Reduction of cross-border financial vulnerabilities

The financial crisis has greatly sharpened market participants' risk awareness, with the result that external developments involving euro-area member countries are also being evaluated from a wholly new perspective. In the run-up to the financial crisis, the growing gap between different countries' current account balances was widely considered part and parcel of a speedy and successful convergence process, and funding shortages on the part of individual member states were deemed unthinkable. However, as the financial and economic crisis swept across the euro area, some member countries' external positions proved unsustainable. Partly as a result of the in some cases extremely high levels of net external debt, the dramatic loss of confidence on the part of domestic and foreign investors meant that current account deficits in a number of member states were no longer accompanied by adequate private capital flows, and maturing debt could no longer always be refinanced.

The international assistance programmes coupled with generous Eurosystem lending prevented the banking and balance of payments crisis from escalating and causing bank failures, an abrupt reduction of current account deficits and the even harsher real economic adjustments that this would have entailed in the affected countries. Ultimately, however, balance of payments positions must be financed by private capital flows. This depends on the macroeconomic and political outlook, in particular, proving stable and thus promising favourable investment conditions so as to restore confidence in the solvency of the government and the private sector. Given the acute uncertainty on the international financial markets, an improvement in countries' net external asset positions still appears necessary. For this to succeed, current account balances first need to revert to sustainable levels, and there are first signs that this is happening.

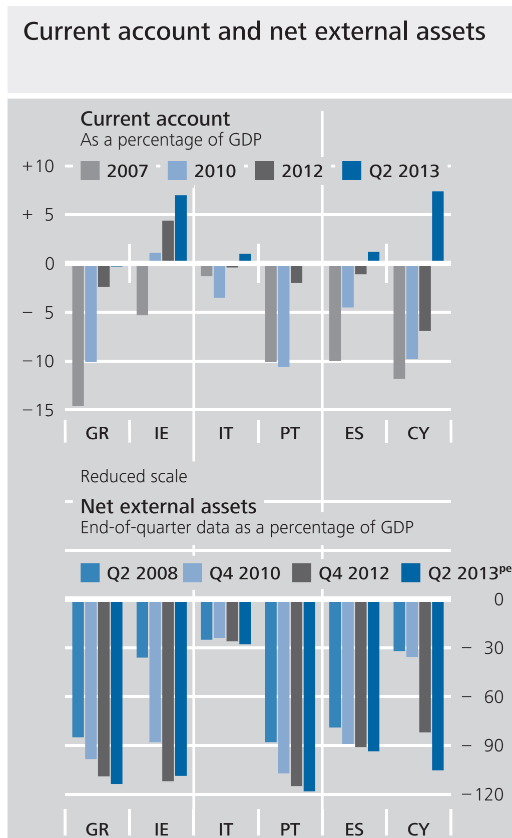
The necessary structural adjustments in the euro area hinge on responsible policymaking by individual countries in a manner that is consistent with the ground rules of the monetary union, adequate capitalisation of national banking systems and intensified oversight and supervision along with a greater emphasis on risk-appropriate differentiation of investment behaviour. Given that there are structures inherent to the system which tend to obstruct the reduction of external imbalances on account of the euro area's single monetary policy, this is key to a sustainable monetary union.

External debt remains high

Net external asset position slowly adjusting

Virtually all of the periphery countries initially recorded declining current account deficits following the onset of the international financial crisis in the third quarter of 2008 and the economic slump which then followed. The current account balances of many countries have now returned to a surplus (see pages 19 to 37). In most countries, this development has led to a marked slowdown in the deterioration in the net external asset position.[1] Cyprus is an exception to this trend, as its net external asset position did not shift to a deficit until 2008, after which it quickly widened, however; likewise Ireland's net external debt continued to grow sharply after 2007. However, given a decline in nominal gross domestic product (GDP) in some countries, most countries have, in the course of the crisis, recorded widening international investment position deficits in relation to their GDP (see chart below). In the second quarter of 2013, these deficits ranged between 28% and 118% of GDP for Italy and Portugal respectively. During the crisis, the volume of both external claims and external liabilities continued to grow in some countries, albeit at a much slower pace than in the period before the start of the international financial crisis. However, developments varied greatly depending on the individual sector and investment instrument.

Current account and net external assets



Source: Eurostat and Bundesbank calculations.
Deutsche Bundesbank

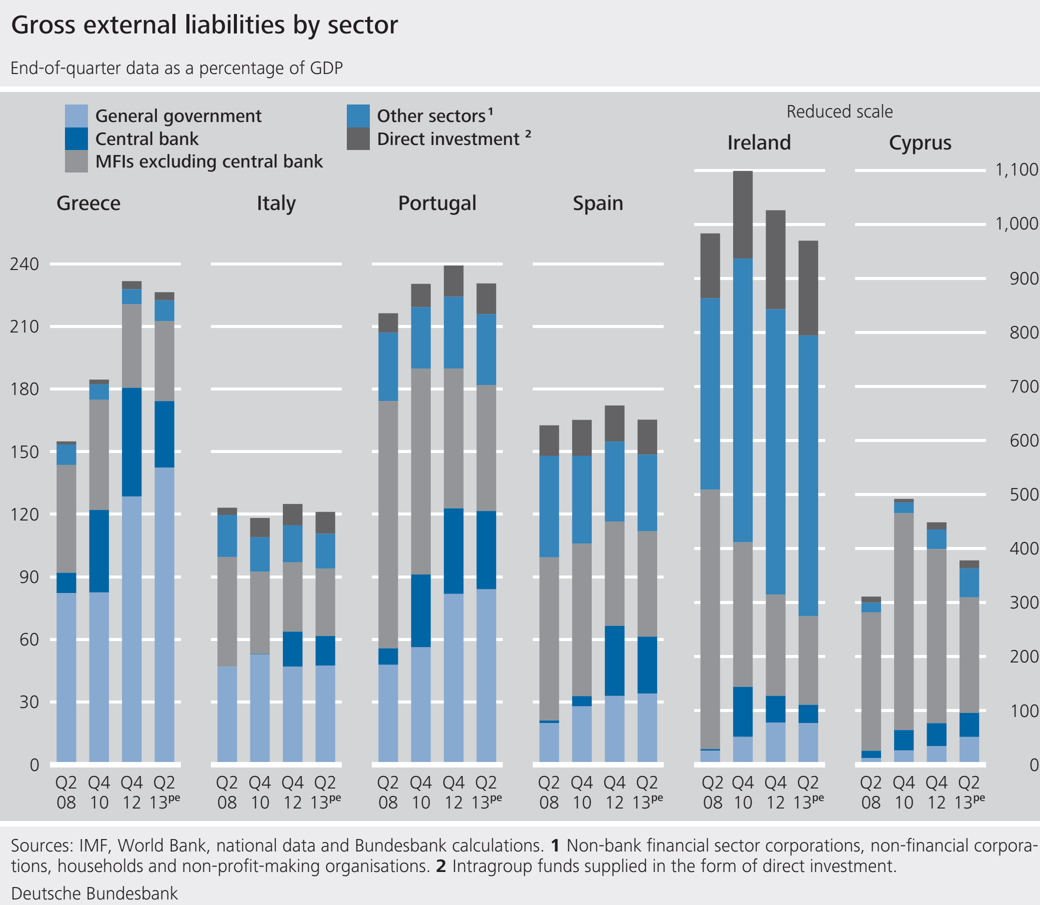
MFIs: widespread drop in cross-border assets and liabilities

As a consequence of the financial crisis and the tighter regulation which it has helped bring about, cross-border positions have been adjusted and scaled back on a worldwide basis, especially in the banking sector. This development is also discernible in the international investment positions of most of the periphery countries where, in the years preceding the crisis, banks had increasingly raised funds from abroad during credit-fuelled economic upturns. The banking sector accounts for a considerable proportion of external debt and, with the exception of Ireland, the banking sector is responsible for more than half of private sector external liabilities in all of the countries under observation. Nevertheless, since the emergence of the European debt crisis monetary financial institutions (MFIs) have generally reduced their claims on the rest of the world, while simultaneously recording a decline in their liabilities. In particular, they have pared down their holdings of foreign securities and of cross-border loans. In Greece, the asset-side trend deviated from this pattern quite starkly on occasion, as Greek banks held notably larger stocks of foreign debt securities in their portfolios at the end of the second quarter of 2013 than at year-end 2010. This is mainly due to the recapitalisation of credit institutions using European Financial Stability Facility (EFSF) bonds.

Effects of monetary union as reflected in external debt

Beside reflecting changes in the banking sector's international exposure, periphery countries' international investment positions also mirror structural shifts which can only be ex-

1 A country's net external asset position is the balance of its claims and liabilities vis-à-vis the rest of the world as stated in the international investment position.



Sources: IMF, World Bank, national data and Bundesbank calculations. 1 Non-bank financial sector corporations, non-financial corporations, households and non-profit-making organisations. 2 Intragroup funds supplied in the form of direct investment.
Deutsche Bundesbank

plained in the context of the special situation engendered by monetary union. Financing sources like those that are available in the monetary union through the European Stability Mechanism (ESM), the EFSF and other mechanisms have gained in importance. The role they play is also evident in gross foreign debt.[2]

In the majority of countries, banking sector external liabilities as a share of gross foreign debt have contracted sharply since mid-2008, whereas governments' debt to non-residents has risen. At the end of the second quarter of 2013, the Greek government's foreign debt stood at 141% of GDP, almost twice as high as in mid-2010, shortly after the sovereign debt crisis set in. The increase was largely due to international assistance loans, while the volume of Greek government bonds held by non-residents has shrunk to around one-quarter of its level in mid-2008.[3] This is a reflection of the haircut, the debt buyback programme and the Greek government's difficulties in placing bonds in foreign markets. In Portugal and Ireland, too, the government's external debt reached particularly high levels in the second quarter of 2013 compared with other periphery countries, of 86% and 80% of GDP respectively.

Corrections in net external assets closely related to challenges of debt crisis

Moreover, since the start of the global financial crisis, central banks of periphery countries, too, have held larger volumes of external liabilities. These chiefly constitute TARGET2 liabilities, holdings of which were usually only temporary and small prior to the crisis.[4] In light of the institutional mechanisms within the euro area,

2 A country's gross foreign debt is calculated as the foreign assets stated in the international investment position minus the equity components; in other words, it constitutes that part of a country's debt that is subject to (re)payment obligations.
3 At the end of the second quarter of 2013, the Greek government's unsecuritised debt constituted around half the country's foreign liabilities, as opposed to mid-2008 when it accounted for less than 3%.
4 See Deutsche Bundesbank, TARGET2 balances in the Eurosystem, Annual Report 2011, pp 48-50.

the public sector's share of periphery countries' external debt has thus increased, while the share of market-driven external debt has decreased by comparison (see the chart on page 69).[5] For this situation to be reversed, progress needs to be made in eliminating the root causes of the crisis in member states and in the institutional framework of monetary union.

Tentative recovery of capital flows and their structure[6]

Modest recovery discernible since mid-2012

As a rule, adjustment progress is reflected more quickly in balance of payments flows than in international investment position stock variables. The balance of payments imbalance which set in at the start of the debt crisis in the first quarter of 2010 and the concomitant (private) external funding gap in some euro-area countries have been contracting since mid-2012. This can be seen *inter alia* in TARGET2 liabilities, which have been in decline since peaking in the middle of 2012. The sum total of TARGET2 liabilities in the periphery countries under observation fell by 37% from the end of the second quarter of 2012 to just under €610 billion at the end of 2013.

Gross flows also relevant alongside net data

However, as when interpreting lower current account balances, a purely net assessment of monetary balance of payments adjustment does not allow any final conclusions to be drawn about the underlying adjustment processes. To answer this question, it is necessary to look at trends in gross capital flows, as their breakdown by investment instrument and investor is key to the stability of financial operations with non-residents.

The declining portfolio flows recorded in 2008 and 2009 are primarily attributable to investors' growing risk awareness with respect to shares and mutual fund shares, while the euro area initially continued to be regarded as a safe haven in terms of government bonds. This changed only when a Greek government default looked imminent. Suddenly, foreign creditors were predominantly worried not only about the soundness of commercial banks but also about the possibility of governments proving unable to meet their financial obligations. In spring 2012, this development reached its zenith when private creditors were involved in efforts to combat the Greek debt crisis through a restructuring of outstanding government debt.

Upturn in portfolio investment, but drop in lending by foreign commercial banks

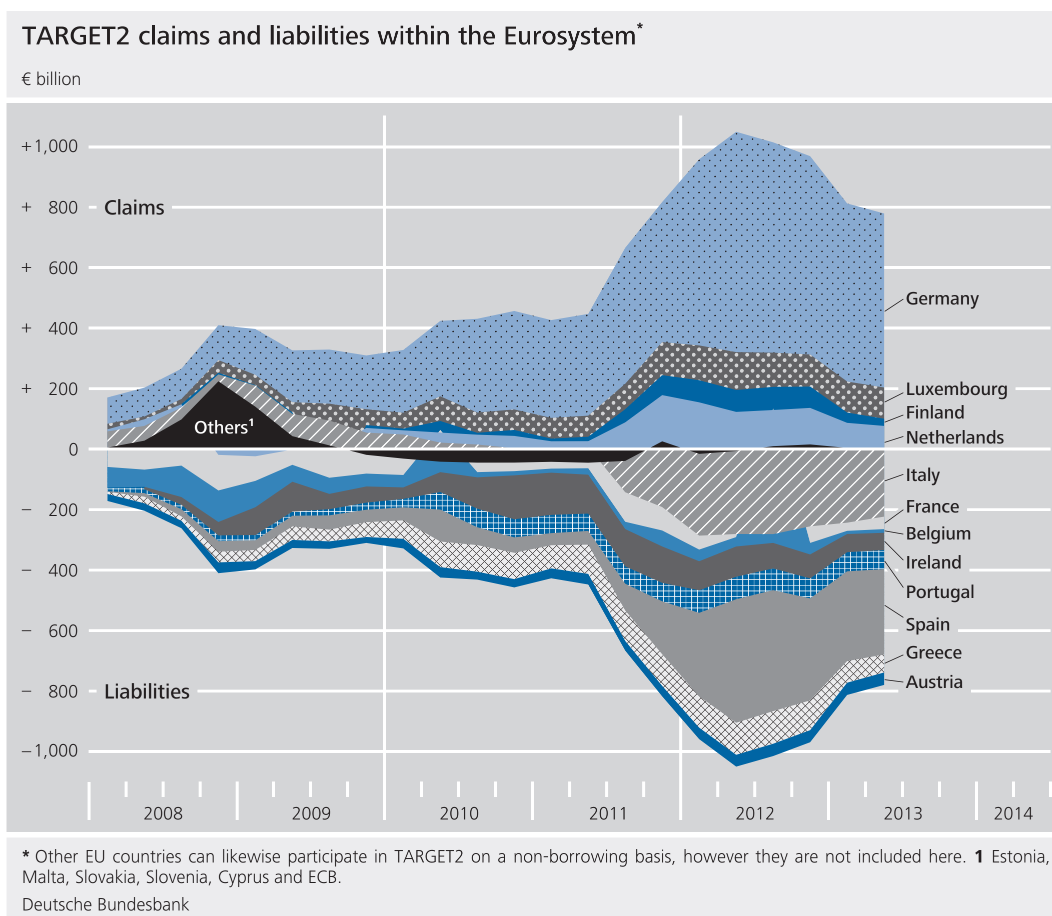
The recovery in capital inflows witnessed from the third quarter of 2012 onwards was broadly confined to portfolio investment. There are likewise signs of a slight revival in direct investment. Compared with the momentum exhibited by other forms of capital transaction, however, this form of investment responded relatively sluggishly throughout the crisis. By contrast, foreign commercial banks continue to withdraw funds from the periphery countries in their (unsecuritised) lending operations.

The reason for the structural shift within the reviving capital flows away from bank financing is only partially to be found in the recipient countries themselves where, notwithstanding first signs of improvement, the economic outlook continues to be dominated by the structural adjustment process and banks are in some cases still deemed to be vulnerable. Another factor is that, since 2008, foreign commercial

5 In Ireland, the decrease in external debt in the banking sector was accompanied by an increase in external liabilities in other sectors, including non-bank financial sector enterprises. The external liabilities of the National Asset Management Agency (NAMA), Ireland's bad bank established in September 2009, onto which Irish banks have offloaded large quantities of non-performing loans, are also recorded under this item. When considering the very high levels of gross external debt in Ireland, the special role played by the financial industry must be borne in mind. The total figure reflects its outstanding liabilities, but it also has large-scale claims on the rest of the world.
6 In the text below, the terms "private capital flows" and "private financial flows" are used interchangeably and refer to capital inflows and outflows excluding transfers executed under international assistance programmes and excluding changes in national central banks' claims on or liabilities to the ECB (TARGET2). As the capital flow data available for Cyprus is less up-to-date than that for the other countries, the country will not be dealt with in any depth in this section.

TARGET2 claims and liabilities within the Eurosystem*

€ billion



* Other EU countries can likewise participate in TARGET2 on a non-borrowing basis, however they are not included here. **1** Estonia, Malta, Slovakia, Slovenia, Cyprus and ECB.

Deutsche Bundesbank

banks have continuously scaled back their exposure to countries outside their core business area, thus rendering them very cautious in their dealings with periphery countries. This reorientation is, in part, a reaction to the new capital rules introduced under Basel III as well as to conditions imposed by the European Commission in connection with state aid procedures (see also pages 53 to 65 on the subject of private debt).

Government bonds successfully placed on primary market again of late

On the whole, market participants' confidence in a stabilisation of the financial markets has undoubtedly increased since mid-2012. This was in no small measure due to anticipation of greater euro-area integration based on decisions relating to the banking union and the decision by the Governing Council of the ECB to carry out open market transactions (OMT), subject to certain conditions. Against this backdrop, government bond prices rose and there were inflows of funds to this investment category from the rest of the world in the remainder of the year. The successful placement of government bonds on the primary market in Spain, Italy and Portugal further testifies to market participants' willingness to provide governments with private funds again. It should be borne in mind, however, that a substantial part of the demand derives from domestic banks, which creates its own problems.[7]

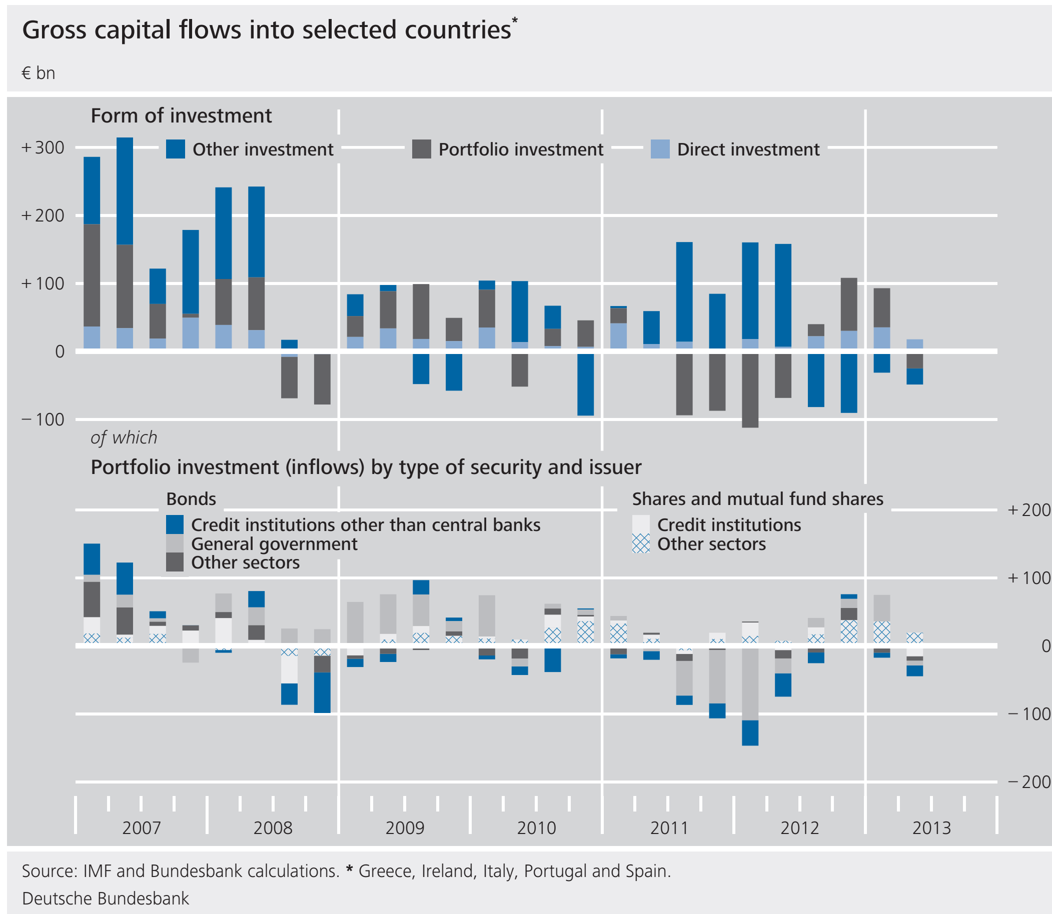
Corporations increasingly going straight to the capital markets for funding

Foreign investors' tendency to invest not just in paper issued by governments and financial institutions but increasingly in shares of non-financial corporations as well is the first indication that the structure of capital flows is beginning to return to more normal levels. Some countries (Portugal and Spain, mainly) are also seeing enterprises themselves adapting their funding behaviour and pushing ahead with the issue of corporate bonds in response to the still

7 See also Deutsche Bundesbank, Changes in bank holdings of domestic government bonds in the euro area, Monthly Report, November 2013, pp 31-32.

Gross capital flows into selected countries*

€ bn



Source: IMF and Bundesbank calculations. * Greece, Ireland, Italy, Portugal and Spain.
Deutsche Bundesbank

subdued supply of credit from commercial banks. This new stance is certainly a welcome development on the whole, because it makes enterprises less reliant on commercial banks and is likely to go hand in hand with a broad shift towards liabilities with longer maturities. Both these factors would help to reduce the risk of financing constraints.

German investors raise their financial exposure to programme countries

As far as German investors' behaviour is concerned, the Bundesbank's statistics on securities investments show that both banks and non-banks (which include insurers and investment companies) withdrew portfolio investments from the periphery countries in 2010 and 2011. While German commercial banks' portfolio investment abroad has remained muted, much like their lending, non-banks – notably money market funds and other non-monetary financial institutions – have also been investing in bonds from southern Europe (primarily Italy and Spain) again of late.

Search for yield regaining importance

Unlike public sector institutions, these institutional investors are likely to attach major importance to the search for yield, particularly so in the prevailing low-interest-rate environment. Even so, the upturn in private capital flows suggests that investors are increasingly confident that progress is being made in overcoming the European debt crisis.

Financial accounts differ considerably from one country to the next

Greece remains reliant on external assistance programmes

The pattern of capital flows into the countries hardest hit by the European debt crisis outlined in this article contains two notable outliers: Greece and Ireland. Greece is still largely cut off from the international capital markets. While it is true that the Greek central bank's TARGET2 liabilities to the ECB have contracted continuously since the beginning of 2013, this welcome development is, in fact, primarily attribut-

able to the disbursement of further instalments from the EU and IMF assistance programmes. These payments are the reason why Greece has been able to pay down its external liabilities.[8] So if anything, only the narrower current account deficit offers any real indication that Greece's external situation is easing.

Ireland showing very promising signs of recovery

Ireland, on the other hand, appears to have been rather more successful in convincing the international capital markets that it has returned to a sustainable growth path, judging by the upturn in foreign demand for Irish equities since the third quarter of 2012. Added to this, the first two quarters of 2013 saw Ireland attracting renewed capital inflows from private commercial banks. Hence, Ireland is once again generating gross capital inflows across all investment categories. The EU/IMF assistance programmes expired in December last year upon acceptance of the final report by the European Commission.

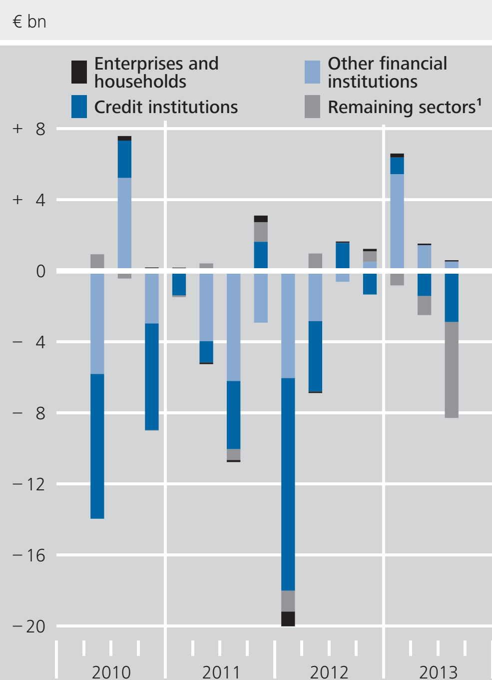
Yet the Irish economy remains heavily biased towards the financial sector. A more diversified economic base would certainly be welcome in that it would reduce the country's external vulnerabilities. Since the second quarter of 2012, the country's current account surpluses have been accompanied not just by a steady contraction in the Irish central bank's TARGET2 liabilities to the ECB but also by increased scope for Irish investment abroad, with long-term bonds as well as foreign shares and mutual fund shares proving to be particularly attractive.[9]

Portuguese privatisation programme showing early signs of success

For all the differences between Portugal and Spain's starting positions and the challenges they continue to face, recent developments in both countries have nonetheless been consistent with the broad pattern of easing external tension, with foreign investors drifting back into the local capital markets since the second quarter of 2012 and also allocating funds to the private sector. Portugal's progress owes something to its privatisation programme, which included the sale of two public utilities and an airport operator, amongst other things, to foreign investors.

Cross-border portfolio investment by German investors broken down by domestic sector in selected countries*

€ bn



* Change in the nominal amount; Greece, Ireland, Italy, Portugal and Spain. **1** General government and Deutsche Bundesbank.

Deutsche Bundesbank

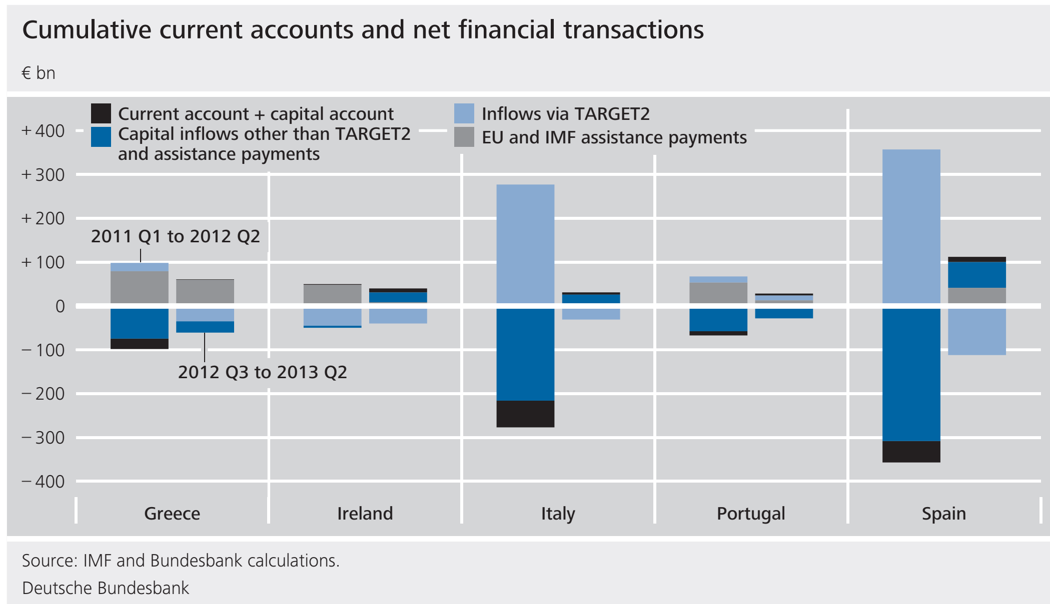
Direct ESM assistance for Spanish restructuring fund

Spain, meanwhile, is a different proposition because the ESM funds of just over €41 billion flowed not into the general government budget but to the Spanish Fund for Orderly Bank Restructuring (Fondo de Reestructuración Ordenada Bancaria, or FROB) in the form of bonds. These securities were used to recapitalise distressed commercial banks and thus help to keep them afloat. The paper is also eligible as collateral for refinancing operations, some of which are conducted across national borders and ultimately also generate higher private capital inflows from abroad. The financial assistance programme for the recapitalisation of

8 If the assistance payments are transferred via TARGET2, they reduce Greece's TARGET2 liabilities "automatically", as it were.
9 This might be nothing more than foreign financial investment passing through, however.

Cumulative current accounts and net financial transactions

€ bn



Source: IMF and Bundesbank calculations.
Deutsche Bundesbank

Spain's banking sector expired in January this year.

Assessment of external adjustments

Receding TARGET2 balances especially desirable from a Eurosystem perspective, …

So all in all, some external adjustment efforts have made more progress than others. On a positive note, foreign private investors have returned to most of the periphery, which is partially reflected in the decline in TARGET2 liabilities, although these figures remain high in absolute terms. On the downside, demand in most countries continues to centre around government securities, which benefit in a special way from guarantees given explicitly or implicitly by international lenders – their performance is driven not just by expectations regarding the issuer's economic prospects but also by the growing mutualisation of liability risk brought about by a raft of crisis measures.

… yet banks still reliant on non-standard monetary policy measures

Time and again, the Eurosystem's non-standard monetary policy measures and the European Union's financial assistance have had a stabilising effect on the periphery countries in recent years. However, lasting progress in adjusting external imbalances is conditional on repaying the capital received through such interventions. This is all the more the case when one considers that such assistance potentially reduces the pressure on them to implement necessary (external) adjustments, meaning that structural changes might even be delayed.

Traditional balance of payments adjustment mechanism weakened in euro area …

The availability of external assistance and increased drawdowns of central bank financing are not the only factors at play here. Structures hardwired into the euro area's framework likewise hinder the reduction of external imbalances within the monetary union. Bundesbank research has found that balance of payments adjustment mechanisms in a number of euro-area countries are fundamentally different from those in other exchange rate regimes.[10] Variations are particularly apparent when compared with economies that have floating exchange rates. Yet a comparison with other fixed exchange rate regimes likewise confirms that a common monetary policy that is geared to developments in the currency area as a whole means that there is no separate interaction between the monetary base and current and net financial transactions in individual parts of the common currency area. Instead, a reduction in the money supply – which would normally tend to drive capital market rates

10 See Deutsche Bundesbank, The financial crisis and balance of payments developments within the euro area, Monthly Report, October 2012, pp 13-27.

higher in the event of external funding gaps – is prevented initially.

… owing to harmonised refinancing conditions

Countries with traditional fixed exchange rate regimes usually attempt to hedge against a abrupt large-scale exodus of capital or a sudden stop in capital inflows from abroad by building up national currency reserves. In the euro area, the Eurosystem's provision of liquidity at uniform terms dampens any interest rate response and swift adjustment in the real economy. A dynamic stochastic general equilibrium (DSGE) model can be used to simulate the specific impact of unexpected and abrupt capital outflows on various exchange rate regimes. The results confirm that the adjustment process is protracted in a monetary union, with the decline in private consumption and GDP, in particular, being less pronounced than in a fixed exchange rate regime (see the box on pages 76 to 78). In a similar vein, joint financing institutions such as the ESM, which certainly play a worthwhile role from a financial stability perspective, run counter to the notion that risk provisioning is a matter of national responsibility, and might reduce the pressure on individual countries to make adjustments.

Mutualised balance sheet risks cannot be ruled out entirely in a monetary union, …

Yet this is a defining feature of any monetary union and thus of the euro area as well: the idea is to render expensive, *ergo* inefficient hedges against internal currency crises superfluous, while simultaneously reaping the benefits of both stable external prices between the member states and a common financial market. An integral component of any monetary union is a single monetary policy – one whose mutualised balance sheet risks need to be curtailed through the risk-appropriate collateralisation of monetary policy operations and by confining operations to financially sound counterparties. That is why any efforts to prevent crises and appropriately reform European Monetary Union need to focus primarily on measures designed to promptly detect and prevent macroeconomic risk without undermining the basic principle of a monetary union.

… making risk provisioning all the more important

Against this backdrop, it would appear essential to step up the pace of structural adjustment in the euro area. The onus here is primarily on the individual programme countries, which have pledged to implement reforms under the terms of the assistance programmes. But the same can be said for the framework of monetary union. Strict banking oversight by the Single Supervisory Mechanism (SSM) coupled with an effective resolution regime for insolvent institutions are key building blocks of a more stable monetary union. The macroeconomic imbalances procedure (MIP) is another mechanism associated with the stabilisation of external imbalances.[11]

Risk-appropriate interest rate spreads crucially important

Responsible policymaking by individual countries in a manner that is consistent with the ground rules of the monetary union, and a greater emphasis on risk-appropriate differentiation of investment behaviour within the euro area thus represent pivotal elements of the structural adjustments that need to be administered. This is one of the cornerstones of a sustainable monetary union, given that it was the large-scale harmonisation of capital costs in a manner which turned a blind eye to fundamental differences between recipient countries and thus overshot the intended and desirable target of deeper financial integration which contributed substantially to mounting external imbalances up to 2007. Investors now appear to be more aware of this situation, if the regional and sectoral composition of capital flows and the preferred forms of investment are anything to go by.

The fact that investors are now making a clearer distinction between the euro-area countries – as reflected by interest rate spreads that are wider than before the crisis – essentially marks a step in the right direction. Yet what it also implies is that interest rate spreads across euro-area member states might persist even after the financial and economic crisis has re-

11 See Deutsche Bundesbank, Monthly Report, October 2012, op cit.

Simulated adjustment processes following a capital outflow shock

Adjustment processes to external changes (shocks) that depend on the exchange rate regime can be examined using a dynamic stochastic general equilibrium (DSGE) model. Simulations with a DSGE model used by the Bundesbank are outlined below for two hypothetical situations. We consider a country that is either in monetary union or is trying to peg its exchange rate to the monetary union.

The Bundesbank's DSGE model is a multi-country model of the euro area in the global economy. The euro area itself is divided into two regions or countries. Each country is modelled as an economy which consists of households, firms and a public sector. While the public sector acts in accordance with pre-defined rules of conduct, the behaviour of households and firms is determined endogenously as a result of utility and profit maximisation. Households, for example, plan their consumption and their supply of labour such that they extract from it the greatest utility; this makes it possible to derive savings decisions and therefore macroeconomic capital accumulation. Firms try to maximise their profits through their decisions on output and the demand for capital and labour, by means of which they also set the prices for their products. Wages and prices are determined in the presence of monopolistic competition. The countries are interconnected with each other and the rest of the world externally through goods trade and financial assets, in particular securities.

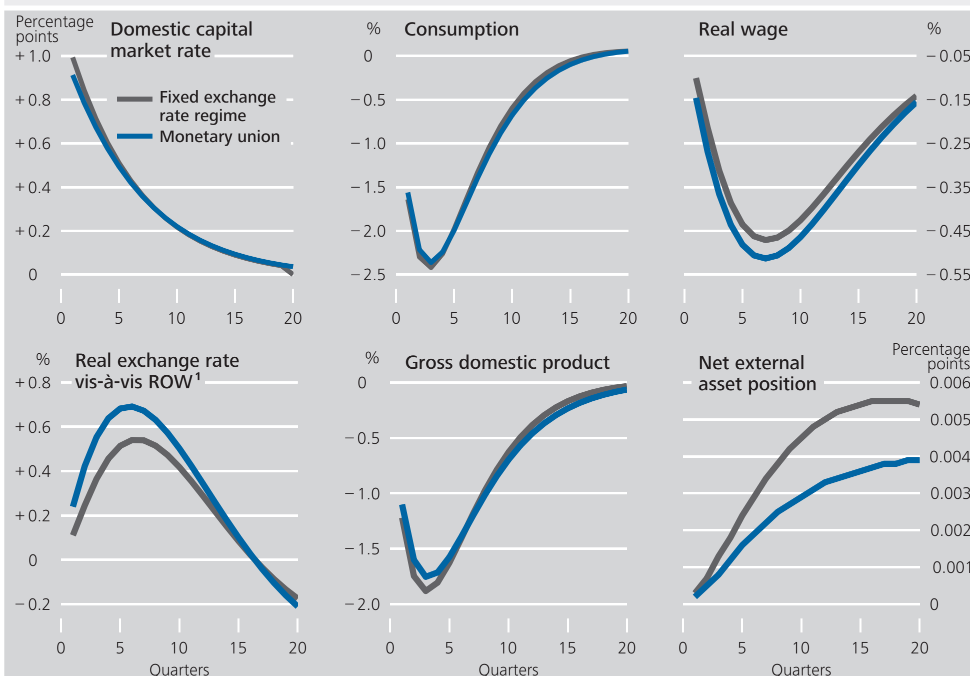
In a floating exchange rate regime, monetary policy is determined by a rule of conduct according to which the policy rate depends on the inflation rate and on what is known as the output gap.[1] As a result, the policy rate increases when the inflation rate surpasses the central bank's inflation target or when the output gap is positive. In a monetary union, the member states' central banks have relinquished control over the policy rate; instead, independent single monetary policy responds to the member states' average inflation rate and average output gap. In the alternative scenario – ie an exchange rate peg of a country that is not in monetary union – the central bank pegs the value of its own currency through purchases or sales on the foreign exchange market. Hence, national inflation and the output gap are no longer taken into consideration in this fixed exchange rate regime.

The scenario that is analysed below comprises an unexpected "capital outflow shock", in which international investors withdraw financial capital from a country. In the Bundesbank's DSGE model, this is modelled in such a way that the relative return on bonds issued in the domestic market, which is assumed to be small, will initially deteriorate by one percentage point.[2] As a result, these securities become less attractive to international investors. One possible reason for the decline in attractiveness could be excessive debt, which is associated with too high a risk in terms of holding government bonds. The question is whether monetary union as opposed to an exchange rate peg renders the adjustment process in the wake of such a shock easier or more difficult. It is otherwise assumed in the comparative analysis of the two scenarios that the other underlying economic conditions are the same in both countries.

A capital outflow shock makes access to the international financial market more difficult in both scenarios, with the effect that – at any given interest rate – fewer financial resources are available. This shortage causes the capital market rate to increase in the country in question, which in turn leads to

1 The output gap is defined as the difference between the actual output level and the natural output level, excluding price and wage inertia.
2 The capital outflow shock follows an autoregressive process both in monetary union and in the case of a currency peg. Owing to its autoregressive features and the shock's assumed persistence, the half-life of the capital outflow shock is five quarters.

Simulated adjustment processes in the event of unexpected capital outflows*



* Adjustment process owing to an unexpected increase in international capital market rates compared with the domestic market by initially one percentage point, which then slowly diminishes. **1** Rest of the world; a rising curve denotes depreciation.
Deutsche Bundesbank

an increase in domestic savings and a decrease in the domestic demand for capital. As a result, there is a decline in both consumption and investment and therefore also in aggregate demand and in production. The extent of this adjustment depends on the exchange rate regime, however.

The above chart illustrates the adjustment process of the economy in question in the two scenarios. It shows the dynamic adjustment of the domestic capital market rate, consumption, the real wage, the real exchange rate level of the country vis-à-vis the rest of the world (ROW), gross domestic product (GDP) and net external assets over a period of 20 quarters (ie five years); the deviation of the variable in question from its long-term equilibrium is depicted in each case. Correspondingly, the zero line illustrates the case where there is no deviation from the long-term equilibrium.

In the case of a membership in monetary union, the domestic capital market rate increases to a lesser extent than in a fixed exchange rate regime (see chart above). This is owed to the fact that the monetary union's central bank counterbalances recessionary trends which, due to a capital outflow shock in one member state, also have an – albeit weaker – impact on the average of the union as a whole. In the case of the fixed exchange rate, the adjustment must be borne in full by the directly affected country itself. The central bank must focus its monetary policy on pegging the exchange rate, whereas the monetary union's monetary policy is geared towards the member states' macroeconomic interests.

Given that the increase in the domestic capital market rate is less pronounced in the context of a capital outflow shock in monetary union, a decrease in consumption, too, is weaker – at least initially. In the DSGE model outlined here, the households in monetary union are willing to reduce their supply of labour to a lesser extent, with the consequence that the real wage declines

more strongly.[3] This is also reflected in a relatively pronounced depreciation in the real exchange rate. In the context of monetary union membership, both factors lead to a relative improvement in competitiveness and – besides the relatively moderate rise in interest rates – therefore also contribute to keeping the decline in GDP in check.[4] In addition, in monetary union the smaller increase in the domestic capital market rate and the weaker decline in consumption go hand in hand with lower savings. In connection with an also relatively moderate decline in investment, existing current account deficits are reduced at a slower pace in the context of a monetary union compared with an exchange rate peg, and current account surpluses tend to be achieved with a lag. This ultimately gives rise to a weaker increase in net external assets.

Overall, the results illustrate that the adjustment path of the small country's economy is less volatile if it is a member of monetary union than if its exchange rate is pegged. This is particularly evident when comparing consumption and GDP.

3 Owing to the capital outflow shock, a shortage of financial resources occurs in both scenarios. However, membership in monetary union guarantees a less pronounced rise in the domestic capital market rate, with the effect that households are willing to reduce their consumption to a lesser degree than would be the case in an exchange rate peg. In order for this relatively small decline in consumption to actually materialise in monetary union, households opt to reduce the supply of labour to a lesser extent. Compared to a situation with an exchange rate peg, this enables them – despite a stronger decline in the real wage – to achieve greater labour income on the whole, thereby also financing the relatively higher consumption.

4 The link between a relatively strong decrease in the wage level and a comparatively moderate decline in consumption in a monetary union shows clearly that a common currency does in fact offer advantages in the event of a capital outflow shock. In reality, responses may differ across countries, which can be attributed to structural differences in these countries, eg in the adjustment capacity of the labour markets. The analysis of the above scenarios focuses on fundamental links and disregards such structural differences. The importance of flexible labour markets in monetary union is a key finding of the theory of optimum currency areas. By contrast, labour market rigidities can cancel out the advantages of monetary union.

ceded and the international financial markets have returned to more stable levels, if those spreads are backed up by fundamentals. Such spreads would not be proof of a lack of integration but represent an acceptable, if not to say highly desirable state of affairs which reaffirms the central role played by individual national responsibility within the euro area's regulatory framework.