The financial crisis and balance of payments developments within the euro area

Some euro-area countries built up considerable and persistent current account deficits prior to the financial crisis. Their external debt consequently rose substantially, causing a significant increase in lenders' funding risks. The financial crisis highlighted these imbalances and risks. Matters were made worse by negative feedback effects between the problems facing government budgets and the risks confronting national banking systems, which caused private investors to question the sustainability of these countries' overall external debt position. As a result, private capital inflows no longer suffice to offset their (albeit contracting) current account deficits. It follows that these countries are experiencing not just a loss of confidence in their public finances but also severe balance of payments difficulties.

Prior to the launch of the euro, many experts underrated the likelihood of such balance of payments risks in the euro area as well as their repercussions. Moreover, the crisis has shown that the usual adjustment mechanisms for external imbalances are slower to take effect within the European monetary union than in other exchange rate regimes. One reason for this, as confirmed by empirical studies carried out by the Bundesbank, is that, in a monetary union, not only are the exchange rates between member states fixed, but the adjustment process is cushioned and protracted by the single monetary policy through harmonised short-term interest rates and liquidity assistance measures.

This prevents an overly abrupt macroeconomic adjustment process and the considerable knock-on costs that this would have on the real economy and the financial systems of the affected countries. But as this weakens market-driven adjustment processes, it is crucial to put in place economic and fiscal policy coordination and conditionality so as to underpin the macroeconomic adjustment processes needed to help create sustainable external positions within the single currency area. In addition, the risk premiums reflected in the interest rates should not be completely levelled out. This requires both appropriate regulation and heightened risk awareness on the part of market participants, especially if – as in the euro area – the institutional and legal framework is still built mainly around national competencies.

At the same time, a weakened adjustment mechanism in the euro area imposes more exacting demands on member states' homogeneity. The newly implemented macroeconomic imbalance procedure in the EU and the Fiscal Compact are steps in the right direction. However, it remains to be seen to what extent this will help to quickly detect and rectify undesirable developments in future.

The single currency does not preclude cross-border financing constraints

Accumulation of external imbalances after euro launch

The first few years of the new millennium leading up to the international financial crisis in 2007 and 2008 saw an enormous accumulation of external imbalances both globally and within the euro area, where there was a clear divergence between states with persistent and increasing current account deficits and the "surplus countries". As a result, the "deficit countries" built up ever-larger external liabilities.

However, large external liabilities, especially when they are funded through short-term financing, can worsen existing national dysfunctions and vulnerabilities. This is exactly what happened to peripheral euro-area countries during the current sovereign debt crisis: they could no longer finance their current account through private inflows. They had to adjust their external imbalance through public funds.[1]

The funding gaps that appeared were a reflection of the international financial markets' growing scepticism about the sustainability of the accrued liabilities to other countries and – connected with this – the state of the banks in the countries affected by the crisis. In addition, the countries concerned experienced negative feedback effects between the problems in public finances and in the banking system. These feedback effects affected each crisis country differently depending on the specific situation. In Ireland and Spain, the stress in the national banking system triggered by corrections on the real estate markets strained the government sector's solvency, while in Greece, the sovereign solvency crisis led to the subsequent national banking crisis. These differences aside, however, the interdependencies exacerbated national problems and contributed significantly to the sudden reversal in private capital flows. The current crisis therefore extends beyond the narrower fiscal issue of debt to include problematic developments in the balance of payments of some euro-area countries.

Definition: balance of payments crisis

Balance of payments deficits that change the public external position by reducing foreign reserves or increasing liabilities to foreign government or supranational institutions can only be sustained for a time. According to Milesi-Ferretti and Razin's definition of current account deficit sustainability (1996), such a crisis is defined as a situation which requires a drastic economic policy shift in order to maintain the ability to service the foreign obligations within the existing currency regime.[2]

Risk of national balance of payments problems largely disregarded prior to the crisis …,

The possibility of national balance of payments crises occurring in the euro area was largely disregarded in economic policy discussions prior to the current crisis. Because it was believed that individual countries would no longer experience funding shortages after exchange rate risk had been eliminated, it was long deemed unnecessary even to analyse national balances of payments. It was thought that a single currency area would prevent balance of payments crises from occurring in individual member states.[3]

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1 As is usual in economic literature, private capital flows here include all cross-border financial flows that do not involve transactions between a domestic and foreign central bank (eg foreign reserves, TARGET2 balances) or international assistance programmes. However, this does not exclude the involvement of government entities.

2 The term current account sustainability refers to an assessment of "whether a continuation of the current policy stance is going to require a 'drastic' policy shift (such as a sudden tightening of monetary and fiscal policy, causing a large recession) or lead to a crisis (such as an exchange rate collapse, resulting in an inability to service external obligations)". See G M Milesi-Ferretti and A Razin (1996), Current-Account Sustainability, Princeton Studies in International Finance No 81, Princeton NJ, p 5.

3 This is also implied by the Treaty on the Functioning of the European Union, which only envisages balance of payments assistance for those EU member states that have not yet adopted the euro (article 143). See B Marzinotto, J Pisani-Ferry and A Sapir (2010), Two crises, two responses, Bruegel Policy Brief, 2010/01, March, and F Giavazzi and L Spaventa (2010), Why the current account may matter in a monetary union: lessons from the financial crisis in the euro area, CEPR Discussion Paper Series No 8008, London.

… which proved incorrect

This theory proved incorrect.[4] Essentially, balance of payments crises can occur whether or not an economy is part of a single currency area. Although the balance of payments is an *ex post* accounting record, from an economic perspective it expresses an important budget constraint: deficits need to be financed. If they can no longer be financed, or only with difficulty, adjustments must be made. This budget constraint also applies to the members of a monetary union, although they face the extra restriction that they are unable to use the exchange rate or national monetary policy to make these adjustments. Furthermore, the current crisis has shown that national imbalances can create significant contagion effects in a monetary union.

Imbalances in individual member states can endanger stability of monetary union

The build-up of intra-European current account imbalances in the euro area

Cheap supply of capital

In the early stages of European economic and monetary union, interest rates in the member states converged at a low level following the elimination of exchange rate risk. From the perspective of deeper financial market integration, this was desirable in principle. At the same time, however, the favourable financing conditions in the peripheral countries stimulated domestic demand. A procyclical real interest rate effect then ensued. Above-average price increases for non-tradeable goods made investment in this area appear particularly attractive, to the detriment of exports. These economies also received large foreign private capital inflows over an extended period. The real estate sector boom associated with the capital flows further fuelled domestic demand in various countries by creating a positive wealth effect.

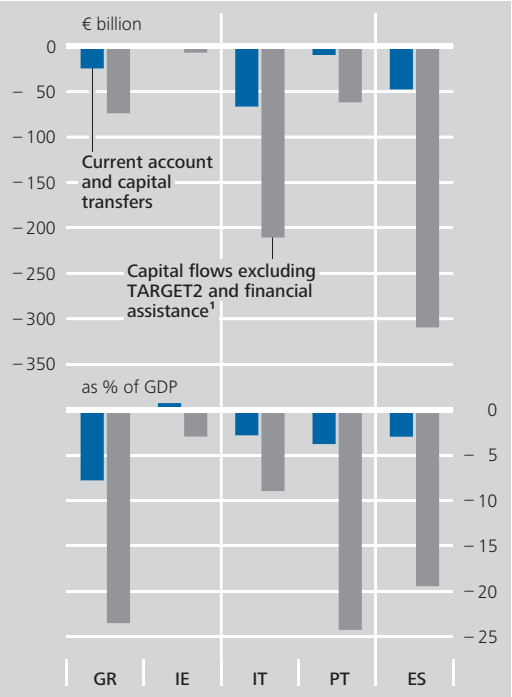
Real interest rate effect crowded out …

… the competition effect

The dampening export momentum on the back of deteriorating price competitiveness did not suffice to significantly affect wage developments in the countries concerned and trigger an adjustment process. These contrasting external developments therefore constantly widened the existing macroeconomic divergences between the euro-area member states in the run-up to the financial crisis, which resulted in considerable and persistent current account imbalances in the euro area.[5]

Current account balances* and private capital flows

2011Q1 to 2012Q2, balances



* Incl capital transfers. **1** (+) = Capital import, (–) = Capital export.

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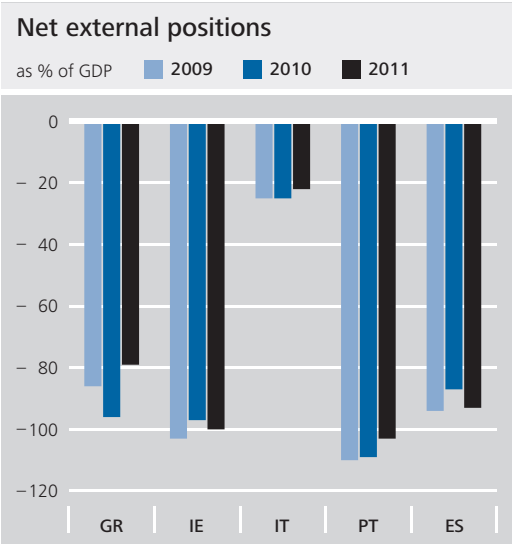
Current account drift in the euro area

Current account surpluses in Germany, Austria, Denmark, Belgium, Finland, the Netherlands and Luxembourg, for example, have risen fairly continuously since the turn of the millennium. In 2007, Germany's current account surplus peaked at nearly 7½% of gross domestic product (GDP). On the other hand, the current ac-

4 See H-W Sinn (2011), The European Balance of Payment Crisis, CESifo Forum Volume 13, Special Issue, January 2012, pp 3-10, CESifo Munich; M Wolf (2012), Can one have balance of payments crisis in a currency union?, Financial Times Deutschland; S Merler and J Pisani-Ferry (2012), Sudden Stops in the Euro Area, Bruegel Policy 2012/06, Bruegel, Brussels; K Reeh (2012), Balance of Payments Adjustment in the Monetary Union, CESifo Forum Special Issue, CESifo Munich.

5 See Deutsche Bundesbank, Current account balances and price competitiveness in the euro area, Monthly Report, June 2007, p 33 ff.



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count positions of the remaining euro-area countries showed growing deficits in some cases. Most notably, the peripheral countries Spain, Portugal and Greece recorded deficits of 10%, 12½% and 15% of GDP in 2007 or 2008.

Current account deficits primarily interpreted as a sign of economic policy convergence, …

For a long time, persistent surpluses and deficits in national current accounts were interpreted as a normal side-effect of a rapid and successful catching-up process in the peripheral countries of southern Europe. However, the fast and excessive increase in private demand in the years leading up to the financial crisis was not fully warranted by the convergence process. The often inefficient use of capital inflows, the emergence of capital market or real estate market price bubbles and the extraordinarily large credit growth were not taken seriously enough as warning signs, nor were they reflected in rising interest rate spreads.[6]

… but net external liabilities signalled existing risks

High ratios of net external liabilities to GDP in Greece (86%), Ireland (103%), Portugal (110%) and Spain (94%) at the end of 2009 indicated considerable vulnerability to a withdrawal of foreign investment. External liabilities in the form of debt represent a particular risk because they create specific payment obligations and an acute requirement for funding due to the need to refinance maturing loans as well as to pay consistently high interest to the rest of the world.[7]

Change in risk perception after the onset of the financial crisis

Change in risk perception with onset of financial crisis

As the financial crisis spread across Europe, confidence that the convergence process could continue permanently and without setbacks began to falter. As a consequence, the ability of some euro-area countries to sustain their external debt levels was increasingly called into question. Funding from private sources was harder to obtain and the terms were less favourable.

Monetary union initially sheltered members from effects of the financial crisis, …

After the collapse of Lehman Brothers in September 2008, non-euro-area EU member states, primarily those with fixed exchange rates, were the first to face significant capital outflows, which forced them to suddenly adjust their current account balances. At the time, international investors still saw the euro area as a haven of stability, so that even member states with considerable current account deficits initially remained protected from abrupt reversals in cross-border private capital flows.

… until the sovereign debt crisis also revealed imbalances in the euro area

However, risk perception of exposure to euro-area countries changed dramatically following the onset of the sovereign debt crisis. The peripheral euro-area countries experienced a turn-

6 See F Giavazzi and L Spaventa (2010), Why the current account may matter in a monetary union: lessons from the financial crisis in the Euro area, CEPR Discussion Paper 8008, CEPR, London; H Zemanek, A Belke and G Schnabl (2009), Current Account Imbalances and Structural Adjustment in the Euro Area: How to Rebalance Competitiveness, Policy Paper No 7, IZA, Bonn; H Berger and V Nitsch (2010), The Euro's Effect on Trade Imbalances, IMF Working Paper, IMF, Washington; C Borio and P Disyatat (2011), Global imbalances and the financial crisis: Link or no link?, BIS Working Papers No 346, BIS, Basel.

7 In cross-country comparisons of gross external liabilities it should be noted, however, that this number depends heavily on the particular economic structure. At the end of 2011, for example, Ireland, where the financial sector continues to play an important role, reported a debt ratio of over 1,000% of GDP, a far higher figure than Greece, which had a comparatively low debt ratio of "just" 170% (excluding liabilities to affiliated enterprises in both cases).

around in private gross capital flows as they lost international investors' confidence. On balance, foreign private lenders divested from the euro-area countries hit hardest by the current debt crisis. A significant share of the funds flowed out through the national banking systems.[8] Instead of private capital inflows, some countries with current account deficits (such as Greece, Portugal, Spain or Italy) even recorded private net capital exports on balance.

Foreign investors' withdrawal

In absolute terms, the largest capital outflows took place in Spain and Italy, where private investors withdrew a total of €307 billion and €211 billion net respectively between the start of 2011 and the end of the second quarter of 2012. In addition, these countries had cumulative current account deficits of €50 billion and €66 billion.[9] In Greece and Portugal too, however, private net capital exports were significantly higher than the financing shortage arising from these countries' current account deficits.

Financial assistance and additional bank funding through the Eurosystem replace private payment flows

Increasing outflows of private capital meant that, despite shrinking current account deficits, some euro-area countries were no longer able to balance private cross-border payment transactions without outside help.

Higher central bank funding

Alongside extensive international financial assistance in the form of bilateral loans and EFSF/IMF adjustment programmes, the Eurosystem's single monetary policy in particular eased national funding shortages by introducing a broad range of liquidity policy measures from which these countries benefited especially.[10] Growing mistrust between credit institutions meant that many commercial banks in the crisis countries found it difficult or impossible to refinance themselves on the interbank market. Deposit withdrawals and difficulties in refinancing maturing bonds also had an negative impact on the liabilities side of some banks' balance sheets. As a result, the countries which were hit hardest by the financial crisis and which had the most vulnerable banking sectors increased their refinancing operations with their national central banks. A large percentage of cross-border payments for current account or

IMF and EU assistance programmes*

€ billion, as at 31 July 2012

Assistance programmes from	Greece[1]	Ireland	Portugal
EU			
Approved*	182	45	52
Paid out	89	33	38
IMF			
Approved*	58	23	26
Paid out	22	17	20

* The total approved amounts of the different assistance programmes are paid out in tranches subject to positive interim reports from the Troika, which consists of representatives from the EU, the IMF and the ECB. **1** Excluding support measures associated with the haircut in March 2012.

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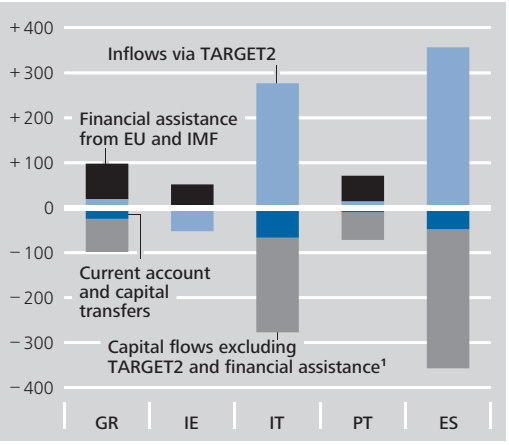
8 From the first quarter of 2011 to the first quarter of 2012, the exchange-rate-adjusted decrease in the external liabilities of Irish commercial banks totalled over €100 billion. In Spain, the cumulative outflows from the banks' balance sheets to the rest of the world reached just under €50 billion. In both Portugal and Italy, this figure was almost €30 billion. Foreign investors also withdrew over €20 billion from the Greek banking system during this period, although the sovereign debt crisis had already taken hold there in spring 2010.

9 Including capital transfers.

10 In May 2010, Greece was granted bilateral assistance initially amounting to €80 billion from individual euro-area countries, plus a further €30 billion contributed by the IMF. This first support package was replaced by a second package in May 2012, which is intended to provide a further €130 billion of external payments by 2014. In addition, the EU provided various support measures associated with the haircut on Greek bonds in March 2012. In November 2010, Ireland received a three-year international support package which included external financial assistance totalling €67.5 billion. In April 2011, Portugal applied for external assistance. Like the package for Ireland, the assistance programme granted to Portugal by the EU and IMF in May is intended to last three years and will provide financial assistance amounting to €78 billion. In each country, the reform measures agreed and actually taken are reviewed by the Troika (consisting of experts from the EU, the IMF and the ECB) before individual payments are disbursed.

Balance of payments situation

2011Q1 to 2012Q2; € billion



1 (+) = Capital import, (–) = Capital export.
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capital transactions was therefore financed by Eurosystem funds.

Sharp rise in TARGET2 liabilities, especially in Italy and Spain

The growing substitution of private cross-border payment flows by Eurosystem funds is reflected in developments in national TARGET2 balances.[11] Spain has recorded the sharpest rise in corresponding liabilities to the ECB since the beginning of 2011. On 31 August 2012, its TARGET2 liabilities stood at €434 billion compared with €51 billion on 31 December 2010. At the end of December 2010, Banca d'Italia even reported a small surplus of €3 billion, but this became a negative figure of €289 billion over the next 20 months. The TARGET2 balances of the programme countries of Greece (€108 billion), Ireland (over €90 billion) and Portugal (72 billion) were still extremely negative at the end of August 2012, too.

Build-up of TARGET2 claims in countries with current account surpluses

By contrast, some national central banks have significant and constantly growing claims on the ECB. On 31 August 2012, Germany had the highest TARGET2 claims, at €751 billion. However, the Netherlands, Luxembourg and Finland also reported high positive TARGET2 balances.

Non-standard monetary policy measures

The massive expansion of TARGET2 balances is the result, on the one hand, of private financial flows drying up and, on the other, of monetary policy easing and the raft of non-standard monetary policy measures introduced by the Eurosystem during the financial crisis, such as full allotment in refinancing operations since October 2008 or the broadening of the range of eligible collateral. The emergency liquidity assistance (ELA) facility also allows individual central banks, on their own account, to provide commercial banks with additional liquidity in the event of severe payment squeezes. However, cause and effect should not be confused when interpreting these developments. The TARGET2 balances are the result of the factors described in the context of a monetary policy that is implemented locally by the Eurosystem's national banks. They are not an independent source of primary risk in the European monetary union. Risks arise from the provision of liquidity itself, not from its subsequent regional distribution via the TARGET2 payment system.

Liquidity assistance and transfers need to be accompanied by reform

In total, the wide-ranging support measures of the EU and the IMF, together with the Eurosystem's non-standard monetary policy measures, have reduced the intensity of the crisis-related adjustment process in the affected countries and the euro area as a whole, thus providing some breathing space. However, they can only lastingly boost confidence in the functioning of the euro area if they remain temporary and are

11 TARGET2 is a payment system that enables the speedy and final settlement of national and cross-border payments in central bank money. See A Lipponer and J Ulbrich (2011), Balances in the TARGET2 Payments System – A Problem?, CESifo Forum Vol 13, Special Issue, January 2012, pp 73-76; H-W Sinn (2011), op cit; S Kooths and B van Roye (2012), Nationale Geldschöpfung im Euroraum, Mechanismen, Defekte, Therapie, Kiel Institute for the World Economy, Kiel Discussion Papers 508/509, University of Kiel; Deutsche Bundesbank, The dynamics of the Bundesbank's TARGET2 balance, Monthly Report, March 2011, p 34; Deutsche Bundesbank, TARGET2 balances in the Eurosystem, Annual Report 2011, p 48; European Central Bank, TARGET2 balances of national central banks in the euro area, Monthly Bulletin, October 2011, p 35; U Bindseil and P König (2011), The Economics of TARGET2 Balances, SF 649 Working Paper 35; OENB (2012) Understanding TARGET2: The Eurosystem's Euro Payment System from an Economic and Balance Sheet Perspective, Monetary Policy and the Economy Q1/12, PENB, Vienna; H-W Sinn and T Wollmershäuser (2011), Target Loans, Current Account Balances and Capital Flows: The ECB's Rescue Facility, NBER Working Paper 17626; W Kohler (2011), The Eurosystem in Times of Crises: Greece in the Role of a Reserve Currency Country?, CESifo Forum, Special Issue January 2012, pp 12-22.

accompanied by coherent economic policy reforms. Should this not happen or not happen to a sufficient extent, they will only help to cement the present situation and intensify the inherent contradiction in the current legal framework between the primacy of individual national responsibility and support measures provided by other euro area countries and the Eurosystem.

External adjustment in the context of a common monetary policy coupled with national competencies

Adjustment process in monetary union different than in a fixed exchange rate regime …

The adoption of the single currency by the euro-area countries led to a far greater level of institutional and economic integration than previously existed in the European Monetary System. Although no move was simultaneously made towards a political union, the single monetary policy framework significantly alters the balance of payments adjustment mechanisms in the member states. This can be illustrated by comparing the main adjustment channels used in various monetary policy regimes.

Thus the adjustment of external imbalances in a monetary union is fundamentally different from the correction mechanism in a fixed exchange rate regime. This is due in particular to the fact that the common monetary policy in a monetary union is oriented to developments in the currency area as a whole. This rules out a regionally diverse monetary policy that reacts singly to specific developments in individual parts of the common currency area. The situation is different in a fixed exchange rate regime. Although in this case, too, assuming free movement of capital and ongoing price stability in terms of the anchor currency, the national central bank cannot freely determine national monetary policy (the "impossible trinity"),[12] in the event of an imbalance on the foreign exchange market, it can, at least in the short term, choose between directly intervening by purchasing or selling foreign currency or influencing private capital flows by lowering or raising its key interest rate.

… in which current account deficits are accompanied by a shrinking domestic money supply and rising interest rates

In a fixed exchange rate regime, both these measures lead to a squeeze in the domestic money supply and therefore in credit demand, which ultimately impacts on the demand for goods and services in the real economy. In the long term, international competitiveness is restored through the reduction in relative prices and wages that this imposes. The economy therefore has to live with the consequences of this exchange rate-oriented monetary policy. However, the accompanying domestic economic contraction has a stabilising effect on the balance of payments, which means that it helps to reduce existing imbalances.

Sterilisation can offset short-term effects on the money supply

A central bank can temporarily sterilise the monetary policy consequences of a fixed exchange rate regime through expansionary lending to the domestic banking sector if the aim is to counterbalance temporary fluctuations and cushion the real economy from unwanted effects. But because sterilisation neutralises the rise in interest rates needed for domestic corrections, there is a delay in reducing the external imbalance. However, the central bank cannot equalise persistent excess demand for foreign currency at the prevailing exchange rate in the long term because its foreign reserve holdings are finite. Sterilisation is therefore only a short-term option. In the long term, an increase in short-term interest rates for fundamental reasons is unavoidable. Therefore, in a fixed exchange rate regime, the money supply develops endogenously, as a function of the fixed exchange rate target.

12 Because of interactions between interest rates and exchange rates (interest rate parity), it is not possible to simultaneously keep the exchange rate stable, pursue an independent monetary policy and allow cross-border financial flows to fluctuate freely. See M Fleming (1962), Domestic financial policies under fixed and floating exchange rates, IMF Staff Papers 9, p 369 ff; R Mundell (1963), Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates in: The Canadian Journal of Economics and Political Science 29, p 475 ff.

Adjustment mechanism in monetary union similar to fixed exchange rate regime with a sterilising monetary policy

By contrast, the member states of a monetary union share a common key interest rate, regardless of whether their private balance of payments transactions currently show a surplus or a deficit. At the same time, the national stock of money in circulation in an individual deficit country is not generally reduced to the same extent as private net capital outflows. Instead, if they have sufficient collateral, commercial banks can cover their existing financing needs via greater refinancing from the central bank. Interest rate effects, as are expected in a fixed exchange rate regime, are therefore largely eliminated at the short end of the yield curve. As a result, there is less monetary policy pressure to adapt prices. In this respect, the adjustment process of balance of payments imbalances within the euro area is similar to the mechanism of a country with a fixed exchange rate regime and a sterilising monetary policy. In this case, the single currency acts as an automatic stabiliser.

Smaller interest rate spread in euro area also at the long end

Furthermore, the single monetary policy not only causes a convergence of short-term interest rates but also tends to narrow the spread at the long end. This was clearly evident in the bunching of interest rates in the run-up to the crisis, which was magnified by the financial markets' scepticism regarding the strict enforcement of the EU Treaty's no bail-out clause. Even in the event of a country-specific deterioration in banks' financing conditions, the impact on the balance of payments is initially more limited than in other currency regimes because commercial banks can resort to Eurosystem liquidity operations at a standard interest rate if they find it significantly more expensive to obtain finance on the capital market.

Sensitivity of domestic financing terms to global stress factors lower in euro area

The connection between domestic financing conditions and global developments was also weakened in the run-up to the recent crisis. As previously mentioned, for a long time the monetary union evidently functioned as a kind of firewall which prevented country-specific financing terms from directly mirroring developments in global stress factors. For example, the correlation between the volatility index VIX S&P 500, which measures global financial market tensions, and national credit default swap (CDS) spreads was significantly higher outside than inside the euro area.[13] The weaker response of country-specific risk perception in the euro area to global developments ultimately helped to prevent the emergence of a suitable risk pricing system in the euro area as an early warning system and a timely adjustment mechanism. However, this is due less to the euro area's operating framework and more to the financial markets' failure to adequately recognise mounting imbalances and to price in these risks sufficiently as they developed.

Non-standard monetary policy measures dampen adjustment process

The sudden re-evaluation of risk during the crisis and the subsequent reversals of private capital flows have meanwhile triggered considerable macroeconomic adjustments, accompanied by severe recessions and high levels of unemployment in the countries affected. However, the stabilising function of the single monetary policy has been evident even during the crisis. It significantly mitigates the adjustment process through low short-term interest rates and monetary policy support measures. On the other hand, the Eurosystem's balance sheet risks have increased. This highlights the conflict between the common monetary policy and the primacy of national autonomy for euro-area member countries established in the current legal framework. The more effectively monetary policy measures support the financial systems of the crisis countries, the more risks are transferred to the Eurosystem's balance sheet and, ultimately, redistributed among taxpayers in the member states as a whole. The resulting tensions become acute, at the latest, when monetary policy measures are specifically tar-

13 J Ejsing and W Lemke (2009), The Janus-headed salvation: sovereign and bank credit risk premia during 2008-09, ECB Working Paper 1127, Frankfurt am Main, interpret the correlation between a single global risk factor, represented by the volatility index VIX S&P 500, and credit default swaps (CDS) as the measure of how risk spreads for individual countries react to global developments. P Honohan (2010), Lessons from Ireland, Comparative Economic Studies 52, p 133 ff concludes that the single currency also makes interest rates less elastic to domestic developments.

geted at alleviating the difficult situation in countries affected by the crisis. Although this may be justified on the grounds of ensuring financial stability or upholding the smooth transmission of the single monetary policy, monetary policy thereby takes on a stabilising role which is clearly a fiscal policy task in a monetary union of sovereign member states. This risk transfer is consequently substituting support measures that really should be taken by political entities equipped with a democratic mandate to do so.

Empirical evidence confirms weakened balance of payments adjustment in euro area

Empirical study analyses current account adjustment under different exchange rate regimes

Econometric studies carried out by the Bundesbank support the hypothesis that the balance of payments adjustment in the euro area is determined by different factors than in other currency regimes. The study examines the adjustment of current account balances. The advantage of this approach compared with looking at the overall private balance of payments position is that floating exchange rate regimes, in which the balance of payments is by definition in equilibrium, can be included in the dataset. In addition, the financial account shows extremely high levels of volatility, which creates difficulties in the estimations, particularly where longer-term interactions are concerned.[14]

Balance of payments crises mostly connected to imbalances in the real economy

Moreover, balance of payments crises predominantly occur when current account deficits exist. Ultimately, the considerable build-up of current account deficits in peripheral countries before the crisis, which was only partially explainable by the fundamentals, also indicates that the balances had risen far beyond a sustainable level and that the rapidly rising foreign debt that accompanied this represented a substantial risk that was not adequately recognised at the time. On top of this, capital outflows as a result of the sovereign debt crisis were particularly large in the countries with the highest current account deficits.[15]

Permanent deviations from balanced current account possible in principle

Based on a dataset comprising the 27 EU countries spanning the period 1994 to 2011, the study confirms that higher levels of exchange rate or interest rate flexibility cause the current account to adjust to its equilibrium value significantly faster. According to the calculations performed, more than half of the deviations from the equilibrium were reduced within a year in the case of freely floating exchange rates, and only 40% persisted in the following year. However, a return to equilibrium does not always imply a balanced current account. Instead, positive or negative current account balances may represent an equilibrium phenomenon; for example, an economic catching-up process over a protracted period may justify the existence of current account deficits. The model only describes the adjustment process from a given starting value to long-term equilibrium, which is determined endogenously by the model. Country-specific differences in equilibrium values are permitted without being defined as imbalances (see the box from pages 23 to 25).

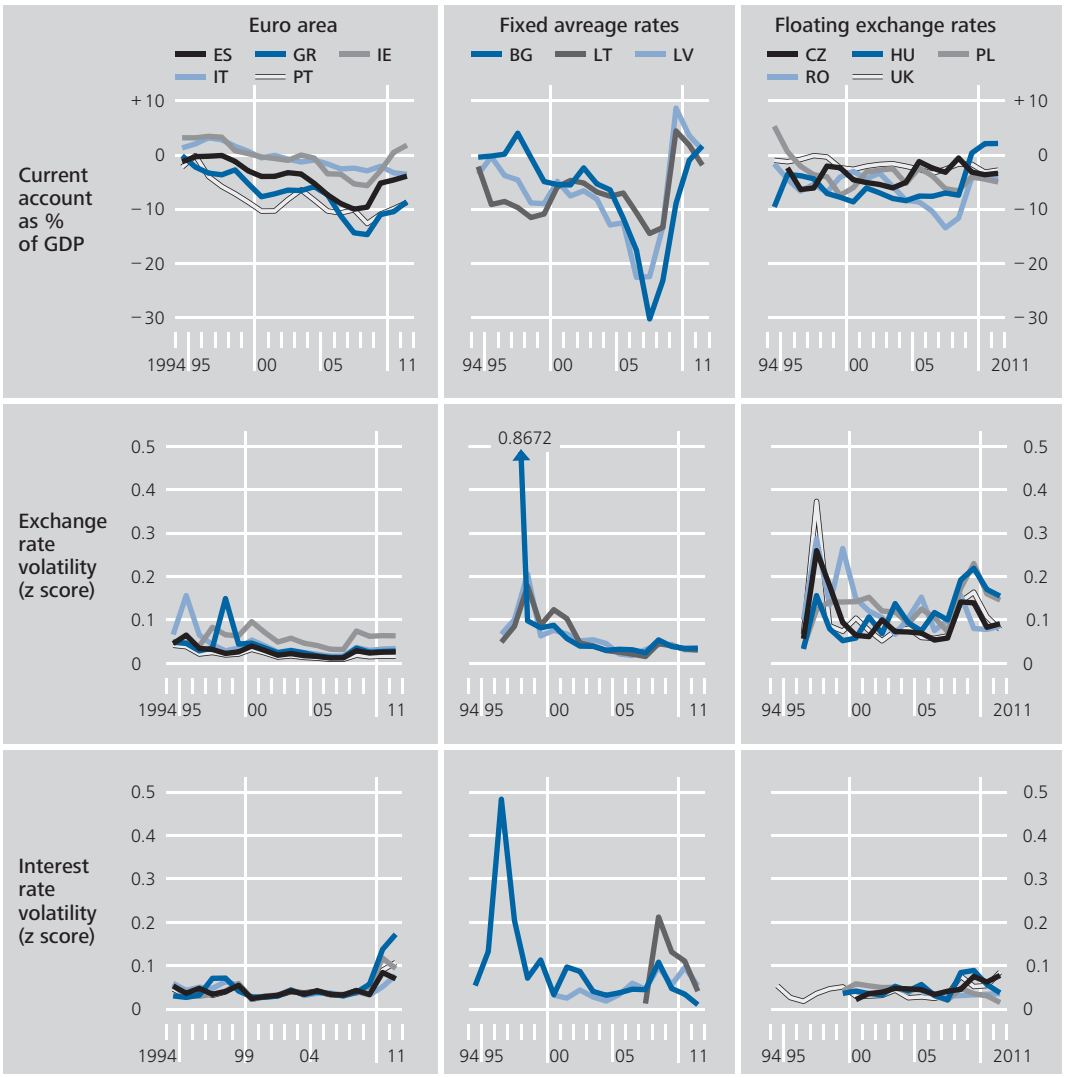
In fixed exchange rate regimes interest rate volatility offsets reduced exchange rate flexibility

In countries with fixed exchange rates, long-term interest rates are much more volatile than in countries with flexible exchange rates. The reduced impact of exchange rate volatility on the adjustment of external balances can thus be at least partially offset by the higher

14 However, the basic reasoning for a delayed adjustment mechanism is also true for balance of payments crises which originate from developments in the financial account.

15 The current crisis in the euro area cannot be explained in isolation from the real economic developments of the 1990s and the early 2000s. For example, the dislocations in the euro area only became more dramatic after government and private debt problems began to emerge and the cumulated current account deficits simultaneously became apparent, whereas the euro area had previously acted as a protective shield against the disruptions of the financial crisis. See P R Lane and B Pels (2012), Current Account Imbalances in Europe, CEPR Discussion Paper 8958, CEPR, London; M Obstfeld and K Rogoff (2010), Global Imbalances and the Financial Crisis; Products of Common Causes, in: R Glick and M Spiegel (eds), Asia and the Global Financial Crisis, Federal Reserve Bank San Francisco, p 131 ff.

Determinants of current account adjustment



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volatility of interest rates. Nonetheless, the persistence of current account positions is significantly higher in a fixed rate regime than in a system with flexible exchange rates. During the observation period the existing divergences were only reduced by 40% within a year, with 60% of deviations carried forward into the next year.

Persistence of current account imbalances greatest in the euro area, …

In terms of the estimated impact of the prevailing current account balance on the following year's value, the persistence of current account deficits in the euro area, at 75%, is distinctly greater than in the case of floating or fixed exchange rate regimes. This is due, in particular, to the lower interest rate volatility than in a fixed exchange rate regime, which cannot offset the absent or small impact of exchange rate volatility. The lower elasticity of interest rates in relation to global stress factors has also delayed the balance of payments adjustment in the euro area in statistically significant terms.

… which encourages imbalances to build up

The studies therefore indicate that the adjustment of the current account depends on the particular exchange rate regime, and that the current account generally balances more slowly in a monetary union. A slower adjustment process in the euro area does not necessarily imply that balance of payments problems will ensue.

Adjustment of current account balances under different exchange rate regimes

In the following empirical studies an autoregressive model is used to test whether belonging to a particular exchange rate regime significantly affects the speed at which the current account rebalances.[1] Theory suggests that nominal exchange rate changes, and therefore differing exchange rate regimes, have no impact on the current account balance in the long term. In the short term, however, prices are subject to considerable rigidities, so that international competitiveness, especially in connection with adjustment processes, might well be affected by nominal exchange rate developments.[2]

The current account equilibrium is determined endogenously to the model by the incorporated variables. The approach used here thus does not assume a balanced current account, even in the steady state, and accepts individual country-specific equilibrium values. However, the model presented in this article provides no answers regarding the extent to which these levels are dependent on the underlying exchange rate regime.[3]

With regard to the current account adjustment process, this study makes an explicit distinction between the impact of a fixed exchange rate regime and that arising from membership of a monetary union.[4] The applied dataset covers the 27 EU countries over the period 1994 to 2011. The estimations are based on the following regression equation:[5]

$$(1)\ CAGDP_{it} = p_0 + p_1\ CAGDP_{it-1} + p_2\ CAGDP_{it-1} \times ER\_REGIME_{it-1} + p_3\ ER\_REGIME_{it-1} + e_{it},$$

where $CAGDP$ is the current account balance as a percentage of GDP, $p1$ is an autoregressive coefficient and ER_REGIME is the exchange rate regime, based on various indicators. The sub-indices i and t denote the countries and the observation year respectively, and e is the error term.

In a first step, the rate of current account adjustment is calculated for floating, hybrid and fixed exchange rate regimes as well as

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1 The empirical studies use the current account as an explanatory variable rather than the overall private balance of payments position. Like the main text, they therefore focus on the origins of balance of payments disequilibria emanating from the real economy. For econometric purposes there is an advantage in explicitly restricting the focus of analysis to the current account since private transactions are per se balanced in the case of floating exchange rate regimes. Hence, it would be impossible to include countries employing floating exchange rates in an empirical study. Moreover, the current account is a good proxy for the overall balance of payments if the current account and private transactions are highly correlated or their changes have the same sign. In this case, an econometric study can benefit from the lower volatility of current account balances compared with international capital flows.

2 See M. Mussa (1986), Nominal Exchange Rate Regimes and the Behavior of Real Exchange Rates: Evidence and Implications, Carnegie Rochester Conference Series on Public Policy 25, pp 117-214.

3 Since the focus is on the process of adjustment, the model does not specify any concrete values for balanced current accounts, nor does it incorporate any fundamental variables. By contrast, Arratibel et al (2008), Real Convergence in Central and Eastern European EU Member States – Which Role for Exchange Rate Volatility?", ECB Working Paper 929, European Central Bank, Frankfurt, examine the relation between exchange rate volatility and the level of the current account.

4 See M D Chinn and S-J Wei (2008), A faith-based initiative: Does a flexible exchange rate regime really facilitate current account adjustment?, NBER Working Paper 14420, Cambridge MA.; S Herrmann (2008), Do we really know that flexible exchange rates facilitate current account adjustment? Some new empirical evidence for CEE countries, Applied Economics Quarterly 55, pp 295-311.

5 The studies were run using a feasible generalized least squares (FGLS) estimator, applying fixed effects, panel-corrected standard errors and, where necessary, an AR term to adjust the autocorrelation. Dynamic models with fixed effects indicate a Nickel bias, which arises from the correlation of the mean-adjusted, lagged endogenous variables with the mean-adjusted error term. However, since the number of periods T contained in this dataset is sufficiently large, the error should not be exceptionally high. All estimations were conducted using Eviews 7. Data sources: Deutsche Bundesbank, BIS and IMF.

Determinants of current account adjustment *

Position	Model 1 FGLS	Model 2 FGLS
CAGDP (-1)	0.594 (5.44)***	1.029 (16.32)***
*CAGDP (-1) * FLEXIBLE*	– 0.197 (– 1.87)**	
*CAGDP (-1) * FIX*	0.006 (0.062)	
*CAGDP (-1) * EMU*	0.156 (2.06)**	
*CAGDP (-1) * ER_VOL(-1)*		– 0.340 (– 2.02)**
*CAGDP (-1) * IR_VOL(-1)*		– 4.381 (– 3.17)***
R2	0.9	0.9
N	429	429
Durbin-Watson Statistic	1.84	2.0

* t-values in brackets. ** denotes significance at the 5% level. *** denotes significance at the 1% level. Note: The variable used for the exchange rate regime is included not only in the interaction term but also in the level. This is necessary for econometric reasons. However, since this has no economic implications, the results are not listed in the table.

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for countries belonging to a monetary union (Model 1).[6] A simple dummy approach, which defines the exchange rate regime using a 0/1 variable, is applied to show the extent to which the various regimes differ, without specifying any reasons for the varying speeds of adjustment.[7]

In a second step, the various exchange rate regimes are modelled according to their specific features (Model 2),[8] thus allowing information about the underlying transmission channels to be derived. In order to differentiate between fixed and floating exchange rates, the z-score index after Gosh, Gulde and Wolf is used to gauge exchange rate volatility; a corresponding variable for interest rate volatility makes it possible to distinguish between the adjustment process under fixed exchange rates and within a monetary union.[9]

The persistence of current account balances p is derived from the autoregressive coefficient of the lagged current account balance $p1$ plus the coefficient of the interaction term of the lagged endogenous variable and the exchange rate regime $p2$. The rate calculated using Model 1 and indicating the pace of reduction of existing current account imbalances, ie of rebalancing a current account balance following a disruption, is $1–(p1+p2)$. Accordingly, the persistence factor in Model 2 likewise comprises $p1+p2$, but in this instance $p2$ is multiplied by the degree of exchange rate and interest rate volatility. A negative sign for the parameter $p2$ implies a speedier current account adjustment as the autoregressive term (with a positive sign) is being reduced and with it the persistence of the current account imbalance.

The empirical studies show that the exchange rate regime has a significant impact on the current account adjustment rate. For example, greater exchange rate flexibility increases the speed with which the current account rebalances. Under a freely floating exchange rate regime, 60% of existing deviations are reduced within a year while 40% of the imbalance persists in the fol-

6 Hybrid exchange rate regimes are neither fully floating nor based on fixed exchange rates. They include regimes with fluctuation bands as well as arrangements under which central banks intervene unofficially and intermittently on the foreign exchange markets with a view to influencing the price of the currency (managed floating).
7 See M D Chinn and S -J Wei (2008), op cit.
8 A continuous variable is able to reflect developments in an exchange rate regime much more precisely than a dummy variable. In addition, the inherent problems of a dummy approach are avoided, eg arbitrary classification, particularly in the case of hybrid regimes. Nevertheless, the risk of possible endogeneity increases, ie if the explanatory variables – exchange rate volatility and interest rate volatility – are affected by the underlying current account developments and are not fully exogenous, this may lead to biased estimation results. To avoid this effect, the volatility of the exchange rate and of the interest rate are incorporated into the estimation on a lagged basis.
9 Exchange rate fluctuations are taken into account according to the following equation: $z_t = \sqrt{\mu_t^2 + \sigma_t^2}$ where μ_t denotes the arithmetic average of the daily percentage changes in the nominal exchange rates in year t and σ_t is the standard deviation of the daily percentage changes in the nominal exchange rates in year t. Interest rate volatility is calculated analogously. See A Gosh, A M Gulde and H Wolf (2003), Exchange Rate Regimes: Choices and Consequences, Cambridge (Mass.), MIT Press.

lowing year. At 59%, the persistence of the imbalance is much more pronounced under a hybrid regime.[10] Under a fixed exchange rate regime, deviations from the balanced level only persist for a marginally longer period (p=0.6). The current account rebalances by far the most slowly within a monetary union. In the case of the euro area, the rate of rebalancing within a year is merely 25%. Therefore, during the period under observation, current account imbalances in the European monetary union not only persisted much longer than that in floating exchange rate regimes but also significantly longer than in a fixed rate regime.

The findings of Model 2 make it clear that higher exchange rate and interest rate volatility facilitates the process of current account adjustment. The autoregressive coefficient is reduced by 0.34, multiplied by the previous year's level of exchange rate volatility, and by 4.38, multiplied by the level of interest rate volatility in the previous period. The coefficients themselves cannot be interpreted as they depend on the respective composition of the variables. However, using a contribution analysis it is possible to map the extent to which these two factors contribute to a faster adjustment. Specifically, it is interesting to measure the respective contribution to current account adjustment in the various exchange rate regimes since 1999 of exchange rate volatility and interest rate volatility (see table below right).[11]

The findings highlight the fact that in a fixed exchange rate regime the small contribution of exchange rate volatility to the adjustment process is offset by the higher volatility of interest rates. By contrast, in the case of the European monetary union, interest rate volatility is lower than under fixed-rate regimes and therefore cannot counteract an absence or smaller level of exchange rate volatility. Overall, the empirical studies therefore support the hypothesis that current account adjustment is hampered in a monetary union. This holds above all in comparison with floating-rate regimes owing to the lower exchange rate flexibility; but compared with fixed-rate regimes, too, the euro area exhibits a much higher persistence in its current account balances due to less volatile interest rates.

Persistence and speed of current account adjustment in different exchange rate regimes

Models	Persistence P	Speed of adjustment (1-P)
Model 1		
Floating exchange rates	0.40	0.60
Hybrid regime	0.59	0.41
Fixed exchange rates	0.60	0.40
Euro area	0.75	0.25
Model 2		
Exchange rate volatility	$1.03 - 0.34 * \text{ER volatility}_{t-1}$	$-0.03 + 0.34 * \text{ER volatility}_{t-1}$
Interest rate volatility	$1.03 - 4.38 * \text{IR volatility}_{t-1}$	$-0.03 + 4.38 * \text{IR volatility}_{t-1}$

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Contribution of interest rate and exchange rate volatility to current account adjustment in different exchange rate regimes (1999-2011)*

Position	Euro area	Fixed exchange rates	Floating exchange rates
Exchange rate volatility	– 0.05	– 0.07	– 0.17
Interest rate volatility	– 0.19	– 0.24	– 0.18
Total contribution	– 0.24	– 0.31	– 0.35

* Negative values reduce the autoregressive coefficient (persistence) and thus speed up the adjustment process.

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10 The hybrid exchange rate regime corresponds to the initial scenario as it is not explicitly included in the estimation as an additional dummy.
11 In each case, the contribution is calculated on the basis of the estimated coefficients of the incorporated variables multiplied by the average values of the variable in an exchange rate regime.

Given the identified persistence of current account positions, however, imbalances are more likely to accumulate. In the past, the corrective effect of market discipline was not sufficient to counteract this. However, the change in risk perception triggered by the crisis was abrupt and was no longer restricted to one country. In this context, non-linear reactions frequently play a role since they involve certain thresholds which, if exceeded, cause the financial markets to react suddenly.

Implications for economic policy

Balance of payments imbalances form more easily in single currency area

These findings imply central economic policy challenges. These relate both to short-term crisis management and to the need to make the institutional framework of the euro area more resilient to these types of risk. From a monetary policy perspective, the key task is to ensure that the single European monetary policy remains geared towards price stability in both these areas.[16]

Strict monetary policy rules needed

In short-term crisis management, it is essential to keep monetary policy and fiscal policy segregated. In a crisis, central banks play an important role as lenders of last resort to solvent banks. This involves short-term refunding operations in return for high-quality collateral. Every support measure for a financial institution that clearly goes beyond this function as a lender of last resort during periods of temporary illiquidity means that the central bank is performing a quasi-fiscal role which rightly belongs in the domain of elected governments.

Financial market regulatory reforms heading in the right direction

In addition to short-term crisis management, the experience of the past few years has underscored the need to strengthen the resilience of the institutional framework in future. All measures that help to reduce the vulnerability of the national banking and financial systems are therefore to be welcomed. The initiative launched to streamline and harmonise financial market regulation in the European Union can help to nip the build-up of unsustainable debt in the bud and to prevent balance of payments crises. Furthermore, the efforts to strengthen banking supervision at European level are likewise a step in the right direction as long as the focus is not on redistributing risk but rather on improving credit institutions' resilience to crises. A precondition for this is to significantly reduce the interdependence between sovereigns and their national financial sector. However, in addition to a single European supervisor, a change in the regulatory approach in the form of differentiated capital and liquidity rules for government bonds is needed to achieve this aim.

Greater need for homogeneity among members of a monetary union in the long term

A general conclusion is that the current basic structure of European monetary and fiscal policy places exacting demands on member states' homogeneity and/or willingness to adjust. This underlines the importance of greater economic policy surveillance, which is to be achieved through the Euro Plus Pact, the macroeconomic surveillance procedure and the enhanced Stability and Growth Pact. It is essential to use these tools for the timely detection and swift counteraction of unhealthy developments in future.

Fiscal Compact …

This also applies to the Fiscal Compact, which will enter into force on 1 January 2013 and which will require the signatory countries (all EU member states except the United Kingdom and the Czech Republic) to incorporate a structurally close-to-balance general government budget into their national legislation. In addition, they must introduce debt brakes which trigger an automatic correction mechanism if targets are missed. However, the terms of the Fiscal Compact do not envisage any powers to intervene in national fiscal policy beyond those

16 See also: C A Sims, Gaps in the institutional structure of the euro area, Financial Stability Review 16, Banque de France, April 2012.

contained in the reformed Stability and Growth Pact.[17]

… and EU macroeconomic imbalance procedure must prove their worth

The surveillance procedures adopted can help to "communicate" problems to market participants earlier on in the expectation that markets will have a greater disciplinary effect on the countries concerned than in the past via higher interest rate spreads. Experience from the first ten years of the euro area has made it clear that public pressure alone may not be sufficient to set the necessary adjustments in motion. Another key need is for effective sanctions which are actually applied if the provisions are breached. It remains to be seen, however, whether the adopted procedures will meet this requirement.[18]

Furthermore, wider interest rate spreads could lead to a faster adjustment of international capital flows (ie before a balance of payments crisis occurs) and could also cause corrections to take place in the real economy, eg in domestic demand. The convergence of nominal interest rates within the euro area is not an end in itself and is therefore only desirable if it is warranted by real convergence and does not undermine the steering function of financial market prices.

Reforms should strengthen individual responsibility

Greater coordination and the threat of potential sanctions for member states at European level do not exempt individual countries from their individual responsibility. Under the euro area's current regulatory framework, economic policy measures ultimately have to be adopted and implemented at national level. The euro area is different to federally organised nations such as the United States or Germany, which may likewise experience regional economic divergences, because there is no central, democratically elected political body under parliamentary control with extensive decision-making authority to manage internal debt crises.

Political union requires broad consensus

For the euro-area countries, evolution towards a political union would be a logical approach to making the monetary union more resilient. However, the loss of sovereignty at the national level that this would inevitably entail would be a seismic shift for the member states and could only be achieved on the basis of a broad social consensus and popular acceptance, regardless of any purely economic considerations.

If such a quantum leap towards greater integration is considered politically undesirable or unenforceable, the primacy of national responsibility will remain in place.

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17 See Deutsche Bundesbank, The fiscal compact and the European Stability Mechanism, Monthly Report, February 2012, pp 60-63.
18 See Deutsche Bundesbank, Germany's external position against the background of increasing economic policy surveillance, Monthly Report, October 2011, p 41 ff.