FX and Rates | Global
10 July 2012

Game theory and euro breakup risk premium

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The meaning of declining tail risk premium

The cost of insuring against EUR tail risk has fallen sharply over the past month. The EU Summit has persuaded many investors that the negative consequences of a euro breakup are so great that politicians will pay whatever price necessary to avoid it. We have reservations about the soundness of this logic and view EUR tail risk premium as mispriced.

Italy may be a bigger problem than Greece

We make our case by using game theory and a cost-benefit study of the relative incentive for a voluntary exit. Our analysis leads to three surprising conclusions. One, Eurobonds are not a Nash equilibrium. Two, while Germany and Austria have the least incentive of any eurozone countries to exit, Italy and Ireland have the most. Three, Germany's incentive to pay other countries to stay is more limited than meets the eye.

Only a weaker EUR can save the EUR

Our analysis suggests that only a much weaker euro can reduce the breakup risk by reducing the incentive for exit and buying time for reforms. We feel that the downside to our near-term 1.20 EUR/USD target is increasing, especially given the low level of US real yields that will reduce the impact of further Fed easing on the USD. We initiate a new recommendation to buy a 6m EUR/USD 1.10 one-touch option that has a 5 to 1 payoff.

Annex: Greece faces mounting challenges

The new coalition government was formed on an agenda that is not fully consistent with the IMF program. We see the next few months as potentially Greece's last chance to stay in the eurozone.

Refer to important disclosures on page 14 to 16. Analyst Certification on Page 13. Link to Definitions on page 13.

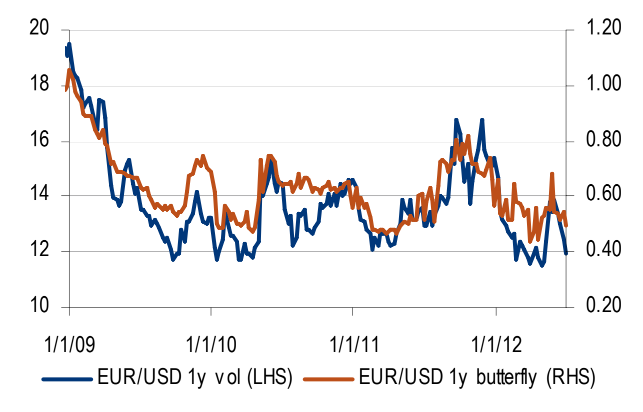
EUR tail risk premium near 2y low

The cost of insuring against EUR tail risk, which was already in retreat even before the EU Summit, has fallen further since. 1y EUR/USD implied vol, now at just 12, is only half a vol from its two-year low. 1y EUR/USD 25 delta butterfly, the most direct measure of perceived tail risk, is trading at 0.5 vol, having reached 0.8 vol last November and nearly 0.7 vol in early June (Chart 1). Even 1y EUR/USD risk reversal has broken above -3 vol. Should investors view these developments as a sign that the worst of the crisis is now behind us, or should they see them as providing an opportunity to pick up cheap EUR tail risk insurance? We would argue for the latter.

To some extent, the drop in tail risk premium is a reflection of the poor performance of tail risk hedges in the past two years. It is also possible that investors have reduced their exposures to eurozone assets so much that their need for insurance against EUR downside risk has simply diminished. While all these considerations may be true, many investors have also come to believe, especially after the EU Summit, that European policymakers, when pushed to the wall, will do whatever it takes to hold the euro club together. For these investors, Eurobonds are a kind of safety valve; when the crisis reaches a boiling point they believe the Germans will capitulate and agree to "shared liabilities" that will end the crisis. The fact that throughout the crisis the Germans consistently have staked their boundaries only to cross them when the crisis intensifies has only encouraged this popular view of what is the end-game.[1]

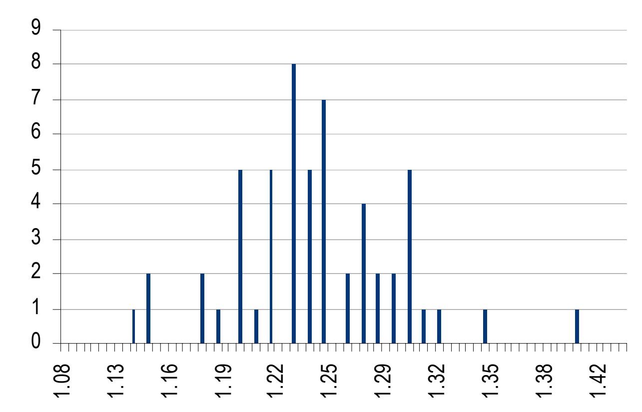
We are skeptical about the wisdom of this consensus. Recent political developments in the eurozone have given us good reasons to think that the EUR breakup risk is not falling but rising (notwithstanding the compromise reached at the EU Summit). The fact that Germany and France are slowly drifting apart (signaling more policy paralysis ahead), that German opposition parties are quietly backing away from their support for Eurobonds[2], and the sharp rise of the Five Star party in Italy (that is already complicating the reform agenda of the

Chart 1: EUR/USD 1y vol and 1y butterfly



Source: Bloomberg

Chart 2: Analyst forecasts of EUR/USD at end Q3



Source: Bloomberg

[1] The fact that the consensus EUR/USD forecast for the next four quarters is a flat line at 1.25 and that very few analysts are still forecasting a significant depreciation of the EUR (Chart 2) would tend to reinforce this.

[2] A German poll conducted after the EU summit found that while 54% of Germans see the EU and the euro as having been beneficial for Germany, 59% of them oppose ceding budget sovereignty to European institutions as and 73% reject Eurobonds.

Monti government) are all signs that common ground in the eurozone is slowly shrinking and that time is running out.

Below are our full arguments on why the recent decline in EUR tail risk premium is not sustainable. In particular, we employ game theory and a cost-benefit analysis to explain why in our view the market may be underpricing the voluntary exit of one or more countries. Our analysis produces a few surprising results that even readers who may disagree with our conclusion are likely to find interesting. We finally discuss how best to position for the risks that we see in the months ahead.

Uncooperative outcome dominates

The outcome of a game is Pareto optimal if there is no other outcome that makes every player at least as well off and at least one player strictly better off.

A Nash equilibrium is a set of strategies, one for each player, such that no player has incentive to unilaterally change an action. Players are in equilibrium if a change in strategy by one of them would lead that player to earn less than remaining with the current strategy.

One of the most provocative observations of modern game theory is that the most likely outcome is not always Pareto optimal. Put differently, the dominant strategy for game players is not always to cooperate, even when everyone is better off if they do.

The most famous illustration of this is the Prisoner's Dilemma. In this game, two men are arrested. The police offer both men a similar deal. If one testifies against the other, and the other stays silent, the betrayer goes free while the one who remains silent gets a one-year sentence. If both remain silent, they will each get a one-month sentence. If both decide to testify against the other, each will get a three-month sentence. Even though both will be better off if they stay silent, the "Nash equilibrium" is that both men will testify against each other. This is because from the perspective of each prisoner, regardless of what the other person does, he can be better off by betraying.

Table 1: Germany vs Greece

		Germany	
		Eurobonds	No Eurobonds
Greece	Austerity	Germany: +5 Greece: +5	Germany: +10 Greece: -5
	No austerity	Germany: -5 Greece: +10	Germany: 0 Greece: 0

Source: BofA Merrill Lynch Global Research

The prisoner's dilemma problem can help us better understand the dynamics of the eurozone crisis, in our view. Below (Table 1), we present a highly abstract, stylized form of the game that Germany and Greece have been playing for the last two years. Greece is given two options: austerity or no austerity. Germany also has two options: Eurobonds or no Eurobonds. For each of the four possible outcomes, we assign a certain payoff for each country that is meant to be illustrative, but captures the essence of the different political/economic considerations of the two countries.

As the payoffs in Table 1 imply, both countries would fare better if they choose to cooperate (Greece agreeing to austerity while Germany agreeing to Eurobonds) than if they do not cooperate (no austerity and no Eurobonds). However, Greece would be even better off if it chooses no austerity but Germany agrees to Eurobonds. Similarly, the best outcome for Germany is that it opts for no Eurobonds but Greece chooses austerity. We assume that neither country knows what the other country is going to do before it has to decide on a course of action.

It is easy to see that the Nash equilibrium is no austerity and no Eurobonds (uncooperative equilibrium). This is because from the point of view of Greece, regardless of what Germany chooses, it will be better off if it opts for no austerity. Similarly, from the point of view of Germany, regardless of what Greece does, it will be better off if it chooses no Eurobonds. As with the Prisoner's Dilemma, no austerity and no Eurobonds can be shown to be the Nash equilibrium (using backward induction) even if we were to allow for the game to be played repeatedly.

In our view, the fact that the dominant strategy for both countries is not to cooperate is why more than two years into the crisis Greece is not closer to implementing a credible reform program and Germany is not any closer to agreeing to Eurobonds (Chancellor Merkel and Minister of Finance Schäuble were both quoted recently as saying that Germany will not agree to shared liabilities in their lifetime). The obstacle is that neither side is able to make a credible pre-commitment to doing the "right thing," to the extent that there is no enforcement mechanism to ensure that each country lives up to its promises. Indeed, to the extent that any trust and good faith among eurozone members is slowly wearing out, the probability of a benign outcome of the peripheral crisis, at least for Greece, is rapidly declining. A German poll conducted after the EU summit found that 49% of Germans want Greece to quit the single currency.

The lack of an enforcement mechanism is why the Germans are demanding that fiscal union will have to precede Eurobonds. Fiscal union, by taking fiscal policy out of the hands of the national governments, solves the pre-commitment problem. However, very few eurozone countries are willing to entertain the notion of giving up their independent fiscal policy, especially given that, as members of the monetary union, they do not have recourse to an independent monetary policy. This may be why France appears to be more hesitant than Germany in terms of wanting to move quickly towards deeper European integration.

The economics of voluntary exit

If the eurozone is no closer to a fiscal union and Eurobonds, we need to consider other potential outcomes of the crisis. Much has been said about involuntary exit from the eurozone (see Annex 1 on our update on Greece), but what about the chances of a voluntary exit, meaning a country (or multiple countries) opting to call it quits on its (their) own accord?

A decision to stay or exit should be dictated by a cost and benefit analysis. What are some of the considerations that should go into such an analysis? In our view, there are four key questions that will have to be answered before any such decision can be made:

- What are the chances for an orderly exit?
- What is the impact on growth following an exit?
- What is the impact on borrowing costs following an exit?
- What is the impact on the country's balance sheet following an exit?

Below we propose a framework that allows us to quantify the answers to these questions for each of the major eurozone member countries, enabling us to assess the *relative* incentives faced by each country regarding its decision to stay or exit the eurozone voluntarily. It is important to emphasize that there are a multitude of considerations in such deliberations (eg, political) that are impossible to quantify and clearly our framework is not equipped to capture. That said, it turns out that our framework nevertheless shed some interesting light on a number of important questions.

Orderly exit?

It goes without saying that a disorderly exit could be extremely disruptive to the economy. In the extreme case, capital controls, loss of access to markets, defaults, and bank runs cannot be ruled out. These disruptions could offset any short-term economic gains from an exit and extract a heavy political cost to any government that undertakes the exit.

Whether a country can achieve an orderly exit is a function of many considerations, but the current account balance and the budget balance will be especially critical. It is reasonable to assume that following an exit the access of the country to foreign financing and capital markets would likely be very limited for a time. This means countries that have large external and fiscal financing needs would be much more vulnerable to a disorderly exit than creditor countries with strong public finances.

In Table 2 we rank the largest 11 eurozone countries in terms of their relative current account balances and primary balances as a share of GDP[3]. It is no surprise to us that the countries that rank as having the greatest ability to achieve an orderly exit include Germany and Austria (with Italy and the Netherlands tied for third place), while Spain and Greece top the countries most vulnerable to a disorderly exit.

Table 2: Likelihood of an orderly exit

	Germany	France	Italy	Spain	Netherl.	Belgium	Austria	Greece	Portugal	Ireland	Finland
Primary balance (% of GDP)	1.0	-2.7	0.9	-6.5	-3.2	-0.6	-0.5	-2.3	-0.6	-10.1	-0.8
Primary balance rank	1	8	2	10	9	5	3	7	4	11	6
Current account balance (% of GDP)	5.7	-2.1	-3.1	-3.5	9.2	-0.8	1.9	-9.8	-6.4	0.1	-0.6
Current account balance rank	2	7	8	9	1	6	3	11	10	4	5
Overall rank	1	9	3	11	3	6	2	10	7	9	6

Source: BofA Merrill Lynch Global Research, OECD

Impact on growth?

For most countries, the most important consideration for any exit decision is likely to be the impact of growth. The three key factors governing this consideration in our view should be: (1) the outlook for the new currency following the exit; (2) the impact of the currency move on export growth; and (3) factors that could constrain any potential increase in export growth.

The exchange rate of any country following an exit is likely to be volatile and could overshoot. However, for the purpose of our exercise, we will assume that the real exchange rate will move toward correcting any gap in unit labor cost between the country and its trading partners in equilibrium. For example, given unit labor cost in Germany, Greece and the entire eurozone has increased by 6%, 32% and 20%, respectively, since 2000, we assume Germany would see the new deutschmark appreciate by 14% while the drachma would depreciate by 12% in real terms if each were to quit the euro club. The results for the rest of countries are in the first row of Table 3. No big surprises here, in our view, except that Italy is not far behind Greece in terms of potential real exchange rate depreciation following an exit.

[3] We calculate a separate ranking for each factor (from 1 to 11 with 1 being the most likely to achieve an orderly exit). For each country, we then add up their two rankings from which we then calculate their overall ranking.

Table 3: Impact on growth from an exit

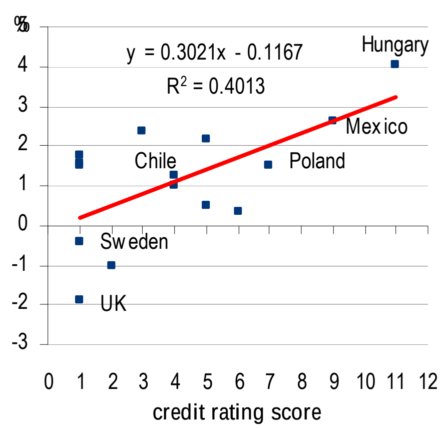
	Germany	France	Italy	Spain	Netherl.	Belgium	Austria	Greece	Portugal	Ireland	Finland
(1) Δ in exchange rate	-15%	5%	11%	6%	5%	5%	-3%	12%	4%	7%	5%
(2) export/GDP	0.5	0.3	0.3	0.3	0.8	0.8	0.6	0.2	0.3	1.0	0.4
(1)*(2) = Δ export as a share of GDP	-7%	1%	3%	2%	4%	4%	-2%	3%	1%	7%	2%
Output gap	1%	3%	3%	6%	1%	0%	1%	8%	3%	9%	1%
Constrained growth impact	-7%	1%	3%	2%	1%	0%	-2%	3%	1%	7%	1%
Rank	11	5	2	4	7	9	10	3	6	1	8

Source: BofA Merrill Lynch Global Research, OECD, Eurostat

Next, we calculate the likely change in exports (as % of GDP) as the result of the exchange rate shift. For simplicity, we assume unitary elasticity of exports with respect to exchange rate (1% currency depreciation would lead to a 1% increase in exports). The results, shown in the third row of Table 4, suggest that Ireland would see the biggest gains to output (7% of GDP) versus Germany, which would see the biggest output loss (-7% of GDP).

However, to complete this part of the analysis, we need to make sure that countries that stand to benefit from an increase in output will not be held back by capacity constraints (so that the exchange rate depreciation does not just translate into higher inflation). To do so, we take as constrained growth impact the lower number between the unconstrained growth impact and the country's output gap as estimated by the OECD. For some countries, this turns out to make a big difference. For example, given that the output gap of Belgium is fairly modest, any real output gains from an exit are also likely to be limited.

Chart 3: Country ratings and real 10-y yields outside the eurozone



Note: AAA=1; AA+=2; AA=3; AA-=4; A+=5; A=6; A-=7; BBB+=8; BBB=9; BBB-=1-; BB+=11; BB=12.
Source: BofA Merrill Lynch Global Research

The final ranking suggests that the countries that stand to reap the most output gains from a eurozone exit are Ireland and Italy, while Germany and Austria have the most to lose. Ireland tops the list because it is a small open economy, while for Italy this is a reflection of the sizeable erosion of its competitiveness since the inception of the euro and its relatively high output gap.

Impact on borrowing costs?

Another important incentive for a country to exit the euro is a potential decline in the government's borrowing costs. There appears to be a consensus that the main reason why peripheral countries are facing high bond yields is that they do not have independent monetary policy, which in turn reinforces perceived devaluation risk and default risk. This is why, at least in theory (and all else being equal), an exit from the eurozone could lead to a decline in a country's real borrowing cost.

The short-term impact on borrowing costs upon an exit is difficult to assess as it would depend on the ability of the country to achieve an orderly exit. The longer-term impact on borrowing costs from an exit, beyond the immediate turmoil, would depend on three factors, in our view: the size of the decline in the bond yields, the size of the debt, and whether existing debt will be redenominated in the new currency. For now, we would assume that the existing debt would be redenominated in the new currency (more on this later). To gauge the potential size of the decline in bond yields, we assume that they would converge to those facing countries outside the eurozone (with independent monetary policy) but with similar credit ratings. So we start by estimating a regression of the real bond yields (10y government yields minus CPI inflation) on the S&P's foreign currency long-term credit ratings for OECD countries that are not in the eurozone (Chart 3).

We then use the regression estimates to derive the likely real borrowing costs of different eurozone economies once they exit the euro. The first row of Table 4 shows how much the bond yield could fall. It is interesting that not all countries would undergo a decline in real borrowing costs upon an exit. For example, Germany, Austria and the Netherlands could have an increase in their bond yields, as the safe haven effect that is now helping to cap their borrowing costs diminishes upon an exit. However, countries like Greece, Portugal, Ireland and even Spain could see a significant decline in their overall borrowing cost, especially given the relatively high debt stocks of these countries.

Table 4: Impact on borrowing costs from an exit

	Germany	France	Italy	Spain	Netherl.	Belgium	Austria	Greece	Portugal	Ireland	Finland
∆ real bond yields (bp)	80	0	-20	-80	60	0	60	-2200	-590	-400	80
debt stock (% of GDP)	81	86	120	68	65	98	72.2	165	108	108	49
(1)*(2) total savings (% of GDP)	0.61	-0.02	-0.21	-0.56	0.38	-0.04	0.43	-37.72	-6.38	-4.34	0.37
Rank	11	7	5	4	9	6	10	1	2	3	8

Source: BofA Merrill Lynch Global Research, Eiurostat

Impact on balance sheets?

An exit from the euro could have big balance sheet impact on households, businesses, banks and the government due to existing cross-border holdings. There would be both winners and losers in any country considering an exit, which would complicate the political decision making. Nevertheless, it is worthwhile asking the question of whether the country as a whole benefits or loses from an exit.

We believe it is reasonable to assume that when a country exits the euro, it would redenominate all of its liabilities into the new currency.[4] If the currency depreciates, this would represent not only a decline in the foreign currency value of the country's total external liabilities, but also its net external liabilities (the foreign asset holdings of domestic residents would not be redenominated). However, if the currency appreciates, this would lead to an increase in the net external liabilities or reduction in the net external assets of the country. Our colleagues in Structured Finance research have pointed out that redenomination may not automatically lead to a default (it depends on lex monetae and contractual intentions), especially for countries that have been issuing debt under domestic law.

Table 5 shows our ranking of the impact on balance sheet from an exit (for simplicity we assume redenomination of all liabilities), using the net international investment position data from the IMF's Balance of Payments database. It is no surprise that Germany again stands to lose the most while Ireland, which has very high level of external liabilities as a share of GDP (17 times), has the most to gain. Belgium (4 times) and the Netherlands (4 times) also stand to reap significant balance sheet gains for the same reason. Italy comes in fourth place as the result of the likely relative large currency depreciation following an exit.

Table 5: Impact on balance sheet from an exit

	Germany	France	Italy	Spain	Netherl.	Belgium	Austria	Greece	Portugal	Ireland	Finland
Change in NIIP	-808	266	232	131	133	88	-27	5	2	202	3
GDP	2571	1995	1580	1073	604	369	301	218	172	156	192
Change in NIIP/GDP	-31	13	15	12	22	24	-9	2	1	129	2
Rank	11	5	4	6	3	2	10	7	9	1	8

Source: BofA Merrill Lynch Global Research, IMF

4 Most of Greece's government debt after the recent PSI debt restructuring is either under foreign law and is held by the private sector, or owned to the IMF-ECB-EU Troika. Although it cannot be redenominated to a new currency legally, Greece is likely to pay only a small share of it in Euro terms after a Euro exit.

Final scores

To reach a final tally of the relative incentives that different countries are facing to voluntarily exit the euro, we add up the rankings across the above four criteria. For simplicity, we attach the same weight to each of our four sets of considerations. The results are in Table 6.

Two very interesting results emerge:

- Even though much of the market focus on exit risk has been on Greece, Italy and Ireland have the highest relative incentive to voluntarily exit the euro, by our analysis. In the case of Italy, it faces a relatively higher chance of achieving an orderly exit and it stands to benefit significantly from competitive gains, growth gains and even balance sheet gains. No wonder former Prime Minister Berlusconi has been recently quoted as saying that leaving the euro is not a "blasphemy." Among the peripheral countries, Spain appears to have the lowest relative incentive to leave.

- While Germany is the country most likely to achieve an orderly exit from the Euro, it also has the lowest incentive of any country to leave, in our view. It would suffer from lower growth, possibly higher borrowing costs, and negative balance sheet effect. Austria, Finland and Belgium don't have strong incentive to leave, either.

It is not our intention to downplay the costs of any exit (orderly or disorderly). However, as the crisis deepens and with more and more policy options unimaginable two years ago finding their way to the table, our framework allows investors to understand the cost-benefit considerations of an exit as part of the policy reaction functions of different countries. As the following section shows, this could have important ramifications on the dynamics of the current negotiations between the core countries and some of the peripheral countries.

Table 6: Final tally

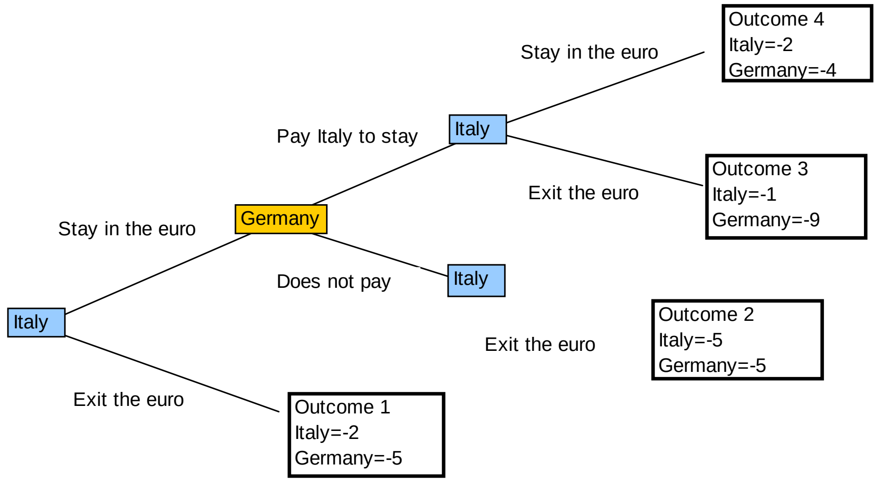
	Germany	France	Italy	Spain	Netherl.	Belgium	Austria	Greece	Portugal	Ireland	Finland
Likelihood of achieving an orderly exit	1	9	3	11	3	6	2	10	7	9	6
Impact on growth	11	5	2	4	7	9	10	3	6	1	8
Impact on borrowing costs	11	7	5	4	9	6	10	1	2	3	8
Impact of balance sheet	11	5	4	6	3	2	10	7	9	1	8
Average ranking	8.5	6.5	3.5	6.3	5.5	5.8	8.0	5.3	6.0	3.5	7.5

Source: BofA Merrill Lynch Global Research (Note: 1 = highest likelihood; 11 = lowest likelihood)

Can Germany "bribe" Italy to stay?

What we have established in the previous section is that the incentive to leave the euro varies from country to country. Among the major economies, we believe Italy stands the most to gain from exiting, whereas Germany has the most to lose from exiting. We would argue for the same reason that Germany would also lose from the exit of other countries. (Say Italy leaves the euro but Germany stays. German holdings of Italian liabilities would fall in value, German exports to Italy would suffer and German companies would now face more competitive Italian manufacturing firms.) Does this mean that Germany would be willing to pay a price for Italy (as it has for Greece, Ireland, and Portugal) to stay in the euro?

Chart 4: Hypothetical 3-period game between Italy and Germany



Source: BofA Merrill Lynch Global Research

Yes, but we would argue that this strategy is not a stable Nash equilibrium. To illustrate this, think of the following game. In period 1, Italy decides whether or not to exit. If it does, the game is immediately over – Italy will get a payoff of -2 and Germany will get a payoff of -5 (outcome 1). If Italy decides to stay, Germany has the option in period 2 of choosing to pay Italy to stay or not. If it decides not to pay, Italy exits the euro in period 3 and the game is over. To the extent that there is a cost to Italy of delaying its exit, we assume the payoff to Italy is now -5 (an increase of 3); the payoff for Germany is still -5 (outcome 2).

What if Germany decides to pay Italy to stay?

Indeed, Germany might be willing to pay Italy 4 units so that if Italy does stay, Germany will still be better off than not paying and Italy leaving. After Italy receives the payment from Germany, it faces the option of exiting or staying in the euro in period 3. If it exits (outcome 3), it will collect a payoff of -1 (the 4 it gets from Germany minus the 2 fixed exit cost minus the 3 penalty for staying for an extra period), while Germany will get a payoff of -9 (-5 when Italy exits and the -4 it had paid Italy to stay). If Italy chooses to stay after receiving the “bribe” from Germany (outcome 4), Italy will end up with a payoff of -2 (the 4 it received from Germany and two periods of -3 for living with low growth, high borrowing costs and political instability) while Germany will receive a payoff of -4.

What is the Nash equilibrium of this game?

We can use backward induction to solve the game. In period 3, Italy is clearly better off exiting than staying (after Germany has already paid the “bribe”), as the payoff for Italy in outcome 4 is inferior to the payoff in outcome 3. If we can see this, so can Germany in period 2. Whether it pays or not, Italy will exit in the following period. Therefore, Germany is better off by not paying. Now in period 1, Italy can make the informed calculation that Germany will not pay. This means that Italy has an incentive to exit in period 1. The bottom line is that the only stable equilibrium of this game is that Italy exits the euro and, more importantly, it exits already in period 1.

Of course, this game is meant to be illustrative rather than predictive, as in real life things are much more complicated. Nevertheless, this game and the analysis in the previous section would suggest that we should not expect what has already happened between Germany and Greece during the eurozone crisis to play out the same way for Italy if the crisis spreads. Italy has more incentives than Greece to voluntarily exit the eurozone, in our view, while it will be more expensive for Germany to keep Italy in the eurozone. This means that Italy could be even more reluctant than Greece to accept tough conditionalities for staying. If our inference turns out to be correct, this could have serious negative implications for markets in the months ahead. With Prime Minister Monti's approval rating having fallen from 70% last November to barely above 30%, the domestic debate about the Italy's future in the eurozone ahead of the general elections next March will be very important to watch.

Only a weak EUR can save the EUR

Despite the depreciation of the euro in the last three years, its trade weighted index is in the middle of its range of the last 30 years, and still nearly 10% stronger than where it was in 2000 (Chart 5). Against the USD, it is still some 45% stronger than its low in November 2000.

Chart 5: EUR trade weighted index

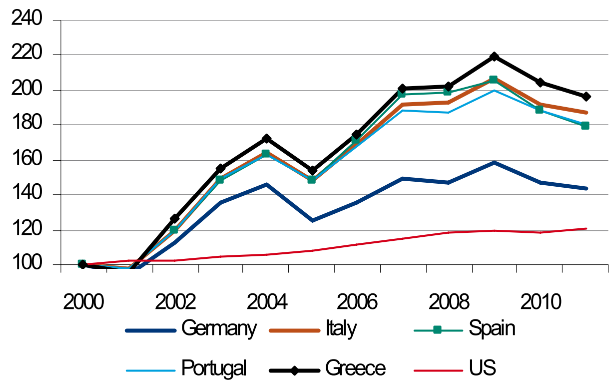
Source: OECD

Our analysis makes it very clear that a much weaker EUR may help save the EUR in the end. For one thing, a much weaker EUR would significantly reduce the incentive of any country to exit. For example, a 20% depreciation of the EUR against the USD would reduce by nearly half the loss of competitiveness of Italy to the US since the inception of the EUR (Chart 6).

It is true that a depreciation of the EUR would not help reduce the competitiveness issues between the peripheral countries and Germany. However, stronger German export growth to non-eurozone countries as the result of EUR depreciation would allow Germany to buy more from other European countries (Chart 7). Stronger external demand would buy more time for the peripheral countries to implement structural reforms and fiscal austerity.

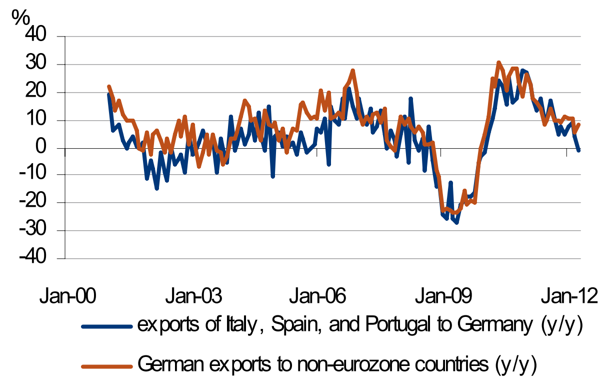
Our analysis above suggests that the eurozone is now facing two paths – break up or accept a much weaker EUR. To the extent that the first path is likely to be also associated with a weaker EUR (at least in the transition), it seems that further depreciation of the EUR is inevitable. This view is further reinforced by our belief that with US real yields already so low, further Fed easing (of the QE variety) would be less negative for the USD. The only reason we are hesitant to revise down dramatically our medium-term EUR/USD forecast is uncertainties with respect to the November US elections and the outlook for Chinese policies in the run-up to the leadership transition early next year.

Chart 6: Unit labor cost in USD



Source: BofA Merrill Lynch Global Research

Chart 7: Peripheral exports to Germany and Germany exports to non-eurozone countries



Source: BofA Merrill Lynch Global Research

What is the trade?

Nevertheless, in our opinion EUR/USD downside risk is opening up, and we would take advantage of the recent sharp decline in EUR/USD vol to buy EUR puts. We initiate a new trade recommendation to buy a 6m EUR/USD 1.10 one-touch that has a 5 to 1 payoff (EUR/USD spot reference: 1.2313). We think this is the best way to protect against continued political turmoil in the eurozone. We think investors who are attracted to the relative low valuation of eurozone assets could also use this hedge to manage their portfolio against systemic risk.

Annex: risks to Greece's membership

The new program in Greece is facing mounting challenges

- **The growth outlook has deteriorated**. The program assumes real GDP growth of -4.8% in 2012 and 0% in 2013. However, private sector estimates in Greece vary from -6 to -7% for 2012 and -2 to -3% for 2013.

- **Fiscal consolidation is off track**. The cash budget is on target until May, but this does not include non-central government entities and the build-up of payment arrears. Furthermore, the worse economic outlook will likely make the current fiscal targets unattainable, in our view.

- **Structural reforms have been delayed**. The March approval of the new program was followed by two elections, during which none of the envisioned reforms was implemented.

- **The new coalition government was formed on an agenda that is not fully consistent with the program**. We are particularly concerned about the government's commitment not to fire any public sector employees – the program calls for firing 150,000 by 2015. Other promises, such as a reduction in the VAT rate and increases in low public sector wages and pensions will increase the deficit.

- **The situation in the banking sector remains fragile**. The Greek banks lost substantial amounts of deposits during the long pre-election period, with only a small share returning since then. A key challenge will be to complete the recapitulation of the Greek banks and provide proper incentives for the restructuring and consolidation of the banking sector in Greece.

- **The politics in Greece remain a risk**. The coalition government has a large majority in the Parliament – 179 out of 300 – but the opposition includes parties strongly against the program. Furthermore, the government itself includes a left party (Democratic Left) that has so far been against the program and could threaten to vote against key reforms.

- **Greece is likely to need more funds**. Slower growth and reform delays are likely to lead to higher deficits. However, approving yet again more funds for Greece will be very difficult politically for the rest of the eurozone.

Best case scenario

Reform implementation

The best case scenario in Greece starts in our view with the new government implementing some of the key program reforms in the next few months. The list includes: tax reform, opening of closed professions, firing of public sector employees, closing redundant public sector organizations, privatization, labor market reform, and approving measures to ensure the 2013-2014 fiscal targets. All these reforms are already program commitments. Some of them have already been approved by the Greek Parliament and, therefore, will only have to be implemented. These reforms will help gain credibility, before any more official funds are spent and even more committed to Greece. They could also help gain some confidence back on the economy's prospects, eventually supporting economic growth.

Increase official support

Assuming satisfactory reform implementation, the best case scenario in our view includes more official funds in the short term and OSI (official sector involvement to reduce the debt burden) in the medium term:

- We believe that it will likely be easier for the Troika to agree on a more gradual pace of fiscal consolidation and for the eurozone parliaments to approve additional funds if the new Greek government has first implemented the above reforms. Ideally although not likely, an enhanced package would also include a direct recapitalization of Greek banks by the EFSF or the ESM (as in Spain) and debt buybacks.

- Eventually, debt sustainability could be ensured with OSI, at least in the form of a further, substantial, maturity extension of official loans.

Worst case scenario

We see the next few months as potentially Greece's last chance to stay in the eurozone. Early implementation of reforms by the new government would allow more official funding, would start bringing back lost confidence, and would eventually allow Greece to benefit from any solution to the broader eurozone crisis. If Greece fails this test, we see a risk that other member countries may consider forcing a Greek exit from the eurozone by stopping official funding as part of the solution to the eurozone crisis, helping strengthen the conditionality that will be required with any common assumption of liabilities.

Although other members cannot force a country out of the eurozone and polls in Greece show very strong support for the euro, in our opinion if the new program fails, this could trigger a chain of events that could lead Greece to exit on its own (see What if Greece exits the euro? for more details). As Greece has no market access, official funding seems to us the only alternative to printing a new currency. Failing to adjust gradually under the program with the Troika, we do not expect Greece to adjust much faster and without any financing outside a program. Introducing a new currency could be the only available option to address what could be severe macroeconomic instability, a collapsing financial sector, and potentially severe social unrest. And as we have recently argued, we are not convinced that use of IOUs would rescue Greece from a full blown default and exit from the eurozone if EU/IMF support is halted (see On parallel currencies).

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Macro

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