total employment (000)	58880	59829	60601	61568	62531	63868	65356	66363	66002	65957	66296
4. Population in employment aged 15-64	54821	55699	56781	57813	59038	60551	62053	63131	62750	62686	63120
5. Employment rate (% population aged 15-64)	52.4	53.1	53.8	54.6	55.4	56.6	57.7	58.4	58.0	57.9	58.2
6. Employment rate (% population aged 15-24)	33.4	33.4	33.1	32.9	33.0	33.4	34.3	34.4	32.8	31.6	31.3
7. Employment rate (% population aged 25-54)	65.0	65.6	66.5	67.6	67.9	69.3	70.3	71.2	70.6	70.5	70.5
8. Employment rate (% population aged 55-64)	25.0	26.4	27.8	28.9	31.4	32.9	34.5	35.7	37.1	38.1	40.0
9. FTE employment rate (% population aged 15-64)	44.8	45.5	46.0	46.0	46.4	47.4	48.4	49.1	48.7	48.5	48.7
10. Self-employed (% total employment)	11.5	11.3	11.2	11.3	11.3	11.2	10.9	10.8	10.6	10.5	10.3
11. Part-time employment (% total employment)	30.1	30.0	30.6	32.2	33.8	34.3	34.6	34.4	34.8	35.2	35.5
12. Fixed term contracts (% total employees)	16.0	15.7	15.7	16.2	16.9	17.6	17.6	17.4	16.6	16.5	16.5
13. Employment in Services (% total employment)	82.4	82.9	83.5	84.0	84.4	85.0	85.2	85.7	86.4	86.8	87.0
14. Employment in Industry (% total employment)	14.1	13.7	13.3	13.0	12.6	12.2	12.1	11.6	11.0	10.7	10.6
15. Employment in Agriculture (% total employment)	3.5	3.3	3.2	3.1	2.9	2.8	2.7	2.7	2.6	2.5	2.4
16. Activity rate (% population aged 15-64)	58.2	59.1	60.0	61.0	61.7	62.6	63.1	63.8	64.3	64.6	65.0
17. Activity rate (% of population aged 15-24)	40.6	40.5	40.2	40.3	40.6	40.5	40.9	41.0	40.5	39.4	39.4
18. Activity rate (% of population aged 25-54)	71.3	72.3	73.4	74.7	74.9	75.8	76.3	77.0	77.5	77.9	78.2
19. Activity rate (% of population aged 55-64)	27.2	28.6	30.2	31.4	34.0	35.6	37.0	38.1	39.8	41.0	42.9
20. Total unemployment (000)	6059	6285	6654	6922	6887	6551	5968	5908	6920	7340	7492
21. Unemployment rate (% labour force 15+)	9.7	9.9	10.3	10.6	10.3	9.7	8.7	8.5	9.8	10.3	10.5
22. Youth unemployment rate (% labour force 15-24)	16.8	16.9	18.1	19.2	19.2	18.2	16.5	16.4	19.4	20.3	20.7
23. Long term unemployment rate (% labour force)	4.6	4.5	4.8	5.0	4.7	4.4	3.8	3.4	3.7	4.4	4.7
24. Youth unemployment ratio (% population aged 15-24)	7.1	7.1	7.2	7.4	7.6	7.2	6.6	6.5	7.7	7.9	8.1

Source: Eurostat.

Labour market indicators: European Union 27

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	477860	479214	480434	482084	484409	486477	488555	490665	492290	493709	495147
2. Population aged 15-64	320968	322184	323188	324131	326331	327902	329256	330447	330935	331177	331416
3. Total employment (000)	212941	213849	214690	216074	218267	221793	225784	227990	223946	222752	223291
4. Population in employment aged 15-64	200792	200901	202287	204054	207048	211159	215063	217402	213526	212395	213027
5. Employment rate (% population aged 15-64)	62.6	62.4	62.6	63.0	63.4	64.4	65.3	65.8	64.5	64.1	64.3
6. Employment rate (% population aged 15-24)	37.5	36.7	36.1	36.1	36.0	36.6	37.3	37.4	35.0	34.0	33.6
7. Employment rate (% population aged 25-54)	76.2	76.0	76.2	76.7	77.0	78.1	79.0	79.5	78.0	77.6	77.6
8. Employment rate (% population aged 55-64)	37.7	38.5	40.0	40.7	42.3	43.5	44.6	45.6	46.0	46.3	47.4
9. FTE employment rate (% population aged 15-64)	58.3	58.1	58.1	57.9	58.2	59.1	59.9	60.4	59.1	58.6	58.6
10. Self-employed (% total employment)	16.2	16.2	16.2	16.3	16.1	15.8	15.6	15.4	15.5	15.7	15.6
11. Part-time employment (% total employment)	16.2	16.2	16.5	17.2	17.8	18.1	18.2	18.2	18.8	19.2	19.5
12. Fixed term contracts (% total employees)	12.4	12.3	12.7	13.3	14.0	14.5	14.6	14.2	13.6	14.0	14.1
13. Employment in Services (% total employment)	66.8	67.4	68.0	68.5	68.9	69.3	69.5	69.9	70.9	71.5	71.8
14. Employment in Industry (% total employment)	26.5	26.0	25.6	25.3	25.1	24.9	24.9	24.7	23.8	23.1	22.9
15. Employment in Agriculture (% total employment)	6.8	6.6	6.4	6.3	6.1	5.7	5.5	5.4	5.4	5.4	5.3
16. Activity rate (% population aged 15-64)	68.6	68.6	68.9	69.3	69.7	70.2	70.4	70.8	70.9	71.0	71.2
17. Activity rate (% of population aged 15-24)	45.6	45.0	44.3	44.3	44.2	44.2	44.2	44.3	43.7	43.0	42.7
18. Activity rate (% of population aged 25-54)	82.5	82.6	82.9	83.4	83.7	84.2	84.3	84.6	84.7	84.9	85.0
19. Activity rate (% of population aged 55-64)	40.3	41.1	42.7	43.6	45.2	46.3	47.2	48.1	49.1	49.7	50.9
20. Total unemployment (000)	19263	20151	20664	21181	20900	19335	17021	16828	21513	23140	23221
21. Unemployment rate (% labour force 15+)	8.6	8.9	9.1	9.3	9.0	8.3	7.2	7.1	9.0	9.7	9.7
22. Youth unemployment rate (% labour force 15-24)	17.2	17.8	18.6	19.0	18.8	17.5	15.7	15.8	20.1	21.1	21.4
23. Long term unemployment rate (% labour force)	3.9	4.0	4.2	4.3	4.1	3.7	3.1	2.6	3.0	3.9	4.1
24. Youth unemployment ratio (% population aged 15-24)	8.1	8.3	8.2	8.2	8.2	7.6	6.8	6.9	8.7	9.0	9.1

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	232616	233412	234035	234851	236129	237290	238376	239426	240300	241037	241809
2. Population aged 15-64	159854	160528	161059	161570	162719	163606	164274	164852	165096	165220	165350
3. Total employment (000)	120266	120342	120431	120700	121738	123362	125308	126041	122679	121703	121788
4. Population in employment aged 15-64	113303	112936	113300	113764	115244	117200	119097	119905	116704	115782	115901
5. Employment rate (% population aged 15-64)	70.9	70.4	70.3	70.4	70.8	71.6	72.5	72.7	70.7	70.1	70.1
6. Employment rate (% population aged 15-24)	40.7	39.7	39.0	39.0	38.9	39.6	40.4	40.3	37.1	36.2	35.7
7. Employment rate (% population aged 25-54)	85.5	84.9	84.8	84.8	85.2	86.0	86.8	86.9	84.6	83.9	83.9
8. Employment rate (% population aged 55-64)	47.7	48.4	49.9	50.4	51.6	52.6	53.9	55.0	54.8	54.6	55.2
9. FTE employment rate (% population aged 15-64)	69.7	69.2	68.9	68.5	68.9	69.6	70.5	70.7	68.5	67.8	67.7
10. Self-employed (% total employment)	18.7	18.9	19.1	19.3	19.0	18.8	18.6	18.4	18.8	19.0	18.9
11. Part-time employment (% total employment)	6.6	6.6	6.7	7.1	7.4	7.7	7.7	7.8	8.3	8.7	9.0
12. Fixed term contracts (% total employees)	11.7	11.6	12.0	12.8	13.5	14.0	13.9	13.4	12.8	13.4	13.6
13. Employment in Services (% total employment)	56.9	57.4	57.8	58.1	58.4	58.7	58.8	59.0	59.9	60.6	61.0
14. Employment in Industry (% total employment)	35.8	35.4	35.1	34.8	34.7	34.8	34.9	35.0	34.0	33.2	32.8
15. Employment in Agriculture (% total employment)	7.3	7.2	7.2	7.1	6.9	6.5	6.3	6.0	6.1	6.2	6.2
16. Activity rate (% population aged 15-64)	77.0	76.8	76.9	77.0	77.3	77.6	77.7	77.9	77.8	77.6	77.6
17. Activity rate (% of population aged 15-24)	49.2	48.6	47.9	47.8	47.7	47.6	47.6	47.8	46.9	46.1	45.7
18. Activity rate (% of population aged 25-54)	91.6	91.4	91.5	91.5	91.7	92.0	91.9	92.0	91.8	91.7	91.6
19. Activity rate (% of population aged 55-64)	51.1	51.7	53.3	54.0	55.2	56.1	57.0	57.9	58.6	58.9	59.5
20. Total unemployment (000)	9733	10339	10653	10918	10769	9870	8636	8716	11846	12682	12518
21. Unemployment rate (% labour force 15+)	7.7	8.2	8.5	8.6	8.4	7.6	6.6	6.7	9.1	9.7	9.6
22. Youth unemployment rate (% labour force 15-24)	16.7	17.6	18.5	18.7	18.7	17.2	15.4	15.8	21.2	21.8	21.9
23. Long term unemployment rate (% labour force)	3.5	3.6	3.8	3.9	3.8	3.5	2.9	2.4	2.9	3.9	4.2
24. Youth unemployment ratio (% population aged 15-24)	8.5	8.9	8.9	8.8	8.8	8.1	7.2	7.5	9.8	10.0	10.0

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	245242	245801	246398	247232	248279	249186	250180	251240	251990	252672	253338
2. Population aged 15-64	161114	161656	162128	162561	163612	164296	164982	165595	165839	165957	166066
3. Total employment (000)	92675	93507	94259	95375	96528	98431	100477	101949	101267	101050	101502
4. Population in employment aged 15-64	87489	87965	88986	90290	91804	93959	95966	97497	96823	96613	97126
5. Employment rate (% population aged 15-64)	54.3	54.4	54.9	55.5	56.1	57.2	58.2	58.9	58.4	58.2	58.5
6. Employment rate (% population aged 15-24)	34.2	33.8	33.1	33.1	33.0	33.5	34.2	34.4	32.9	31.8	31.4
7. Employment rate (% population aged 25-54)	66.9	67.1	67.7	68.5	68.9	70.1	71.2	72.0	71.4	71.3	71.4
8. Employment rate (% population aged 55-64)	28.2	29.1	30.7	31.6	33.6	34.8	35.9	36.8	37.8	38.6	40.2
9. FTE employment rate (% population aged 15-64)	47.2	47.3	47.7	47.6	48.0	48.9	49.8	50.5	50.0	49.8	49.9
10. Self-employed (% total employment)	13.1	12.7	12.5	12.5	12.3	12.1	11.9	11.7	11.7	11.7	11.6
11. Part-time employment (% total employment)	28.6	28.5	29.0	30.0	30.9	31.2	31.2	31.1	31.5	31.9	32.1
12. Fixed term contracts (% total employees)	13.3	13.2	13.4	13.9	14.5	15.1	15.3	15.0	14.5	14.6	14.6
13. Employment in Services (% total employment)	79.1	79.9	80.6	81.1	81.7	82.2	82.5	82.9	83.8	84.3	84.4
14. Employment in Industry (% total employment)	14.8	14.3	13.9	13.6	13.2	13.0	12.9	12.5	11.7	11.3	11.3
15. Employment in Agriculture (% total employment)	6.1	5.8	5.5	5.3	5.1	4.7	4.6	4.6	4.5	4.4	4.3
16. Activity rate (% population aged 15-64)	60.2	60.5	61.0	61.7	62.2	62.9	63.2	63.7	64.1	64.4	64.9
17. Activity rate (% of population aged 15-24)	41.9	41.4	40.6	40.8	40.6	40.7	40.6	40.8	40.4	39.7	39.6
18. Activity rate (% of population aged 25-54)	73.4	73.7	74.4	75.4	75.6	76.3	76.7	77.3	77.7	78.1	78.4
19. Activity rate (% of population aged 55-64)	30.1	31.1	32.8	33.8	35.8	37.1	38.0	38.8	40.2	41.2	42.8
20. Total unemployment (000)	9531	9813	10011	10263	10131	9465	8384	8112	9667	10458	10703
21. Unemployment rate (% labour force 15+)	9.6	9.8	9.9	10.1	9.8	9.0	7.9	7.6	9.0	9.6	9.8
22. Youth unemployment rate (% labour force 15-24)	17.8	18.1	18.7	19.3	19.0	18.0	16.1	15.8	18.9	20.2	20.8
23. Long term unemployment rate (% labour force)	4.5	4.6	4.6	4.7	4.5	4.1	3.4	2.8	3.1	3.8	4.1
24. Youth unemployment ratio (% population aged 15-24)	7.7	7.7	7.5	7.6	7.6	7.2	6.4	6.3	7.5	8.0	8.2

Source: Eurostat.

Labour market indicators: European Union 15

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	373352	375166	377514	379339	381785	383989	386256	388465	390068	391407	392901
2. Population aged 15-64	249702	250689	252226	252908	254924	256318	257677	258849	259321	259528	259920
3. Total employment (000)	170627	171780	172638	173974	175726	178365	181271	182627	179362	178677	179021
4. Population in employment aged 15-64	159967	160995	162570	163996	166367	169361	172220	173744	170525	169710	170218
5. Employment rate (% population aged 15-64)	64.1	64.2	64.5	64.8	65.3	66.1	66.8	67.1	65.8	65.4	65.5
6. Employment rate (% population aged 15-24)	40.9	40.6	40.0	40.0	39.9	40.4	41.0	40.8	38.0	36.9	36.5
7. Employment rate (% population aged 25-54)	77.0	77.1	77.3	77.7	78.0	78.8	79.6	79.8	78.3	77.9	77.9
8. Employment rate (% population aged 55-64)	38.8	40.2	41.7	42.6	44.2	45.3	46.5	47.4	47.9	48.4	49.5
9. FTE employment rate (% population aged 15-64)	58.7	58.8	58.8	58.6	58.9	59.5	60.2	60.5	59.1	58.7	58.6
10. Self-employed (% total employment)	14.2	14.1	14.2	14.3	14.2	14.2	14.0	13.9	13.9	14.0	13.9
11. Part-time employment (% total employment)	17.9	18.1	18.5	19.4	20.3	20.7	20.9	21.0	21.6	22.1	22.5
12. Fixed term contracts (% total employees)	13.5	13.1	13.2	13.6	14.3	14.9	14.9	14.5	13.8	14.1	14.2
13. Employment in Services (% total employment)	71.0	71.6	72.1	72.6	73.0	73.4	73.6	74.0	74.8	75.4	75.9
14. Employment in Industry (% total employment)	25.2	24.7	24.3	23.9	23.6	23.4	23.2	22.9	22.0	21.4	21.1
15. Employment in Agriculture (% total employment)	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.1	3.1	3.0
16. Activity rate (% population aged 15-64)	69.2	69.7	70.2	70.6	71.1	71.7	71.9	72.3	72.4	72.4	72.5
17. Activity rate (% of population aged 15-24)	47.9	47.8	47.5	47.6	47.9	48.0	48.1	48.2	47.3	46.3	46.0
18. Activity rate (% of population aged 25-54)	82.4	82.8	83.3	83.8	84.0	84.6	84.8	85.1	85.2	85.3	85.3
19. Activity rate (% of population aged 55-64)	41.5	42.9	44.6	45.5	47.2	48.3	49.2	50.0	51.2	51.9	53.0
20. Total unemployment (000)	12942	13717	14630	15141	15297	14621	13393	13739	17483	18396	18577
21. Unemployment rate (% labour force 15+)	7.3	7.7	8.1	8.3	8.3	7.8	7.1	7.2	9.2	9.6	9.7
22. Youth unemployment rate (% labour force 15-24)	14.0	14.6	15.8	16.5	16.9	16.2	15.2	15.7	19.9	20.4	20.7
23. Long term unemployment rate (% labour force)	3.1	3.1	3.4	3.5	3.4	3.3	2.9	2.6	3.0	3.8	4.1
24. Youth unemployment ratio (% population aged 15-24)	6.9	7.2	7.5	7.6	7.9	7.6	7.2	7.4	9.3	9.3	9.5

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	182231	183258	184444	185337	186650	187876	189075	190193	191043	191707	192484
2. Population aged 15-64	124742	125286	126043	126372	127373	128164	128839	129409	129616	129670	129829
3. Total employment (000)	97456	97533	97570	97786	98425	99581	100909	101133	98299	97664	97601
4. Population in employment aged 15-64	91196	91241	91686	91936	92934	94299	95603	95922	93185	92495	92497
5. Employment rate (% population aged 15-64)	73.1	72.8	72.7	72.7	73.0	73.6	74.2	74.1	71.9	71.3	71.2
6. Employment rate (% population aged 15-24)	44.3	43.6	42.9	43.0	42.8	43.3	43.8	43.4	39.7	38.7	38.2
7. Employment rate (% population aged 25-54)	87.3	86.8	86.6	86.5	86.7	87.3	87.8	87.6	85.1	84.5	84.3
8. Employment rate (% population aged 55-64)	48.9	50.1	51.6	52.2	53.3	54.1	55.2	56.2	56.2	56.2	56.8
9. FTE employment rate (% population aged 15-64)	71.5	71.2	70.8	70.4	70.6	71.1	71.7	71.6	69.2	68.6	68.3
10. Self-employed (% total employment)	17.0	17.0	17.3	17.4	17.3	17.3	17.1	17.0	17.3	17.3	17.2
11. Part-time employment (% total employment)	6.2	6.6	6.8	7.2	7.7	8.1	8.3	8.5	8.9	9.4	9.8
12. Fixed term contracts (% total employees)	12.5	12.2	12.2	12.9	13.7	14.1	14.1	13.6	12.8	13.3	13.6
13. Employment in Services (% total employment)	60.7	61.1	61.5	61.9	62.2	62.5	62.6	62.9	63.7	64.5	65.1
14. Employment in Industry (% total employment)	34.8	34.5	34.1	33.8	33.6	33.5	33.5	33.3	32.4	31.6	31.1
15. Employment in Agriculture (% total employment)	4.5	4.4	4.3	4.2	4.1	4.1	3.9	3.8	3.9	3.9	3.8
16. Activity rate (% population aged 15-64)	78.3	78.4	78.6	78.6	79.0	79.2	79.3	79.5	79.2	79.0	78.9
17. Activity rate (% of population aged 15-24)	51.4	51.2	51.0	50.9	51.2	51.3	51.3	51.4	50.0	49.0	48.5
18. Activity rate (% of population aged 25-54)	92.4	92.4	92.5	92.4	92.6	92.8	92.8	92.8	92.4	92.3	92.1
19. Activity rate (% of population aged 55-64)	52.2	53.4	55.1	55.9	56.9	57.6	58.4	59.2	60.1	60.6	61.2
20. Total unemployment (000)	6423	6935	7468	7706	7847	7392	6726	7090	9616	10064	10005
21. Unemployment rate (% labour force 15+)	6.5	6.9	7.4	7.6	7.7	7.2	6.5	6.8	9.2	9.6	9.6
22. Youth unemployment rate (% labour force 15-24)	13.3	14.3	15.7	16.2	16.7	15.9	14.8	15.9	21.0	21.3	21.3
23. Long term unemployment rate (% labour force)	2.7	2.7	3.0	3.2	3.1	3.0	2.6	2.4	2.9	3.9	4.1
24. Youth unemployment ratio (% population aged 15-24)	7.1	7.6	8.0	7.9	8.4	8.0	7.5	8.0	10.4	10.3	10.3

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	191121	191909	193070	194003	195135	196113	197181	198272	199025	199700	200417
2. Population aged 15-64	124960	125404	126183	126536	127551	128154	128837	129440	129705	129858	130091
3. Total employment (000)	73171	74248	75068	76188	77301	78784	80362	81495	81063	81013	81421
4. Population in employment aged 15-64	68771	69754	70885	72060	73433	75062	76617	77822	77340	77215	77721
5. Employment rate (% population aged 15-64)	55.0	55.6	56.2	56.9	57.6	58.6	59.5	60.1	59.6	59.5	59.7
6. Employment rate (% population aged 15-24)	37.4	37.5	37.1	37.1	36.9	37.4	38.0	38.1	36.3	35.1	34.8
7. Employment rate (% population aged 25-54)	66.7	67.3	68.0	68.9	69.3	70.4	71.3	72.1	71.5	71.4	71.5
8. Employment rate (% population aged 55-64)	29.1	30.7	32.2	33.2	35.5	36.8	38.0	39.0	40.1	40.9	42.5
9. FTE employment rate (% population aged 15-64)	46.2	46.8	47.2	47.2	47.7	48.4	49.2	49.9	49.4	49.2	49.4
10. Self-employed (% total employment)	10.4	10.3	10.3	10.4	10.3	10.3	10.1	10.0	9.9	9.9	9.8
11. Part-time employment (% total employment)	33.3	33.3	33.8	35.1	36.2	36.6	36.7	36.6	37.0	37.4	37.6
12. Fixed term contracts (% total employees)	14.6	14.3	14.2	14.5	15.1	15.8	15.8	15.5	14.9	14.8	14.9
13. Employment in Services (% total employment)	84.3	84.8	85.3	85.8	86.2	86.6	86.8	87.2	87.9	88.2	88.4
14. Employment in Industry (% total employment)	12.9	12.5	12.1	11.7	11.4	11.1	11.0	10.5	10.0	9.6	9.6
15. Employment in Agriculture (% total employment)	2.8	2.7	2.6	2.5	2.4	2.3	2.3	2.3	2.2	2.1	2.0
16. Activity rate (% population aged 15-64)	60.2	61.0	61.7	62.7	63.3	64.1	64.6	65.2	65.6	65.8	66.2
17. Activity rate (% of population aged 15-24)	44.2	44.3	44.0	44.2	44.4	44.6	44.8	45.0	44.4	43.4	43.4
18. Activity rate (% of population aged 25-54)	72.3	73.1	74.0	75.2	75.5	76.3	76.7	77.4	77.9	78.2	78.5
19. Activity rate (% of population aged 55-64)	31.1	32.8	34.4	35.6	37.9	39.3	40.4	41.2	42.6	43.6	45.3
20. Total unemployment (000)	6519	6782	7162	7435	7450	7228	6666	6649	7867	8332	8572
21. Unemployment rate (% labour force 15+)	8.5	8.7	9.0	9.2	9.1	8.7	7.9	7.8	9.1	9.6	9.8
22. Youth unemployment rate (% labour force 15-24)	14.8	14.9	16.0	16.9	17.2	16.6	15.6	15.5	18.6	19.4	19.9
23. Long term unemployment rate (% labour force)	3.7	3.6	3.8	4.0	3.8	3.6	3.2	2.8	3.2	3.8	4.1
24. Youth unemployment ratio (% population aged 15-24)	6.8	6.8	6.9	7.2	7.5	7.3	6.8	6.8	8.1	8.3	8.6

Source: Eurostat.

Labour market indicators: Belgium

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	10263	10310	10356	10396	10477	10546	10614	10708	10796	10892	10989
2. Population aged 15-64	6728	6758	6791	6818	6876	6941	7008	7073	7126	7177	7220
3. Total employment (000)	4171	4164	4160	4204	4264	4311	4383	4462	4454	4492	4553
4. Population in employment aged 15-64	4033	4047	4047	4114	4199	4233	4348	4414	4389	4451	4471
5. Employment rate (% population aged 15-64)	59.9	59.9	59.6	60.3	61.1	61.0	62.0	62.4	61.6	62.0	61.9
6. Employment rate (% population aged 15-24)	29.7	29.4	27.4	27.8	27.5	27.6	27.5	27.4	25.3	25.2	26.0
7. Employment rate (% population aged 25-54)	76.6	76.5	76.5	77.3	78.3	78.4	79.7	80.5	79.8	80.0	79.3
8. Employment rate (% population aged 55-64)	25.1	26.6	28.1	30.0	31.8	32.0	34.4	34.5	35.3	37.3	38.7
9. FTE employment rate (% population aged 15-64)	55.8	55.4	54.7	55.8	56.2	56.5	57.7	57.8	56.9	57.3	56.8
10. Self-employed (% total employment)	16.7	16.5	16.6	16.5	16.3	16.2	16.1	16.0	16.2	16.2	16.2
11. Part-time employment (% total employment)	18.5	19.1	20.5	21.4	22.0	22.2	22.1	22.6	23.4	24.0	25.1
12. Fixed term contracts (% total employees)	8.8	8.1	8.4	8.7	8.9	8.7	8.6	8.3	8.2	8.1	9.0
13. Employment in Services (% total employment)	75.2	76.0	76.5	77.1	77.5	77.6	77.9	78.1	78.7	79.3	79.6
14. Employment in Industry (% total employment)	22.9	22.2	21.6	21.1	20.7	20.7	20.5	20.3	19.8	19.2	19.0
15. Employment in Agriculture (% total employment)	1.9	1.8	1.8	1.8	1.8	1.7	1.6	1.6	1.5	1.4	1.4
16. Activity rate (% population aged 15-64)	64.2	64.8	64.9	65.9	66.7	66.5	67.1	67.1	66.9	67.7	66.7
17. Activity rate (% of population aged 15-24)	35.7	35.7	35.0	35.3	35.0	34.7	33.9	33.4	32.4	32.5	32.0
18. Activity rate (% of population aged 25-54)	81.2	81.9	82.3	83.4	84.6	84.5	85.3	85.7	85.6	86.3	84.7
19. Activity rate (% of population aged 55-64)	25.9	27.7	28.9	31.2	33.3	33.6	35.9	36.1	37.2	39.2	40.3
20. Total unemployment (000)	286	331	362	379	390	383	353	333	380	406	347
21. Unemployment rate (% labour force 15+)	6.6	7.5	8.2	8.4	8.5	8.3	7.5	7.0	7.9	8.3	7.2
22. Youth unemployment rate (% labour force 15-24)	16.8	17.7	21.8	21.2	21.5	20.5	18.8	18.0	21.9	22.4	18.7
23. Long term unemployment rate (% labour force)	3.2	3.7	3.7	4.1	4.4	4.2	3.8	3.3	3.5	4.1	3.5
24. Youth unemployment ratio (% population aged 15-24)	6.1	6.3	7.6	7.5	7.5	7.1	6.4	6.0	7.1	7.3	6.0

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5018	5042	5067	5086	5127	5162	5197	5246	5291	5340	5390
2. Population aged 15-64	3388	3403	3420	3443	3459	3491	3524	3557	3582	3607	3628
3. Total employment (000)	2413	2393	2368	2391	2403	2418	2445	2470	2448	2459	2486
4. Population in employment aged 15-64	2331	2323	2300	2337	2361	2371	2421	2439	2406	2433	2435
5. Employment rate (% population aged 15-64)	68.8	68.3	67.3	67.9	68.3	67.9	68.7	68.6	67.2	67.4	67.1
6. Employment rate (% population aged 15-24)	33.2	32.2	29.9	30.1	29.7	30.4	29.9	29.7	27.4	27.3	27.7
7. Employment rate (% population aged 25-54)	86.5	86.1	85.0	85.8	86.1	85.9	87.0	87.0	85.7	85.5	84.9
8. Employment rate (% population aged 55-64)	35.1	36.0	37.8	39.1	41.7	40.9	42.9	42.8	42.9	45.6	46.0
9. FTE employment rate (% population aged 15-64)	68.6	67.6	66.7	67.6	67.4	67.7	68.6	68.2	66.7	67.0	66.2
10. Self-employed (% total employment)	18.7	18.5	18.5	18.9	18.7	19.0	18.9	19.2	19.3	19.5	19.8
11. Part-time employment (% total employment)	5.2	5.6	6.4	6.8	7.6	7.4	7.5	7.9	8.6	9.0	9.8
12. Fixed term contracts (% total employees)	6.3	5.8	6.2	6.4	6.8	6.9	6.8	6.6	6.5	6.8	7.7
13. Employment in Services (% total employment)	65.2	66.1	66.8	67.1	67.7	67.2	67.8	67.3	68.1	69.1	69.2
14. Employment in Industry (% total employment)	32.4	31.6	30.9	30.6	30.1	30.6	30.1	30.7	30.0	29.0	29.0
15. Employment in Agriculture (% total employment)	2.4	2.3	2.3	2.3	2.2	2.2	2.0	2.0	2.0	1.9	1.8
16. Activity rate (% population aged 15-64)	73.2	73.2	72.9	73.4	73.9	73.4	73.6	73.3	72.8	73.4	72.3
17. Activity rate (% of population aged 15-24)	39.6	38.9	38.4	37.7	37.6	37.4	36.1	36.0	34.9	35.2	34.1
18. Activity rate (% of population aged 25-54)	91.0	91.3	90.9	91.8	92.2	91.9	92.5	92.3	91.8	92.2	90.7
19. Activity rate (% of population aged 55-64)	36.3	37.5	38.9	40.4	43.4	42.7	44.4	44.4	45.2	47.6	47.8
20. Total unemployment (000)	147	167	192	191	196	191	174	170	204	217	188
21. Unemployment rate (% labour force 15+)	5.9	6.7	7.7	7.5	7.6	7.4	6.7	6.5	7.8	8.1	7.1
22. Youth unemployment rate (% labour force 15-24)	16.0	17.2	22.2	20.2	21.0	18.8	17.1	17.3	21.5	22.4	18.7
23. Long term unemployment rate (% labour force)	2.9	3.2	3.4	3.7	3.9	3.7	3.3	3.0	3.4	4.0	3.4
24. Youth unemployment ratio (% population aged 15-24)	6.4	6.7	8.5	7.6	7.9	7.0	6.2	6.2	7.5	7.9	6.4

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5245	5267	5289	5310	5350	5384	5417	5462	5505	5553	5600
2. Population aged 15-64	3341	3355	3371	3375	3417	3450	3484	3517	3543	3570	3592
3. Total employment (000)	1757	1771	1792	1813	1861	1893	1938	1992	2007	2032	2067
4. Population in employment aged 15-64	1702	1724	1746	1777	1838	1862	1927	1975	1984	2018	2036
5. Employment rate (% population aged 15-64)	51.0	51.4	51.8	52.6	53.8	54.0	55.3	56.2	56.0	56.5	56.7
6. Employment rate (% population aged 15-24)	26.0	26.5	24.7	25.4	25.2	24.7	25.0	25.0	23.2	23.1	24.2
7. Employment rate (% population aged 25-54)	66.5	66.8	67.8	68.5	70.4	70.7	72.3	73.8	73.8	74.4	73.8
8. Employment rate (% population aged 55-64)	15.5	17.5	18.7	21.1	22.1	23.2	26.0	26.3	27.7	29.2	31.6
9. FTE employment rate (% population aged 15-64)	43.0	43.2	42.9	44.4	45.2	45.6	47.1	47.7	47.4	47.9	47.7
10. Self-employed (% total employment)	13.9	13.9	14.0	13.2	13.1	12.7	12.5	12.1	12.3	12.2	11.9
11. Part-time employment (% total employment)	36.9	37.4	39.1	40.5	40.5	41.1	40.6	40.9	41.5	42.3	43.4
12. Fixed term contracts (% total employees)	12.0	11.2	11.1	11.7	11.4	10.9	10.8	10.2	10.2	9.6	10.3
13. Employment in Services (% total employment)	88.6	88.8	88.9	89.6	89.5	90.2	89.9	90.8	91.1	91.0	91.4
14. Employment in Industry (% total employment)	10.2	10.0	9.8	9.2	9.3	8.7	9.0	8.2	8.0	8.1	7.7
15. Employment in Agriculture (% total employment)	1.2	1.3	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.9	0.9
16. Activity rate (% population aged 15-64)	55.1	56.3	56.9	58.2	59.5	59.5	60.4	60.8	60.9	61.8	61.1
17. Activity rate (% of population aged 15-24)	31.7	32.4	31.4	32.8	32.3	31.9	31.6	30.8	29.9	29.8	29.8
18. Activity rate (% of population aged 25-54)	71.2	72.4	73.6	74.8	76.8	77.0	78.0	79.0	79.2	80.4	78.7
19. Activity rate (% of population aged 55-64)	15.9	18.2	19.2	22.1	23.4	24.6	27.5	27.9	29.3	30.9	33.0
20. Total unemployment (000)	138	164	170	188	194	192	179	163	176	189	158
21. Unemployment rate (% labour force 15+)	7.5	8.6	8.9	9.5	9.5	9.3	8.5	7.6	8.1	8.5	7.2
22. Youth unemployment rate (% labour force 15-24)	17.8	18.3	21.3	22.4	22.1	22.6	20.9	18.7	22.5	22.4	18.7
23. Long term unemployment rate (% labour force)	3.5	4.3	4.2	4.7	5.0	4.9	4.3	3.7	3.6	4.1	3.6
24. Youth unemployment ratio (% population aged 15-24)	5.7	5.9	6.7	7.3	7.1	7.2	6.6	5.8	6.7	6.7	5.6

Source: Eurostat.

Indicator 23: 2011 break in series.

Labour market indicators: Bulgaria

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	7884	7877	7821	7786	7747	7706	7673	7640	7607	7564	7505
2. Population aged 15-64	5375	5357	5308	5306	5283	5238	5198	5169	5122	5046	4970
3. Total employment (000)	3215	3222	3317	3403	3495	3612	3727	3825	3725	3551	3402
4. Population in employment aged 15-64	2672	2709	2785	2877	2947	3072	3209	3306	3205	3010	2908
5. Employment rate (% population aged 15-64)	49.7	50.6	52.5	54.2	55.8	58.6	61.7	64.0	62.6	59.7	58.5
6. Employment rate (% population aged 15-24)	19.8	19.4	20.7	21.5	21.6	23.2	24.5	26.3	24.8	22.2	20.1
7. Employment rate (% population aged 25-54)	67.2	67.6	69.2	71.2	73.0	75.7	79.4	81.3	79.2	75.7	74.0
8. Employment rate (% population aged 55-64)	24.0	27.0	30.0	32.5	34.7	39.6	42.6	46.0	46.1	43.5	43.9
9. FTE employment rate (% population aged 15-64)	50.3	50.6	52.5	54.5	55.3	58.2	61.4	63.5	61.9	59.0	57.9
10. Self-employed (% total employment)	29.3	29.2	28.7	28.5	27.8	27.2	26.5	26.4	26.9	27.5	27.3
11. Part-time employment (% total employment)	3.2	2.5	2.3	2.4	2.1	2.0	1.7	2.3	2.3	2.4	2.4
12. Fixed term contracts (% total employees)	6.3	5.3	6.5	7.4	6.4	6.2	5.2	5.0	4.7	4.5	4.1
13. Employment in Services (% total employment)	48.7	48.7	50.1	50.9	51.4	51.4	51.4	51.2	52.3	53.8	53.7
14. Employment in Industry (% total employment)	27.4	27.5	27.0	27.0	27.4	28.3	29.2	29.5	28.0	26.4	26.4
15. Employment in Agriculture (% total employment)	23.9	23.7	22.9	22.1	21.2	20.3	19.4	19.3	19.6	19.8	19.9
16. Activity rate (% population aged 15-64)	62.5	61.9	60.9	61.8	62.1	64.5	66.3	67.8	67.2	66.5	66.0
17. Activity rate (% of population aged 15-24)	33.2	30.9	28.8	28.9	27.9	28.9	28.9	30.1	29.5	28.9	27.4
18. Activity rate (% of population aged 25-54)	81.9	80.7	79.1	79.9	80.2	82.3	84.5	85.5	84.3	83.4	82.4
19. Activity rate (% of population aged 55-64)	29.2	31.8	33.9	36.2	38.0	43.0	45.7	48.7	49.2	47.9	48.3
20. Total unemployment (000)	665	614	453	404	338	309	242	202	240	352	376
21. Unemployment rate (% labour force 15+)	19.5	18.2	13.7	12.1	10.1	9.0	6.9	5.6	6.8	10.3	11.3
22. Youth unemployment rate (% labour force 15-24)	38.3	35.2	26.6	24.3	21.0	18.3	14.1	11.9	15.1	21.8	25.0
23. Long term unemployment rate (% labour force)	12.1	12.0	9.0	7.2	6.1	5.0	4.1	2.9	3.0	4.8	6.3
24. Youth unemployment ratio (% population aged 15-24)	13.4	11.5	8.1	7.5	6.2	5.6	4.4	3.8	4.8	6.7	7.3

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	3818	3820	3792	3775	3754	3731	3714	3700	3681	3659	3630
2. Population aged 15-64	2647	2643	2616	2623	2614	2590	2578	2562	2540	2508	2476
3. Total employment (000)	1683	1693	1756	1805	1866	1920	1984	2041	1983	1871	1772
4. Population in employment aged 15-64	1394	1418	1466	1520	1569	1626	1701	1756	1699	1579	1508
5. Employment rate (% population aged 15-64)	52.7	53.7	56.0	57.9	60.0	62.8	66.0	68.5	66.9	63.0	60.9
6. Employment rate (% population aged 15-24)	20.1	20.5	21.7	23.2	23.9	25.4	27.1	29.3	28.0	25.4	22.8
7. Employment rate (% population aged 25-54)	68.4	69.0	71.4	73.5	75.7	78.6	82.5	84.7	82.7	77.9	75.0
8. Employment rate (% population aged 55-64)	34.2	37.0	40.5	42.2	45.5	49.5	51.8	55.8	54.1	50.3	49.9
9. FTE employment rate (% population aged 15-64)	53.5	53.9	56.3	58.3	59.6	62.5	65.7	68.2	66.3	62.3	60.3
10. Self-employed (% total employment)	35.2	34.9	34.7	34.4	32.9	32.8	32.1	31.2	31.9	32.2	32.8
11. Part-time employment (% total employment)	2.9	2.1	1.9	2.1	1.7	1.5	1.3	2.0	2.0	2.2	2.2
12. Fixed term contracts (% total employees)	6.6	5.9	7.0	7.7	6.7	6.3	5.0	5.6	5.2	5.0	4.5
13. Employment in Services (% total employment)	42.0	42.2	43.6	44.3	44.5	43.7	43.4	43.0	43.5	44.8	44.9
14. Employment in Industry (% total employment)	29.2	29.3	29.3	29.6	30.5	32.2	33.4	34.4	33.2	31.8	30.8
15. Employment in Agriculture (% total employment)	28.8	28.5	27.1	26.1	25.0	24.1	23.1	22.6	23.3	23.5	24.3
16. Activity rate (% population aged 15-64)	67.0	66.4	65.4	66.4	67.0	68.8	70.6	72.5	72.0	70.8	69.6
17. Activity rate (% of population aged 15-24)	35.6	34.2	31.5	31.8	31.1	31.3	31.7	34.0	34.0	33.5	31.5
18. Activity rate (% of population aged 25-54)	84.2	83.0	81.8	82.9	83.3	85.1	87.5	88.8	88.0	86.3	84.6
19. Activity rate (% of population aged 55-64)	41.7	43.7	45.6	47.2	49.9	53.6	55.3	58.7	57.4	55.7	55.3
20. Total unemployment (000)	365	341	249	225	185	159	123	105	132	199	219
21. Unemployment rate (% labour force 15+)	20.2	18.8	14.0	12.5	10.3	8.6	6.5	5.5	6.9	10.8	12.3
22. Youth unemployment rate (% labour force 15-24)	41.5	38.3	29.4	25.5	22.0	17.7	13.5	12.8	16.7	22.8	26.0
23. Long term unemployment rate (% labour force)	12.6	12.4	9.2	7.2	6.0	4.7	3.7	2.7	2.8	5.0	7.0
24. Youth unemployment ratio (% population aged 15-24)	15.4	13.8	9.8	8.6	7.3	5.9	4.6	4.7	6.0	8.1	8.7

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	4066	4057	4030	4010	3993	3975	3958	3941	3925	3904	3875
2. Population aged 15-64	2729	2714	2692	2683	2669	2647	2621	2607	2582	2538	2493
3. Total employment (000)	1532	1529	1561	1598	1629	1692	1743	1785	1742	1680	1630
4. Population in employment aged 15-64	1278	1290	1319	1357	1378	1446	1508	1551	1506	1431	1400
5. Employment rate (% population aged 15-64)	46.8	47.5	49.0	50.6	51.7	54.6	57.6	59.5	58.3	56.4	56.2
6. Employment rate (% population aged 15-24)	19.4	18.4	19.6	19.6	19.4	21.0	21.8	23.1	21.4	18.9	17.2
7. Employment rate (% population aged 25-54)	65.9	66.1	67.1	68.8	70.3	72.8	76.2	77.9	75.8	73.6	73.0
8. Employment rate (% population aged 55-64)	14.7	18.2	21.0	24.2	25.5	31.1	34.5	37.7	39.2	37.7	38.8
9. FTE employment rate (% population aged 15-64)	47.2	47.5	48.8	50.8	51.1	54.0	57.1	58.9	57.7	55.8	55.5
10. Self-employed (% total employment)	22.8	22.9	22.0	21.9	21.9	20.8	20.0	20.9	21.2	22.3	21.3
11. Part-time employment (% total employment)	3.6	3.0	2.6	2.7	2.5	2.5	2.1	2.7	2.7	2.6	2.6
12. Fixed term contracts (% total employees)	5.9	4.7	6.0	7.0	6.2	6.1	5.5	4.4	4.2	4.0	3.7
13. Employment in Services (% total employment)	56.8	56.5	57.9	58.7	59.6	60.5	61.0	61.0	62.9	64.3	64.0
14. Employment in Industry (% total employment)	25.2	25.4	24.3	23.9	23.7	23.7	24.0	23.7	21.9	20.1	21.2
15. Employment in Agriculture (% total employment)	18.0	18.1	17.8	17.4	16.7	15.8	15.0	15.3	15.2	15.6	14.8
16. Activity rate (% population aged 15-64)	58.1	57.5	56.5	57.2	57.3	60.2	62.1	63.1	62.5	62.3	62.4
17. Activity rate (% of population aged 15-24)	30.9	27.6	26.1	25.9	24.5	26.4	26.0	26.1	24.8	24.2	23.0
18. Activity rate (% of population aged 25-54)	79.6	78.4	76.4	76.8	77.2	79.4	81.4	82.1	80.6	80.5	80.2
19. Activity rate (% of population aged 55-64)	18.0	21.5	23.8	26.8	27.8	33.9	37.2	40.2	42.1	41.3	42.4
20. Total unemployment (000)	300	273	204	178	152	150	120	96	108	152	157
21. Unemployment rate (% labour force 15+)	18.6	17.4	13.4	11.6	10.0	9.4	7.4	5.8	6.7	9.6	10.1
22. Youth unemployment rate (% labour force 15-24)	34.7	31.4	23.3	22.8	19.7	18.9	14.8	10.5	12.8	20.3	23.6
23. Long term unemployment rate (% labour force)	11.5	11.5	8.7	7.1	6.1	5.3	4.5	3.1	3.1	4.5	5.5
24. Youth unemployment ratio (% population aged 15-24)	11.5	9.3	6.5	6.3	5.2	5.3	4.1	3.0	3.4	5.3	5.8

Source: Eurostat.

Labour market indicators: Czech Republic

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	10176	10171	10179	10196	10229	10265	10320	10422	10499	10522	10546
2. Population aged 15-64	7121	7149	7182	7231	7270	7307	7347	7410	7431	7400	7345
3. Total employment (000)	4839	4869	4830	4815	4915	4981	5086	5204	5141	5055	5066
4. Population in employment aged 15-64	4631	4677	4647	4639	4710	4769	4856	4934	4857	4810	4828
5. Employment rate (% population aged 15-64)	65.0	65.4	64.7	64.2	64.8	65.3	66.1	66.6	65.4	65.0	65.7
6. Employment rate (% population aged 15-24)	34.2	32.2	30.0	27.8	27.5	27.7	28.5	28.1	26.5	25.2	24.7
7. Employment rate (% population aged 25-54)	82.1	82.5	81.7	81.4	82.0	82.5	83.5	83.8	82.5	82.2	82.8
8. Employment rate (% population aged 55-64)	37.1	40.8	42.3	42.7	44.5	45.2	46.0	47.6	46.8	46.5	47.6
9. FTE employment rate (% population aged 15-64)	63.4	64.7	64.1	63.3	64.0	64.4	65.1	65.6	64.2	63.8	64.7
10. Self-employed (% total employment)	15.8	16.7	17.9	17.5	16.6	16.7	16.6	16.4	17.0	18.1	18.4
11. Part-time employment (% total employment)	4.9	4.9	5.0	4.9	4.9	5.0	5.0	4.9	5.5	5.9	5.5
12. Fixed term contracts (% total employees)	8.0	8.1	9.2	9.1	8.6	8.7	8.6	8.0	8.5	8.9	8.5
13. Employment in Services (% total employment)	56.5	57.2	57.8	57.2	57.5	58.0	58.4	58.6	60.4	60.7	61.0
14. Employment in Industry (% total employment)	38.8	38.7	38.2	38.7	38.8	38.3	38.2	38.0	36.3	36.2	36.0
15. Employment in Agriculture (% total employment)	4.7	4.1	4.0	4.1	3.8	3.7	3.4	3.4	3.4	3.1	3.0
16. Activity rate (% population aged 15-64)	70.8	70.6	70.2	70.0	70.4	70.3	69.9	69.7	70.1	70.2	70.5
17. Activity rate (% of population aged 15-24)	41.5	38.7	36.8	35.2	34.0	33.5	31.9	31.1	31.8	30.9	30.1
18. Activity rate (% of population aged 25-54)	88.4	88.2	87.8	87.8	88.3	88.2	87.8	87.3	87.7	87.8	88.0
19. Activity rate (% of population aged 55-64)	39.0	42.4	44.2	45.1	46.9	47.7	48.2	49.5	49.6	49.7	50.6
20. Total unemployment (000)	405	370	395	422	406	368	274	228	349	380	351
21. Unemployment rate (% labour force 15+)	8.0	7.3	7.8	8.3	7.9	7.1	5.3	4.4	6.7	7.3	6.7
22. Youth unemployment rate (% labour force 15-24)	17.3	16.9	18.6	21.1	19.3	17.6	10.8	9.9	16.7	18.4	18.1
23. Long term unemployment rate (% labour force)	4.2	3.7	3.8	4.2	4.2	3.9	2.8	2.2	2.0	3.0	2.7
24. Youth unemployment ratio (% population aged 15-24)	7.3	6.5	6.8	7.4	6.5	5.9	3.4	3.1	5.3	5.7	5.4

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	4932	4934	4941	4959	4987	5012	5045	5107	5156	5166	5174
2. Population aged 15-64	3545	3563	3582	3616	3646	3671	3696	3739	3760	3744	3714
3. Total employment (000)	2717	2744	2727	2717	2792	2829	2900	2978	2942	2895	2886
4. Population in employment aged 15-64	2595	2632	2619	2615	2671	2704	2764	2820	2777	2753	2750
5. Employment rate (% population aged 15-64)	73.2	73.9	73.1	72.3	73.3	73.7	74.8	75.4	73.8	73.5	74.0
6. Employment rate (% population aged 15-24)	37.1	35.3	32.3	30.1	31.3	31.5	32.8	32.4	31.1	29.6	29.2
7. Employment rate (% population aged 25-54)	89.7	90.2	89.7	89.2	89.8	90.4	91.7	92.1	90.5	90.5	90.9
8. Employment rate (% population aged 55-64)	52.6	57.2	57.5	57.2	59.3	59.5	59.6	61.9	59.6	58.4	58.9
9. FTE employment rate (% population aged 15-64)	72.6	73.9	73.2	72.1	73.2	73.6	74.6	75.3	73.5	73.2	73.8
10. Self-employed (% total employment)	19.9	21.1	22.5	22.3	21.0	20.8	21.0	20.6	21.1	22.4	22.4
11. Part-time employment (% total employment)	2.2	2.2	2.3	2.3	2.1	2.2	2.3	2.2	2.8	2.9	2.5
12. Fixed term contracts (% total employees)	7.2	7.0	7.9	7.8	7.6	7.5	7.3	6.5	7.0	7.5	7.2
13. Employment in Services (% total employment)	45.8	46.5	47.1	46.4	46.7	47.5	47.5	47.6	48.9	48.9	49.3
14. Employment in Industry (% total employment)	48.2	48.4	48.0	48.6	48.7	48.1	48.3	48.2	47.0	47.2	46.8
15. Employment in Agriculture (% total employment)	6.0	5.0	4.9	5.0	4.6	4.4	4.2	4.1	4.1	4.0	3.9
16. Activity rate (% population aged 15-64)	78.6	78.6	78.0	77.9	78.4	78.3	78.1	78.1	78.5	78.6	78.7
17. Activity rate (% of population aged 15-24)	45.2	42.3	39.6	38.7	38.9	37.7	36.7	35.9	37.3	36.2	35.6
18. Activity rate (% of population aged 25-54)	94.9	94.8	94.4	94.6	94.8	94.8	95.0	94.8	95.1	95.5	95.3
19. Activity rate (% of population aged 55-64)	55.0	59.3	59.9	60.2	62.1	62.7	62.5	64.2	63.2	62.5	62.6
20. Total unemployment (000)	187	167	173	199	185	168	123	102	174	189	171
21. Unemployment rate (% labour force 15+)	6.7	5.9	6.1	7.1	6.4	5.8	4.2	3.5	5.8	6.4	5.8
22. Youth unemployment rate (% labour force 15-24)	17.7	16.7	18.4	22.3	19.4	16.7	10.6	9.9	16.7	18.3	18.2
23. Long term unemployment rate (% labour force)	3.4	3.0	2.9	3.4	3.4	3.1	2.1	1.7	1.6	2.6	2.4
24. Youth unemployment ratio (% population aged 15-24)	8.1	7.0	7.3	8.6	7.5	6.3	3.9	3.5	6.2	6.6	6.4

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5244	5238	5238	5237	5242	5252	5275	5315	5343	5356	5372
2. Population aged 15-64	3576	3586	3601	3615	3624	3636	3651	3671	3671	3656	3631
3. Total employment (000)	2121	2125	2103	2098	2124	2152	2187	2225	2199	2159	2179
4. Population in employment aged 15-64	2036	2045	2028	2024	2039	2065	2092	2114	2081	2057	2078
5. Employment rate (% population aged 15-64)	56.9	57.0	56.3	56.0	56.3	56.8	57.3	57.6	56.7	56.3	57.2
6. Employment rate (% population aged 15-24)	31.4	29.2	27.6	25.4	23.4	23.7	23.9	23.5	21.7	20.6	19.9
7. Employment rate (% population aged 25-54)	74.4	74.7	73.5	73.4	74.0	74.5	74.9	75.2	74.1	73.4	74.3
8. Employment rate (% population aged 55-64)	23.1	25.9	28.4	29.4	30.9	32.1	33.5	34.4	35.0	35.5	37.2
9. FTE employment rate (% population aged 15-64)	54.2	55.6	55.1	54.6	54.8	55.2	55.5	55.8	54.8	54.3	55.3
10. Self-employed (% total employment)	10.6	11.1	11.9	11.3	10.8	11.2	10.8	10.8	11.6	12.4	13.2
11. Part-time employment (% total employment)	8.5	8.3	8.5	8.3	8.6	8.7	8.5	8.5	9.2	9.9	9.4
12. Fixed term contracts (% total employees)	8.9	9.3	10.7	10.7	9.8	10.1	10.2	9.8	10.2	10.6	10.1
13. Employment in Services (% total employment)	69.9	70.7	71.5	71.1	71.5	71.7	72.5	72.8	75.3	76.2	76.1
14. Employment in Industry (% total employment)	26.9	26.4	25.7	26.0	25.9	25.6	25.2	24.7	22.3	21.9	22.0
15. Employment in Agriculture (% total employment)	3.2	2.9	2.8	2.9	2.7	2.7	2.4	2.4	2.4	1.9	1.9
16. Activity rate (% population aged 15-64)	63.2	62.7	62.5	62.2	62.4	62.3	61.5	61.0	61.5	61.5	62.2
17. Activity rate (% of population aged 15-24)	37.9	35.2	34.0	31.5	28.9	29.2	26.9	26.1	26.1	25.3	24.2
18. Activity rate (% of population aged 25-54)	81.8	81.5	81.0	80.9	81.6	81.3	80.3	79.6	79.9	79.8	80.4
19. Activity rate (% of population aged 55-64)	24.6	27.2	30.0	31.3	32.9	34.0	35.2	36.1	37.2	38.0	39.4
20. Total unemployment (000)	218	203	222	222	221	201	152	126	175	191	180
21. Unemployment rate (% labour force 15+)	9.7	9.0	9.9	9.9	9.8	8.8	6.7	5.6	7.7	8.4	7.9
22. Youth unemployment rate (% labour force 15-24)	17.0	17.3	18.9	19.5	19.1	18.7	11.0	10.0	16.7	18.5	18.0
23. Long term unemployment rate (% labour force)	5.1	4.5	5.0	5.3	5.3	4.9	3.6	2.8	2.5	3.5	3.2
24. Youth unemployment ratio (% population aged 15-24)	6.5	6.1	6.4	6.1	5.5	5.4	2.9	2.6	4.4	4.7	4.3

Source: Eurostat.

Labour market indicators: Denmark

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5321	5339	5359	5379	5396	5415	5438	5485	5517	5542	5566
2. Population aged 15-64	3545	3538	3548	3559	3566	3569	3582	3605	3616	3619	3613
3. Total employment (000)	2785	2787	2756	2739	2767	2825	2903	2952	2882	2817	2806
4. Population in employment aged 15-64	2700	2684	2666	2693	2706	2762	2759	2807	2724	2654	2643
5. Employment rate (% population aged 15-64)	76.2	75.9	75.1	75.7	75.9	77.4	77.0	77.9	75.3	73.3	73.1
6. Employment rate (% population aged 15-24)	62.3	63.5	59.6	62.3	62.3	64.6	65.3	66.4	62.5	58.1	57.5
7. Employment rate (% population aged 25-54)	84.4	84.1	83.5	83.7	84.5	86.1	86.1	87.5	84.7	82.8	82.3
8. Employment rate (% population aged 55-64)	58.0	57.9	60.2	60.3	59.5	60.7	58.9	58.4	58.2	58.4	59.5
9. FTE employment rate (% population aged 15-64)	69.8	69.7	68.4	68.6	68.6	69.3	69.7	70.1	67.3	65.1	64.8
10. Self-employed (% total employment)	6.6	6.7	6.7	6.4	6.3	6.2	6.0	5.9	6.0	6.1	6.1
11. Part-time employment (% total employment)	20.1	20.0	21.3	22.2	22.1	23.6	23.7	24.4	25.9	26.3	25.9
12. Fixed term contracts (% total employees)	9.2	9.1	9.3	9.5	9.8	8.9	9.1	8.5	8.7	8.4	8.8
13. Employment in Services (% total employment)	74.7	75.3	75.9	76.5	76.7	76.9	76.9	77.0	78.4	79.2	79.3
14. Employment in Industry (% total employment)	22.1	21.5	21.0	20.5	20.4	20.4	20.5	20.5	19.0	18.2	18.1
15. Employment in Agriculture (% total employment)	3.2	3.2	3.1	3.0	2.9	2.7	2.6	2.5	2.6	2.6	2.6
16. Activity rate (% population aged 15-64)	79.9	79.6	79.5	80.1	79.8	80.6	80.1	80.7	80.2	79.4	79.3
17. Activity rate (% of population aged 15-24)	68.0	68.6	65.6	67.9	68.1	69.9	70.6	72.2	70.9	67.5	67.1
18. Activity rate (% of population aged 25-54)	87.9	87.8	87.8	88.2	88.1	88.9	88.9	89.9	89.4	88.7	88.2
19. Activity rate (% of population aged 55-64)	60.5	60.4	63.3	63.9	62.8	63.2	61.0	59.9	60.8	61.8	63.2
20. Total unemployment (000)	130	131	155	160	140	114	111	101	177	218	221
21. Unemployment rate (% labour force 15+)	4.5	4.6	5.4	5.5	4.8	3.9	3.8	3.4	6.0	7.5	7.6
22. Youth unemployment rate (% labour force 15-24)	8.3	7.4	9.2	8.2	8.6	7.7	7.5	8.0	11.8	14.0	14.2
23. Long term unemployment rate (% labour force)	0.9	0.9	1.1	1.2	1.1	0.8	0.6	0.5	0.6	1.5	1.8
24. Youth unemployment ratio (% population aged 15-24)	5.7	5.1	6.0	5.6	5.9	5.4	5.3	5.8	8.4	9.4	9.6

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	2632	2640	2650	2662	2671	2682	2692	2717	2734	2747	2758
2. Population aged 15-64	1792	1786	1794	1798	1799	1803	1807	1819	1823	1823	1820
3. Total employment (000)	1490	1490	1483	1465	1478	1506	1545	1570	1513	1472	1475
4. Population in employment aged 15-64	1438	1429	1429	1433	1436	1464	1460	1484	1421	1378	1381
5. Employment rate (% population aged 15-64)	80.2	80.0	79.6	79.7	79.8	81.2	80.8	81.6	78.0	75.6	75.9
6. Employment rate (% population aged 15-24)	64.5	65.5	61.5	63.4	63.9	65.0	66.5	67.4	62.2	56.7	56.6
7. Employment rate (% population aged 25-54)	88.2	88.4	87.9	87.6	88.3	90.1	89.8	90.9	86.9	85.3	85.7
8. Employment rate (% population aged 55-64)	65.5	64.5	67.3	67.3	65.6	67.1	64.9	65.2	64.9	63.3	63.8
9. FTE employment rate (% population aged 15-64)	76.9	76.7	75.4	75.7	75.3	76.3	76.3	76.6	72.6	70.3	70.3
10. Self-employed (% total employment)	9.2	9.2	9.0	8.7	8.5	8.1	8.2	8.1	8.3	8.3	8.3
11. Part-time employment (% total employment)	10.2	11.1	11.6	12.1	12.7	13.3	13.3	14.3	15.3	15.1	15.3
12. Fixed term contracts (% total employees)	7.7	7.9	8.2	8.7	8.5	8.0	7.8	7.7	7.9	8.1	8.3
13. Employment in Services (% total employment)	63.7	64.7	65.0	65.7	66.2	66.0	66.9	66.8	68.2	68.7	68.8
14. Employment in Industry (% total employment)	31.6	30.7	30.4	29.9	29.6	29.9	29.4	29.4	27.9	27.2	27.1
15. Employment in Agriculture (% total employment)	4.7	4.6	4.6	4.4	4.2	4.0	3.7	3.8	4.0	4.1	4.1
16. Activity rate (% population aged 15-64)	83.8	83.6	83.8	84.0	83.6	84.1	83.7	84.3	83.6	82.6	82.3
17. Activity rate (% of population aged 15-24)	70.2	70.7	67.7	69.7	70.0	70.5	72.0	72.8	71.7	67.6	67.1
18. Activity rate (% of population aged 25-54)	91.4	91.9	91.8	91.5	91.7	92.3	92.3	93.3	92.2	92.0	91.5
19. Activity rate (% of population aged 55-64)	68.4	67.1	70.4	71.3	68.7	69.6	66.9	66.9	68.1	67.8	68.3
20. Total unemployment (000)	63	65	74	78	68	52	53	50	103	129	118
21. Unemployment rate (% labour force 15+)	4.1	4.3	4.8	5.1	4.4	3.3	3.4	3.2	6.6	8.4	7.7
22. Youth unemployment rate (% labour force 15-24)	8.1	7.3	9.2	8.9	8.6	7.9	7.6	7.4	13.3	16.1	15.7
23. Long term unemployment rate (% labour force)	0.8	0.7	1.2	1.1	1.1	0.7	0.5	0.4	0.6	1.8	2.0
24. Youth unemployment ratio (% population aged 15-24)	5.7	5.2	6.2	6.2	6.1	5.6	5.5	5.4	9.5	10.9	10.5

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	2689	2699	2708	2717	2725	2733	2746	2768	2783	2796	2807
2. Population aged 15-64	1752	1752	1753	1762	1767	1767	1775	1786	1793	1795	1793
3. Total employment (000)	1295	1297	1273	1274	1290	1318	1358	1382	1369	1344	1331
4. Population in employment aged 15-64	1261	1256	1237	1261	1270	1297	1299	1323	1303	1276	1262
5. Employment rate (% population aged 15-64)	72.0	71.7	70.5	71.6	71.9	73.4	73.2	74.1	72.7	71.1	70.4
6. Employment rate (% population aged 15-24)	60.1	61.4	57.6	61.1	60.5	64.1	64.0	65.3	62.8	59.5	58.5
7. Employment rate (% population aged 25-54)	80.6	79.8	79.0	79.8	80.6	82.0	82.3	84.0	82.5	80.3	78.9
8. Employment rate (% population aged 55-64)	49.7	50.4	52.9	53.3	53.5	54.3	52.9	51.5	51.7	53.6	55.3
9. FTE employment rate (% population aged 15-64)	63.0	63.1	61.8	61.9	62.3	62.7	63.4	63.9	62.2	60.1	59.5
10. Self-employed (% total employment)	3.6	3.9	4.1	3.8	3.8	4.0	3.5	3.3	3.5	3.8	3.6
11. Part-time employment (% total employment)	31.6	30.3	32.7	33.8	33.0	35.4	35.5	36.0	37.5	38.4	37.6
12. Fixed term contracts (% total employees)	10.7	10.3	10.4	10.3	11.3	10.0	10.4	9.4	9.6	8.7	9.4
13. Employment in Services (% total employment)	86.9	87.2	88.1	88.4	88.2	88.8	87.9	88.3	89.5	90.6	90.6
14. Employment in Industry (% total employment)	11.6	11.3	10.5	10.2	10.4	9.9	10.8	10.7	9.3	8.5	8.4
15. Employment in Agriculture (% total employment)	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.1	1.1	0.9	0.9
16. Activity rate (% population aged 15-64)	75.9	75.5	75.1	76.2	75.9	77.0	76.4	77.0	76.8	76.0	76.1
17. Activity rate (% of population aged 15-24)	65.8	66.4	63.5	66.0	66.2	69.3	69.1	71.5	70.0	67.4	67.1
18. Activity rate (% of population aged 25-54)	84.4	83.7	83.7	84.8	84.5	85.4	85.3	86.4	86.5	85.3	84.7
19. Activity rate (% of population aged 55-64)	51.9	52.9	55.9	56.5	56.8	56.7	55.1	53.0	53.5	55.9	58.0
20. Total unemployment (000)	66	66	81	81	71	62	57	52	74	89	103
21. Unemployment rate (% labour force 15+)	5.0	5.0	6.1	6.0	5.3	4.5	4.2	3.7	5.3	6.5	7.5
22. Youth unemployment rate (% labour force 15-24)	8.5	7.5	9.2	7.4	8.6	7.5	7.4	8.7	10.3	11.8	12.7
23. Long term unemployment rate (% labour force)	1.0	1.0	1.0	1.3	1.2	0.9	0.7	0.5	0.5	1.2	1.7
24. Youth unemployment ratio (% population aged 15-24)	5.8	5.0	5.9	4.9	5.7	5.2	5.1	6.2	7.2	7.9	8.5

Source: Eurostat.

Labour market indicators: Germany

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	81345	81558	81598	81589	81529	81489	81363	81265	80967	80760	80806
2. Population aged 15-64	54973	54852	54675	54450	54764	54543	54229	54066	53763	53546	53730
3. Total employment (000)	39485	39257	38918	39034	38976	39192	39857	40345	40362	40553	41096
4. Population in employment aged 15-64	36179	35883	35512	35413	35845	36633	37397	37902	37808	38073	38979
5. Employment rate (% population aged 15-64)	65.8	65.4	65.0	65.0	65.5	67.2	69.0	70.1	70.3	71.1	72.5
6. Employment rate (% population aged 15-24)	47.0	45.7	44.2	41.9	41.9	43.5	45.4	46.6	46.0	46.2	47.9
7. Employment rate (% population aged 25-54)	79.3	78.7	77.9	78.1	77.4	78.8	80.3	80.9	80.8	81.5	82.8
8. Employment rate (% population aged 55-64)	37.9	38.9	39.9	41.8	45.5	48.1	51.3	53.7	56.1	57.7	59.9
9. FTE employment rate (% population aged 15-64)	58.6	58.1	57.5	56.6	57.1	58.0	59.5	60.7	60.9	61.6	62.6
10. Self-employed (% total employment)	10.2	10.3	10.6	10.9	11.3	11.4	11.3	11.1	11.1	11.1	11.0
11. Part-time employment (% total employment)	20.3	20.8	21.7	22.3	24.0	25.8	26.1	25.9	26.1	26.2	26.6
12. Fixed term contracts (% total employees)	12.4	12.0	12.2	12.4	14.2	14.5	14.6	14.7	14.5	14.7	14.7
13. Employment in Services (% total employment)	70.0	70.7	71.3	71.9	72.4	72.8	72.9	72.9	73.4	73.9	73.8
14. Employment in Industry (% total employment)	28.2	27.5	26.9	26.4	25.8	25.5	25.4	25.4	24.9	24.5	24.6
15. Employment in Agriculture (% total employment)	1.8	1.8	1.8	1.8	1.7	1.6	1.7	1.7	1.7	1.6	1.6
16. Activity rate (% population aged 15-64)	71.5	71.7	72.1	72.6	73.8	74.9	75.6	75.9	76.3	76.6	77.2
17. Activity rate (% of population aged 15-24)	51.3	50.7	50.0	48.0	49.6	50.4	51.5	52.2	51.8	51.3	52.5
18. Activity rate (% of population aged 25-54)	85.5	85.6	86.0	86.5	86.4	87.1	87.2	87.0	87.1	87.3	87.7
19. Activity rate (% of population aged 55-64)	42.9	43.9	45.5	47.8	52.1	54.9	57.2	58.7	61.0	62.5	64.0
20. Total unemployment (000)	3128	3462	3916	4251	4653	4245	3601	3136	3228	2946	2501
21. Unemployment rate (% labour force 15+)	7.9	8.7	9.8	10.5	11.3	10.3	8.7	7.5	7.8	7.1	5.9
22. Youth unemployment rate (% labour force 15-24)	8.4	9.9	11.6	13.8	15.6	13.8	11.9	10.6	11.2	9.9	8.6
23. Long term unemployment rate (% labour force)	3.9	4.2	4.9	5.9	6.0	5.8	4.9	4.0	3.5	3.4	2.8
24. Youth unemployment ratio (% population aged 15-24)	4.2	5.0	5.8	6.0	7.7	6.9	6.1	5.5	5.8	5.1	4.5

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	39736	39877	39931	39947	39938	39952	39904	39857	39738	39645	39717
2. Population aged 15-64	27715	27642	27549	27451	27558	27482	27297	27213	27055	26943	27057
3. Total employment (000)	22049	21741	21447	21480	21399	21441	21765	22017	21839	21871	22135
4. Population in employment aged 15-64	20175	19845	19540	19434	19636	20000	20378	20631	20401	20481	20927
5. Employment rate (% population aged 15-64)	72.8	71.8	70.9	70.8	71.3	72.8	74.7	75.8	75.4	76.0	77.3
6. Employment rate (% population aged 15-24)	49.3	46.9	45.4	43.6	43.6	45.3	47.2	48.7	47.5	47.9	49.7
7. Employment rate (% population aged 25-54)	86.9	85.6	84.3	83.9	83.7	84.8	86.4	87.1	86.1	86.5	87.7
8. Employment rate (% population aged 55-64)	46.5	47.3	48.2	50.7	53.6	56.1	59.4	61.7	63.8	65.0	67.0
9. FTE employment rate (% population aged 15-64)	70.9	69.9	68.9	67.8	68.7	69.6	71.4	72.6	72.1	72.7	73.8
10. Self-employed (% total employment)	12.2	12.5	12.9	13.3	13.5	13.6	13.4	13.3	13.6	13.6	13.6
11. Part-time employment (% total employment)	5.3	5.8	6.1	6.5	7.8	9.3	9.4	9.3	9.6	9.7	10.3
12. Fixed term contracts (% total employees)	12.2	11.8	12.1	12.7	14.4	14.7	14.7	14.7	14.4	14.5	14.6
13. Employment in Services (% total employment)	58.4	59.1	59.8	60.4	61.3	61.8	61.6	61.3	61.8	62.3	62.1
14. Employment in Industry (% total employment)	39.4	38.7	38.0	37.3	36.5	36.1	36.3	36.6	36.2	35.7	35.8
15. Employment in Agriculture (% total employment)	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0
16. Activity rate (% population aged 15-64)	79.0	78.8	79.1	79.2	80.6	81.3	81.7	82.0	82.2	82.3	82.5
17. Activity rate (% of population aged 15-24)	54.3	53.1	52.7	50.8	52.4	53.1	54.0	54.7	54.3	53.7	54.8
18. Activity rate (% of population aged 25-54)	93.5	93.2	93.2	93.0	93.6	93.8	93.8	93.5	93.2	93.1	93.1
19. Activity rate (% of population aged 55-64)	52.2	53.0	54.9	57.8	61.2	63.7	65.8	67.2	69.3	70.8	71.7
20. Total unemployment (000)	1729	1954	2230	2397	2620	2338	1938	1686	1836	1696	1406
21. Unemployment rate (% labour force 15+)	7.8	8.8	10.1	10.7	11.6	10.3	8.6	7.4	8.1	7.5	6.2
22. Youth unemployment rate (% labour force 15-24)	9.7	11.8	13.9	15.3	16.9	14.8	12.6	11.0	12.5	10.9	9.3
23. Long term unemployment rate (% labour force)	3.7	4.1	4.8	5.9	6.1	5.8	4.9	4.0	3.6	3.6	3.1
24. Youth unemployment ratio (% population aged 15-24)	5.0	6.2	7.2	7.2	8.8	7.9	6.8	6.0	6.8	5.8	5.1

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	41610	41681	41668	41642	41590	41537	41460	41408	41229	41115	41089
2. Population aged 15-64	27258	27210	27126	26999	27206	27061	26932	26854	26708	26604	26673
3. Total employment (000)	17436	17517	17471	17554	17577	17752	18091	18328	18523	18682	18961
4. Population in employment aged 15-64	16004	16038	15972	15979	16209	16633	17019	17271	17407	17591	18052
5. Employment rate (% population aged 15-64)	58.7	58.9	58.9	59.2	59.6	61.5	63.2	64.3	65.2	66.1	67.7
6. Employment rate (% population aged 15-24)	44.7	44.5	43.0	40.2	40.2	41.6	43.5	44.5	44.4	44.6	46.1
7. Employment rate (% population aged 25-54)	71.6	71.6	71.4	72.1	71.0	72.7	74.0	74.7	75.4	76.3	77.8
8. Employment rate (% population aged 55-64)	29.4	30.6	31.6	33.0	37.6	40.3	43.4	46.0	48.6	50.5	53.0
9. FTE employment rate (% population aged 15-64)	46.5	46.4	46.2	45.5	45.7	46.6	47.9	49.0	49.8	50.6	51.8
10. Self-employed (% total employment)	7.7	7.7	7.7	8.0	8.6	8.7	8.7	8.4	8.1	8.0	8.0
11. Part-time employment (% total employment)	39.3	39.5	40.8	41.6	43.8	45.8	46.1	45.7	45.4	45.5	45.7
12. Fixed term contracts (% total employees)	12.7	12.2	12.3	12.2	14.0	14.3	14.6	14.8	14.7	14.9	14.8
13. Employment in Services (% total employment)	83.7	84.2	84.7	85.0	85.3	85.5	85.7	86.1	86.5	86.8	86.8
14. Employment in Industry (% total employment)	14.8	14.4	14.0	13.8	13.5	13.4	13.2	12.7	12.3	12.1	12.1
15. Employment in Agriculture (% total employment)	1.4	1.4	1.3	1.2	1.2	1.1	1.2	1.2	1.2	1.1	1.1
16. Activity rate (% population aged 15-64)	63.8	64.4	65.1	65.8	66.9	68.5	69.4	69.7	70.4	70.8	71.8
17. Activity rate (% of population aged 15-24)	48.1	48.3	47.3	45.0	46.7	47.6	49.0	49.5	49.2	48.9	50.0
18. Activity rate (% of population aged 25-54)	77.4	77.9	78.6	79.7	79.1	80.3	80.6	80.5	81.0	81.3	82.1
19. Activity rate (% of population aged 55-64)	33.6	34.8	36.2	37.8	43.2	46.3	48.9	50.5	52.9	54.5	56.7
20. Total unemployment (000)	1399	1507	1686	1854	2033	1907	1663	1450	1393	1250	1095
21. Unemployment rate (% labour force 15+)	7.9	8.5	9.4	10.2	11.0	10.2	8.8	7.7	7.3	6.6	5.6
22. Youth unemployment rate (% labour force 15-24)	6.8	7.6	8.9	12.2	14.1	12.6	11.1	10.0	9.8	8.8	7.8
23. Long term unemployment rate (% labour force)	4.1	4.3	4.9	5.9	5.8	5.8	5.0	4.0	3.4	3.0	2.6
24. Youth unemployment ratio (% population aged 15-24)	3.4	3.8	4.3	4.9	6.6	6.0	5.4	4.9	4.8	4.3	3.9

Source: Eurostat.

LFS indicators: 2005 break in series.

Labour market indicators: Estonia

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1361	1356	1350	1348	1343	1339	1338	1336	1336	1335	1337
2. Population aged 15-64	916	912	911	910	910	913	909	907	906	904	903
3. Total employment (000)	577	584	593	592	604	637	641	643	579	551	590
4. Population in employment aged 15-64	559	566	573	573	586	621	631	634	576	552	588
5. Employment rate (% population aged 15-64)	61.0	62.0	62.9	63.0	64.4	68.1	69.4	69.8	63.5	61.0	65.1
6. Employment rate (% population aged 15-24)	28.1	28.2	29.3	27.2	29.1	31.6	34.5	36.4	28.9	25.7	31.5
7. Employment rate (% population aged 25-54)	76.0	76.8	77.8	78.8	79.6	84.2	84.8	83.9	76.4	74.8	78.1
8. Employment rate (% population aged 55-64)	48.5	51.6	52.3	52.4	56.1	58.5	60.0	62.4	60.4	53.8	57.2
9. FTE employment rate (% population aged 15-64)	59.9	60.9	61.3	61.8	63.1	66.7	67.7	68.3	61.5	59.0	63.2
10. Self-employed (% total employment)	8.2	8.1	8.9	9.7	8.1	8.1	9.1	7.8	8.2	8.3	8.5
11. Part-time employment (% total employment)	8.2	7.7	8.5	8.0	7.8	7.8	8.2	7.2	10.5	11.0	10.6
12. Fixed term contracts (% total employees)	2.5	2.7	2.5	2.6	2.7	2.7	2.1	2.4	2.5	3.7	4.5
13. Employment in Services (% total employment)	61.0	62.0	61.5	59.4	61.4	62.4	61.0	61.6	65.2	66.7	64.5
14. Employment in Industry (% total employment)	32.2	31.1	32.4	34.8	33.4	32.9	34.5	34.6	30.9	29.2	31.1
15. Employment in Agriculture (% total employment)	6.8	6.8	6.1	5.7	5.1	4.7	4.6	3.9	3.9	4.2	4.4
16. Activity rate (% population aged 15-64)	70.0	69.3	70.1	70.0	70.1	72.4	72.9	74.0	74.0	73.8	74.7
17. Activity rate (% of population aged 15-24)	36.5	34.2	36.9	34.7	34.6	35.9	38.3	41.4	39.9	38.3	40.6
18. Activity rate (% of population aged 25-54)	86.3	85.4	85.7	86.5	86.0	89.1	88.5	88.1	87.8	88.2	88.3
19. Activity rate (% of population aged 55-64)	53.2	55.7	56.3	55.7	59.0	61.0	62.2	65.1	66.7	64.2	64.7
20. Total unemployment (000)	83	67	66	64	52	41	32	38	95	116	87
21. Unemployment rate (% labour force 15+)	12.6	10.3	10.0	9.7	7.9	5.9	4.7	5.5	13.8	16.9	12.5
22. Youth unemployment rate (% labour force 15-24)	23.2	17.6	20.6	21.7	15.9	12.0	10.0	12.0	27.5	32.9	22.3
23. Long term unemployment rate (% labour force)	6.1	5.4	4.6	5.0	4.2	2.9	2.3	1.7	3.8	7.7	7.1
24. Youth unemployment ratio (% population aged 15-24)	8.5	6.0	7.6	7.5	5.5	4.3	3.8	5.0	11.0	12.6	9.1

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	627	624	621	619	616	616	615	613	613	614	615
2. Population aged 15-64	439	435	435	433	434	437	436	435	435	434	434
3. Total employment (000)	294	297	302	298	299	318	323	324	280	266	292
4. Population in employment aged 15-64	285	289	292	288	291	311	319	320	279	267	294
5. Employment rate (% population aged 15-64)	65.0	66.5	67.2	66.4	67.0	71.0	73.2	73.6	64.1	61.5	67.7
6. Employment rate (% population aged 15-24)	33.9	34.6	35.9	32.8	33.1	37.0	38.9	39.5	30.8	27.4	33.6
7. Employment rate (% population aged 25-54)	78.7	80.3	81.0	81.6	81.9	87.5	89.7	88.5	77.4	75.7	81.5
8. Employment rate (% population aged 55-64)	56.7	58.4	58.9	56.4	59.3	57.5	59.4	65.2	59.4	52.2	57.3
9. FTE employment rate (% population aged 15-64)	65.0	66.5	66.0	65.7	66.4	70.6	72.4	73.0	62.9	60.3	67.0
10. Self-employed (% total employment)	10.9	10.7	11.8	13.0	11.1	11.3	12.7	10.6	11.4	11.5	11.9
11. Part-time employment (% total employment)	5.1	4.8	5.4	5.4	4.9	4.3	4.3	4.1	7.0	7.1	5.6
12. Fixed term contracts (% total employees)	3.3	3.9	3.2	3.5	3.4	3.3	2.7	3.4	3.0	4.7	5.4
13. Employment in Services (% total employment)	48.7	49.9	49.9	47.9	49.6	48.7	46.3	47.2	50.9	52.0	49.0
14. Employment in Industry (% total employment)	41.6	40.7	41.7	44.2	43.5	44.9	47.4	47.4	43.7	42.2	44.5
15. Employment in Agriculture (% total employment)	9.7	9.4	8.4	7.9	7.0	6.4	6.2	5.3	5.4	5.8	6.5
16. Activity rate (% population aged 15-64)	74.9	74.6	75.0	74.4	73.6	75.8	77.5	78.3	77.6	76.8	78.1
17. Activity rate (% of population aged 15-24)	42.4	40.4	43.1	41.6	39.7	41.2	44.2	45.2	45.0	42.3	44.0
18. Activity rate (% of population aged 25-54)	90.2	90.1	89.6	90.1	89.2	92.8	93.6	92.9	91.9	91.8	92.1
19. Activity rate (% of population aged 55-64)	62.5	63.7	64.4	60.7	62.9	61.6	63.7	68.8	67.4	64.5	67.1
20. Total unemployment (000)	44	36	34	35	29	21	19	20	59	67	46
21. Unemployment rate (% labour force 15+)	12.9	10.8	10.2	10.4	8.8	6.2	5.4	5.8	16.9	19.5	13.1
22. Youth unemployment rate (% labour force 15-24)	20.1	14.3	16.9	21.2	16.6	10.0	12.1	12.6	31.7	35.2	23.7
23. Long term unemployment rate (% labour force)	6.8	6.3	4.8	5.6	4.2	3.2	2.8	2.0	4.5	9.4	7.9
24. Youth unemployment ratio (% population aged 15-24)	8.5	5.8	7.3	8.8	6.6	4.1	5.3	5.7	14.3	14.9	10.4

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	734	732	729	729	727	724	723	723	723	722	722
2. Population aged 15-64	478	478	476	476	476	475	473	472	472	470	469
3. Total employment (000)	283	287	291	295	305	319	318	319	299	286	298
4. Population in employment aged 15-64	274	277	281	286	296	310	312	313	297	285	295
5. Employment rate (% population aged 15-64)	57.4	57.9	59.0	60.0	62.1	65.3	65.9	66.3	63.0	60.6	62.8
6. Employment rate (% population aged 15-24)	21.9	21.6	22.7	21.6	25.1	26.1	30.0	33.2	27.0	24.0	29.4
7. Employment rate (% population aged 25-54)	73.5	73.6	74.8	76.2	77.5	81.1	80.1	79.5	75.5	73.9	74.8
8. Employment rate (% population aged 55-64)	42.1	46.5	47.3	49.4	53.7	59.2	60.5	60.3	61.2	54.9	57.1
9. FTE employment rate (% population aged 15-64)	55.2	55.9	57.0	58.3	60.0	63.1	63.5	64.0	60.3	57.9	59.7
10. Self-employed (% total employment)	5.4	5.4	5.9	6.3	5.1	4.8	5.5	5.0	5.2	5.3	5.2
11. Part-time employment (% total employment)	11.3	10.7	11.8	10.6	10.6	11.3	12.1	10.4	13.8	14.5	15.4
12. Fixed term contracts (% total employees)	1.8	1.5	1.8	1.8	2.0	2.2	1.6	1.4	2.0	2.8	3.6
13. Employment in Services (% total employment)	73.6	74.5	73.5	71.0	72.9	76.0	75.7	76.0	78.5	80.0	79.5
14. Employment in Industry (% total employment)	22.6	21.4	22.7	25.4	23.7	21.0	21.4	21.7	19.0	17.3	18.1
15. Employment in Agriculture (% total employment)	3.8	4.2	3.8	3.5	3.4	3.0	2.9	2.4	2.5	2.7	2.4
16. Activity rate (% population aged 15-64)	65.5	64.4	65.7	66.0	66.9	69.3	68.7	70.1	70.6	71.0	71.5
17. Activity rate (% of population aged 15-24)	30.3	27.9	30.6	27.8	29.5	30.6	32.3	37.5	34.7	34.3	37.1
18. Activity rate (% of population aged 25-54)	82.7	81.0	82.2	83.2	83.1	85.7	83.7	83.6	83.9	84.9	84.7
19. Activity rate (% of population aged 55-64)	46.0	49.8	50.3	51.9	56.0	60.5	61.0	62.3	66.1	63.9	62.9
20. Total unemployment (000)	39	31	32	29	23	19	13	18	37	49	41
21. Unemployment rate (% labour force 15+)	12.2	9.7	9.9	8.9	7.1	5.6	3.9	5.3	10.6	14.3	11.8
22. Youth unemployment rate (% labour force 15-24)	27.6	22.5	26.0	22.4	14.9	14.7	7.1	11.3	22.0	30.0	20.7
23. Long term unemployment rate (% labour force)	5.4	4.5	4.4	4.4	4.2	2.6	1.7	1.4	3.0	5.9	6.4
24. Youth unemployment ratio (% population aged 15-24)	8.4	6.3	8.0	6.2	4.4	4.5	2.3	4.2	7.6	10.3	7.7

Source: Eurostat.

Labour market indicators: Ireland

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	3859	3926	3991	4059	4149	4253	4357	4440	4468	4476	4491
2. Population aged 15-64	2601	2661	2711	2761	2831	2919	2997	3041	3028	3002	2979
3. Total employment (000)	1749	1776	1809	1870	1962	2048	2123	2100	1929	1848	1810
4. Population in employment aged 15-64	1712	1742	1776	1830	1915	2005	2073	2055	1885	1804	1764
5. Employment rate (% population aged 15-64)	65.8	65.5	65.5	66.3	67.6	68.7	69.2	67.6	62.2	60.1	59.2
6. Employment rate (% population aged 15-24)	49.3	47.6	47.5	47.7	48.7	50.3	50.4	45.9	35.8	30.5	28.2
7. Employment rate (% population aged 25-54)	76.3	76.1	75.9	76.8	77.9	78.3	78.6	77.3	72.4	70.4	69.4
8. Employment rate (% population aged 55-64)	46.8	48.0	49.0	49.5	51.6	53.1	53.8	53.7	51.3	50.2	50.0
9. FTE employment rate (% population aged 15-64)	60.8	60.9	60.6	61.0	62.8	64.0	64.2	62.3	56.2	53.9	52.8
10. Self-employed (% total employment)	18.1	17.9	17.6	17.7	16.9	16.3	17.0	17.6	17.8	17.2	16.7
11. Part-time employment (% total employment)	16.5	16.5	16.9	16.8	:	:	17.7	18.6	21.3	22.5	23.5
12. Fixed term contracts (% total employees)	5.3	5.3	5.2	4.1	3.7	6.0	8.1	8.5	8.6	9.4	9.9
13. Employment in Services (% total employment)	64.7	66.0	66.9	67.1	67.3	67.3	68.0	69.6	73.5	75.7	76.4
14. Employment in Industry (% total employment)	28.3	27.3	26.7	26.8	27.0	27.3	26.8	25.0	21.5	19.7	19.0
15. Employment in Agriculture (% total employment)	7.1	6.7	6.4	6.1	5.7	5.4	5.2	5.5	5.0	4.6	4.6
16. Activity rate (% population aged 15-64)	68.6	68.6	68.8	69.5	70.8	71.9	72.5	72.0	70.8	69.8	69.4
17. Activity rate (% of population aged 15-24)	53.1	52.0	52.3	52.4	53.3	55.0	55.4	52.5	47.3	42.3	39.9
18. Activity rate (% of population aged 25-54)	78.9	79.1	79.1	79.9	80.9	81.4	81.9	81.6	81.1	80.7	80.3
19. Activity rate (% of population aged 55-64)	48.0	49.3	50.2	50.8	53.1	54.4	55.1	55.5	54.8	54.9	55.3
20. Total unemployment (000)	72	83	87	88	90	95	101	141	259	292	304
21. Unemployment rate (% labour force 15+)	3.9	4.5	4.6	4.5	4.4	4.5	4.6	6.3	11.9	13.7	14.4
22. Youth unemployment rate (% labour force 15-24)	7.2	8.4	8.7	8.7	8.6	8.6	8.9	13.3	24.4	27.8	29.4
23. Long term unemployment rate (% labour force)	1.3	1.3	1.5	1.6	1.5	1.4	1.3	1.7	3.5	6.7	8.6
24. Youth unemployment ratio (% population aged 15-24)	3.8	4.4	4.8	4.7	4.6	4.7	5.0	6.7	11.5	11.8	11.7

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1919	1951	1983	2018	2067	2127	2180	2215	2221	2218	2224
2. Population aged 15-64	1307	1337	1361	1387	1425	1476	1515	1531	1515	1495	1482
3. Total employment (000)	1031	1036	1050	1084	1130	1181	1211	1180	1047	990	967
4. Population in employment aged 15-64	1002	1008	1024	1053	1095	1149	1174	1146	1014	958	935
5. Employment rate (% population aged 15-64)	76.6	75.4	75.2	75.9	76.9	77.9	77.5	74.9	66.9	64.1	63.1
6. Employment rate (% population aged 15-24)	53.1	50.6	50.5	50.7	51.5	53.9	53.0	46.7	33.5	28.4	26.3
7. Employment rate (% population aged 25-54)	88.6	87.4	87.0	87.8	88.4	88.4	87.7	85.5	77.8	75.2	74.1
8. Employment rate (% population aged 55-64)	64.6	65.0	64.6	65.0	65.7	66.9	67.8	66.1	61.3	58.2	57.2
9. FTE employment rate (% population aged 15-64)	75.9	74.7	74.4	74.9	76.4	77.6	77.0	73.8	64.5	61.3	60.0
10. Self-employed (% total employment)	25.3	25.2	24.8	25.0	24.2	23.3	24.4	25.4	26.5	25.4	24.8
11. Part-time employment (% total employment)	6.6	6.5	6.6	6.1	:	:	7.0	7.8	10.7	11.8	12.8
12. Fixed term contracts (% total employees)	4.4	4.5	4.4	3.7	3.1	5.1	6.7	7.2	7.5	8.6	9.5
13. Employment in Services (% total employment)	51.2	52.0	52.9	52.8	52.5	52.1	52.5	54.7	60.2	63.3	64.5
14. Employment in Industry (% total employment)	38.1	37.6	37.2	37.6	38.6	39.4	39.3	36.6	31.5	29.0	27.8
15. Employment in Agriculture (% total employment)	10.8	10.4	9.8	9.6	9.0	8.5	8.3	8.6	8.3	7.7	7.7
16. Activity rate (% population aged 15-64)	79.9	79.2	79.3	79.9	80.6	81.7	81.6	80.7	78.8	77.4	76.8
17. Activity rate (% of population aged 15-24)	57.3	55.7	56.0	55.9	56.6	59.3	58.8	55.2	48.6	43.1	40.6
18. Activity rate (% of population aged 25-54)	91.8	91.2	91.0	91.8	92.1	92.1	91.6	91.3	90.3	89.6	89.1
19. Activity rate (% of population aged 55-64)	66.4	66.7	66.3	66.9	67.7	68.6	69.6	68.6	66.7	65.3	65.0
20. Total unemployment (000)	43	51	54	55	54	57	62	94	182	200	204
21. Unemployment rate (% labour force 15+)	4.1	4.7	4.9	4.8	4.6	4.6	4.9	7.4	14.9	16.9	17.5
22. Youth unemployment rate (% labour force 15-24)	7.5	9.1	9.4	9.1	9.2	8.9	9.8	16.1	31.1	34.0	35.3
23. Long term unemployment rate (% labour force)	1.6	1.8	1.9	2.0	1.9	1.8	1.7	2.3	4.8	9.1	11.5
24. Youth unemployment ratio (% population aged 15-24)	4.3	5.1	5.5	5.2	5.1	5.3	5.8	8.5	15.1	14.7	14.3

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1940	1975	2008	2041	2081	2126	2177	2225	2247	2258	2267
2. Population aged 15-64	1293	1324	1350	1375	1406	1443	1482	1510	1513	1507	1497
3. Total employment (000)	718	741	759	787	833	867	911	920	883	858	843
4. Population in employment aged 15-64	710	734	752	777	820	855	898	909	871	846	829
5. Employment rate (% population aged 15-64)	54.9	55.4	55.7	56.5	58.3	59.3	60.6	60.2	57.6	56.1	55.4
6. Employment rate (% population aged 15-24)	45.5	44.5	44.4	44.7	45.9	46.5	47.8	45.0	38.1	32.6	30.0
7. Employment rate (% population aged 25-54)	64.0	64.7	64.8	65.8	67.3	68.0	69.3	69.0	66.9	65.7	64.8
8. Employment rate (% population aged 55-64)	28.7	30.8	33.1	33.7	37.3	39.0	39.6	41.1	41.1	42.1	42.9
9. FTE employment rate (% population aged 15-64)	45.7	47.0	46.7	47.1	49.2	50.4	51.3	50.8	48.1	46.6	45.9
10. Self-employed (% total employment)	7.9	7.6	7.6	7.5	7.1	6.8	7.2	7.6	7.6	7.7	7.5
11. Part-time employment (% total employment)	30.7	30.6	31.0	31.5	:	:	32.0	32.4	33.9	34.8	35.6
12. Fixed term contracts (% total employees)	6.2	6.3	6.0	4.6	4.2	7.0	9.5	9.8	9.6	10.0	10.4
13. Employment in Services (% total employment)	83.8	85.2	85.9	86.4	87.2	87.7	88.4	88.6	89.4	90.1	90.1
14. Employment in Industry (% total employment)	14.4	13.1	12.4	12.3	11.6	11.1	10.4	10.0	9.5	8.9	8.9
15. Employment in Agriculture (% total employment)	1.8	1.6	1.6	1.3	1.2	1.3	1.2	1.4	1.1	1.1	1.0
16. Activity rate (% population aged 15-64)	57.1	57.8	58.3	59.0	60.8	61.9	63.3	63.1	62.7	62.2	62.1
17. Activity rate (% of population aged 15-24)	48.8	48.1	48.5	48.8	49.9	50.6	51.9	49.9	46.1	41.5	39.2
18. Activity rate (% of population aged 25-54)	66.0	66.9	67.2	68.0	69.6	70.5	71.9	71.8	71.9	71.8	71.7
19. Activity rate (% of population aged 55-64)	29.4	31.6	33.8	34.4	38.2	40.0	40.4	42.2	42.8	44.6	45.6
20. Total unemployment (000)	28	31	32	33	35	38	39	47	77	92	100
21. Unemployment rate (% labour force 15+)	3.8	4.1	4.1	4.0	4.1	4.2	4.1	4.9	8.0	9.7	10.6
22. Youth unemployment rate (% labour force 15-24)	6.7	7.6	7.8	8.3	7.9	8.2	7.8	10.3	17.3	21.5	23.3
23. Long term unemployment rate (% labour force)	0.8	0.8	0.9	1.0	0.9	0.9	0.9	0.9	1.8	3.7	5.0
24. Youth unemployment ratio (% population aged 15-24)	3.3	3.7	4.1	4.2	4.0	4.1	4.2	4.9	8.0	8.9	9.1

Source: Eurostat.

Labour market indicators: Greece

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	10504	10542	10578	10616	10657	10710	10754	10780	10839	10882	10925
2. Population aged 15-64	7099	7111	7119	7129	7132	7158	7208	7232	7222	7231	7230
3. Total employment (000)	4261	4357	4408	4514	4650	4736	4810	4846	4835	4743	4425
4. Population in employment aged 15-64	3999	4087	4181	4235	4287	4365	4424	4474	4423	4307	4017
5. Employment rate (% population aged 15-64)	56.3	57.5	58.7	59.4	60.1	61.0	61.4	61.9	61.2	59.6	55.6
6. Employment rate (% population aged 15-24)	26.2	26.5	25.3	26.8	25.0	24.2	24.0	23.5	22.9	20.4	16.3
7. Employment rate (% population aged 25-54)	70.6	71.6	72.9	73.5	74.0	75.3	75.6	76.1	75.4	73.3	69.0
8. Employment rate (% population aged 55-64)	38.2	39.2	41.3	39.4	41.6	42.3	42.4	42.8	42.2	42.3	39.4
9. FTE employment rate (% population aged 15-64)	56.0	57.1	58.4	58.8	59.3	59.9	60.3	60.9	60.1	58.3	54.1
10. Self-employed (% total employment)	37.9	37.0	36.5	35.7	35.6	35.1	34.3	33.9	34.3	34.3	34.7
11. Part-time employment (% total employment)	4.0	4.4	4.3	4.6	5.0	5.7	5.6	5.6	6.0	6.4	6.8
12. Fixed term contracts (% total employees)	13.2	11.7	11.2	11.9	11.8	10.7	10.9	11.5	12.1	12.4	11.6
13. Employment in Services (% total employment)	63.9	64.7	65.2	67.5	68.4	69.2	69.3	69.4	69.5	70.1	72.0
14. Employment in Industry (% total employment)	20.4	20.2	20.2	19.8	19.7	19.3	19.7	19.7	19.2	18.2	16.4
15. Employment in Agriculture (% total employment)	15.7	15.1	14.6	12.6	11.8	11.5	11.1	10.9	11.2	11.7	11.6
16. Activity rate (% population aged 15-64)	63.3	64.2	65.2	66.5	66.8	67.0	67.0	67.1	67.8	68.2	67.7
17. Activity rate (% of population aged 15-24)	36.5	36.2	34.6	36.7	33.7	32.4	31.1	30.2	30.9	30.3	29.2
18. Activity rate (% of population aged 25-54)	77.8	78.8	79.8	81.1	81.5	82.0	81.9	82.0	82.8	83.3	83.2
19. Activity rate (% of population aged 55-64)	39.9	40.9	42.7	41.3	43.2	43.9	43.9	44.2	44.2	45.1	43.1
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	5.5	5.3	5.3	5.6	5.1	4.8	4.1	3.6	3.9	5.7	8.8
24. Youth unemployment ratio (% population aged 15-24)	10.3	9.7	9.3	9.9	8.8	8.2	7.1	6.7	8.0	10.0	13.0

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5154	5172	5190	5207	5227	5255	5285	5300	5330	5354	5377
2. Population aged 15-64	3519	3529	3537	3545	3551	3570	3603	3617	3615	3623	3626
3. Total employment (000)	2684	2728	2747	2796	2870	2901	2944	2950	2914	2839	2641
4. Population in employment aged 15-64	2514	2550	2595	2613	2636	2663	2698	2713	2658	2570	2390
5. Employment rate (% population aged 15-64)	71.4	72.2	73.4	73.7	74.2	74.6	74.9	75.0	73.5	70.9	65.9
6. Employment rate (% population aged 15-24)	30.7	31.5	30.9	32.3	30.1	29.7	29.2	28.5	27.7	24.5	19.6
7. Employment rate (% population aged 25-54)	88.5	88.7	89.3	89.3	89.5	90.0	90.1	90.2	88.4	85.3	80.0
8. Employment rate (% population aged 55-64)	55.3	55.9	58.7	56.4	58.8	59.2	59.1	59.1	57.7	56.5	52.3
9. FTE employment rate (% population aged 15-64)	71.9	72.8	73.9	74.1	74.4	74.6	75.0	75.2	73.5	70.6	65.1
10. Self-employed (% total employment)	40.1	39.0	38.5	38.4	38.2	37.8	37.1	36.6	37.4	37.3	37.8
11. Part-time employment (% total employment)	2.2	2.3	2.2	2.2	2.3	2.9	2.7	2.8	3.2	3.7	4.5
12. Fixed term contracts (% total employees)	11.6	10.5	9.7	10.5	10.1	9.1	9.3	9.9	10.6	10.9	10.5
13. Employment in Services (% total employment)	58.5	59.2	59.5	61.5	62.0	62.7	62.3	61.9	61.7	62.6	65.6
14. Employment in Industry (% total employment)	26.5	26.5	26.7	26.7	26.8	26.4	27.0	27.4	27.0	25.8	23.0
15. Employment in Agriculture (% total employment)	15.1	14.3	13.8	11.9	11.1	10.9	10.7	10.8	11.2	11.7	11.5
16. Activity rate (% population aged 15-64)	77.1	77.6	78.3	79.0	79.2	79.1	79.1	79.1	79.0	78.9	77.7
17. Activity rate (% of population aged 15-24)	39.1	39.3	38.1	40.0	37.0	36.1	34.7	34.3	34.4	33.4	31.8
18. Activity rate (% of population aged 25-54)	94.1	94.1	94.3	94.6	94.6	94.7	94.6	94.4	94.4	94.2	93.5
19. Activity rate (% of population aged 55-64)	57.7	58.1	60.6	58.9	60.8	61.0	60.8	60.9	60.1	60.2	57.3
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	3.2	3.1	3.0	3.0	2.6	2.6	2.2	2.1	2.4	3.9	6.7
24. Youth unemployment ratio (% population aged 15-24)	8.5	7.8	7.2	7.6	6.9	6.4	5.5	5.8	6.6	8.9	12.2

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5350	5369	5388	5409	5431	5455	5469	5480	5509	5528	5548
2. Population aged 15-64	3580	3582	3583	3584	3581	3588	3605	3615	3607	3608	3604
3. Total employment (000)	1577	1629	1662	1719	1780	1835	1866	1896	1920	1904	1784
4. Population in employment aged 15-64	1485	1537	1586	1621	1651	1702	1725	1761	1766	1737	1626
5. Employment rate (% population aged 15-64)	41.5	42.9	44.3	45.2	46.1	47.4	47.9	48.7	48.9	48.1	45.1
6. Employment rate (% population aged 15-24)	21.7	21.4	19.8	21.3	19.8	18.7	18.7	18.5	18.1	16.2	12.9
7. Employment rate (% population aged 25-54)	52.8	54.5	56.4	57.6	58.5	60.5	60.8	61.9	62.2	61.1	57.7
8. Employment rate (% population aged 55-64)	22.9	24.0	25.5	24.0	25.8	26.6	26.9	27.5	27.7	28.9	27.3
9. FTE employment rate (% population aged 15-64)	40.5	41.7	43.2	43.8	44.3	45.3	45.7	46.6	46.7	45.9	43.0
10. Self-employed (% total employment)	34.3	33.7	33.3	31.2	31.5	30.8	29.7	29.7	29.7	29.9	30.1
11. Part-time employment (% total employment)	7.2	8.0	7.7	8.5	9.3	10.2	10.1	9.9	10.4	10.4	10.2
12. Fixed term contracts (% total employees)	15.7	13.6	13.3	14.0	14.3	13.0	13.1	13.7	14.1	14.4	12.9
13. Employment in Services (% total employment)	72.9	73.6	74.3	77.1	78.5	79.2	79.9	80.7	81.1	81.1	81.4
14. Employment in Industry (% total employment)	10.2	9.9	9.8	9.1	8.6	8.5	8.5	8.1	7.7	7.2	6.9
15. Employment in Agriculture (% total employment)	16.9	16.5	15.8	13.8	12.9	12.3	11.6	11.2	11.2	11.7	11.7
16. Activity rate (% population aged 15-64)	49.7	51.0	52.2	54.1	54.5	55.0	54.9	55.1	56.5	57.6	57.5
17. Activity rate (% of population aged 15-24)	33.8	33.1	31.2	33.4	30.4	28.7	27.6	26.1	27.4	27.2	26.6
18. Activity rate (% of population aged 25-54)	61.7	63.4	65.2	67.6	68.2	69.1	69.1	69.4	71.0	72.2	72.7
19. Activity rate (% of population aged 55-64)	23.9	25.2	26.4	25.2	27.1	28.0	28.2	28.6	29.3	30.9	29.7
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	9.0	8.6	8.9	9.4	8.9	8.1	7.0	6.0	6.0	8.1	11.5
24. Youth unemployment ratio (% population aged 15-24)	12.1	11.7	11.4	12.1	10.6	9.9	8.8	7.5	9.3	11.1	13.7

Source: Eurostat.

Labour market indicators: Spain

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	40427	41063	41753	42440	43141	43835	44630	45329	45671	45820	45908
2. Population aged 15-64	27742	28231	28729	29227	29755	30255	30808	31252	31349	31261	31127
3. Total employment (000)	16942	17359	17916	18565	19335	20105	20713	20676	19293	18790	18413
4. Population in employment aged 15-64	16039	16527	17188	17861	18834	19600	20211	20103	18736	18304	17953
5. Employment rate (% population aged 15-64)	57.8	58.5	59.8	61.1	63.3	64.8	65.6	64.3	59.8	58.6	57.7
6. Employment rate (% population aged 15-24)	34.0	34.0	34.4	35.2	38.3	39.5	39.1	36.0	28.0	24.9	21.9
7. Employment rate (% population aged 25-54)	69.5	70.2	71.4	72.7	74.4	75.8	76.8	75.3	70.7	69.6	68.7
8. Employment rate (% population aged 55-64)	39.2	39.6	40.7	41.3	43.1	44.1	44.6	45.6	44.1	43.6	44.5
9. FTE employment rate (% population aged 15-64)	55.4	56.2	57.3	58.3	59.4	60.8	61.7	60.5	55.8	54.5	53.5
10. Self-employed (% total employment)	15.6	15.3	14.8	14.6	14.2	13.8	13.5	13.4	13.4	13.3	13.1
11. Part-time employment (% total employment)	8.0	8.0	8.2	8.7	12.4	12.0	11.8	12.0	12.8	13.3	13.8
12. Fixed term contracts (% total employees)	32.2	31.8	31.8	32.5	33.3	34.0	31.7	29.3	25.4	24.9	25.3
13. Employment in Services (% total employment)	64.4	65.1	65.7	66.4	67.0	67.9	68.5	70.4	73.3	74.7	75.9
14. Employment in Industry (% total employment)	29.8	29.3	28.9	28.5	28.3	27.8	27.4	25.7	22.7	21.2	19.9
15. Employment in Agriculture (% total employment)	5.8	5.6	5.4	5.1	4.8	4.3	4.1	3.9	4.0	4.2	4.1
16. Activity rate (% population aged 15-64)	64.7	66.2	67.6	68.7	69.7	70.8	71.6	72.6	73.0	73.4	73.7
17. Activity rate (% of population aged 15-24)	43.0	43.7	44.5	45.1	47.7	48.2	47.8	47.7	45.1	42.7	40.9
18. Activity rate (% of population aged 25-54)	76.6	78.2	79.6	80.6	80.9	82.0	82.8	83.8	84.7	85.5	86.0
19. Activity rate (% of population aged 55-64)	41.9	42.7	43.8	44.4	45.9	46.8	47.4	49.2	50.2	50.8	52.3
20. Total unemployment (000)	1904	2155	2242	2214	1913	1837	1834	2591	4150	4632	4999
21. Unemployment rate (% labour force 15+)	10.5	11.4	11.4	10.9	9.2	8.5	8.3	11.3	18.0	20.1	21.7
22. Youth unemployment rate (% labour force 15-24)	21.0	22.2	22.6	22.0	19.7	17.9	18.2	24.6	37.8	41.6	46.4
23. Long term unemployment rate (% labour force)	3.8	3.8	3.8	3.5	2.2	1.8	1.7	2.0	4.3	7.3	9.0
24. Youth unemployment ratio (% population aged 15-24)	9.1	9.7	10.1	9.9	9.4	8.6	8.7	11.7	17.1	17.8	19.0

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	19825	20172	20532	20894	21268	21641	22062	22412	22569	22604	22612
2. Population aged 15-64	13908	14185	14456	14727	15019	15292	15596	15816	15855	15778	15664
3. Total employment (000)	10651	10819	11035	11296	11606	11955	12198	11963	10875	10476	10162
4. Population in employment aged 15-64	10077	10296	10583	10864	11294	11642	11888	11624	10555	10204	9908
5. Employment rate (% population aged 15-64)	72.5	72.6	73.2	73.8	75.2	76.1	76.2	73.5	66.6	64.7	63.2
6. Employment rate (% population aged 15-24)	40.2	39.7	39.9	40.8	43.5	44.4	44.2	39.3	29.4	25.6	22.1
7. Employment rate (% population aged 25-54)	85.9	85.7	85.9	86.1	86.9	87.6	87.6	84.4	77.3	75.7	74.5
8. Employment rate (% population aged 55-64)	57.7	58.4	59.2	58.9	59.7	60.4	60.0	60.9	56.7	54.7	53.9
9. FTE employment rate (% population aged 15-64)	71.9	72.1	72.6	73.0	73.7	74.6	74.8	72.1	65.0	62.9	61.3
10. Self-employed (% total employment)	17.2	17.1	16.6	16.5	16.2	16.0	15.7	15.8	16.0	16.0	15.8
11. Part-time employment (% total employment)	2.8	2.6	2.6	2.8	4.5	4.3	4.1	4.2	4.9	5.4	6.0
12. Fixed term contracts (% total employees)	30.6	29.9	29.9	30.6	31.7	32.0	30.6	27.6	23.8	23.9	24.2
13. Employment in Services (% total employment)	53.3	53.9	54.0	54.2	54.5	54.8	55.4	57.5	61.1	62.9	64.4
14. Employment in Industry (% total employment)	39.7	39.3	39.5	39.6	39.7	39.8	39.5	37.4	33.5	31.4	30.0
15. Employment in Agriculture (% total employment)	6.9	6.8	6.5	6.2	5.9	5.3	5.2	5.1	5.4	5.6	5.6
16. Activity rate (% population aged 15-64)	78.4	79.1	80.0	80.4	80.9	81.3	81.4	81.8	81.0	80.7	80.4
17. Activity rate (% of population aged 15-24)	48.2	48.8	49.5	50.2	52.3	52.2	52.1	51.5	48.3	45.1	42.6
18. Activity rate (% of population aged 25-54)	91.7	92.1	92.5	92.5	92.4	92.5	92.6	92.6	92.3	92.5	92.6
19. Activity rate (% of population aged 55-64)	61.2	62.1	62.9	62.7	63.2	63.5	63.1	65.1	64.0	63.9	63.7
20. Total unemployment (000)	828	929	976	971	863	791	815	1311	2292	2529	2689
21. Unemployment rate (% labour force 15+)	7.5	8.2	8.4	8.1	7.1	6.3	6.4	10.1	17.7	19.7	21.2
22. Youth unemployment rate (% labour force 15-24)	16.1	17.9	18.9	18.2	16.7	15.0	15.2	23.7	39.1	43.2	48.2
23. Long term unemployment rate (% labour force)	2.3	2.3	2.4	2.3	1.4	1.2	1.1	1.4	3.7	7.1	8.6
24. Youth unemployment ratio (% population aged 15-24)	8.0	9.0	9.7	9.4	8.7	7.8	7.9	12.2	18.9	19.5	20.6

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	20602	20891	21221	21547	21873	22193	22569	22917	23102	23216	23296
2. Population aged 15-64	13834	14046	14273	14500	14736	14963	15212	15436	15494	15483	15463
3. Total employment (000)	6291	6540	6881	7269	7729	8150	8516	8713	8418	8314	8251
4. Population in employment aged 15-64	5962	6230	6605	6997	7540	7958	8323	8479	8181	8101	8046
5. Employment rate (% population aged 15-64)	43.1	44.4	46.3	48.3	51.2	53.2	54.7	54.9	52.8	52.3	52.0
6. Employment rate (% population aged 15-24)	27.5	28.0	28.6	29.3	32.8	34.4	33.8	32.5	26.5	24.2	21.8
7. Employment rate (% population aged 25-54)	52.9	54.4	56.6	58.9	61.5	63.7	65.6	65.9	63.8	63.2	62.7
8. Employment rate (% population aged 55-64)	21.7	21.9	23.3	24.6	27.4	28.7	30.0	31.1	32.3	33.2	35.6
9. FTE employment rate (% population aged 15-64)	38.9	40.3	41.9	43.5	45.0	47.0	48.5	48.7	46.7	46.1	45.8
10. Self-employed (% total employment)	12.8	12.2	11.7	11.6	11.4	10.7	10.3	10.1	10.1	9.8	9.8
11. Part-time employment (% total employment)	16.8	16.8	17.1	17.9	24.2	23.2	22.8	22.7	23.0	23.2	23.5
12. Fixed term contracts (% total employees)	34.7	34.8	34.6	35.2	35.7	36.7	33.1	31.4	27.3	26.1	26.6
13. Employment in Services (% total employment)	82.6	83.0	83.9	84.8	85.2	86.4	86.7	87.4	88.6	89.0	89.7
14. Employment in Industry (% total employment)	13.4	13.2	12.4	11.9	11.6	10.7	10.7	10.1	9.0	8.6	8.0
15. Employment in Agriculture (% total employment)	4.0	3.8	3.7	3.3	3.2	2.9	2.6	2.5	2.4	2.4	2.4
16. Activity rate (% population aged 15-64)	50.9	53.1	55.1	56.8	58.3	60.2	61.4	63.2	64.8	65.9	67.0
17. Activity rate (% of population aged 15-24)	37.7	38.5	39.2	39.8	42.9	43.9	43.3	43.7	41.7	40.1	39.1
18. Activity rate (% of population aged 25-54)	61.3	64.1	66.5	68.3	69.0	71.2	72.7	74.7	76.7	78.3	79.3
19. Activity rate (% of population aged 55-64)	23.7	24.4	25.7	27.2	29.6	31.0	32.5	34.2	37.2	38.5	41.7
20. Total unemployment (000)	1076	1226	1266	1243	1050	1046	1019	1280	1857	2103	2310
21. Unemployment rate (% labour force 15+)	15.1	16.2	15.8	14.8	12.2	11.6	10.9	13.0	18.4	20.5	22.2
22. Youth unemployment rate (% labour force 15-24)	27.8	28.2	27.9	27.3	23.4	21.6	21.9	25.8	36.4	39.8	44.4
23. Long term unemployment rate (% labour force)	6.1	6.1	5.9	5.2	3.4	2.8	2.5	2.9	5.0	7.7	9.5
24. Youth unemployment ratio (% population aged 15-24)	10.1	10.5	10.6	10.5	10.1	9.5	9.5	11.3	15.1	16.0	17.4

Source: Eurostat.

LFS indicators: 2005 break in series.

Labour market indicators: France

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	57726	57987	58864	59278	59712	60123	60505	60825	61129	61443	61757
2. Population aged 15-64	37682	37825	38425	38699	39010	39313	39569	39736	39858	39996	40054
3. Total employment (000)	25970	26105	26137	26176	26349	26634	27006	27137	26783	26766	26892
4. Population in employment aged 15-64	23659	23840	24568	24666	24835	25011	25426	25756	25515	25535	25562
5. Employment rate (% population aged 15-64)	62.8	63.0	63.9	63.7	63.7	63.6	64.3	64.8	64.0	63.8	63.8
6. Employment rate (% population aged 15-24)	29.5	29.9	31.0	30.5	30.2	29.8	31.0	31.4	30.5	30.3	29.9
7. Employment rate (% population aged 25-54)	79.4	79.5	80.4	80.5	80.7	81.2	82.0	83.0	82.0	81.7	81.3
8. Employment rate (% population aged 55-64)	31.9	34.7	37.0	37.8	38.5	38.1	38.2	38.2	38.9	39.7	41.4
9. FTE employment rate (% population aged 15-64)	59.9	60.4	59.6	59.2	59.4	59.3	59.9	60.6	59.7	59.4	59.4
10. Self-employed (% total employment)	8.8	8.7	8.7	8.8	8.9	8.9	8.8	8.9	9.0	9.0	9.0
11. Part-time employment (% total employment)	16.3	16.4	16.6	16.8	17.2	17.3	17.4	17.0	17.4	17.8	17.9
12. Fixed term contracts (% total employees)	14.6	13.5	13.4	13.3	13.9	14.8	15.1	14.9	14.3	15.0	15.3
13. Employment in Services (% total employment)	75.2	75.6	75.9	76.3	76.5	76.8	77.0	77.2	77.5	78.1	78.4
14. Employment in Industry (% total employment)	21.2	20.9	20.7	20.3	20.1	20.0	19.8	19.8	19.5	19.0	18.8
15. Employment in Agriculture (% total employment)	3.6	3.5	3.4	3.4	3.4	3.2	3.1	3.0	3.0	2.9	2.8
16. Activity rate (% population aged 15-64)	68.7	69.1	69.9	70.0	69.9	69.8	69.9	70.0	70.5	70.5	70.4
17. Activity rate (% of population aged 15-24)	36.2	36.9	38.0	38.1	38.0	38.1	38.4	38.5	39.8	39.3	38.4
18. Activity rate (% of population aged 25-54)	86.1	86.3	87.0	87.3	87.5	87.8	88.1	88.6	88.8	88.9	88.5
19. Activity rate (% of population aged 55-64)	33.8	36.7	38.9	40.1	40.7	40.4	40.2	40.0	41.5	42.5	44.3
20. Total unemployment (000)	2216	2277	2455	2583	2601	2609	2383	2232	2759	2842	2821
21. Unemployment rate (% labour force 15+)	8.2	8.3	8.9	9.3	9.3	9.2	8.4	7.8	9.5	9.8	9.7
22. Youth unemployment rate (% labour force 15-24)	16.3	17.2	19.1	20.8	21.3	22.4	19.8	19.3	23.9	23.7	23.0
23. Long term unemployment rate (% labour force)	2.9	2.9	3.5	3.8	3.8	3.9	3.4	2.9	3.4	3.9	4.0
24. Youth unemployment ratio (% population aged 15-24)	6.6	7.0	7.0	7.6	7.8	8.2	7.3	7.2	9.2	9.0	8.5

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	28010	28152	28494	28678	28870	29067	29263	29424	29581	29743	29906
2. Population aged 15-64	18631	18697	18931	19060	19192	19334	19461	19541	19599	19668	19696
3. Total employment (000)	14267	14230	14084	14057	14085	14184	14293	14331	14067	14062	14128
4. Population in employment aged 15-64	12992	12986	13227	13237	13270	13313	13447	13591	13390	13402	13416
5. Employment rate (% population aged 15-64)	69.7	69.5	69.9	69.4	69.1	68.9	69.1	69.5	68.3	68.1	68.1
6. Employment rate (% population aged 15-24)	33.3	33.6	34.3	33.8	33.7	33.4	34.1	34.4	32.7	33.4	32.9
7. Employment rate (% population aged 25-54)	88.1	87.4	87.7	87.6	87.6	87.8	88.2	89.1	87.6	87.1	86.7
8. Employment rate (% population aged 55-64)	36.2	38.7	40.9	41.6	41.5	40.5	40.5	40.6	41.5	42.1	44.0
9. FTE employment rate (% population aged 15-64)	70.3	70.4	68.2	68.0	67.7	67.3	67.6	68.0	66.8	66.4	66.4
10. Self-employed (% total employment)	10.8	10.8	10.9	11.1	11.3	11.3	11.4	11.3	11.7	11.8	11.7
11. Part-time employment (% total employment)	5.0	5.2	5.5	5.4	5.8	5.8	5.7	5.8	6.0	6.7	6.9
12. Fixed term contracts (% total employees)	13.2	11.9	11.8	12.0	13.0	14.0	14.0	13.8	13.0	14.1	14.7
13. Employment in Services (% total employment)	65.2	65.4	65.5	66.2	66.0	65.9	66.4	66.4	66.3	67.1	68.0
14. Employment in Industry (% total employment)	30.1	30.1	30.0	29.4	29.4	29.6	29.4	29.7	29.7	28.9	28.3
15. Employment in Agriculture (% total employment)	4.6	4.6	4.6	4.4	4.6	4.5	4.2	3.9	4.0	3.9	3.7
16. Activity rate (% population aged 15-64)	75.2	75.5	75.6	75.5	75.2	74.9	74.7	74.7	75.0	74.9	74.7
17. Activity rate (% of population aged 15-24)	39.9	40.9	41.8	41.8	41.8	41.9	41.8	42.2	43.1	42.9	41.7
18. Activity rate (% of population aged 25-54)	94.0	93.8	93.9	94.0	94.0	94.1	94.2	94.4	94.4	94.2	93.8
19. Activity rate (% of population aged 55-64)	38.3	41.2	43.0	44.0	43.8	43.0	42.7	42.6	44.3	45.2	47.1
20. Total unemployment (000)	1005	1093	1181	1240	1246	1262	1168	1092	1406	1428	1395
21. Unemployment rate (% labour force 15+)	6.9	7.4	8.0	8.4	8.4	8.5	7.8	7.3	9.3	9.4	9.2
22. Youth unemployment rate (% labour force 15-24)	15.4	16.9	18.5	20.0	20.2	21.1	19.1	19.2	24.7	23.0	22.0
23. Long term unemployment rate (% labour force)	2.4	2.5	3.1	3.4	3.3	3.6	3.2	2.8	3.3	3.9	3.9
24. Youth unemployment ratio (% population aged 15-24)	6.6	7.2	7.4	8.0	8.1	8.5	7.7	7.8	10.3	9.5	8.8

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	29716	29835	30370	30600	30842	31056	31243	31400	31548	31700	31852
2. Population aged 15-64	19051	19128	19494	19638	19818	19979	20108	20195	20259	20328	20359
3. Total employment (000)	11703	11874	12053	12118	12264	12450	12712	12806	12716	12704	12764
4. Population in employment aged 15-64	10667	10854	11341	11429	11565	11699	11979	12166	12126	12134	12147
5. Employment rate (% population aged 15-64)	56.0	56.7	58.2	58.2	58.4	58.6	59.6	60.2	59.9	59.7	59.7
6. Employment rate (% population aged 15-24)	25.7	26.2	27.7	27.2	26.7	26.3	27.9	28.3	28.3	27.2	26.9
7. Employment rate (% population aged 25-54)	71.1	71.7	73.3	73.7	74.0	74.7	76.0	77.2	76.6	76.6	76.2
8. Employment rate (% population aged 55-64)	27.8	30.8	33.3	34.2	35.7	35.8	36.0	35.9	36.6	37.4	39.0
9. FTE employment rate (% population aged 15-64)	50.0	50.9	51.7	51.2	51.8	51.9	52.9	53.8	53.2	53.0	53.0
10. Self-employed (% total employment)	6.4	6.2	6.1	6.1	6.0	6.1	5.9	6.2	6.0	6.0	6.0
11. Part-time employment (% total employment)	30.1	29.8	29.6	30.0	30.3	30.3	30.4	29.5	30.0	30.1	30.1
12. Fixed term contracts (% total employees)	16.2	15.3	15.1	14.7	14.8	15.7	16.2	16.1	15.7	15.9	15.8
13. Employment in Services (% total employment)	86.7	87.2	87.5	87.4	87.9	88.5	88.5	88.9	89.4	89.8	89.5
14. Employment in Industry (% total employment)	10.8	10.5	10.3	10.2	10.0	9.6	9.6	9.2	8.7	8.5	8.8
15. Employment in Agriculture (% total employment)	2.4	2.3	2.2	2.4	2.1	1.9	1.9	2.0	1.9	1.7	1.8
16. Activity rate (% population aged 15-64)	62.4	63.0	64.3	64.6	64.7	64.8	65.2	65.4	66.1	66.1	66.1
17. Activity rate (% of population aged 15-24)	32.4	32.9	34.2	34.4	34.3	34.2	35.0	34.8	36.5	35.6	35.0
18. Activity rate (% of population aged 25-54)	78.5	78.9	80.4	80.9	81.3	81.7	82.3	83.1	83.4	83.7	83.4
19. Activity rate (% of population aged 55-64)	29.5	32.3	35.1	36.4	37.7	37.9	37.8	37.6	38.9	40.0	41.8
20. Total unemployment (000)	1212	1184	1274	1343	1355	1346	1214	1140	1353	1414	1425
21. Unemployment rate (% labour force 15+)	9.7	9.3	9.9	10.3	10.3	10.1	9.0	8.4	9.8	10.2	10.2
22. Youth unemployment rate (% labour force 15-24)	17.5	17.6	19.9	21.7	22.7	23.9	20.7	19.4	23.0	24.5	24.1
23. Long term unemployment rate (% labour force)	3.5	3.3	3.9	4.2	4.3	4.2	3.6	3.0	3.4	3.9	4.2
24. Youth unemployment ratio (% population aged 15-24)	6.7	6.8	6.6	7.2	7.5	7.9	7.0	6.5	8.1	8.4	8.1

Source: Eurostat.

Labour market indicators: Italy

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	57229	57382	57399	57442	58077	58435	58880	59336	59752	60051	60328
2. Population aged 15-64	38645	38676	38692	38292	38588	38726	38946	39182	39406	39546	39659
3. Total employment (000)	23393	23793	24150	24256	24396	24874	25187	25256	24839	24660	24743
4. Population in employment aged 15-64	21169	21478	21710	22060	22214	22619	22846	23011	22650	22497	22583
5. Employment rate (% population aged 15-64)	54.8	55.5	56.1	57.6	57.6	58.4	58.7	58.7	57.5	56.9	56.9
6. Employment rate (% population aged 15-24)	26.3	25.8	25.2	27.6	25.7	25.5	24.7	24.4	21.7	20.5	19.4
7. Employment rate (% population aged 25-54)	69.2	70.1	70.7	72.2	72.3	73.3	73.5	73.5	71.9	71.1	71.1
8. Employment rate (% population aged 55-64)	28.0	28.9	30.3	30.5	31.4	32.5	33.8	34.4	35.7	36.6	37.9
9. FTE employment rate (% population aged 15-64)	52.7	53.6	54.3	54.3	54.1	54.8	55.1	55.1	53.9	53.2	53.1
10. Self-employed (% total employment)	26.0	25.5	25.6	25.7	24.7	24.4	24.1	23.6	23.2	23.4	23.2
11. Part-time employment (% total employment)	8.4	8.6	8.5	12.7	12.8	13.3	13.6	14.3	14.3	15.0	15.5
12. Fixed term contracts (% total employees)	9.8	9.9	9.9	11.8	12.3	13.1	13.2	13.3	12.5	12.8	13.4
13. Employment in Services (% total employment)	66.2	66.5	66.9	67.1	67.1	67.3	67.4	67.7	68.3	68.9	69.3
14. Employment in Industry (% total employment)	29.1	29.0	28.9	28.7	28.8	28.6	28.6	28.4	27.8	27.2	26.9
15. Employment in Agriculture (% total employment)	4.7	4.5	4.2	4.2	4.1	4.1	4.0	3.9	3.9	4.0	3.9
16. Activity rate (% population aged 15-64)	60.6	61.1	61.5	62.7	62.5	62.7	62.5	63.0	62.4	62.2	62.2
17. Activity rate (% of population aged 15-24)	36.6	35.5	34.6	36.1	33.8	32.5	30.9	30.9	29.1	28.4	27.4
18. Activity rate (% of population aged 25-54)	75.1	75.7	76.3	77.5	77.4	77.8	77.6	78.1	77.2	76.9	76.9
19. Activity rate (% of population aged 55-64)	29.2	30.2	31.5	31.8	32.6	33.4	34.6	35.5	37.0	38.0	39.5
20. Total unemployment (000)	2173	2058	2050	1960	1889	1673	1506	1692	1945	2102	2108
21. Unemployment rate (% labour force 15+)	9.0	8.5	8.4	8.0	7.7	6.8	6.1	6.7	7.8	8.4	8.4
22. Youth unemployment rate (% labour force 15-24)	23.1	22.0	23.6	23.5	24.0	21.6	20.3	21.3	25.4	27.8	29.1
23. Long term unemployment rate (% labour force)	5.6	5.0	4.9	4.0	3.9	3.4	2.9	3.1	3.5	4.1	4.4
24. Youth unemployment ratio (% population aged 15-24)	10.3	9.7	9.4	8.5	8.1	7.0	6.3	6.6	7.4	7.9	8.0

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	27764	27858	27873	27830	28192	28406	28629	28849	29047	29181	29304
2. Population aged 15-64	19258	19293	19309	19047	19248	19355	19467	19574	19670	19719	19755
3. Total employment (000)	14630	14816	14990	14747	14854	15083	15247	15176	14876	14700	14671
4. Population in employment aged 15-64	13201	13332	13438	13353	13460	13647	13762	13755	13500	13347	13327
5. Employment rate (% population aged 15-64)	68.5	69.1	69.6	70.1	69.9	70.5	70.7	70.3	68.6	67.7	67.5
6. Employment rate (% population aged 15-24)	30.4	30.3	29.7	32.1	30.4	30.6	29.6	29.1	26.1	24.3	23.1
7. Employment rate (% population aged 25-54)	85.5	86.0	86.5	86.7	86.6	87.2	87.3	86.7	84.7	83.5	83.4
8. Employment rate (% population aged 55-64)	40.4	41.3	42.8	42.2	42.7	43.7	45.1	45.5	46.7	47.6	48.4
9. FTE employment rate (% population aged 15-64)	67.6	68.4	69.0	68.9	68.5	69.1	69.3	68.9	67.3	66.3	65.9
10. Self-employed (% total employment)	29.5	29.1	29.1	29.1	28.4	28.0	27.8	27.4	27.2	27.6	27.5
11. Part-time employment (% total employment)	3.5	3.5	3.2	4.8	4.6	4.7	5.0	5.3	5.1	5.5	5.9
12. Fixed term contracts (% total employees)	8.3	8.4	8.2	9.9	10.5	11.2	11.2	11.6	10.8	11.4	12.3
13. Employment in Services (% total employment)	59.1	59.2	59.3	58.4	58.1	58.2	58.1	58.1	58.2	58.5	59.0
14. Employment in Industry (% total employment)	35.7	35.8	36.0	36.8	37.1	37.1	37.3	37.4	37.2	36.8	36.3
15. Employment in Agriculture (% total employment)	5.2	5.0	4.7	4.8	4.8	4.8	4.6	4.5	4.6	4.7	4.6
16. Activity rate (% population aged 15-64)	74.1	74.3	74.7	74.9	74.6	74.6	74.4	74.4	73.7	73.3	73.1
17. Activity rate (% of population aged 15-24)	40.6	39.9	39.2	40.5	38.7	37.8	36.1	35.9	34.0	33.2	31.6
18. Activity rate (% of population aged 25-54)	90.7	91.0	91.5	91.4	91.2	91.3	91.0	91.0	90.0	89.4	89.2
19. Activity rate (% of population aged 55-64)	42.3	43.0	44.4	44.0	44.3	45.0	46.3	47.0	48.5	49.6	50.7
20. Total unemployment (000)	999	947	937	925	902	801	722	820	1000	1114	1114
21. Unemployment rate (% labour force 15+)	6.9	6.5	6.5	6.4	6.2	5.4	4.9	5.5	6.8	7.6	7.6
22. Youth unemployment rate (% labour force 15-24)	:	:	:	20.6	21.5	19.1	18.2	18.9	23.3	26.8	27.1
23. Long term unemployment rate (% labour force)	4.3	3.9	3.8	2.9	2.9	2.6	2.2	2.4	2.8	3.6	3.9
24. Youth unemployment ratio (% population aged 15-24)	10.2	9.6	9.5	8.4	8.3	7.2	6.6	6.8	7.9	8.9	8.6

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	29465	29524	29525	29612	29885	30030	30251	30488	30705	30871	31024
2. Population aged 15-64	19388	19383	19384	19245	19340	19371	19479	19608	19736	19827	19904
3. Total employment (000)	8764	8977	9159	9509	9542	9791	9941	10080	9964	9961	10071
4. Population in employment aged 15-64	7968	8146	8272	8706	8754	8971	9084	9256	9151	9150	9256
5. Employment rate (% population aged 15-64)	41.1	42.0	42.7	45.2	45.3	46.3	46.6	47.2	46.4	46.1	46.5
6. Employment rate (% population aged 15-24)	22.1	21.3	20.6	23.1	20.8	20.1	19.5	19.4	17.0	16.5	15.5
7. Employment rate (% population aged 25-54)	52.8	54.0	54.9	57.8	57.9	59.3	59.6	60.2	59.1	58.7	58.9
8. Employment rate (% population aged 55-64)	16.2	17.3	18.5	19.6	20.8	21.9	23.0	24.0	25.4	26.2	28.1
9. FTE employment rate (% population aged 15-64)	38.1	39.2	39.9	40.2	40.1	41.0	41.3	41.7	40.9	40.6	40.9
10. Self-employed (% total employment)	20.1	19.7	19.8	20.3	19.1	18.9	18.5	17.9	17.2	17.2	16.9
11. Part-time employment (% total employment)	16.6	16.9	17.3	25.0	25.6	26.5	26.9	27.9	27.9	29.0	29.3
12. Fixed term contracts (% total employees)	11.9	12.0	12.2	14.5	14.7	15.8	15.9	15.6	14.6	14.5	14.7
13. Employment in Services (% total employment)	77.6	78.2	79.0	80.2	80.7	81.1	81.5	82.1	83.2	83.9	83.9
14. Employment in Industry (% total employment)	18.4	18.0	17.7	16.6	16.1	15.7	15.4	15.0	14.0	13.2	13.3
15. Employment in Agriculture (% total employment)	4.0	3.7	3.3	3.3	3.2	3.2	3.0	3.0	2.8	2.8	2.7
16. Activity rate (% population aged 15-64)	47.3	47.9	48.3	50.6	50.4	50.8	50.7	51.6	51.1	51.1	51.5
17. Activity rate (% of population aged 15-24)	32.6	31.0	29.9	31.7	28.7	26.9	25.5	25.7	23.9	23.4	22.9
18. Activity rate (% of population aged 25-54)	59.3	60.3	60.9	63.6	63.6	64.3	64.1	65.2	64.5	64.4	64.6
19. Activity rate (% of population aged 55-64)	16.9	18.1	19.3	20.4	21.5	22.5	23.5	24.7	26.1	27.0	28.9
20. Total unemployment (000)	1175	1111	1114	1036	986	873	784	872	944	989	994
21. Unemployment rate (% labour force 15+)	12.1	11.4	11.3	10.5	10.1	8.8	7.9	8.5	9.3	9.7	9.6
22. Youth unemployment rate (% labour force 15-24)	:	:	:	27.2	27.4	25.3	23.3	24.7	28.7	29.4	32.0
23. Long term unemployment rate (% labour force)	7.6	6.8	6.6	5.5	5.2	4.5	3.9	4.1	4.4	4.8	5.0
24. Youth unemployment ratio (% population aged 15-24)	10.5	9.7	9.2	8.6	7.9	6.8	6.0	6.3	6.9	6.9	7.3

Source: Eurostat.

LFS indicators: 2004 break in series.

Labour market indicators: Cyprus

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	674	681	690	714	727	737	752	758	763	771	773
2. Population aged 15-64	444	449	460	479	494	500	518	524	528	534	535
3. Total employment (000)	322	328	341	354	366	373	385	393	391	391	393
4. Population in employment aged 15-64	301	308	318	330	338	348	368	371	369	372	364
5. Employment rate (% population aged 15-64)	67.8	68.6	69.2	68.9	68.5	69.6	71.0	70.9	69.9	69.7	68.1
6. Employment rate (% population aged 15-24)	38.4	37.0	37.6	37.5	36.7	37.4	37.4	38.0	35.5	33.8	29.3
7. Employment rate (% population aged 25-54)	80.8	82.2	82.6	82.4	81.8	82.6	83.8	83.7	82.6	82.5	81.6
8. Employment rate (% population aged 55-64)	49.1	49.4	50.4	49.9	50.6	53.6	55.9	54.8	56.0	56.8	55.2
9. FTE employment rate (% population aged 15-64)	66.2	67.4	67.8	68.0	66.7	68.1	69.4	69.1	68.0	67.3	65.4
10. Self-employed (% total employment)	22.8	22.2	22.8	22.6	22.1	20.6	19.7	17.8	17.6	17.5	17.5
11. Part-time employment (% total employment)	8.4	7.2	8.9	8.6	8.9	7.7	7.3	7.8	8.4	9.3	10.0
12. Fixed term contracts (% total employees)	10.8	9.1	12.5	12.9	14.0	13.1	13.2	13.9	13.4	13.5	13.6
13. Employment in Services (% total employment)	73.7	73.4	73.6	73.5	74.0	74.7	74.4	74.8	75.0	75.7	76.7
14. Employment in Industry (% total employment)	20.6	20.5	20.9	21.0	20.9	21.1	21.1	20.9	20.4	19.5	18.6
15. Employment in Agriculture (% total employment)	5.7	6.1	5.5	5.5	5.0	4.2	4.5	4.3	4.6	4.7	4.6
16. Activity rate (% population aged 15-64)	70.6	71.2	72.4	72.6	72.4	73.0	73.9	73.6	74.0	74.4	74.0
17. Activity rate (% of population aged 15-24)	41.8	40.2	41.3	42.4	42.6	41.5	41.7	41.7	41.1	40.6	37.8
18. Activity rate (% of population aged 25-54)	83.5	84.7	85.8	86.0	85.7	86.2	86.7	86.5	86.6	87.2	87.6
19. Activity rate (% of population aged 55-64)	51.7	51.3	52.7	52.4	52.4	55.5	57.7	56.6	58.5	59.6	58.0
20. Total unemployment (000)	14	13	16	18	22	19	17	16	24	28	34
21. Unemployment rate (% labour force 15+)	4.0	3.6	4.2	4.7	5.5	4.7	4.1	3.8	5.5	6.4	7.9
22. Youth unemployment rate (% labour force 15-24)	8.2	8.0	8.8	10.2	13.9	9.9	10.2	9.0	13.7	16.6	22.4
23. Long term unemployment rate (% labour force)	0.9	0.8	1.0	1.3	1.3	0.9	0.8	0.5	0.6	1.3	1.6
24. Youth unemployment ratio (% population aged 15-24)	3.4	3.2	3.7	4.9	5.9	4.1	4.2	3.8	5.7	6.8	8.5

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	327	330	333	347	354	360	367	371	376	379	381
2. Population aged 15-64	214	216	221	232	240	244	252	256	260	263	264
3. Total employment (000)	183	184	189	200	208	209	213	218	216	214	215
4. Population in employment aged 15-64	170	171	174	185	190	194	202	203	202	201	197
5. Employment rate (% population aged 15-64)	79.3	78.9	78.8	79.8	79.2	79.4	80.0	79.2	77.6	76.6	74.7
6. Employment rate (% population aged 15-24)	39.8	38.0	38.7	41.6	40.5	41.0	39.1	39.4	36.4	33.9	30.5
7. Employment rate (% population aged 25-54)	93.4	93.0	92.2	92.5	91.8	92.0	92.4	91.4	89.2	88.4	86.5
8. Employment rate (% population aged 55-64)	66.9	67.3	68.9	70.8	70.8	71.6	72.5	70.9	71.7	71.2	69.8
9. FTE employment rate (% population aged 15-64)	79.3	79.5	79.3	80.3	79.4	79.6	79.8	78.9	77.1	75.3	73.0
10. Self-employed (% total employment)	28.4	27.6	28.9	28.2	27.3	25.6	25.3	22.9	21.8	21.9	22.3
11. Part-time employment (% total employment)	5.0	4.0	5.5	4.8	5.0	4.3	4.4	4.8	5.2	6.5	7.5
12. Fixed term contracts (% total employees)	7.1	5.8	8.1	8.5	9.0	7.9	7.6	8.2	7.5	7.0	7.0
13. Employment in Services (% total employment)	65.1	64.5	63.7	63.0	63.4	64.2	62.7	63.3	64.6	65.5	65.7
14. Employment in Industry (% total employment)	28.4	28.4	29.7	30.4	30.4	30.5	31.0	31.0	29.9	28.5	28.2
15. Employment in Agriculture (% total employment)	6.5	7.1	6.6	6.6	6.1	5.3	6.2	5.6	5.5	6.0	6.1
16. Activity rate (% population aged 15-64)	81.5	81.3	82.2	83.0	82.9	82.7	82.9	82.0	82.0	81.7	81.3
17. Activity rate (% of population aged 15-24)	42.5	41.3	42.6	46.3	46.6	45.0	43.9	43.1	42.1	40.4	39.7
18. Activity rate (% of population aged 25-54)	95.3	95.2	95.2	95.2	95.3	95.3	95.0	94.0	93.5	93.5	93.2
19. Activity rate (% of population aged 55-64)	69.5	69.7	73.2	74.2	73.2	74.1	74.8	73.0	74.9	75.0	73.6
20. Total unemployment (000)	5	6	8	8	10	9	8	8	13	15	18
21. Unemployment rate (% labour force 15+)	2.8	3.0	3.8	3.7	4.7	4.1	3.6	3.4	5.4	6.3	8.1
22. Youth unemployment rate (% labour force 15-24)	6.4	8.0	8.7	9.0	13.2	8.9	10.9	8.7	13.5	16.0	23.3
23. Long term unemployment rate (% labour force)	0.6	0.5	0.8	0.9	0.9	0.7	0.8	0.5	0.6	1.3	1.8
24. Youth unemployment ratio (% population aged 15-24)	2.7	3.3	3.9	4.7	6.1	4.0	4.8	3.7	5.7	6.5	9.2

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	347	351	356	367	373	377	386	387	387	392	391
2. Population aged 15-64	230	233	239	247	254	257	266	268	268	272	271
3. Total employment (000)	139	144	152	154	159	164	172	175	175	177	178
4. Population in employment aged 15-64	132	138	144	145	148	155	166	168	168	171	167
5. Employment rate (% population aged 15-64)	57.2	59.1	60.4	58.7	58.4	60.3	62.4	62.9	62.5	63.0	61.6
6. Employment rate (% population aged 15-24)	37.1	36.0	36.6	33.8	33.2	34.1	36.0	36.7	34.6	33.7	28.3
7. Employment rate (% population aged 25-54)	69.0	72.0	73.6	72.8	72.2	73.6	75.5	76.2	76.0	76.6	76.6
8. Employment rate (% population aged 55-64)	32.2	32.2	32.7	30.0	31.5	36.6	40.3	39.4	40.8	43.0	41.1
9. FTE employment rate (% population aged 15-64)	54.1	56.3	57.2	56.6	54.9	57.2	59.5	59.7	59.2	59.5	58.1
10. Self-employed (% total employment)	15.4	15.3	15.1	15.2	15.3	14.2	12.8	11.5	12.5	12.2	11.7
11. Part-time employment (% total employment)	12.9	11.3	13.2	13.6	14.0	12.1	10.9	11.4	12.5	12.7	13.0
12. Fixed term contracts (% total employees)	14.8	12.7	17.1	17.7	19.5	19.0	19.2	19.9	19.8	20.5	20.7
13. Employment in Services (% total employment)	84.7	84.5	85.6	86.7	87.4	87.7	88.6	88.6	87.6	88.0	89.6
14. Employment in Industry (% total employment)	10.7	10.5	10.2	9.2	9.0	9.4	9.0	8.7	8.8	8.8	7.4
15. Employment in Agriculture (% total employment)	4.6	4.9	4.1	4.1	3.6	2.9	2.5	2.7	3.6	3.2	2.9
16. Activity rate (% population aged 15-64)	60.6	61.8	63.3	62.8	62.5	63.8	65.4	65.7	66.2	67.4	66.8
17. Activity rate (% of population aged 15-24)	41.2	39.2	40.2	39.0	39.0	38.3	39.7	40.5	40.2	40.7	36.1
18. Activity rate (% of population aged 25-54)	72.3	74.9	76.9	77.2	76.5	77.4	78.7	79.1	79.7	80.9	81.9
19. Activity rate (% of population aged 55-64)	34.7	33.8	33.2	31.6	32.8	37.8	41.6	41.0	42.6	44.9	43.1
20. Total unemployment (000)	9	7	8	10	12	10	9	8	11	13	16
21. Unemployment rate (% labour force 15+)	5.5	4.3	4.7	6.0	6.5	5.4	4.6	4.3	5.5	6.4	7.7
22. Youth unemployment rate (% labour force 15-24)	9.9	8.0	8.8	11.5	14.7	11.1	9.4	9.4	13.9	17.2	21.5
23. Long term unemployment rate (% labour force)	1.1	1.0	1.4	1.6	1.8	1.1	0.7	0.5	0.6	1.3	1.5
24. Youth unemployment ratio (% population aged 15-24)	4.1	3.1	3.6	5.1	5.7	4.3	3.7	3.8	5.6	7.0	7.8

Source: Eurostat.

Labour market indicators: Latvia

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	2366	2344	2330	2319	2305	2294	2281	2271	2261	2248	2230
2. Population aged 15-64	1594	1590	1588	1587	1583	1580	1573	1568	1560	1549	1536
3. Total employment (000)	953	981	1000	1012	1028	1079	1117	1128	979	933	857
4. Population in employment aged 15-64	935	960	982	988	1002	1047	1075	1076	951	919	949
5. Employment rate (% population aged 15-64)	58.6	60.4	61.8	62.3	63.3	66.3	68.3	68.6	60.9	59.3	61.8
6. Employment rate (% population aged 15-24)	28.8	31.0	31.5	30.5	32.6	35.9	38.4	37.2	27.7	26.4	27.2
7. Employment rate (% population aged 25-54)	75.4	76.1	77.7	77.9	78.4	81.1	82.3	82.6	74.7	73.4	75.8
8. Employment rate (% population aged 55-64)	36.9	41.7	44.1	47.9	49.5	53.3	57.7	59.4	53.2	48.2	51.1
9. FTE employment rate (% population aged 15-64)	57.6	59.9	61.1	60.8	63.0	66.2	68.4	68.6	59.7	57.7	60.3
10. Self-employed (% total employment)	15.2	14.2	13.4	13.5	11.9	11.9	11.0	10.3	11.6	11.7	11.6
11. Part-time employment (% total employment)	10.3	9.7	10.3	10.4	8.3	6.5	6.4	6.3	8.9	9.7	9.2
12. Fixed term contracts (% total employees)	6.7	13.9	11.1	9.5	8.4	7.1	4.2	3.3	4.3	6.8	6.5
13. Employment in Services (% total employment)	59.0	59.4	59.4	59.9	61.6	61.8	62.6	64.3	67.6	67.8	67.9
14. Employment in Industry (% total employment)	26.7	26.0	27.2	27.2	27.3	27.3	28.1	27.9	23.9	23.5	23.3
15. Employment in Agriculture (% total employment)	14.3	14.6	13.4	13.0	11.2	10.9	9.3	7.8	8.6	8.7	8.8
16. Activity rate (% population aged 15-64)	67.7	68.8	69.2	69.7	69.6	71.3	72.8	74.4	73.9	73.2	73.3
17. Activity rate (% of population aged 15-24)	36.9	39.1	38.4	37.2	37.7	40.8	43.0	42.9	41.7	40.4	38.4
18. Activity rate (% of population aged 25-54)	86.2	85.7	86.3	86.3	85.6	86.4	87.2	88.9	88.5	88.5	88.1
19. Activity rate (% of population aged 55-64)	41.4	46.3	47.9	52.3	53.9	57.1	60.3	63.3	61.4	57.1	59.8
20. Total unemployment (000)	142	132	112	111	95	75	67	85	191	203	167
21. Unemployment rate (% labour force 15+)	12.9	12.8	11.3	11.2	9.6	7.3	6.5	8.0	18.2	19.8	16.2
22. Youth unemployment rate (% labour force 15-24)	23.0	23.6	19.9	20.0	15.0	13.5	11.9	14.5	36.2	37.2	31.0
23. Long term unemployment rate (% labour force)	7.2	5.8	4.7	4.9	4.4	2.7	1.7	2.1	4.9	8.9	8.8
24. Youth unemployment ratio (% population aged 15-24)	8.2	8.1	6.9	6.8	5.1	5.0	4.6	5.6	14.0	13.9	11.2

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1089	1078	1071	1068	1062	1057	1052	1047	1043	1038	1029
2. Population aged 15-64	764	762	761	764	763	763	761	759	757	752	747
3. Total employment (000)	481	501	513	518	530	553	573	574	476	451	422
4. Population in employment aged 15-64	473	490	503	507	516	537	552	547	462	445	469
5. Employment rate (% population aged 15-64)	61.9	64.3	66.1	66.4	67.6	70.4	72.5	72.1	61.0	59.2	62.9
6. Employment rate (% population aged 15-24)	32.8	36.4	37.1	36.4	38.7	42.8	43.4	42.4	29.3	27.8	30.0
7. Employment rate (% population aged 25-54)	76.7	78.1	80.7	80.4	81.7	83.7	85.6	85.4	74.5	72.9	76.2
8. Employment rate (% population aged 55-64)	46.2	50.5	51.3	55.8	55.2	59.5	64.6	63.1	53.1	47.6	52.6
9. FTE employment rate (% population aged 15-64)	61.5	63.5	66.3	66.8	67.7	70.6	73.0	72.5	60.2	57.9	61.8
10. Self-employed (% total employment)	17.4	16.1	15.4	14.7	13.8	13.7	13.3	13.0	14.7	13.9	13.9
11. Part-time employment (% total employment)	8.6	7.6	7.9	7.7	6.3	4.7	4.9	4.5	7.5	7.8	7.5
12. Fixed term contracts (% total employees)	8.5	17.0	13.1	11.6	10.7	8.8	5.5	4.7	5.8	8.9	7.8
13. Employment in Services (% total employment)	47.8	47.3	47.4	48.3	49.1	48.2	48.2	50.3	55.3	54.0	54.8
14. Employment in Industry (% total employment)	34.9	34.7	35.9	35.8	36.5	37.9	40.2	39.6	33.3	34.1	32.6
15. Employment in Agriculture (% total employment)	17.3	18.0	16.7	15.9	14.4	13.8	11.7	10.1	11.5	11.9	12.6
16. Activity rate (% population aged 15-64)	72.6	74.1	74.1	74.3	74.4	76.2	77.6	78.6	77.0	75.8	76.5
17. Activity rate (% of population aged 15-24)	42.2	44.6	44.5	43.3	43.8	47.8	48.9	48.8	46.8	43.0	42.5
18. Activity rate (% of population aged 25-54)	89.0	89.2	89.7	89.7	89.4	90.0	91.0	92.2	91.1	91.3	91.1
19. Activity rate (% of population aged 55-64)	52.9	57.1	56.1	60.4	61.0	64.4	67.9	68.7	63.8	58.9	63.0
20. Total unemployment (000)	80	74	57	57	49	41	36	46	112	116	95
21. Unemployment rate (% labour force 15+)	14.2	14.1	11.5	11.5	9.8	8.0	6.9	8.6	21.7	23.1	18.6
22. Youth unemployment rate (% labour force 15-24)	23.5	21.9	18.3	17.6	13.0	11.6	12.4	14.5	40.2	38.0	31.3
23. Long term unemployment rate (% labour force)	8.1	6.7	4.6	5.1	4.8	3.3	2.1	2.1	5.9	11.1	11.0
24. Youth unemployment ratio (% population aged 15-24)	9.4	8.2	7.4	6.9	5.2	5.0	5.5	6.4	17.6	15.2	12.5

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1277	1266	1258	1251	1244	1237	1230	1224	1218	1211	1200
2. Population aged 15-64	831	828	826	823	820	817	812	808	803	797	789
3. Total employment (000)	472	481	487	494	498	526	545	554	504	482	434
4. Population in employment aged 15-64	462	471	478	482	487	510	523	529	489	474	480
5. Employment rate (% population aged 15-64)	55.7	56.8	57.9	58.5	59.3	62.4	64.4	65.4	60.9	59.4	60.8
6. Employment rate (% population aged 15-24)	24.6	25.4	25.7	24.4	26.3	28.7	33.1	31.9	26.0	25.1	24.4
7. Employment rate (% population aged 25-54)	74.3	74.3	74.9	75.5	75.3	78.6	79.1	79.9	74.9	73.8	75.4
8. Employment rate (% population aged 55-64)	30.0	35.2	38.8	41.9	45.2	48.7	52.4	56.7	53.3	48.7	49.9
9. FTE employment rate (% population aged 15-64)	54.1	56.7	56.5	55.2	58.5	62.0	64.0	65.0	59.2	57.4	58.9
10. Self-employed (% total employment)	13.0	12.2	11.3	12.4	10.0	10.1	8.6	7.5	8.7	9.6	9.3
11. Part-time employment (% total employment)	11.9	12.0	12.7	13.2	10.4	8.3	8.0	8.1	10.2	11.4	10.8
12. Fixed term contracts (% total employees)	5.0	10.8	9.1	7.3	6.2	5.4	2.9	2.0	2.9	5.0	5.2
13. Employment in Services (% total employment)	70.4	71.9	72.1	72.0	74.9	76.1	77.5	78.5	79.0	80.6	80.5
14. Employment in Industry (% total employment)	18.4	17.1	18.1	18.1	17.4	16.1	15.6	16.0	15.1	13.7	14.3
15. Employment in Agriculture (% total employment)	11.2	11.0	9.8	9.9	7.7	7.8	6.9	5.5	5.9	5.7	5.1
16. Activity rate (% population aged 15-64)	63.2	63.9	64.7	65.3	65.1	66.7	68.3	70.5	71.0	70.7	70.2
17. Activity rate (% of population aged 15-24)	31.5	33.4	32.1	31.0	31.3	33.6	36.8	36.7	36.3	37.7	34.2
18. Activity rate (% of population aged 25-54)	83.5	82.3	83.0	83.1	82.0	82.9	83.6	85.7	86.1	85.9	85.2
19. Activity rate (% of population aged 55-64)	32.8	38.2	41.8	46.1	48.6	51.6	54.6	59.3	59.7	55.8	57.2
20. Total unemployment (000)	62	58	55	54	46	33	31	40	78	87	71
21. Unemployment rate (% labour force 15+)	11.5	11.5	11.2	10.9	9.3	6.6	6.0	7.4	14.8	16.7	13.8
22. Youth unemployment rate (% labour force 15-24)	22.4	25.9	22.1	23.4	17.9	16.3	11.2	14.6	30.9	36.3	30.6
23. Long term unemployment rate (% labour force)	6.3	4.8	4.8	4.7	4.0	2.0	1.3	2.0	3.8	6.8	6.7
24. Youth unemployment ratio (% population aged 15-24)	6.9	8.1	6.4	6.6	5.1	4.9	3.7	4.8	10.3	12.6	9.8

Source: Eurostat.

Labour market indicators: Lithuania

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	3483	3453	3445	3434	3424	3403	3385	3366	3350	3311	3231
2. Population aged 15-64	2312	2303	2305	2311	2322	2321	2319	2316	2309	2283	2210
3. Total employment (000)	1346	1395	1426	1425	1461	1487	1529	1519	1415	1343	1370
4. Population in employment aged 15-64	1329	1379	1408	1413	1454	1476	1506	1490	1388	1320	1342
5. Employment rate (% population aged 15-64)	57.5	59.9	61.1	61.2	62.6	63.6	64.9	64.3	60.1	57.8	60.7
6. Employment rate (% population aged 15-24)	22.7	23.8	22.5	20.3	21.2	23.7	25.2	26.7	21.5	19.2	19.7
7. Employment rate (% population aged 25-54)	74.1	76.9	78.9	79.4	81.0	81.7	82.5	81.2	76.3	73.8	77.3
8. Employment rate (% population aged 55-64)	38.9	41.6	44.7	47.1	49.2	49.6	53.4	53.1	51.6	48.6	50.5
9. FTE employment rate (% population aged 15-64)	58.0	60.3	62.0	60.3	61.9	62.6	64.2	63.7	59.0	57.0	59.8
10. Self-employed (% total employment)	19.9	20.2	20.5	18.7	17.1	15.8	13.7	11.5	12.1	11.0	10.6
11. Part-time employment (% total employment)	9.9	10.8	9.6	8.4	7.1	9.9	8.6	6.7	8.3	8.1	8.7
12. Fixed term contracts (% total employees)	5.8	7.2	7.2	6.3	5.5	4.5	3.5	2.4	2.2	2.4	2.8
13. Employment in Services (% total employment)	56.4	55.3	54.5	56.4	57.1	58.3	59.2	61.5	63.8	66.3	66.9
14. Employment in Industry (% total employment)	26.4	27.1	27.8	28.0	29.1	29.6	30.6	30.6	27.0	24.6	24.6
15. Employment in Agriculture (% total employment)	17.2	17.7	17.7	15.6	13.9	12.1	10.1	7.9	9.2	9.0	8.5
16. Activity rate (% population aged 15-64)	69.7	69.6	69.9	69.1	68.4	67.4	67.9	68.4	69.8	70.5	72.0
17. Activity rate (% of population aged 15-24)	33.1	30.9	30.0	26.2	25.1	26.3	27.4	30.8	30.3	29.6	29.4
18. Activity rate (% of population aged 25-54)	88.5	88.5	88.8	88.7	87.9	86.2	86.0	85.5	87.3	88.5	90.0
19. Activity rate (% of population aged 55-64)	44.9	46.9	50.5	52.6	52.8	52.9	55.6	55.6	57.6	56.8	58.4
20. Total unemployment (000)	284	224	204	184	133	89	69	94	225	291	249
21. Unemployment rate (% labour force 15+)	17.4	13.8	12.4	11.4	8.3	5.6	4.3	5.8	13.7	17.8	15.4
22. Youth unemployment rate (% labour force 15-24)	31.1	23.0	24.8	22.5	15.7	9.8	8.2	13.4	29.2	35.1	32.9
23. Long term unemployment rate (% labour force)	9.8	7.4	6.0	5.8	4.3	2.5	1.4	1.2	3.2	7.4	8.0
24. Youth unemployment ratio (% population aged 15-24)	10.4	7.1	7.5	5.9	3.9	2.6	2.2	4.1	8.9	10.4	9.6

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1626	1611	1607	1601	1597	1587	1577	1567	1559	1539	1501
2. Population aged 15-64	1109	1104	1108	1113	1119	1121	1121	1121	1119	1105	1072
3. Total employment (000)	661	702	720	728	744	750	775	768	680	640	666
4. Population in employment aged 15-64	653	692	709	720	740	743	761	752	666	628	653
5. Employment rate (% population aged 15-64)	58.9	62.7	64.0	64.7	66.1	66.3	67.9	67.1	59.5	56.8	60.9
6. Employment rate (% population aged 15-24)	24.6	27.1	26.3	24.0	24.8	26.4	29.6	30.9	22.0	20.2	21.9
7. Employment rate (% population aged 25-54)	73.3	78.0	79.8	81.7	83.3	84.1	84.3	82.7	74.6	71.4	76.3
8. Employment rate (% population aged 55-64)	49.2	51.5	55.3	57.6	59.1	55.7	60.8	60.2	56.0	52.3	54.5
9. FTE employment rate (% population aged 15-64)	59.9	64.4	65.8	64.8	66.2	66.2	67.9	67.3	59.1	56.7	60.8
10. Self-employed (% total employment)	23.9	23.4	23.8	21.0	19.4	17.7	16.3	14.2	14.8	13.0	12.5
11. Part-time employment (% total employment)	8.4	9.4	7.4	6.5	5.1	7.9	7.0	4.9	7.0	6.7	6.9
12. Fixed term contracts (% total employees)	7.6	9.8	9.6	8.7	7.6	6.4	4.9	2.9	2.9	3.3	3.8
13. Employment in Services (% total employment)	45.4	45.1	44.9	46.5	46.5	46.1	46.2	48.0	51.3	54.9	56.1
14. Employment in Industry (% total employment)	33.1	33.6	34.2	35.5	37.0	39.7	41.3	42.1	37.0	33.6	33.3
15. Employment in Agriculture (% total employment)	21.5	21.3	21.0	18.0	16.4	14.2	12.6	9.9	11.7	11.5	10.7
16. Activity rate (% population aged 15-64)	73.7	73.6	73.5	72.8	72.1	70.5	71.0	71.4	72.0	72.4	74.3
17. Activity rate (% of population aged 15-24)	38.3	35.2	34.1	30.9	29.5	29.3	31.8	35.4	33.9	32.8	33.5
18. Activity rate (% of population aged 25-54)	89.7	90.5	90.5	90.7	90.1	88.7	87.9	87.4	88.3	89.2	91.0
19. Activity rate (% of population aged 55-64)	59.0	59.8	62.0	63.7	63.8	59.9	63.4	63.0	63.8	63.0	64.8
20. Total unemployment (000)	166	121	105	91	67	47	35	49	140	172	144
21. Unemployment rate (% labour force 15+)	20.0	14.6	12.7	11.0	8.2	5.8	4.3	6.1	17.1	21.2	17.8
22. Youth unemployment rate (% labour force 15-24)	36.1	23.1	22.5	22.3	16.0	10.0	7.0	12.6	35.1	38.5	34.6
23. Long term unemployment rate (% labour force)	11.6	7.9	6.0	5.5	4.2	2.5	1.4	1.0	3.6	9.0	9.3
24. Youth unemployment ratio (% population aged 15-24)	13.8	8.1	7.8	7.0	4.7	2.9	2.2	4.4	11.9	12.6	11.6

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1856	1842	1839	1832	1827	1817	1808	1799	1791	1772	1731
2. Population aged 15-64	1203	1200	1197	1197	1202	1200	1198	1196	1190	1178	1139
3. Total employment (000)	685	693	706	698	717	737	754	751	735	703	704
4. Population in employment aged 15-64	676	687	699	693	714	733	745	739	722	692	689
5. Employment rate (% population aged 15-64)	56.2	57.2	58.4	57.8	59.4	61.0	62.2	61.8	60.7	58.7	60.5
6. Employment rate (% population aged 15-24)	20.9	20.5	18.5	16.5	17.4	20.9	20.5	22.2	20.9	18.2	17.4
7. Employment rate (% population aged 25-54)	74.8	75.8	78.0	77.3	78.8	79.5	80.8	79.7	78.0	76.1	78.3
8. Employment rate (% population aged 55-64)	31.1	34.1	36.7	39.3	41.7	45.1	47.9	47.8	48.3	45.8	47.4
9. FTE employment rate (% population aged 15-64)	56.2	56.5	58.4	56.1	57.8	59.2	60.7	60.4	58.9	57.3	58.9
10. Self-employed (% total employment)	16.0	17.0	17.2	16.3	14.7	13.9	11.0	8.8	9.6	9.1	8.8
11. Part-time employment (% total employment)	11.4	12.3	11.8	10.5	9.1	12.0	10.2	8.6	9.5	9.3	10.5
12. Fixed term contracts (% total employees)	4.2	4.9	4.8	3.9	3.6	2.7	2.3	1.9	1.6	1.7	1.9
13. Employment in Services (% total employment)	67.0	65.5	64.3	66.7	68.0	70.7	72.6	75.3	75.3	76.7	77.2
14. Employment in Industry (% total employment)	20.0	20.5	21.4	20.1	20.8	19.4	19.7	18.9	17.7	16.5	16.3
15. Employment in Agriculture (% total employment)	13.0	14.0	14.3	13.2	11.2	9.9	7.6	5.8	6.9	6.8	6.5
16. Activity rate (% population aged 15-64)	66.0	65.8	66.5	65.6	64.9	64.6	65.0	65.5	67.8	68.8	69.7
17. Activity rate (% of population aged 15-24)	27.8	26.6	25.8	21.4	20.5	23.1	22.8	26.0	26.7	26.3	25.0
18. Activity rate (% of population aged 25-54)	87.4	86.7	87.2	86.8	85.8	83.8	84.2	83.8	86.3	87.9	89.0
19. Activity rate (% of population aged 55-64)	34.3	37.2	41.8	44.2	44.5	47.6	49.7	50.0	52.9	52.2	53.4
20. Total unemployment (000)	118	103	98	94	66	43	34	45	85	119	105
21. Unemployment rate (% labour force 15+)	14.7	12.9	12.2	11.8	8.3	5.4	4.3	5.6	10.4	14.5	13.0
22. Youth unemployment rate (% labour force 15-24)	24.1	22.9	28.1	22.7	15.3	9.6	10.0	14.6	21.6	30.8	30.4
23. Long term unemployment rate (% labour force)	7.9	6.8	6.0	6.2	4.5	2.5	1.3	1.4	2.8	5.8	6.7
24. Youth unemployment ratio (% population aged 15-24)	6.9	6.1	7.3	4.9	3.1	2.2	2.3	3.8	5.8	8.1	7.6

Source: Eurostat.

Indicator 1: 2001 estimate.

Labour market indicators: Luxembourg

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	433	436	443	446	450	456	465	467	481	488	500
2. Population aged 15-64	293	295	300	301	304	307	316	318	330	335	344
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	185	187	186	188	193	195	203	202	215	219	222
5. Employment rate (% population aged 15-64)	63.1	63.4	62.2	62.5	63.6	63.6	64.2	63.4	65.2	65.2	64.6
6. Employment rate (% population aged 15-24)	32.3	31.2	27.0	23.3	24.9	23.3	22.5	23.8	26.7	21.2	20.7
7. Employment rate (% population aged 25-54)	78.7	79.0	77.8	79.3	80.7	81.0	81.9	80.0	81.2	82.3	82.0
8. Employment rate (% population aged 55-64)	25.6	28.1	30.3	30.4	31.7	33.2	32.0	34.1	38.2	39.6	39.3
9. FTE employment rate (% population aged 15-64)	60.0	60.9	58.3	58.2	59.2	59.7	60.6	59.4	59.7	59.8	59.3
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	10.4	10.7	13.4	16.4	17.4	17.1	17.8	18.0	18.2	17.9	18.4
12. Fixed term contracts (% total employees)	5.6	5.1	3.1	4.8	5.3	6.1	6.8	6.2	7.2	7.1	7.1
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	64.4	65.2	64.6	65.8	66.6	66.7	66.9	66.8	68.7	68.2	67.9
17. Activity rate (% of population aged 15-24)	34.5	33.8	30.4	28.0	28.8	27.8	26.5	29.0	32.3	24.7	24.9
18. Activity rate (% of population aged 25-54)	80.0	81.0	80.4	83.0	83.9	84.5	84.7	83.4	84.8	85.7	85.6
19. Activity rate (% of population aged 55-64)	25.7	28.2	30.7	30.9	32.4	33.6	32.7	35.1	39.4	40.6	40.4
20. Total unemployment (000)	4	5	7	10	9	9	9	10	12	11	12
21. Unemployment rate (% labour force 15+)	1.9	2.6	3.8	5.0	4.6	4.6	4.2	4.9	5.1	4.6	4.9
22. Youth unemployment rate (% labour force 15-24)	6.2	7.0	11.2	16.4	14.6	15.5	15.6	17.3	16.5	15.8	16.4
23. Long term unemployment rate (% labour force)	0.5	0.7	1.0	1.0	1.2	1.4	1.2	1.6	1.2	1.3	1.4
24. Youth unemployment ratio (% population aged 15-24)	2.2	2.6	3.3	4.7	3.9	4.5	4.0	5.2	5.5	3.5	4.2

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	214	216	219	221	223	232	234	233	240	243	249
2. Population aged 15-64	148	149	151	152	153	153	157	161	167	169	175
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	111	112	111	111	112	111	114	115	122	124	126
5. Employment rate (% population aged 15-64)	75.0	75.1	73.3	72.8	73.3	72.6	72.3	71.5	73.2	73.1	72.1
6. Employment rate (% population aged 15-24)	34.6	34.3	28.0	26.0	28.4	25.4	26.5	27.0	29.1	22.1	22.8
7. Employment rate (% population aged 25-54)	93.2	93.1	91.6	92.2	92.8	92.7	92.2	90.2	90.8	92.0	90.8
8. Employment rate (% population aged 55-64)	35.9	37.7	39.7	38.3	38.3	38.7	35.6	38.7	46.5	47.7	47.0
9. FTE employment rate (% population aged 15-64)	74.9	76.0	72.9	72.9	73.7	73.5	73.8	72.3	71.7	71.8	70.7
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	1.4	1.8	1.6	2.5	2.5	2.6	2.6	2.7	5.6	4.0	4.8
12. Fixed term contracts (% total employees)	5.2	4.7	2.4	4.1	4.9	5.7	6.2	5.9	6.3	6.2	6.3
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	76.3	76.7	75.5	75.6	76.0	75.3	75.0	74.7	76.6	76.0	75.0
17. Activity rate (% of population aged 15-24)	37.1	36.6	31.0	29.6	32.1	30.6	30.6	30.9	34.9	26.8	26.3
18. Activity rate (% of population aged 25-54)	94.4	94.9	94.1	95.3	95.5	95.3	94.9	93.7	94.1	94.8	93.9
19. Activity rate (% of population aged 55-64)	36.1	37.9	40.1	38.8	39.4	38.9	36.4	39.7	47.7	48.8	48.4
20. Total unemployment (000)	2	2	3	4	4	4	4	5	6	5	5
21. Unemployment rate (% labour force 15+)	1.6	2.0	3.0	3.6	3.6	3.5	3.4	4.1	4.5	3.8	3.9
22. Youth unemployment rate (% labour force 15-24)	6.6	5.8	9.9	12.0	12.6	16.0	13.8	13.4	15.0	17.2	14.5
23. Long term unemployment rate (% labour force)	0.6	0.6	0.9	0.8	1.2	1.2	1.3	1.2	0.9	1.3	1.3
24. Youth unemployment ratio (% population aged 15-24)	2.5	2.3	3.0	3.6	3.8	5.2	4.1	3.9	5.8	4.7	3.5

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	219	221	224	224	227	225	230	235	241	246	250
2. Population aged 15-64	145	146	148	149	151	154	159	157	163	166	170
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	74	76	76	77	81	84	89	87	93	95	97
5. Employment rate (% population aged 15-64)	50.9	51.6	50.9	51.9	53.7	54.6	56.1	55.1	57.0	57.2	56.9
6. Employment rate (% population aged 15-24)	29.8	28.0	26.1	20.5	21.3	21.2	18.4	20.6	24.2	20.3	18.5
7. Employment rate (% population aged 25-54)	63.9	64.6	63.8	66.2	68.4	69.5	71.7	69.5	71.4	72.6	72.9
8. Employment rate (% population aged 55-64)	15.2	18.4	20.6	22.2	24.9	27.8	28.6	29.3	29.4	31.3	31.3
9. FTE employment rate (% population aged 15-64)	45.1	45.7	43.7	43.3	44.4	46.1	47.5	46.3	47.8	48.0	47.9
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	25.8	25.3	30.7	36.3	38.2	36.2	37.2	38.3	35.1	36.0	36.1
12. Fixed term contracts (% total employees)	6.4	5.6	4.2	5.8	5.8	6.6	7.6	6.6	8.4	8.3	8.2
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	52.2	53.6	53.5	55.8	57.0	58.2	58.9	58.7	60.7	60.3	60.7
17. Activity rate (% of population aged 15-24)	31.8	30.9	29.7	26.4	25.5	25.0	22.3	27.1	29.5	22.7	23.4
18. Activity rate (% of population aged 25-54)	65.3	66.8	66.5	70.4	72.2	73.8	74.7	72.9	75.3	76.4	77.1
19. Activity rate (% of population aged 55-64)	15.2	18.5	21.2	22.6	25.1	28.5	29.1	30.3	30.6	32.0	32.1
20. Total unemployment (000)	2	3	4	6	5	5	5	5	6	6	6
21. Unemployment rate (% labour force 15+)	2.4	3.5	4.9	6.8	6.1	5.9	5.1	5.9	5.9	5.5	6.2
22. Youth unemployment rate (% labour force 15-24)	5.7	8.6	12.5	21.5	17.2	14.9	18.2	22.0	18.2	14.3	18.6
23. Long term unemployment rate (% labour force)	0.6	0.8	0.9	1.3	1.2	1.5	1.1	2.1	1.6	1.4	1.6
24. Youth unemployment ratio (% population aged 15-24)	2.0	2.9	3.6	5.9	4.1	3.8	3.9	6.5	5.2	2.3	4.9

Source: Eurostat.

Labour market indicators: Hungary

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	10038	10012	9980	9944	9932	9921	9907	9893	9867	9852	9833
2. Population aged 15-64	6851	6849	6836	6826	6815	6816	6800	6794	6771	6769	6770
3. Total employment (000)	4230	4227	4227	4187	4174	4192	4194	4133	4019	4032	4044
4. Population in employment aged 15-64	3850	3850	3897	3875	3879	3906	3897	3849	3751	3750	3779
5. Employment rate (% population aged 15-64)	56.2	56.2	57.0	56.8	56.9	57.3	57.3	56.7	55.4	55.4	55.8
6. Employment rate (% population aged 15-24)	30.7	28.5	26.8	23.6	21.8	21.7	21.0	20.0	18.1	18.3	18.3
7. Employment rate (% population aged 25-54)	73.1	73.0	73.7	73.6	73.7	74.2	74.6	74.4	72.9	72.5	73.1
8. Employment rate (% population aged 55-64)	23.5	25.6	28.9	31.1	33.0	33.6	33.1	31.4	32.8	34.4	35.8
9. FTE employment rate (% population aged 15-64)	56.0	56.2	56.9	56.5	56.5	57.0	56.9	56.2	54.6	54.6	54.7
10. Self-employed (% total employment)	15.2	14.9	13.8	13.6	12.7	12.2	11.7	11.4	11.0	10.7	10.9
11. Part-time employment (% total employment)	3.6	3.6	4.4	4.7	4.1	4.0	4.1	4.6	5.6	5.8	6.8
12. Fixed term contracts (% total employees)	7.5	7.3	7.5	6.8	7.0	6.7	7.3	7.9	8.5	9.7	8.9
13. Employment in Services (% total employment)	56.3	56.6	58.5	59.7	60.7	61.0	61.3	61.8	62.8	63.4	62.8
14. Employment in Industry (% total employment)	32.2	32.3	32.0	31.5	31.0	31.0	31.2	31.1	30.3	29.6	30.0
15. Employment in Agriculture (% total employment)	11.5	11.1	9.4	8.8	8.3	8.0	7.5	7.1	6.9	7.0	7.2
16. Activity rate (% population aged 15-64)	59.6	59.7	60.6	60.5	61.3	62.0	61.9	61.5	61.6	62.4	62.7
17. Activity rate (% of population aged 15-24)	34.6	32.6	31.0	27.9	27.1	26.8	25.6	25.0	24.6	24.9	24.7
18. Activity rate (% of population aged 25-54)	77.1	77.0	77.8	77.9	78.7	79.6	80.0	80.1	80.2	80.9	81.3
19. Activity rate (% of population aged 55-64)	24.2	26.4	29.8	32.0	34.3	34.9	34.5	33.1	35.0	37.3	39.2
20. Total unemployment (000)	235	240	244	252	302	317	312	329	421	475	468
21. Unemployment rate (% labour force 15+)	5.7	5.8	5.9	6.1	7.2	7.5	7.4	7.8	10.0	11.2	10.9
22. Youth unemployment rate (% labour force 15-24)	11.3	12.7	13.4	15.5	19.4	19.1	18.0	19.9	26.5	26.6	26.1
23. Long term unemployment rate (% labour force)	2.6	2.5	2.4	2.7	3.2	3.4	3.4	3.6	4.2	5.5	5.2
24. Youth unemployment ratio (% population aged 15-24)	3.9	4.1	4.1	4.3	5.2	5.1	4.6	5.0	6.5	6.6	6.4

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	4756	4742	4722	4703	4698	4692	4691	4680	4671	4664	4658
2. Population aged 15-64	3340	3338	3329	3329	3328	3328	3319	3321	3316	3321	3331
3. Total employment (000)	2311	2307	2292	2273	2264	2280	2289	2249	2173	2157	2183
4. Population in employment aged 15-64	2102	2100	2113	2102	2101	2122	2126	2093	2026	2005	2039
5. Employment rate (% population aged 15-64)	62.9	62.9	63.5	63.1	63.1	63.8	64.0	63.0	61.1	60.4	61.2
6. Employment rate (% population aged 15-24)	34.4	31.2	29.8	26.3	24.4	24.5	24.2	23.2	19.9	20.0	19.9
7. Employment rate (% population aged 25-54)	79.4	79.7	80.1	80.5	80.3	81.0	81.3	81.0	78.9	77.9	79.6
8. Employment rate (% population aged 55-64)	34.1	35.5	37.8	38.4	40.6	41.4	41.7	38.5	39.9	39.6	39.8
9. FTE employment rate (% population aged 15-64)	63.4	63.6	64.0	63.7	63.3	64.1	64.3	63.1	60.9	60.1	60.7
10. Self-employed (% total employment)	18.9	18.3	17.4	16.9	15.8	15.1	14.2	14.3	13.5	13.3	13.7
11. Part-time employment (% total employment)	2.2	2.3	2.8	3.2	2.7	2.6	2.8	3.3	3.9	3.9	4.7
12. Fixed term contracts (% total employees)	8.1	7.9	8.3	7.5	7.6	7.4	7.7	8.7	9.0	10.1	9.4
13. Employment in Services (% total employment)	46.3	46.3	47.5	48.5	49.1	49.4	49.6	50.3	50.9	51.6	51.3
14. Employment in Industry (% total employment)	38.4	39.0	39.3	39.2	39.6	39.7	39.9	40.0	39.7	38.5	38.8
15. Employment in Agriculture (% total employment)	15.4	14.7	13.2	12.3	11.3	10.9	10.5	9.8	9.4	9.8	9.9
16. Activity rate (% population aged 15-64)	67.2	67.1	67.6	67.2	67.9	68.7	69.0	68.3	68.2	68.3	68.8
17. Activity rate (% of population aged 15-24)	39.2	36.0	34.6	31.4	30.3	30.1	29.3	28.6	27.7	27.7	27.3
18. Activity rate (% of population aged 25-54)	84.2	84.3	84.8	85.0	85.5	86.5	86.9	87.0	86.9	87.2	88.3
19. Activity rate (% of population aged 55-64)	35.4	36.9	38.9	39.7	42.3	43.1	43.6	40.5	42.6	43.1	44.0
20. Total unemployment (000)	143	139	138	137	159	165	164	174	234	264	253
21. Unemployment rate (% labour force 15+)	6.3	6.2	6.1	6.1	7.0	7.2	7.1	7.6	10.3	11.6	11.0
22. Youth unemployment rate (% labour force 15-24)	12.3	13.2	13.8	16.2	19.6	18.6	17.6	19.1	28.2	27.9	27.2
23. Long term unemployment rate (% labour force)	3.0	2.8	2.5	2.8	3.2	3.3	3.3	3.6	4.2	5.8	5.2
24. Youth unemployment ratio (% population aged 15-24)	4.8	4.8	4.8	5.1	6.0	5.6	5.2	5.5	7.8	7.7	7.4

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5282	5270	5258	5241	5234	5228	5216	5212	5196	5187	5174
2. Population aged 15-64	3511	3512	3506	3497	3486	3488	3481	3473	3455	3448	3439
3. Total employment (000)	1919	1920	1935	1914	1910	1912	1905	1884	1846	1875	1862
4. Population in employment aged 15-64	1747	1750	1785	1773	1777	1784	1772	1756	1725	1745	1740
5. Employment rate (% population aged 15-64)	49.8	49.8	50.9	50.7	51.0	51.1	50.9	50.6	49.9	50.6	50.6
6. Employment rate (% population aged 15-24)	26.9	25.8	23.8	20.8	19.2	18.8	17.8	16.8	16.3	16.6	16.7
7. Employment rate (% population aged 25-54)	67.0	66.5	67.4	67.0	67.2	67.6	67.9	67.9	66.9	67.1	66.6
8. Employment rate (% population aged 55-64)	14.9	17.6	21.8	25.0	26.7	27.1	26.2	25.7	27.0	30.1	32.4
9. FTE employment rate (% population aged 15-64)	48.8	49.1	50.0	49.5	50.0	50.2	49.9	49.5	48.6	49.2	48.9
10. Self-employed (% total employment)	10.8	10.7	9.5	9.7	9.1	8.7	8.6	8.0	8.0	7.7	7.7
11. Part-time employment (% total employment)	5.2	5.1	6.2	6.3	5.8	5.6	5.8	6.2	7.5	8.0	9.2
12. Fixed term contracts (% total employees)	6.8	6.6	6.7	6.1	6.4	6.0	6.8	7.0	7.8	9.2	8.4
13. Employment in Services (% total employment)	69.0	69.5	72.2	73.5	74.9	75.1	75.7	75.8	77.1	77.2	76.5
14. Employment in Industry (% total employment)	24.5	23.8	23.1	22.0	20.6	20.4	20.5	20.4	19.0	19.2	19.6
15. Employment in Agriculture (% total employment)	6.5	6.7	4.8	4.4	4.6	4.5	3.8	3.8	4.0	3.6	4.0
16. Activity rate (% population aged 15-64)	52.4	52.7	53.9	54.0	55.1	55.5	55.1	55.0	55.3	56.7	56.8
17. Activity rate (% of population aged 15-24)	29.9	29.3	27.3	24.3	23.8	23.4	21.8	21.3	21.5	22.1	22.1
18. Activity rate (% of population aged 25-54)	70.1	69.9	71.0	70.9	72.1	72.9	73.2	73.3	73.6	74.6	74.3
19. Activity rate (% of population aged 55-64)	15.1	18.0	22.4	25.8	27.7	28.2	27.3	27.0	28.8	32.4	35.2
20. Total unemployment (000)	92	101	106	116	143	152	148	155	187	210	215
21. Unemployment rate (% labour force 15+)	5.0	5.4	5.6	6.1	7.4	7.8	7.7	8.1	9.7	10.7	10.9
22. Youth unemployment rate (% labour force 15-24)	10.0	11.9	12.8	14.4	19.0	19.8	18.6	20.9	24.2	24.9	24.6
23. Long term unemployment rate (% labour force)	2.1	2.2	2.3	2.6	3.2	3.4	3.6	3.7	4.1	5.2	5.3
24. Youth unemployment ratio (% population aged 15-24)	3.0	3.5	3.5	3.5	4.5	4.6	4.1	4.4	5.2	5.5	5.4

Source: Eurostat.

Labour market indicators: Malta

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	393	396	399	400	402	406	409	411	414	416	418
2. Population aged 15-64	267	269	271	272	274	281	285	288	290	289	289
3. Total employment (000)	149	150	151	150	153	155	160	164	163	167	171
4. Population in employment aged 15-64	145	147	147	147	148	151	156	159	159	162	166
5. Employment rate (% population aged 15-64)	54.3	54.4	54.2	54.0	53.9	53.6	54.6	55.3	55.0	56.1	57.6
6. Employment rate (% population aged 15-24)	52.3	50.5	47.2	46.2	45.3	44.2	45.7	45.9	44.0	44.8	44.7
7. Employment rate (% population aged 25-54)	61.0	61.6	61.8	62.1	62.4	64.4	66.2	67.3	68.0	68.8	70.6
8. Employment rate (% population aged 55-64)	29.4	30.1	32.5	31.5	30.8	29.8	28.5	29.2	27.8	30.2	31.7
9. FTE employment rate (% population aged 15-64)	53.4	53.7	53.0	52.6	51.6	51.9	52.5	53.3	53.1	53.7	55.0
10. Self-employed (% total employment)	11.2	11.2	11.5	11.7	11.8	11.8	11.9	12.0	12.3	12.3	12.1
11. Part-time employment (% total employment)	7.4	8.3	9.2	8.7	9.6	10.0	10.9	11.5	11.3	12.5	13.2
12. Fixed term contracts (% total employees)	4.0	4.3	3.6	4.0	4.5	3.7	5.1	4.3	4.9	5.7	6.6
13. Employment in Services (% total employment)	66.0	67.0	68.6	70.4	71.0	72.2	73.2	75.1	75.9	76.8	78.0
14. Employment in Industry (% total employment)	30.6	29.7	27.8	25.5	25.1	24.7	23.7	22.1	21.0	20.2	19.2
15. Employment in Agriculture (% total employment)	3.5	3.3	3.7	4.0	3.9	3.1	3.1	2.9	3.0	3.1	2.8
16. Activity rate (% population aged 15-64)	58.1	58.5	58.6	58.2	58.1	57.6	58.4	58.9	59.1	60.3	61.6
17. Activity rate (% of population aged 15-24)	60.8	58.8	56.5	55.3	54.4	52.6	53.1	52.2	51.4	51.5	51.8
18. Activity rate (% of population aged 25-54)	63.8	65.0	65.4	65.3	65.7	67.9	69.7	70.8	71.8	73.1	74.7
19. Activity rate (% of population aged 55-64)	30.1	30.7	33.4	32.3	31.9	30.6	29.6	30.4	29.5	31.6	32.6
20. Total unemployment (000)	12	12	12	11	12	11	11	10	12	12	12
21. Unemployment rate (% labour force 15+)	7.6	7.4	7.7	7.2	7.3	6.9	6.5	6.0	6.9	6.9	6.5
22. Youth unemployment rate (% labour force 15-24)	18.8	17.1	17.4	16.6	16.8	15.9	13.9	12.2	14.4	13.1	13.8
23. Long term unemployment rate (% labour force)	3.7	3.3	3.2	3.4	3.5	2.9	2.7	2.5	3.0	3.2	3.0
24. Youth unemployment ratio (% population aged 15-24)	8.5	8.3	9.3	9.2	9.1	8.4	7.4	6.4	7.4	6.7	7.1

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	195	196	198	198	199	202	203	204	207	207	208
2. Population aged 15-64	134	135	136	137	138	143	145	146	148	147	147
3. Total employment (000)	105	104	105	105	105	107	109	109	109	110	112
4. Population in employment aged 15-64	103	101	102	103	102	105	106	106	106	106	108
5. Employment rate (% population aged 15-64)	76.2	74.7	74.5	75.1	73.8	73.3	72.9	72.6	71.6	72.4	73.6
6. Employment rate (% population aged 15-24)	54.3	51.7	49.1	50.4	46.7	46.9	48.1	47.7	46.3	47.8	48.6
7. Employment rate (% population aged 25-54)	90.0	88.5	88.3	88.8	88.9	89.6	90.0	89.5	89.0	88.8	89.7
8. Employment rate (% population aged 55-64)	50.4	50.8	53.8	53.4	50.8	49.4	45.9	46.5	45.0	47.9	50.1
9. FTE employment rate (% population aged 15-64)	76.3	75.7	75.3	75.5	72.7	72.9	72.6	72.7	71.7	71.9	72.8
10. Self-employed (% total employment)	13.6	14.1	13.8	14.5	14.8	14.8	14.6	15.1	15.4	15.9	15.5
11. Part-time employment (% total employment)	3.2	3.9	3.8	4.1	4.5	4.9	4.4	4.5	5.1	6.0	6.7
12. Fixed term contracts (% total employees)	2.8	3.4	3.0	3.1	3.7	2.7	3.7	3.4	3.8	4.7	5.7
13. Employment in Services (% total employment)	:	62.0	62.7	64.8	64.5	65.9	66.5	67.4	69.0	70.3	71.6
14. Employment in Industry (% total employment)	:	33.4	32.4	29.9	30.1	30.0	29.2	28.6	26.9	25.3	24.4
15. Employment in Agriculture (% total employment)	:	4.6	4.9	5.3	5.4	4.2	4.3	3.9	4.1	4.3	4.0
16. Activity rate (% population aged 15-64)	81.3	80.1	80.2	80.2	79.1	78.1	77.6	76.9	76.7	77.7	78.5
17. Activity rate (% of population aged 15-24)	64.8	61.1	58.8	59.9	56.4	56.6	57.1	55.3	55.0	55.4	56.3
18. Activity rate (% of population aged 25-54)	94.0	93.2	93.5	93.3	93.2	93.9	94.2	93.7	93.7	94.3	94.8
19. Activity rate (% of population aged 55-64)	51.6	52.0	55.5	54.7	53.1	50.6	47.3	48.0	47.6	50.3	51.5
20. Total unemployment (000)	8	7	8	7	7	7	7	6	8	8	7
21. Unemployment rate (% labour force 15+)	6.9	6.6	7.1	6.4	6.6	6.1	6.0	5.6	6.6	6.9	6.2
22. Youth unemployment rate (% labour force 15-24)	20.5	17.5	16.9	15.9	17.2	17.2	15.8	13.7	15.9	14.1	13.7
23. Long term unemployment rate (% labour force)	4.0	3.5	3.4	3.6	3.5	3.0	2.8	2.6	3.3	3.4	3.3
24. Youth unemployment ratio (% population aged 15-24)	10.5	9.4	9.7	9.5	9.7	9.7	9.0	7.6	8.7	7.6	7.7

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	199	200	201	202	203	204	205	207	207	209	210
2. Population aged 15-64	133	134	135	136	136	139	140	142	142	142	142
3. Total employment (000)	44	46	47	45	47	47	51	54	55	57	59
4. Population in employment aged 15-64	43	45	45	44	46	46	50	53	53	56	58
5. Employment rate (% population aged 15-64)	32.1	33.9	33.6	32.7	33.7	33.4	35.7	37.4	37.6	39.3	41.0
6. Employment rate (% population aged 15-24)	50.2	49.2	45.2	41.8	43.9	41.3	43.2	43.9	41.4	41.5	40.5
7. Employment rate (% population aged 25-54)	31.4	34.2	34.7	34.8	35.4	38.1	41.3	44.1	45.9	47.8	50.6
8. Employment rate (% population aged 55-64)	10.2	10.9	13.0	11.5	12.4	10.8	11.6	12.4	11.0	13.0	13.8
9. FTE employment rate (% population aged 15-64)	30.4	31.7	30.6	29.7	30.4	30.4	31.8	33.5	33.9	35.0	36.8
10. Self-employed (% total employment)	5.6	4.6	6.4	5.3	5.2	5.1	6.1	5.6	6.2	5.3	5.7
11. Part-time employment (% total employment)	17.5	18.3	21.3	19.3	21.1	21.5	24.6	25.5	23.7	25.0	25.7
12. Fixed term contracts (% total employees)	6.4	5.9	4.8	5.8	6.1	5.8	7.7	5.8	6.8	7.3	7.9
13. Employment in Services (% total employment)	:	78.3	81.7	83.4	85.3	86.5	87.3	90.0	89.5	89.0	89.7
14. Employment in Industry (% total employment)	:	21.2	17.3	15.4	13.9	13.0	12.0	9.2	9.6	10.4	9.7
15. Employment in Agriculture (% total employment)	:	0.5	1.0	1.2	0.8	0.6	0.6	0.7	0.9	0.6	0.6
16. Activity rate (% population aged 15-64)	34.6	36.7	36.8	36.0	36.9	36.5	38.6	40.2	40.8	42.3	44.1
17. Activity rate (% of population aged 15-24)	56.6	56.4	54.0	50.6	52.4	48.3	48.9	49.0	47.4	47.2	46.9
18. Activity rate (% of population aged 25-54)	33.1	36.2	36.8	36.8	37.6	40.8	44.0	46.7	48.8	50.9	53.7
19. Activity rate (% of population aged 55-64)	10.3	11.1	13.1	11.9	12.4	11.2	12.3	13.3	11.9	13.3	14.2
20. Total unemployment (000)	4	5	5	4	4	4	4	4	4	4	4
21. Unemployment rate (% labour force 15+)	9.3	9.3	9.2	9.0	8.9	8.6	7.6	6.9	7.6	7.1	7.1
22. Youth unemployment rate (% labour force 15-24)	16.9	16.6	17.9	17.4	16.2	14.3	11.6	10.4	12.5	11.9	13.8
23. Long term unemployment rate (% labour force)	2.7	2.3	2.4	3.0	3.4	2.6	2.5	2.6	2.4	2.7	2.5
24. Youth unemployment ratio (% population aged 15-24)	6.4	7.2	8.8	8.8	8.5	6.9	5.7	5.1	5.9	5.7	6.5

Source: Eurostat.

Indicator 1: 2001 estimate.

Labour market indicators: Netherlands

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	15837	15964	16037	16119	16107	16142	16180	16190	16223	16350	16400
2. Population aged 15-64	10801	10871	10920	10960	10943	10964	10986	10970	10970	11017	10994
3. Total employment (000)	8282	8324	8283	8211	8251	8392	8605	8733	8671	8636	8698
4. Population in employment aged 15-64	8005	8089	8042	8014	8013	8152	8345	8468	8443	8227	8232
5. Employment rate (% population aged 15-64)	74.1	74.4	73.6	73.1	73.2	74.3	76.0	77.2	77.0	74.7	74.9
6. Employment rate (% population aged 15-24)	70.4	70.0	68.3	65.9	65.2	66.2	68.4	69.3	68.0	63.0	63.5
7. Employment rate (% population aged 25-54)	82.8	82.8	82.6	82.5	82.9	84.2	85.4	86.8	86.3	84.7	84.2
8. Employment rate (% population aged 55-64)	39.6	42.3	44.3	45.2	46.1	47.7	50.9	53.0	55.1	53.7	56.1
9. FTE employment rate (% population aged 15-64)	58.1	58.1	57.2	56.5	56.4	57.4	58.6	59.6	59.2	57.2	57.3
10. Self-employed (% total employment)	13.6	13.5	13.5	13.7	13.9	13.9	13.7	13.5	13.6	13.8	14.0
11. Part-time employment (% total employment)	42.2	43.9	45.0	45.5	46.1	46.2	46.8	47.3	48.3	48.9	49.1
12. Fixed term contracts (% total employees)	14.3	14.4	14.5	14.8	15.5	16.6	18.1	18.2	18.2	18.5	18.4
13. Employment in Services (% total employment)	77.9	78.3	78.9	79.2	79.7	80.0	80.4	80.5	80.8	81.2	81.5
14. Employment in Industry (% total employment)	18.9	18.5	18.0	17.7	17.4	17.1	16.8	16.8	16.6	16.2	15.9
15. Employment in Agriculture (% total employment)	3.2	3.2	3.1	3.0	3.0	2.9	2.8	2.7	2.6	2.6	2.6
16. Activity rate (% population aged 15-64)	75.8	76.5	76.5	76.6	76.9	77.4	78.5	79.3	79.7	78.2	78.4
17. Activity rate (% of population aged 15-24)	73.8	73.7	72.9	71.6	71.0	70.8	72.7	73.2	72.8	69.0	68.8
18. Activity rate (% of population aged 25-54)	84.3	84.8	85.3	85.9	86.5	87.1	87.6	88.5	88.8	87.9	87.5
19. Activity rate (% of population aged 55-64)	40.2	43.3	45.5	46.9	48.1	49.6	52.8	54.7	56.8	55.9	58.5
20. Total unemployment (000)	206	254	341	419	441	366	306	267	327	390	389
21. Unemployment rate (% labour force 15+)	2.5	3.1	4.2	5.1	5.3	4.4	3.6	3.1	3.7	4.5	4.4
22. Youth unemployment rate (% labour force 15-24)	5.0	5.4	7.3	9.0	9.4	7.5	7.0	6.3	7.7	8.7	7.6
23. Long term unemployment rate (% labour force)	0.7	0.8	1.2	1.7	2.1	1.9	1.4	1.1	0.9	1.2	1.5
24. Youth unemployment ratio (% population aged 15-24)	3.4	3.7	4.6	5.7	5.8	4.6	4.3	3.9	4.8	6.0	5.3

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	7865	7930	7969	8012	7992	8006	8022	8027	8043	8103	8126
2. Population aged 15-64	5469	5502	5525	5543	5519	5524	5529	5516	5512	5533	5517
3. Total employment (000)	4694	4680	4626	4572	4560	4624	4709	4752	4689	4670	4676
4. Population in employment aged 15-64	4526	4536	4479	4447	4411	4471	4547	4588	4540	4425	4403
5. Employment rate (% population aged 15-64)	82.8	82.4	81.1	80.2	79.9	80.9	82.2	83.2	82.4	80.0	79.8
6. Employment rate (% population aged 15-24)	71.2	70.6	68.9	66.3	65.5	67.2	68.9	69.8	67.5	62.6	62.7
7. Employment rate (% population aged 25-54)	92.7	91.8	90.6	90.2	90.3	91.4	92.1	93.0	92.0	90.0	89.4
8. Employment rate (% population aged 55-64)	51.1	54.6	56.7	56.9	56.9	58.0	61.5	63.7	65.4	64.5	65.8
9. FTE employment rate (% population aged 15-64)	75.0	74.7	73.2	72.0	71.7	72.5	73.5	74.3	73.2	70.9	70.7
10. Self-employed (% total employment)	15.3	15.5	15.9	16.0	16.3	16.4	16.4	16.2	16.2	16.6	16.8
11. Part-time employment (% total employment)	20.0	21.2	22.0	22.3	22.6	23.0	23.6	23.9	24.9	25.4	25.4
12. Fixed term contracts (% total employees)	11.9	12.1	12.9	13.4	14.3	15.4	16.6	16.6	16.4	17.3	17.3
13. Employment in Services (% total employment)	68.7	68.9	69.3	69.5	70.0	70.2	70.8	70.8	70.9	71.1	71.5
14. Employment in Industry (% total employment)	27.5	27.1	26.7	26.5	26.1	26.0	25.6	25.7	25.6	25.3	25.0
15. Employment in Agriculture (% total employment)	3.8	4.0	4.0	4.0	3.9	3.8	3.6	3.5	3.5	3.6	3.6
16. Activity rate (% population aged 15-64)	84.3	84.5	84.0	83.9	83.7	83.9	84.6	85.3	85.3	83.7	83.5
17. Activity rate (% of population aged 15-24)	74.4	74.5	73.5	72.0	71.2	71.5	73.0	73.7	72.7	68.6	67.8
18. Activity rate (% of population aged 25-54)	94.0	93.6	93.5	93.7	93.8	94.1	94.0	94.5	94.4	93.3	93.0
19. Activity rate (% of population aged 55-64)	51.8	55.8	58.2	59.1	59.5	60.4	64.0	65.9	67.6	67.3	68.6
20. Total unemployment (000)	94	127	187	227	227	179	147	134	175	208	211
21. Unemployment rate (% labour force 15+)	2.1	2.7	4.1	4.9	4.9	3.9	3.1	2.8	3.7	4.4	4.5
22. Youth unemployment rate (% labour force 15-24)	4.7	5.7	7.7	9.1	9.5	6.7	6.3	6.3	8.1	8.8	7.5
23. Long term unemployment rate (% labour force)	0.5	0.7	1.1	1.8	2.1	1.8	1.3	1.0	0.9	1.2	1.6
24. Youth unemployment ratio (% population aged 15-24)	3.2	3.9	4.6	5.7	5.7	4.3	4.1	4.0	5.2	6.1	5.1

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	7972	8035	8068	8107	8116	8136	8157	8164	8181	8247	8274
2. Population aged 15-64	5332	5368	5395	5417	5424	5441	5457	5454	5458	5485	5477
3. Total employment (000)	3588	3644	3657	3639	3691	3768	3896	3981	3982	3966	4022
4. Population in employment aged 15-64	3479	3553	3562	3567	3603	3681	3798	3880	3903	3802	3829
5. Employment rate (% population aged 15-64)	65.2	66.2	66.0	65.8	66.4	67.7	69.6	71.1	71.5	69.3	69.9
6. Employment rate (% population aged 15-24)	69.6	69.5	67.8	65.4	64.9	65.1	67.9	68.8	68.4	63.5	64.4
7. Employment rate (% population aged 25-54)	72.5	73.6	74.4	74.6	75.5	77.0	78.7	80.5	80.7	79.3	79.0
8. Employment rate (% population aged 55-64)	28.0	29.9	31.8	33.4	35.2	37.2	40.1	42.2	44.7	42.8	46.4
9. FTE employment rate (% population aged 15-64)	41.6	42.0	41.7	41.5	41.8	43.0	44.4	45.7	45.9	44.3	44.7
10. Self-employed (% total employment)	11.4	10.9	10.3	10.9	10.9	10.8	10.5	10.3	10.6	10.5	10.7
11. Part-time employment (% total employment)	71.3	73.1	74.1	74.7	75.1	74.7	75.0	75.3	75.8	76.5	76.7
12. Fixed term contracts (% total employees)	17.4	17.1	16.4	16.5	16.9	18.0	19.7	20.0	20.3	19.9	19.6
13. Employment in Services (% total employment)	89.9	90.2	90.7	91.0	91.1	91.4	91.6	91.7	91.9	92.3	92.4
14. Employment in Industry (% total employment)	7.8	7.7	7.3	7.1	7.0	6.8	6.7	6.6	6.4	6.1	6.0
15. Employment in Agriculture (% total employment)	2.3	2.1	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.5
16. Activity rate (% population aged 15-64)	67.1	68.3	68.7	69.2	70.0	70.7	72.2	73.3	74.1	72.6	73.1
17. Activity rate (% of population aged 15-24)	73.1	73.0	72.3	71.1	70.8	70.1	72.4	72.6	72.9	69.4	69.9
18. Activity rate (% of population aged 25-54)	74.3	75.7	77.0	77.9	79.0	80.1	81.2	82.5	83.0	82.4	81.9
19. Activity rate (% of population aged 55-64)	28.4	30.6	32.6	34.4	36.5	38.6	41.4	43.5	46.0	44.5	48.4
20. Total unemployment (000)	111	126	154	192	214	187	159	134	152	182	178
21. Unemployment rate (% labour force 15+)	3.2	3.5	4.3	5.3	5.8	5.0	4.1	3.4	3.8	4.5	4.4
22. Youth unemployment rate (% labour force 15-24)	5.2	5.1	6.9	8.9	9.4	8.4	7.8	6.4	7.3	8.6	7.8
23. Long term unemployment rate (% labour force)	0.9	1.0	1.2	1.7	2.1	2.0	1.5	1.1	1.0	1.2	1.4
24. Youth unemployment ratio (% population aged 15-24)	3.6	3.5	4.6	5.7	5.9	4.9	4.5	3.8	4.5	6.0	5.5

Source: Eurostat.

LFS indicators: 2010 break in series.

Labour market indicators: Austria

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	7963	7893	7998	8045	8109	8155	8191	8220	8238	8259	8290
2. Population aged 15-64	5404	5356	5459	5485	5516	5532	5551	5576	5588	5606	5644
3. Total employment (000)	3763	3759	3784	3807	3852	3917	3987	4066	4034	4069	4128
4. Population in employment aged 15-64	3707	3682	3763	3716	3786	3881	3963	4020	4002	4021	4070
5. Employment rate (% population aged 15-64)	68.5	68.7	68.9	67.8	68.6	70.2	71.4	72.1	71.6	71.7	72.1
6. Employment rate (% population aged 15-24)	51.3	51.7	51.1	51.9	53.1	54.0	55.5	55.9	54.5	53.6	54.9
7. Employment rate (% population aged 25-54)	82.9	83.6	84.0	82.6	82.6	83.5	84.0	84.4	84.0	84.2	84.9
8. Employment rate (% population aged 55-64)	28.9	29.1	30.3	28.8	31.8	35.5	38.6	41.0	41.1	42.4	41.5
9. FTE employment rate (% population aged 15-64)	63.4	62.9	63.2	60.6	61.8	63.0	63.8	64.3	63.5	63.4	63.7
10. Self-employed (% total employment)	13.2	13.3	13.4	13.5	13.5	13.6	13.4	13.4	13.5	13.4	13.2
11. Part-time employment (% total employment)	18.2	19.0	18.7	19.8	21.1	21.8	22.6	23.3	24.6	25.2	25.2
12. Fixed term contracts (% total employees)	7.9	7.4	6.9	9.6	9.1	9.0	8.9	9.0	9.1	9.3	9.6
13. Employment in Services (% total employment)	68.0	68.9	69.0	69.5	70.2	70.5	70.5	70.7	71.2	71.7	71.5
14. Employment in Industry (% total employment)	25.9	25.4	25.1	24.7	24.4	24.1	24.3	24.3	23.8	23.4	23.5
15. Employment in Agriculture (% total employment)	6.1	5.7	5.9	5.7	5.4	5.4	5.2	5.1	5.0	4.9	4.9
16. Activity rate (% population aged 15-64)	71.0	71.6	72.0	71.3	72.4	73.7	74.7	75.0	75.3	75.1	75.3
17. Activity rate (% of population aged 15-24)	54.5	55.1	55.0	57.4	59.2	59.4	60.8	60.8	60.5	58.8	59.9
18. Activity rate (% of population aged 25-54)	85.4	86.6	87.3	86.3	86.4	87.1	87.4	87.3	87.7	87.7	88.1
19. Activity rate (% of population aged 55-64)	30.1	30.8	32.0	29.9	33.0	36.8	39.8	41.9	42.1	43.4	42.9
20. Total unemployment (000)	138	163	166	195	208	196	186	162	204	188	179
21. Unemployment rate (% labour force 15+)	3.6	4.2	4.3	4.9	5.2	4.8	4.4	3.8	4.8	4.4	4.2
22. Youth unemployment rate (% labour force 15-24)	5.8	6.7	8.1	9.7	10.3	9.1	8.7	8.0	10.0	8.8	8.3
23. Long term unemployment rate (% labour force)	0.9	1.1	1.1	1.4	1.3	1.3	1.2	0.9	1.0	1.1	1.1
24. Youth unemployment ratio (% population aged 15-24)	3.1	3.4	3.9	5.6	6.1	5.4	5.3	4.9	6.0	5.2	5.0

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	3854	3805	3877	3898	3939	3964	3985	4001	4012	4024	4041
2. Population aged 15-64	2693	2653	2718	2728	2745	2753	2763	2775	2780	2789	2807
3. Total employment (000)	2104	2070	2088	2096	2110	2141	2186	2209	2162	2183	2219
4. Population in employment aged 15-64	2060	2026	2076	2043	2070	2118	2168	2178	2138	2151	2183
5. Employment rate (% population aged 15-64)	76.4	76.4	76.4	74.9	75.4	76.9	78.4	78.5	76.9	77.1	77.8
6. Employment rate (% population aged 15-24)	55.6	56.0	55.7	56.0	56.8	58.2	59.6	59.5	57.3	57.9	59.8
7. Employment rate (% population aged 25-54)	90.6	91.1	91.1	89.4	89.1	89.9	90.6	90.2	88.5	88.7	89.6
8. Employment rate (% population aged 55-64)	40.1	39.6	40.4	38.9	41.3	45.3	49.8	51.8	51.0	51.6	50.6
9. FTE employment rate (% population aged 15-64)	76.0	74.8	74.9	72.6	74.1	75.5	76.8	76.5	74.7	74.7	75.4
10. Self-employed (% total employment)	14.1	14.4	14.6	15.6	15.6	15.4	15.0	15.3	15.6	15.5	15.3
11. Part-time employment (% total employment)	4.8	5.1	4.7	4.9	6.1	6.5	7.2	8.1	8.7	9.0	8.9
12. Fixed term contracts (% total employees)	7.2	7.6	7.1	10.2	9.3	9.1	8.8	8.9	9.2	9.8	9.6
13. Employment in Services (% total employment)	56.5	56.7	56.7	58.5	58.7	59.1	59.3	59.3	59.7	60.2	60.2
14. Employment in Industry (% total employment)	37.7	37.8	37.5	35.8	35.8	35.5	35.5	35.6	35.2	34.7	34.7
15. Employment in Agriculture (% total employment)	5.9	5.6	5.9	5.6	5.4	5.4	5.2	5.1	5.2	5.1	5.2
16. Activity rate (% population aged 15-64)	79.4	79.6	79.9	78.5	79.3	80.5	81.7	81.4	81.0	80.9	81.1
17. Activity rate (% of population aged 15-24)	59.2	59.9	60.3	61.7	63.6	63.9	65.0	64.6	64.0	63.6	64.9
18. Activity rate (% of population aged 25-54)	93.7	94.3	94.6	92.9	92.8	93.2	93.7	93.0	92.6	92.5	92.8
19. Activity rate (% of population aged 55-64)	42.1	42.1	42.9	40.6	43.0	47.3	51.3	52.8	52.3	53.0	52.6
20. Total unemployment (000)	66	85	84	98	108	97	90	82	114	105	93
21. Unemployment rate (% labour force 15+)	3.1	4.0	4.0	4.5	4.9	4.3	3.9	3.6	5.0	4.6	4.0
22. Youth unemployment rate (% labour force 15-24)	5.2	6.4	7.3	9.3	10.7	8.9	8.3	7.9	10.5	8.9	7.9
23. Long term unemployment rate (% labour force)	0.7	1.0	1.1	1.3	1.3	1.3	1.0	0.9	1.1	1.3	1.1
24. Youth unemployment ratio (% population aged 15-24)	3.4	3.9	4.5	5.7	6.8	5.7	5.4	5.1	6.7	5.7	5.1

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	4109	4088	4120	4147	4170	4191	4206	4219	4226	4235	4249
2. Population aged 15-64	2711	2704	2741	2757	2770	2779	2788	2801	2808	2818	2837
3. Total employment (000)	1659	1690	1695	1711	1742	1776	1801	1857	1872	1886	1909
4. Population in employment aged 15-64	1647	1656	1688	1673	1717	1764	1796	1842	1865	1870	1887
5. Employment rate (% population aged 15-64)	60.7	61.3	61.6	60.7	62.0	63.5	64.4	65.8	66.4	66.4	66.5
6. Employment rate (% population aged 15-24)	47.1	47.4	46.5	47.9	49.4	49.9	51.5	52.3	51.6	49.4	50.1
7. Employment rate (% population aged 25-54)	75.2	76.2	76.9	75.8	76.0	77.0	77.5	78.6	79.5	79.7	80.2
8. Employment rate (% population aged 55-64)	18.4	19.3	20.8	19.3	22.9	26.3	28.0	30.8	31.7	33.7	32.9
9. FTE employment rate (% population aged 15-64)	50.9	51.2	51.6	49.0	50.1	51.0	51.4	52.7	52.8	52.6	52.6
10. Self-employed (% total employment)	12.1	11.9	11.8	10.9	11.1	11.4	11.5	11.2	11.0	11.0	10.8
11. Part-time employment (% total employment)	35.0	35.9	36.0	38.0	39.3	40.2	41.2	41.5	42.9	43.8	44.0
12. Fixed term contracts (% total employees)	8.7	7.3	6.7	9.0	8.8	8.9	9.0	9.1	9.0	8.8	9.4
13. Employment in Services (% total employment)	81.8	83.1	83.4	82.5	83.5	83.5	83.5	83.9	84.3	84.7	84.3
14. Employment in Industry (% total employment)	11.8	11.1	10.7	11.6	11.2	11.1	11.2	11.1	10.8	10.7	11.0
15. Employment in Agriculture (% total employment)	6.4	5.9	6.0	5.9	5.3	5.3	5.2	5.0	4.9	4.7	4.6
16. Activity rate (% population aged 15-64)	62.5	63.7	64.3	64.2	65.6	67.0	67.8	68.6	69.6	69.3	69.5
17. Activity rate (% of population aged 15-24)	49.7	50.3	49.8	53.3	54.8	55.1	56.7	56.9	57.0	54.1	55.0
18. Activity rate (% of population aged 25-54)	77.2	79.0	79.9	79.6	79.9	80.9	81.1	81.5	82.8	82.8	83.4
19. Activity rate (% of population aged 55-64)	18.8	20.1	21.7	19.9	23.5	26.9	28.9	31.6	32.4	34.2	33.7
20. Total unemployment (000)	72	78	82	97	100	98	96	80	90	83	86
21. Unemployment rate (% labour force 15+)	4.2	4.4	4.7	5.4	5.5	5.2	5.0	4.1	4.6	4.2	4.3
22. Youth unemployment rate (% labour force 15-24)	6.5	7.1	8.9	10.1	9.9	9.3	9.1	8.2	9.4	8.8	8.8
23. Long term unemployment rate (% labour force)	1.1	1.2	1.1	1.4	1.4	1.3	1.4	0.9	1.0	0.9	1.0
24. Youth unemployment ratio (% population aged 15-24)	2.8	2.9	3.2	5.4	5.4	5.1	5.2	4.7	5.4	4.7	4.8

Source: Eurostat.

LFS indicators: 2004 break in series.

Labour market indicators: Poland

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	38109	38070	37657	37601	37527	37446	37277	37158	37196	37368	37503
2. Population aged 15-64	25986	26159	26031	26142	26211	26325	26299	26266	26338	26527	26618
3. Total employment (000)	:	:	:	13760	14057	14504	15156	15740	15803	15876	16032
4. Population in employment aged 15-64	13866	13470	13324	13504	13834	14338	14997	15557	15630	15719	15880
5. Employment rate (% population aged 15-64)	53.4	51.5	51.2	51.7	52.8	54.5	57.0	59.2	59.3	59.3	59.7
6. Employment rate (% population aged 15-24)	24.0	21.7	21.2	21.7	22.5	24.0	25.8	27.3	26.8	26.3	24.9
7. Employment rate (% population aged 25-54)	69.2	67.4	67.5	68.2	69.6	71.8	74.9	77.5	77.6	77.1	77.2
8. Employment rate (% population aged 55-64)	27.4	26.1	26.9	26.2	27.2	28.1	29.7	31.6	32.3	34.0	36.9
9. FTE employment rate (% population aged 15-64)	52.9	50.7	50.3	50.2	51.5	53.3	55.9	58.3	58.4	58.4	58.8
10. Self-employed (% total employment)	:	:	:	26.8	25.8	24.5	23.5	23.0	22.8	22.8	22.7
11. Part-time employment (% total employment)	10.3	10.8	10.5	10.8	10.8	9.8	9.2	8.5	8.4	8.3	8.0
12. Fixed term contracts (% total employees)	11.7	15.4	19.4	22.7	25.7	27.3	28.2	27.0	26.5	27.3	26.9
13. Employment in Services (% total employment)	:	:	:	53.0	53.2	54.1	54.5	54.3	55.8	57.2	56.9
14. Employment in Industry (% total employment)	:	:	:	29.1	29.5	30.2	30.9	31.8	30.9	30.0	30.4
15. Employment in Agriculture (% total employment)	:	:	:	17.9	17.3	15.7	14.6	14.0	13.3	12.8	12.7
16. Activity rate (% population aged 15-64)	65.5	64.6	63.9	64.0	64.4	63.4	63.2	63.8	64.7	65.6	66.1
17. Activity rate (% of population aged 15-24)	39.7	37.8	36.4	35.9	35.7	34.2	33.0	33.1	33.8	34.5	33.6
18. Activity rate (% of population aged 25-54)	81.9	81.5	81.4	81.9	82.5	81.7	81.7	82.5	83.4	84.1	84.2
19. Activity rate (% of population aged 55-64)	30.2	29.1	30.1	29.6	30.5	30.7	31.8	33.3	34.5	36.7	39.6
20. Total unemployment (000)	3170	3431	3323	3230	3045	2344	1619	1211	1411	1699	1722
21. Unemployment rate (% labour force 15+)	18.3	20.0	19.7	19.0	17.8	13.9	9.6	7.1	8.2	9.6	9.7
22. Youth unemployment rate (% labour force 15-24)	39.5	42.5	41.9	39.6	36.9	29.8	21.7	17.3	20.6	23.7	25.8
23. Long term unemployment rate (% labour force)	9.2	10.9	11.0	10.3	10.3	7.8	4.9	2.4	2.5	3.0	3.6
24. Youth unemployment ratio (% population aged 15-24)	15.7	16.1	15.2	14.2	13.2	10.2	7.1	5.7	7.0	8.2	8.7

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	18408	18381	18169	18139	18104	18052	17924	17831	17850	17973	18063
2. Population aged 15-64	12832	12919	12873	12940	12986	13027	12976	12931	12971	13103	13174
3. Total employment (000)	:	:	:	7546	7777	8031	8356	8685	8686	8700	8837
4. Population in employment aged 15-64	7592	7352	7271	7400	7643	7927	8258	8573	8578	8598	8739
5. Employment rate (% population aged 15-64)	59.2	56.9	56.5	57.2	58.9	60.9	63.6	66.3	66.1	65.6	66.3
6. Employment rate (% population aged 15-24)	26.6	24.2	23.9	24.8	25.4	26.9	29.2	31.0	30.4	30.3	29.6
7. Employment rate (% population aged 25-54)	75.4	73.0	73.0	73.9	76.1	78.3	81.1	84.0	83.7	82.6	83.0
8. Employment rate (% population aged 55-64)	35.6	34.5	35.2	34.1	35.9	38.4	41.4	44.1	44.3	45.3	47.8
9. FTE employment rate (% population aged 15-64)	59.2	56.7	56.1	56.4	58.4	60.5	63.5	66.4	66.2	65.7	66.4
10. Self-employed (% total employment)	:	:	:	29.0	27.9	26.7	25.6	25.0	25.0	25.2	25.2
11. Part-time employment (% total employment)	8.3	8.5	8.2	8.2	8.0	7.1	6.6	5.9	5.8	5.7	5.5
12. Fixed term contracts (% total employees)	12.4	16.4	20.8	23.7	26.5	28.5	28.4	26.3	26.3	27.4	27.6
13. Employment in Services (% total employment)	:	:	:	42.7	42.8	43.4	43.5	42.8	44.0	45.3	44.9
14. Employment in Industry (% total employment)	:	:	:	38.7	39.4	40.3	41.4	43.1	42.6	41.5	41.8
15. Employment in Agriculture (% total employment)	:	:	:	18.6	17.8	16.3	15.1	14.1	13.4	13.2	13.2
16. Activity rate (% population aged 15-64)	71.5	70.6	70.0	70.1	70.8	70.1	70.0	70.9	71.8	72.4	73.0
17. Activity rate (% of population aged 15-24)	43.1	41.6	40.5	39.7	39.5	37.5	36.5	36.5	38.1	39.1	38.7
18. Activity rate (% of population aged 25-54)	87.7	87.2	87.1	87.8	88.7	88.2	87.9	88.8	89.4	89.7	89.8
19. Activity rate (% of population aged 55-64)	39.6	38.7	39.7	39.1	40.9	42.6	44.7	46.8	47.5	48.9	51.6
20. Total unemployment (000)	1582	1779	1738	1681	1553	1202	830	599	734	896	879
21. Unemployment rate (% labour force 15+)	16.9	19.2	19.0	18.2	16.6	13.0	9.0	6.4	7.8	9.3	9.0
22. Youth unemployment rate (% labour force 15-24)	38.3	41.9	40.9	37.7	35.7	28.3	20.0	15.2	20.2	22.4	23.6
23. Long term unemployment rate (% labour force)	7.8	9.8	10.4	9.6	9.3	7.1	4.6	2.0	2.2	2.9	3.3
24. Youth unemployment ratio (% population aged 15-24)	16.5	17.4	16.6	15.0	14.1	10.6	7.3	5.6	7.7	8.7	9.1

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	19699	19688	19487	19461	19422	19394	19353	19327	19346	19395	19440
2. Population aged 15-64	13153	13241	13158	13203	13225	13298	13322	13335	13368	13424	13444
3. Total employment (000)	:	:	:	6214	6280	6473	6800	7055	7117	7176	7194
4. Population in employment aged 15-64	6274	6119	6054	6103	6191	6411	6738	6984	7052	7121	7141
5. Employment rate (% population aged 15-64)	47.7	46.2	46.0	46.2	46.8	48.2	50.6	52.4	52.8	53.0	53.1
6. Employment rate (% population aged 15-24)	21.5	19.3	18.3	18.6	19.6	21.0	22.4	23.7	23.2	22.1	20.1
7. Employment rate (% population aged 25-54)	63.0	61.9	62.1	62.6	63.1	65.3	68.8	71.0	71.6	71.7	71.4
8. Employment rate (% population aged 55-64)	20.4	18.9	19.8	19.4	19.7	19.0	19.4	20.7	21.9	24.2	27.3
9. FTE employment rate (% population aged 15-64)	46.7	44.9	44.7	44.2	44.8	46.4	48.7	50.6	50.9	51.2	51.4
10. Self-employed (% total employment)	:	:	:	24.1	23.1	21.8	21.0	20.5	20.1	19.9	19.6
11. Part-time employment (% total employment)	12.7	13.4	13.2	14.0	14.3	13.0	12.5	11.7	11.6	11.5	11.1
12. Fixed term contracts (% total employees)	10.9	14.4	17.8	21.5	24.7	26.0	27.9	27.7	26.6	27.1	26.2
13. Employment in Services (% total employment)	:	:	:	65.5	66.1	67.4	67.9	68.3	70.1	71.6	71.6
14. Employment in Industry (% total employment)	:	:	:	17.3	17.3	17.6	18.0	17.8	16.7	16.0	16.4
15. Employment in Agriculture (% total employment)	:	:	:	17.2	16.6	15.0	14.1	13.8	13.2	12.5	12.0
16. Activity rate (% population aged 15-64)	59.7	58.7	58.0	57.9	58.1	56.8	56.5	57.0	57.8	59.0	59.4
17. Activity rate (% of population aged 15-24)	36.4	34.1	32.2	32.0	31.8	30.7	29.3	29.6	29.4	29.7	28.2
18. Activity rate (% of population aged 25-54)	76.2	75.8	75.8	76.0	76.4	75.4	75.6	76.3	77.5	78.6	78.7
19. Activity rate (% of population aged 55-64)	22.2	20.9	22.0	21.4	21.5	20.3	20.6	21.6	23.2	25.9	29.1
20. Total unemployment (000)	1587	1652	1585	1550	1492	1142	788	612	678	803	843
21. Unemployment rate (% labour force 15+)	19.9	21.0	20.5	20.0	19.2	14.9	10.4	8.0	8.7	10.0	10.5
22. Youth unemployment rate (% labour force 15-24)	41.0	43.3	43.1	41.9	38.3	31.6	23.8	19.9	21.2	25.4	28.9
23. Long term unemployment rate (% labour force)	10.8	12.3	11.8	11.1	11.4	8.6	5.4	2.8	2.9	3.2	4.0
24. Youth unemployment ratio (% population aged 15-24)	14.9	14.8	13.9	13.4	12.2	9.7	7.0	5.9	6.2	7.5	8.2

Source: Eurostat.

Indicator 1: 2001-2005 estimate; Indicator 3, 10, 13, 14, 15: 2005 break in series.

Labour market indicators: Portugal

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	10284	10357	10435	10504	10563	10586	10604	10623	10638	10636	10647
2. Population aged 15-64	6950	6992	7038	7084	7115	7116	7135	7145	7143	7114	7097
3. Total employment (000)	5121	5151	5121	5117	5100	5126	5124	5147	5014	4937	4861
4. Population in employment aged 15-64	4796	4812	4792	4806	4800	4830	4837	4872	4736	4663	4557
5. Employment rate (% population aged 15-64)	69.0	68.8	68.1	67.8	67.5	67.9	67.8	68.2	66.3	65.6	64.2
6. Employment rate (% population aged 15-24)	42.9	42.2	38.8	37.1	36.1	35.8	34.9	34.7	31.3	28.5	27.2
7. Employment rate (% population aged 25-54)	82.3	81.5	81.0	81.1	80.8	81.3	81.0	81.6	79.7	79.2	77.8
8. Employment rate (% population aged 55-64)	50.2	51.4	51.6	50.3	50.5	50.1	50.9	50.8	49.7	49.2	47.9
9. FTE employment rate (% population aged 15-64)	67.5	67.6	66.5	66.4	65.8	66.1	65.8	66.3	64.5	63.6	61.1
10. Self-employed (% total employment)	17.2	16.4	16.6	15.9	15.4	14.9	14.5	14.5	14.5	13.4	12.4
11. Part-time employment (% total employment)	11.1	11.2	11.7	11.3	11.2	11.3	12.1	11.9	11.6	11.6	13.3
12. Fixed term contracts (% total employees)	20.3	21.5	20.6	19.8	19.5	20.6	22.4	22.8	22.0	23.0	22.2
13. Employment in Services (% total employment)	56.0	56.5	57.1	58.2	59.3	59.9	60.3	61.2	62.4	63.1	63.6
14. Employment in Industry (% total employment)	31.7	31.6	30.8	30.2	29.3	28.7	28.5	27.8	26.5	26.0	25.7
15. Employment in Agriculture (% total employment)	12.3	11.9	12.1	11.6	11.4	11.4	11.2	11.0	11.1	10.9	10.7
16. Activity rate (% population aged 15-64)	72.1	72.7	72.9	73.0	73.4	73.9	74.1	74.2	73.7	74.0	74.1
17. Activity rate (% of population aged 15-24)	47.3	47.7	45.4	43.8	43.0	42.7	41.9	41.6	39.2	36.7	38.8
18. Activity rate (% of population aged 25-54)	85.3	85.3	85.9	86.3	87.1	87.7	87.8	88.0	87.9	88.7	88.4
19. Activity rate (% of population aged 55-64)	51.9	53.4	54.0	53.2	53.8	53.5	54.4	54.4	53.9	54.0	53.7
20. Total unemployment (000)	240	305	384	408	468	472	491	470	582	658	706
21. Unemployment rate (% labour force 15+)	4.6	5.7	7.1	7.5	8.6	8.6	8.9	8.5	10.6	12.0	12.9
22. Youth unemployment rate (% labour force 15-24)	11.5	14.3	17.8	18.9	19.8	20.1	20.4	20.2	24.8	27.7	30.1
23. Long term unemployment rate (% labour force)	1.7	2.0	2.5	3.3	4.1	4.3	4.2	4.0	4.7	6.3	6.2
24. Youth unemployment ratio (% population aged 15-24)	4.4	5.5	6.6	6.7	6.9	6.9	6.9	6.8	7.9	8.2	11.7

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	4961	5001	5042	5083	5115	5125	5133	5141	5149	5147	5152
2. Population aged 15-64	3414	3440	3467	3498	3516	3518	3527	3536	3535	3522	3518
3. Total employment (000)	2815	2824	2789	2781	2753	2772	2765	2770	2666	2623	2587
4. Population in employment aged 15-64	2627	2632	2599	2595	2581	2601	2605	2617	2514	2468	2397
5. Employment rate (% population aged 15-64)	77.0	76.5	75.0	74.2	73.4	73.9	73.8	74.0	71.1	70.1	68.1
6. Employment rate (% population aged 15-24)	48.7	47.8	43.1	41.5	40.5	39.8	39.1	38.5	33.2	30.4	29.3
7. Employment rate (% population aged 25-54)	90.1	89.2	87.8	87.4	86.7	87.4	87.2	87.6	84.5	83.9	81.6
8. Employment rate (% population aged 55-64)	61.6	61.9	62.1	59.1	58.1	58.2	58.6	58.5	57.5	55.7	54.2
9. FTE employment rate (% population aged 15-64)	77.5	77.2	75.5	74.4	73.4	73.8	73.5	74.0	70.8	69.4	66.1
10. Self-employed (% total employment)	18.0	17.3	17.5	17.0	16.2	15.6	15.4	15.4	15.8	14.8	14.6
11. Part-time employment (% total employment)	6.7	7.0	7.3	7.1	7.0	7.4	8.0	7.4	7.5	8.2	10.7
12. Fixed term contracts (% total employees)	18.4	19.9	19.0	18.7	18.7	19.5	21.8	21.7	20.9	22.4	22.0
13. Employment in Services (% total employment)	47.9	47.6	48.1	49.2	50.0	50.7	50.6	51.2	52.3	53.0	52.7
14. Employment in Industry (% total employment)	40.8	41.4	40.5	39.7	39.3	38.4	38.6	38.3	36.7	35.8	35.2
15. Employment in Agriculture (% total employment)	11.3	11.0	11.4	11.1	10.6	10.9	10.8	10.6	11.0	11.2	12.1
16. Activity rate (% population aged 15-64)	79.6	80.0	79.6	79.1	79.0	79.5	79.4	79.5	78.5	78.2	78.5
17. Activity rate (% of population aged 15-24)	52.5	53.0	49.2	47.9	46.9	46.6	45.3	44.4	40.8	38.6	41.1
18. Activity rate (% of population aged 25-54)	92.6	92.5	92.3	92.2	92.4	92.9	92.8	93.2	92.4	92.5	92.3
19. Activity rate (% of population aged 55-64)	63.6	64.3	65.2	62.8	62.4	62.7	63.0	63.0	62.7	61.8	61.6
20. Total unemployment (000)	111	148	194	208	237	233	234	231	309	340	366
21. Unemployment rate (% labour force 15+)	3.9	5.1	6.7	7.2	8.1	7.9	8.0	7.9	10.7	11.8	12.7
22. Youth unemployment rate (% labour force 15-24)	9.3	12.7	16.0	17.4	17.6	18.8	17.5	17.2	24.1	27.4	28.7
23. Long term unemployment rate (% labour force)	1.5	1.7	2.2	3.1	3.8	4.1	3.8	3.8	4.4	6.1	6.1
24. Youth unemployment ratio (% population aged 15-24)	3.8	5.2	6.1	6.5	6.4	6.8	6.1	5.9	7.6	8.2	11.8

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5323	5357	5393	5421	5448	5461	5471	5481	5489	5489	5495
2. Population aged 15-64	3536	3553	3572	3586	3599	3598	3608	3609	3607	3592	3579
3. Total employment (000)	2306	2327	2332	2336	2347	2355	2359	2377	2348	2314	2274
4. Population in employment aged 15-64	2168	2180	2193	2211	2219	2229	2232	2255	2222	2195	2160
5. Employment rate (% population aged 15-64)	61.3	61.4	61.4	61.7	61.7	62.0	61.9	62.5	61.6	61.1	60.4
6. Employment rate (% population aged 15-24)	37.0	36.5	34.4	32.5	31.4	31.6	30.6	30.8	29.4	26.5	24.9
7. Employment rate (% population aged 25-54)	74.7	74.0	74.3	74.9	74.9	75.3	74.9	75.8	74.9	74.6	74.1
8. Employment rate (% population aged 55-64)	40.3	42.2	42.4	42.5	43.7	42.8	44.0	43.9	42.7	43.5	42.1
9. FTE employment rate (% population aged 15-64)	57.9	58.4	57.9	58.6	58.4	58.7	58.4	58.9	58.3	58.0	56.2
10. Self-employed (% total employment)	16.2	15.4	15.5	14.6	14.4	14.0	13.4	13.6	12.9	11.9	10.0
11. Part-time employment (% total employment)	16.4	16.4	16.9	16.3	16.2	15.8	16.9	17.2	16.4	15.5	16.3
12. Fixed term contracts (% total employees)	22.5	23.4	22.3	21.1	20.4	21.7	23.0	24.1	23.2	23.6	22.4
13. Employment in Services (% total employment)	65.6	67.0	67.8	68.9	70.0	70.6	71.5	72.6	73.6	74.3	75.7
14. Employment in Industry (% total employment)	20.8	20.0	19.4	18.9	17.7	17.5	16.9	15.8	15.1	15.1	15.0
15. Employment in Agriculture (% total employment)	13.6	13.0	12.8	12.1	12.4	11.9	11.6	11.6	11.3	10.6	9.3
16. Activity rate (% population aged 15-64)	64.8	65.6	66.5	67.0	67.9	68.4	68.8	68.9	69.0	69.9	69.8
17. Activity rate (% of population aged 15-24)	42.1	42.4	41.5	39.5	38.9	38.7	38.4	38.6	37.5	34.8	36.4
18. Activity rate (% of population aged 25-54)	78.2	78.4	79.7	80.6	81.8	82.7	82.8	82.9	83.4	84.9	84.5
19. Activity rate (% of population aged 55-64)	41.5	43.8	44.0	44.8	46.1	45.1	46.7	46.6	45.9	47.0	46.5
20. Total unemployment (000)	129	157	190	199	231	238	257	239	272	318	340
21. Unemployment rate (% labour force 15+)	5.4	6.4	7.7	8.0	9.1	9.3	10.0	9.2	10.5	12.2	13.2
22. Youth unemployment rate (% labour force 15-24)	14.3	16.5	20.1	20.8	22.5	21.7	24.0	23.8	25.5	28.0	31.7
23. Long term unemployment rate (% labour force)	2.1	2.3	2.8	3.6	4.4	4.6	4.7	4.3	5.0	6.5	6.4
24. Youth unemployment ratio (% population aged 15-24)	5.1	5.9	7.0	6.9	7.4	7.1	7.8	7.8	8.1	8.2	11.5

Source: Eurostat.

LFS indicators: 2011 break in series.

Labour market indicators: Romania

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	22326	22309	21686	21638	21609	21575	21551	21517	21484	21447	21384
2. Population aged 15-64	15277	15327	14933	14964	15021	15035	15046	15042	15028	14999	14968
3. Total employment (000)	:	:	:	:	:	:	:	:	9181	9049	9087
4. Population in employment aged 15-64	9529	8833	8602	8635	8651	8838	8843	8882	8805	8822	8750
5. Employment rate (% population aged 15-64)	62.4	57.6	57.6	57.7	57.6	58.8	58.8	59.0	58.6	58.8	58.5
6. Employment rate (% population aged 15-24)	32.6	28.7	26.4	27.9	24.9	24.0	24.4	24.8	24.5	24.3	23.8
7. Employment rate (% population aged 25-54)	76.6	72.7	73.1	72.9	73.3	74.7	74.6	74.4	73.7	74.4	74.1
8. Employment rate (% population aged 55-64)	48.2	37.3	38.1	36.9	39.4	41.7	41.4	43.1	42.6	41.1	40.0
9. FTE employment rate (% population aged 15-64)	62.9	58.4	58.5	58.3	56.7	57.7	57.8	57.9	57.4	57.4	56.9
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	32.0	34.3	34.6
11. Part-time employment (% total employment)	16.6	11.8	11.5	10.6	10.2	9.7	9.7	9.9	9.8	11.0	10.5
12. Fixed term contracts (% total employees)	3.0	1.0	2.0	2.5	2.4	1.8	1.6	1.3	1.0	1.1	1.5
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	40.1	39.7	39.2
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	29.8	28.2	28.3
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	30.1	32.1	32.6
16. Activity rate (% population aged 15-64)	67.3	63.4	62.2	63.0	62.3	63.6	63.0	62.9	63.1	63.6	63.3
17. Activity rate (% of population aged 15-24)	40.0	37.4	32.9	35.8	31.2	30.6	30.5	30.4	30.9	31.2	31.1
18. Activity rate (% of population aged 25-54)	81.6	78.6	78.0	78.3	78.2	79.9	79.0	78.3	78.5	79.5	79.1
19. Activity rate (% of population aged 55-64)	48.7	37.9	38.8	37.9	40.4	42.8	42.4	44.2	43.9	42.5	41.5
20. Total unemployment (000)	747	786	686	800	704	728	641	576	681	725	730
21. Unemployment rate (% labour force 15+)	6.6	7.5	6.8	8.0	7.2	7.3	6.4	5.8	6.9	7.3	7.4
22. Youth unemployment rate (% labour force 15-24)	17.6	21.0	19.5	21.0	19.7	21.0	20.1	18.6	20.8	22.1	23.7
23. Long term unemployment rate (% labour force)	3.2	4.0	4.2	4.7	4.0	4.2	3.2	2.4	2.2	2.5	3.1
24. Youth unemployment ratio (% population aged 15-24)	7.5	8.7	6.5	7.8	6.3	6.6	6.1	5.7	6.4	6.9	7.4

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	10863	10855	10549	10527	10521	10506	10504	10484	10465	10443	10408
2. Population aged 15-64	7543	7577	7397	7423	7467	7481	7502	7501	7495	7481	7466
3. Total employment (000)	:	:	:	:	:	:	:	:	5066	5006	4998
4. Population in employment aged 15-64	5115	4817	4718	4705	4760	4835	4863	4925	4890	4916	4849
5. Employment rate (% population aged 15-64)	67.8	63.6	63.8	63.4	63.7	64.6	64.8	65.7	65.2	65.7	65.0
6. Employment rate (% population aged 15-24)	35.2	31.4	29.9	30.7	28.2	27.3	28.3	29.1	28.3	28.1	27.0
7. Employment rate (% population aged 25-54)	82.8	79.6	80.1	79.2	80.0	80.8	80.6	80.9	80.5	81.5	80.7
8. Employment rate (% population aged 55-64)	54.3	42.7	43.5	43.1	46.7	50.0	50.3	53.0	52.3	50.3	48.9
9. FTE employment rate (% population aged 15-64)	69.4	65.1	65.2	64.3	63.2	63.9	64.3	65.0	64.4	64.6	63.9
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	32.3	35.0	34.6
11. Part-time employment (% total employment)	14.9	10.9	10.9	10.2	10.0	9.5	9.2	9.1	9.1	10.6	9.6
12. Fixed term contracts (% total employees)	3.2	1.1	2.2	2.9	2.8	2.0	1.7	1.3	1.1	1.3	1.8
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	35.0	34.1	33.8
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	36.3	34.9	35.2
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	28.7	31.0	31.0
16. Activity rate (% population aged 15-64)	73.6	70.4	69.3	70.0	69.4	70.7	70.1	70.6	70.9	71.5	70.7
17. Activity rate (% of population aged 15-24)	43.8	41.5	37.5	40.5	35.9	35.1	35.9	35.9	35.9	36.2	35.4
18. Activity rate (% of population aged 25-54)	88.5	86.4	85.8	85.7	85.8	87.1	85.9	85.8	86.3	87.5	86.5
19. Activity rate (% of population aged 55-64)	55.3	43.9	44.6	44.9	48.4	52.0	52.1	55.1	54.5	52.7	51.6
20. Total unemployment (000)	418	441	396	491	420	452	399	369	424	437	431
21. Unemployment rate (% labour force 15+)	6.9	7.8	7.2	9.0	7.7	8.2	7.2	6.7	7.7	7.9	7.9
22. Youth unemployment rate (% labour force 15-24)	17.9	20.7	19.1	22.4	20.5	21.6	21.1	18.8	21.2	22.3	23.7
23. Long term unemployment rate (% labour force)	3.3	4.1	4.4	5.5	4.6	4.7	3.6	2.9	2.5	2.9	3.4
24. Youth unemployment ratio (% population aged 15-24)	8.6	10.1	7.6	9.8	7.7	7.8	7.6	6.8	7.6	8.0	8.4

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	11463	11454	11136	11111	11089	11069	11047	11032	11019	11004	10976
2. Population aged 15-64	7733	7750	7536	7541	7554	7554	7545	7541	7533	7518	7502
3. Total employment (000)	:	:	:	:	:	:	:	:	4115	4043	4089
4. Population in employment aged 15-64	4414	4016	3884	3930	3891	4003	3980	3958	3915	3906	3901
5. Employment rate (% population aged 15-64)	57.1	51.8	51.5	52.1	51.5	53.0	52.8	52.5	52.0	52.0	52.0
6. Employment rate (% population aged 15-24)	30.0	26.1	22.9	25.1	21.6	20.6	20.2	20.2	20.6	20.4	20.4
7. Employment rate (% population aged 25-54)	70.6	65.9	66.0	66.6	66.5	68.6	68.5	67.8	66.9	67.2	67.4
8. Employment rate (% population aged 55-64)	42.9	32.6	33.3	31.4	33.1	34.5	33.6	34.4	34.1	33.0	32.2
9. FTE employment rate (% population aged 15-64)	56.5	51.9	51.8	52.4	50.2	51.6	51.3	50.8	50.4	50.2	50.0
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	31.7	33.5	34.5
11. Part-time employment (% total employment)	18.4	13.0	12.2	11.2	10.5	9.8	10.4	10.8	10.6	11.4	11.5
12. Fixed term contracts (% total employees)	2.8	0.8	1.7	2.0	1.9	1.6	1.5	1.2	1.0	1.0	1.3
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	46.5	46.7	45.7
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	21.8	19.9	19.8
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	31.8	33.5	34.5
16. Activity rate (% population aged 15-64)	61.1	56.6	55.3	56.2	55.3	56.6	56.0	55.2	55.4	55.8	56.0
17. Activity rate (% of population aged 15-24)	36.3	33.4	28.2	31.0	26.5	25.9	24.9	24.7	25.8	26.1	26.7
18. Activity rate (% of population aged 25-54)	74.8	70.8	70.1	70.9	70.7	72.6	72.0	70.7	70.6	71.4	71.7
19. Activity rate (% of population aged 55-64)	43.1	32.8	33.6	31.9	33.5	34.8	33.9	34.7	34.7	33.5	32.7
20. Total unemployment (000)	328	346	290	309	284	276	242	206	257	288	299
21. Unemployment rate (% labour force 15+)	6.2	7.1	6.3	6.9	6.4	6.1	5.4	4.7	5.8	6.5	6.8
22. Youth unemployment rate (% labour force 15-24)	17.4	21.3	20.1	18.9	18.4	20.2	18.7	18.3	20.1	21.8	23.8
23. Long term unemployment rate (% labour force)	3.2	4.0	4.0	3.8	3.4	3.6	2.7	1.8	1.8	2.1	2.8
24. Youth unemployment ratio (% population aged 15-24)	6.3	7.3	5.3	5.8	4.9	5.2	4.7	4.5	5.2	5.7	6.4

Source: Eurostat.

LFS indicators: 2002 break in series.

Labour market indicators: Slovenia

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1992	1995	1996	1997	1999	2006	2015	2033	2037	2048	2051
2. Population aged 15-64	1399	1401	1405	1405	1402	1407	1412	1422	1414	1422	1421
3. Total employment (000)	920	934	931	935	931	945	977	1002	984	959	942
4. Population in employment aged 15-64	893	889	879	917	925	937	957	975	955	942	915
5. Employment rate (% population aged 15-64)	63.8	63.4	62.6	65.3	66.0	66.6	67.8	68.6	67.5	66.2	64.4
6. Employment rate (% population aged 15-24)	30.5	30.6	29.1	33.8	34.1	35.0	37.6	38.4	35.3	34.1	31.5
7. Employment rate (% population aged 25-54)	83.6	83.4	82.5	83.8	83.8	84.2	85.3	86.8	84.8	83.7	83.1
8. Employment rate (% population aged 55-64)	25.5	24.5	23.5	29.0	30.7	32.6	33.5	32.8	35.6	35.0	31.2
9. FTE employment rate (% population aged 15-64)	62.4	62.7	60.9	63.3	63.9	64.5	65.8	66.6	65.1	63.4	62.0
10. Self-employed (% total employment)	17.7	17.9	17.5	17.4	17.2	17.1	16.9	16.8	17.5	18.0	18.4
11. Part-time employment (% total employment)	6.1	6.1	6.2	9.3	9.0	9.2	9.3	9.0	10.6	11.4	10.4
12. Fixed term contracts (% total employees)	13.0	14.3	13.7	17.8	17.4	17.3	18.5	17.4	16.4	17.3	18.2
13. Employment in Services (% total employment)	52.1	53.7	54.5	55.3	55.6	56.6	57.0	57.4	59.0	60.5	61.4
14. Employment in Industry (% total employment)	36.7	35.7	35.2	34.7	34.6	34.1	34.2	34.2	32.6	31.1	30.3
15. Employment in Agriculture (% total employment)	11.2	10.7	10.3	10.0	9.8	9.3	8.8	8.4	8.4	8.4	8.4
16. Activity rate (% population aged 15-64)	68.1	67.8	67.1	69.8	70.7	70.9	71.3	71.8	71.8	71.5	70.3
17. Activity rate (% of population aged 15-24)	37.1	36.6	35.2	40.3	40.5	40.6	41.8	42.9	40.9	39.9	37.4
18. Activity rate (% of population aged 25-54)	88.0	88.1	87.5	88.6	88.8	89.0	89.3	90.1	89.6	90.0	90.1
19. Activity rate (% of population aged 55-64)	26.5	25.2	24.3	29.9	32.1	33.4	34.6	34.2	36.9	36.5	33.3
20. Total unemployment (000)	60	61	64	63	66	61	50	46	61	75	83
21. Unemployment rate (% labour force 15+)	6.2	6.3	6.7	6.3	6.5	6.0	4.9	4.4	5.9	7.3	8.2
22. Youth unemployment rate (% labour force 15-24)	17.8	16.5	17.3	16.1	15.9	13.9	10.1	10.4	13.6	14.7	15.7
23. Long term unemployment rate (% labour force)	3.7	3.5	3.5	3.2	3.1	2.9	2.2	1.9	1.8	3.2	3.6
24. Youth unemployment ratio (% population aged 15-24)	6.6	6.1	6.1	6.5	6.5	5.6	4.2	4.5	5.6	5.9	5.9

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	974	976	976	977	979	984	991	1007	1008	1014	1015
2. Population aged 15-64	709	710	712	712	713	716	721	732	727	732	731
3. Total employment (000)	501	508	509	509	506	515	535	546	532	520	510
4. Population in employment aged 15-64	487	484	479	499	502	510	525	532	516	509	495
5. Employment rate (% population aged 15-64)	68.6	68.2	67.4	70.0	70.4	71.1	72.7	72.7	71.0	69.6	67.7
6. Employment rate (% population aged 15-24)	34.1	34.4	33.7	38.8	38.1	39.2	43.2	43.0	39.1	37.6	35.7
7. Employment rate (% population aged 25-54)	87.0	86.7	85.7	86.4	86.4	87.1	88.1	88.6	86.4	85.2	84.8
8. Employment rate (% population aged 55-64)	35.9	35.4	33.2	40.9	43.1	44.5	45.3	44.7	46.4	45.5	39.5
9. FTE employment rate (% population aged 15-64)	67.9	67.7	66.1	68.3	69.0	69.9	71.6	71.6	69.5	68.0	66.1
10. Self-employed (% total employment)	20.4	20.9	20.7	19.8	19.6	19.7	19.2	19.6	20.6	20.9	21.5
11. Part-time employment (% total employment)	5.0	4.9	5.2	7.9	7.2	7.2	7.7	7.1	8.4	8.6	7.9
12. Fixed term contracts (% total employees)	12.1	12.6	12.6	16.7	15.7	15.5	16.5	15.3	15.1	15.4	16.5
13. Employment in Services (% total employment)	43.8	45.2	45.3	45.8	45.9	46.4	47.1	46.8	49.2	50.1	49.6
14. Employment in Industry (% total employment)	44.7	43.8	43.9	44.0	44.2	43.9	44.3	44.6	42.3	41.1	41.4
15. Employment in Agriculture (% total employment)	11.5	10.9	10.8	10.2	9.9	9.7	8.6	8.6	8.5	8.7	9.0
16. Activity rate (% population aged 15-64)	72.8	72.5	72.0	74.5	75.1	74.9	75.8	75.8	75.6	75.4	73.9
17. Activity rate (% of population aged 15-24)	40.5	40.4	39.9	45.1	44.5	44.4	47.6	47.7	45.4	44.4	42.0
18. Activity rate (% of population aged 25-54)	91.1	91.2	90.6	91.0	91.1	91.0	91.3	91.6	91.3	91.7	91.8
19. Activity rate (% of population aged 55-64)	37.5	36.7	34.5	42.5	45.4	45.8	46.7	46.4	48.2	47.5	42.7
20. Total unemployment (000)	30	31	33	32	33	27	22	23	33	42	45
21. Unemployment rate (% labour force 15+)	5.7	5.9	6.3	5.9	6.1	4.9	4.0	4.0	5.9	7.5	8.2
22. Youth unemployment rate (% labour force 15-24)	15.7	15.0	15.6	13.9	14.5	11.6	9.4	9.9	13.8	15.2	15.0
23. Long term unemployment rate (% labour force)	3.5	3.5	3.4	3.1	2.9	2.5	1.8	1.6	1.7	3.4	3.7
24. Youth unemployment ratio (% population aged 15-24)	6.4	6.1	6.2	6.2	6.5	5.2	4.5	4.7	6.2	6.8	6.3

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	1018	1019	1020	1020	1021	1022	1024	1026	1030	1034	1036
2. Population aged 15-64	690	691	693	693	690	691	691	691	687	691	690
3. Total employment (000)	419	427	423	426	425	430	442	456	451	439	433
4. Population in employment aged 15-64	406	405	400	419	423	427	432	443	439	432	420
5. Employment rate (% population aged 15-64)	58.8	58.6	57.6	60.5	61.3	61.8	62.6	64.2	63.8	62.6	60.9
6. Employment rate (% population aged 15-24)	26.8	26.5	24.3	28.6	29.8	30.3	31.4	33.2	31.0	30.0	26.9
7. Employment rate (% population aged 25-54)	80.1	80.0	79.3	81.2	81.1	81.2	82.4	84.8	83.2	82.1	81.3
8. Employment rate (% population aged 55-64)	15.8	14.2	14.6	17.8	18.5	21.0	22.2	21.1	24.8	24.5	22.7
9. FTE employment rate (% population aged 15-64)	56.9	57.6	55.5	58.1	58.6	59.0	59.9	61.3	60.5	58.6	57.6
10. Self-employed (% total employment)	14.5	14.3	13.7	14.6	14.4	14.1	14.1	13.4	13.9	14.6	14.7
11. Part-time employment (% total employment)	7.4	7.5	7.5	11.0	11.1	11.6	11.3	11.4	13.2	14.7	13.3
12. Fixed term contracts (% total employees)	14.0	16.1	14.9	19.1	19.3	19.3	20.8	19.7	17.8	19.3	19.9
13. Employment in Services (% total employment)	61.8	63.5	65.4	66.3	67.0	68.6	68.9	69.9	70.5	72.5	75.0
14. Employment in Industry (% total employment)	27.2	26.1	24.8	23.9	23.4	22.6	22.1	21.9	21.2	19.4	17.4
15. Employment in Agriculture (% total employment)	11.0	10.3	9.8	9.8	9.6	8.9	9.0	8.1	8.2	8.1	7.7
16. Activity rate (% population aged 15-64)	63.2	63.0	62.1	65.0	66.1	66.7	66.6	67.5	67.9	67.4	66.5
17. Activity rate (% of population aged 15-24)	33.7	32.5	30.3	35.4	36.3	36.4	35.4	37.4	35.8	34.8	32.3
18. Activity rate (% of population aged 25-54)	84.7	84.9	84.3	86.1	86.4	87.0	87.3	88.5	87.9	88.1	88.4
19. Activity rate (% of population aged 55-64)	16.2	14.4	14.9	18.1	18.9	21.4	23.1	22.2	25.6	25.5	23.7
20. Total unemployment (000)	30	30	31	31	33	34	28	23	28	33	38
21. Unemployment rate (% labour force 15+)	6.8	6.8	7.1	6.9	7.1	7.2	5.9	4.8	5.8	7.1	8.2
22. Youth unemployment rate (% labour force 15-24)	20.4	18.6	19.8	19.2	17.8	16.8	11.2	11.3	13.4	13.8	16.8
23. Long term unemployment rate (% labour force)	4.0	3.6	3.6	3.4	3.3	3.5	2.7	2.1	1.9	2.9	3.5
24. Youth unemployment ratio (% population aged 15-24)	6.9	6.0	6.0	6.8	6.4	6.1	4.0	4.2	4.8	4.8	5.4

Source: Eurostat.

Labour market indicators: Slovakia

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5379	5384	5389	5370	5379	5389	5391	5396	5409	5422	5435
2. Population aged 15-64	3723	3728	3733	3792	3824	3862	3873	3892	3917	3926	3932
3. Total employment (000)	2037	2038	2061	2056	2089	2132	2177	2247	2203	2170	2208
4. Population in employment aged 15-64	2115	2118	2155	2160	2207	2295	2351	2423	2357	2307	2339
5. Employment rate (% population aged 15-64)	56.8	56.8	57.7	57.0	57.7	59.4	60.7	62.3	60.2	58.8	59.5
6. Employment rate (% population aged 15-24)	27.7	27.0	27.4	26.3	25.6	25.9	27.6	26.2	22.8	20.6	20.2
7. Employment rate (% population aged 25-54)	74.8	75.0	76.0	74.7	75.3	77.2	78.0	80.1	77.8	75.8	76.5
8. Employment rate (% population aged 55-64)	22.4	22.8	24.6	26.8	30.3	33.1	35.6	39.2	39.5	40.5	41.4
9. FTE employment rate (% population aged 15-64)	55.7	55.8	57.0	55.7	56.9	58.5	59.8	61.3	59.1	57.4	58.0
10. Self-employed (% total employment)	10.2	10.7	11.4	13.3	13.7	14.0	14.5	15.5	16.6	16.6	16.0
11. Part-time employment (% total employment)	2.3	1.9	2.4	2.7	2.5	2.8	2.6	2.7	3.6	3.9	4.1
12. Fixed term contracts (% total employees)	4.9	4.9	4.9	5.5	5.0	5.1	5.1	4.7	4.4	5.8	6.6
13. Employment in Services (% total employment)	60.2	60.9	60.9	61.5	61.5	62.0	62.3	62.0	64.0	64.9	64.8
14. Employment in Industry (% total employment)	34.0	33.7	34.2	33.8	33.9	34.0	33.9	34.4	32.6	31.9	31.9
15. Employment in Agriculture (% total employment)	5.9	5.4	4.9	4.7	4.5	4.0	3.8	3.6	3.5	3.2	3.2
16. Activity rate (% population aged 15-64)	70.4	69.9	70.0	69.7	68.9	68.6	68.3	68.8	68.4	68.7	68.9
17. Activity rate (% of population aged 15-24)	45.5	43.4	41.1	39.3	36.6	35.3	34.6	32.4	31.4	31.1	30.2
18. Activity rate (% of population aged 25-54)	88.9	88.6	89.5	88.9	88.0	87.6	86.9	87.8	87.2	86.9	87.0
19. Activity rate (% of population aged 55-64)	25.5	26.9	28.5	31.7	35.0	36.7	38.8	41.9	42.8	45.1	46.0
20. Total unemployment (000)	504	484	457	480	427	353	293	254	321	386	366
21. Unemployment rate (% labour force 15+)	19.5	18.8	17.7	18.4	16.4	13.5	11.2	9.6	12.1	14.5	13.6
22. Youth unemployment rate (% labour force 15-24)	39.6	38.1	33.8	33.4	30.4	27.0	20.6	19.3	27.6	33.9	33.6
23. Long term unemployment rate (% labour force)	11.4	12.3	11.5	11.9	11.8	10.3	8.3	6.7	6.5	9.3	9.2
24. Youth unemployment ratio (% population aged 15-24)	17.8	16.3	13.7	13.0	11.0	9.4	7.0	6.2	8.6	10.4	10.0

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	2602	2608	2613	2601	2609	2616	2617	2621	2628	2635	2642
2. Population aged 15-64	1836	1842	1847	1878	1899	1922	1928	1940	1954	1961	1965
3. Total employment (000)	1098	1107	1119	1130	1162	1197	1221	1259	1235	1203	1230
4. Population in employment aged 15-64	1139	1149	1170	1186	1227	1288	1319	1357	1320	1279	1303
5. Employment rate (% population aged 15-64)	62.0	62.4	63.3	63.2	64.6	67.0	68.4	70.0	67.6	65.2	66.3
6. Employment rate (% population aged 15-24)	28.9	28.7	29.3	28.0	28.1	29.2	30.9	30.8	26.8	23.8	25.0
7. Employment rate (% population aged 25-54)	79.0	79.5	80.5	80.0	81.4	84.1	85.0	86.4	84.2	81.4	82.6
8. Employment rate (% population aged 55-64)	37.7	39.1	41.0	43.8	47.8	49.8	52.5	56.7	54.9	54.0	52.6
9. FTE employment rate (% population aged 15-64)	61.5	61.7	63.2	62.5	64.3	66.6	68.2	69.5	66.7	64.3	65.3
10. Self-employed (% total employment)	13.9	14.7	15.2	17.8	18.6	18.5	19.4	20.7	21.5	22.2	21.0
11. Part-time employment (% total employment)	1.2	1.1	1.3	1.4	1.3	1.3	1.1	1.4	2.7	2.8	2.8
12. Fixed term contracts (% total employees)	5.1	5.2	5.3	6.0	5.1	5.0	4.9	4.6	4.6	5.6	6.4
13. Employment in Services (% total employment)	47.8	49.0	48.5	49.1	49.1	49.6	49.1	48.4	50.7	51.1	51.1
14. Employment in Industry (% total employment)	44.2	43.9	44.9	44.3	44.5	44.8	45.6	46.5	44.6	44.4	44.2
15. Employment in Agriculture (% total employment)	8.0	7.1	6.7	6.6	6.3	5.6	5.4	5.1	4.8	4.5	4.8
16. Activity rate (% population aged 15-64)	77.4	76.7	76.7	76.5	76.5	76.4	75.9	76.4	76.3	76.1	76.7
17. Activity rate (% of population aged 15-24)	49.8	47.5	44.9	42.9	40.7	39.7	38.9	37.8	37.1	36.4	37.3
18. Activity rate (% of population aged 25-54)	94.0	93.4	94.1	93.8	93.8	94.0	93.1	93.4	93.6	92.9	93.5
19. Activity rate (% of population aged 55-64)	43.1	46.3	48.1	51.9	55.1	55.2	57.0	59.9	58.7	59.7	58.9
20. Total unemployment (000)	281	263	246	250	224	180	144	124	169	211	204
21. Unemployment rate (% labour force 15+)	19.9	18.8	17.5	17.5	15.6	12.4	10.0	8.4	11.5	14.3	13.6
22. Youth unemployment rate (% labour force 15-24)	42.3	39.7	35.0	34.9	31.2	26.6	20.6	18.6	27.9	34.8	33.2
23. Long term unemployment rate (% labour force)	11.4	12.0	11.3	11.4	11.3	9.5	7.5	5.8	5.9	9.0	9.4
24. Youth unemployment ratio (% population aged 15-24)	21.0	18.7	15.6	14.9	12.6	10.5	7.9	7.0	10.3	12.6	12.3

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	2776	2776	2777	2768	2770	2773	2774	2775	2781	2787	2793
2. Population aged 15-64	1886	1886	1886	1914	1926	1940	1946	1952	1963	1966	1967
3. Total employment (000)	939	931	941	926	927	936	956	988	968	967	978
4. Population in employment aged 15-64	976	969	985	974	980	1008	1032	1066	1036	1029	1037
5. Employment rate (% population aged 15-64)	51.8	51.4	52.2	50.9	50.9	51.9	53.0	54.6	52.8	52.3	52.7
6. Employment rate (% population aged 15-24)	26.5	25.3	25.4	24.6	23.1	22.5	24.1	21.5	18.7	17.4	15.1
7. Employment rate (% population aged 25-54)	70.7	70.6	71.5	69.3	69.2	70.2	71.0	73.7	71.2	70.1	70.4
8. Employment rate (% population aged 55-64)	9.8	9.5	11.2	12.6	15.6	18.9	21.2	24.2	26.1	28.7	31.5
9. FTE employment rate (% population aged 15-64)	50.1	50.0	50.9	49.1	49.6	50.6	51.6	53.2	51.4	50.6	50.7
10. Self-employed (% total employment)	5.9	5.8	6.9	7.8	7.5	8.1	8.2	8.8	10.4	9.8	9.8
11. Part-time employment (% total employment)	3.5	2.7	3.8	4.2	4.1	4.7	4.5	4.2	4.7	5.4	5.9
12. Fixed term contracts (% total employees)	4.7	4.5	4.6	5.1	4.9	5.2	5.3	4.8	4.1	5.9	6.9
13. Employment in Services (% total employment)	74.0	74.3	74.9	75.6	76.2	76.9	77.9	78.0	79.8	80.9	81.0
14. Employment in Industry (% total employment)	22.5	22.3	22.3	21.9	21.4	21.0	20.1	20.1	18.3	17.5	17.5
15. Employment in Agriculture (% total employment)	3.5	3.4	2.9	2.5	2.4	2.1	2.0	1.9	1.9	1.7	1.5
16. Activity rate (% population aged 15-64)	63.7	63.2	63.5	63.0	61.5	60.9	60.8	61.3	60.6	61.3	61.0
17. Activity rate (% of population aged 15-24)	41.3	39.2	37.2	35.7	32.4	30.9	30.2	26.7	25.4	25.5	22.8
18. Activity rate (% of population aged 25-54)	83.9	83.9	84.8	84.1	82.1	81.2	80.7	82.1	80.7	80.9	80.4
19. Activity rate (% of population aged 55-64)	11.0	11.1	12.4	14.8	18.1	20.9	23.3	26.4	29.0	32.3	34.7
20. Total unemployment (000)	224	222	212	230	203	173	149	130	152	175	162
21. Unemployment rate (% labour force 15+)	18.9	18.9	17.9	19.3	17.4	14.8	12.8	11.0	12.9	14.7	13.7
22. Youth unemployment rate (% labour force 15-24)	36.4	36.2	32.3	31.7	29.4	27.5	20.7	20.3	27.1	32.6	34.3
23. Long term unemployment rate (% labour force)	11.4	12.6	11.8	12.5	12.4	11.3	9.4	7.7	7.4	9.6	9.1
24. Youth unemployment ratio (% population aged 15-24)	14.7	13.9	11.8	11.1	9.3	8.3	6.1	5.3	6.7	8.1	7.7

Source: Eurostat.

Labour market indicators: Finland

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	5166	5180	5193	5205	5225	5242	5266	5289	5317	5343	5365
2. Population aged 15-64	3450	3458	3464	3467	3476	3484	3497	3514	3527	3537	3518
3. Total employment (000)	2324	2346	2348	2357	2389	2433	2486	2550	2483	2454	2483
4. Population in employment aged 15-64	2350	2354	2345	2345	2378	2416	2459	2497	2423	2410	2429
5. Employment rate (% population aged 15-64)	68.1	68.1	67.7	67.6	68.4	69.3	70.3	71.1	68.7	68.1	69.0
6. Employment rate (% population aged 15-24)	41.8	40.7	39.7	39.4	40.5	42.1	44.6	44.7	39.6	38.8	40.4
7. Employment rate (% population aged 25-54)	81.5	81.6	81.1	81.0	81.7	82.4	83.4	84.3	82.4	81.6	82.3
8. Employment rate (% population aged 55-64)	45.7	47.8	49.6	50.9	52.7	54.5	55.0	56.5	55.5	56.2	57.0
9. FTE employment rate (% population aged 15-64)	65.7	65.8	65.2	64.8	64.6	65.5	66.4	67.2	64.7	64.1	64.9
10. Self-employed (% total employment)	11.8	11.5	11.4	11.4	11.3	11.5	11.5	11.4	12.1	12.3	12.2
11. Part-time employment (% total employment)	12.2	12.8	13.0	13.5	13.7	14.0	14.1	13.3	14.0	14.6	14.9
12. Fixed term contracts (% total employees)	16.4	16.0	16.3	16.1	16.5	16.4	15.9	15.0	14.6	15.5	15.6
13. Employment in Services (% total employment)	67.3	68.2	68.8	69.3	69.4	69.5	69.5	69.6	70.5	71.0	71.5
14. Employment in Industry (% total employment)	27.0	26.4	25.9	25.4	25.4	25.5	25.6	25.6	24.6	24.2	23.9
15. Employment in Agriculture (% total employment)	5.7	5.4	5.3	5.2	5.2	5.0	4.9	4.8	4.9	4.8	4.6
16. Activity rate (% population aged 15-64)	75.0	74.9	74.5	74.2	74.7	75.2	75.6	76.0	75.0	74.5	74.9
17. Activity rate (% of population aged 15-24)	52.1	51.5	50.7	49.7	50.7	51.8	53.4	53.5	50.4	49.4	50.5
18. Activity rate (% of population aged 25-54)	88.0	88.0	87.5	87.4	87.7	87.8	88.0	88.6	88.2	87.5	87.7
19. Activity rate (% of population aged 55-64)	50.3	52.1	53.7	54.9	56.6	58.5	58.8	59.7	59.1	60.2	60.9
20. Total unemployment (000)	238	237	235	229	220	204	183	172	221	224	209
21. Unemployment rate (% labour force 15+)	9.1	9.1	9.0	8.8	8.4	7.7	6.9	6.4	8.2	8.4	7.8
22. Youth unemployment rate (% labour force 15-24)	19.8	21.0	21.8	20.7	20.1	18.7	16.5	16.5	21.5	21.4	20.1
23. Long term unemployment rate (% labour force)	2.5	2.3	2.3	2.1	2.2	1.9	1.6	1.2	1.4	2.0	1.7
24. Youth unemployment ratio (% population aged 15-24)	10.3	10.8	11.0	10.3	10.2	9.7	8.8	8.8	10.9	10.6	10.1

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	2512	2521	2529	2536	2547	2555	2569	2581	2598	2613	2624
2. Population aged 15-64	1733	1738	1741	1742	1747	1750	1758	1766	1774	1779	1770
3. Total employment (000)	1218	1215	1218	1225	1237	1261	1287	1325	1268	1263	1283
4. Population in employment aged 15-64	1227	1216	1213	1214	1228	1249	1268	1291	1233	1234	1249
5. Employment rate (% population aged 15-64)	70.8	70.0	69.7	69.7	70.3	71.4	72.1	73.1	69.5	69.4	70.6
6. Employment rate (% population aged 15-24)	42.9	41.1	40.1	39.4	40.4	42.6	44.5	44.3	37.7	37.7	39.5
7. Employment rate (% population aged 25-54)	84.7	83.8	83.3	83.8	84.4	85.2	86.0	87.3	84.3	83.9	84.8
8. Employment rate (% population aged 55-64)	46.6	48.5	51.0	51.4	52.8	54.8	55.1	57.1	54.6	55.6	56.8
9. FTE employment rate (% population aged 15-64)	69.8	69.3	68.4	68.3	67.9	69.1	69.9	70.8	67.1	66.9	67.8
10. Self-employed (% total employment)	15.1	14.8	14.7	14.8	14.8	15.2	15.1	14.9	16.0	16.1	16.1
11. Part-time employment (% total employment)	7.9	8.3	8.7	9.0	9.2	9.3	9.3	8.9	9.2	10.0	10.6
12. Fixed term contracts (% total employees)	12.9	12.5	12.6	12.6	12.9	12.6	12.4	11.2	10.6	12.4	12.7
13. Employment in Services (% total employment)	53.4	54.1	54.4	55.2	55.1	54.9	54.4	54.2	55.2	56.6	56.7
14. Employment in Industry (% total employment)	39.2	38.9	38.5	37.6	37.8	38.1	38.7	39.3	38.2	37.0	36.9
15. Employment in Agriculture (% total employment)	7.4	7.0	7.0	7.2	7.1	6.9	6.9	6.5	6.6	6.4	6.3
16. Activity rate (% population aged 15-64)	77.6	77.0	76.8	76.4	76.6	77.1	77.2	77.9	76.4	76.4	77.2
17. Activity rate (% of population aged 15-24)	53.3	52.1	51.4	50.5	50.9	52.6	53.3	53.4	49.7	49.4	50.5
18. Activity rate (% of population aged 25-54)	90.9	90.5	90.1	90.1	90.3	90.3	90.4	91.2	90.6	90.5	90.9
19. Activity rate (% of population aged 55-64)	51.3	53.0	55.3	55.6	56.9	58.9	59.1	60.6	58.7	60.1	61.4
20. Total unemployment (000)	117	123	124	118	111	101	90	85	122	126	117
21. Unemployment rate (% labour force 15+)	8.6	9.1	9.2	8.7	8.2	7.4	6.5	6.1	8.9	9.1	8.4
22. Youth unemployment rate (% labour force 15-24)	19.6	21.2	21.9	22.0	20.6	19.0	16.4	17.1	24.1	23.8	21.8
23. Long term unemployment rate (% labour force)	2.7	2.5	2.6	2.3	2.4	2.1	1.7	1.3	1.6	2.5	2.2
24. Youth unemployment ratio (% population aged 15-24)	10.4	11.0	11.3	11.1	10.5	10.0	8.8	9.2	12.0	11.8	11.0

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	2654	2659	2664	2669	2678	2687	2697	2708	2719	2731	2741
2. Population aged 15-64	1717	1720	1723	1725	1728	1734	1739	1748	1753	1758	1749
3. Total employment (000)	1107	1131	1129	1132	1152	1173	1200	1226	1215	1192	1200
4. Population in employment aged 15-64	1123	1138	1132	1131	1150	1167	1191	1206	1191	1176	1179
5. Employment rate (% population aged 15-64)	65.4	66.2	65.7	65.6	66.5	67.3	68.5	69.0	67.9	66.9	67.4
6. Employment rate (% population aged 15-24)	40.7	40.3	39.2	39.4	40.6	41.6	44.7	45.1	41.5	39.9	41.2
7. Employment rate (% population aged 25-54)	78.1	79.2	78.9	78.2	79.0	79.6	80.6	81.2	80.5	79.2	79.6
8. Employment rate (% population aged 55-64)	45.0	47.2	48.3	50.4	52.7	54.3	55.0	55.8	56.3	56.9	57.2
9. FTE employment rate (% population aged 15-64)	61.8	62.4	62.0	61.3	61.3	61.9	62.9	63.8	62.5	61.5	62.1
10. Self-employed (% total employment)	8.0	7.9	7.8	7.7	7.6	7.6	7.5	7.6	8.0	8.2	8.0
11. Part-time employment (% total employment)	16.8	17.5	17.7	18.4	18.6	19.2	19.3	18.2	19.0	19.6	19.6
12. Fixed term contracts (% total employees)	19.9	19.5	20.0	19.5	20.0	20.0	19.4	18.7	18.3	18.4	18.4
13. Employment in Services (% total employment)	82.6	83.3	84.2	84.5	84.7	85.2	85.7	86.4	86.6	86.6	87.6
14. Employment in Industry (% total employment)	13.7	13.1	12.3	12.3	12.1	11.8	11.5	10.7	10.3	10.4	9.8
15. Employment in Agriculture (% total employment)	3.7	3.6	3.5	3.2	3.1	3.0	2.8	2.9	3.0	3.0	2.6
16. Activity rate (% population aged 15-64)	72.4	72.8	72.2	72.0	72.8	73.3	73.8	73.9	73.5	72.5	72.7
17. Activity rate (% of population aged 15-24)	50.9	50.9	50.0	48.9	50.4	51.0	53.6	53.5	51.2	49.3	50.5
18. Activity rate (% of population aged 25-54)	85.0	85.5	84.8	84.5	85.1	85.3	85.6	85.9	85.7	84.4	84.3
19. Activity rate (% of population aged 55-64)	49.4	51.2	52.2	54.3	56.4	58.2	58.4	58.8	59.5	60.3	60.4
20. Total unemployment (000)	121	114	111	111	109	104	93	87	99	98	91
21. Unemployment rate (% labour force 15+)	9.7	9.1	8.9	8.9	8.6	8.1	7.2	6.7	7.6	7.6	7.1
22. Youth unemployment rate (% labour force 15-24)	20.0	20.9	21.6	19.4	19.5	18.4	16.6	15.8	19.0	19.0	18.4
23. Long term unemployment rate (% labour force)	2.3	2.0	2.0	2.0	2.0	1.8	1.4	1.1	1.1	1.5	1.2
24. Youth unemployment ratio (% population aged 15-24)	10.2	10.6	10.8	9.5	9.8	9.4	8.9	8.4	9.7	9.4	9.3

Source: Eurostat.

Labour market indicators: Sweden

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	8889	8930	8969	9006	9039	9084	9147	9203	9297	9363	9419
2. Population aged 15-64	5739	5776	5821	5855	5896	5951	6002	6046	6080	6101	6113
3. Total employment (000)	4391	4393	4368	4337	4349	4423	4525	4565	4455	4502	4601
4. Population in employment aged 15-64	4249	4252	4242	4220	4272	4352	4453	4494	4391	4438	4529
5. Employment rate (% population aged 15-64)	74.0	73.6	72.9	72.1	72.5	73.1	74.2	74.3	72.2	72.7	74.1
6. Employment rate (% population aged 15-24)	44.2	42.8	41.2	39.2	38.7	40.3	42.2	42.2	38.3	38.7	40.5
7. Employment rate (% population aged 25-54)	84.6	84.1	83.5	82.9	83.9	84.7	86.1	86.5	84.5	85.0	86.0
8. Employment rate (% population aged 55-64)	66.7	68.0	68.6	69.1	69.4	69.6	70.0	70.1	70.0	70.5	72.3
9. FTE employment rate (% population aged 15-64)	68.4	68.1	67.6	66.2	65.9	66.6	67.6	67.8	65.7	66.5	68.0
10. Self-employed (% total employment)	6.1	5.9	5.5	5.7	5.7	5.7	5.7	5.4	5.6	5.6	5.3
11. Part-time employment (% total employment)	21.1	21.5	22.9	23.6	24.7	25.1	25.0	26.6	27.0	26.4	26.0
12. Fixed term contracts (% total employees)	15.3	15.2	15.1	15.5	16.0	17.3	17.5	16.1	15.3	15.8	16.4
13. Employment in Services (% total employment)	73.8	74.3	74.8	75.4	75.5	75.8	75.5	75.2	76.2	76.3	76.4
14. Employment in Industry (% total employment)	23.6	23.2	22.9	22.4	22.3	22.1	22.4	22.8	21.8	21.6	21.6
15. Employment in Agriculture (% total employment)	2.6	2.5	2.4	2.3	2.2	2.1	2.0	2.0	2.1	2.1	2.0
16. Activity rate (% population aged 15-64)	77.9	77.6	77.3	77.2	78.7	78.8	79.1	79.3	78.9	79.5	80.2
17. Activity rate (% of population aged 15-24)	50.0	49.1	47.7	47.2	50.2	51.3	52.2	52.8	51.0	51.7	52.6
18. Activity rate (% of population aged 25-54)	88.0	87.7	87.7	87.7	89.5	89.4	90.0	90.4	90.0	90.6	91.0
19. Activity rate (% of population aged 55-64)	70.0	71.2	71.9	72.7	72.6	72.8	72.8	72.8	73.9	74.5	75.9
20. Total unemployment (000)	270	277	306	346	361	336	298	305	408	416	378
21. Unemployment rate (% labour force 15+)	5.8	6.0	6.6	7.4	7.7	7.1	6.1	6.2	8.3	8.4	7.5
22. Youth unemployment rate (% labour force 15-24)	15.0	16.4	17.4	20.4	22.6	21.5	19.2	20.2	25.0	25.2	22.9
23. Long term unemployment rate (% labour force)	1.2	1.2	1.2	1.4	1.0	1.0	0.9	0.8	1.1	1.5	1.4
24. Youth unemployment ratio (% population aged 15-24)	5.9	6.3	6.5	8.0	11.5	11.0	10.1	10.7	12.8	13.0	12.0

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	4393	4421	4443	4463	4479	4504	4540	4567	4628	4664	4694
2. Population aged 15-64	2916	2935	2957	2974	2993	3020	3048	3071	3088	3099	3107
3. Total employment (000)	2293	2286	2272	2259	2282	2327	2382	2407	2336	2378	2422
4. Population in employment aged 15-64	2208	2200	2195	2189	2228	2280	2333	2357	2291	2328	2370
5. Employment rate (% population aged 15-64)	75.7	74.9	74.2	73.6	74.4	75.5	76.5	76.7	74.2	75.1	76.3
6. Employment rate (% population aged 15-24)	43.7	41.8	40.4	38.6	37.7	40.2	42.0	42.2	37.7	38.2	40.1
7. Employment rate (% population aged 25-54)	86.6	85.9	85.3	85.0	86.6	87.8	89.1	89.4	86.9	88.0	88.8
8. Employment rate (% population aged 55-64)	69.4	70.4	70.8	71.2	72.0	72.3	72.9	73.4	73.2	74.2	75.7
9. FTE employment rate (% population aged 15-64)	73.6	72.9	72.3	70.9	71.3	72.3	73.4	73.5	70.9	72.0	73.2
10. Self-employed (% total employment)	8.6	8.4	7.9	8.2	8.0	8.1	8.0	7.4	7.7	7.7	7.4
11. Part-time employment (% total employment)	10.8	11.1	11.2	12.0	11.5	11.8	11.8	13.3	14.2	14.0	13.7
12. Fixed term contracts (% total employees)	12.9	12.8	12.8	13.5	14.2	15.4	15.0	13.4	13.0	14.0	14.5
13. Employment in Services (% total employment)	61.0	61.3	61.7	62.4	62.9	63.2	62.9	62.0	63.3	63.8	63.7
14. Employment in Industry (% total employment)	35.2	35.0	34.7	34.1	33.9	33.6	34.0	34.9	33.6	33.1	33.3
15. Employment in Agriculture (% total employment)	3.9	3.7	3.6	3.5	3.3	3.2	3.1	3.1	3.1	3.1	3.0
16. Activity rate (% population aged 15-64)	79.9	79.4	79.2	79.1	80.9	81.2	81.4	81.7	81.4	82.3	82.7
17. Activity rate (% of population aged 15-24)	50.0	48.5	47.3	47.1	49.1	50.8	51.8	52.6	51.1	52.1	52.6
18. Activity rate (% of population aged 25-54)	90.4	89.8	89.9	90.0	92.4	92.5	92.9	93.1	92.8	93.6	93.8
19. Activity rate (% of population aged 55-64)	73.1	74.2	74.9	75.6	76.2	76.0	76.2	76.5	77.8	79.1	79.9
20. Total unemployment (000)	146	153	169	186	191	173	149	152	222	223	200
21. Unemployment rate (% labour force 15+)	6.1	6.3	6.9	7.6	7.7	6.9	5.9	5.9	8.6	8.5	7.6
22. Youth unemployment rate (% labour force 15-24)	16.0	17.3	18.2	21.3	22.6	21.0	18.7	19.7	26.3	26.7	23.8
23. Long term unemployment rate (% labour force)	1.4	1.4	1.4	1.6	1.2	1.2	0.9	0.8	1.2	1.7	1.6
24. Youth unemployment ratio (% population aged 15-24)	6.3	6.7	6.9	8.4	11.4	10.7	9.7	10.4	13.4	13.9	12.5

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	4496	4510	4527	4543	4559	4580	4607	4637	4668	4700	4725
2. Population aged 15-64	2823	2841	2864	2881	2903	2931	2954	2975	2992	3002	3006
3. Total employment (000)	2098	2107	2096	2078	2067	2096	2143	2158	2119	2124	2179
4. Population in employment aged 15-64	2041	2053	2047	2031	2044	2072	2121	2137	2101	2110	2160
5. Employment rate (% population aged 15-64)	72.3	72.2	71.5	70.5	70.4	70.7	71.8	71.8	70.2	70.3	71.8
6. Employment rate (% population aged 15-24)	44.7	43.8	42.1	39.7	39.8	40.4	42.3	42.1	38.9	39.2	41.0
7. Employment rate (% population aged 25-54)	82.5	82.4	81.7	80.9	81.1	81.5	83.0	83.5	81.9	82.0	83.2
8. Employment rate (% population aged 55-64)	64.0	65.6	66.3	67.0	66.7	66.9	67.0	66.7	66.7	66.7	68.9
9. FTE employment rate (% population aged 15-64)	63.3	63.4	63.0	61.6	60.6	61.1	62.0	62.1	60.7	61.1	62.8
10. Self-employed (% total employment)	3.3	3.1	2.9	3.0	3.1	3.1	3.1	3.0	3.2	3.3	3.0
11. Part-time employment (% total employment)	33.0	33.1	35.5	36.3	39.6	40.2	40.0	41.4	41.2	40.4	39.6
12. Fixed term contracts (% total employees)	17.6	17.6	17.4	17.5	17.7	19.1	19.9	18.7	17.6	17.6	18.3
13. Employment in Services (% total employment)	87.9	88.4	89.0	89.4	89.5	89.7	89.7	90.2	90.7	90.7	90.8
14. Employment in Industry (% total employment)	11.0	10.4	10.0	9.7	9.5	9.4	9.5	8.9	8.4	8.4	8.3
15. Employment in Agriculture (% total employment)	1.2	1.2	1.0	1.0	1.0	0.9	0.9	0.8	0.9	0.9	0.9
16. Activity rate (% population aged 15-64)	75.7	75.8	75.4	75.2	76.3	76.3	76.8	76.9	76.4	76.7	77.7
17. Activity rate (% of population aged 15-24)	50.1	49.7	48.3	47.3	51.3	51.9	52.7	53.1	51.0	51.4	52.5
18. Activity rate (% of population aged 25-54)	85.5	85.5	85.4	85.3	86.5	86.3	87.1	87.6	87.1	87.5	88.1
19. Activity rate (% of population aged 55-64)	66.9	68.2	68.9	69.7	69.0	69.6	69.4	69.0	69.9	69.8	71.8
20. Total unemployment (000)	124	124	137	160	170	164	148	152	186	193	178
21. Unemployment rate (% labour force 15+)	5.6	5.6	6.2	7.1	7.6	7.2	6.5	6.6	8.0	8.2	7.5
22. Youth unemployment rate (% labour force 15-24)	14.0	15.4	16.5	19.5	22.5	22.0	19.8	20.8	23.7	23.7	22.0
23. Long term unemployment rate (% labour force)	1.0	0.9	0.9	1.2	0.8	0.9	0.8	0.7	1.0	1.3	1.2
24. Youth unemployment ratio (% population aged 15-24)	5.4	5.9	6.2	7.6	11.5	11.4	10.4	11.0	12.1	12.2	11.6

Source: Eurostat.

LFS indicators: 2005 break in series.

Labour market indicators: United Kingdom

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	58106	58299	58542	58815	59156	59518	59862	60305	60734	61099	61510
2. Population aged 15-64	38052	38289	38534	38821	39153	39540	39845	40094	40318	40441	40599
3. Total employment (000)	30059	30265	30593	30913	31326	31662	31890	31993	31435	31213	31363
4. Population in employment aged 15-64	27186	27332	27553	27835	28090	28307	28478	28671	28184	28110	28207
5. Employment rate (% population aged 15-64)	71.4	71.4	71.5	71.7	71.7	71.6	71.5	71.5	69.9	69.5	69.5
6. Employment rate (% population aged 15-24)	56.6	56.2	55.4	55.6	54.4	53.8	52.9	52.4	48.4	47.6	46.4
7. Employment rate (% population aged 25-54)	80.4	80.4	80.6	80.9	81.2	81.2	81.3	81.4	80.2	79.8	80.1
8. Employment rate (% population aged 55-64)	52.2	53.4	55.4	56.2	56.8	57.3	57.4	58.0	57.5	57.1	56.7
9. FTE employment rate (% population aged 15-64)	61.8	61.7	61.6	61.8	62.4	62.2	62.2	62.2	60.6	60.0	60.0
10. Self-employed (% total employment)	12.1	12.2	12.8	12.8	12.8	12.9	13.1	13.0	13.4	13.9	14.1
11. Part-time employment (% total employment)	25.0	25.3	25.6	25.7	25.2	25.3	25.2	25.3	26.1	26.9	26.8
12. Fixed term contracts (% total employees)	6.8	6.4	6.1	6.0	5.8	5.8	5.9	5.4	5.7	6.1	6.2
13. Employment in Services (% total employment)	78.3	79.1	79.8	80.3	80.7	81.0	81.2	81.6	82.1	82.4	82.9
14. Employment in Industry (% total employment)	20.4	19.7	19.0	18.5	18.0	17.7	17.6	17.1	16.6	16.2	15.8
15. Employment in Agriculture (% total employment)	1.2	1.2	1.2	1.2	1.3	1.2	1.2	1.3	1.3	1.5	1.3
16. Activity rate (% population aged 15-64)	75.3	75.3	75.3	75.3	75.4	75.7	75.5	75.8	75.7	75.5	75.7
17. Activity rate (% of population aged 15-24)	64.2	63.8	63.2	63.2	62.3	62.5	61.7	61.7	59.7	59.2	58.8
18. Activity rate (% of population aged 25-54)	83.6	83.8	83.8	83.8	84.1	84.5	84.5	84.9	85.1	85.0	85.3
19. Activity rate (% of population aged 55-64)	54.1	55.3	57.2	57.8	58.4	59.1	59.3	59.9	60.3	59.9	59.7
20. Total unemployment (000)	1451	1503	1465	1399	1444	1642	1623	1753	2363	2440	2534
21. Unemployment rate (% labour force 15+)	5.0	5.1	5.0	4.7	4.8	5.4	5.3	5.6	7.6	7.8	8.0
22. Youth unemployment rate (% labour force 15-24)	11.7	12.0	12.2	12.1	12.8	14.0	14.3	15.0	19.1	19.6	21.1
23. Long term unemployment rate (% labour force)	1.3	1.1	1.1	1.0	1.0	1.2	1.3	1.4	1.9	2.5	2.7
24. Youth unemployment ratio (% population aged 15-24)	7.6	7.7	7.8	7.6	8.0	8.7	8.8	9.2	11.4	11.6	12.4

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	28375	28499	28645	28801	28995	29199	29381	29624	29862	30082	30309
2. Population aged 15-64	18851	18996	19127	19278	19448	19644	19789	19918	20047	20123	20210
3. Total employment (000)	16302	16375	16573	16723	16910	17082	17246	17256	16790	16707	16800
4. Population in employment aged 15-64	14707	14751	14878	15012	15116	15219	15341	15395	15005	14994	15052
5. Employment rate (% population aged 15-64)	78.0	77.7	77.8	77.9	77.7	77.5	77.5	77.3	74.8	74.5	74.5
6. Employment rate (% population aged 15-24)	58.9	57.7	57.0	57.0	56.0	54.9	54.4	53.8	48.5	48.5	47.0
7. Employment rate (% population aged 25-54)	87.4	87.4	87.5	87.7	87.8	87.9	88.2	87.7	85.7	85.4	85.9
8. Employment rate (% population aged 55-64)	61.7	62.6	64.8	65.7	65.9	66.0	66.3	67.3	66.2	65.0	64.2
9. FTE employment rate (% population aged 15-64)	74.5	73.7	73.6	73.7	73.8	73.5	73.6	73.1	70.6	70.0	70.0
10. Self-employed (% total employment)	16.1	16.3	17.1	17.3	17.1	17.1	17.3	17.3	17.7	18.2	18.3
11. Part-time employment (% total employment)	9.0	9.6	10.1	10.3	10.4	10.6	10.8	11.3	11.8	12.6	12.7
12. Fixed term contracts (% total employees)	6.0	5.7	5.4	5.5	5.3	5.2	5.3	4.9	5.3	5.8	5.9
13. Employment in Services (% total employment)	67.7	68.5	69.4	69.9	70.5	71.0	71.3	72.0	72.2	72.6	73.5
14. Employment in Industry (% total employment)	30.5	29.7	28.8	28.3	27.7	27.1	27.0	26.3	25.9	25.2	24.6
15. Employment in Agriculture (% total employment)	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.9	2.1	1.9
16. Activity rate (% population aged 15-64)	82.6	82.4	82.4	82.1	82.0	82.3	82.2	82.4	82.0	81.7	81.7
17. Activity rate (% of population aged 15-24)	67.9	66.9	66.2	65.7	65.3	65.1	64.5	64.8	62.0	61.8	61.5
18. Activity rate (% of population aged 25-54)	91.3	91.3	91.3	91.0	91.1	91.6	91.6	91.6	91.7	91.4	91.7
19. Activity rate (% of population aged 55-64)	64.6	65.3	67.4	68.1	68.3	68.4	69.0	69.9	70.3	69.1	68.5
20. Total unemployment (000)	874	901	886	821	847	950	927	1032	1444	1455	1472
21. Unemployment rate (% labour force 15+)	5.5	5.7	5.5	5.1	5.2	5.8	5.6	6.1	8.6	8.6	8.7
22. Youth unemployment rate (% labour force 15-24)	13.2	13.7	13.8	13.3	14.4	15.7	15.8	17.0	21.8	21.5	23.5
23. Long term unemployment rate (% labour force)	1.7	1.4	1.4	1.2	1.3	1.5	1.6	1.7	2.3	3.2	3.3
24. Youth unemployment ratio (% population aged 15-24)	9.0	9.1	9.2	8.7	9.3	10.2	10.2	11.0	13.5	13.3	14.4

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	29731	29800	29897	30014	30161	30318	30480	30681	30872	31017	31201
2. Population aged 15-64	19201	19293	19407	19543	19705	19896	20056	20176	20270	20318	20389
3. Total employment (000)	13756	13890	14020	14190	14416	14580	14644	14737	14645	14506	14563
4. Population in employment aged 15-64	12479	12581	12675	12823	12974	13088	13137	13276	13179	13116	13155
5. Employment rate (% population aged 15-64)	65.0	65.2	65.3	65.6	65.8	65.8	65.5	65.8	65.0	64.6	64.5
6. Employment rate (% population aged 15-24)	54.3	54.6	53.7	54.1	52.7	52.6	51.4	51.0	48.2	46.6	45.7
7. Employment rate (% population aged 25-54)	73.5	73.6	73.8	74.2	74.8	74.6	74.6	75.2	74.7	74.3	74.5
8. Employment rate (% population aged 55-64)	43.0	44.5	46.3	47.0	48.0	49.0	48.9	49.0	49.2	49.5	49.6
9. FTE employment rate (% population aged 15-64)	50.2	50.7	50.7	50.8	51.8	51.8	51.7	52.2	51.3	50.8	50.8
10. Self-employed (% total employment)	7.3	7.4	7.8	7.6	7.7	7.9	8.1	8.0	8.4	9.0	9.2
11. Part-time employment (% total employment)	43.9	43.8	43.9	43.8	42.6	42.5	42.2	41.8	42.5	43.3	43.1
12. Fixed term contracts (% total employees)	7.6	7.2	6.9	6.6	6.3	6.5	6.4	6.0	6.1	6.5	6.5
13. Employment in Services (% total employment)	90.2	90.9	91.4	91.8	91.9	92.1	92.1	92.1	93.0	93.2	93.3
14. Employment in Industry (% total employment)	9.2	8.6	8.1	7.7	7.4	7.3	7.2	7.1	6.4	6.1	6.0
15. Employment in Agriculture (% total employment)	0.6	0.6	0.5	0.6	0.7	0.6	0.7	0.8	0.6	0.7	0.7
16. Activity rate (% population aged 15-64)	68.0	68.3	68.3	68.5	68.8	69.2	69.0	69.4	69.5	69.4	69.7
17. Activity rate (% of population aged 15-24)	60.4	60.7	60.0	60.5	59.2	59.7	58.7	58.4	57.4	56.4	56.0
18. Activity rate (% of population aged 25-54)	76.1	76.4	76.4	76.7	77.3	77.6	77.6	78.2	78.7	78.6	79.1
19. Activity rate (% of population aged 55-64)	44.0	45.6	47.2	47.9	48.9	50.1	50.0	50.2	50.6	51.1	51.3
20. Total unemployment (000)	577	602	578	577	597	692	696	721	919	985	1061
21. Unemployment rate (% labour force 15+)	4.4	4.5	4.3	4.2	4.3	4.9	5.0	5.1	6.4	6.8	7.3
22. Youth unemployment rate (% labour force 15-24)	10.1	10.2	10.5	10.7	11.1	12.0	12.5	12.7	16.0	17.3	18.4
23. Long term unemployment rate (% labour force)	0.8	0.7	0.7	0.6	0.7	0.8	0.9	0.9	1.4	1.8	2.0
24. Youth unemployment ratio (% population aged 15-24)	6.2	6.2	6.3	6.4	6.5	7.2	7.4	7.4	9.2	9.8	10.3

Source: Eurostat.

Labour market indicators: Iceland

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	197	199	202	210	217	223	223	223	224
2. Population aged 15-64	:	:	179	181	184	192	199	204	204	203	203
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	149	149	154	162	170	171	160	159	159
5. Employment rate (% population aged 15-64)	:	:	83.3	82.3	83.8	84.6	85.1	83.6	78.3	78.2	78.5
6. Employment rate (% population aged 15-24)	:	:	67.4	66.0	70.5	72.1	74.3	71.7	61.5	61.7	62.5
7. Employment rate (% population aged 25-54)	:	:	88.2	87.4	87.7	88.4	88.5	87.3	83.0	82.9	83.4
8. Employment rate (% population aged 55-64)	:	:	83.0	81.8	84.3	84.3	84.7	82.9	80.2	79.8	79.2
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	22.1	22.2	22.2	17.1	21.7	20.5	23.6	22.9	20.8
12. Fixed term contracts (% total employees)	:	:	7.9	6.7	6.9	11.5	12.3	9.5	9.7	12.4	12.2
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	86.2	84.9	86.0	87.1	87.1	86.2	84.6	84.7	84.5
17. Activity rate (% of population aged 15-24)	:	:	73.5	71.9	76.1	78.6	79.9	78.1	73.1	73.7	73.1
18. Activity rate (% of population aged 25-54)	:	:	90.4	89.0	89.1	90.0	89.7	89.1	88.4	88.5	88.4
19. Activity rate (% of population aged 55-64)	:	:	84.8	84.1	85.5	85.6	85.4	84.3	83.3	83.5	83.8
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	0.2	0.3	0.3	0.2	0.2	0.1	0.4	1.3	1.7
24. Youth unemployment ratio (% population aged 15-24)	:	:	6.2	5.9	5.6	6.5	5.6	6.4	11.6	12.0	10.6

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	99	100	102	108	112	115	114	112	113
2. Population aged 15-64	:	:	91	91	93	99	104	106	105	103	102
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	78	78	81	87	92	93	84	82	82
5. Employment rate (% population aged 15-64)	:	:	86.3	85.8	86.9	88.1	89.1	87.3	80.0	80.1	80.3
6. Employment rate (% population aged 15-24)	:	:	68.3	65.1	67.8	70.2	74.0	70.1	56.9	58.2	58.7
7. Employment rate (% population aged 25-54)	:	:	91.9	91.9	92.3	93.3	93.6	92.3	86.1	86.2	86.9
8. Employment rate (% population aged 55-64)	:	:	87.0	86.9	88.9	88.7	89.3	88.4	84.3	83.2	82.0
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	9.4	9.2	8.7	7.0	9.3	9.5	12.2	11.9	10.4
12. Fixed term contracts (% total employees)	:	:	7.4	5.5	6.0	10.4	11.0	9.1	8.9	12.0	12.2
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	89.6	88.5	89.3	90.5	91.2	90.3	87.7	87.6	87.2
17. Activity rate (% of population aged 15-24)	:	:	75.5	71.8	74.3	77.1	80.2	77.0	70.9	71.3	71.7
18. Activity rate (% of population aged 25-54)	:	:	94.1	93.5	93.8	94.8	94.6	94.3	92.8	92.7	92.1
19. Activity rate (% of population aged 55-64)	:	:	89.6	89.5	89.7	89.7	90.1	90.6	88.6	87.8	88.3
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	0.3	0.2	0.3	0.2	0.2	0.1	0.5	1.6	1.7
24. Youth unemployment ratio (% population aged 15-24)	:	:	7.1	6.7	6.4	6.9	6.2	6.9	14.0	13.1	13.0

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	98	99	100	102	105	108	109	111	111
2. Population aged 15-64	:	:	89	90	90	92	95	98	99	100	101
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	71	71	73	75	77	78	76	77	77
5. Employment rate (% population aged 15-64)	:	:	80.1	78.8	80.5	80.8	80.8	79.6	76.5	76.2	76.6
6. Employment rate (% population aged 15-24)	:	:	66.4	67.1	73.3	74.2	74.6	73.5	66.4	65.3	66.6
7. Employment rate (% population aged 25-54)	:	:	84.6	82.8	82.9	83.1	82.9	82.0	79.8	79.6	79.9
8. Employment rate (% population aged 55-64)	:	:	78.9	76.7	79.6	79.8	79.8	77.2	76.0	76.4	76.3
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	36.2	36.8	37.5	30.1	36.7	33.7	36.4	34.9	32.2
12. Fixed term contracts (% total employees)	:	:	8.3	7.9	7.8	12.7	13.6	9.9	10.5	12.8	12.2
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	82.7	81.2	82.6	83.4	82.7	81.7	81.3	81.8	81.7
17. Activity rate (% of population aged 15-24)	:	:	71.5	72.1	78.1	80.3	79.5	79.4	75.5	76.1	74.6
18. Activity rate (% of population aged 25-54)	:	:	86.7	84.5	84.3	84.8	84.2	83.4	83.9	84.3	84.7
19. Activity rate (% of population aged 55-64)	:	:	79.9	78.6	81.3	81.2	80.5	77.6	77.7	79.1	79.1
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	0.2	0.4	0.3	0.3	0.3	0.1	0.4	1.1	1.6
24. Youth unemployment ratio (% population aged 15-24)	:	:	5.1	5.0	4.7	6.1	5.0	5.9	9.0	10.8	8.0

Source: Eurostat.

Indicator 1: Population aged 16-74.

Labour market indicators: Croatia

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	4206	4218	4215	4217	4218	4219	4225	4225	4225	4225
2. Population aged 15-64	:	2773	2778	2751	2746	2744	2743	2742	2736	2757	2746
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	1482	1482	1505	1512	1526	1568	1584	1549	1489	1438
5. Employment rate (% population aged 15-64)	:	53.4	53.4	54.7	55.0	55.6	57.1	57.8	56.6	54.0	52.4
6. Employment rate (% population aged 15-24)	:	26.2	24.9	26.5	25.8	25.5	26.5	27.1	25.6	23.0	20.1
7. Employment rate (% population aged 25-54)	:	70.2	70.1	70.9	71.8	72.2	74.1	75.0	73.6	71.2	70.1
8. Employment rate (% population aged 55-64)	:	24.8	28.4	30.1	32.6	34.3	35.8	36.7	38.5	37.6	37.1
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	8.3	8.5	8.5	10.1	9.4	8.6	8.8	9.0	9.7	9.9
12. Fixed term contracts (% total employees)	:	10.9	11.3	12.2	12.4	12.9	12.6	12.1	11.6	12.3	12.7
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	62.9	62.4	63.7	63.3	62.8	63.4	63.2	62.4	61.5	60.8
17. Activity rate (% of population aged 15-24)	:	40.6	38.7	39.6	38.1	35.9	34.9	34.7	34.1	34.2	31.4
18. Activity rate (% of population aged 25-54)	:	80.3	79.8	80.7	80.6	80.1	80.9	80.9	79.9	79.4	79.8
19. Activity rate (% of population aged 55-64)	:	26.8	30.4	32.3	35.1	36.5	38.3	38.8	40.8	40.5	40.5
20. Total unemployment (000)	:	263	252	247	227	199	266	149	160	206	232
21. Unemployment rate (% labour force 15+)	:	14.8	14.2	13.7	12.7	11.2	9.0	8.4	9.1	11.8	13.5
22. Youth unemployment rate (% labour force 15-24)	:	35.4	35.8	33.2	32.3	28.9	24.0	21.9	25.1	32.6	36.1
23. Long term unemployment rate (% labour force)	:	9.0	8.4	7.4	7.4	6.7	5.7	5.3	5.1	6.7	8.6
24. Youth unemployment ratio (% population aged 15-24)	:	14.4	13.9	13.1	12.3	10.4	8.4	7.6	8.5	11.2	11.3

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	1999	2000	2012	2006	2008	1995	2000	1995	1992	2009
2. Population aged 15-64	:	1352	1361	1357	1354	1353	1359	1357	1346	1352	1355
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	818	821	838	835	839	875	882	840	802	785
5. Employment rate (% population aged 15-64)	:	60.5	60.3	61.8	61.7	62.0	64.4	65.0	62.4	59.4	57.9
6. Employment rate (% population aged 15-24)	:	29.2	28.6	30.9	30.0	29.1	31.6	33.2	31.0	27.7	23.9
7. Employment rate (% population aged 25-54)	:	77.6	77.2	77.7	77.9	78.1	80.6	80.9	78.0	74.6	74.1
8. Employment rate (% population aged 55-64)	:	34.2	38.1	40.9	43.0	44.4	48.4	49.0	50.1	49.3	48.4
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	6.6	6.3	6.3	7.3	7.5	6.4	6.7	6.9	7.3	7.9
12. Fixed term contracts (% total employees)	:	11.3	11.8	12.1	12.4	13.1	12.2	11.9	11.4	12.1	12.7
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	69.9	69.5	70.5	70.0	68.9	70.4	70.0	68.0	67.2	67.4
17. Activity rate (% of population aged 15-24)	:	44.8	43.4	43.8	43.0	39.9	39.9	40.7	40.3	40.2	37.1
18. Activity rate (% of population aged 25-54)	:	86.7	86.2	86.6	85.9	84.9	86.4	85.6	83.2	82.4	84.2
19. Activity rate (% of population aged 55-64)	:	37.4	41.1	44.0	47.2	47.7	52.2	52.3	53.2	53.4	53.3
20. Total unemployment (000)	:	128	125	118	113	94	126	68	76	107	129
21. Unemployment rate (% labour force 15+)	:	13.3	12.9	12.1	11.6	9.9	7.8	7.0	8.0	11.4	13.8
22. Youth unemployment rate (% labour force 15-24)	:	34.7	34.1	29.4	30.2	27.2	20.9	18.5	23.1	31.1	35.6
23. Long term unemployment rate (% labour force)	:	7.5	7.5	6.0	6.5	5.8	4.6	4.2	4.1	6.1	8.6
24. Youth unemployment ratio (% population aged 15-24)	:	15.5	14.8	12.9	13.0	10.9	8.3	7.5	9.3	12.5	13.2

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	2207	2218	2203	2211	2209	2225	2225	2230	2234	2216
2. Population aged 15-64	:	1421	1417	1394	1392	1391	1385	1385	1390	1405	1391
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	664	661	667	676	687	692	703	708	687	653
5. Employment rate (% population aged 15-64)	:	46.7	46.7	47.8	48.6	49.4	50.0	50.7	51.0	48.8	47.0
6. Employment rate (% population aged 15-24)	:	23.2	21.0	21.7	21.3	21.8	21.1	20.6	19.4	17.9	15.8
7. Employment rate (% population aged 25-54)	:	63.1	63.2	64.3	65.7	66.3	67.7	69.2	69.4	67.9	66.2
8. Employment rate (% population aged 55-64)	:	16.9	20.3	21.0	23.8	25.7	24.2	25.5	28.1	27.4	27.0
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	10.5	11.2	11.2	13.4	11.7	11.3	11.5	11.6	12.5	12.4
12. Fixed term contracts (% total employees)	:	10.4	10.7	12.4	12.3	12.6	13.2	12.3	11.9	12.6	12.7
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	56.2	55.6	57.1	56.7	56.9	56.4	56.6	57.0	55.9	54.4
17. Activity rate (% of population aged 15-24)	:	36.3	33.9	35.1	32.9	31.6	29.5	28.3	27.1	27.6	25.0
18. Activity rate (% of population aged 25-54)	:	74.0	73.5	74.9	75.3	75.2	75.4	76.3	76.7	76.5	75.5
19. Activity rate (% of population aged 55-64)	:	17.9	21.3	22.3	24.9	26.9	25.5	26.7	29.7	29.1	29.2
20. Total unemployment (000)	:	135	127	129	113	104	140	81	84	99	103
21. Unemployment rate (% labour force 15+)	:	16.6	15.8	15.7	13.9	12.8	10.4	10.1	10.3	12.3	13.2
22. Youth unemployment rate (% labour force 15-24)	:	36.2	38.2	38.2	35.1	31.1	28.5	27.2	28.4	35.1	36.8
23. Long term unemployment rate (% labour force)	:	10.8	9.6	9.0	8.4	7.8	7.0	6.5	6.3	7.4	8.6
24. Youth unemployment ratio (% population aged 15-24)	:	13.2	12.9	13.4	11.6	9.8	8.4	7.7	7.7	9.7	9.2

Source: Eurostat.

Labour market indicators: Macedonia FYR

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	:	:	:	2038	2042	2044	2046	2051	2055
2. Population aged 15-64	:	:	:	:	:	1421	1433	1435	1439	1448	1455
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	:	:	:	563	583	602	623	630	639
5. Employment rate (% population aged 15-64)	:	:	:	:	:	39.6	40.7	41.9	43.3	43.5	43.9
6. Employment rate (% population aged 15-24)	:	:	:	:	:	14.4	15.2	15.7	15.7	15.4	14.4
7. Employment rate (% population aged 25-54)	:	:	:	:	:	51.6	52.8	53.9	55.3	55.8	56.4
8. Employment rate (% population aged 55-64)	:	:	:	:	:	27.9	28.8	31.7	34.6	34.2	35.4
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	6.6	6.7	5.8	5.6	5.9	6.3
12. Fixed term contracts (% total employees)	:	:	:	:	:	11.9	12.6	14.7	15.5	16.4	14.9
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	62.2	62.8	63.5	64.0	64.2	64.2
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	35.8	35.9	35.9	35.0	33.3	32.1
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	77.3	77.9	78.1	78.5	79.4	79.2
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	39.0	40.0	44.3	46.9	47.4	49.2
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	:	:	:	:	:	:	:	:	:
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	21.4	20.7	20.2	19.3	17.9	17.7

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	:	:	:	1020	1024	1025	1026	1028	1030
2. Population aged 15-64	:	:	:	:	:	718	726	727	729	733	737
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	:	:	:	347	354	369	385	387	385
5. Employment rate (% population aged 15-64)	:	:	:	:	:	48.3	48.8	50.7	52.8	52.8	52.3
6. Employment rate (% population aged 15-24)	:	:	:	:	:	17.2	18.6	19.2	20.6	19.5	17.7
7. Employment rate (% population aged 25-54)	:	:	:	:	:	61.8	62.1	64.0	65.7	66.1	65.7
8. Employment rate (% population aged 55-64)	:	:	:	:	:	39.0	38.6	43.0	47.6	46.7	47.3
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	6.0	6.5	4.7	4.7	5.0	5.8
12. Fixed term contracts (% total employees)	:	:	:	:	:	13.2	14.1	16.2	17.4	18.6	16.7
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	75.0	74.8	76.6	77.6	77.7	76.8
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	42.0	43.8	43.3	43.4	42.2	39.9
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	91.1	90.4	91.8	92.7	93.3	92.0
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	56.9	56.4	62.9	66.0	65.6	67.7
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	:	:	:	:	:	:	:	:	:
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	24.7	25.1	24.1	22.9	22.7	22.2

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	:	:	:	1018	1019	1020	1020	1023	1025
2. Population aged 15-64	:	:	:	:	:	702	707	708	711	715	718
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	:	:	:	216	229	233	238	243	254
5. Employment rate (% population aged 15-64)	:	:	:	:	:	30.7	32.3	32.9	33.5	34.0	35.3
6. Employment rate (% population aged 15-24)	:	:	:	:	:	11.4	11.5	12.0	10.6	11.2	10.8
7. Employment rate (% population aged 25-54)	:	:	:	:	:	41.0	43.0	43.4	44.5	45.1	46.8
8. Employment rate (% population aged 55-64)	:	:	:	:	:	17.5	19.6	21.1	22.4	22.4	24.0
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	7.6	7.2	7.6	7.0	7.4	7.1
12. Fixed term contracts (% total employees)	:	:	:	:	:	10.1	10.5	12.4	12.6	13.3	12.3
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	49.2	50.4	50.2	50.0	50.4	51.2
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	29.3	27.5	28.1	26.2	24.0	23.9
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	63.0	65.0	63.9	63.9	65.0	65.8
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	22.3	24.6	26.9	29.0	30.2	31.7
20. Total unemployment (000)	:	:	:	:	:	:	:	:	:	:	:
21. Unemployment rate (% labour force 15+)	:	:	:	:	:	:	:	:	:	:	:
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	:	:	:	:	:	:	:
23. Long term unemployment rate (% labour force)	:	:	:	:	:	:	:	:	:	:	:
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	17.8	16.0	16.1	15.6	12.8	13.1

Source: Eurostat.

Labour market indicators: Turkey

All	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	:	:	:	68063	68897	69721	70537	71340	72371
2. Population aged 15-64	:	:	:	:	:	44584	45303	45988	46771	47533	48431
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	:	:	:	19885	20219	20633	20698	22003	23450
5. Employment rate (% population aged 15-64)	:	:	:	:	:	44.6	44.6	44.9	44.3	46.3	48.4
6. Employment rate (% population aged 15-24)	:	:	:	:	:	30.3	30.2	30.3	28.9	30.0	32.0
7. Employment rate (% population aged 25-54)	:	:	:	:	:	53.2	53.2	53.4	52.8	55.4	57.5
8. Employment rate (% population aged 55-64)	:	:	:	:	:	27.7	27.2	27.5	28.2	29.6	31.4
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	7.6	8.4	9.3	11.3	11.7	12.0
12. Fixed term contracts (% total employees)	:	:	:	:	:	12.5	11.9	11.2	10.7	11.5	12.2
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	49.0	49.1	49.8	50.8	51.9	53.2
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	36.3	36.5	37.1	37.4	37.4	38.5
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	57.4	57.5	58.2	59.4	61.1	62.3
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	28.7	28.1	28.7	29.9	31.1	32.8
20. Total unemployment (000)	:	:	:	:	2030	1953	2013	2275	3047	2697	2328
21. Unemployment rate (% labour force 15+)	:	:	:	:	9.2	8.7	8.8	9.7	12.5	10.7	8.8
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	17.4	16.4	17.2	18.4	22.7	19.7	16.8
23. Long term unemployment rate (% labour force)	:	:	:	:	:	2.7	2.3	2.3	2.8	2.8	2.1
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	6.0	6.3	6.9	8.5	7.4	6.4

Male	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	:	:	:	33754	34176	34587	34998	35400	35907
2. Population aged 15-64	:	:	:	:	:	22088	22464	22821	23226	23620	24078
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	:	:	:	14772	15012	15192	14992	15744	16671
5. Employment rate (% population aged 15-64)	:	:	:	:	:	66.9	66.8	66.6	64.5	66.7	69.2
6. Employment rate (% population aged 15-24)	:	:	:	:	:	41.9	41.6	41.3	39.0	40.2	43.3
7. Employment rate (% population aged 25-54)	:	:	:	:	:	80.7	80.7	80.2	77.9	80.5	82.7
8. Employment rate (% population aged 55-64)	:	:	:	:	:	41.6	40.6	41.0	41.1	42.7	45.4
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	4.3	4.7	5.3	6.5	6.9	6.8
12. Fixed term contracts (% total employees)	:	:	:	:	:	12.6	12.0	11.1	10.5	11.1	12.4
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	73.3	73.4	73.8	74.0	74.5	75.6
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	49.8	50.2	50.5	50.6	49.8	51.3
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	87.2	87.2	87.5	87.6	88.6	89.2
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	43.7	42.5	43.4	44.3	45.7	48.1
20. Total unemployment (000)	:	:	:	:	1504	1428	1474	1653	2200	1873	1548
21. Unemployment rate (% labour force 15+)	:	:	:	:	9.1	8.6	8.7	9.6	12.5	10.4	8.3
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	17.2	15.9	17.0	18.2	22.8	19.3	15.6
23. Long term unemployment rate (% labour force)	:	:	:	:	:	2.3	2.0	2.0	2.5	2.3	1.6
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	7.9	8.6	9.2	11.6	9.6	8.0

Female	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total population (000)	:	:	:	:	:	34309	34721	35133	35540	35940	36464
2. Population aged 15-64	:	:	:	:	:	22496	22839	23167	23545	23912	24353
3. Total employment (000)	:	:	:	:	:	:	:	:	:	:	:
4. Population in employment aged 15-64	:	:	:	:	:	5112	5207	5442	5706	6258	6779
5. Employment rate (% population aged 15-64)	:	:	:	:	:	22.7	22.8	23.5	24.2	26.2	27.8
6. Employment rate (% population aged 15-24)	:	:	:	:	:	19.3	19.4	19.8	19.3	20.2	21.2
7. Employment rate (% population aged 25-54)	:	:	:	:	:	25.5	25.6	26.5	27.6	30.1	32.2
8. Employment rate (% population aged 55-64)	:	:	:	:	:	14.8	14.7	14.8	16.0	17.1	17.9
9. FTE employment rate (% population aged 15-64)	:	:	:	:	:	:	:	:	:	:	:
10. Self-employed (% total employment)	:	:	:	:	:	:	:	:	:	:	:
11. Part-time employment (% total employment)	:	:	:	:	:	17.3	19.1	20.2	23.7	23.8	24.7
12. Fixed term contracts (% total employees)	:	:	:	:	:	12.1	11.5	11.6	11.5	12.5	11.8
13. Employment in Services (% total employment)	:	:	:	:	:	:	:	:	:	:	:
14. Employment in Industry (% total employment)	:	:	:	:	:	:	:	:	:	:	:
15. Employment in Agriculture (% total employment)	:	:	:	:	:	:	:	:	:	:	:
16. Activity rate (% population aged 15-64)	:	:	:	:	:	25.1	25.2	26.2	27.8	29.6	31.0
17. Activity rate (% of population aged 15-24)	:	:	:	:	:	23.4	23.5	24.4	24.9	25.5	26.2
18. Activity rate (% of population aged 25-54)	:	:	:	:	:	27.5	27.6	28.8	31.0	33.4	35.2
19. Activity rate (% of population aged 55-64)	:	:	:	:	:	14.9	14.8	15.0	16.3	17.3	18.1
20. Total unemployment (000)	:	:	:	:	527	525	539	622	847	824	780
21. Unemployment rate (% labour force 15+)	:	:	:	:	9.3	9.1	9.1	10.0	12.6	11.4	10.1
22. Youth unemployment rate (% labour force 15-24)	:	:	:	:	17.9	17.4	17.5	18.9	22.4	20.6	19.0
23. Long term unemployment rate (% labour force)	:	:	:	:	:	3.6	3.1	3.1	3.8	3.9	3.2
24. Youth unemployment ratio (% population aged 15-24)	:	:	:	:	:	4.1	4.1	4.6	5.6	5.3	5.0

Source: Eurostat.

Data sources and definitions

Main data sources

Most of the data used in this report originates from Eurostat, the Statistical Office of the European Union. The main data sources used are:

- European Union Labour Force Survey
- ESA95 National Accounts

The **European Union Labour Force Survey** (EU LFS) is the EU's harmonised household survey on labour market participation. While in the early years, it was carried out as an annual survey conducted in the spring quarter in many Member States, it is now a continuous quarterly survey in all EU Member States. If not mentioned otherwise, the results based on the LFS for years before the introduction of the quarterly survey refer to the spring quarter of each year. LFS data covers the population living in private households only (collective households are excluded) and refers to the place of residence (household residence concept). They are broken down by various socio-demographic categories, in particular gender and age. The EU LFS covers all EU Member States as well as Croatia, Iceland, Macedonia and Turkey plus Norway and Switzerland.

A particular data collection connected to the EU LFS is Eurostat's 'LFS main indicators' which present a selection of the main statistics on the labour market. They encompass annual and quarterly indicators of population, activity and inactivity; employment; unemployment; education and training. Those indicators are mainly but not only based on the results of the EU LFS, in few cases integrated with data sources like national accounts employment or registered unemployment. National accounts employment data covers all people employed in resident producer units (domestic concept), including people living in collective households. In the main indicators, these national accounts figures are broken down by sex, working-time status (full-time/part-time) and contract status (permanent/temporary) using LFS distributions. Where available, all key employment indicators in this report are based on the 'LFS main indicators'.

For the unemployment-related indicators, Eurostat's series on unemployment comprises yearly averages, quarterly and monthly data. It is based on the (annual and quarterly) EU LFS data and monthly data on unemployment, either from the national LFS or other national sources, mainly unemployment register data. For the compilation of monthly unemployment estimates, these monthly figures from national sources are benchmarked against the quarterly EU LFS data, and they are used to produce provisional unemployment figures for recent months which are not yet covered by quarterly EU LFS results. Unemployment by skills or duration is not available from this data collection.

Most macro-economic indicators are based on Eurostat's collection of national accounts data according to the European System of National Accounts (**ESA95 National Accounts**). Data is compiled by the Member States and collected by Eurostat. The collection comprises aggregates such as GDP, from which derived measures such as productivity and real unit labour costs are calculated. In addition, national accounts also cover population and employment data, the latter expressed in persons and in hours worked and also broken down by economic activity, but not by socio-demographic categories.

Forecasts for central economic indicators are produced by the Commission's Directorate-General for Economic and Financial Affairs (DG ECFIN) in spring and autumn, covering two years ahead.

Physically, data is generally obtained from Eurobase, Eurostat's online dissemination database, or in specific cases from AMECO, DG ECFIN's annual macro-economic database. Both databases are open to public access.

Data shown here represents availability and revision status of mid-July 2012.

Definitions and data sources of macro-economic indicators

Some figures for 2011 are forecasts and bound to change as real data becomes available. The same holds for earlier years where actual data are not available yet.

1. Real GDP: Gross Domestic Product (GDP), volume, annual change (Source: Eurostat, ESA95 National Accounts).

2. Total employment: Employment, total economy, annual change (Source: Eurostat, ESA95 National Accounts, except for IE, LU, PL, RO, HR, MK, TR, IS, US, JP: DG ECFIN, AMECO).

3. Labour productivity: GDP volume per person employed, annual change (Source: Eurostat, ESA95 National Accounts).

4. Annual average hours worked per person employed, annual change (Source: DG ECFIN, AMECO: Average annual hours worked per person employed).

5. Productivity per hour worked: GDP volume per hour worked, annual change (Source: DG ECFIN, AMECO: Gross domestic product at 2005 market prices per hour worked).

6. Harmonised CPI: harmonised consumer price index, annual change (Source: DG ECFIN, AMECO: Harmonised consumer price index) (Note: Figures for US and Japan are national consumer price indices and not fully comparable with those for European countries.).

7. Price deflator GDP: Implicit price deflator of GDP, annual change (Source: Eurostat, ESA95 National Accounts).

8. Nominal compensation per employee, total economy, annual change (Source: Eurostat, ESA95 National Accounts, except for US, JP, TR, IS: DG ECFIN, AMECO).

9. Real compensation per employee (GDP deflator): nominal compensation deflated with the implicit deflator of GDP, per employee, annual change (Source: Eurostat, ESA95 National Accounts, except for US, JP, TR, IS: DG ECFIN, AMECO).

10. Real compensation per employee (private consumption deflator): nominal compensation deflated with the implicit deflator of private consumption expenditure, per employee, annual change (Source: Eurostat, ESA95 National Accounts, except for US, JP, TR, IS: DG ECFIN, AMECO).

11. Nominal unit labour costs: Nominal compensation per employee divided

by labour productivity, annual change (Source: Eurostat, ESA95 National Accounts, except for US, JP, TR, IS: DG ECFIN, AMECO).

12. Real unit labour costs: Real compensation per employee divided by labour productivity, annual change (Source: Eurostat, ESA95 National Accounts, except for US, JP, TR, IS: DG ECFIN, AMECO).

Definitions and data sources of key employment indicators

Certain figures in particular but not only for 2011 for a number of countries and indicators may still be based on forecasts and bound to change as real data becomes available.

1. Total population in 1000s, excluding population living in institutional households (Source: Eurostat, EU LFS. Note: Population living in institutional households is not covered. For Iceland, the LFS covers only the population from 16 to 74 years of age.).

2. Total population aged 15-64 (the 'working age population') in 1000s (Source: Eurostat, EU LFS).

3. Total employment in 1000s (Source: Eurostat, ESA95 National Accounts).

4. Population in employment aged 15-64 in 1000s (Source: Eurostat, EU LFS).

5-8. Employment rates: calculated by the number of employed divided by the population in the corresponding age bracket (Source: Eurostat, EU LFS).

9. Full-time equivalent employment rate: calculated by dividing the full-time equivalent employment by the total population in the 15-64 age group. Full-time equivalent employment is defined as total hours worked on both main and second job divided by the average annual number of hours worked in full-time jobs (Source: Eurostat, EU LFS).

10. Self-employed in total employment: number of self-employed as a share of total employment (Source: Eurostat, ESA95 National Accounts).

11. Part-time employment in total employment: number of part-time employed as a share of total employment (Source: Eurostat, EU LFS).

12. Fixed-term contracts in total employees: number of employees with contracts of limited duration as a share of total employees (Source: Eurostat, EU LFS).

13. Employment in services: employed in services (NACE Rev. 2 sections G-U) as a share of total employment (Source: Eurostat, ESA95 National Accounts).

14. Employment in industry: employed in industry, including construction (NACE Rev. 2 sections B-F) as a share of total employment (Source: Eurostat, ESA95 National Accounts).

15. Employment in agriculture: employed in agriculture, forestry and fishing (NACE Rev. 2 section A) as a share of total employment (Source: Eurostat, ESA95 National Accounts).

16-19. Activity rates: labour force (employed and unemployed) as a share of total population in the corresponding age bracket (Source: Eurostat, EU LFS).

20. Total unemployment in 1000s (Source: Eurostat, EU LFS).

21-22. Unemployment rates: unemployed as a share of the labour force (employed and unemployed persons) in the corresponding age bracket (Source: Eurostat, EU LFS).

23. Long-term unemployment rate: persons unemployed for a duration of 12 months or more as a share of the labour force (Source: Eurostat, EU LFS).

24. Youth unemployment ratio: young unemployed (aged 15-24) as a share of the total population in the same age bracket (Source: Eurostat, EU LFS).

Note: For indicators for which the ESA95 National Accounts are the main source, the split into male and female indicators is done using additionally EU LFS data.

3. Social indicators

Social inclusion indicators: **Austria**

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	16.8	17.8	16.7	18.6	17.0	16.6	16.9
At-risk-of-poverty (% of total population)	12.3	12.6	12.0	12.4	12.0	12.1	12.6
At-risk-of-poverty threshold (PPS single person)	10458	10452	10686	11124	11315	11451	12035
Poverty gap (%)	15.3	15.5	17.0	15.3	17.2	17.2	19.0
Persistent at-risk-of-poverty (% of total population)	:	:	5.5	5.6	6.2	6.5	5.8
At-risk-of-poverty before social transfers excl. pensions (% of total population)	24.4	25.1	24.7	24.5	24.1	24.1	24.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	49.6	51.2	51.4	49.4	50.2	49.8	49.4
Severe Material Deprivation (% of total population)	3.0	3.6	3.3	6.4	4.8	4.3	3.9
Share of people living in low work intensity households (% of people aged 0-59)	6.5	8.0	8.1	7.8	7.2	7.7	8.0
Gross Household Disposable Income adjusted for consumer prices (growth %)	3.3	3.1	2.8	-0.1	0.3	-0.3	-0.8
Income quintile share ratio S80/S20	3.8	3.7	3.8	3.7	3.7	3.7	3.8
GINI coefficient	26.2	25.3	26.2	26.2	25.7	26.1	26.3
Early leavers from education and training (% of population aged 18-24)	9.1	9.8	10.7	10.1	8.7	8.3	8.3
NEET: Young people not in employment, education or training (% of total population aged 15-24)	8.3	7.5	7.0	7.1	7.8	7.1	6.9

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	15.0	15.7	14.5	16.8	15.0	14.7	15.2
At-risk-of-poverty (% of male population)	11.5	11.0	10.6	11.2	10.7	10.7	11.7
Poverty gap (%)	15.2	17.5	18.7	15.7	18.7	17.5	20.0
Persistent at-risk-of-poverty (% of male population)	:	:	3.5	4.9	4.4	5.8	4.6
Severe Material Deprivation (% of male population)	2.8	3.8	3.1	6.0	4.4	3.9	3.5
Share of people living in low work intensity households (% of males aged 0-59)	5.3	7.0	6.6	6.6	5.6	6.7	7.0
Life expectancy at birth (years)	76.6	77.1	77.4	77.8	77.6	77.9	:
Healthy life years at birth (years)	58.2	58.7	58.7	58.3	59.5	59.5	:
Early leavers from education and training (% of males aged 18-24)	9.6	10.0	11.4	10.4	8.5	8.4	8.8
NEET: Young people not in employment, education or training (% of males aged 15-24)	8.0	7.0	6.4	6.4	7.4	6.9	6.8

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	18.5	19.7	18.9	20.3	18.9	18.4	18.5
At-risk-of-poverty (% of female population)	13.1	14.0	13.3	13.5	13.2	13.5	13.5
Poverty gap (%)	15.3	14.1	15.9	15.2	16.1	16.7	18.8
Persistent at-risk-of-poverty (% of female population)	:	:	7.3	6.3	7.9	7.1	6.9
Severe Material Deprivation (% of female population)	3.3	3.4	3.5	6.7	5.1	4.6	4.3
Share of people living in low work intensity households (% of females aged 0-59)	7.8	9.1	9.7	9.0	8.7	8.8	9.1
Life expectancy at birth (years)	82.2	82.8	83.1	83.3	83.2	83.5	:
Healthy life years at birth (years)	60.1	61.0	61.5	59.7	60.8	60.7	:
Early leavers from education and training (% of females aged 18-24)	8.7	9.7	10.1	9.8	8.9	8.2	7.8
NEET: Young people not in employment, education or training (% of females aged 15-24)	8.6	8.0	7.6	7.8	8.3	7.4	7.1

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	18.5	19.3	18.5	20.4	17.5	18.8	19.2
At-risk-of-poverty (% of Children population)	14.9	14.7	14.8	14.9	13.4	14.3	15.4
Severe Material Deprivation (% of Children population)	3.6	4.2	3.7	7.3	5.6	5.7	5.6
Share of children living in low work intensity households (% of Children population)	4.7	7.0	6.2	5.8	5.9	6.0	6.7
Risk of poverty of children in households at work (Working Intensity > 0.2)	12.7	11.2	11.6	11.7	10.2	11.3	11.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	58.5	61.3	59.0	58.7	62.9	61.1	57.9

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	16.5	17.4	16.7	18.4	17.1	16.1	16.2
At-risk-of-poverty (% of Working age population)	11.1	11.0	10.6	10.9	10.8	10.7	11.0
Severe Material Deprivation (% of Working age population)	3.1	3.8	3.4	6.6	5.0	4.5	3.9
Low work intensity (18-59)	7.2	8.4	8.8	8.4	7.6	8.3	8.5
In-work at Risk-of-povery rate (% of Working age population)	6.7	6.3	6.1	6.4	6.0	5.0	5.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	51.3	53.5	54.5	52.4	51.1	51.8	52.8

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	15.9	17.3	15.1	17.3	16.4	15.8	17.1
At-risk-of-poverty (% of Elderly population)	14.3	16.2	14.0	15.0	15.1	15.2	16.0
Severe Material Deprivation (% of Elderly population)	2.1	2.1	2.1	4.4	2.8	2.0	2.0
Relative median income of elderly (ratio with median income of people younger than 65)	0.95	0.94	0.93	0.92	0.91	0.91	0.93
Aggregate replacement ratio (ratio)	0.68	0.65	0.62	0.68	0.64	0.64	0.60

Expenditure in social protection indicators (% of GDP - Austria)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	7.1	6.9	7.0	7.2	7.6	7.4	
Disability	2.4	2.3	2.2	2.1	2.3	2.2	
Old age and survivors	13.4	13.3	13.2	13.6	14.6	14.6	
Family/Children	3.0	2.8	2.7	2.8	3.1	3.1	
Unemployment	1.6	1.6	1.4	1.4	1.7	1.7	
Housing and Social Exclusion	0.4	0.4	0.4	0.4	0.4	0.4	
Total	28.8	28.2	27.8	28.4	30.6	30.4	
of which: Means tested benefits	1.8	1.9	1.8	1.9	2.1	2.1	

Source: Eurostat.

Social inclusion indicators: Belgium

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	22.6	21.5	21.6	20.8	20.2	20.8	21.0
At-risk-of-poverty (% of total population)	14.8	14.7	15.2	14.7	14.6	14.6	15.3
At-risk-of-poverty threshold (PPS single person)	9320	9707	9787	10046	10494	10398	10776
Poverty gap (%)	17.8	19.4	17.8	17.2	18.1	18.0	18.6
Persistent at-risk-of-poverty (% of total population)	:	:	7.8	9.0	9.2	9.3	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	28.3	26.8	27.5	27.0	26.7	26.7	27.8
Impact of social transfers (excl. pensions) in reducing poverty (%)	47.7	42.8	44.7	45.6	45.3	45.3	45.0
Severe Material Deprivation (% of total population)	6.5	6.4	5.7	5.6	5.2	5.9	5.7
Share of people living in low work intensity households (% of people aged 0-59)	15.1	14.3	13.8	11.7	12.3	12.6	13.7
Gross Household Disposable Income adjusted for consumer prices (growth %)	0.7	3.3	3.5	1.0	2.1	-1.5	-1.2
Income quintile share ratio S80/S20	4.0	4.2	3.9	4.1	3.9	3.9	3.9
GINI coefficient	28.0	27.8	26.3	27.5	26.4	26.6	26.3
Early leavers from education and training (% of population aged 18-24)	12.9	12.6	12.1	12.0	11.1	11.9	12.3
NEET: Young people not in employment, education or training (% of total population aged 15-24)	13.0	11.2	11.2	10.1	11.1	10.9	11.8

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	21.4	20.0	19.9	19.1	18.5	20.0	20.4
At-risk-of-poverty (% of male population)	14.1	13.7	14.4	13.6	13.4	13.9	14.6
Poverty gap (%)	18.0	20.7	19.2	18.2	18.9	18.0	19.9
Persistent at-risk-of-poverty (% of male population)	:	:	7.3	8.3	7.8	8.5	:
Severe Material Deprivation (% of male population)	6.5	6.2	5.2	5.2	4.9	5.7	5.9
Share of people living in low work intensity households (% of males aged 0-59)	13.7	12.7	12.6	10.2	11.0	11.8	13.2
Life expectancy at birth (years)	76.2	76.6	77.1	76.9	77.3	77.6	:
Healthy life years at birth (years)	62.4	63.0	63.5	63.3	63.9	64.0	:
Early leavers from education and training (% of males aged 18-24)	15.3	15.1	13.9	13.4	12.8	13.8	14.9
NEET: Young people not in employment, education or training (% of males aged 15-24)	12.5	10.2	10.2	9.2	10.5	10.8	11.6

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	23.7	23.1	23.1	22.4	21.8	21.7	21.5
At-risk-of-poverty (% of female population)	15.5	15.6	15.9	15.9	15.7	15.2	16.0
Poverty gap (%)	16.8	18.5	16.9	16.6	17.7	18.0	17.4
Persistent at-risk-of-poverty (% of female population)	:	:	8.3	9.7	10.4	10.0	:
Severe Material Deprivation (% of female population)	6.5	6.7	6.2	6.0	5.5	6.0	5.4
Share of people living in low work intensity households (% of females aged 0-59)	16.4	15.9	15.0	13.2	13.6	13.5	14.3
Life expectancy at birth (years)	81.9	82.3	82.6	82.6	82.8	83.0	:
Healthy life years at birth (years)	62.3	63.2	63.9	64.2	63.7	62.6	:
Early leavers from education and training (% of females aged 18-24)	10.5	10.0	10.3	10.6	9.3	10.0	9.7
NEET: Young people not in employment, education or training (% of females aged 15-24)	13.6	12.3	12.2	11.1	11.7	10.9	12.0

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	23.7	21.4	21.6	21.3	20.5	23.2	23.3
At-risk-of-poverty (% of Children population)	18.1	15.3	16.9	17.2	16.6	18.3	18.7
Severe Material Deprivation (% of Children population)	8.5	9.4	7.0	7.3	6.5	7.7	8.2
Share of children living in low work intensity households (% of Children population)	13.4	13.0	12.2	8.9	11.0	12.0	13.9
Risk of poverty of children in households at work (Working Intensity > 0.2)	9.7	6.7	9.2	11.1	8.8	10.3	8.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	46.3	40.7	46.2	45.6	48.6	42.5	44.7

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	21.9	20.7	20.7	20.1	19.3	20.0	20.0
At-risk-of-poverty (% of Working age population)	12.0	12.2	12.6	12.2	12.1	12.1	12.9
Severe Material Deprivation (% of Working age population)	6.5	6.2	5.9	5.7	5.3	6.0	5.6
Low work intensity (18-59)	15.7	14.8	14.4	12.7	12.8	12.9	13.6
In-work at Risk-of-povery rate (% of Working age population)	3.9	4.0	4.3	4.7	4.5	4.4	4.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	55.6	51.1	52.3	53.1	51.8	52.9	51.1

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	23.3	25.2	25.0	22.9	23.1	21.0	21.6
At-risk-of-poverty (% of Elderly population)	21.4	23.2	23.0	21.2	21.6	19.4	20.2
Severe Material Deprivation (% of Elderly population)	3.6	3.3	3.6	3.2	3.1	2.8	2.6
Relative median income of elderly (ratio with median income of people younger than 65)	0.73	0.71	0.74	0.74	0.74	0.75	0.74
Aggregate replacement ratio (ratio)	0.42	0.42	0.44	0.45	0.45	0.46	0.44

Expenditure in social protection indicators (% of GDP - Belgium)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	7.5	7.2	7.2	7.5	8.1	8.0	
Disability	2.0	1.9	1.8	1.9	2.1	2.1	
Old age and survivors	10.6	10.6	10.2	10.8	11.6	11.3	
Family/Children	2.0	2.0	2.1	2.1	2.2	2.2	
Unemployment	3.4	3.4	3.3	3.3	3.8	3.8	
Housing and Social Exclusion	0.5	0.6	0.9	0.9	1.0	1.0	
Total	27.3	27.0	26.9	28.1	30.4	29.9	
of which: Means tested benefits	1.0	1.1	1.2	1.4	1.4	1.4	

Source: Eurostat.

Social inclusion indicators: Bulgaria

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	:	61.3	60.7	38.2	46.2	41.6	49.1
At-risk-of-poverty (% of total population)	14.0	18.4	22.0	21.4	21.8	20.7	22.3
At-risk-of-poverty threshold (PPS single person)	2253	1920	1979	2859	3451	3528	3427
Poverty gap (%)	20.0	28.1	33.5	27.0	27.4	29.6	30.0
Persistent at-risk-of-poverty (% of total population)	:	:	:	:	10.7	16.4	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	17.0	24.7	25.5	27.1	26.4	27.1	27.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	17.0	37.1	13.7	21.0	17.4	23.6	17.7
Severe Material Deprivation (% of total population)	:	57.7	57.6	31.5	41.9	35.0	43.6
Share of people living in low work intensity households (% of people aged 0-59)	:	14.7	15.9	8.1	6.9	7.9	11.0
Gross Household Disposable Income adjusted for consumer prices (growth %)	12.5	2.0	-5.7	9.0	7.4	-1.7	:
Income quintile share ratio S80/S20	3.7	5.1	7.0	6.5	5.9	5.9	6.5
GINI coefficient	25.0	31.2	35.3	35.9	33.4	33.2	35.1
Early leavers from education and training (% of population aged 18-24)	20.4	17.3	14.9	14.8	14.7	13.9	12.8
NEET: Young people not in employment, education or training (% of total population aged 15-24)	25.1	22.2	19.1	17.4	19.5	21.8	22.6

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	:	60.5	59.4	36.5	44.1	39.8	47.7
At-risk-of-poverty (% of male population)	13.0	17.3	20.9	19.8	19.8	19.0	20.8
Poverty gap (%)	21.0	30.8	37.1	26.8	27.3	29.0	31.2
Persistent at-risk-of-poverty (% of male population)	:	:	:	:	9.8	13.7	:
Severe Material Deprivation (% of male population)	:	57.1	56.6	30.4	40.1	33.8	42.5
Share of people living in low work intensity households (% of males aged 0-59)	:	14.4	15.5	7.8	7.0	7.7	11.1
Life expectancy at birth (years)	69.0	69.2	69.5	69.8	70.1	70.3	:
Healthy life years at birth (years)	:	66.2	67.1	62.1	62.1	63.0	:
Early leavers from education and training (% of males aged 18-24)	20.6	17.7	15.2	14.1	13.7	13.2	12.0
NEET: Young people not in employment, education or training (% of males aged 15-24)	23.7	19.9	17.7	15.6	18.1	20.7	22.3

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	:	62.1	61.9	39.8	48.1	43.3	50.5
At-risk-of-poverty (% of female population)	15.0	19.3	23.0	22.9	23.7	22.3	23.6
Poverty gap (%)	19.0	26.6	31.6	27.0	27.5	30.2	29.4
Persistent at-risk-of-poverty (% of female population)	:	:	:	:	11.5	18.9	:
Severe Material Deprivation (% of female population)	:	58.2	58.6	32.6	43.5	36.0	44.6
Share of people living in low work intensity households (% of females aged 0-59)	:	14.9	16.3	8.3	6.8	8.1	10.9
Life expectancy at birth (years)	76.2	76.3	76.7	77.0	77.4	77.4	:
Healthy life years at birth (years)	:	71.9	73.9	65.7	65.9	67.1	:
Early leavers from education and training (% of females aged 18-24)	20.3	17.0	14.7	15.5	15.8	14.5	13.7
NEET: Young people not in employment, education or training (% of females aged 15-24)	26.5	24.7	20.6	19.3	20.9	23.0	22.8

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	:	61.0	60.8	38.4	47.3	44.6	51.8
At-risk-of-poverty (% of Children population)	18.0	25.0	29.9	25.5	24.9	26.8	28.9
Severe Material Deprivation (% of Children population)	:	57.6	58.3	31.7	43.6	37.4	45.6
Share of children living in low work intensity households (% of Children population)	:	16.7	18.7	9.4	7.5	10.3	14.0
Risk of poverty of children in households at work (Working Intensity > 0.2)	:	13.4	16.6	18.2	19.3	19.3	19.3
Impact of social transfers (excl. pensions) in reducing poverty (%)	25.0	31.3	11.8	18.0	17.3	21.6	17.2

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	:	58.1	57.9	32.8	40.6	36.9	45.2
At-risk-of-poverty (% of Working age population)	12.0	16.2	19.4	17.0	16.4	16.0	18.2
Severe Material Deprivation (% of Working age population)	:	54.2	54.9	27.3	37.1	31.8	40.3
Low work intensity (18-59)	:	14.1	15.1	7.7	6.7	7.3	10.1
In-work at Risk-of-povery rate (% of Working age population)	:	5.5	5.9	7.6	7.5	7.7	8.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	20.0	34.7	14.5	24.1	21.2	28.9	20.9

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	:	73.7	71.1	58.5	66.0	55.9	61.1
At-risk-of-poverty (% of Elderly population)	18.0	19.9	23.9	33.8	39.3	32.2	30.9
Severe Material Deprivation (% of Elderly population)	:	70.7	67.2	47.4	58.4	44.3	53.7
Relative median income of elderly (ratio with median income of people younger than 65)	0.84	0.79	0.78	0.66	0.63	0.74	0.72
Aggregate replacement ratio (ratio)	0.60	0.37	0.37	0.34	0.34	0.43	0.41

Expenditure in social protection indicators (% of GDP - Bulgaria)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	4.2	3.6	3.7	4.4	3.9	4.2	
Disability	1.2	1.3	1.1	1.2	1.4	1.4	
Old age and survivors	7.5	7.3	7.0	7.4	8.6	9.0	
Family/Children	1.0	1.0	1.2	1.3	2.0	2.0	
Unemployment	0.3	0.3	0.3	0.3	0.5	0.6	
Housing and Social Exclusion	0.4	0.3	0.3	0.3	0.2	0.3	
Total	15.1	14.2	14.1	15.5	17.2	18.1	
of which: Means tested benefits	1.0	0.8	0.7	0.7	0.7	0.8	

Source: Eurostat.

Social inclusion indicators: Cyprus

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	25.3	25.4	25.2	22.4	22.9	22.9	23.5
At-risk-of-poverty (% of total population)	16.1	15.6	15.5	15.7	15.3	15.3	14.5
At-risk-of-poverty threshold (PPS single person)	8866	9817	10951	11299	11342	11207	11580
Poverty gap (%)	19.4	18.9	19.7	16.5	17.6	17.8	18.9
Persistent at-risk-of-poverty (% of total population)	:	:	:	10.4	10.5	10.3	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	21.7	21.6	21.0	22.5	23.3	23.5	23.3
Impact of social transfers (excl. pensions) in reducing poverty (%)	25.8	27.6	26.2	30.2	34.3	34.9	37.8
Severe Material Deprivation (% of total population)	12.2	12.6	13.3	8.8	9.5	9.6	10.7
Share of people living in low work intensity households (% of people aged 0-59)	4.4	3.8	3.7	4.2	3.8	4.4	4.5
Gross Household Disposable Income adjusted for consumer prices (growth %)	4.6	5.2	7.7	5.6	-0.2	2.2	-9.1
Income quintile share ratio S80/S20	4.3	4.3	4.4	4.2	4.3	4.3	4.3
GINI coefficient	28.7	28.8	29.8	28.3	29.1	29.2	28.8
Early leavers from education and training (% of population aged 18-24)	18.2	14.9	12.5	13.7	11.7	12.6	11.2
NEET: Young people not in employment, education or training (% of total population aged 15-24)	19.5	10.7	9.0	9.7	10.1	11.7	14.4

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	23.9	23.3	22.7	19.8	20.9	21.5	21.5
At-risk-of-poverty (% of male population)	14.5	13.5	13.5	13.5	13.4	13.8	12.6
Poverty gap (%)	17.4	17.2	18.3	15.8	16.1	16.3	17.7
Persistent at-risk-of-poverty (% of male population)	:	:	:	8.5	7.7	8.2	:
Severe Material Deprivation (% of male population)	12.4	12.5	12.5	8.6	9.3	9.8	10.6
Share of people living in low work intensity households (% of males aged 0-59)	3.2	2.6	2.9	3.3	3.1	4.0	4.0
Life expectancy at birth (years)	76.8	78.4	77.9	78.5	78.6	79.2	:
Healthy life years at birth (years)	59.8	64.2	63.2	64.5	64.9	65.1	:
Early leavers from education and training (% of males aged 18-24)	27.2	22.5	19.5	19.0	15.2	16.2	15.1
NEET: Young people not in employment, education or training (% of males aged 15-24)	17.3	10.2	8.3	8.2	8.6	10.3	14.7

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	26.7	27.4	27.6	25.0	25.0	24.4	25.4
At-risk-of-poverty (% of female population)	17.6	17.7	17.4	17.8	17.1	16.8	16.3
Poverty gap (%)	21.1	19.8	20.5	16.7	20.1	18.6	19.4
Persistent at-risk-of-poverty (% of female population)	:	:	:	12.2	13.0	12.1	:
Severe Material Deprivation (% of female population)	11.9	12.7	14.0	9.0	9.6	9.5	10.7
Share of people living in low work intensity households (% of females aged 0-59)	5.5	5.0	4.5	5.1	4.5	4.8	5.0
Life expectancy at birth (years)	80.9	82.2	82.2	83.1	83.6	83.9	:
Healthy life years at birth (years)	58.2	63.4	62.9	65.4	65.6	64.2	:
Early leavers from education and training (% of females aged 18-24)	10.4	8.2	6.8	9.5	8.8	9.8	8.1
NEET: Young people not in employment, education or training (% of females aged 15-24)	21.5	11.2	9.6	10.9	11.3	12.9	14.1

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	22.1	21.3	20.8	21.0	20.6	20.0	21.8
At-risk-of-poverty (% of Children population)	12.8	11.5	12.4	14.4	12.6	12.8	12.0
Severe Material Deprivation (% of Children population)	12.1	12.1	11.7	9.1	9.2	10.4	13.5
Share of children living in low work intensity households (% of Children population)	3.5	3.0	2.8	3.2	3.0	3.0	2.8
Risk of poverty of children in households at work (Working Intensity > 0.2)	10.7	10.4	10.5	12.6	11.1	10.9	10.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	37.3	43.1	37.7	42.4	49.6	51.0	49.6

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	21.3	21.4	21.1	18.0	19.3	20.2	20.8
At-risk-of-poverty (% of Working age population)	11.1	10.6	10.1	10.4	10.7	11.4	11.0
Severe Material Deprivation (% of Working age population)	11.8	12.3	12.7	8.3	9.6	9.9	10.6
Low work intensity (18-59)	4.7	4.1	4.0	4.6	4.1	4.9	5.1
In-work at Risk-of-povery rate (% of Working age population)	6.4	7.2	6.3	5.9	6.4	6.8	7.3
Impact of social transfers (excl. pensions) in reducing poverty (%)	32.3	33.5	34.0	37.3	40.6	38.7	43.9

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	54.2	55.6	55.6	49.1	46.6	42.3	40.4
At-risk-of-poverty (% of Elderly population)	50.3	51.9	50.6	46.4	44.4	40.0	36.9
Severe Material Deprivation (% of Elderly population)	14.2	15.3	19.4	10.6	9.4	7.1	6.0
Relative median income of elderly (ratio with median income of people younger than 65)	0.57	0.57	0.57	0.61	0.63	0.65	0.65
Aggregate replacement ratio (ratio)	0.29	0.28	0.29	0.33	0.37	0.36	0.38

Expenditure in social protection indicators (% of GDP - Cyprus)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	4.5	4.6	4.5	4.5	5.1	5.0	
Disability	0.7	0.7	0.7	0.7	0.8	0.7	
Old age and survivors	8.3	8.3	8.3	8.4	9.3	9.7	
Family/Children	2.1	1.9	1.9	2.1	2.2	2.1	
Unemployment	1.1	1.2	0.9	1.0	1.0	1.1	
Housing and Social Exclusion	1.2	1.3	1.6	1.9	2.5	2.7	
Total	18.4	18.5	18.2	19.5	21.1	21.6	
of which: Means tested benefits	1.5	1.6	1.8	2.2	2.8	3.0	

Source: Eurostat.

Social inclusion indicators: Czech Republic

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	19.6	18.0	15.8	15.3	14.0	14.4	15.3
At-risk-of-poverty (% of total population)	10.4	9.9	9.6	9.0	8.6	9.0	9.8
At-risk-of-poverty threshold (PPS single person)	4585	4956	5305	5835	6062	5793	5944
Poverty gap (%)	18.2	16.8	18.1	18.5	18.8	21.1	17.2
Persistent at-risk-of-poverty (% of total population)	:	:	:	3.9	3.7	5.5	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	21.2	21.6	20.1	20.0	17.9	18.1	18.0
Impact of social transfers (excl. pensions) in reducing poverty (%)	50.9	55.2	52.2	55.0	52.0	50.3	45.6
Severe Material Deprivation (% of total population)	11.8	9.6	7.4	6.8	6.1	6.2	6.1
Share of people living in low work intensity households (% of people aged 0-59)	8.8	8.9	8.6	7.2	6.0	6.4	6.6
Gross Household Disposable Income adjusted for consumer prices (growth %)	4.1	4.9	3.7	0.6	2.8	0.2	-2.8
Income quintile share ratio S80/S20	3.7	3.5	3.5	3.4	3.5	3.5	3.5
GINI coefficient	26.0	25.3	25.3	24.7	25.1	24.9	25.2
Early leavers from education and training (% of population aged 18-24)	6.2	5.1	5.2	5.6	5.4	4.9	4.9
NEET: Young people not in employment, education or training (% of total population aged 15-24)	13.3	9.2	6.9	6.7	8.5	8.8	8.3

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	17.8	16.6	14.2	13.3	12.3	12.7	13.7
At-risk-of-poverty (% of male population)	9.7	8.9	8.7	8.0	7.5	8.0	8.9
Poverty gap (%)	18.9	18.6	19.0	21.4	22.0	23.6	19.1
Persistent at-risk-of-poverty (% of male population)	:	:	:	3.5	3.1	5.1	:
Severe Material Deprivation (% of male population)	10.8	9.4	7.0	6.3	5.8	5.8	5.6
Share of people living in low work intensity households (% of males aged 0-59)	7.3	8.2	7.4	6.2	4.8	5.2	5.8
Life expectancy at birth (years)	72.9	73.5	73.8	74.1	74.2	74.5	:
Healthy life years at birth (years)	58.0	57.9	61.4	61.2	61.1	62.2	:
Early leavers from education and training (% of males aged 18-24)	6.1	5.4	5.7	5.8	5.5	4.9	5.4
NEET: Young people not in employment, education or training (% of males aged 15-24)	11.2	7.3	4.9	4.8	7.2	7.5	7.1

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	21.4	19.4	17.4	17.2	15.7	16.0	16.9
At-risk-of-poverty (% of female population)	11.0	10.8	10.5	10.1	9.5	10.0	10.6
Poverty gap (%)	17.5	15.6	17.2	15.1	16.3	18.9	16.5
Persistent at-risk-of-poverty (% of female population)	:	:	:	4.3	4.2	5.9	:
Severe Material Deprivation (% of female population)	12.7	9.9	7.7	7.3	6.5	6.5	6.7
Share of people living in low work intensity households (% of females aged 0-59)	10.4	9.6	9.9	8.2	7.1	7.6	7.4
Life expectancy at birth (years)	79.2	79.9	80.2	80.5	80.5	80.9	:
Healthy life years at birth (years)	60.0	59.9	63.3	63.4	62.7	64.5	:
Early leavers from education and training (% of females aged 18-24)	6.3	4.9	4.7	5.4	5.2	4.8	4.4
NEET: Young people not in employment, education or training (% of females aged 15-24)	15.4	11.1	9.1	8.7	9.9	10.3	9.5

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	25.6	22.7	21.5	18.6	17.2	18.9	20.0
At-risk-of-poverty (% of Children population)	17.6	16.5	16.6	13.2	13.3	14.3	15.2
Severe Material Deprivation (% of Children population)	15.3	12.2	10.0	8.3	7.4	8.6	8.0
Share of children living in low work intensity households (% of Children population)	9.1	8.6	10.0	7.6	6.1	7.0	6.9
Risk of poverty of children in households at work (Working Intensity > 0.2)	11.0	10.3	9.0	8.1	8.6	9.2	10.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	47.1	46.5	46.1	55.6	47.4	45.0	43.7

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	19.0	17.8	15.3	15.0	13.7	14.1	15.1
At-risk-of-poverty (% of Working age population)	9.4	8.8	8.6	8.3	7.6	8.1	9.1
Severe Material Deprivation (% of Working age population)	10.9	9.3	6.8	6.5	5.9	6.0	5.8
Low work intensity (18-59)	8.8	8.9	8.2	7.1	5.9	6.2	6.4
In-work at Risk-of-povery rate (% of Working age population)	3.5	3.5	3.3	3.6	3.2	3.7	4.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	52.8	58.3	54.3	55.4	54.5	52.6	47.7

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	14.7	12.7	10.9	12.5	11.7	10.1	10.7
At-risk-of-poverty (% of Elderly population)	5.3	5.9	5.5	7.4	7.2	6.8	6.6
Severe Material Deprivation (% of Elderly population)	10.8	8.0	6.5	6.4	5.7	4.3	5.4
Relative median income of elderly (ratio with median income of people younger than 65)	0.83	0.82	0.81	0.79	0.78	0.82	0.82
Aggregate replacement ratio (ratio)	0.51	0.52	0.51	0.51	0.51	0.54	0.53

Expenditure in social protection indicators (% of GDP - Czech Republic)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.3	6.0	5.9	5.8	6.4	6.3	
Disability	1.4	1.5	1.4	1.4	1.5	1.5	
Old age and survivors	7.6	7.5	7.7	8.0	9.0	9.2	
Family/Children	1.3	1.3	1.6	1.4	1.4	1.3	
Unemployment	0.6	0.6	0.6	0.6	1.0	0.8	
Housing and Social Exclusion	0.6	0.6	0.3	0.2	0.3	0.3	
Total	18.4	18.0	18.0	18.0	20.3	20.1	
of which: Means tested benefits	1.0	0.9	0.6	0.4	0.4	0.4	

Source: Eurostat.

Social inclusion indicators: Germany

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	18.4	20.2	20.6	20.1	20.0	19.7	19.9
At-risk-of-poverty (% of total population)	12.2	12.5	15.2	15.2	15.5	15.6	15.8
At-risk-of-poverty threshold (PPS single person)	9391	9100	10395	10804	10772	10635	10955
Poverty gap (%)	18.9	20.4	23.2	22.2	21.5	20.7	21.4
Persistent at-risk-of-poverty (% of total population)	:	:	:	7.2	8.1	9.1	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	23.1	25.7	24.8	24.2	24.1	24.2	25.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	47.2	57.1	38.7	37.2	35.7	35.5	37.1
Severe Material Deprivation (% of total population)	4.6	5.1	4.8	5.5	5.4	4.5	5.3
Share of people living in low work intensity households (% of people aged 0-59)	11.9	13.5	11.4	11.6	10.8	11.1	11.1
Gross Household Disposable Income adjusted for consumer prices (growth %)	0.2	0.5	-0.5	0.0	-0.6	1.7	0.8
Income quintile share ratio S80/S20	3.8	4.1	4.9	4.8	4.5	4.5	4.5
GINI coefficient	26.1	26.8	30.4	30.2	29.1	29.3	29.0
Early leavers from education and training (% of population aged 18-24)	13.5	13.7	12.5	11.8	11.1	11.9	11.5
NEET: Young people not in employment, education or training (% of total population aged 15-24)	10.9	9.6	8.9	8.4	8.8	8.3	7.5

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	17.0	18.9	18.8	18.5	18.8	18.6	18.5
At-risk-of-poverty (% of male population)	11.4	12.1	14.1	14.2	14.7	14.9	14.9
Poverty gap (%)	20.3	21.4	24.4	23.7	22.3	21.5	22.6
Persistent at-risk-of-poverty (% of male population)	:	:	:	6.6	7.0	9.0	:
Severe Material Deprivation (% of male population)	4.3	5.0	4.3	5.3	5.3	4.4	5.0
Share of people living in low work intensity households (% of males aged 0-59)	11.0	12.2	10.4	10.8	10.4	10.7	10.4
Life expectancy at birth (years)	76.7	77.2	77.4	77.6	77.8	78.0	:
Healthy life years at birth (years)	54.5	58.7	59.0	56.3	57.1	57.9	:
Early leavers from education and training (% of males aged 18-24)	13.3	14.0	13.1	12.4	11.5	12.7	12.4
NEET: Young people not in employment, education or training (% of males aged 15-24)	10.1	8.9	8.0	7.5	8.2	7.7	6.7

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	19.7	21.3	22.3	21.6	21.2	20.9	21.3
At-risk-of-poverty (% of female population)	12.9	13.0	16.3	16.2	16.3	16.4	16.8
Poverty gap (%)	17.7	19.2	22.4	21.1	20.8	19.6	20.6
Persistent at-risk-of-poverty (% of female population)	:	:	:	7.7	9.0	9.2	:
Severe Material Deprivation (% of female population)	4.8	5.1	5.3	5.6	5.4	4.7	5.7
Share of people living in low work intensity households (% of females aged 0-59)	12.8	14.8	12.5	12.3	11.2	11.6	11.8
Life expectancy at birth (years)	82.0	82.4	82.7	82.7	82.8	83.0	:
Healthy life years at birth (years)	54.8	58.3	58.6	57.7	58.1	58.7	:
Early leavers from education and training (% of females aged 18-24)	13.7	13.4	11.9	11.2	10.7	11.0	10.6
NEET: Young people not in employment, education or training (% of females aged 15-24)	11.6	10.4	9.8	9.5	9.4	9.0	8.3

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	17.9	20.9	19.7	20.1	20.4	21.7	19.9
At-risk-of-poverty (% of Children population)	12.2	12.4	14.1	15.2	15.0	17.5	15.6
Severe Material Deprivation (% of Children population)	5.2	5.9	5.4	6.9	7.1	5.2	5.4
Share of children living in low work intensity households (% of Children population)	8.9	10.9	9.1	9.0	9.0	8.9	8.6
Risk of poverty of children in households at work (Working Intensity > 0.2)	7.6	8.2	9.2	9.6	9.7	11.7	10.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	59.2	71.6	53.6	50.3	50.8	46.6	52.7

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	19.6	21.9	21.9	21.5	21.1	20.8	21.3
At-risk-of-poverty (% of Working age population)	11.9	12.6	15.2	15.4	15.8	15.6	16.4
Severe Material Deprivation (% of Working age population)	4.9	5.7	5.5	6.1	5.8	5.2	6.0
Low work intensity (18-59)	12.9	14.4	12.1	12.3	11.3	11.8	11.8
In-work at Risk-of-povery rate (% of Working age population)	4.8	5.5	7.4	7.1	6.8	7.1	7.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	49.4	60.4	40.4	38.2	36.3	37.3	37.2

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	14.5	13.5	16.8	15.5	16.0	14.8	15.3
At-risk-of-poverty (% of Elderly population)	13.4	12.5	16.2	14.9	15.0	14.1	14.2
Severe Material Deprivation (% of Elderly population)	2.6	2.1	2.2	2.1	2.5	2.1	3.2
Relative median income of elderly (ratio with median income of people younger than 65)	0.94	0.93	0.87	0.87	0.88	0.89	0.90
Aggregate replacement ratio (ratio)	0.46	0.46	0.46	0.44	0.47	0.49	0.51

Expenditure in social protection indicators (% of GDP - Germany)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	8.3	8.1	8.0	8.3	9.7	9.5	
Disability	2.4	2.3	2.2	2.3	2.4	2.4	
Old age and survivors	12.3	11.9	11.4	11.4	12.2	11.8	
Family/Children	3.1	2.9	2.8	2.8	3.2	3.2	
Unemployment	2.1	1.8	1.5	1.4	1.9	1.7	
Housing and Social Exclusion	0.8	0.8	0.8	0.7	0.8	0.8	
Total	30.1	29.0	27.9	28.1	31.5	30.7	
of which: Means tested benefits	3.5	3.5	3.3	3.3	3.6	3.5	

Source: Eurostat.

Social inclusion indicators: Denmark

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	17.2	16.7	16.8	16.3	17.6	18.3	18.9
At-risk-of-poverty (% of total population)	11.8	11.7	11.7	11.8	13.1	13.3	13.0
At-risk-of-poverty threshold (PPS single person)	9513	9688	10121	10561	10750	10713	11122
Poverty gap (%)	15.6	16.5	17.0	18.0	18.4	21.6	21.4
Persistent at-risk-of-poverty (% of total population)	:	:	4.7	4.9	2.7	6.3	6.4
At-risk-of-poverty before social transfers excl. pensions (% of total population)	29.9	28.0	27.1	27.8	31.2	29.1	28.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	60.5	54.5	56.8	57.6	58.0	54.3	54.2
Severe Material Deprivation (% of total population)	3.2	3.1	3.3	2.0	2.3	2.7	2.6
Share of people living in low work intensity households (% of people aged 0-59)	9.9	9.3	9.9	8.3	8.5	10.3	11.4
Gross Household Disposable Income adjusted for consumer prices (growth %)	1.9	2.1	0.2	-0.3	0.5	3.4	0.5
Income quintile share ratio S80/S20	3.5	3.4	3.7	3.6	4.6	4.4	4.4
GINI coefficient	23.9	23.7	25.2	25.1	26.9	26.9	27.8
Early leavers from education and training (% of population aged 18-24)	8.7	9.1	12.9	12.5	11.3	11.0	9.6
NEET: Young people not in employment, education or training (% of total population aged 15-24)	4.3	3.6	4.3	4.3	5.4	6.0	6.3

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	16.2	15.5	15.9	15.7	17.0	17.7	18.2
At-risk-of-poverty (% of male population)	11.6	11.4	11.3	11.7	12.8	13.1	13.0
Poverty gap (%)	15.5	18.8	18.8	19.3	21.9	23.3	25.1
Persistent at-risk-of-poverty (% of male population)	:	:	4.5	5.2	4.0	5.5	6.7
Severe Material Deprivation (% of male population)	3.1	2.8	2.9	1.5	2.2	2.8	2.0
Share of people living in low work intensity households (% of males aged 0-59)	9.1	8.1	8.9	8.2	8.0	9.4	10.7
Life expectancy at birth (years)	76.0	76.1	76.2	76.5	76.9	77.2	:
Healthy life years at birth (years)	68.4	67.7	67.4	62.1	61.8	62.3	:
Early leavers from education and training (% of males aged 18-24)	10.5	10.5	16.2	15.0	14.3	14.1	12.1
NEET: Young people not in employment, education or training (% of males aged 15-24)	3.6	3.4	4.7	4.4	5.9	6.7	6.4

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	18.3	17.9	17.7	17.0	18.2	19.0	19.5
At-risk-of-poverty (% of female population)	12.1	12.0	12.0	12.0	13.4	13.4	13.0
Poverty gap (%)	15.9	15.2	16.4	17.2	17.1	20.9	17.1
Persistent at-risk-of-poverty (% of female population)	:	:	4.9	4.6	1.5	7.0	6.1
Severe Material Deprivation (% of female population)	3.3	3.5	3.6	2.4	2.4	2.5	3.3
Share of people living in low work intensity households (% of females aged 0-59)	10.7	10.7	10.9	8.3	9.1	11.1	12.0
Life expectancy at birth (years)	80.5	80.7	80.6	81.0	81.1	81.4	:
Healthy life years at birth (years)	68.4	67.2	67.4	61.0	60.4	61.4	:
Early leavers from education and training (% of females aged 18-24)	6.9	7.7	9.5	10.0	8.1	7.7	7.0
NEET: Young people not in employment, education or training (% of females aged 15-24)	5.1	3.8	3.8	4.2	4.9	5.4	6.1

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	15.6	14.5	14.2	12.7	14.0	15.1	16.0
At-risk-of-poverty (% of Children population)	10.4	9.9	9.6	9.1	10.6	10.9	10.2
Severe Material Deprivation (% of Children population)	3.9	4.3	4.8	2.5	2.1	3.1	3.3
Share of children living in low work intensity households (% of Children population)	7.5	7.1	6.8	4.3	5.4	7.3	8.9
Risk of poverty of children in households at work (Working Intensity > 0.2)	6.8	6.7	6.2	7.6	7.9	6.8	7.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	58.7	57.1	59.8	58.8	56.4	54.6	60.3

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	17.7	17.1	17.4	17.1	18.1	19.5	20.5
At-risk-of-poverty (% of Working age population)	11.0	11.0	10.9	11.3	12.2	12.9	13.1
Severe Material Deprivation (% of Working age population)	3.7	3.2	3.3	2.0	2.7	2.9	2.9
Low work intensity (18-59)	10.8	10.3	11.1	9.8	9.8	11.4	12.3
In-work at Risk-of-povery rate (% of Working age population)	4.8	4.5	4.2	5.0	5.9	6.3	6.3
Impact of social transfers (excl. pensions) in reducing poverty (%)	61.5	58.0	58.9	59.4	58.9	56.1	56.5

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	17.8	18.3	18.3	18.6	20.6	18.4	16.6
At-risk-of-poverty (% of Elderly population)	17.6	17.4	17.7	18.1	20.1	17.7	16.0
Severe Material Deprivation (% of Elderly population)	0.2	1.1	0.8	0.9	0.9	0.9	1.1
Relative median income of elderly (ratio with median income of people younger than 65)	0.70	0.71	0.70	0.70	0.71	0.71	0.72
Aggregate replacement ratio (ratio)	0.35	0.37	0.39	0.41	0.42	0.44	0.42

Expenditure in social protection indicators (% of GDP - Denmark)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.1	6.1	6.4	6.7	7.5	7.3	
Disability	4.2	4.2	4.2	4.4	4.9	4.8	
Old age and survivors	11.0	10.8	10.7	11.0	12.0	12.2	
Family/Children	3.8	3.7	3.7	3.8	4.2	4.0	
Unemployment	2.5	2.1	1.6	1.4	2.1	2.4	
Housing and Social Exclusion	1.7	1.5	1.4	1.5	1.6	1.6	
Total	30.2	29.2	28.8	29.4	33.2	33.3	
of which: Means tested benefits	0.9	0.8	0.9	0.9	1.0	1.0	

Source: Eurostat.

Social inclusion indicators: Estonia

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	25.9	22.0	22.0	21.8	23.4	21.7	23.1
At-risk-of-poverty (% of total population)	18.3	18.3	19.4	19.5	19.7	15.8	17.5
At-risk-of-poverty threshold (PPS single person)	2837	3377	3895	4538	4794	4490	4491
Poverty gap (%)	24.0	22.0	20.2	20.3	17.0	23.2	26.0
Persistent at-risk-of-poverty (% of total population)	:	:	11.1	13.6	12.9	9.9	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	24.2	24.6	25.2	24.7	25.9	24.9	24.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	24.4	26.0	23.0	21.1	23.9	36.5	29.7
Severe Material Deprivation (% of total population)	12.4	7.0	5.6	4.9	6.2	9.0	8.7
Share of people living in low work intensity households (% of people aged 0-59)	9.4	7.0	6.2	5.3	5.6	8.9	9.9
Gross Household Disposable Income adjusted for consumer prices (growth %)	10.5	11.8	13.0	-2.8	-5.6	-6.4	2.0
Income quintile share ratio S80/S20	5.9	5.5	5.5	5.0	5.0	5.0	5.3
GINI coefficient	34.1	33.1	33.4	30.9	31.4	31.3	31.9
Early leavers from education and training (% of population aged 18-24)	13.4	13.5	14.4	14.0	13.9	11.6	10.9
NEET: Young people not in employment, education or training (% of total population aged 15-24)	10.2	8.8	8.9	8.8	14.9	14.5	11.8

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	24.3	20.0	19.4	18.9	21.1	21.5	23.2
At-risk-of-poverty (% of male population)	17.4	16.3	16.7	16.5	17.5	15.4	17.6
Poverty gap (%)	28.6	26.5	24.2	23.8	20.7	25.9	27.9
Persistent at-risk-of-poverty (% of male population)	:	:	9.5	10.1	11.5	7.8	:
Severe Material Deprivation (% of male population)	12.1	6.8	5.4	4.8	6.2	9.3	8.8
Share of people living in low work intensity households (% of males aged 0-59)	9.5	7.7	6.6	5.9	6.4	9.6	10.8
Life expectancy at birth (years)	67.3	67.4	67.2	68.7	69.8	70.6	:
Healthy life years at birth (years)	48.3	49.6	49.7	53.0	55.0	54.1	:
Early leavers from education and training (% of males aged 18-24)	17.1	19.8	21.7	19.8	18.4	15.2	13.1
NEET: Young people not in employment, education or training (% of males aged 15-24)	8.2	6.6	8.6	8.2	14.9	15.0	11.9

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	27.3	23.7	24.2	24.3	25.5	22.0	22.9
At-risk-of-poverty (% of female population)	19.1	19.9	21.7	22.0	21.6	16.2	17.4
Poverty gap (%)	20.7	19.9	18.4	19.3	15.5	20.0	24.0
Persistent at-risk-of-poverty (% of female population)	:	:	12.5	16.5	13.9	11.7	:
Severe Material Deprivation (% of female population)	12.6	7.2	5.8	4.9	6.3	8.7	8.6
Share of people living in low work intensity households (% of females aged 0-59)	9.3	6.4	5.8	4.7	4.7	8.2	9.1
Life expectancy at birth (years)	78.1	78.6	78.8	79.5	80.2	80.8	:
Healthy life years at birth (years)	52.4	53.9	54.9	57.5	59.2	58.2	:
Early leavers from education and training (% of females aged 18-24)	:	:	:	8.2	9.3	:	8.6
NEET: Young people not in employment, education or training (% of females aged 15-24)	12.2	11.1	9.2	9.4	14.8	14.0	11.7

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	28.4	24.1	20.1	19.4	24.5	24.0	24.8
At-risk-of-poverty (% of Children population)	21.3	20.1	18.2	17.1	20.6	17.3	19.5
Severe Material Deprivation (% of Children population)	12.7	7.6	4.1	5.3	7.0	10.7	9.1
Share of children living in low work intensity households (% of Children population)	9.7	6.5	4.5	3.8	4.5	8.4	9.1
Risk of poverty of children in households at work (Working Intensity > 0.2)	14.7	15.3	14.4	14.3	17.8	12.1	13.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	31.5	33.8	35.5	35.0	30.6	44.4	35.9

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	24.2	19.8	19.1	17.5	19.9	21.8	24.2
At-risk-of-poverty (% of Working age population)	16.8	15.9	16.1	15.0	15.8	15.6	18.0
Severe Material Deprivation (% of Working age population)	11.6	6.8	5.5	4.5	6.1	9.1	9.3
Low work intensity (18-59)	9.3	7.2	6.7	5.8	5.9	9.0	10.2
In-work at Risk-of-povery rate (% of Working age population)	7.5	7.8	7.9	7.4	8.3	6.7	8.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	25.0	26.8	25.1	24.6	28.2	37.6	30.2

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	29.2	27.8	35.4	40.9	35.6	19.0	17.0
At-risk-of-poverty (% of Elderly population)	20.3	25.1	33.2	39.0	33.9	15.1	13.1
Severe Material Deprivation (% of Elderly population)	14.9	7.4	7.9	5.8	5.6	6.6	5.8
Relative median income of elderly (ratio with median income of people younger than 65)	0.73	0.69	0.65	0.62	0.66	0.73	0.75
Aggregate replacement ratio (ratio)	0.47	0.49	0.47	0.45	0.52	0.55	0.54

Expenditure in social protection indicators (% of GDP - Estonia)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	4.0	3.7	4.0	4.8	5.4	4.8	
Disability	1.2	1.1	1.1	1.5	1.9	1.9	
Old age and survivors	5.4	5.4	5.2	6.4	8.1	7.9	
Family/Children	1.5	1.5	1.4	1.8	2.3	2.3	
Unemployment	0.2	0.1	0.1	0.3	1.2	0.8	
Housing and Social Exclusion	0.1	0.1	0.1	0.1	0.2	0.2	
Total	12.6	12.1	12.1	14.9	19.3	18.1	
of which: Means tested benefits	0.1	0.1	0.1	0.1	0.1	0.2	

Source: Eurostat.

Social inclusion indicators: Greece

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	29.4	29.3	28.3	28.1	27.6	27.7	31.0
At-risk-of-poverty (% of total population)	19.6	20.5	20.3	20.1	19.7	20.1	21.4
At-risk-of-poverty threshold (PPS single person)	6450	6697	6873	7219	7575	7559	6930
Poverty gap (%)	23.9	25.8	26.0	24.7	24.1	23.4	26.1
Persistent at-risk-of-poverty (% of total population)	:	:	13.1	13.0	16.1	17.6	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	22.6	23.4	23.7	23.3	22.7	23.8	24.8
Impact of social transfers (excl. pensions) in reducing poverty (%)	13.3	12.8	14.3	13.7	13.2	15.5	13.7
Severe Material Deprivation (% of total population)	12.8	11.5	11.5	11.2	11.0	11.6	15.2
Share of people living in low work intensity households (% of people aged 0-59)	7.5	8.0	8.0	7.4	6.5	7.5	11.8
Gross Household Disposable Income adjusted for consumer prices (growth %)	4.0	3.3	9.4	-3.8	0.6	-9.4	-8.3
Income quintile share ratio S80/S20	5.8	6.1	6.0	5.9	5.8	5.6	6.0
GINI coefficient	33.2	34.3	34.3	33.4	33.1	32.9	33.6
Early leavers from education and training (% of population aged 18-24)	13.6	15.5	14.6	14.8	14.5	13.7	13.1
NEET: Young people not in employment, education or training (% of total population aged 15-24)	16.1	12.2	11.5	11.7	12.6	14.9	17.4

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	27.1	27.5	26.8	26.3	26.1	26.0	29.6
At-risk-of-poverty (% of male population)	18.3	19.5	19.6	19.6	19.1	19.3	20.9
Poverty gap (%)	23.7	25.8	25.6	24.4	24.4	23.4	27.2
Persistent at-risk-of-poverty (% of male population)	:	:	12.4	11.3	15.6	16.3	:
Severe Material Deprivation (% of male population)	11.8	11.0	10.6	10.1	10.2	10.9	14.9
Share of people living in low work intensity households (% of males aged 0-59)	6.1	6.5	6.4	6.0	5.2	6.4	10.9
Life expectancy at birth (years)	76.8	77.2	77.1	77.7	77.8	78.4	:
Healthy life years at birth (years)	65.9	66.5	66.1	65.8	66.1	66.3	:
Early leavers from education and training (% of males aged 18-24)	17.6	20.2	18.6	18.5	18.3	16.5	16.1
NEET: Young people not in employment, education or training (% of males aged 15-24)	12.6	8.9	8.3	8.9	9.6	12.7	16.0

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	31.6	31.1	29.9	29.8	29.0	29.3	32.3
At-risk-of-poverty (% of female population)	20.9	21.4	20.9	20.7	20.2	20.9	21.9
Poverty gap (%)	23.9	25.7	26.3	25.0	24.1	23.4	25.6
Persistent at-risk-of-poverty (% of female population)	:	:	13.8	14.7	16.6	18.7	:
Severe Material Deprivation (% of female population)	13.8	11.9	12.3	12.2	11.7	12.2	15.4
Share of people living in low work intensity households (% of females aged 0-59)	8.9	9.6	9.6	8.8	7.8	8.5	12.8
Life expectancy at birth (years)	81.6	81.9	81.8	82.3	82.7	82.8	:
Healthy life years at birth (years)	67.4	68.1	67.4	66.1	66.8	67.7	:
Early leavers from education and training (% of females aged 18-24)	9.7	10.8	10.6	10.9	10.6	10.8	10.1
NEET: Young people not in employment, education or training (% of females aged 15-24)	19.7	15.5	14.8	14.4	15.5	17.2	18.8

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	26.0	27.9	28.2	28.7	30.0	28.7	30.4
At-risk-of-poverty (% of Children population)	20.4	22.6	23.3	23.0	23.7	23.0	23.7
Severe Material Deprivation (% of Children population)	10.1	9.5	9.7	10.4	12.2	12.2	16.4
Share of children living in low work intensity households (% of Children population)	4.2	4.3	4.6	3.9	2.7	3.9	7.2
Risk of poverty of children in households at work (Working Intensity > 0.2)	17.8	20.5	21.3	21.4	22.8	21.6	19.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	9.7	10.2	14.0	10.9	6.0	10.9	10.6

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	27.9	28.4	27.8	27.9	27.1	27.7	31.6
At-risk-of-poverty (% of Working age population)	17.1	18.4	18.7	18.7	18.1	19.0	20.0
Severe Material Deprivation (% of Working age population)	11.7	10.6	10.2	10.4	10.3	11.2	15.4
Low work intensity (18-59)	8.5	9.2	9.1	8.4	7.7	8.5	13.2
In-work at Risk-of-povery rate (% of Working age population)	12.7	13.7	14.1	14.2	13.7	13.9	11.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	13.6	13.6	13.4	13.8	13.0	14.4	13.0

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	37.9	33.8	30.6	28.1	26.8	26.7	29.3
At-risk-of-poverty (% of Elderly population)	27.9	25.6	22.9	22.3	21.4	21.3	23.6
Severe Material Deprivation (% of Elderly population)	19.4	16.4	17.4	14.8	12.1	12.4	13.1
Relative median income of elderly (ratio with median income of people younger than 65)	0.79	0.82	0.83	0.86	0.86	0.84	0.81
Aggregate replacement ratio (ratio)	0.49	0.49	0.40	0.41	0.41	0.42	0.45

Expenditure in social protection indicators (% of GDP - Greece)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.7	6.9	6.8	7.4	8.0	8.2	
Disability	1.2	1.1	1.2	1.2	1.3	1.3	
Old age and survivors	12.4	12.4	12.5	12.9	13.6	14.1	
Family/Children	1.6	1.5	1.5	1.6	1.8	1.8	
Unemployment	1.2	1.1	1.1	1.3	1.6	1.7	
Housing and Social Exclusion	1.1	1.1	1.1	1.1	1.1	1.0	
Total	24.9	24.8	24.8	26.2	28.0	29.1	
of which: Means tested benefits	1.9	1.8	1.8	1.9	2.0	1.9	

Source: Eurostat.

Social inclusion indicators: Spain

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	23.4	23.3	23.1	22.9	23.4	25.5	27.0
At-risk-of-poverty (% of total population)	19.7	19.9	19.7	19.6	19.5	20.7	21.8
At-risk-of-poverty threshold (PPS single person)	6993	7560	7871	8369	8384	7995	7736
Poverty gap (%)	25.5	26.0	24.1	23.6	27.7	30.6	30.8
Persistent at-risk-of-poverty (% of total population)	:	:	10.1	11.7	11.4	11.0	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	24.0	23.9	23.9	24.1	24.4	28.1	29.8
Impact of social transfers (excl. pensions) in reducing poverty (%)	17.9	16.7	17.6	18.7	20.1	26.3	26.8
Severe Material Deprivation (% of total population)	3.4	3.4	3.0	2.5	3.5	4.0	3.9
Share of people living in low work intensity households (% of people aged 0-59)	6.5	6.0	6.3	6.2	7.0	9.8	12.2
Gross Household Disposable Income adjusted for consumer prices (growth %)	4.2	3.3	3.6	2.6	0.8	-4.8	-3.4
Income quintile share ratio S80/S20	5.5	5.3	5.3	5.4	6.0	6.9	6.8
GINI coefficient	31.8	31.2	31.3	31.3	32.3	33.9	34.0
Early leavers from education and training (% of population aged 18-24)	30.8	30.5	31.0	31.9	31.2	28.4	26.5
NEET: Young people not in employment, education or training (% of total population aged 15-24)	13.0	12.0	12.2	14.4	18.3	18.0	18.5

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	22.2	21.9	21.7	21.6	22.3	24.9	26.6
At-risk-of-poverty (% of male population)	18.5	18.5	18.5	18.3	18.3	20.1	21.1
Poverty gap (%)	27.8	26.6	24.4	24.9	29.1	32.4	31.4
Persistent at-risk-of-poverty (% of male population)	:	:	9.4	10.8	10.7	10.6	:
Severe Material Deprivation (% of male population)	3.3	3.4	2.9	2.6	3.5	3.8	3.7
Share of people living in low work intensity households (% of males aged 0-59)	5.9	5.5	5.8	5.7	6.5	9.5	11.8
Life expectancy at birth (years)	77.0	77.7	77.8	78.2	78.7	79.1	:
Healthy life years at birth (years)	63.3	63.9	63.4	64.1	62.9	64.4	:
Early leavers from education and training (% of males aged 18-24)	36.6	36.7	36.6	38.0	37.4	33.5	31.0
NEET: Young people not in employment, education or training (% of males aged 15-24)	11.1	10.3	10.4	13.9	19.5	18.9	19.3

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	24.6	24.7	24.6	24.2	24.4	26.1	27.3
At-risk-of-poverty (% of female population)	20.8	21.3	20.9	21.0	20.6	21.3	22.4
Poverty gap (%)	24.0	25.6	23.9	22.8	26.7	29.0	30.5
Persistent at-risk-of-poverty (% of female population)	:	:	10.8	14.0	13.1	12.2	:
Severe Material Deprivation (% of female population)	3.5	3.4	3.1	2.5	3.4	4.1	4.0
Share of people living in low work intensity households (% of females aged 0-59)	7.2	6.6	6.8	6.7	7.5	10.1	12.6
Life expectancy at birth (years)	83.7	84.4	84.3	84.5	84.9	85.3	:
Healthy life years at birth (years)	63.4	63.5	63.2	63.6	62.2	63.9	:
Early leavers from education and training (% of females aged 18-24)	24.9	24.0	25.2	25.7	24.7	23.1	21.9
NEET: Young people not in employment, education or training (% of females aged 15-24)	15.1	13.8	14.0	15.0	17.1	17.1	17.7

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	26.6	26.5	26.4	26.3	26.2	29.8	30.6
At-risk-of-poverty (% of Children population)	24.2	24.5	24.3	24.4	23.7	26.2	27.2
Severe Material Deprivation (% of Children population)	4.4	4.4	3.1	3.2	4.6	5.6	4.2
Share of children living in low work intensity households (% of Children population)	4.9	4.3	4.3	3.5	5.0	8.3	9.8
Risk of poverty of children in households at work (Working Intensity > 0.2)	21.4	21.9	22.2	22.6	20.7	21.6	21.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	15.1	14.4	15.6	15.3	17.1	22.7	21.8

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	20.8	20.1	20.6	20.7	21.9	25.1	27.2
At-risk-of-poverty (% of Working age population)	16.1	16.0	16.4	16.4	16.9	19.0	20.5
Severe Material Deprivation (% of Working age population)	3.2	3.0	2.9	2.6	3.5	4.0	4.1
Low work intensity (18-59)	7.0	6.6	6.9	6.9	7.6	10.3	12.9
In-work at Risk-of-povery rate (% of Working age population)	10.4	9.9	10.7	10.6	11.4	12.6	12.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	22.2	20.8	21.2	23.0	24.6	29.9	30.3

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	30.4	32.4	29.7	28.2	26.1	22.6	22.3
At-risk-of-poverty (% of Elderly population)	29.3	30.7	28.2	27.4	25.2	21.7	20.8
Severe Material Deprivation (% of Elderly population)	3.2	3.9	3.5	1.7	2.0	2.0	2.6
Relative median income of elderly (ratio with median income of people younger than 65)	0.75	0.74	0.77	0.78	0.80	0.83	0.83
Aggregate replacement ratio (ratio)	0.56	0.49	0.47	0.49	0.49	0.53	0.56

Expenditure in social protection indicators (% of GDP - Spain)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.3	6.3	6.4	6.8	7.3	7.2	
Disability	1.5	1.5	1.5	1.6	1.7	1.8	
Old age and survivors	8.5	8.4	8.5	8.9	10.0	10.7	
Family/Children	1.2	1.2	1.3	1.4	1.5	1.5	
Unemployment	2.2	2.1	2.1	2.5	3.7	3.5	
Housing and Social Exclusion	0.4	0.4	0.4	0.4	0.4	0.5	
Total	20.6	20.5	20.7	22.1	25.3	25.7	
of which: Means tested benefits	2.7	2.7	2.7	2.9	3.6	4.0	

Source: Eurostat.

Social inclusion indicators: Finland

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	17.2	17.1	17.4	17.4	16.9	16.9	17.9
At-risk-of-poverty (% of total population)	11.7	12.6	13.0	13.6	13.8	13.1	13.7
At-risk-of-poverty threshold (PPS single person)	8474	8886	9145	9933	10366	10276	10600
Poverty gap (%)	13.8	14.5	14.1	15.7	15.1	13.8	13.5
Persistent at-risk-of-poverty (% of total population)	:	:	7.6	6.8	6.5	7.7	7.5
At-risk-of-poverty before social transfers excl. pensions (% of total population)	28.0	28.6	28.9	27.3	26.2	27.0	27.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	58.2	57.1	55.0	50.2	47.3	51.5	50.0
Severe Material Deprivation (% of total population)	3.8	3.3	3.6	3.5	2.8	2.8	3.2
Share of people living in low work intensity households (% of people aged 0-59)	9.8	8.9	8.7	7.3	8.2	9.1	9.8
Gross Household Disposable Income adjusted for consumer prices (growth %)	1.5	3.0	4.6	2.0	1.3	2.5	0.3
Income quintile share ratio S80/S20	3.6	3.6	3.7	3.8	3.7	3.6	3.7
GINI coefficient	26.0	25.9	26.2	26.3	25.9	25.4	25.8
Early leavers from education and training (% of population aged 18-24)	10.3	9.7	9.1	9.8	9.9	10.3	9.8
NEET: Young people not in employment, education or training (% of total population aged 15-24)	7.8	7.7	7.0	7.8	9.9	9.0	8.4

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	16.2	16.3	15.8	15.9	15.8	16.0	17.3
At-risk-of-poverty (% of male population)	10.6	12.0	12.1	12.7	12.9	12.4	13.2
Poverty gap (%)	15.1	14.6	14.7	17.1	16.6	14.7	15.2
Persistent at-risk-of-poverty (% of male population)	:	:	6.5	6.2	5.1	7.4	6.8
Severe Material Deprivation (% of male population)	3.8	3.0	3.0	3.2	2.9	2.6	3.2
Share of people living in low work intensity households (% of males aged 0-59)	10.1	9.2	8.5	7.2	8.5	9.4	10.2
Life expectancy at birth (years)	75.6	75.9	76.0	76.5	76.6	76.9	:
Healthy life years at birth (years)	51.7	53.2	56.8	58.6	58.2	58.5	:
Early leavers from education and training (% of males aged 18-24)	12.4	11.8	11.2	12.1	10.7	11.6	11.2
NEET: Young people not in employment, education or training (% of males aged 15-24)	7.9	7.2	6.4	7.7	10.5	9.4	8.7

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	18.1	17.9	19.0	18.9	17.9	17.7	18.5
At-risk-of-poverty (% of female population)	12.8	13.1	13.8	14.5	14.7	13.8	14.2
Poverty gap (%)	13.2	14.1	13.5	14.1	14.6	12.9	12.4
Persistent at-risk-of-poverty (% of female population)	:	:	8.5	7.4	7.7	8.1	8.1
Severe Material Deprivation (% of female population)	3.8	3.6	4.1	3.8	2.7	3.1	3.2
Share of people living in low work intensity households (% of females aged 0-59)	9.5	8.7	8.8	7.5	7.9	8.8	9.3
Life expectancy at birth (years)	82.5	83.1	83.1	83.3	83.5	83.5	:
Healthy life years at birth (years)	52.5	52.8	58.0	59.5	58.6	58.2	:
Early leavers from education and training (% of females aged 18-24)	8.2	7.8	7.2	7.7	9.0	9.0	8.4
NEET: Young people not in employment, education or training (% of females aged 15-24)	7.8	8.1	7.7	7.9	9.2	8.6	8.2

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	15.0	13.8	15.1	15.1	14.0	14.2	16.1
At-risk-of-poverty (% of Children population)	10.0	9.8	10.9	12.0	12.1	11.4	11.8
Severe Material Deprivation (% of Children population)	3.8	2.6	3.4	3.1	2.5	2.3	3.2
Share of children living in low work intensity households (% of Children population)	7.4	6.4	6.0	4.9	5.8	5.9	7.6
Risk of poverty of children in households at work (Working Intensity > 0.2)	6.1	6.5	8.2	9.1	7.9	7.6	7.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	67.6	65.4	65.3	59.6	56.5	61.6	60.9

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	17.2	16.8	16.8	16.5	16.2	17.1	18.0
At-risk-of-poverty (% of Working age population)	10.5	11.2	11.5	11.8	12.2	12.3	12.8
Severe Material Deprivation (% of Working age population)	4.1	3.8	3.9	3.7	3.1	3.3	3.5
Low work intensity (18-59)	10.7	9.9	9.7	8.3	9.1	10.3	10.6
In-work at Risk-of-povery rate (% of Working age population)	3.7	4.4	5.0	5.1	3.7	3.7	3.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	61.4	59.9	58.2	54.1	50.8	53.8	52.9

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	20.1	23.0	23.1	23.9	23.1	19.5	19.8
At-risk-of-poverty (% of Elderly population)	18.7	21.8	21.6	22.5	22.1	18.3	18.9
Severe Material Deprivation (% of Elderly population)	2.5	2.2	2.6	3.2	2.2	1.7	2.1
Relative median income of elderly (ratio with median income of people younger than 65)	0.74	0.73	0.74	0.72	0.73	0.78	0.78
Aggregate replacement ratio (ratio)	0.46	0.47	0.47	0.49	0.48	0.50	0.50

Expenditure in social protection indicators (% of GDP - Finland)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.7	6.7	6.5	6.8	7.6	7.5	
Disability	3.3	3.2	3.1	3.2	3.6	3.6	
Old age and survivors	9.6	9.7	9.5	9.6	11.4	11.7	
Family/Children	3.0	3.0	2.9	2.9	3.3	3.3	
Unemployment	2.4	2.2	1.9	1.8	2.4	2.4	
Housing and Social Exclusion	0.8	0.8	0.8	1.0	1.2	1.2	
Total	26.7	26.4	25.4	26.2	30.4	30.6	
of which: Means tested benefits	1.3	1.2	1.1	1.1	1.3	1.3	

Source: Eurostat.

Social inclusion indicators: France

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	18.9	18.8	19.0	18.6	18.5	19.2	19.3
At-risk-of-poverty (% of total population)	13.0	13.2	13.1	12.7	12.9	13.3	14.0
At-risk-of-poverty threshold (PPS single person)	8702	8989	9089	10547	10529	10711	10826
Poverty gap (%)	16.5	18.5	17.9	14.8	18.2	20.2	17.1
Persistent at-risk-of-poverty (% of total population)	:	:	6.4	:	:	:	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	26.0	24.9	26.4	23.5	24.0	25.2	24.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	50.0	45.0	50.4	46.0	46.2	47.2	43.3
Severe Material Deprivation (% of total population)	5.3	5.0	4.7	5.4	5.6	5.8	5.2
Share of people living in low work intensity households (% of people aged 0-59)	8.6	9.1	9.5	8.8	8.3	9.8	9.3
Gross Household Disposable Income adjusted for consumer prices (growth %)	1.1	2.6	3.5	0.2	0.5	0.3	0.3
Income quintile share ratio S80/S20	4.0	4.0	3.9	4.4	4.4	4.5	4.6
GINI coefficient	27.7	27.3	26.6	29.8	29.9	29.8	30.8
Early leavers from education and training (% of population aged 18-24)	12.2	12.4	12.6	11.5	12.2	12.6	12.0
NEET: Young people not in employment, education or training (% of total population aged 15-24)	10.9	11.0	10.3	10.2	12.5	12.5	12.0

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	17.6	17.3	18.0	17.3	17.1	18.3	18.6
At-risk-of-poverty (% of male population)	12.3	12.3	12.8	11.8	11.9	12.6	13.5
Poverty gap (%)	16.6	19.1	18.0	15.0	18.8	20.3	17.8
Persistent at-risk-of-poverty (% of male population)	:	:	5.9	:	:	:	:
Severe Material Deprivation (% of male population)	5.0	4.6	4.4	5.1	5.2	5.7	5.1
Share of people living in low work intensity households (% of males aged 0-59)	7.8	8.2	8.5	8.0	7.6	9.2	9.0
Life expectancy at birth (years)	76.7	77.3	77.6	77.8	78.0	78.3	:
Healthy life years at birth (years)	62.3	62.8	62.8	62.7	62.8	61.8	:
Early leavers from education and training (% of males aged 18-24)	14.1	14.3	14.9	13.5	14.3	15.2	13.9
NEET: Young people not in employment, education or training (% of males aged 15-24)	10.1	10.0	9.6	10.0	12.9	12.4	11.7

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	20.0	20.3	20.0	19.8	19.7	20.0	19.9
At-risk-of-poverty (% of female population)	13.7	14.0	13.4	13.4	13.8	13.9	14.5
Poverty gap (%)	16.3	18.4	17.7	14.7	18.0	19.7	16.4
Persistent at-risk-of-poverty (% of female population)	:	:	6.9	:	:	:	:
Severe Material Deprivation (% of female population)	5.5	5.3	5.0	5.7	5.9	5.8	5.4
Share of people living in low work intensity households (% of females aged 0-59)	9.4	9.9	10.5	9.5	9.1	10.5	9.7
Life expectancy at birth (years)	83.8	84.5	84.8	84.8	85.0	85.3	:
Healthy life years at birth (years)	64.6	64.4	64.4	64.6	63.5	63.5	:
Early leavers from education and training (% of females aged 18-24)	10.4	10.6	10.3	9.5	10.1	10.0	10.2
NEET: Young people not in employment, education or training (% of females aged 15-24)	11.7	12.0	11.0	10.4	12.0	12.5	12.4

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	19.4	18.1	19.6	21.4	21.2	22.6	23.0
At-risk-of-poverty (% of Children population)	14.4	13.9	15.3	15.9	16.8	17.9	18.8
Severe Material Deprivation (% of Children population)	6.2	5.6	5.4	6.6	6.5	7.0	7.0
Share of children living in low work intensity households (% of Children population)	6.9	6.9	7.7	7.4	6.5	8.8	8.2
Risk of poverty of children in households at work (Working Intensity > 0.2)	10.5	9.2	10.6	11.8	12.8	12.3	13.6
Impact of social transfers (excl. pensions) in reducing poverty (%)	57.6	49.7	58.5	54.6	51.4	50.8	47.5

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	18.8	19.4	19.7	18.9	18.9	19.7	20.1
At-risk-of-poverty (% of Working age population)	11.6	12.1	12.3	11.8	11.8	12.4	13.5
Severe Material Deprivation (% of Working age population)	5.4	5.3	4.8	5.5	5.9	6.0	5.2
Low work intensity (18-59)	9.2	9.9	10.3	9.3	9.0	10.2	9.7
In-work at Risk-of-povery rate (% of Working age population)	6.1	6.0	6.4	6.6	6.6	6.2	7.6
Impact of social transfers (excl. pensions) in reducing poverty (%)	52.7	48.6	50.4	46.6	47.8	49.4	43.7

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	18.5	17.5	15.2	13.9	13.4	12.8	11.5
At-risk-of-poverty (% of Elderly population)	16.4	16.1	13.1	11.7	11.9	10.6	9.7
Severe Material Deprivation (% of Elderly population)	3.5	2.9	3.4	3.3	3.2	3.4	2.9
Relative median income of elderly (ratio with median income of people younger than 65)	0.90	0.88	0.91	0.97	0.96	0.99	1.01
Aggregate replacement ratio (ratio)	0.57	0.58	0.60	0.66	0.66	0.67	0.64

Expenditure in social protection indicators (% of GDP - France)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	8.8	8.7	8.6	8.7	9.2	9.2	
Disability	1.8	1.9	1.8	1.8	1.9	2.0	
Old age and survivors	13.0	13.0	13.0	13.4	14.3	14.4	
Family/Children	2.5	2.6	2.6	2.6	2.7	2.7	
Unemployment	2.2	2.1	1.9	1.9	2.1	2.2	
Housing and Social Exclusion	1.3	1.4	1.3	1.4	1.6	1.6	
Total	31.5	31.3	30.9	31.3	33.6	33.8	
of which: Means tested benefits	3.5	3.4	3.3	3.3	3.6	3.6	

Source: Eurostat.

Social inclusion indicators: Hungary

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	32.1	31.4	29.4	28.2	29.6	29.9	31.0
At-risk-of-poverty (% of total population)	13.5	15.9	12.3	12.4	12.4	12.3	13.8
At-risk-of-poverty threshold (PPS single person)	3337	3646	3894	3958	4102	4012	4190
Poverty gap (%)	18.4	24.1	19.8	17.3	16.3	16.5	18.3
Persistent at-risk-of-poverty (% of total population)	:	:	:	7.7	8.6	5.7	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	29.4	29.6	29.3	30.4	28.9	28.4	28.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	54.1	46.6	58.0	59.2	57.1	56.7	52.2
Severe Material Deprivation (% of total population)	22.9	20.9	19.9	17.9	20.3	21.6	23.1
Share of people living in low work intensity households (% of people aged 0-59)	9.5	13.0	11.3	12.0	11.3	11.8	12.1
Gross Household Disposable Income adjusted for consumer prices (growth %)	3.6	1.4	-3.7	-2.4	-4.2	-2.8	2.9
Income quintile share ratio S80/S20	4.0	5.5	3.7	3.6	3.5	3.4	3.9
GINI coefficient	27.6	33.3	25.6	25.2	24.7	24.1	26.9
Early leavers from education and training (% of population aged 18-24)	12.5	12.6	11.4	11.7	11.2	10.5	11.2
NEET: Young people not in employment, education or training (% of total population aged 15-24)	12.9	12.4	11.3	11.5	13.4	12.4	13.3

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	31.3	31.1	28.6	27.3	29.1	29.4	30.5
At-risk-of-poverty (% of male population)	13.9	16.3	12.3	12.4	12.8	12.6	14.1
Poverty gap (%)	19.3	25.3	20.5	17.9	16.3	16.9	18.5
Persistent at-risk-of-poverty (% of male population)	:	:	:	7.8	9.2	6.2	:
Severe Material Deprivation (% of male population)	22.6	20.8	19.6	17.3	20.2	21.5	22.7
Share of people living in low work intensity households (% of males aged 0-59)	8.3	12.4	10.8	11.1	10.6	11.2	11.8
Life expectancy at birth (years)	68.7	69.2	69.4	70.0	70.3	70.7	:
Healthy life years at birth (years)	52.2	54.4	55.1	54.8	55.9	56.3	:
Early leavers from education and training (% of males aged 18-24)	13.7	13.8	12.6	12.5	12.0	11.5	12.1
NEET: Young people not in employment, education or training (% of males aged 15-24)	11.2	11.0	9.9	10.1	12.7	11.8	12.4

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	32.8	31.8	30.1	29.0	30.0	30.3	31.4
At-risk-of-poverty (% of female population)	13.2	15.5	12.3	12.4	12.1	12.0	13.6
Poverty gap (%)	18.0	23.3	18.9	17.0	16.3	15.6	18.0
Persistent at-risk-of-poverty (% of female population)	:	:	:	7.5	8.1	5.4	:
Severe Material Deprivation (% of female population)	23.1	21.0	20.1	18.4	20.4	21.6	23.5
Share of people living in low work intensity households (% of females aged 0-59)	10.6	13.6	11.8	12.8	11.9	12.5	12.4
Life expectancy at birth (years)	77.2	77.8	77.8	78.3	78.4	78.6	:
Healthy life years at birth (years)	54.3	57.2	57.8	58.3	58.2	58.6	:
Early leavers from education and training (% of females aged 18-24)	11.3	11.4	10.1	10.9	10.4	9.5	10.3
NEET: Young people not in employment, education or training (% of females aged 15-24)	14.7	13.9	12.6	13.0	14.2	13.0	14.1

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	38.4	37.7	34.1	33.4	37.2	38.7	39.6
At-risk-of-poverty (% of Children population)	19.9	24.8	18.8	19.7	20.6	20.3	23.0
Severe Material Deprivation (% of Children population)	27.5	24.8	24.4	21.5	25.5	28.8	29.8
Share of children living in low work intensity households (% of Children population)	9.6	14.0	10.0	11.1	11.9	13.8	14.1
Risk of poverty of children in households at work (Working Intensity > 0.2)	14.7	15.7	12.6	13.3	14.1	12.4	14.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	55.0	43.4	57.8	57.7	55.5	57.2	51.6

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	32.1	31.1	29.8	29.1	30.2	30.5	31.7
At-risk-of-poverty (% of Working age population)	13.2	14.5	11.6	12.0	11.9	11.9	13.6
Severe Material Deprivation (% of Working age population)	22.2	20.2	19.0	17.6	20.1	21.3	23.1
Low work intensity (18-59)	9.4	12.7	11.7	12.3	11.1	11.2	11.5
In-work at Risk-of-povery rate (% of Working age population)	8.8	6.9	5.8	5.8	6.2	5.4	6.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	54.6	48.1	59.3	60.3	58.0	57.0	52.3

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	23.9	23.9	21.1	17.5	17.5	16.8	18.0
At-risk-of-poverty (% of Elderly population)	6.5	9.4	6.1	4.3	4.6	4.1	4.5
Severe Material Deprivation (% of Elderly population)	19.9	18.6	17.2	14.4	14.6	14.1	15.5
Relative median income of elderly (ratio with median income of people younger than 65)	1.01	0.94	0.97	1.00	1.02	1.01	1.00
Aggregate replacement ratio (ratio)	0.61	0.54	0.58	0.61	0.62	0.60	0.59

Expenditure in social protection indicators (% of GDP - Hungary)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.4	6.4	5.7	5.6	5.7	5.7	
Disability	2.1	2.2	2.1	2.1	2.1	1.9	
Old age and survivors	9.1	9.3	9.8	10.2	10.5	10.5	
Family/Children	2.5	2.8	2.8	2.9	3.0	2.9	
Unemployment	0.6	0.7	0.8	0.8	1.0	0.9	
Housing and Social Exclusion	0.7	0.7	1.1	0.9	0.8	0.6	
Total	21.9	22.5	22.7	22.9	23.5	23.1	
of which: Means tested benefits	1.1	1.0	1.4	1.2	1.2	1.1	

Source: Eurostat.

Social inclusion indicators: Ireland

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	25.0	23.3	23.1	23.7	25.7	29.9	:
At-risk-of-poverty (% of total population)	19.7	18.5	17.2	15.5	15.0	16.1	:
At-risk-of-poverty threshold (PPS single person)	9048	9563	10633	10901	10556	9705	:
Poverty gap (%)	20.2	16.6	17.6	17.7	16.2	15.2	:
Persistent at-risk-of-poverty (% of total population)	:	:	11.6	:	:	:	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	32.3	32.8	33.1	34.0	37.5	40.4	:
Impact of social transfers (excl. pensions) in reducing poverty (%)	39.0	44.3	48.0	54.4	60.0	60.1	:
Severe Material Deprivation (% of total population)	5.1	4.8	4.5	5.5	6.1	7.5	:
Share of people living in low work intensity households (% of people aged 0-59)	14.6	12.8	14.2	13.6	19.8	22.9	:
Gross Household Disposable Income adjusted for consumer prices (growth %)	7.8	5.1	5.8	2.8	-5.3	-3.1	-1.6
Income quintile share ratio S80/S20	5.0	4.9	4.8	4.4	4.2	5.3	:
GINI coefficient	31.9	31.9	31.3	29.9	28.8	33.2	:
Early leavers from education and training (% of population aged 18-24)	12.5	12.1	11.6	11.3	11.6	11.4	10.6
NEET: Young people not in employment, education or training (% of total population aged 15-24)	10.9	10.1	10.7	14.8	18.4	18.9	18.4

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	24.1	22.0	21.6	22.7	25.0	29.3	:
At-risk-of-poverty (% of male population)	18.9	17.5	16.0	14.5	14.9	15.9	:
Poverty gap (%)	21.1	17.6	17.7	18.9	17.1	15.8	:
Persistent at-risk-of-poverty (% of male population)	:	:	11.6	:	:	:	:
Severe Material Deprivation (% of male population)	4.7	4.6	4.0	5.3	5.5	7.1	:
Share of people living in low work intensity households (% of males aged 0-59)	13.8	12.0	13.6	13.0	18.6	21.5	:
Life expectancy at birth (years)	77.2	77.3	77.4	77.8	77.4	78.7	:
Healthy life years at birth (years)	62.9	63.2	62.9	63.5	63.7	65.9	:
Early leavers from education and training (% of males aged 18-24)	15.4	15.2	14.6	14.6	14.7	13.5	12.5
NEET: Young people not in employment, education or training (% of males aged 15-24)	10.1	9.0	10.0	15.3	20.3	20.1	19.5

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	25.9	24.6	24.6	24.7	26.4	30.5	:
At-risk-of-poverty (% of female population)	20.6	19.5	18.5	16.4	15.1	16.2	:
Poverty gap (%)	19.5	15.0	17.1	17.4	14.9	15.0	:
Persistent at-risk-of-poverty (% of female population)	:	:	11.7	:	:	:	:
Severe Material Deprivation (% of female population)	5.5	5.0	4.9	5.8	6.8	8.0	:
Share of people living in low work intensity households (% of females aged 0-59)	15.3	13.6	14.9	14.3	21.0	24.4	:
Life expectancy at birth (years)	81.6	82.1	82.1	82.4	82.5	83.2	:
Healthy life years at birth (years)	64.0	64.9	65.6	65.0	65.2	67.0	:
Early leavers from education and training (% of females aged 18-24)	9.5	9.0	8.4	8.0	8.5	9.4	8.7
NEET: Young people not in employment, education or training (% of females aged 15-24)	11.8	11.2	11.4	14.3	16.6	17.6	17.3

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	29.9	28.0	26.2	26.6	31.4	37.6	:
At-risk-of-poverty (% of Children population)	23.0	22.5	19.2	18.0	18.8	19.7	:
Severe Material Deprivation (% of Children population)	8.6	7.4	7.6	6.8	8.4	10.6	:
Share of children living in low work intensity households (% of Children population)	18.7	15.4	15.7	15.0	23.4	25.5	:
Risk of poverty of children in households at work (Working Intensity > 0.2)	11.3	13.4	10.1	11.0	7.5	12.3	:
Impact of social transfers (excl. pensions) in reducing poverty (%)	42.5	45.7	50.6	55.2	59.7	61.8	:

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	21.4	20.5	20.7	22.6	24.8	29.7	:
At-risk-of-poverty (% of Working age population)	16.0	15.3	14.4	13.4	13.2	15.5	:
Severe Material Deprivation (% of Working age population)	4.2	4.3	3.7	5.6	5.8	7.1	:
Low work intensity (18-59)	12.7	11.6	13.6	13.0	18.2	21.7	:
In-work at Risk-of-povery rate (% of Working age population)	5.9	6.2	5.5	6.3	4.9	7.5	:
Impact of social transfers (excl. pensions) in reducing poverty (%)	41.2	47.8	50.3	56.6	61.4	60.1	:

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	33.4	27.7	28.7	22.5	17.9	12.9	:
At-risk-of-poverty (% of Elderly population)	32.8	26.9	28.3	21.1	16.2	10.6	:
Severe Material Deprivation (% of Elderly population)	1.8	1.7	1.2	2.2	2.6	2.7	:
Relative median income of elderly (ratio with median income of people younger than 65)	0.66	0.70	0.69	0.74	0.78	0.86	:
Aggregate replacement ratio (ratio)	0.46	0.38	0.49	0.49	0.48	0.47	:

Expenditure in social protection indicators (% of GDP - Ireland)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.9	7.0	7.2	8.5	10.7	12.3	
Disability	0.9	0.9	1.0	1.1	1.3	1.3	
Old age and survivors	4.6	4.7	4.8	5.6	6.4	6.6	
Family/Children	2.5	2.5	2.6	3.1	3.6	3.7	
Unemployment	1.3	1.3	1.4	1.8	3.1	3.5	
Housing and Social Exclusion	0.7	0.7	0.7	0.9	0.9	0.9	
Total	18.0	18.3	18.9	22.3	27.4	29.6	
of which: Means tested benefits	4.0	4.1	4.4	5.3	6.7	7.6	

Source: Eurostat.

Social inclusion indicators: Italy

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	25.0	25.9	26.0	25.3	24.7	24.5	:
At-risk-of-poverty (% of total population)	18.9	19.6	19.8	18.7	18.4	18.2	:
At-risk-of-poverty threshold (PPS single person)	8208	8323	8640	9157	9119	9119	:
Poverty gap (%)	24.2	24.2	22.4	23.0	22.6	24.5	:
Persistent at-risk-of-poverty (% of total population)	:	:	14.6	12.7	13.0	11.6	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	23.4	23.9	24.1	23.4	23.2	23.3	:
Impact of social transfers (excl. pensions) in reducing poverty (%)	19.2	18.4	17.8	20.1	20.7	21.9	:
Severe Material Deprivation (% of total population)	6.4	6.3	6.8	7.5	7.0	6.9	:
Share of people living in low work intensity households (% of people aged 0-59)	10.3	10.8	10.0	9.8	8.8	10.2	:
Gross Household Disposable Income adjusted for consumer prices (growth %)	0.9	1.3	1.3	-1.5	-3.4	-0.6	-0.7
Income quintile share ratio S80/S20	5.6	5.5	5.5	5.1	5.2	5.2	:
GINI coefficient	32.8	32.1	32.2	31.0	31.5	31.2	:
Early leavers from education and training (% of population aged 18-24)	22.0	20.6	19.7	19.7	19.2	18.8	18.2
NEET: Young people not in employment, education or training (% of total population aged 15-24)	17.0	16.8	16.2	16.6	17.7	19.1	19.8

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	22.8	23.9	23.8	23.2	22.8	22.6	:
At-risk-of-poverty (% of male population)	17.0	18.0	18.4	17.1	17.0	16.8	:
Poverty gap (%)	24.5	24.5	23.6	23.1	22.4	24.6	:
Persistent at-risk-of-poverty (% of male population)	:	:	13.4	11.5	11.8	9.9	:
Severe Material Deprivation (% of male population)	6.3	5.9	6.4	7.2	6.7	6.7	:
Share of people living in low work intensity households (% of males aged 0-59)	8.8	9.3	8.5	8.3	7.4	8.8	:
Life expectancy at birth (years)	78.0	78.5	78.7	79.1	79.4	:	:
Healthy life years at birth (years)	66.6	65.2	63.3	63.0	63.4	67.3	:
Early leavers from education and training (% of males aged 18-24)	25.8	23.9	22.9	22.6	22.0	22.0	21.0
NEET: Young people not in employment, education or training (% of males aged 15-24)	15.2	15.4	15.1	15.2	17.1	19.0	19.5

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	27.2	27.9	28.1	27.2	26.4	26.3	:
At-risk-of-poverty (% of female population)	20.6	21.1	21.2	20.1	19.8	19.5	:
Poverty gap (%)	23.7	23.9	21.9	23.0	22.9	24.2	:
Persistent at-risk-of-poverty (% of female population)	:	:	15.6	13.7	14.1	13.3	:
Severe Material Deprivation (% of female population)	6.6	6.6	7.2	7.8	7.3	7.1	:
Share of people living in low work intensity households (% of females aged 0-59)	11.9	12.4	11.6	11.3	10.3	11.6	:
Life expectancy at birth (years)	83.6	84.2	84.2	84.5	84.6	:	:
Healthy life years at birth (years)	67.8	64.7	62.5	61.9	62.6	67.3	:
Early leavers from education and training (% of females aged 18-24)	18.2	17.1	16.4	16.7	16.3	15.4	15.2
NEET: Young people not in employment, education or training (% of females aged 15-24)	18.9	18.3	17.3	18.0	18.3	19.2	20.1

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	27.6	28.4	29.3	29.1	28.8	28.9	:
At-risk-of-poverty (% of Children population)	23.6	24.5	25.4	24.7	24.4	24.7	:
Severe Material Deprivation (% of Children population)	7.6	6.7	7.9	9.3	8.3	8.0	:
Share of children living in low work intensity households (% of Children population)	7.2	6.9	6.6	6.5	5.8	7.3	:
Risk of poverty of children in households at work (Working Intensity > 0.2)	19.6	21.0	21.5	20.9	21.3	20.3	:
Impact of social transfers (excl. pensions) in reducing poverty (%)	23.1	24.1	21.6	22.6	23.3	24.5	:

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	24.3	25.7	25.3	24.5	24.1	24.7	:
At-risk-of-poverty (% of Working age population)	16.4	17.6	17.6	16.3	16.4	16.9	:
Severe Material Deprivation (% of Working age population)	6.4	6.3	6.7	7.3	7.1	6.8	:
Low work intensity (18-59)	11.3	12.1	11.1	10.8	9.7	11.1	:
In-work at Risk-of-povery rate (% of Working age population)	8.9	9.7	9.9	9.0	10.2	9.5	:
Impact of social transfers (excl. pensions) in reducing poverty (%)	21.5	20.6	19.3	22.4	23.0	23.9	:

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	25.2	24.6	25.3	24.4	22.8	20.3	:
At-risk-of-poverty (% of Elderly population)	22.6	21.7	21.9	20.9	19.6	16.6	:
Severe Material Deprivation (% of Elderly population)	5.5	5.8	6.3	6.7	5.7	6.3	:
Relative median income of elderly (ratio with median income of people younger than 65)	0.85	0.87	0.86	0.88	0.89	0.92	:
Aggregate replacement ratio (ratio)	0.58	0.58	0.49	0.51	0.51	0.53	:

Expenditure in social protection indicators (% of GDP - Italy)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.8	6.8	6.6	6.9	7.3	7.3	
Disability	1.5	1.5	1.5	1.6	1.7	1.7	
Old age and survivors	15.3	15.4	15.5	16.1	17.1	17.3	
Family/Children	1.1	1.1	1.2	1.3	1.4	1.3	
Unemployment	0.5	0.5	0.4	0.5	0.8	0.8	
Housing and Social Exclusion	0.1	0.1	0.1	0.1	0.1	0.1	
Total	26.3	26.5	26.6	27.7	29.9	29.9	
of which: Means tested benefits	1.2	1.6	1.7	1.8	2.0	1.8	

Source: Eurostat.

Social inclusion indicators: Lithuania

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	41.0	35.9	28.7	27.6	29.5	33.4	33.4
At-risk-of-poverty (% of total population)	20.5	20.0	19.1	20.0	20.6	20.2	20.0
At-risk-of-poverty threshold (PPS single person)	2308	2772	3428	4170	4382	3615	3690
Poverty gap (%)	28.4	29.1	25.7	25.7	23.1	32.6	28.7
Persistent at-risk-of-poverty (% of total population)	:	:	:	10.9	11.7	7.6	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	26.1	26.6	25.5	27.2	29.4	31.8	31.8
Impact of social transfers (excl. pensions) in reducing poverty (%)	21.5	25.3	25.1	26.5	29.9	36.5	37.1
Severe Material Deprivation (% of total population)	32.6	25.3	16.6	12.3	15.1	19.5	18.5
Share of people living in low work intensity households (% of people aged 0-59)	9.5	8.3	6.4	5.1	6.9	9.2	12.3
Gross Household Disposable Income adjusted for consumer prices (growth %)	10.7	10.5	5.6	5.1	-10.2	-7.6	:
Income quintile share ratio S80/S20	6.9	6.3	5.9	5.9	6.3	7.3	5.8
GINI coefficient	36.3	35.0	33.8	34.0	35.5	36.9	32.9
Early leavers from education and training (% of population aged 18-24)	8.1	8.2	7.4	7.4	8.7	8.1	7.9
NEET: Young people not in employment, education or training (% of total population aged 15-24)	8.6	8.2	7.0	8.9	12.4	13.5	12.5

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	38.9	33.9	26.3	25.3	27.3	32.9	33.2
At-risk-of-poverty (% of male population)	19.7	19.1	16.7	17.6	19.1	20.7	19.8
Poverty gap (%)	31.1	30.6	28.2	28.9	27.8	37.0	28.7
Persistent at-risk-of-poverty (% of male population)	:	:	:	10.2	9.2	6.8	:
Severe Material Deprivation (% of male population)	31.1	23.6	15.8	11.7	14.3	19.5	18.1
Share of people living in low work intensity households (% of males aged 0-59)	9.3	8.3	6.5	5.1	7.3	9.6	12.5
Life expectancy at birth (years)	65.3	65.3	64.8	66.3	67.5	68.0	:
Healthy life years at birth (years)	51.4	52.6	53.6	54.8	57.2	57.8	:
Early leavers from education and training (% of males aged 18-24)	10.7	10.5	9.6	10.0	11.5	9.9	10.6
NEET: Young people not in employment, education or training (% of males aged 15-24)	8.1	8.0	6.2	8.6	14.1	15.0	13.6

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	42.9	37.7	30.9	29.7	31.4	33.8	33.6
At-risk-of-poverty (% of female population)	21.3	20.8	21.2	22.0	21.9	19.8	20.1
Poverty gap (%)	26.3	24.7	23.5	25.0	20.7	28.9	28.7
Persistent at-risk-of-poverty (% of female population)	:	:	:	11.5	13.8	8.4	:
Severe Material Deprivation (% of female population)	33.8	26.7	17.3	12.9	15.7	19.5	18.8
Share of people living in low work intensity households (% of females aged 0-59)	9.7	8.2	6.3	5.0	6.6	8.7	12.2
Life expectancy at birth (years)	77.3	77.0	77.2	77.6	78.7	78.9	:
Healthy life years at birth (years)	54.6	56.5	58.2	59.9	61.2	62.4	:
Early leavers from education and training (% of females aged 18-24)	5.6	5.8	5.1	4.7	5.7	6.2	5.0
NEET: Young people not in employment, education or training (% of females aged 15-24)	9.2	8.4	7.8	9.3	10.7	11.9	11.3

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	42.5	37.2	29.9	29.4	31.0	34.3	33.4
At-risk-of-poverty (% of Children population)	27.2	25.1	22.1	22.8	23.7	23.3	24.3
Severe Material Deprivation (% of Children population)	32.2	24.0	15.9	12.3	14.8	19.7	15.9
Share of children living in low work intensity households (% of Children population)	8.4	7.5	6.4	3.6	5.2	5.5	11.3
Risk of poverty of children in households at work (Working Intensity > 0.2)	21.4	19.9	17.3	20.9	20.5	20.3	17.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	19.8	21.5	24.3	29.8	36.5	46.6	40.0

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	39.3	34.2	25.8	24.5	27.5	34.0	33.6
At-risk-of-poverty (% of Working age population)	19.0	17.8	15.6	16.8	18.5	21.8	20.7
Severe Material Deprivation (% of Working age population)	30.8	24.2	15.8	11.3	14.3	18.5	17.6
Low work intensity (18-59)	10.0	8.5	6.4	5.5	7.5	10.3	12.7
In-work at Risk-of-povery rate (% of Working age population)	10.2	10.1	8.1	9.5	10.6	12.4	10.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	23.4	28.2	30.4	30.9	31.7	33.7	37.8

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	46.1	41.3	39.1	38.1	35.8	30.0	32.5
At-risk-of-poverty (% of Elderly population)	17.0	22.0	29.8	29.5	25.2	10.2	12.1
Severe Material Deprivation (% of Elderly population)	40.5	31.5	20.8	16.5	18.6	23.7	24.9
Relative median income of elderly (ratio with median income of people younger than 65)	0.81	0.74	0.69	0.71	0.73	0.92	0.87
Aggregate replacement ratio (ratio)	0.47	0.44	0.40	0.44	0.48	0.60	0.52

Expenditure in social protection indicators (% of GDP - Lithuania)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	3.9	4.1	4.3	4.6	5.5	4.7	
Disability	1.3	1.3	1.4	1.6	2.1	1.8	
Old age and survivors	5.9	5.7	6.5	6.9	9.0	8.1	
Family/Children	1.1	1.1	1.2	1.8	2.8	2.2	
Unemployment	0.4	0.4	0.4	0.4	0.9	0.8	
Housing and Social Exclusion	0.2	0.2	0.2	0.2	0.4	0.7	
Total	13.2	13.3	14.4	16.1	21.2	19.1	
of which: Means tested benefits	0.3	0.2	0.2	0.3	0.5	1.0	

Source: Eurostat.

Social inclusion indicators: Luxembourg

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	17.3	16.5	15.9	15.5	17.8	17.1	16.8
At-risk-of-poverty (% of total population)	13.7	14.1	13.5	13.4	14.9	14.5	13.6
At-risk-of-poverty threshold (PPS single person)	16538	15851	16108	16166	16221	16049	16195
Poverty gap (%)	18.6	19.7	18.8	16.6	17.6	18.6	15.7
Persistent at-risk-of-poverty (% of total population)	:	:	8.9	8.4	8.8	6.0	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	23.8	23.6	23.4	23.6	27.0	29.1	27.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	42.4	39.9	42.3	43.2	44.8	50.2	50.0
Severe Material Deprivation (% of total population)	1.8	1.1	0.8	0.7	1.1	0.5	1.2
Share of people living in low work intensity households (% of people aged 0-59)	5.7	5.2	5.0	4.7	6.3	5.5	5.8
Gross Household Disposable Income adjusted for consumer prices (growth %)	:	:	4.0	3.6	2.7	:	:
Income quintile share ratio S80/S20	3.9	4.2	4.0	4.1	4.3	4.1	4.0
GINI coefficient	26.5	27.8	27.4	27.7	29.2	27.9	27.2
Early leavers from education and training (% of population aged 18-24)	13.3	14.0	12.5	13.4	7.7	7.1	6.2
NEET: Young people not in employment, education or training (% of total population aged 15-24)	5.5	6.7	5.7	6.2	5.8	5.1	4.7

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	16.2	15.8	15.0	14.2	16.0	16.5	15.6
At-risk-of-poverty (% of male population)	13.2	13.8	12.9	12.5	13.8	14.6	12.7
Poverty gap (%)	19.5	19.7	19.1	15.4	16.9	18.6	15.7
Persistent at-risk-of-poverty (% of male population)	:	:	7.9	7.7	7.7	5.2	:
Severe Material Deprivation (% of male population)	2.1	0.9	0.8	0.6	0.9	0.4	1.3
Share of people living in low work intensity households (% of males aged 0-59)	5.0	4.5	4.3	3.8	4.9	4.8	5.1
Life expectancy at birth (years)	76.7	76.8	76.7	78.1	78.1	77.9	:
Healthy life years at birth (years)	62.3	61.2	62.3	64.8	65.1	64.4	:
Early leavers from education and training (% of males aged 18-24)	17.0	17.6	16.6	15.8	8.9	8.0	7.6
NEET: Young people not in employment, education or training (% of males aged 15-24)	4.3	6.1	4.7	4.6	6.0	5.6	4.6

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	18.3	17.1	16.9	16.7	19.6	17.7	18.0
At-risk-of-poverty (% of female population)	14.2	14.3	14.1	14.3	16.0	14.4	14.5
Poverty gap (%)	17.7	20.3	18.7	17.6	19.2	18.8	15.9
Persistent at-risk-of-poverty (% of female population)	:	:	9.8	9.2	9.9	6.9	:
Severe Material Deprivation (% of female population)	1.6	1.3	0.8	0.7	1.3	0.7	1.1
Share of people living in low work intensity households (% of females aged 0-59)	6.5	5.9	5.8	5.5	7.8	6.3	6.6
Life expectancy at birth (years)	82.3	81.9	82.2	83.1	83.3	83.5	:
Healthy life years at birth (years)	62.4	62.1	64.6	64.4	65.9	66.4	:
Early leavers from education and training (% of females aged 18-24)	9.6	10.4	8.4	10.9	6.6	6.0	:
NEET: Young people not in employment, education or training (% of females aged 15-24)	6.7	7.3	6.6	7.8	5.5	4.7	4.9

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	22.8	20.4	21.2	20.9	23.7	22.3	21.7
At-risk-of-poverty (% of Children population)	20.2	19.6	19.9	19.8	22.3	21.4	20.3
Severe Material Deprivation (% of Children population)	3.3	1.6	0.7	0.9	1.2	0.2	1.2
Share of children living in low work intensity households (% of Children population)	3.0	3.1	3.5	3.1	4.1	3.2	2.9
Risk of poverty of children in households at work (Working Intensity > 0.2)	19.0	17.9	18.1	18.2	20.3	19.7	19.0
Impact of social transfers (excl. pensions) in reducing poverty (%)	43.4	37.0	40.1	41.2	43.7	50.3	50.0

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	17.3	16.8	16.0	15.8	18.2	17.5	17.6
At-risk-of-poverty (% of Working age population)	12.8	13.5	12.7	12.9	14.2	13.9	13.1
Severe Material Deprivation (% of Working age population)	1.7	1.1	0.9	0.7	1.3	0.7	1.4
Low work intensity (18-59)	6.7	5.9	5.6	5.2	7.1	6.4	6.9
In-work at Risk-of-povery rate (% of Working age population)	9.8	10.3	9.3	9.4	10.1	10.6	9.8
Impact of social transfers (excl. pensions) in reducing poverty (%)	43.4	43.8	44.8	44.9	46.2	50.5	50.8

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	8.0	8.3	7.2	5.4	6.2	6.1	4.7
At-risk-of-poverty (% of Elderly population)	7.8	7.9	7.2	5.4	6.0	5.9	4.7
Severe Material Deprivation (% of Elderly population)	0.2	0.4	0.6	0.0	0.2	0.1	0.0
Relative median income of elderly (ratio with median income of people younger than 65)	0.96	0.96	0.96	0.97	1.01	1.05	1.05
Aggregate replacement ratio (ratio)	0.63	0.66	0.61	0.58	0.62	0.68	0.74

Expenditure in social protection indicators (% of GDP - Luxembourg)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	5.5	5.1	4.9	5.3	6.0	5.7	
Disability	2.8	2.6	2.3	2.4	2.7	2.5	
Old age and survivors	7.8	7.3	7.1	7.6	8.5	8.1	
Family/Children	3.6	3.4	3.1	4.2	4.2	4.0	
Unemployment	1.1	1.0	0.9	1.0	1.3	1.3	
Housing and Social Exclusion	0.6	0.6	0.6	0.6	0.8	0.8	
Total	21.7	20.4	19.3	21.4	24.0	22.7	
of which: Means tested benefits	0.6	0.6	0.6	0.6	0.9	0.8	

Source: Eurostat.

Social inclusion indicators: Latvia

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	45.8	41.4	36.0	33.8	37.4	38.1	40.1
At-risk-of-poverty (% of total population)	19.2	23.1	21.2	25.6	25.7	21.3	19.3
At-risk-of-poverty threshold (PPS single person)	2356	2668	3309	4354	4394	3580	3484
Poverty gap (%)	27.2	24.9	24.6	28.6	28.9	29.4	31.7
Persistent at-risk-of-poverty (% of total population)	:	:	:	12.6	17.1	11.0	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	25.7	27.8	27.2	30.2	30.3	29.1	27.3
Impact of social transfers (excl. pensions) in reducing poverty (%)	25.3	18.3	22.1	15.2	15.2	26.8	29.3
Severe Material Deprivation (% of total population)	38.9	30.6	24.9	19.0	21.9	27.4	30.9
Share of people living in low work intensity households (% of people aged 0-59)	8.1	7.0	6.1	5.1	6.7	12.2	12.2
Gross Household Disposable Income adjusted for consumer prices (growth %)	9.5	14.9	11.5	4.8	-18.7	-3.8	0.0
Income quintile share ratio S80/S20	6.7	7.9	6.3	7.3	7.3	6.9	6.6
GINI coefficient	36.1	39.2	35.4	37.7	37.4	36.1	35.2
Early leavers from education and training (% of population aged 18-24)	14.4	14.8	15.1	15.5	13.9	13.3	11.8
NEET: Young people not in employment, education or training (% of total population aged 15-24)	10.0	11.1	11.8	11.4	17.4	17.8	15.7

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	42.9	38.7	34.1	31.0	35.9	37.6	39.8
At-risk-of-poverty (% of male population)	18.3	21.1	19.3	23.1	24.2	21.7	20.0
Poverty gap (%)	33.3	28.7	27.3	27.4	31.3	32.4	33.7
Persistent at-risk-of-poverty (% of male population)	:	:	:	10.7	14.6	10.8	:
Severe Material Deprivation (% of male population)	35.9	28.5	23.5	17.3	21.3	26.8	30.4
Share of people living in low work intensity households (% of males aged 0-59)	8.2	7.0	6.1	5.5	7.2	13.4	12.8
Life expectancy at birth (years)	65.4	65.4	65.8	67.0	68.1	68.6	:
Healthy life years at birth (years)	50.8	50.8	51.0	51.8	52.8	53.5	:
Early leavers from education and training (% of males aged 18-24)	18.2	18.9	20.0	20.2	17.5	17.2	15.9
NEET: Young people not in employment, education or training (% of males aged 15-24)	8.7	7.9	10.1	9.8	18.9	18.5	15.8

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	48.2	43.6	37.7	36.2	38.7	38.5	40.4
At-risk-of-poverty (% of female population)	20.0	24.8	22.7	27.7	27.0	21.0	18.7
Poverty gap (%)	23.4	22.5	23.6	29.7	27.9	25.8	28.1
Persistent at-risk-of-poverty (% of female population)	:	:	:	14.2	19.2	11.1	:
Severe Material Deprivation (% of female population)	41.4	32.3	26.1	20.4	22.5	27.9	31.4
Share of people living in low work intensity households (% of females aged 0-59)	8.0	7.0	6.0	4.8	6.2	11.0	11.5
Life expectancy at birth (years)	76.5	76.3	76.5	77.8	78.0	78.4	:
Healthy life years at birth (years)	53.2	52.5	54.1	54.6	56.2	56.7	:
Early leavers from education and training (% of females aged 18-24)	10.4	10.4	10.1	10.7	10.4	9.4	7.7
NEET: Young people not in employment, education or training (% of females aged 15-24)	11.3	14.3	13.6	13.2	15.8	17.1	15.7

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	44.3	42.7	33.9	33.2	38.0	42.0	43.6
At-risk-of-poverty (% of Children population)	21.5	25.8	20.5	24.6	25.7	26.6	24.8
Severe Material Deprivation (% of Children population)	35.4	30.0	21.5	19.8	24.3	30.5	32.4
Share of children living in low work intensity households (% of Children population)	7.3	6.4	5.0	4.4	5.9	12.5	12.3
Risk of poverty of children in households at work (Working Intensity > 0.2)	16.7	21.1	17.7	21.3	21.5	18.7	17.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	29.5	18.7	31.0	22.6	21.9	28.1	32.4

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	43.6	38.5	33.1	28.1	32.8	37.0	40.9
At-risk-of-poverty (% of Working age population)	18.0	20.6	18.3	19.6	20.3	20.5	20.2
Severe Material Deprivation (% of Working age population)	37.1	28.9	23.4	16.5	20.4	26.4	31.0
Low work intensity (18-59)	8.3	7.2	6.4	5.4	6.9	12.1	12.1
In-work at Risk-of-povery rate (% of Working age population)	9.1	11.2	9.9	11.2	11.5	9.9	9.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	25.0	19.6	23.7	18.7	18.5	27.3	29.1

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	55.6	51.3	50.3	58.1	55.5	37.7	33.2
At-risk-of-poverty (% of Elderly population)	21.2	29.8	33.3	51.2	47.5	18.8	9.5
Severe Material Deprivation (% of Elderly population)	49.9	38.1	35.3	28.2	25.3	27.5	29.0
Relative median income of elderly (ratio with median income of people younger than 65)	0.74	0.67	0.66	0.54	0.58	0.77	0.85
Aggregate replacement ratio (ratio)	0.61	0.49	0.38	0.30	0.35	0.46	0.54

Expenditure in social protection indicators (% of GDP - Latvia)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	3.4	3.8	3.4	3.7	3.9	3.7	
Disability	0.9	0.9	0.7	0.9	1.3	1.3	
Old age and survivors	6.0	5.8	5.0	5.7	7.9	9.4	
Family/Children	1.3	1.2	1.2	1.4	1.7	1.5	
Unemployment	0.5	0.5	0.4	0.5	1.6	1.3	
Housing and Social Exclusion	0.2	0.2	0.2	0.3	0.3	0.4	
Total	12.8	12.7	11.3	12.7	16.9	17.8	
of which: Means tested benefits	0.2	0.2	0.2	0.2	0.3	0.7	

Source: Eurostat.

Social inclusion indicators: Malta

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	20.2	19.1	19.4	19.6	20.2	20.3	21.4
At-risk-of-poverty (% of total population)	13.9	14.0	14.8	15.0	15.3	15.0	15.4
At-risk-of-poverty threshold (PPS single person)	7044	7253	7464	7994	8270	7944	8359
Poverty gap (%)	17.6	18.0	17.2	20.4	16.2	17.2	17.7
Persistent at-risk-of-poverty (% of total population)	:	:	:	7.7	7.7	9.1	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	19.7	21.1	21.2	22.7	23.1	22.6	22.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	29.4	36.0	30.2	33.9	33.8	33.6	32.8
Severe Material Deprivation (% of total population)	5.5	3.7	4.2	4.0	4.7	5.7	6.3
Share of people living in low work intensity households (% of people aged 0-59)	9.6	9.2	9.2	8.2	8.4	8.4	8.3
Gross Household Disposable Income adjusted for consumer prices (growth %)	:	:	:	:	:	:	:
Income quintile share ratio S80/S20	3.9	4.0	3.9	4.2	4.0	4.3	4.1
GINI coefficient	26.9	27.0	26.3	27.9	27.2	28.4	27.4
Early leavers from education and training (% of population aged 18-24)	38.9	39.9	38.3	38.1	36.8	36.9	33.5
NEET: Young people not in employment, education or training (% of total population aged 15-24)	11.9	10.3	11.7	9.5	9.8	9.6	10.6

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	18.6	17.6	18.3	18.2	19.0	19.4	20.6
At-risk-of-poverty (% of male population)	13.4	13.3	14.4	13.6	14.7	14.5	15.0
Poverty gap (%)	17.6	17.8	16.4	21.7	15.9	17.3	17.2
Persistent at-risk-of-poverty (% of male population)	:	:	:	7.7	6.3	8.4	:
Severe Material Deprivation (% of male population)	5.1	3.5	3.8	3.8	4.5	5.6	6.2
Share of people living in low work intensity households (% of males aged 0-59)	7.8	7.6	7.8	6.5	6.5	6.7	6.7
Life expectancy at birth (years)	77.2	77.0	77.5	77.1	77.9	79.2	:
Healthy life years at birth (years)	68.6	68.3	69.1	69.0	69.4	70.2	:
Early leavers from education and training (% of males aged 18-24)	42.1	42.8	41.3	40.5	40.1	40.9	38.9
NEET: Young people not in employment, education or training (% of males aged 15-24)	11.2	10.2	12.2	8.2	9.4	8.0	9.9

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	21.7	20.6	20.6	21.0	21.4	21.2	22.2
At-risk-of-poverty (% of female population)	14.4	14.7	15.3	16.4	15.9	15.5	15.8
Poverty gap (%)	17.6	18.1	18.2	18.8	16.7	16.6	18.0
Persistent at-risk-of-poverty (% of female population)	:	:	:	7.8	9.0	9.7	:
Severe Material Deprivation (% of female population)	5.8	3.9	4.5	4.2	4.9	5.8	6.4
Share of people living in low work intensity households (% of females aged 0-59)	11.4	10.8	10.8	9.9	10.3	10.2	9.9
Life expectancy at birth (years)	81.4	81.9	82.2	82.3	82.7	83.6	:
Healthy life years at birth (years)	70.4	69.5	71.1	72.3	71.0	71.6	:
Early leavers from education and training (% of females aged 18-24)	35.5	36.8	34.9	35.5	33.2	32.3	27.6
NEET: Young people not in employment, education or training (% of females aged 15-24)	12.6	10.4	11.2	10.9	10.3	11.4	11.4

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	22.8	20.8	23.1	23.5	25.5	24.3	25.8
At-risk-of-poverty (% of Children population)	16.7	16.7	19.0	19.3	20.9	19.9	21.1
Severe Material Deprivation (% of Children population)	6.3	4.4	5.8	5.6	6.5	6.5	7.0
Share of children living in low work intensity households (% of Children population)	9.8	8.3	9.4	9.2	8.9	8.6	8.3
Risk of poverty of children in households at work (Working Intensity > 0.2)	11.3	11.8	13.3	13.4	16.3	14.5	16.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	34.3	39.8	31.9	34.4	33.4	32.8	30.4

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	17.9	17.1	17.5	17.0	17.9	18.8	20.1
At-risk-of-poverty (% of Working age population)	11.1	11.2	12.3	11.8	12.5	12.9	13.1
Severe Material Deprivation (% of Working age population)	5.0	3.3	3.9	3.7	4.3	5.7	6.5
Low work intensity (18-59)	9.5	9.5	9.2	7.8	8.2	8.4	8.3
In-work at Risk-of-povery rate (% of Working age population)	4.0	4.1	4.5	5.0	5.7	5.6	6.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	33.5	41.3	33.9	38.9	36.9	35.8	35.8

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	27.1	26.3	23.1	26.4	23.2	21.5	21.5
At-risk-of-poverty (% of Elderly population)	23.4	24.2	20.7	24.7	20.9	18.0	18.1
Severe Material Deprivation (% of Elderly population)	6.2	4.3	3.0	3.0	4.1	4.7	4.6
Relative median income of elderly (ratio with median income of people younger than 65)	0.75	0.79	0.77	0.73	0.76	0.81	0.80
Aggregate replacement ratio (ratio)	0.48	0.47	0.48	0.42	0.47	0.46	0.47

Expenditure in social protection indicators (% of GDP - Malta)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	5.4	5.3	5.2	5.5	6.1	5.7	
Disability	1.2	1.1	1.1	1.0	0.9	0.9	
Old age and survivors	9.3	9.5	9.3	9.5	10.3	10.7	
Family/Children	1.2	1.1	1.1	1.2	1.3	1.2	
Unemployment	0.6	0.6	0.5	0.5	0.6	0.5	
Housing and Social Exclusion	0.4	0.5	0.6	0.6	0.6	0.5	
Total	18.4	18.3	18.0	18.4	20.0	19.8	
of which: Means tested benefits	3.2	3.2	3.1	2.5	2.7	2.6	

Source: Eurostat.

Social inclusion indicators: Netherlands

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	16.7	16.0	15.7	14.9	15.1	15.1	15.7
At-risk-of-poverty (% of total population)	10.7	9.7	10.2	10.5	11.1	10.3	11.0
At-risk-of-poverty threshold (PPS single person)	9612	9897	10522	11485	11536	11294	11326
Poverty gap (%)	20.9	16.9	17.0	14.9	16.5	16.2	15.5
Persistent at-risk-of-poverty (% of total population)	:	:	:	6.4	4.7	8.2	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	21.7	21.0	20.6	19.9	20.5	21.1	20.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	50.7	52.1	50.5	47.2	45.9	51.2	47.4
Severe Material Deprivation (% of total population)	2.5	2.3	1.7	1.5	1.4	2.2	2.5
Share of people living in low work intensity households (% of people aged 0-59)	9.7	10.7	9.5	8.1	8.3	8.2	8.7
Gross Household Disposable Income adjusted for consumer prices (growth %)	0.5	1.2	2.9	-1.2	-2.1	0.4	-0.7
Income quintile share ratio S80/S20	4.0	3.8	4.0	4.0	4.0	3.7	3.8
GINI coefficient	26.9	26.4	27.6	27.6	27.2	25.5	25.8
Early leavers from education and training (% of population aged 18-24)	13.5	12.6	11.7	11.4	10.9	10.0	9.1
NEET: Young people not in employment, education or training (% of total population aged 15-24)	5.3	4.0	3.5	3.4	4.1	4.3	3.8

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	15.6	14.6	14.6	14.3	14.3	14.1	14.9
At-risk-of-poverty (% of male population)	10.6	9.5	9.6	10.5	10.8	9.7	10.8
Poverty gap (%)	21.9	18.9	17.5	14.6	16.9	15.1	15.3
Persistent at-risk-of-poverty (% of male population)	:	:	:	6.9	5.4	6.8	:
Severe Material Deprivation (% of male population)	2.3	1.7	1.7	1.5	1.4	2.3	2.4
Share of people living in low work intensity households (% of males aged 0-59)	8.2	8.9	8.4	6.9	7.5	7.3	7.9
Life expectancy at birth (years)	77.2	77.7	78.1	78.4	78.7	78.9	:
Healthy life years at birth (years)	65.4	65.2	66.1	62.4	61.7	61.3	:
Early leavers from education and training (% of males aged 18-24)	15.9	15.1	14.0	14.0	13.1	12.1	10.8
NEET: Young people not in employment, education or training (% of males aged 15-24)	5.0	3.7	3.1	3.1	4.1	4.4	3.7

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	17.7	17.4	16.9	15.5	15.9	16.0	16.6
At-risk-of-poverty (% of female population)	10.8	9.9	10.7	10.4	11.3	10.8	11.1
Poverty gap (%)	19.9	16.7	16.9	17.0	16.3	16.4	16.5
Persistent at-risk-of-poverty (% of female population)	:	:	:	5.8	4.1	9.5	:
Severe Material Deprivation (% of female population)	2.7	2.8	1.7	1.6	1.5	2.2	2.6
Share of people living in low work intensity households (% of females aged 0-59)	11.3	12.6	10.6	9.3	9.2	9.1	9.5
Life expectancy at birth (years)	81.7	82.0	82.5	82.5	82.9	83.0	:
Healthy life years at birth (years)	63.5	63.5	64.3	59.9	60.1	60.2	:
Early leavers from education and training (% of females aged 18-24)	11.1	10.1	9.3	8.8	8.6	7.8	7.2
NEET: Young people not in employment, education or training (% of females aged 15-24)	5.5	4.4	4.0	3.8	4.1	4.2	3.8

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	19.6	17.5	17.2	15.5	17.5	16.9	18.0
At-risk-of-poverty (% of Children population)	15.3	13.5	14.0	12.9	15.4	13.7	15.5
Severe Material Deprivation (% of Children population)	3.4	3.2	1.9	2.2	1.5	2.0	2.9
Share of children living in low work intensity households (% of Children population)	7.3	8.5	6.2	5.1	5.4	5.8	6.3
Risk of poverty of children in households at work (Working Intensity > 0.2)	12.2	9.2	11.3	10.1	12.2	11.2	11.8
Impact of social transfers (excl. pensions) in reducing poverty (%)	44.4	47.6	43.5	43.9	38.9	45.6	36.2

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	17.7	17.5	16.5	15.8	15.9	16.5	17.0
At-risk-of-poverty (% of Working age population)	10.2	9.3	8.9	9.9	10.3	10.1	10.5
Severe Material Deprivation (% of Working age population)	2.4	2.3	1.9	1.6	1.6	2.7	2.8
Low work intensity (18-59)	10.7	11.6	10.8	9.2	9.4	9.1	9.6
In-work at Risk-of-povery rate (% of Working age population)	5.8	4.4	4.5	4.7	5.0	5.1	5.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	53.8	52.9	55.3	50.0	49.3	53.5	51.6

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	6.4	6.4	9.8	9.7	8.1	6.2	6.9
At-risk-of-poverty (% of Elderly population)	5.4	5.8	9.5	9.4	7.7	5.9	6.5
Severe Material Deprivation (% of Elderly population)	1.2	0.7	0.7	0.4	0.4	0.3	0.4
Relative median income of elderly (ratio with median income of people younger than 65)	0.88	0.87	0.83	0.84	0.86	0.87	0.87
Aggregate replacement ratio (ratio)	0.43	0.43	0.43	0.43	0.44	0.47	0.46

Expenditure in social protection indicators (% of GDP - Netherlands)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	8.0	8.8	8.6	9.4	10.4	10.6	
Disability	2.5	2.4	2.4	2.4	2.5	2.5	
Old age and survivors	11.1	10.9	10.9	10.9	11.6	11.8	
Family/Children	1.3	1.5	1.6	1.2	1.3	1.2	
Unemployment	1.6	1.4	1.1	1.0	1.4	1.6	
Housing and Social Exclusion	1.6	2.1	2.1	2.1	2.4	2.4	
Total	27.9	28.8	28.3	28.5	31.6	32.1	
of which: Means tested benefits	3.1	3.4	3.7	3.9	4.5	4.6	

Source: Eurostat.

Social inclusion indicators: Poland

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	45.3	39.5	34.4	30.5	27.8	27.8	27.2
At-risk-of-poverty (% of total population)	20.5	19.1	17.3	16.9	17.1	17.6	17.7
At-risk-of-poverty threshold (PPS single person)	2855	3057	3365	4039	4426	4540	4873
Poverty gap (%)	30.1	25.0	24.0	20.6	22.7	22.2	21.4
Persistent at-risk-of-poverty (% of total population)	:	:	:	10.4	10.2	10.5	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	29.8	28.6	26.5	25.1	23.6	24.4	24.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	31.2	31.9	34.7	32.7	27.5	27.9	26.6
Severe Material Deprivation (% of total population)	33.8	27.6	22.3	17.7	15.0	14.2	13.0
Share of people living in low work intensity households (% of people aged 0-59)	14.2	12.3	10.0	7.9	6.9	7.3	6.9
Gross Household Disposable Income adjusted for consumer prices (growth %)	1.5	4.4	4.5	4.1	3.0	2.4	-0.9
Income quintile share ratio S80/S20	6.6	5.6	5.3	5.1	5.0	5.0	5.0
GINI coefficient	35.6	33.3	32.2	32.0	31.4	31.1	31.1
Early leavers from education and training (% of population aged 18-24)	5.3	5.4	5.0	5.0	5.3	5.4	5.6
NEET: Young people not in employment, education or training (% of total population aged 15-24)	13.9	12.6	10.6	9.0	10.1	10.8	11.6

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	44.7	39.0	33.5	29.9	27.0	27.0	26.6
At-risk-of-poverty (% of male population)	21.3	19.7	17.6	17.0	16.9	17.4	17.8
Poverty gap (%)	30.8	25.9	25.4	21.5	23.7	23.3	22.8
Persistent at-risk-of-poverty (% of male population)	:	:	:	10.7	10.4	10.2	:
Severe Material Deprivation (% of male population)	33.4	27.4	21.9	17.6	14.6	14.1	12.9
Share of people living in low work intensity households (% of males aged 0-59)	13.8	11.7	9.4	7.3	6.4	6.7	6.4
Life expectancy at birth (years)	70.8	70.9	71.0	71.3	71.5	72.1	:
Healthy life years at birth (years)	61.2	58.4	57.6	58.5	58.3	58.5	:
Early leavers from education and training (% of males aged 18-24)	6.8	6.9	6.2	6.1	6.6	7.2	7.4
NEET: Young people not in employment, education or training (% of males aged 15-24)	13.4	12.1	9.3	7.3	9.4	10.5	11.2

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	45.8	40.0	35.1	31.2	28.6	28.5	27.7
At-risk-of-poverty (% of female population)	19.9	18.5	17.1	16.7	17.4	17.7	17.6
Poverty gap (%)	29.8	24.2	22.8	20.0	21.8	21.0	20.3
Persistent at-risk-of-poverty (% of female population)	:	:	:	10.2	10.1	10.7	:
Severe Material Deprivation (% of female population)	34.2	27.8	22.7	17.9	15.3	14.4	13.2
Share of people living in low work intensity households (% of females aged 0-59)	14.6	13.0	10.6	8.6	7.4	8.0	7.4
Life expectancy at birth (years)	79.3	79.7	79.8	80.0	80.1	80.7	:
Healthy life years at birth (years)	66.9	62.9	61.5	63.0	62.5	62.3	:
Early leavers from education and training (% of females aged 18-24)	3.7	3.9	3.8	3.9	3.9	3.5	3.8
NEET: Young people not in employment, education or training (% of females aged 15-24)	14.5	13.1	11.9	10.8	10.8	11.1	12.0

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	48.0	42.0	37.1	32.9	31.0	30.8	29.8
At-risk-of-poverty (% of Children population)	29.3	26.3	24.2	22.4	23.0	22.5	22.0
Severe Material Deprivation (% of Children population)	34.2	28.2	22.5	17.5	15.3	14.9	13.2
Share of children living in low work intensity households (% of Children population)	10.6	8.7	6.6	5.0	4.7	4.8	4.1
Risk of poverty of children in households at work (Working Intensity > 0.2)	24.0	21.9	20.8	19.8	20.3	19.4	19.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	24.9	25.6	29.9	31.1	23.6	26.7	26.9

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	45.6	40.2	34.9	30.6	27.3	27.6	27.0
At-risk-of-poverty (% of Working age population)	20.4	19.1	17.2	16.3	16.0	16.9	17.1
Severe Material Deprivation (% of Working age population)	33.1	27.2	21.9	17.2	14.4	13.6	12.5
Low work intensity (18-59)	15.5	13.6	11.1	8.9	7.6	8.1	7.8
In-work at Risk-of-povery rate (% of Working age population)	13.8	12.8	11.7	11.5	11.0	11.5	11.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	33.6	34.5	36.5	34.5	30.4	29.9	28.2

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	39.3	32.5	27.3	26.9	25.8	24.4	24.7
At-risk-of-poverty (% of Elderly population)	7.3	7.8	7.8	11.7	14.4	14.2	14.7
Severe Material Deprivation (% of Elderly population)	36.7	29.2	23.7	20.8	17.3	16.5	15.4
Relative median income of elderly (ratio with median income of people younger than 65)	1.09	1.07	1.04	0.97	0.92	0.93	0.94
Aggregate replacement ratio (ratio)	0.58	0.59	0.58	0.56	0.56	0.57	0.55

Expenditure in social protection indicators (% of GDP - Poland)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	3.8	3.8	3.9	4.5	4.7	4.5	
Disability	2.0	1.9	1.6	1.5	1.3	1.4	
Old age and survivors	11.4	11.5	10.8	10.9	11.4	11.3	
Family/Children	0.8	0.8	0.8	0.7	0.8	0.8	
Unemployment	0.6	0.6	0.4	0.4	0.4	0.4	
Housing and Social Exclusion	0.5	0.3	0.3	0.2	0.2	0.2	
Total	19.7	19.4	18.1	18.6	19.2	18.9	
of which: Means tested benefits	1.2	1.0	0.9	0.8	0.7	0.7	

Source: Eurostat.

Social inclusion indicators: Portugal

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	26.1	25.0	25.0	26.0	24.9	25.3	24.4
At-risk-of-poverty (% of total population)	19.4	18.5	18.1	18.5	17.9	17.9	18.0
At-risk-of-poverty threshold (PPS single person)	4942	5157	5349	5702	5644	5839	5722
Poverty gap (%)	26.0	23.5	24.3	23.2	23.6	22.7	23.2
Persistent at-risk-of-poverty (% of total population)	:	:	14.1	13.1	:	13.2	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	25.7	25.1	24.2	24.9	24.3	26.4	25.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	24.5	25.7	25.2	25.7	26.3	32.2	29.1
Severe Material Deprivation (% of total population)	9.3	9.1	9.6	9.7	9.1	9.0	8.3
Share of people living in low work intensity households (% of people aged 0-59)	5.9	6.6	7.2	6.3	6.9	8.6	8.2
Gross Household Disposable Income adjusted for consumer prices (growth %)	1.4	-0.1	2.5	1.6	0.5	1.7	-4.2
Income quintile share ratio S80/S20	7.0	6.7	6.5	6.1	6.0	5.6	5.7
GINI coefficient	38.1	37.7	36.8	35.8	35.4	33.7	34.2
Early leavers from education and training (% of population aged 18-24)	38.8	39.1	36.9	35.4	31.2	28.7	23.2
NEET: Young people not in employment, education or training (% of total population aged 15-24)	11.2	10.6	11.2	10.3	11.2	11.5	12.7

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	25.2	23.9	24.0	25.0	24.0	24.8	23.8
At-risk-of-poverty (% of male population)	18.7	17.7	17.2	17.9	17.3	17.3	17.6
Poverty gap (%)	25.6	22.4	24.3	22.5	24.9	23.1	23.4
Persistent at-risk-of-poverty (% of male population)	:	:	13.1	12.0	:	13.0	:
Severe Material Deprivation (% of male population)	8.9	8.7	9.2	9.5	8.9	9.2	7.8
Share of people living in low work intensity households (% of males aged 0-59)	5.6	6.0	6.7	5.8	6.6	8.4	7.9
Life expectancy at birth (years)	74.9	75.5	75.9	76.2	76.5	76.7	:
Healthy life years at birth (years)	58.6	60.0	58.5	59.1	58.3	59.3	:
Early leavers from education and training (% of males aged 18-24)	46.7	46.6	43.1	41.9	36.1	32.7	28.2
NEET: Young people not in employment, education or training (% of males aged 15-24)	10.2	9.8	9.7	8.9	10.6	10.4	12.3

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	26.9	26.0	26.0	26.8	25.8	25.8	25.1
At-risk-of-poverty (% of female population)	20.1	19.1	19.0	19.1	18.4	18.4	18.4
Poverty gap (%)	26.3	23.9	24.2	23.6	23.0	22.6	23.0
Persistent at-risk-of-poverty (% of female population)	:	:	15.0	14.1	:	13.5	:
Severe Material Deprivation (% of female population)	9.7	9.4	9.9	9.9	9.2	8.8	8.7
Share of people living in low work intensity households (% of females aged 0-59)	6.3	7.2	7.8	6.8	7.3	8.8	8.6
Life expectancy at birth (years)	81.3	82.3	82.2	82.4	82.6	82.8	:
Healthy life years at birth (years)	57.1	57.9	57.8	57.6	56.4	56.6	:
Early leavers from education and training (% of females aged 18-24)	30.7	31.3	30.4	28.6	26.1	24.6	18.1
NEET: Young people not in employment, education or training (% of females aged 15-24)	12.2	11.5	12.8	11.7	11.8	12.7	13.1

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	28.8	25.5	26.9	29.5	28.7	28.7	28.6
At-risk-of-poverty (% of Children population)	23.7	20.8	20.9	22.8	22.9	22.4	22.4
Severe Material Deprivation (% of Children population)	9.9	9.6	11.8	11.8	10.5	10.8	11.3
Share of children living in low work intensity households (% of Children population)	3.8	4.4	5.1	5.8	6.2	7.9	7.1
Risk of poverty of children in households at work (Working Intensity > 0.2)	22.0	17.7	17.6	19.5	19.3	17.1	18.3
Impact of social transfers (excl. pensions) in reducing poverty (%)	23.5	22.6	22.9	24.3	25.4	30.4	27.5

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	23.4	22.9	23.1	24.5	23.5	24.1	23.2
At-risk-of-poverty (% of Working age population)	15.9	15.7	15.2	16.3	15.8	15.7	16.2
Severe Material Deprivation (% of Working age population)	8.0	7.7	8.6	8.9	8.3	8.3	7.6
Low work intensity (18-59)	6.7	7.3	7.9	6.5	7.2	8.8	8.6
In-work at Risk-of-povery rate (% of Working age population)	11.5	10.4	9.3	11.3	10.3	9.6	10.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	29.3	31.6	30.9	30.3	30.7	37.7	33.6

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	33.2	32.2	30.0	27.7	26.0	26.1	24.5
At-risk-of-poverty (% of Elderly population)	27.6	26.1	25.5	22.3	20.1	21.0	20.0
Severe Material Deprivation (% of Elderly population)	13.4	13.3	10.7	10.1	10.6	9.6	7.7
Relative median income of elderly (ratio with median income of people younger than 65)	0.77	0.79	0.80	0.83	0.85	0.82	0.87
Aggregate replacement ratio (ratio)	0.60	0.59	0.47	0.51	0.50	0.53	0.56

Expenditure in social protection indicators (% of GDP - Portugal)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	6.9	6.7	6.4	6.5	7.3	7.0	
Disability	2.3	2.3	2.3	2.1	2.2	2.1	
Old age and survivors	11.0	11.3	11.3	11.9	13.0	13.2	
Family/Children	1.2	1.2	1.2	1.3	1.5	1.5	
Unemployment	1.3	1.3	1.1	1.0	1.4	1.4	
Housing and Social Exclusion	0.2	0.3	0.3	0.3	0.3	0.3	
Total	24.5	24.5	23.9	24.3	27.0	27.0	
of which: Means tested benefits	2.5	2.1	2.1	2.3	2.7	2.7	

Source: Eurostat.

Social inclusion indicators: Romania

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	:	:	45.9	44.2	43.1	41.4	40.3
At-risk-of-poverty (% of total population)	:	:	24.8	23.4	22.4	21.1	22.2
At-risk-of-poverty threshold (PPS single person)	:	:	1726	1838	2065	2122	2159
Poverty gap (%)	:	:	34.8	32.3	32.0	30.6	31.8
Persistent at-risk-of-poverty (% of total population)	:	:	:	:	:	18.2	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	:	:	30.9	30.7	29.1	27.5	29.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	:	:	19.7	23.8	23.0	23.3	23.7
Severe Material Deprivation (% of total population)	:	:	36.5	32.9	32.2	31.0	29.4
Share of people living in low work intensity households (% of people aged 0-59)	:	:	8.4	8.2	7.7	6.8	6.7
Gross Household Disposable Income adjusted for consumer prices (growth %)	2.6	9.0	14.2	22.6	-11.8	-3.9	:
Income quintile share ratio S80/S20	4.9	5.3	7.8	7.0	6.7	6.0	6.2
GINI coefficient	31.0	33.0	37.8	36.0	34.9	33.3	33.2
Early leavers from education and training (% of population aged 18-24)	19.6	17.9	17.3	15.9	16.6	18.4	17.5
NEET: Young people not in employment, education or training (% of total population aged 15-24)	16.8	14.8	13.3	11.6	13.9	16.4	17.4

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	:	:	45.1	43.0	41.9	40.8	39.5
At-risk-of-poverty (% of male population)	:	:	24.3	22.4	21.4	20.7	21.9
Poverty gap (%)	:	:	35.4	32.6	32.4	31.5	33.7
Persistent at-risk-of-poverty (% of male population)	:	:	:	:	:	18.0	:
Severe Material Deprivation (% of male population)	:	:	36.1	32.4	31.8	30.7	29.2
Share of people living in low work intensity households (% of males aged 0-59)	:	:	7.5	7.2	6.5	6.0	5.7
Life expectancy at birth (years)	68.7	69.2	69.7	69.7	69.8	70.1	:
Healthy life years at birth (years)	:	:	60.6	60.2	59.8	57.5	:
Early leavers from education and training (% of males aged 18-24)	20.1	17.8	17.1	15.9	16.1	18.6	18.5
NEET: Young people not in employment, education or training (% of males aged 15-24)	14.9	13.0	11.6	8.8	11.2	14.0	15.9

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	:	:	46.7	45.3	44.2	42.1	41.1
At-risk-of-poverty (% of female population)	:	:	25.3	24.3	23.4	21.4	22.5
Poverty gap (%)	:	:	34.8	31.7	31.3	30.3	29.3
Persistent at-risk-of-poverty (% of female population)	:	:	:	:	:	18.5	:
Severe Material Deprivation (% of female population)	:	:	36.9	33.4	32.6	31.2	29.5
Share of people living in low work intensity households (% of females aged 0-59)	:	:	9.2	9.2	8.9	7.7	7.6
Life expectancy at birth (years)	75.7	76.2	76.9	77.2	77.4	77.6	:
Healthy life years at birth (years)	:	:	62.6	62.8	61.7	57.5	:
Early leavers from education and training (% of females aged 18-24)	19.1	18.0	17.4	16.0	17.2	18.2	16.6
NEET: Young people not in employment, education or training (% of females aged 15-24)	18.8	16.6	15.1	14.5	16.8	18.9	18.8

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	:	:	50.5	51.2	52.0	48.7	49.1
At-risk-of-poverty (% of Children population)	:	:	32.8	32.9	32.9	31.3	32.9
Severe Material Deprivation (% of Children population)	:	:	40.4	39.2	40.3	36.7	35.8
Share of children living in low work intensity households (% of Children population)	:	:	6.5	6.3	5.6	4.3	4.6
Risk of poverty of children in households at work (Working Intensity > 0.2)	:	:	29.1	29.5	29.8	29.9	30.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	:	:	20.4	24.2	21.9	20.6	22.0

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	:	:	42.0	41.0	40.5	39.7	39.0
At-risk-of-poverty (% of Working age population)	:	:	21.1	20.0	19.8	19.2	21.0
Severe Material Deprivation (% of Working age population)	:	:	32.7	29.8	29.6	29.0	27.7
Low work intensity (18-59)	:	:	9.0	8.8	8.3	7.6	7.3
In-work at Risk-of-povery rate (% of Working age population)	:	:	17.3	16.8	17.3	17.0	18.6
Impact of social transfers (excl. pensions) in reducing poverty (%)	:	:	21.9	26.5	25.0	26.2	25.8

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	:	:	57.7	49.2	43.1	39.9	35.3
At-risk-of-poverty (% of Elderly population)	:	:	30.6	26.0	21.0	16.7	14.1
Severe Material Deprivation (% of Elderly population)	:	:	48.9	38.9	33.8	32.4	28.6
Relative median income of elderly (ratio with median income of people younger than 65)	:	:	0.76	0.85	0.93	0.97	1.01
Aggregate replacement ratio (ratio)	:	:	0.43	0.49	0.55	0.65	0.64

Expenditure in social protection indicators (% of GDP - Romania)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	3.8	3.3	3.5	3.5	4.1	4.4	
Disability	1.1	1.1	1.3	1.4	1.6	1.6	
Old age and survivors	5.8	5.7	6.0	7.1	8.8	8.8	
Family/Children	1.8	1.8	1.7	1.5	1.7	1.7	
Unemployment	0.4	0.3	0.3	0.2	0.4	0.6	
Housing and Social Exclusion	0.3	0.3	0.4	0.3	0.2	0.3	
Total	13.4	12.8	13.6	14.3	17.1	17.6	
of which: Means tested benefits	0.9	0.8	0.8	0.7	0.9	1.2	

Source: Eurostat.

Social inclusion indicators: Sweden

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	14.4	16.3	13.9	14.9	15.9	15.0	16.1
At-risk-of-poverty (% of total population)	9.5	12.3	10.5	12.2	13.3	12.9	14.0
At-risk-of-poverty threshold (PPS single person)	8648	9068	9545	10680	11258	10897	11102
Poverty gap (%)	17.9	22.7	20.3	18.0	20.3	19.7	18.5
Persistent at-risk-of-poverty (% of total population)	:	:	2.1	2.6	3.7	4.9	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	28.7	29.0	27.5	28.5	26.6	26.7	27.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	66.9	58.2	61.8	57.2	50.0	51.7	49.8
Severe Material Deprivation (% of total population)	2.3	2.1	2.2	1.4	1.6	1.3	1.2
Share of people living in low work intensity households (% of people aged 0-59)	7.5	6.6	5.9	5.4	6.2	5.9	6.8
Gross Household Disposable Income adjusted for consumer prices (growth %)	2.2	3.4	5.2	2.0	2.2	1.2	3.4
Income quintile share ratio S80/S20	3.3	3.6	3.3	3.5	3.7	3.5	3.6
GINI coefficient	23.4	24.0	23.4	24.0	24.8	24.1	24.4
Early leavers from education and training (% of population aged 18-24)	10.8	8.6	8.0	7.9	7.0	6.4	6.7
NEET: Young people not in employment, education or training (% of total population aged 15-24)	10.5	9.3	7.5	7.8	9.6	7.8	7.5

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	13.4	15.9	13.6	13.7	14.4	13.4	14.2
At-risk-of-poverty (% of male population)	9.0	12.3	10.5	11.3	12.0	11.4	12.2
Poverty gap (%)	19.1	26.4	22.7	20.1	22.1	22.9	19.3
Persistent at-risk-of-poverty (% of male population)	:	:	1.9	2.5	3.1	4.4	:
Severe Material Deprivation (% of male population)	1.7	2.1	2.2	1.3	1.5	1.2	1.1
Share of people living in low work intensity households (% of males aged 0-59)	7.1	6.1	5.4	5.0	5.9	5.7	6.6
Life expectancy at birth (years)	78.5	78.8	79.0	79.2	79.4	79.6	:
Healthy life years at birth (years)	64.5	67.3	67.7	69.4	70.7	71.7	:
Early leavers from education and training (% of males aged 18-24)	11.9	10.1	9.5	9.0	8.0	7.4	7.9
NEET: Young people not in employment, education or training (% of males aged 15-24)	11.0	9.6	7.5	7.5	9.8	8.0	7.7

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	15.4	16.7	14.2	16.1	17.5	16.6	18.0
At-risk-of-poverty (% of female population)	10.0	12.3	10.6	13.0	14.5	14.3	15.7
Poverty gap (%)	17.0	20.9	18.3	17.0	17.8	16.8	17.9
Persistent at-risk-of-poverty (% of female population)	:	:	2.2	2.7	4.3	5.2	:
Severe Material Deprivation (% of female population)	3.0	2.1	2.1	1.6	1.6	1.4	1.2
Share of people living in low work intensity households (% of females aged 0-59)	7.9	7.2	6.3	5.8	6.6	6.1	6.9
Life expectancy at birth (years)	82.9	83.1	83.1	83.3	83.5	83.6	:
Healthy life years at birth (years)	63.2	67.5	66.8	69.0	69.6	71.1	:
Early leavers from education and training (% of females aged 18-24)	9.7	7.1	6.5	6.8	6.0	5.4	5.4
NEET: Young people not in employment, education or training (% of females aged 15-24)	10.1	9.0	7.4	8.2	9.5	7.5	7.4

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	14.9	18.5	14.9	14.6	15.1	14.5	15.9
At-risk-of-poverty (% of Children population)	10.2	15.0	12.0	12.9	13.1	13.1	14.5
Severe Material Deprivation (% of Children population)	3.2	2.8	3.2	1.7	1.7	1.3	1.3
Share of children living in low work intensity households (% of Children population)	6.0	5.4	5.5	4.0	4.2	4.8	5.4
Risk of poverty of children in households at work (Working Intensity > 0.2)	7.4	11.6	8.4	9.6	9.9	9.0	10.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	71.5	60.3	64.7	62.2	56.9	58.4	54.7

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	15.1	16.5	14.5	14.8	15.6	15.0	15.4
At-risk-of-poverty (% of Working age population)	9.1	11.4	10.2	11.2	12.1	11.9	12.5
Severe Material Deprivation (% of Working age population)	2.3	2.1	2.2	1.5	1.8	1.5	1.3
Low work intensity (18-59)	8.1	7.2	6.0	6.0	7.0	6.4	7.3
In-work at Risk-of-povery rate (% of Working age population)	5.5	7.4	6.5	6.8	7.0	6.6	6.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	67.0	60.1	61.8	59.1	52.2	54.1	52.8

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	11.3	11.9	10.4	15.5	18.0	15.9	18.6
At-risk-of-poverty (% of Elderly population)	10.1	11.3	9.9	15.0	17.7	15.5	18.2
Severe Material Deprivation (% of Elderly population)	1.3	0.9	0.6	0.8	0.5	0.7	0.6
Relative median income of elderly (ratio with median income of people younger than 65)	0.81	0.85	0.81	0.78	0.77	0.79	0.77
Aggregate replacement ratio (ratio)	0.60	0.62	0.63	0.62	0.60	0.60	0.58

Expenditure in social protection indicators (% of GDP - Sweden)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	7.9	7.8	7.5	7.5	7.9	7.4	
Disability	4.6	4.5	4.4	4.3	4.6	4.2	
Old age and survivors	12.2	11.8	11.6	12.1	13.2	12.6	
Family/Children	2.9	3.0	2.9	3.0	3.2	3.1	
Unemployment	1.8	1.6	1.1	0.9	1.3	1.4	
Housing and Social Exclusion	1.1	1.1	1.1	1.1	1.2	1.2	
Total	31.1	30.4	29.2	29.5	32.0	30.4	
of which: Means tested benefits	0.9	0.8	0.8	0.8	0.9	0.8	

Source: Eurostat.

Social inclusion indicators: Slovakia

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	32.0	26.7	21.3	20.6	19.6	20.6	20.6
At-risk-of-poverty (% of total population)	13.3	11.6	10.6	10.9	11.0	12.0	13.0
At-risk-of-poverty threshold (PPS single person)	2394	2772	3365	4058	4711	4984	5280
Poverty gap (%)	23.5	20.0	19.2	18.1	23.2	25.7	22.8
Persistent at-risk-of-poverty (% of total population)	:	:	:	4.9	5.4	6.0	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	21.9	20.0	18.2	18.4	17.1	19.8	19.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	39.3	38.4	41.8	40.8	35.7	39.4	33.3
Severe Material Deprivation (% of total population)	22.1	18.2	13.7	11.8	11.1	11.4	10.6
Share of people living in low work intensity households (% of people aged 0-59)	6.6	6.2	6.4	5.2	5.6	7.9	7.6
Gross Household Disposable Income adjusted for consumer prices (growth %)	6.0	4.0	9.5	5.5	0.4	3.9	-1.5
Income quintile share ratio S80/S20	3.9	4.1	3.5	3.4	3.6	3.8	3.8
GINI coefficient	26.2	28.1	24.5	23.7	24.8	25.9	25.7
Early leavers from education and training (% of population aged 18-24)	6.3	6.6	6.5	6.0	4.9	4.7	5.0
NEET: Young people not in employment, education or training (% of total population aged 15-24)	15.8	14.4	12.5	11.1	12.5	14.1	13.8

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	30.7	25.6	19.4	18.9	18.0	19.6	19.5
At-risk-of-poverty (% of male population)	13.2	11.8	10.2	10.1	10.1	11.7	12.8
Poverty gap (%)	25.5	20.8	22.4	21.0	24.7	28.0	24.5
Persistent at-risk-of-poverty (% of male population)	:	:	:	4.6	5.1	4.6	:
Severe Material Deprivation (% of male population)	21.6	17.8	12.8	11.1	10.5	11.1	10.1
Share of people living in low work intensity households (% of males aged 0-59)	5.8	5.8	5.7	4.5	5.1	7.4	7.5
Life expectancy at birth (years)	70.2	70.4	70.6	70.8	71.4	71.7	:
Healthy life years at birth (years)	55.2	54.5	55.6	52.1	52.4	52.4	:
Early leavers from education and training (% of males aged 18-24)	6.7	7.3	7.2	7.1	5.7	4.6	5.4
NEET: Young people not in employment, education or training (% of males aged 15-24)	14.4	12.8	11.0	9.6	12.2	13.8	13.8

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	33.2	27.6	23.1	22.0	21.1	21.6	21.7
At-risk-of-poverty (% of female population)	13.5	11.5	11.0	11.5	11.8	12.2	13.1
Poverty gap (%)	22.8	19.6	17.2	16.5	21.8	24.3	21.0
Persistent at-risk-of-poverty (% of female population)	:	:	:	5.2	5.6	7.3	:
Severe Material Deprivation (% of female population)	22.5	18.6	14.5	12.3	11.6	11.8	11.0
Share of people living in low work intensity households (% of females aged 0-59)	7.4	6.6	7.2	5.9	6.0	8.4	7.8
Life expectancy at birth (years)	78.1	78.4	78.4	79.0	79.1	79.3	:
Healthy life years at birth (years)	56.6	54.6	56.1	52.6	52.6	52.1	:
Early leavers from education and training (% of females aged 18-24)	5.9	5.8	5.8	4.9	4.1	4.9	4.6
NEET: Young people not in employment, education or training (% of females aged 15-24)	17.3	16.0	14.1	12.5	12.9	14.4	13.7

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	35.0	30.4	25.8	24.3	23.7	25.3	26.0
At-risk-of-poverty (% of Children population)	18.9	17.1	17.0	16.7	16.8	18.8	21.2
Severe Material Deprivation (% of Children population)	23.6	19.9	16.3	12.6	12.7	13.5	12.4
Share of children living in low work intensity households (% of Children population)	4.8	4.4	5.5	4.4	5.4	8.0	7.3
Risk of poverty of children in households at work (Working Intensity > 0.2)	15.8	14.4	13.0	13.7	12.7	13.0	16.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	35.7	38.1	37.3	38.1	30.3	35.8	28.6

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	31.6	25.8	20.1	19.3	18.5	20.2	20.6
At-risk-of-poverty (% of Working age population)	12.7	10.6	9.2	9.5	9.6	11.2	12.4
Severe Material Deprivation (% of Working age population)	21.2	17.1	12.3	10.8	10.6	11.0	10.3
Low work intensity (18-59)	7.2	6.7	6.7	5.4	5.6	7.9	7.8
In-work at Risk-of-povery rate (% of Working age population)	9.0	6.3	4.9	5.8	5.2	5.7	6.3
Impact of social transfers (excl. pensions) in reducing poverty (%)	40.4	38.5	45.9	43.5	39.2	41.4	34.7

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	29.0	25.6	22.0	21.9	19.7	16.7	14.5
At-risk-of-poverty (% of Elderly population)	7.1	8.5	9.6	9.9	10.8	7.7	6.3
Severe Material Deprivation (% of Elderly population)	24.6	21.0	17.7	15.3	11.7	11.1	9.7
Relative median income of elderly (ratio with median income of people younger than 65)	0.85	0.85	0.81	0.79	0.81	0.83	0.86
Aggregate replacement ratio (ratio)	0.55	0.57	0.54	0.54	0.55	0.61	0.62

Expenditure in social protection indicators (% of GDP - Slovakia)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	4.8	4.8	4.7	5.1	5.8	5.6	
Disability	1.3	1.3	1.3	1.4	1.5	1.6	
Old age and survivors	7.1	6.9	6.8	6.6	7.8	7.8	
Family/Children	1.7	1.6	1.5	1.5	1.7	1.8	
Unemployment	0.5	0.5	0.6	0.6	1.0	0.9	
Housing and Social Exclusion	:	:	:	:	:	:	
Total	16.5	16.4	16.1	16.1	18.8	18.6	
of which: Means tested benefits	0.9	1.0	1.0	0.8	0.9	0.9	

Source: Eurostat.

Social inclusion indicators: Slovenia

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	18.5	17.1	17.1	18.5	17.1	18.3	19.3
At-risk-of-poverty (% of total population)	12.2	11.6	11.5	12.3	11.3	12.7	13.6
At-risk-of-poverty threshold (PPS single person)	6946	7292	7753	8287	8646	8228	8512
Poverty gap (%)	19.1	18.6	19.4	19.3	20.2	20.2	19.9
Persistent at-risk-of-poverty (% of total population)	:	:	:	7.7	7.0	6.9	7.5
At-risk-of-poverty before social transfers excl. pensions (% of total population)	25.9	24.2	23.1	23.0	22.0	24.2	24.2
Impact of social transfers (excl. pensions) in reducing poverty (%)	52.9	48.6	50.2	46.5	48.6	47.5	43.8
Severe Material Deprivation (% of total population)	5.1	5.1	5.1	6.7	6.1	5.9	6.1
Share of people living in low work intensity households (% of people aged 0-59)	8.6	6.9	7.2	6.7	5.6	6.9	7.6
Gross Household Disposable Income adjusted for consumer prices (growth %)	3.9	3.0	4.5	1.6	-0.2	-0.9	-0.7
Income quintile share ratio S80/S20	3.4	3.4	3.3	3.4	3.2	3.4	3.5
GINI coefficient	23.8	23.7	23.2	23.4	22.7	23.8	23.8
Early leavers from education and training (% of population aged 18-24)	4.9	5.6	4.1	5.1	5.3	5.0	4.2
NEET: Young people not in employment, education or training (% of total population aged 15-24)	8.9	8.5	6.7	6.5	7.5	7.1	7.1

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	16.4	15.3	15.0	16.6	15.1	16.5	17.4
At-risk-of-poverty (% of male population)	10.6	10.3	10.0	11.0	9.8	11.3	12.2
Poverty gap (%)	20.3	20.0	19.2	20.8	21.1	20.9	20.1
Persistent at-risk-of-poverty (% of male population)	:	:	:	6.3	5.8	5.6	5.9
Severe Material Deprivation (% of male population)	4.9	5.1	4.9	6.4	5.9	5.6	5.8
Share of people living in low work intensity households (% of males aged 0-59)	8.0	6.1	6.3	6.2	4.8	6.0	6.7
Life expectancy at birth (years)	73.9	74.5	74.6	75.5	75.9	76.4	:
Healthy life years at birth (years)	56.4	57.7	58.7	59.5	60.6	53.4	:
Early leavers from education and training (% of males aged 18-24)	6.5	7.1	5.8	7.2	7.2	6.4	5.7
NEET: Young people not in employment, education or training (% of males aged 15-24)	8.2	8.4	6.8	6.7	7.9	8.1	7.8

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	20.5	18.8	19.2	20.3	19.1	20.1	21.1
At-risk-of-poverty (% of female population)	13.7	12.9	12.9	13.6	12.8	14.1	15.0
Poverty gap (%)	18.5	18.3	19.7	18.7	20.2	19.1	19.5
Persistent at-risk-of-poverty (% of female population)	:	:	:	9.0	8.1	8.0	9.1
Severe Material Deprivation (% of female population)	5.4	5.1	5.3	6.9	6.3	6.3	6.4
Share of people living in low work intensity households (% of females aged 0-59)	9.2	7.7	8.2	7.3	6.5	8.0	8.6
Life expectancy at birth (years)	80.9	82.0	82.0	82.6	82.7	83.1	:
Healthy life years at birth (years)	60.1	61.0	62.3	60.8	61.5	54.6	:
Early leavers from education and training (% of females aged 18-24)	3.2	4.0	2.2	2.6	3.2	3.3	2.5
NEET: Young people not in employment, education or training (% of females aged 15-24)	9.7	8.6	6.6	6.2	6.9	6.0	6.3

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	15.3	14.3	14.7	15.3	15.1	15.2	17.3
At-risk-of-poverty (% of Children population)	12.1	11.5	11.3	11.6	11.2	12.6	14.7
Severe Material Deprivation (% of Children population)	4.2	3.9	4.4	5.2	5.4	5.1	5.3
Share of children living in low work intensity households (% of Children population)	4.1	3.5	4.5	3.7	2.5	3.3	4.4
Risk of poverty of children in households at work (Working Intensity > 0.2)	9.3	9.0	8.4	9.0	9.5	9.9	11.3
Impact of social transfers (excl. pensions) in reducing poverty (%)	57.1	52.1	54.8	50.4	53.7	51.4	45.4

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	18.2	16.5	16.6	18.0	16.2	18.1	18.7
At-risk-of-poverty (% of Working age population)	10.4	9.7	9.8	10.5	9.2	11.0	11.7
Severe Material Deprivation (% of Working age population)	5.0	5.1	5.0	6.9	6.2	6.1	6.2
Low work intensity (18-59)	9.9	7.8	8.1	7.6	6.5	8.0	8.6
In-work at Risk-of-povery rate (% of Working age population)	4.6	4.8	4.7	5.1	4.8	5.3	6.0
Impact of social transfers (excl. pensions) in reducing poverty (%)	56.1	51.1	53.3	49.0	52.1	49.8	45.8

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	23.8	22.5	22.4	24.4	23.3	22.8	24.2
At-risk-of-poverty (% of Elderly population)	20.3	19.9	19.4	21.3	20.0	20.2	20.9
Severe Material Deprivation (% of Elderly population)	6.9	6.3	6.6	7.4	6.5	6.3	6.8
Relative median income of elderly (ratio with median income of people younger than 65)	0.86	0.85	0.87	0.84	0.86	0.87	0.87
Aggregate replacement ratio (ratio)	0.42	0.41	0.44	0.44	0.45	0.45	0.47

Expenditure in social protection indicators (% of GDP - Slovenia)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	7.3	7.1	6.7	7.0	7.8	7.9	
Disability	1.9	1.9	1.7	1.6	1.8	1.8	
Old age and survivors	10.0	10.1	9.7	9.6	10.9	11.2	
Family/Children	1.9	1.9	1.7	1.8	2.1	2.2	
Unemployment	0.7	0.6	0.4	0.4	0.6	0.7	
Housing and Social Exclusion	0.7	0.6	0.5	0.4	0.5	0.6	
Total	23.0	22.7	21.3	21.4	24.2	24.8	
of which: Means tested benefits	2.2	2.0	1.8	1.8	2.0	2.0	

Source: Eurostat.

Social inclusion indicators: United Kingdom

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	24.8	23.7	22.6	23.2	22.0	23.1	22.7
At-risk-of-poverty (% of total population)	19.0	19.0	18.6	18.7	17.3	17.1	16.2
At-risk-of-poverty threshold (PPS single person)	10137	10578	11267	11126	10250	10238	10114
Poverty gap (%)	22.3	22.8	22.4	21.0	20.6	21.4	21.1
Persistent at-risk-of-poverty (% of total population)	:	:	:	:	8.0	7.4	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	30.6	30.1	29.7	28.9	30.4	31.0	30.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	37.9	36.3	37.4	35.3	43.1	44.8	46.9
Severe Material Deprivation (% of total population)	5.3	4.5	4.2	4.5	3.3	4.8	5.1
Share of people living in low work intensity households (% of people aged 0-59)	12.8	12.0	10.3	10.4	12.6	13.1	11.5
Gross Household Disposable Income adjusted for consumer prices (growth %)	1.6	2.0	1.0	0.1	1.0	0.9	-1.4
Income quintile share ratio S80/S20	5.9	5.4	5.3	5.6	5.3	5.4	5.3
GINI coefficient	34.6	32.5	32.6	33.9	32.4	33.0	33.0
Early leavers from education and training (% of population aged 18-24)	11.6	11.3	16.6	17.0	15.7	14.9	15.0
NEET: Young people not in employment, education or training (% of total population aged 15-24)	8.4	8.5	11.9	12.1	13.3	13.7	14.3

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	23.6	22.1	21.1	21.7	21.1	22.1	21.4
At-risk-of-poverty (% of male population)	18.6	18.0	17.6	17.4	16.7	16.4	14.8
Poverty gap (%)	23.9	22.8	22.9	21.1	20.9	23.0	21.8
Persistent at-risk-of-poverty (% of male population)	:	:	:	:	7.6	7.0	:
Severe Material Deprivation (% of male population)	4.9	4.4	3.9	4.3	3.4	4.8	5.0
Share of people living in low work intensity households (% of males aged 0-59)	11.8	10.8	9.6	9.7	12.0	12.4	10.7
Life expectancy at birth (years)	77.1	77.3	77.6	77.8	78.3	78.7	:
Healthy life years at birth (years)	64.2	64.8	64.6	65.0	65.0	65.0	:
Early leavers from education and training (% of males aged 18-24)	12.6	12.3	17.6	18.3	16.9	15.8	16.2
NEET: Young people not in employment, education or training (% of males aged 15-24)	7.3	7.5	10.1	10.2	12.1	12.2	13.2

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	25.9	25.4	24.1	24.7	22.8	24.2	24.1
At-risk-of-poverty (% of female population)	19.4	19.9	19.6	20.0	17.8	17.8	17.6
Poverty gap (%)	21.5	22.7	21.9	20.9	20.5	19.2	20.4
Persistent at-risk-of-poverty (% of female population)	:	:	:	:	8.3	7.7	:
Severe Material Deprivation (% of female population)	5.6	4.7	4.4	4.8	3.2	4.9	5.1
Share of people living in low work intensity households (% of females aged 0-59)	13.9	13.1	11.1	11.1	13.3	13.9	12.2
Life expectancy at birth (years)	81.3	81.7	81.8	81.9	82.5	82.6	:
Healthy life years at birth (years)	65.5	64.9	66.0	66.3	66.1	65.6	:
Early leavers from education and training (% of females aged 18-24)	10.6	10.2	15.6	15.6	14.5	14.0	13.8
NEET: Young people not in employment, education or training (% of females aged 15-24)	9.5	9.6	13.7	14.1	14.6	15.2	15.5

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	31.2	30.1	27.6	29.6	27.4	29.7	26.9
At-risk-of-poverty (% of Children population)	22.9	23.8	23.0	24.0	20.7	20.3	18.0
Severe Material Deprivation (% of Children population)	8.0	7.1	6.3	6.5	4.4	7.3	7.1
Share of children living in low work intensity households (% of Children population)	16.6	15.4	13.7	13.8	16.1	17.1	14.0
Risk of poverty of children in households at work (Working Intensity > 0.2)	14.4	15.1	14.7	16.2	12.2	12.7	12.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	44.7	43.0	43.6	39.5	51.6	54.4	57.4

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	22.2	20.7	19.6	19.7	19.8	21.2	21.4
At-risk-of-poverty (% of Working age population)	16.2	15.5	15.1	14.7	14.8	14.9	14.1
Severe Material Deprivation (% of Working age population)	5.2	4.3	4.0	4.7	3.6	5.0	5.5
Low work intensity (18-59)	11.4	10.7	9.0	9.1	11.3	11.6	10.5
In-work at Risk-of-povery rate (% of Working age population)	8.1	7.7	7.9	8.0	6.3	6.7	7.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	37.7	36.9	38.9	38.0	44.4	45.2	47.8

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	25.9	27.5	27.9	28.5	23.1	22.3	22.7
At-risk-of-poverty (% of Elderly population)	24.8	26.1	26.5	27.3	22.3	21.4	21.8
Severe Material Deprivation (% of Elderly population)	1.8	2.1	1.9	1.4	1.2	1.3	1.3
Relative median income of elderly (ratio with median income of people younger than 65)	0.74	0.73	0.74	0.74	0.80	0.81	0.81
Aggregate replacement ratio (ratio)	0.42	0.45	0.44	0.43	0.44	0.48	0.48

Expenditure in social protection indicators (% of GDP - United Kingdom)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	7.9	8.0	7.6	7.8	8.8	8.6	
Disability	2.3	2.4	2.5	2.7	2.9	2.8	
Old age and survivors	11.5	11.3	10.5	10.9	11.9	11.5	
Family/Children	1.6	1.5	1.6	1.7	1.9	1.9	
Unemployment	0.7	0.6	0.5	0.6	0.8	0.7	
Housing and Social Exclusion	1.6	1.6	1.4	1.4	1.7	1.7	
Total	26.1	25.9	25.0	26.1	28.9	28.0	
of which: Means tested benefits	4.0	3.9	3.6	3.7	4.2	4.2	

Source: Eurostat.

Social inclusion indicators: Euro area 15

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	21.5	21.8	21.6	21.4	21.2	21.7	22.5
At-risk-of-poverty (% of total population)	15.7	15.9	16.0	16.2	16.1	16.2	16.7
At-risk-of-poverty threshold (PPS single person)	:	:	:	:	:	:	:
Poverty gap (%)	21.4	22.1	21.9	20.9	21.7	22.6	22.8
Persistent at-risk-of-poverty (% of total population)	:	:	:	8.7	8.8	9.2	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	25.4	25.8	25.7	24.9	25.2	26.1	26.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	38.2	39.0	37.7	34.9	36.1	37.9	36.7
Severe Material Deprivation (% of total population)	5.2	5.0	4.9	5.2	5.0	5.2	6.1
Share of people living in low work intensity households (% of people aged 0-59)	10.1	10.4	9.7	9.3	9.5	10.6	10.6
Gross Household Disposable Income adjusted for consumer prices (growth %)	:	:	:	:	:	:	:
Income quintile share ratio S80/S20	4.8	4.7	4.9	4.9	4.9	5.0	5.1
GINI coefficient	29.9	29.5	30.2	30.7	30.4	30.5	:
Early leavers from education and training (% of population aged 18-24)	17.5	17.3	16.9	16.7	15.9	15.5	14.7
NEET: Young people not in employment, education or training (% of total population aged 15-24)	11.9	11.2	10.8	11.0	12.5	12.6	12.7

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	20.1	20.3	20.0	20.0	19.9	20.5	21.3
At-risk-of-poverty (% of male population)	14.8	15.0	15.1	15.2	15.2	15.4	15.8
Poverty gap (%)	22.4	22.7	22.5	21.5	22.3	23.5	23.8
Persistent at-risk-of-poverty (% of male population)	:	:	:	8.1	8.1	8.6	:
Severe Material Deprivation (% of male population)	4.9	4.8	4.5	5.0	4.9	5.1	5.8
Share of people living in low work intensity households (% of males aged 0-59)	9.1	9.3	8.7	8.5	8.7	9.9	9.9
Life expectancy at birth (years)	:	:	:	:	:	:	:
Healthy life years at birth (years)	:	:	:	:	:	:	:
Early leavers from education and training (% of males aged 18-24)	19.8	19.7	19.3	19.0	18.1	17.7	16.7
NEET: Young people not in employment, education or training (% of males aged 15-24)	10.7	10.0	9.7	10.1	12.2	12.3	12.3

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	22.9	23.3	23.1	22.9	22.4	22.8	23.6
At-risk-of-poverty (% of female population)	16.5	16.8	16.9	17.2	17.0	17.0	17.6
Poverty gap (%)	20.7	21.7	21.4	20.5	21.3	21.6	22.2
Persistent at-risk-of-poverty (% of female population)	:	:	:	9.3	9.5	9.8	:
Severe Material Deprivation (% of female population)	5.4	5.2	5.2	5.5	5.2	5.4	6.3
Share of people living in low work intensity households (% of females aged 0-59)	11.1	11.6	10.7	10.2	10.3	11.3	11.3
Life expectancy at birth (years)	:	:	:	:	:	:	:
Healthy life years at birth (years)	:	:	:	:	:	:	:
Early leavers from education and training (% of females aged 18-24)	15.2	14.9	14.5	14.2	13.7	13.2	12.6
NEET: Young people not in employment, education or training (% of females aged 15-24)	13.1	12.4	11.9	12.0	12.8	13.0	13.1

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	23.3	23.5	23.1	23.9	23.6	25.1	24.9
At-risk-of-poverty (% of Children population)	18.1	18.3	18.0	19.3	18.9	19.8	19.7
Severe Material Deprivation (% of Children population)	6.3	6.0	5.7	6.5	6.0	6.5	7.1
Share of children living in low work intensity households (% of Children population)	9.0	9.0	8.4	8.0	8.5	9.8	9.3
Risk of poverty of children in households at work (Working Intensity > 0.2)	13.4	13.5	14.1	14.8	14.2	14.4	14.6
Impact of social transfers (excl. pensions) in reducing poverty (%)	44.8	44.8	45.9	40.8	43.1	43.6	43.1

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	20.8	21.3	21.1	20.8	20.8	21.7	22.8
At-risk-of-poverty (% of Working age population)	13.8	14.2	14.6	14.5	14.7	15.1	15.9
Severe Material Deprivation (% of Working age population)	5.1	5.1	4.9	5.3	5.2	5.4	6.3
Low work intensity (18-59)	10.5	10.9	10.1	9.8	9.9	10.8	11.0
In-work at Risk-of-povery rate (% of Working age population)	7.3	7.3	7.9	7.9	7.8	7.8	8.5
Impact of social transfers (excl. pensions) in reducing poverty (%)	41.0	41.9	38.7	37.2	38.0	39.6	37.9

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	21.8	21.6	21.9	21.0	19.6	18.0	18.9
At-risk-of-poverty (% of Elderly population)	19.8	19.7	18.9	19.2	18.0	16.3	16.4
Severe Material Deprivation (% of Elderly population)	3.9	3.7	3.8	3.5	3.3	3.3	4.3
Relative median income of elderly (ratio with median income of people younger than 65)	0.84	0.84	0.83	0.85	0.86	0.88	0.88
Aggregate replacement ratio (ratio)	0.51	0.51	0.49	0.50	0.50	0.53	0.46

Expenditure in social protection indicators (% of GDP - Euro area 15)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	7.7	7.7	7.5	7.8	8.7	8.6	
Disability	2.1	2.1	2.1	2.2	2.3	2.3	
Old age and survivors	12.1	11.9	11.6	12.0	13.0	12.9	
Family/Children	2.1	2.1	2.1	2.1	2.4	2.3	
Unemployment	1.6	1.5	1.3	1.4	1.8	1.8	
Housing and Social Exclusion	0.9	1.0	0.9	0.9	1.1	1.1	
Total	27.6	27.3	26.8	27.6	30.4	30.2	
of which: Means tested benefits	2.9	2.9	2.8	2.9	3.2	3.2	

Source: Eurostat.

Social inclusion indicators: Euro area 17

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	21.4	21.7	21.7	21.4	21.2	21.6	22.6
At-risk-of-poverty (% of total population)	15.2	15.5	16.3	15.8	15.9	16.1	16.9
At-risk-of-poverty threshold (PPS single person)	:	:	:	:	:	:	:
Poverty gap (%)	21.4	21.9	21.8	20.9	21.9	23.0	23.3
Persistent at-risk-of-poverty (% of total population)	:	:	:	8.9	9.1	9.6	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	24.2	24.7	24.7	23.9	23.9	25.0	25.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	37.2	38.0	34.0	33.9	33.5	35.6	33.5
Severe Material Deprivation (% of total population)	5.6	5.5	5.3	5.7	5.6	5.6	6.6
Share of people living in low work intensity households (% of people aged 0-59)	9.6	10.1	9.6	9.1	8.9	10.1	10.4
Gross Household Disposable Income adjusted for consumer prices (growth %)	:	:	:	:	:	:	:
Income quintile share ratio S80/S20	4.6	4.6	4.8	4.8	4.8	4.9	5.0
GINI coefficient	29.2	29.1	29.9	30.2	30.1	30.2	:
Early leavers from education and training (% of population aged 18-24)	17.7	17.4	16.8	16.5	15.9	15.5	14.7
NEET: Young people not in employment, education or training (% of total population aged 15-24)	12.1	11.3	10.8	11.0	12.5	12.7	12.6

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	19.9	20.2	20.1	19.8	19.8	20.5	21.5
At-risk-of-poverty (% of male population)	14.2	14.5	15.3	14.8	14.9	15.3	16.1
Poverty gap (%)	22.3	22.6	22.5	21.6	22.7	23.6	24.2
Persistent at-risk-of-poverty (% of male population)	:	:	:	8.2	8.4	9.0	:
Severe Material Deprivation (% of male population)	5.4	5.2	4.9	5.4	5.4	5.4	6.3
Share of people living in low work intensity households (% of males aged 0-59)	8.6	9.1	8.5	8.2	8.1	9.4	9.8
Life expectancy at birth (years)	:	:	:	:	:	:	:
Healthy life years at birth (years)	:	:	:	:	:	:	:
Early leavers from education and training (% of males aged 18-24)	20.2	20.1	19.5	19.1	18.3	18.0	16.9
NEET: Young people not in employment, education or training (% of males aged 15-24)	10.9	10.2	9.7	10.2	12.4	12.5	12.4

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	22.8	23.2	23.3	22.8	22.5	22.7	23.7
At-risk-of-poverty (% of female population)	16.2	16.4	17.2	16.8	16.8	16.9	17.6
Poverty gap (%)	20.7	21.5	21.3	20.5	21.5	22.2	22.7
Persistent at-risk-of-poverty (% of female population)	:	:	:	9.5	9.9	10.4	:
Severe Material Deprivation (% of female population)	5.8	5.7	5.7	5.9	5.8	5.8	6.8
Share of people living in low work intensity households (% of females aged 0-59)	10.6	11.2	10.6	10.0	9.7	10.9	11.1
Life expectancy at birth (years)	:	:	:	:	:	:	:
Healthy life years at birth (years)	:	:	:	:	:	:	:
Early leavers from education and training (% of females aged 18-24)	15.0	14.7	14.1	13.8	13.4	13.0	12.4
NEET: Young people not in employment, education or training (% of females aged 15-24)	13.3	12.4	11.8	11.8	12.6	12.8	12.9

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	22.4	22.6	22.7	23.2	23.3	24.6	24.9
At-risk-of-poverty (% of Children population)	17.5	17.3	18.3	18.6	18.8	20.0	20.4
Severe Material Deprivation (% of Children population)	6.4	6.2	5.9	6.8	6.7	6.7	7.4
Share of children living in low work intensity households (% of Children population)	7.4	7.8	7.3	6.8	6.9	8.4	8.3
Risk of poverty of children in households at work (Working Intensity > 0.2)	13.5	13.4	14.2	14.8	14.8	15.1	15.4
Impact of social transfers (excl. pensions) in reducing poverty (%)	43.4	44.7	42.3	40.2	39.7	39.9	38.2

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	21.0	21.7	21.5	21.2	21.1	21.9	23.2
At-risk-of-poverty (% of Working age population)	13.5	14.0	14.8	14.4	14.6	15.2	16.2
Severe Material Deprivation (% of Working age population)	5.6	5.5	5.3	5.7	5.8	5.8	6.7
Low work intensity (18-59)	10.4	10.9	10.3	9.9	9.5	10.7	11.1
In-work at Risk-of-povery rate (% of Working age population)	7.2	7.3	8.0	7.9	8.1	8.1	8.6
Impact of social transfers (excl. pensions) in reducing poverty (%)	40.5	41.9	36.5	36.3	36.0	37.7	35.5

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	21.6	21.1	21.3	20.0	19.2	17.4	18.2
At-risk-of-poverty (% of Elderly population)	19.2	18.8	19.3	17.9	17.3	15.4	15.3
Severe Material Deprivation (% of Elderly population)	4.7	4.4	4.5	4.2	3.9	3.9	5.1
Relative median income of elderly (ratio with median income of people younger than 65)	0.86	0.86	0.85	0.87	0.87	0.89	0.90
Aggregate replacement ratio (ratio)	0.52	0.51	0.49	0.51	0.51	0.53	0.46

Expenditure in social protection indicators (% of GDP - Euro area 17)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	7.6	7.6	7.5	7.8	8.6	8.6	
Disability	2.0	1.9	1.9	1.9	2.1	2.1	
Old age and survivors	12.2	12.0	11.9	12.2	13.1	13.2	
Family/Children	2.2	2.1	2.1	2.1	2.4	2.3	
Unemployment	1.8	1.7	1.5	1.5	2.0	2.0	
Housing and Social Exclusion	0.7	0.8	0.8	0.8	0.9	0.9	
Total	27.7	27.3	26.9	27.6	30.4	30.4	
of which: Means tested benefits	2.7	2.8	2.7	2.8	3.2	3.2	

Source: Eurostat.

Social inclusion indicators: European Union 27

Global

All	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of total population)	25.6	25.2	24.4	23.5	23.1	23.4	24.2
At-risk-of-poverty (% of total population)	16.4	16.5	16.5	16.4	16.3	16.4	16.9
At-risk-of-poverty threshold (PPS single person)	:	:	:	:	:	:	:
Poverty gap (%)	23.3	23.3	23.1	21.7	22.4	23.2	23.3
Persistent at-risk-of-poverty (% of total population)	:	:	:	8.7	8.8	9.6	:
At-risk-of-poverty before social transfers excl. pensions (% of total population)	25.9	26.1	25.8	25.2	25.1	25.9	26.1
Impact of social transfers (excl. pensions) in reducing poverty (%)	36.7	37.1	36.0	34.9	35.1	36.7	35.2
Severe Material Deprivation (% of total population)	10.7	9.8	9.1	8.3	8.1	8.1	8.8
Share of people living in low work intensity households (% of people aged 0-59)	10.3	10.5	9.6	9.0	9.0	10.0	10.0
Gross Household Disposable Income adjusted for consumer prices (growth %)	1.8	2.0	2.3	-2.1	-3.0	0.6	-0.6
Income quintile share ratio S80/S20	5.0	4.9	5.0	5.0	4.9	5.0	5.1
GINI coefficient	30.6	30.2	30.6	30.8	30.4	30.5	:
Early leavers from education and training (% of population aged 18-24)	15.8	15.5	15.1	14.9	14.4	14.1	13.5
NEET: Young people not in employment, education or training (% of total population aged 15-24)	12.6	11.7	10.9	10.9	12.4	12.8	12.9

By gender

Male	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of male population)	24.3	23.8	22.9	22.0	21.8	22.3	23.0
At-risk-of-poverty (% of male population)	15.6	15.7	15.7	15.5	15.4	15.6	16.1
Poverty gap (%)	24.4	24.1	23.9	22.3	23.1	24.1	24.4
Persistent at-risk-of-poverty (% of male population)	:	:	:	8.2	8.2	9.0	:
Severe Material Deprivation (% of male population)	10.3	9.6	8.7	8.0	7.8	7.9	8.5
Share of people living in low work intensity households (% of males aged 0-59)	9.4	9.5	8.7	8.2	8.3	9.3	9.4
Life expectancy at birth (years)	75.4	75.8	76.1	76.4	76.7	:	:
Healthy life years at birth (years)	61.1	61.8	61.7	61.1	61.3	61.7	:
Early leavers from education and training (% of males aged 18-24)	17.8	17.6	17.1	16.9	16.3	16.0	15.3
NEET: Young people not in employment, education or training (% of males aged 15-24)	11.4	10.5	9.7	9.7	12.0	12.3	12.5

Female	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of female population)	26.9	26.6	25.9	24.9	24.4	24.5	25.2
At-risk-of-poverty (% of female population)	17.0	17.2	17.3	17.4	17.1	17.0	17.6
Poverty gap (%)	22.6	22.8	22.4	21.2	21.9	22.2	22.5
Persistent at-risk-of-poverty (% of female population)	:	:	:	9.2	9.4	10.2	:
Severe Material Deprivation (% of female population)	11.0	10.1	9.5	8.6	8.3	8.3	9.1
Share of people living in low work intensity households (% of females aged 0-59)	11.3	11.5	10.6	9.8	9.8	10.7	10.7
Life expectancy at birth (years)	81.6	82.0	82.2	82.4	82.6	:	:
Healthy life years at birth (years)	62.5	62.5	62.6	62.2	62.0	62.6	:
Early leavers from education and training (% of females aged 18-24)	13.7	13.4	13.0	12.8	12.5	12.1	11.6
NEET: Young people not in employment, education or training (% of females aged 15-24)	13.9	12.9	12.2	12.1	12.9	13.2	13.4

By age group

Children (0-17)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Children population)	27.8	27.2	26.3	26.1	26.0	27.0	27.0
At-risk-of-poverty (% of Children population)	19.9	19.8	19.5	20.1	19.8	20.5	20.6
Severe Material Deprivation (% of Children population)	12.0	11.0	10.0	9.6	9.3	9.6	10.0
Share of children living in low work intensity households (% of Children population)	9.0	9.0	8.3	7.6	8.0	9.1	8.8
Risk of poverty of children in households at work (Working Intensity > 0.2)	15.0	14.9	15.2	15.8	15.4	15.5	15.7
Impact of social transfers (excl. pensions) in reducing poverty (%)	41.1	41.1	42.1	39.5	40.5	41.4	40.5

Working age (18-64)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Working age population)	25.0	24.7	23.8	22.8	22.6	23.3	24.3
At-risk-of-poverty (% of Working age population)	14.6	14.8	15.1	14.7	14.8	15.2	16.0
Severe Material Deprivation (% of Working age population)	10.5	9.7	8.9	8.2	8.1	8.2	8.9
Low work intensity (18-59)	10.8	11.0	10.1	9.5	9.4	10.3	10.4
In-work at Risk-of-povery rate (% of Working age population)	8.8	8.6	8.4	8.4	8.3	8.4	8.9
Impact of social transfers (excl. pensions) in reducing poverty (%)	39.7	40.1	37.1	37.2	37.3	38.7	37.0

Elderly (65+)	2005	2006	2007	2008	2009	2010	2011
At-risk-of-poverty or exclusion (% of Elderly population)	25.5	24.8	24.5	23.2	21.8	19.9	20.5
At-risk-of-poverty (% of Elderly population)	18.9	19.0	18.4	19.0	18.0	16.0	16.0
Severe Material Deprivation (% of Elderly population)	10.0	9.1	8.6	7.2	6.7	6.4	7.2
Relative median income of elderly (ratio with median income of people younger than 65)	0.86	0.85	0.84	0.85	0.86	0.88	0.89
Aggregate replacement ratio (ratio)	0.51	0.51	0.49	0.50	0.51	0.53	0.48

Expenditure in social protection indicators (% of GDP - European Union 27)

	2005	2006	2007	2008	2009	2010	
Sickness/Health care	7.5	7.5	7.3	7.6	8.4	8.3	
Disability	2.1	2.1	2.1	2.1	2.3	2.2	
Old age and survivors	11.9	11.7	11.4	11.8	12.7	12.7	
Family/Children	2.1	2.0	2.0	2.1	2.3	2.3	
Unemployment	1.6	1.4	1.3	1.3	1.8	1.7	
Housing and Social Exclusion	0.9	0.9	0.9	0.9	1.0	1.0	
Total	27.1	26.7	26.1	26.8	29.6	29.4	
of which: Means tested benefits	2.8	2.8	2.7	2.7	3.0	3.1	

Source: Eurostat.

Data sources and definitions

Main data sources

Most of the data used in this report originates from Eurostat, the Statistical Office of the European Union. The main data source for the social indicators is the EU-SILC (EU-Statistics on Income and Living Conditions). The EU-SILC instrument is the EU reference source for comparative statistics on income distribution and social inclusion at the European level. It provides two types of annual data for 27 European Union countries, Croatia, Iceland, Norway, Switzerland and Turkey:

- Cross-sectional data pertaining to a given time or a certain time period with variables on income, poverty, social exclusion and other living conditions, and
- Longitudinal data pertaining to individual-level changes over time, observed periodically over a four year period.

EU-SILC does not rely on a common questionnaire or a survey but on the idea of a 'framework'. The latter defines the harmonised lists of target primary (annual) and secondary (every four years or less frequently) variables to be transmitted to Eurostat; common guidelines and procedures; common concepts (household and income) and classifications aimed at maximising comparability of the information produced.

Data regarding social protection expenditures are from the European System of integrated Social PROtection Statistics (ESSPROS). ESSPROS is an instrument of statistical observation which enables international comparison of the administrative national data on social protection in the EU Member States.

The conventional definition used for the scope of social protection definition is the following:

'Social Protection encompasses all interventions from public or private bodies intended to relieve households and individuals of the burden of a defined set of risks or needs, provided that there is neither a simultaneous reciprocal nor an individual arrangement involved. The list of risks or needs that may give rise to social protection is, by convention, as follows: Sickness/Health care, Disability, Old age, Survivors, Family/children, Unemployment, Housing and Social exclusion not elsewhere classified'.

Definitions and data sources of key social indicators

Indicator	Definition	Data by Gender	Data by Age	Source
At-risk-of-poverty-or-exclusion	Percentage of a population representing the sum of persons who are: at risk of poverty or severely materially deprived or living in households with very low work intensity.	X	X	Eurostat, SILC
At-risk-of-poverty	Share of people with an equivalised disposable income (after social transfer) below the at-risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers.	X	X	Eurostat, SILC
At-risk-of-poverty threshold	60 % of the national median equivalised disposable income after social transfers.	X		Eurostat, SILC
Poverty gap	Difference between the median equivalised disposable income of people below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold, expressed as a percentage of the at-risk-of-poverty threshold (cut-off point: 60 % of national median equivalised disposable income).	X		Eurostat, SILC
Persistent at-risk-of-poverty	Percentage of the population living in households where the equivalised disposable income was below the at-risk-of-poverty threshold for the current year and at least two out of the preceding three years.	X		Eurostat, SILC
At-risk-of-poverty before social transfers excl. pensions	Share of people having an equivalised disposable income before social transfers that is below the at-risk-of-poverty threshold calculated after social transfers.			Eurostat, SILC
Impact of social transfers	Computed indicator, formula: 100*(B-A)/B, where B: At-risk-of-poverty before social transfers excl. pensions. A: At-risk-of-poverty.		X	Eurostat, SILC
Severe Material Deprivation	Inability to afford some items (at least 4 on a list of 9)considered by most people to be desirable or even necessary to lead an adequate life.	X	X	Eurostat, SILC
Share of people living in low work intensity households	Share of persons living in a household having a work intensity below a threshold set at 0.20. The work intensity of a household is the ratio of the total number of months that all working-age household members have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period.	X		Eurostat, SILC
Gross Household Disposable Income adjusted for consumer prices	The amount of money available for spending or saving. This is money left after expenditure associated with income, e.g. taxes and social contributions, property ownership and provision for future pension income.			AMECO
Income quintile share ratio S80/S20	Ratio of total income received by the 20 % of the population with the highest income (the top quintile) to that received by the 20 % of the population with the lowest income (the bottom quintile).			Eurostat, SILC
GINI coefficient	The relationship of cumulative shares of the population arranged according to the level of equivalised disposable income, to the cumulative share of the equivalised total disposable income received by them.			Eurostat, SILC
Life expectancy at birth	The mean number of years a newborn child can expect to live if subjected throughout his or her life to the current mortality conditions, the probabilities of dying at each age.	X		Eurostat
Healthy life years at birth	Number of years that a person is expected to continue to live in a healthy condition.	X		Eurostat
Early leavers from education and training	Early leaver from education and training, previously named early school leaver, generally refers to a person aged 18 to 24 who has finished no more than a lower secondary education and is not involved in further education or training; their number can be expressed as a percentage of the total population aged 18 to 24.	X		Eurostat
NEET: Young people not in employment, education or training	Share of people aged 15 to 24 who are unemployed, not engaged in housework, not enrolled in school or work-related training, and not seeking work.	X		Eurostat, LFS
Risk of poverty of children in households at work (Working Intensity > 0.2)	Share of children at-risk-of-poverty living in households with work intensity bigger than very low.			Eurostat, SILC
In-work at Risk-of-poverty rate	The share of persons who are at work and have an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers).			Eurostat, SILC
Relative median income of elderly	Ratio of the median equivalised disposable income of people aged above 65 to the median equivalised disposable income of those aged below 65.			Eurostat, SILC
Aggregate replacement ratio	Ratio of the median individual gross pensions of 65-74 age category relative to median individual gross earnings of 50-59 age category, excluding other social benefits.			Eurostat, SILC
Social indicator expenditure	Percentage of expenditure in different social protection areas in relation with the GDP.			Eurostat

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