The Financial Crisis: Risks and Challenges for the Euro Area

1. Introduction

The current crisis has led many analysts to re-assess the role of the euro. At face value, the euro area has done relatively well at avoiding the massive financial crisis of the Anglo-Saxon countries. Does the crisis prove the virtues of the euro, or can it be a source of tensions that stress the viability of the monetary union? In this chapter we discuss these issues. We acknowledge that membership in the euro area has helped to eliminate the possibility of a "twin crisis", i.e. a joint banking and balance of payment crisis in the member countries. To the extent that such crises are self-fulfilling rather than driven by fundamentals, this is unambiguously beneficial. On the other hand, the crisis brings about some scenarios that may be problematic for the euro area. One such scenario is a rapid, excess appreciation of the euro reflecting a flight out of US assets. Another is a balance-of-payments crisis in Central and Eastern European countries. Despite the fact that these countries are not members of the monetary union, they are slated to join some day, and financial and macroeconomic fragility there affects the euro area.

Finally, we document a number of asymmetries and imbalances between the core members of the monetary union, in particular with respect to inflation differentials and net foreign asset positions. It is unclear whether the crisis has exacerbated or dampened these asymmetries. But the evolution of spreads in government yields during the crisis suggests that the credibility of the euro area is not absolute. It is plausible that these asymmetries, while not accentuated by the crisis, undermine the credibility of the area, which itself becomes more of an issue in times of crisis. That is, a shrinking economic activity may make imbalances such as low competitiveness, high trade deficits or high public debt more problematic, which increases the likelihood of an exit from the euro area or of a default on public debt. The rise of the spreads during the crisis suggests that over a ten-year horizon and for a peripheral country, markets do not consider those possibilities as rare events.

One case in point is Greece. In December 2009, its sovereign debt was downgraded to BBB. The spreads shot up again as debt is quickly growing well beyond 100 percent of GDP, while low competitiveness due to past cumulated inflation differentials makes it difficult to exit the recession. Possible scenarios include outright default, exiting the euro area, or a bail-out from core euro countries. None of these scenarios is favourable for the euro. A bail-out can be especially problematic if it fails to prevent contagion to other, much larger economies with a public debt overhang, such as Belgium or Italy, for which a bail-out would be too costly.

2. The international transmission of the crisis

Historically, macroeconomic shocks that originate in the United States eventually spread to Europe, but this happens with a substantial lag. Typically, the transmission is thought to take place through international trade.[1] Essentially, a recession in the US is associated with a fall in import demand by US consumers, which reduces the demand for foreign-produced goods and thus depresses aggregate demand in the rest of the world. The effect is small because the share of imports in consumption expenditures is not very large; and it is associated to a lag because it takes some time for consumers to rebalance their expenditure and for exporters to realise that demand has fallen and to adjust their employment and production decisions. Thus, Krugman (2008) has argued that for aggregate demand in the rest of the world to be reduced by 1 percent, the US would need to be in a recession where output has fallen by 8 percent.

[1] The academic literature on the international transmission of business cycles is large. The reader may refer to Clark and van Wincoop (2001), Canova and Dellas (1993), or Calderon (2008).

In that respect, the recent crisis seems unique in that despite having originated in the United States, its transmission to the euro area has been instantaneous and the magnitude of the recession has been of the same order as in the US. The reason for this unusual pattern is that the transmission mechanism is different; due to financial globalisation, there now exists an international financial transmission mechanism of macroeconomic disturbances, and this mechanism is more rapid than the traditional one. Thus, the world economy is now in a regime where economies are more interdependent and react more quickly to shocks in other countries.

The increased financial interdependence is illustrated in Figure 5.1 (taken from Krugman), which shows that in three decades the level of foreign assets in the balance sheet of financial institution has been multiplied by 5 relative to world GDP. Similarly, a 2007 study finds a portfolio exposure of French banks to US assets equal to 22 percent, to which one may want to add a 15 percent exposure to UK assets.

That the transmission of the crisis is now synchronised is evidenced by the synchronisation of the responses of stock markets and real economic variables across economic blocks in the current crisis, as is depicted in Figures 5.2 and 5.3.

The mechanism underlying the financial transmission of the crisis lies in the balance sheet of international investors and its effect on asset prices. Those in turn affect the "financial accelerator", which is the transmission mechanism from the financial to the real sector.

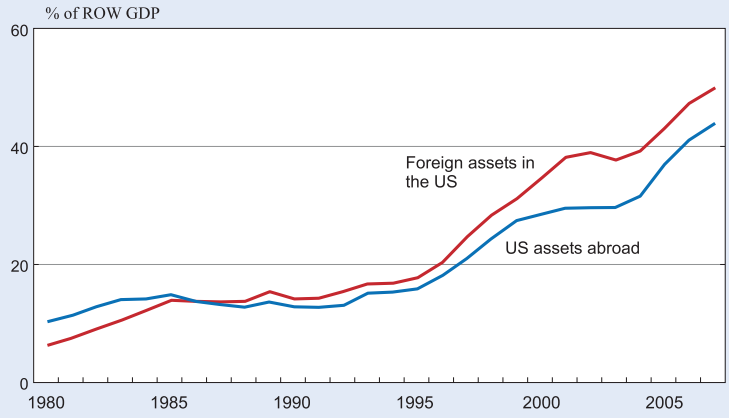
Financial institutions must hold a fraction of their liabilities in the form of equity rather than debt, generally for regulatory reasons. Because their portfolios are valued at market prices, when market prices fall, they have trouble matching their regulatory ratios if they are leveraged. This is essentially because their equity, which is equal to the value of their assets minus their debt, is more sensitive to stock prices than their total assets, because debt, which does not fall with stock prices, is subtracted from total assets when computing equity. This is illustrated by the following example. Suppose an investor has 10 shares, worth 10 each, financed with equity of 40 and debt of 60. The total value of the portfolio is equal to 100. If stock prices fall by 20 percent, equity falls to $10 * 8 - 60 = 20$, i.e. it falls by 50 percent. The ratio of equity over total portfolio value falls from 40 percent to 20/80 = 25 percent. Assuming the firm wants to restore that ratio, short of getting new capital, for example by issuing new shares, it must sell assets to reduce its debt – this is the essence of the deleveraging process. Assume it sells n shares. Then its debt falls to $D' = 60 - 8 * n$, and its equity is unchanged at $8 * (10 - n) - (60 - 8 * n) = 20$. To restore a ratio of $20/(20 + D') = 0.4$, we need $D' = 30$, so that the firm needs to sell 3.75 shares. To fix ideas, let us assume that 4 shares are sold.

Therefore, a fall in asset prices induces investors to reduce their portfolio holdings. Note that this in turn increases the supply of the asset on the market, which may further exacerbate the initial fall in the price.

Assume now that the investor is internationally diversified, and owns 50 percent of his portfolio in US shares and 50 percent in euro shares. Assume the price of those shares is initially equal to 10, and that the investor owns 5 of each share. The initial value of the portfolio is $10 * 5 + 10 * 5 = 100$, which again we assume is split between 60 of debt and 40 of equity. Next, assume that the price of US shares falls to 6. The new value of the firm's assets is $6 * 5 + 10 * 5 = 80$ again. The investor must again deleverage, and let us assume that his preferences are such that he wants to keep an equal proportion of each asset. If he sells n assets, that will be n/2 of each kind, and the resulting value of the portfolio is $6 * (5 - n/2) + 10 * (5 - n/2)$

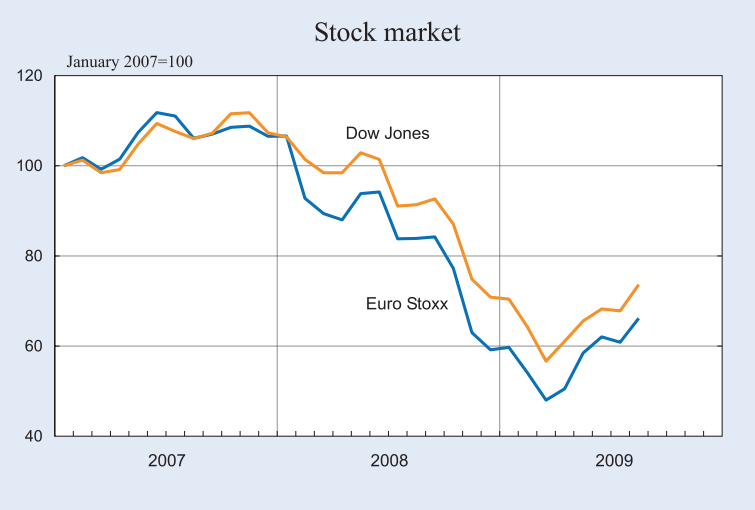
Figure 5.1

The rise of globalized financial portfolios



Source: Krugman (2008).

Figure 5.2



= 8 ∗ (10 – n). Debt falls by 6 ∗ n/2 + 10 ∗ n/2 = 8 ∗ n, and equity is unchanged. These are the same computations as before, and thus n = 4. The investor dumps 2 US shares and 2 euro shares on the international market. We now have a fall in euro stock prices, which deteriorates the balance sheet of investors who hold those assets. This triggers another wave of deleveraging, which alters both euro and US markets if those investors also hold US assets. The spiral continues until a new equilibrium is found.

3. The impact of the crisis on the euro exchange rate

We now discuss how the economic crisis may affect the likely evolution of the exchange rate of the euro vis-à-vis the dollar. Potentially, the crisis can have a large effect on the euro area through massive movements in nominal exchange rates. We start by discussing the mechanisms by which the recession and the response of policy makers may affect the exchange rate of the euro vis-à-vis other currencies.

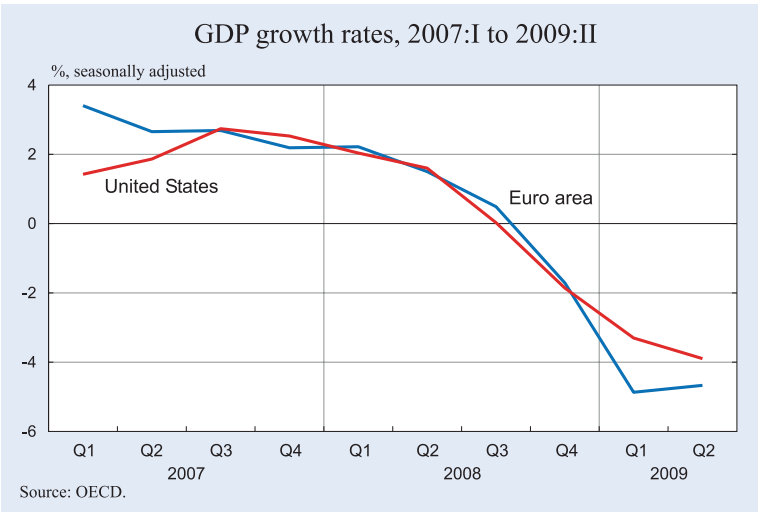
In the United States, the crisis is characterised by

- A severe contraction in aggregate demand
- A massive policy response, in the form of
  - Large scale stimulus packages that may lift the budget deficit to some 13 percent of GDP in year 2009.
  - Aggressive cuts in interest rates by the Fed to a level close to zero.

These developments have diverging effects on the exchange rate. At any point in time, the exchange rate clears the market for foreign exchange. The demand and supply for foreign exchange comes from two motives. First, exporters and importers need to acquire foreign currency to finance their purchases, or conversely get rid of the foreign currency they got in international transactions. Second, portfolio investors also generate a demand and a supply for foreign currency depending on the denominations of the assets they want to hold in their portfolio. In particular, their demand for, say, dollar denominated assets will be greater, the greater the rate of return on those assets compared to the rest of the world is. That rate of return is in turn more favourable when either the rate of return of US assets, expressed in dollars, goes up, or the dollar is expected to appreciate. Nowadays, the second motive for foreign exchange transactions plays a far greater role than the first, because the volume of FOREX trade induced by international capital movements dwarfs the one associated with international trade in goods and services.

Let us now tackle the presumed impact of each aspect of the US crisis on the euro/dollar exchange rate. Consider first the fall in aggregate demand. Let us discuss its impact on the exchange rate by first assuming that inflation in the US relative to the rest of the world, as well as rates of returns on assets, are unchanged. A fall in aggregate demand implies a per-

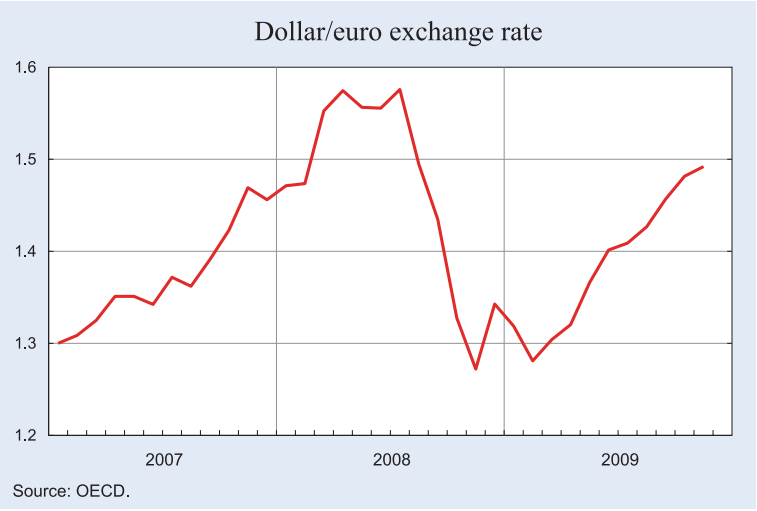
Figure 5.3



Source: OECD.

manent improvement in the US's net foreign asset position, as the US imports less goods from the rest of the world. Furthermore, it should be matched by a once-and-for-all adjustment in the exchange rate, because any future movements in the exchange rate beyond the impact effect of the shift would be arbitraged away by financial markets. If the real exchange rate were to depreciate, the US trade deficit would improve by even more. If markets were expecting the US foreign asset position to be balanced in the long run before the fall in aggregate demand, they would now expect it to be ever-improving. This is clearly not an equilibrium since the US consumer would eventually want to consume part of that added wealth. Therefore, the fall in aggregate demand has to be matched by an appreciation of the real exchange rate, which reflects the associated lower demand for US goods.

Figure 5.4



However, this argument holds everything else equal, i.e. assuming that there is no reaction by monetary authorities to the slump in demand and more generally that the return to US dollar denominated assets does not fall. In practice we rather expect the latter to fall, for example because monetary authorities will reduce interest rates to counteract the recession. This would then trigger a shift out of US assets and a depreciation of the dollar – this effect is likely to dwarf the effect of an expected improvement in the net foreign asset position.

Let us now consider the effect of a fiscal expansion. A fiscal expansion, everything else equal, needs to be financed; the rate of return on dollar denominated debt increases, which attracts foreign capital and triggers an appreciation of the exchange rate. This is what was observed during the 1980s with the so-called "Reagan" deficits. Again, this is everything else equal. If markets expect that the additional debt will be financed by inflation, thus expecting a low return on US assets, deficits may well trigger capital flight and a depreciation of the dollar. Finally, a monetary expansion, by lowering nominal interest rates, makes it more profitable to exit dollar-denominated assets in order to invest one's money elsewhere where returns are higher, and this leads to a depreciation of the dollar.

Thus we see that in the current crisis there are forces for appreciation along with forces for depreciation. What has actually happened? Figure 5.4 depicts the evolution of the euro/dollar exchange rate since the beginning of 2007. We observe three phases:

Initially, the dollar gradually depreciates to end up below 1.5 dollars per euro. This coincides with the "pre-crisis" period, during which investors started to be increasingly worried about global imbalances and subprime mortgages.

- Then we have another period of appreciation, which ends in November 2008.
- Finally, a new depreciation period started in January 2009.

Such evolutions are notoriously difficult to interpret, in light of the complex forces outlined above. The expectations of market participants play a key role in shaping them. One important question for the euro area is: Can the current trend of depreciation continue? If so, this would be a mixed blessing, as it would trigger a substantial appreciation of the euro and a loss in competitiveness, and therefore make the recession more persistent in Europe. As documented below, it is likely that competitiveness problems are building up in some euro countries, such as Spain, France and potentially Italy.

There are some arguments against such a scenario. In particular, euro-denominated assets are not overall more attractive than US-denominated ones. Historically, monetary conditions in the euro area typically have been more restrictive than in the United States. As we have seen in Chapter 1, though, the pre-

sent difference in interest rates is smaller than ever. Thus compared to the recent past there is no particular reason for a portfolio shift in favour of euro assets. Nor is there any clear evidence that growth prospects are better in Europe than in the United States: the crisis is at least as severe as in the US, the aging problem is worse, and, despite the rhetoric of the Lisbon Agenda, there are no expectations of broad reforms that might unleash some unexploited growth potential – if anything, the crisis has postponed such reforms. Finally, while budget deficits in the US are substantially higher than in the euro area (See Chapter 1 and Chapter 4), the initial situation in the United States is more favourable because its initial level of public debt is lower. Thus even though the crisis has made the US less attractive than before, it does not seem to justify a massive portfolio shift in favour of euro assets. This is further compounded by two stabilising forces. First, at some point markets seem to internalise the effect of exchange rate misalignments on competitiveness and future trade deficits. For example, in previous EEAG reports we have documented that the US dollar/euro exchange rate seems to remain between two boundaries: an upper boundary where a German basket of goods is as expensive in the US as in Germany (and further euro appreciation would make it cheaper in the US), and a lower boundary where the converse is true, i.e. a US basket of goods is as expensive in Germany as in the US. Between these two boundaries, a sort of "no-envy" situation holds, with the German basket being cheaper in Germany than in the US, while the US basket of goods is cheaper in the US. While we lack a firm theory that would account for such an empirical regularity, it is possible that these two critical points capture somewhat the level of bilateral rates beyond which massive arbitrage in goods markets would take place, i.e. beyond which trade imbalances would clearly be unsustainable. If so, then intertemporal arbitrage by speculators would prevent the boundaries from being trespassed. Such an interpretation is consistent with the halt of the preceding phase of appreciation, when the euro started falling again after hitting 1.55 dollars per euro – which is around the level where in the US the German basket becomes as cheap as the US one. We should then expect the current phase of appreciation to stop at around a rate of 1.5. Another stabilising mechanism is the well-known valuation effect, which was already discussed in our 2008 report. Because the US tends to borrow in its own currency, while it is holding assets (such as equities) that are real, a depreciation of the dollar reduces the value of the debt of US citizens relative to their assets. Consequently, their net debt falls. This tends to improve its net foreign asset position which, as we have discussed above, is a force for appreciation; thus, we have an additional mechanism for correcting an appreciation of the dollar. In particular, this rules an insolvency/depreciation spiral out by which as the dollar depreciates US residents would increasingly be unable to meet their (foreign-denominated) debt, which would trigger a run away from US assets and further depreciation of the currency.[2] Such a mechanism has been important in previous episodes in emerging economies, for example during the Asian crisis or the Argentinean crisis of the 1990s. As we discuss below, it is actually more likely to come into play at the periphery of the euro area than in the United States.

Thus there are compelling reasons to rule out both, a continuation of the appreciation of the euro beyond 1.5–1.6 dollars/euro and a sudden portfolio shift away from US dollar-denominated assets and in favour of euro-denominated assets. One scenario that cannot be ruled out, though, is a sharp rise in expectations of inflation in the US, if say markets anticipate persistently high budget deficits and it appears that inflation will be the most likely form of taxation that will be used to reduce the burden of debt. Such a realisation by markets could trigger a sharp drop in the dollar. In the long run this would not be associated with competitiveness problems in the euro area: On average, the rate of depreciation merely offsets the inflation differential between the two zones. However, upon impact the drop may indeed cause competitiveness problems, as the fall in the dollar reflects expected increases in the US price level that have not yet materialised. Through imports, such a fall may exert deflationary pressure in the euro area which would have contractionary effects through higher real interest rates, while making it more likely that a liquidity trap arises. In the longer run, the ECB will be faced with the dilemma between aligning itself to US monetary policy, which amounts to importing US inflation, and fighting an endemic appreciation of the euro.

This inflationary scenario is plausible given the massive liquidity that has been injected in the economy by the Fed and the poor quality of many of the assets that it has acquired in exchange for that. However, at present markets do not anticipate that it will prevail. If it were to prevail, the nominal yield on 5 year US

[2] Such a run would quite often be associated with a bank run, and therefore one would have a "twin crisis", as discussed below.

treasury bonds would be substantially higher than for short term maturities, and as we have seen in Chapter 1 this is not observed. This may mean either that markets do not see an end to the recovery (which would be necessary to ignite inflation), or that they are confident in the Fed's ability to fine tune the rate of inflation when the recovery comes, by gradually reducing the monetary base.

4. Is the euro area a safe haven?

There has been much debate regarding whether the euro area has acted as a successful shelter against the financial crisis. This argument is motivated by the experience of Iceland, where the failure of large banks has led to government insolvency (along with a collapse of the value of the currency). The role of a single currency in preventing those outcomes has to be clarified. Clearly, participating in a currency union does not reduce the likelihood of a bank run, insofar as such a run is motivated by the fact that the bank is not able to pay back all depositors should it occur, given the illiquidity of the asset side of its balance sheet. Thus, a priori, financial crises bear little relation to the exchange rate regime. On the other hand, macroeconomists have identified "twin crises", i.e. episodes where a banking crisis occurs simultaneously with a balance of payments crisis (see Kaminsky and Reinhart (1999), Dornbusch et al. (1995), Sachs et al. (1996)). While this literature is still burgeoning, there are reasons to believe that there are complementarities between the two types of crises (which explains that they both happen at the same time in many cases). More specifically, if the liabilities of financial institutions are denominated in foreign currency, expectations of a sudden drop in the exchange rate reduce the solvency of those institutions, which makes it more likely that a run may take place. In that respect, it is reasonable to believe that for a number of small countries in the euro area, the euro has made a run on the financial sector less likely, since it is very unlikely that a massive fall in the euro would have taken place, contrary to the case of a small country with its own currency where domestic macroeconomic problems can substantially increase the probability of an attack on the currency. Thus, Ireland, which had a large exposure to toxic US assets, was spared the problems experienced by Iceland.

Does that mean that the euro is an unambiguous blessing? The answer is "no", and we have three main reasons for concern:

- The crisis in some non-members has a severe impact on some members through the depreciation of those non-members' currencies.
- The crisis in accession countries generates important policy dilemmas that may weaken the euro.
- The fiscal and macroeconomic position of at least one peripheral member country is straining the monetary union.

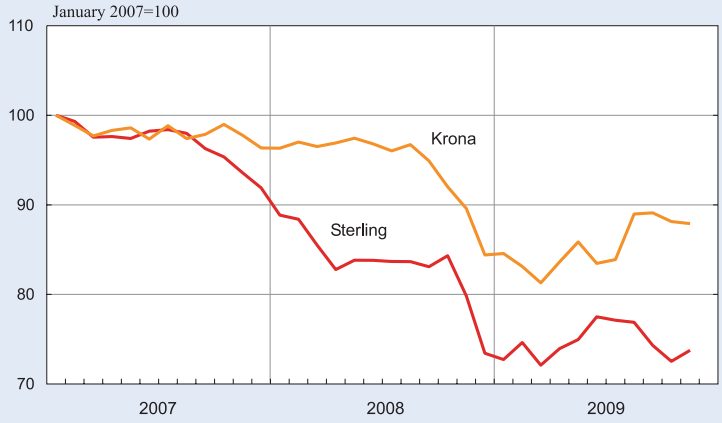
We discuss these three issues successively.

4.1 Depreciation of contiguous currencies

Essentially, while the euro is overall a blessing in that it protects some countries against a financial crisis, as discussed above, its drawback that the European Monetary Union (EMU) is not an optimal currency area may be particularly salient under a crisis. This is because non member countries that trade heavily with some member countries may experience a large depreciation of their exchange rate, which will induce a strong economic contraction in the member country. In the case of the EMU, two member countries are in such a situation: Ireland, which trades heavily with the United Kingdom, and Finland, which trades heavily with Sweden. Figure 5.5 documents the very large depreciation of the British

Figure 5.5

The depreciation of the British and Swedish currencies



Source: OECD.

pound during the crisis as well as the milder depreciation of the Swedish krona.

These factors certainly play some role in the fact that Finland and Ireland are the two euro area countries where the recession has been most severe, with an estimated contraction of 8.8 percent and 7.5 percent respectively for 2007.[3] Thus, while membership of the euro area is favourable for financial stability by shutting down channels for twin crises, it may make the actual contractionary impact of the crisis more severe by preventing a quick adjustment of the real exchange rate. In contrast, non euro countries can rebalance their economies quite quickly by having a sharp depreciation. The UK, for example, suffered from substantial trade deficits and arguably from an overvalued exchange rate; the quick depreciation of the pound has gone a long way toward restoring equilibrium.

4.2 Critical macroeconomic developments in candidate countries

Another critical issue is the effect of the crisis on Eastern European countries and the timetable of those countries' adoption of the euro. In principle, these countries have a claim to join the euro after a period of two years of moderate exchange rate fluctuations, and no devaluation (the so-called ERM-II arrangement). However, a number of these emerging countries are particularly vulnerable to the crisis. This is not so much due to their exposure to toxic assets as to the sharp rise in their foreign-currency denominated liabilities during the period of strong growth and imbalances that preceded the crisis. This generates the risk of self-fulfilling balance of payment crises, as investors anticipate that a collapse in the currency would make a lot of debtors insolvent, and get rid of their domestic assets. The world recession clearly does not help as these small countries rely more on exports and are therefore more vulnerable to a slump in world aggregate demand.

To illustrate this, let us take two examples: Latvia and Hungary (see Tables 5.1, 5.2 and 5.3). The rapid boom in Latvia prior to the crisis was fuelled by strong capital inflows and international investor euphoria. As a result, a large stock of foreign debt was accumulated and up to 90 percent of debt was denominated in foreign currency (See Stokes (2009)); the boom was associated with a current account deficit of 25 percent of GDP and the foreign debt reached 140 percent of GDP.

To foster early accession to the EMU, Latvia has adopted a narrow peg to the euro. This leads to the problem that markets may force a devaluation because they face a high foreign debt, a poor performance of the economy and a probable overvaluation of the currency. In 2009 the economy contracted at an annual rate of 18 percent. Among the results is a sharp rise in budget deficits, estimated at 13 percent of GDP, which along with the recession create expectations of a devaluation. The government has received support from the IMF, but due to the magnitude of the contraction it cannot meet the conditionality attached to it in terms of fiscal discipline. All these issues are making a self-fulfilling balance of payments crisis more likely, along with the rapid appreciation of the real exchange rate that was accumulated during the period of pegging to the euro.

Hungary has experienced similar developments, on a milder scale: a commitment to a euro peg, strong growth and large external imbalances, with a prevalence of foreign-currency borrowing and again the risk of a twin crisis. Inflation has been less strong than in Latvia (Table 5.3) though, and is probably compatible with the exchange rate peg, given the necessary appreciation of non-traded goods over time vis-à-vis those prevailing in the euro area. By contrast, inflation in Latvia has been incompatible with the exchange rate peg and is now having a sharp contractionary effect through the loss of competitiveness. As in other countries, this tends to correct the trade deficit because imports massively fall; nevertheless, such rebalancing of external trade only comes at the cost of an internal recession and does not eliminate the need for a real depreciation.

Table 5.1
Trade balance/GDP Hungary and Latvia

	Hungary	Latvia
2006Q04	– 7.4	– 29.0
2007Q01	– 6.5	– 22.4
2007Q02	– 7.6	– 23.0
2007Q03	– 6.4	– 25.2
2007Q04	– 6.3	– 19.1
2008Q01	– 5.3	– 15.2
2008Q02	– 5.3	– 15.3
2008Q03	– 8.5	– 13.0
2008Q04	– 9.4	– 8.3
2009Q01	– 1.3	1.2

Source: Eurostat.

[3] See Table 5.

Table 5.2
Real GDP growth, Latvia and Hungary

	Latvia	Hungary
2000	6.9	4.9
2001	8	4.1
2002	6.5	4.4
2003	7.2	4.3
2004	8.7	4.9
2005	10.6	3.5
2006	12.2	4
2007	10	1
2008	– 4.6	0.6
2009	– 18	– 6.5

Source: Eurostat.

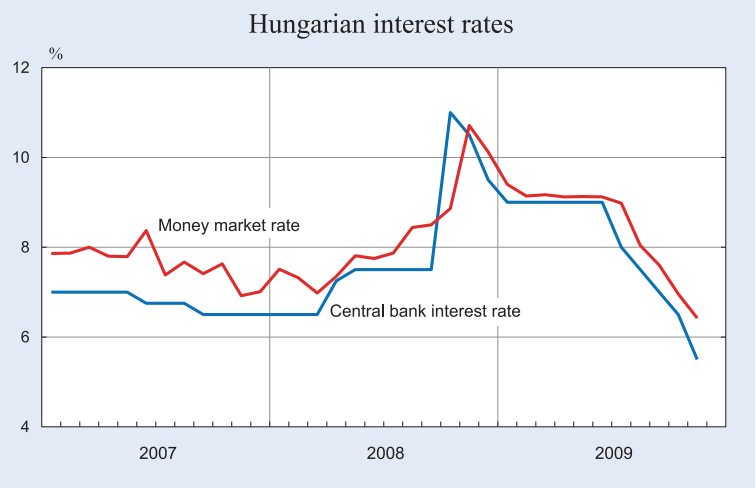
Table 5.3
Inflation, Latvia and Hungary (%)

	Latvia	Hungary
2007	17	5.5
2008	11	4.5

Source: Eurostat.

Hungary, has maintained high interest rates in order to defend its currency. For example, throughout 2008 interest rates in Hungary soared from 7 percent to more than 11 percent and they remained above 9.5 percent throughout most of 2009 (Figure 5.6). The policy dilemma is clear: either the central bank lowers interest rates and runs the risk of a depreciation and a crisis induced by the insolvency of borrowers in foreign currency, or it maintains high nominal and real interest rates and fuels a recession driven by weak aggregate demand. So far it has chosen the latter course and the result is a sharp contraction in economic activity. Since the peak of the crisis, though, tensions seem to have eased and the central bank has managed to reduce its interest rate to 5.5 percent.

Figure 5.6



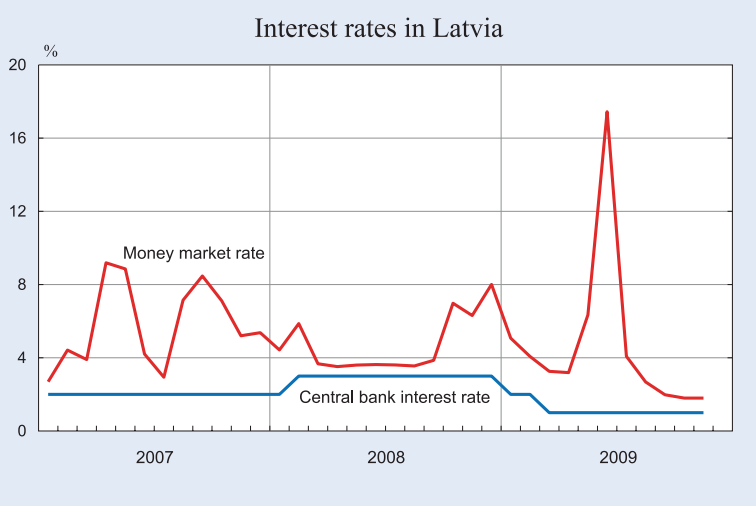
In Latvia, monetary authorities have been able so far to defend the currency peg at a remarkably low cost in terms of interest rates. This is especially surprising given that, as shown on Figure 5.7, money market rates experience large swings that reflect the sensitivity of market expectations to news regarding the possibility of a devaluation or a balance of payment crisis (such a disconnect between bank rates and market rates is not observed in Hungary). It is possible that covert intervention by the ECB to defend the Latvian currency (lats) explains such a pattern.

How do the macroeconomic problems of peripheral accession countries affect the euro area? First, they create pressure for early entry in the euro area. The point, again, is that the risk of a self-fulfilling attack would have been nil if those countries had been members of the euro area. A "surprise" adoption of the euro by the CEECs (as advocated by some commentators[4]) would kill any prospect of a balance payment crisis in these countries. The problem is that, presumably, with a critical mass of vulnerable countries in the euro area, the euro itself would eventually become vulnerable. We have seen in the case of Ireland that euro membership did not preclude a sharp contraction of GDP, and such a contraction is typically associated with large budget deficits. Having the troubled CEECs join the euro would further weaken the overall budget outlook of the euro area, thus raising pressures for loose monetary policy while fixing another nail in the coffin of the EU's Growth and Stability Pact. This point is especially relevant in light of the issues faced by some peripheral member countries, as discussed in the next subsection.

More fundamentally, given the constraints associated with euro membership, it is unwise that a country joins the euro area at a time of crisis, because prices are more likely to be incorrect. In the case of Latvia, for example, we may assume that entry in the euro area at current exchange rates will lead to overvaluation and therefore be associated with a prolonged slump in that country. On the other hand, entry in the euro area immediately after a

[4] Marcin Piatkowski and Krzysztof Rybinski, " Let us roll out the euro to the whole Union", *Financial Times*, June 11, 2009.

Figure 5.7



devaluation may lead to under-valuation, especially if such devaluation is the by-product of a balance-of-payments crisis.

The second issue is that the problems in Eastern europe may lead to a bailout from Western Europe. This may happen both because Western banks are exposed to substantial credit risk in the East, and because the West may want to inject money in those economies in order to stabilise them, in particular so as to avoid a postponement of their joining the single currency. Indeed, rescue packages were implemented during the first half of 2009 under the auspices of the IMF. Such a bailout will make the overall fiscal situation of euro area countries more fragile. Again, there is a limit to the extent to which the problems of small countries can be solved by mutualising their liabilities and diluting them in a larger, more stable area. Beyond that limit, the stability of the whole area may be in danger. If one compounds the scenario of an Eastern bail-out with the poor situation of a number of peripheral member states and the rapidly rising public debt in core countries such as Spain, Germany and France, it is not far-fetched to argue that such a limit may be surpassed.

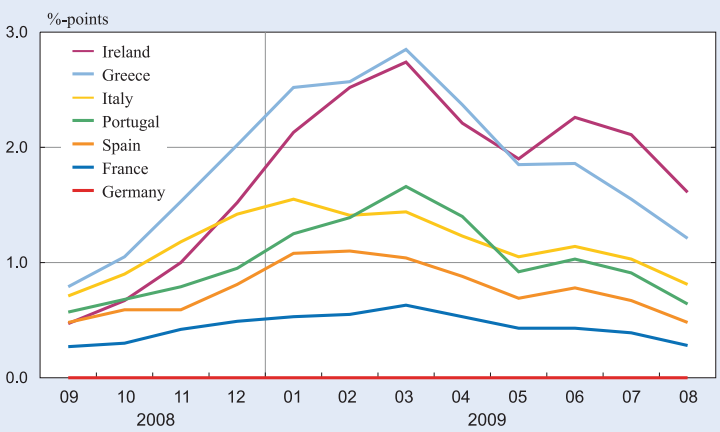
4.3 Fiscal imbalances in peripheral member states

The third challenge faced by the euro area is that while it is true that member countries have avoided a balance-of-payment crisis, the safe haven hypothesis is currently being tested by markets for the most highly indebted countries – especially Greece.

This is apparent when one looks at the yield on government bonds of the euro area countries. Given that these are denominated in euros, the euro value of a sovereign bond's coupon is unaffected by the domestic inflation rate. Therefore, a higher yield on such a bond can only reflect the market's expectation of outright default or perhaps an exit from the euro area and a conversion of the bonds in the (reintroduced) domestic currency. At present such a move is not on the political agenda of any member country,[5] and, in Europe, outright default is only observed in the context of war or revolution. If in addition to that one expects that the devaluation of domestic debt cannot be forced by a balance of payment crisis, due to the protective effect of euro membership, we would think that the yields on euro sovereign bonds should be very similar across member countries. Yet, not only are the spreads substantial, but they widened considerably during the crisis. Going back to Figure 3.1, which is reproduced in Figure 5.8 for convenience, we see that for the most exposed countries, Ireland and Greece, they exceeded 250 basis points at the peak. To put this in perspec-

[5] And the consensus view among economists is that it cannot happen. See Eichengreen (2007).

Figure 5.8



Source: International Monetry Fund; European Central Bank; own calculations.

tive, consider that this can be interpreted as a yearly probability of total default on the debt. Over a ten-year period, and assuming the baseline country Germany never defaults, this means that for Ireland or Greece the market evaluates such an event as having a probability of $1 - (1 - 0.025)^{10} = 22.4$ percent. This is huge. While the tensions have eased somewhat, the spreads remain considerable. If neither default nor devaluation are possible options, a speculator could make infinite profits by arbitraging those spreads away. Therefore, there must be some reason why default or exiting the euro are more likely outcomes than we thought.

To see this, let us take the example of Greece. It entered the crisis with a ratio of public debt over GDP equal to 100 percent, after more than a decade of very large trade deficits – this latter feature probably reflecting an entry into the euro area at an overvalued exchange rate. In the absence of euro membership Greece would probably have experienced a balance-of-payments crisis and massive currency depreciation, as both exchange rate overvaluation and high public debt would have created expectations of loose monetary policy in the future. But we can see from the evolution of spreads and the more recent downgrading of Greece's sovereign debt by rating agencies that the safe haven mechanism works at best imperfectly. Public debt is forecast to hit the 135 percent mark in 2011 (recent revisions of the deficit put it at some 12 percent of GDP for 2009). Furthermore, the economy is harmed by its poor export competitiveness and the ability of the government to effectively increase tax receipts remains to be proved. As a result, a default triggered by markets' expectations of the government being unable to repay its obligations in the future cannot be ruled out as a scenario. In such a case, though, many analysts would typically expect a bail-out to occur by major euro area countries, perhaps with the help of the IMF.[6] But contagion may well spread to bigger economies with a debt overhang, such as Belgium, Italy, or even France (as the latter is rapidly headed toward the 100 percent debt/GDP ratio mark). In such a case, bail-out would clearly be impossible and some form of default would have to occur. It must be the case that markets do not rule out an incomplete bail-out and/or a contagion scenario that would make a complete bailout impossible; otherwise we would not observe such high spreads on Greek public debt.

[6] See, for example,"Greece: A New Deal?", BNP Paribas note, 15 Dec 2009, http://www.roubini.com/citation/401470/4/0/11109.

The other issue regarding Greece is that given the political climate, it is unclear whether a policy of fiscal consolidation or wage moderation will be politically feasible. Reforms are often met with violent protests and populist electoral platforms tend to gain the upper hand, as in the 2009 election when the Socialist party won with a program of wage increases and greater public spending. It is possible that a radicalisation of Greek politics might lead to new options such as exiting the euro being considered, and that such a possibility is already reflected in the behaviour of markets.

The lesson to be drawn from this discussion is that while euro membership provides an insurance against currency and financial crises, its real effects on peripheral countries may lead to such large imbalances that they may end up in a crisis despite the safe-haven effect.

One may interpret recent proposals to issue so-called "euro bonds" backed by future tax receipts of the European Union as a step toward mutualising claims between member countries. Given the size of the EU budget, additional resources to pay for such bonds must inevitably be the outcome of a strategic game between countries in which each member tries to shift the burden of taxation to the others. Typically, we expect such a game to benefit the more highly indebted countries. Thus, the euro bonds would create an implicit commitment of the more virtuous governments to bail-out the least virtuous ones in the future, and at the same time generate perverse incentives for all countries to increase their debt so as to benefit from such a bail-out. This mutualisation indeed partially helps the most indebted countries, but only by diluting their fiscal insolvency in a wider geographical area, while it weakens fiscal discipline in the monetary union. The end result would be an overall weakening of the euro and an increase in the risk premium over euro-denominated assets.

5. How have member economies reacted to the crisis?

We now discuss how the crisis has affected the various countries participating in the EMU. In dealing with the crisis, the euro area faces a number of specific challenges due to its heterogeneity and the decentralised character of budget decisions. The more the euro area countries are similar in terms of shocks and policies, the lower are the costs of having the single currency. Thus it is important to understand the

sources of heterogeneity within the euro area and how they affect the response to the crisis of each member country as well as the scope for a coordinated policy response. We now turn to these issues.

5.1 Differences in openness

As discussed above, one important transmission channel is international trade. It is known that different countries in the euro area have different trade intensities and therefore different sensitivities to a fall in world aggregate demand. Figure 5.9 illustrates this by plotting the fall in the share of exports over GDP during the crisis (i.e. between 2007 and 2009) versus the initial level of openness (measured as imports plus exports over GDP): bigger exporters have experienced a larger external shock.

These differences imply differences in the preferred policy response to the crisis. Everything else equal,

- a stronger external shock generates a greater demand for stimulus coming from the policy authorities, but
- greater openness means that a larger fraction of the stimulus is going to "leak" through imports, so that the net effect of the stimulus is smaller.

Since the more open economies had the bigger shock, these two effects go in opposite directions and it is therefore not clear what their net response should be. On the other hand, the more open economies are the ones that are likely to benefit most from a global coordinated stimulus, whereby the leak-out of activity associated with imports is compensated by a leak-in associated with exports.

Table 5.4
Share of US equity held by euro area investors

euro area	45.8
Austria	48.2
Belgium	44.8
France	42.5
Germany	45.5
Italy	44.8
Luxembourg	42.7
Netherlands	54.6
Finland	31.8
Greece	40.0
Ireland	46.8
Portugal	41.3
Spain	32.4

Source: Lane and Milesi-Ferretti (2005).

5.2 Differences in financial exposure

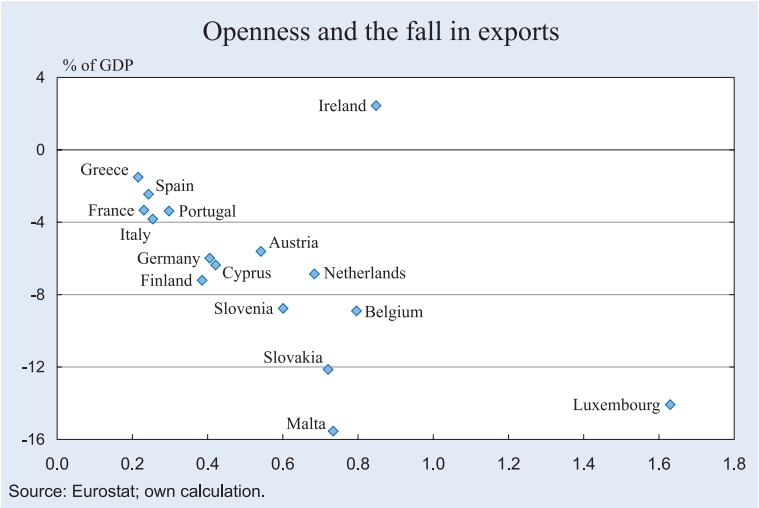
Second, countries may differ in their sensitivity to the financial transmission channel. As the above argument has shown, that channel is stronger, the larger the fraction of an investor's portfolio that is invested in US assets. That fraction clearly differs across countries, but a look at the data suggests this is not a big source of heterogeneity. Table 5.4, taken from Lane and Milesi-Ferretti (2005), gives us the equity share of euro area countries in the US as of 2005. We see that the exposure rate of the larger countries is around 45 percent, with the exception of Spain which seems more financially insulated from the crisis, with only 32 percent of its equity portfolio invested in US assets.

Therefore, with the exception of Spain, the rate of exposure to US assets is not a big source of heterogeneity.

5.3 Different initial conditions

Euro area countries are subjected to different initial conditions at the time they enter the crisis. These initial conditions will in turn have an effect on the economic consequences of the crisis in a given country, on its margin of manoeuvre for counter-cyclical policy measures and on the nature of the policy response that it prefers. Two important aspects, in particular, are the evolution of the country's competitiveness and its trade balance,

Figure 5.9

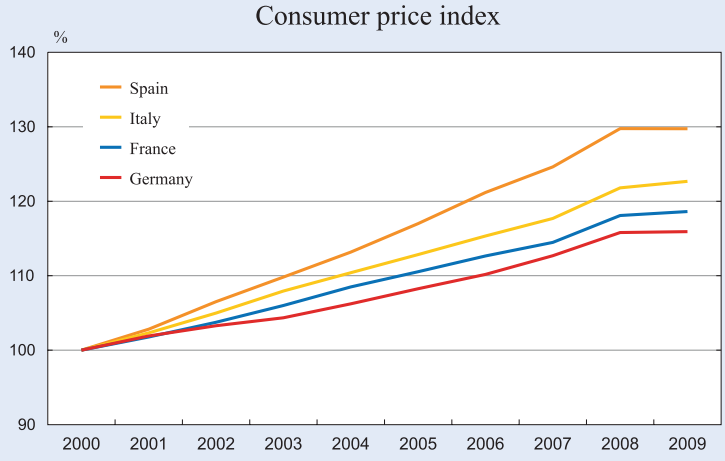


Source: Eurostat; own calculation.

and its initial budget position. We have already seen in the case of Greece that poor initial conditions may lead to a loss of market confidence and a very reduced margin of manoeuvre for the government.

An important source of disparity is that some euro area countries are more competitive than others, meaning that their exports are cheaper relative to some reference and their trade balance is more favourable. These countries can hope to have increased living standards and an appreciation of their real exchange rate in the future, while the others can expect to have to "tighten their belt" and reduce their consumption so as to restore external balance. This means that the crisis, to the extent that it comes from a reduction in exports, is somewhat more "harmful" to the second kind of countries relative to the first. In turn these countries will be more reluctant to engage in fiscal stimulus, because they are more concerned by the import leakages. On the other hand, they are more likely to favour an aggressive monetary policy because it would tend to lead to a depreciation of the euro.

Figure 5.11



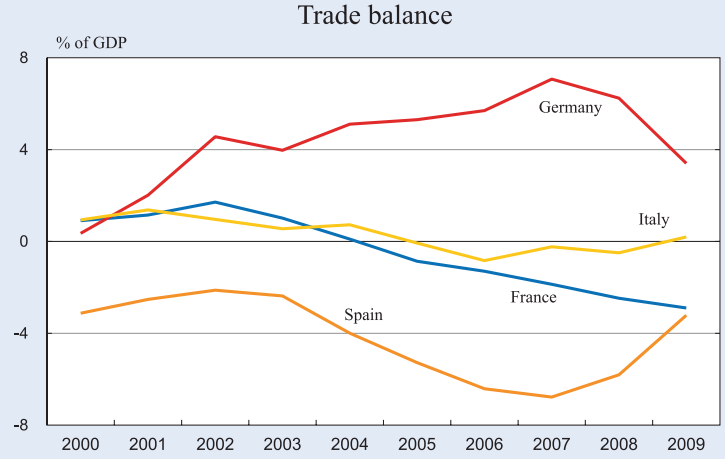
Source: International Monetary Fund; Eurostat.

Since the introduction of the single currency, a creeping divergence in competitiveness and trade balances had been observed among the four major countries. This divergence is depicted in Figure 5.10 for the trade balance. We observe that Germany has been accumulating trade surpluses, Italy remains more or less balanced although slightly on the deficit side, Spain has a large deficit and France is gradually deteriorating, being in a surplus situation at the onset and now with a deficit which is nearing three percentage points of GDP. Thus we see substantial heterogeneity. Ironically, the responses to the crisis tend to correct those heterogeneities, as Germany's exports are plummeting while Spain's imports are falling due to the slowdown of activity in non-traded goods such as construction. In that respect, the crisis has not exacerbated the imbalances; rather, it has corrected them.

These developments are themselves due at least in part to the cumulative effects of inflation differentials over time. These inflation differentials are depicted in Figure 5.11, which reports the consumer price index for the four major euro economies. We see that Germany is gradually gaining competitiveness while Spain is losing competitiveness. In the long run, the persistence of those inflation differentials would typically exert pressure on the euro area.

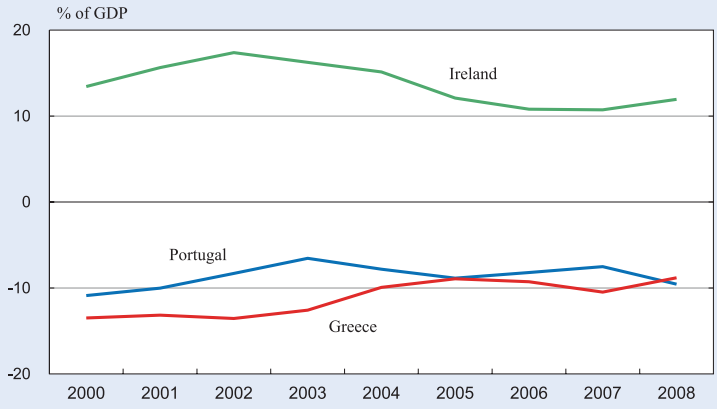
It also seems that large trade imbalances have been accumulating at the periphery of the euro area since the establishment of the single currency. On the one hand, Ireland has had a very substantial trade surplus. On the other hand, Portugal and Greece have accumulated double-digit trade deficits. These issues are documented in Figure 5.12.

Figure 5.10



Source: International Monetary Fund; own calculation.

Figure 5.12



Source: International Monetary Fund; own calculation.

Inevitably, small peripheral countries have little impact on euro area monetary policy, and that is the reason why such imbalances may accumulate. For example, a country with a strong boom driven by internal demand may gradually accumulate a positive inflation differential vis-à-vis the other euro area countries. Such a differential will only lead to a small increase in the euro interest rate as the boom affects the inflation rate in the euro area only to a small extent. And, when the real overvaluation and the adverse net foreign asset position start having a negative impact on the economy, it cannot implement a devaluation, again because its own recession has little impact on economic conditions in the euro area.[7]

Member countries also differ in their fiscal margin of manoeuvre, as we have already discussed in Chapter 3 of this report. Figure 5.13 shows the evolution of the debt/GDP ratio over the last decade. It does not reflect the increment in public debt associated with the spending packages of 2009. We see that there are three types of countries: "high debt" countries, with a debt/GDP ratio greater than 90 percent, "middle debt countries", with a ratio between 50 and 90, and low debt countries, with a ratio below 50. For high debt countries, the margin of manoeuvre in engineering a massive US-style stimulus package is very low. This would tend to induce them to support monetary easing, which would in addition help them to finance their debt. The middle debt countries are in a worse situation than the United States but they can still afford some stimulus provided they manage to commit to stabilise debt when the economy has exited the recession. Finally the low debt countries have a greater margin of manoeuvre.

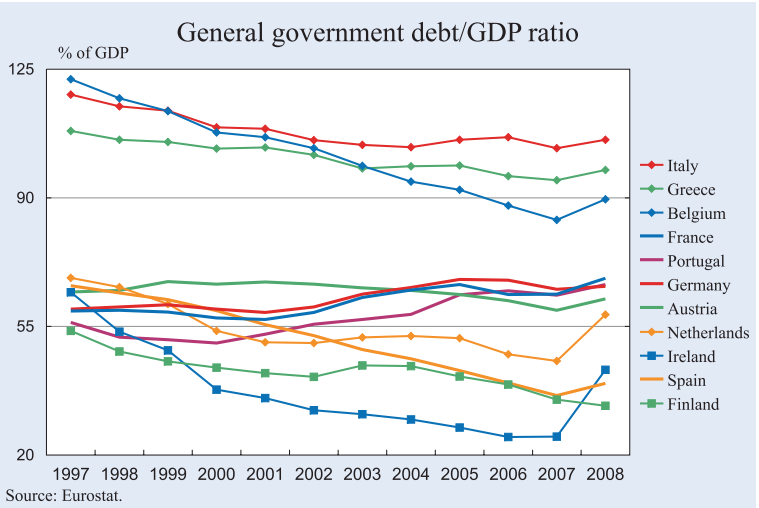
Finally, euro area countries are heterogeneous in their preferences. Historically, some of them, like Germany, have insisted on price stability, while others have been more tolerant of inflation, resorting to recurrent devaluations to regularly offset their inflation differential. The latter are more likely to engage in stimulus than the former, and to be in favour of aggressive monetary easing.

This disparity of initial conditions will likely make it difficult to engineer coordination over fiscal stimulus. And it also means that we will observe heterogeneity in the impact of the crisis across countries as well as in the policy responses to the crisis. We discuss these two aspects in turn.

5.4 The macroeconomic impact of the crisis

The performance of the main euro area countries during the crisis is summarized on Table 5.5, which

Figure 5.13



Source: Eurostat.

[7] The challenges of adjustment for asymmetrical countries in the euro area have been discussed in our 2007 report for Ireland and Italy.

Table 5.5
Real annual GDP growth between 2008:Q3 and 2009:Q3 in the euro area

Country	GDP growth
Austria	– 3.7
Belgium	– 3.4
Denmark*	– 7.0
Finland	– 8.8
France	– 2.4
Germany	– 4.8
Greece	– 1.7
Ireland	– 7.6
Italy	– 4.6
Luxembourg*	– 5.3
Netherlands	– 4.0
Portugal	– 2.5
Spain	– 4.0
european Union	– 4.3
euro area	– 4.1

*: data are between 2008:Q2 and 2009:Q2.

Source: OECD.

reports annual GDP growth between 2008Q3 and 2009Q3. The rate of contraction is similar between the euro area and the United States. There are substantial disparities in the contraction rate between countries: The growth rates range from – 1.7 (Greece) to – 8.8 (Finland).

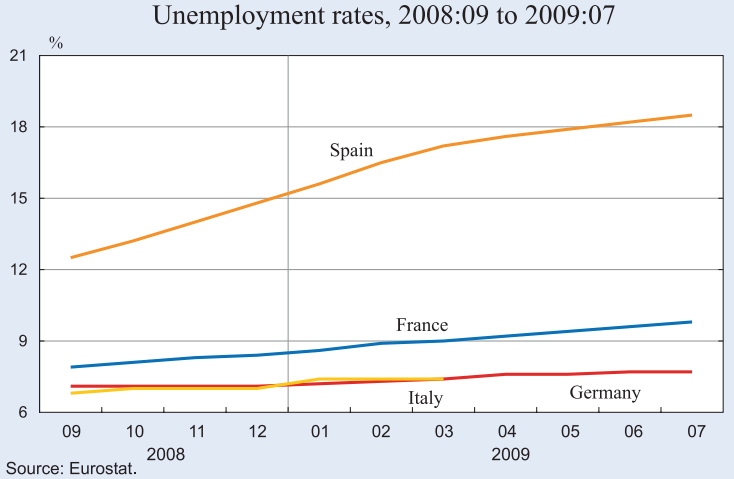
If one looks alternatively at unemployment rates (Figure 5.14), we also find disparities; however, a paradox emerges. The rise in unemployment does not match the fall in GDP. France and Spain have experienced a larger rise in unemployment than Italy and Germany, while the fall in GDP has been larger in the latter countries. It is not easy to explain this pattern. In general, employment may be more or less cyclical relative to output depending on the cost of adjusting employment. This cost in turn is affected by labour market institutions and particularly by employment protection. If employment protection is large, we will observe a lower fall in employment during a downturn – workers are retained by the firm and asked to work fewer hours or to exert lower effort, thus we observe a substantial fall in productivity per worker along with a small drop in employment rather than a larger drop in employment and a lower fall (or even a rise) in productivity. Since the mid-1980s, a number of countries have reduced employment protection at the margin by easing the use of temporary contracts and other flexible forms of employment. In principle, we expect those countries to become more cyclical in terms of employment, relative to those that have not engineered those reforms. This seems to go some way in explaining the sharp rise in unemployment in Spain, since Spain is the country where such reforms have been most far-reaching. However, when one looks at the remaining three major euro area countries, things are not so clear-cut. If anything Italy makes more use of flexible contracts than France, yet unemployment has risen very little there.

Therefore, other factors must explain the disparity in unemployment rates. In particular, in Germany a large program of subsidisation of part-time unemployment has been implemented. In Spain, the sharp increase in unemployment is related to the fact that a restructuring of the economy is underway: The construction boom is over and as the reduction in activity in that sector is perceived as permanent, firms have no incentive to hoard labour and instead implement large, immediate employment cuts.

5.5 The fiscal policy response

We now briefly discuss the fiscal policy response of the euro area economies, referring the reader to Chapter 3 for further discussion of the fiscal issues. Figure 5.15, based on Table 3.1, depicts the size of the budget deficits, as a percentage of GDP, in the OECD, for year 2009. These numbers differ from the official "stimulus package" numbers. The latter refer to the official pro-active measures that are being implemented over and beyond both the effect of auto-

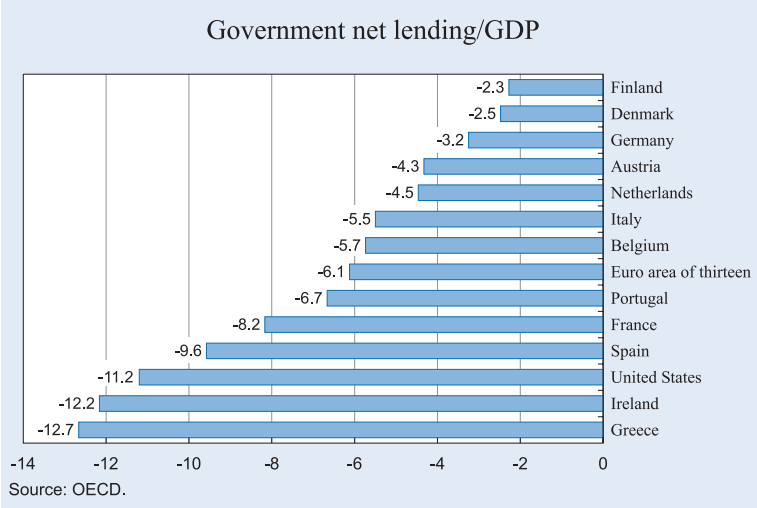
Figure 5.14



Source: Eurostat.

matic stabilisers and of measures that have been decided independently of the crisis. We believe the total deficit number is a better measure: clearly, if a country has a less ambitious stimulus package but if its automatic stabilisers are stronger or its fiscal policy is otherwise more expansionary, it has less need and margin of manoeuvre for such a package.

Figure 5.15



Overall, the size of deficits in the euro area is smaller than for the United States. In many countries, they are comparable to the numbers that prevailed during the 1993–94 recession. We also note a substantial heterogeneity among euro area countries. Is that problematic? As noted above, this is to be expected given differences among member countries in terms of preferences and initial conditions. However, there are substantial coordination issues that may be problematic.

First, stimulus in one country increases demand in another through the channel of international trade. As a result, to the extent that one's own fiscal stimulus is costly, one country may want to free ride on the others' fiscal expansion. In fact, the more my neighbours are stimulating their economy, the more I want to take advantage of it by reducing my own spending. In equilibrium, the level of stimulus is too small and coordination between countries may improve outcomes, although coordination does not mean uniformity and the gains from it may be small for those countries that desire less stimulus.

Such coordination failure may help explain why the scale of fiscal expansion in Europe is smaller than in the United States. Of course, coordination failure is a problem if governments target the right level of fiscal spending. The economic literature has proposed some mechanisms by which spending may be too large. For example electoral considerations may induce incumbent governments to accumulate too much public debt. In such a case, the coordination failure acts as a corrective for the expansionary biases.

The other coordination problem has to do with the interplay between national governments and the ECB. In an economy with independent central banks, governments may refrain from implementing a fiscal expansion because they anticipate that the central bank will react with an increase in interest rates to fight the inflationary effects of such an expansion. In a monetary union, the effects of expansionary policies in one country are diluted throughout the union. Since the central bank only reacts to union-wide macroeconomic developments, its response to a national government's fiscal expansion is likely to be small. This generates incentives for each government to be more expansionary than absent a monetary union. Of course, in equilibrium all governments engage in expansionary policies and the monetary policy is tighter – the monetary union generates a bias toward lose fiscal policies and tight monetary policies. It is not totally clear, however, how relevant this mechanism is in present circumstances. Given the level of slack, it is unlikely that central banks, whether a monetary union or an independent national one, would react to additional stimulus by increasing interest rates. This leads us to discuss the monetary policy response of the ECB to the crisis.

5.6 The monetary policy response

How appropriate has the ECB's response been to the crisis? In particular, some analysts complain that the ECB is not "doing enough" to stimulate the economy. The response of the central bank has been actually two-fold:

First, it has acted as a liquidity provider of last resort in the face of a shortage of interbank lending. This process amounts to substituting base money, i.e. money created by the central bank, for "internal

money", i.e. money created by the financial sector. When the financial sector is subject to a collapse in lending, this reduces internal money and to prevent broad monetary aggregates from shrinking, one must provide liquidity to the financial sector. It is not difficult to evaluate whether this process is being successful. Absent liquidity injunctions, one would have observed persistent increases in short-term interest rates. Clearly, the intervention of the ECB has avoided this.

Second, it is traditionally believed that reducing interest rates contributes to an increase in aggregate demand because it stimulates consumption and investment. The question is: how important is this channel at the margin, once one has reached the zone of near-zero interest rates? If it is important, then further cuts by 50 basis points could have a strong effect on economic activity. But that which determines investment and consumption are the terms under which private agents can borrow. If those terms are disconnected from the bank policy rates, then the economy is in a zone where monetary policy can achieve little. In particular, in a credit crunch, the total amount of credit has more to do with the financial institutions' beliefs about the characteristics of the borrowers than with the rate at which they can refinance themselves. In any case, while the response of the ECB has arguably not been as aggressive as that of the Fed, in part because it was not able to do so due to a lower interest rate before the onset of the crisis; its key rates fell by three points during 2009. The deposit facility rate is now at 0.25 percent since May 2009, down from 3.25 percent in October 2008. This means that the liquidity trap is not out of sight. The stimulus effect of such policy is unclear. Artus (2009) reports a fall in interest rates on loans to businesses from a peak of 5.5 percent to 5 percent. This suggests a relatively low impact of monetary policy on actual lending rates. Incidentally, this rate is lower than the one prevailing in the US, despite looser monetary conditions there. Furthermore, according to Artus, part of this decline is due to a fall in the demand for loans associated with the deleveraging process. This further reduces the impact of ECB policy rates on lending rates. Thus it does not seem that any further ground for monetary expansion has been by-passed by the ECB. On the other hand, there is growing concern that the massive injection of liquidity during the crisis may be igniting a new asset bubble worldwide, as evidenced by the 25 percent hike in stock prices in just over six months during 2009.

6. Conclusion

In this Chapter we have discussed a number of challenges faced by the euro area in the context of the crisis. We can summarise our discussion as follows:

- The risk of a persistent overvaluation of the euro is not very important. It is unlikely that the exchange rate will exceed 1.5 dollars per euro.
- Fiscal imbalances of peripheral countries inside and outside the area, coupled with a severe contraction and problems of trade deficits and competitiveness, pose a real risk.
- To preserve the euro as a stable currency, a wave of bail-outs should be avoided. Similarly, we do not recommend introducing indirect bail-out instruments such as the "euro bonds".
- Nor do we recommend early entry of countries such as Hungary or Latvia into the euro area on the grounds that it would solve their internal problems. Ideally, these countries should have achieved fiscal and monetary stability before joining the monetary union.
- If, however, policy-makers were to make the choice of early accession of CEECs in order to avoid a balance of payment crisis and a default on these countries' external obligations, it is important that they enter at the proper exchange rate. In some cases (e.g. Latvia), this would imply a devaluation prior to entry. Even if entry takes place later in calmer circumstances, proper attention should be paid to the exchange rate and a devaluation should be considered if necessary, even though that it would conflict with the philosophy of ERM-II.
- Finally, we do not find cause for concern in the fact that monetary and fiscal policies are somewhat tighter in the euro area than in the US. First, the policy mix is extremely expansionary in the US, to a point that may be considered counterproductive. Second, in many European countries the fiscal margin of manoeuvre is reduced due to a high level of inherited public debt. Finally, lending rates seem not to react much to monetary policy rates, implying that the downside risks of further monetary easing are more relevant than any additional stimulus it could generate.

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