EUROPEAN IMBALANCES

2.1 Introduction

Europe is in the grip of three interrelated crises: a balance-of-payments crisis, a sovereign debt crisis and a banking crisis. Both EU leaders and analysts have focused heavily on the sovereign debt and the banking crises. The fiscal compact agreed upon in December 2011 was supposed to ease the former, while the European Financial Stability Facility (EFSF) was designed to ease the latter. However, the announcement of the European Central Bank's (ECB) unlimited bond buying scheme on September 6, 2012, signalled that the crisis is far from over; and that the existence of the euro area in its present form is still on the line. In our report last year (EEAG, 2012, Chapter 2) we argued that a credible strategy for getting the euro area back on track needs to address the problem of the large imbalances reflected in current account deficits and surpluses, as well as in foreign asset positions.

This chapter identifies the factors that led to imbalances in the euro area, which resulted in the current balance-of-payments crisis. The chapter also discusses how rebalancing might be achieved, and how fiscal policy could accelerate this process.

2.2 Imbalances in the euro area

There is a large body of literature on global imbalances. To date, however, little attention has been paid to the imbalances within the European Union or the euro area.[1] One reason for this may be that the current account of the European Union and that of the euro area have always been roughly in balance. Hence, Europe did,

and does not make any great contribution to global imbalances. Moreover, Lane and Milesi-Ferretti (2007) concluded, using a general equilibrium analysis, that a global rebalancing would have no major effect on the European Union as a whole, but would affect individual member states asymmetrically due to differences in their existing external balances. At that time, however, very little was known about the effect of such a shock on individual euro area member states, and it was not perceived to be a major problem. In earlier analyses, Sinn and Koll (2000) and Blanchard and Giavazzi (2002) even argued that divergence in external balances is natural within the euro area. This is because the euro area forms a convergence club, where poorer individual member states are catching up with their richer counterparts, and naturally run a current account deficit during this process. Thus, current account imbalances within the euro area are a natural phenomenon.[2] All in all, imbalances were not previously recognized as a problem within the euro area.[3]

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[1] See Obstfeld and Rogoff (2005), EEAG (2006, Chapter 2) and Sinn (2010) among many others.

[2] It is important to note that global imbalances were generated by capital flowing from poor to rich countries (primarily to the United States). In contrast, European imbalances came about because capital was flowing from rich to poor countries.

[3] The European Comission now recognises the problem as the introduction of the Macroeconomic Imbalance Procedure suggests. See Box 2.1 for more details.

Box 2.1

Macroeconomic Imbalance Procedure in the European Union

The Macroeconomic Imbalance Procedure (MIP) is part of the set of rules that came into force on December 13, 2011, the so-called "six-pack". The MIP is intended to identify imbalances early, and to require countries to design policies to correct large imbalances. Part of the MIP is an alert mechanism based on a set of indicators and corresponding threshold values for these indicators (European Commission, 2012). Importantly, the set of indicators includes not only the usual fiscal indicators, but others including current account balance, real effective exchange rate, private credit stock and flow, house prices etc. The International Monetary Fund (IMF) considered a similar system of indicators (IMF, 2010).

While it seems to be a good idea for the Commission to broaden the focus of its macroeconomic monitoring, there are a number of problems with the MIP. Firstly, the set of indicators and the suggested thresholds are somewhat arbitrary, suggesting the lack of a coherent conceptual basis for the MIP (Whelan, 2012). Secondly, the large body of empirical literature on the so-called early warning indicators suggests that these indicators lead far too often to false alarms (Kaminsky and Reinhart, 1999). Finally, unlike in the case of fiscal policy, policy instruments tend to have an indirect effect on these indicators. Hence, it is unclear how the economic policy of a particular country could be monitored or assessed in terms of correcting imbalances.

This section begins by describing the facts behind current account imbalances and international investment positions within the euro area. It subsequently discusses the factors that may explain the emergence of these imbalances. Finally, it concludes with an analysis of how rebalancing within the euro area could be achieved.

2.2.1 Facts behind the imbalances

The current account of the euro area as a whole was roughly balanced over the period of 1995 to 2011, with alternating small surpluses or deficits. The external balance of the euro area, however, disguised a considerable imbalance within the euro area. In particular, Figure 2.1 shows that the GIIPS (Greece, Ireland, Italy, Portugal, and Spain) countries, which have received a great deal of attention during the current crisis, have run a combined current account deficit that has been rising since the late 1990s. This deficit was largely offset by the German current account surplus during the whole period, which balanced the current account of the euro area. The other member states of the euro area ran declining current account balances, moving from a 1 percent surplus to a balanced current account overall.

Greater insights into current account imbalances within the euro area can be gained by looking at individual countries' balances. Figure 2.2 plots the current account balances of individual euro area countries for
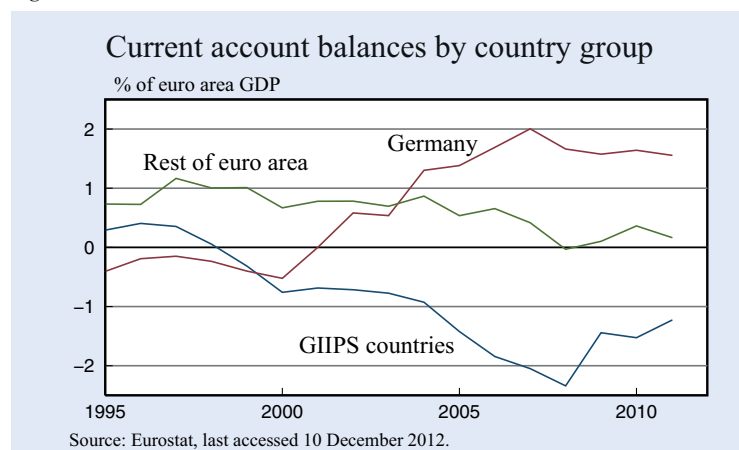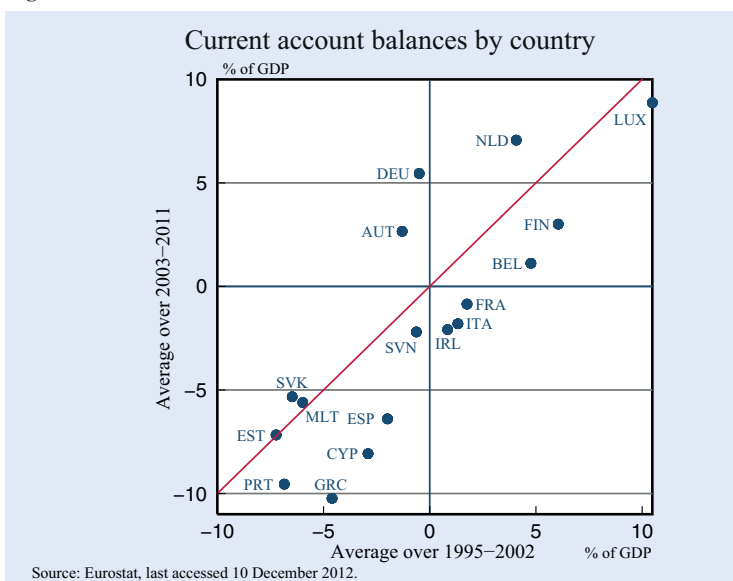
Figure 2.2

Current account balances by country

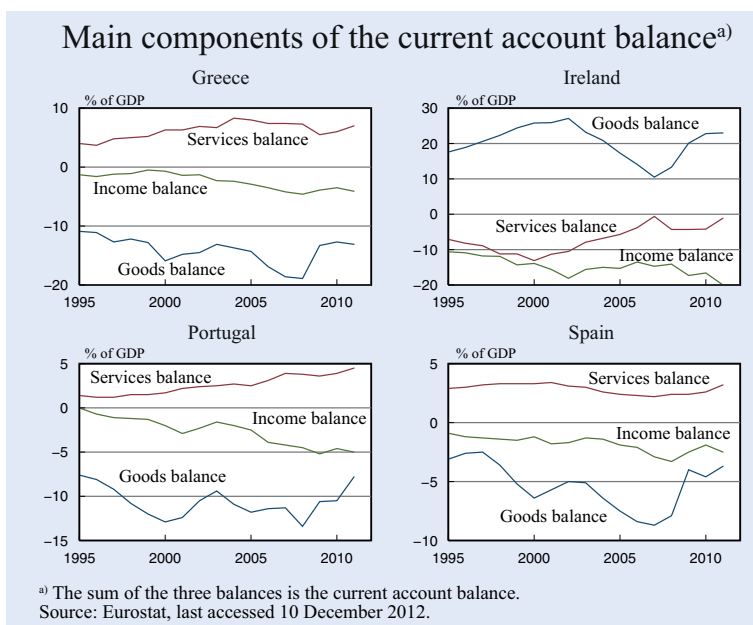Source: Eurostat, last accessed 10 December 2012.

the period 2003–2011 against those for the period 1995–2002. Firstly, the figure shows that current account balances are highly persistent. Balances for the first period are good predictors of balances for the following period. However, it should also be noted that the current account balances of some countries improved, while those of others deteriorated across the two periods. The current account balances of countries above the straight line shown in Figure 2.2 improved, while those of the countries below it deteriorated. Germany, for example, turned a roughly balanced current account into a surplus averaging 5 percent of GDP. In contrast, France, Italy and Ireland on average ran a current account surplus in the first period, which turned into a small deficit in the second period. More importantly, three countries at the heart of the current crisis, namely Greece, Spain and Portugal, as well as Cyprus, not only ran a significant current account deficit over the period 1995–2002, but that deficit increased significantly during the period 2003–2011.

Figure 2.3 shows the main components of the current account of the four countries (Portugal, Ireland, Greece, and Spain) that were hit hardest by the crises.[4]

Figure 2.1

Current account balances by country group

Source: Eurostat, last accessed 10 December 2012.

[4] Italy is also one of the crisis hit countries, but it cannot easily be included in the periphery of the euro area. As Figure 2.2 also shows, it contributed relatively little to the imbalances during the run-up to the crisis. However, the Italian economy has deep structural problems, which are manifested, among other areas, in one of the lowest growth rates among major industrialised countries in the last 20 years.

Figure 2.3

Main components of the current account balance[a)]

a) The sum of the three balances is the current account balance.
Source: Eurostat, last accessed 10 December 2012.

The countries of Southern Europe show a pattern different to that of Ireland. Their balance in services was positive and slowly improved between 1995 and 2011, while their balance in goods was negative and deteriorated until 2007. Finally, their balance in income was negative and also deteriorated throughout the period. By contrast, Ireland's balance was negative in services and positive in goods throughout the period. Like that of the Southern countries, Ireland's balance in income was negative and deteriorating. Overall, imbalances in goods and services led to an increasing imbalance in income as countries accumulated external liabilities. Importantly, since the beginning of the crisis the balances both in goods and services have improved in these countries, primarily due to the fact that the real contraction has driven down imports.

As the balance in income for the above four countries has already suggested, current account deficits and surpluses resulted in corresponding changes in the net international asset position. As Figure 2.4 shows, Germany steadily improved its asset position over the entire period 1995–2011, giving it a net foreign asset position of nearly 10 percent of the euro area's GDP by 2011. In contrast, the GIIPS countries swiftly accumulated a net foreign liability position over
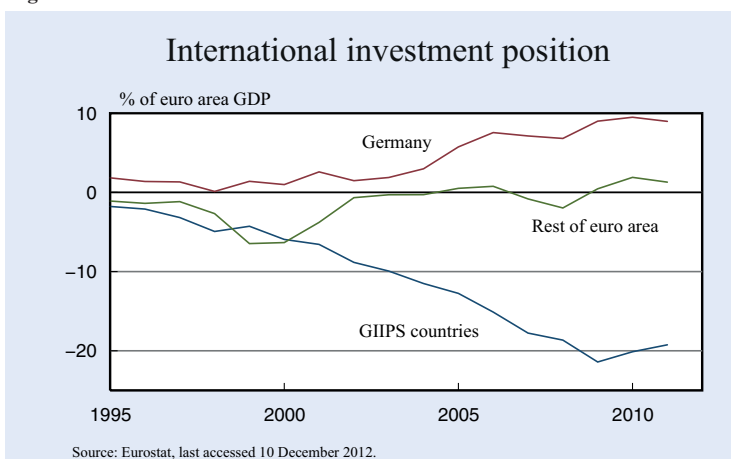
the decade between 1999 and 2009, which amounted to about 20 percent of the euro area's GDP in 2009. Since then the GIIPS countries have maintained their international asset position at this level, although they have continued to borrow abroad, on the back of the declining market value of their existing debt, a fact that is statistically treated like a debt redemption. The rest of the euro area net foreign asset position was roughly zero.

Considering only the total international investment position does not show the changes in its composition. In particular, our last report (EEAG, 2012, Chapter 2) highlighted that, during the crisis, the ECB played a growing role in financing current account deficits and capital flight, providing extra refinancing credits that went beyond the task of providing internal liquidity for the crisis countries. As shown by Sinn and Wollmershäuser (2012), Target imbalances result from net-payment orders across the euro area countries and are identical to balance-of-payment imbalances (the sum of current account imbalances and private and intergovernmental capital exports). As a result of endogenous market reactions, they indirectly also measure the reallocation of the ECB's refinancing credit from the core to the periphery, which was made possible by a reduction in the ECB's collateral requirements.

The ECB's role in replacing the capital market is illustrated by Figure 2.5, which plots the ECB's

Figure 2.4

International investment position

Source: Eurostat, last accessed 10 December 2012.

EEAG Report 2013

Target balances. The left panel shows that the Target debt of the GIIPS countries and Cyprus (GIPSIC) vis-à-vis the ECB began to increase in autumn 2007, after the first break-down of the interbank market; and that the increase has accelerated dramatically since the second half of 2011. It only slowed down for the first time in October 2012, following the ECB's announcement that it would repurchase unlimited amounts of government bonds and the German Supreme Court's rejection of appeals against the European Stability Mechanism (ESM), but it remains too early to say whether this reflects a turning point. This rise in the debt of the GIPSIC countries was matched by a corresponding increase in four countries' claims against the ECB, and especially the claims of Germany. The right panel in Figure 2.5 shows the distribution of ECB Target credit as of the end of 2012: Germany, Luxembourg, the Netherlands and Finland financed the GIPSIC countries' borrowing from the ECB, which amounted to almost 1 trillion euros by this date. As discussed in EEAG (2012, Chapter 2), during the crisis, the GIPSIC countries relied increasingly on public support to finance themselves internationally; and the main source of this public support was ECB Target credit. The extra refinancing credit that is reflected in the increase in the Target balances basically compensated for the reversal of capital flows, financing or co-financing the current account deficits of Greece, Portugal and Spain since winter 2007/2008, and compensating for capital flight from Ireland after the Lehman crisis, as well as from Spain and Italy since summer 2011.

Even although it operates via the mechanics of the ECB's money providing operations, Target credit represents a public rescue operation very similar to the EFSF and ESM open rescue operations controlled by the parliaments of Europe, but in quantitative terms it is far greater than the latter. In EEAG (2012, Chapter 2) we argued that the euro area might need to settle Target balances; and Chapter 4 of this report compares the European Target system with the US settlement system.

2.2.2 Causes of the imbalances

Arguably, there were two primary and interrelated causes of current account imbalances. Firstly, as we argued in EEAG (2012, Chapter 2), the introduction of the euro eliminated the exchange rate risk and induced investors to disregard country-specific bankruptcy risks, given the unlimited firing power of the ECB.[5] Secondly, the Eurosystem created optimistic expectations regarding the rapid convergence of the periphery countries (Greece, Ireland, Portugal and Spain) with the core of the euro area.[6] Both causes generated an investment and credit boom in the periphery and imply that there was a catching-up process, with international capital movements from the core to the periphery that materialise as current account imbalances. The periphery countries, which are catching up, run current account deficits as imports grow together with incomes, and as inflation undermines export competitiveness.

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[5] Sinn and Koll (2000) and Sinn (2010) study the elimination of risk premiums in the context of a simple Harbergian two-country model.
[6] Blanchard and Giavazzi (2002) set up a multi-country growth model that, in addition to rate-of-return induced capital flow, focuses on growth expectations and its implications for savings, emphasizing that catching-up countries will reduce savings, which contributes to their current account imbalances. Lane and Pels (2012) argue that growth expectations not only explain lower savings rates, but also higher construction investment at the expense of equipment investment.
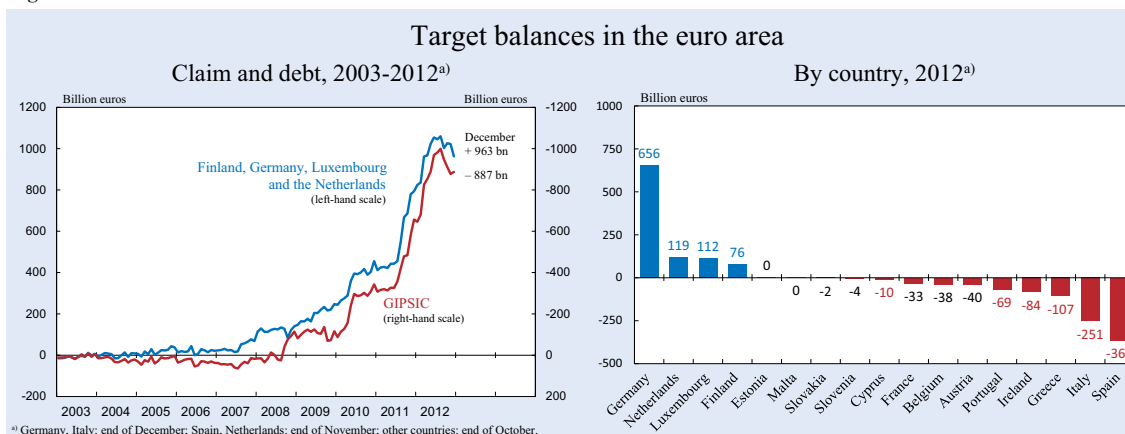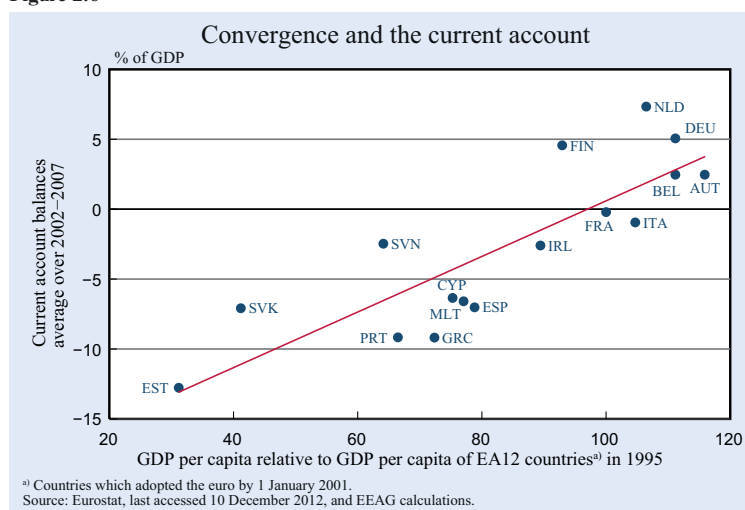
Figure 2.5

Target balances in the euro area

Claim and debt, 2003-2012[a)]

By country, 2012[a)]

a) Germany, Italy: end of December; Spain, Netherlands: end of November; other countries: end of October.

Figure 2.6

Convergence and the current account

% of GDP

Current account balances
average over 2002−2007

GDP per capita relative to GDP per capita of EA12 countries[a)] in 1995

[a)] Countries which adopted the euro by 1 January 2001.
Source: Eurostat, last accessed 10 December 2012, and EEAG calculations.

It is important to emphasise that convergence only takes place as long as the sole relevant difference between core and periphery is the difference in capital stocks. If there are additional differences in human capital, economic policies or institutions, convergence cannot be taken for granted. However, the European Union in general, and the euro area in particular, can be viewed as a convergence club in which all other differences are not really relevant to the convergence process. Figure 2.6 illustrates this idea. The poorer a country was in 1995 relative to the average, the larger its current account deficit was from 2002 to 2007. Estonia, for example, which had an average income level that was only about 30 percent of that of the other euro area members in 1995, ran a deficit of about 12 percent of GDP on average from 2002 to 2007.

Current account balances have a natural counterpart in national accounts in terms of the difference between savings and investment. The first panel of Figure 2.7 shows the difference between private savings and investment, and the differences between gov-

ernment saving and investment, and how they contributed to the current account balances. It is worth noting that, among the crisis countries, Greece and Portugal posted large imbalances in the government sector, while the imbalances in Spain and Cyprus basically resulted from the private sector. The second panel of Figure 2.7 shows to what extent differences in net investment rates (private and public) contributed to these imbalances. Originally poorer countries such as Estonia, Spain and Ireland topped the list of investment rates, while more mature countries like the Netherlands, Finland, and Germany were to be found at the lower end. Germany had the lowest rate of net investment of all euro area countries in the period considered, which explains why it had the euro area's second lowest growth rate in this period after Italy, and why it turned from a net immigration to a net emigration country in the years prior to the crisis.[7] As the euro had lured capital from the core to the periphery, the periphery grew via stronger investment at the expense of the core, and thus brought about convergence.

Growth and investment in the periphery was accompanied by rapidly rising prices and led to the bubble that ultimately burst. The left panel of Figure 2.8 shows that the price levels of individual countries evolved at a rather different pace between 1995, the year of the Madrid Summit where the euro was ultimately agreed, and 2011. Prices increased relatively little in Germany, Austria and Finland (capital

[7] As a result of net emigration, Germany's growth performance looks somewhat better in per capita terms than in absolute terms, see Figure 2.8.
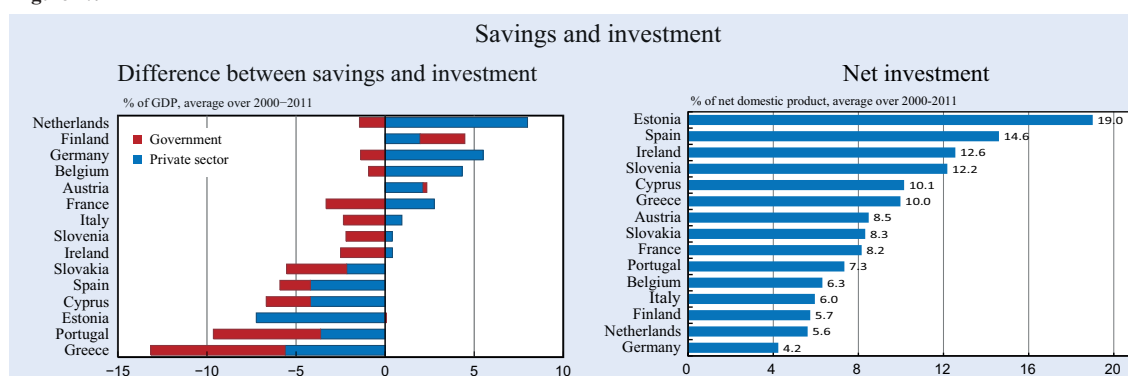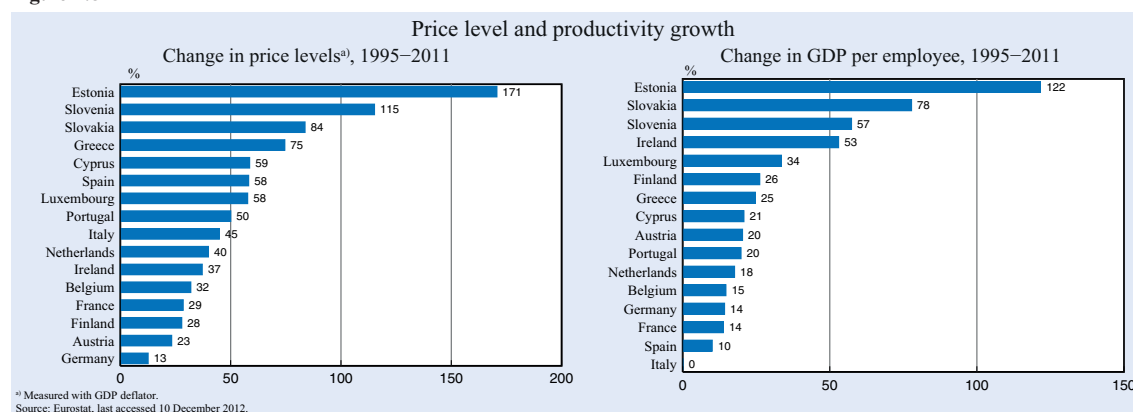
Figure 2.7

Savings and investment

Difference between savings and investment

% of GDP, average over 2000−2011

Net investment

% of net domestic product, average over 2000-2011

Figure 2.8

Price level and productivity growth

Change in price levels[a], 1995−2011 | Change in GDP per employee, 1995−2011

[a] Measured with GDP deflator.
Source: Eurostat, last accessed 10 December 2012.

exporting countries), but to a much greater degree in Estonia, Greece and Spain, which were all capital importers. The price level changes indicate that all euro area countries appreciated in real terms relative to Germany to a smaller or larger extent.
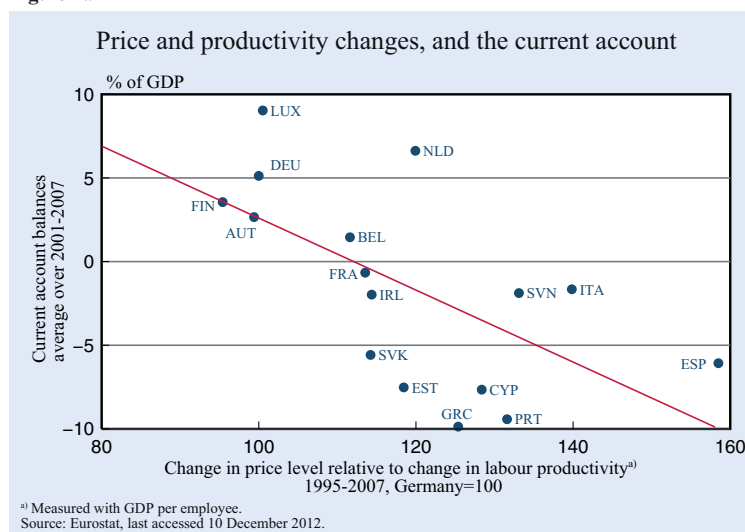
However, to understand the implications of inflation differentials within the euro area for current account imbalances, we need to look more closely at the source of this inflation. If an inflation differential occurs because of strong demand at home due to the surplus of investment over savings, the higher inflation leads to real appreciation and the loss of competitiveness at home. If, however, the inflation differential occurs due to the Balassa-Samuelson effect,[8] higher inflation at home may not lead to a loss of competitiveness because it results from higher differential productivity growth in the domestic sector of tradables that translates into higher wages and higher prices for non-traded and labour intensive goods. The right panel in Figure 2.8 shows the labour productivity change measured by GDP per employee over the period 1995–2011. Italy, Portugal and Spain are in the bottom half of the productivity league table, while Greece and Ireland are in the top half. It is hard to determine empirically how much extra inflation in a country can be justified by the Balassa-Samuelson effect, but it is probably safe to say that Italy's 0 percent productivity growth is hard to relate to the 45 percent increase in its price level. Comparing productivity and price level increases in Spain (10 percent vs. 58 percent) and Greece (25 percent vs. 75 percent) also suggests that the Balassa-Samuelson effect alone cannot explain the price level increases of these countries.

To get a better idea of how productivity growth may dilute the effect of real appreciation on competitiveness, and hence on current account imbalances in the euro area, we calculated the ratio of the price level index and the productivity index for the period 1995–2007 and normalised it such that Germany's value equals 100. This (inverse) competitiveness indicator measures the deterioration in a country's competitiveness relative to Germany under the simplifying assumption that all of the measured average aggregate productivity growth resulted from a productivity growth in the tradables sector only, while there was no productivity growth in the non-tradables sectors. While this admittedly is a strong assumption, it may still be useful to gain a first rough adjustment of the price effects for the Balassa-Samuelson effect. The idea is that a price level increase must exceed the productivity increase in order to have a negative effect on competitiveness.[9] Countries with values of this competitiveness indicator below 100 improved their competitiveness relative to Germany, while countries with values above 100 saw their competitiveness deteriorate relative to Germany. Figure 2.9 plots the current account balances between 2001–2007 against the competitiveness indicator. Firstly, it is worth noting that Austria and Finland improved their competitiveness during this period relative to Germany. Secondly, Figure 2.9 suggests that there is a pronounced negative relationship between our (lack-of) competitiveness indicator and current account deficit. All Southern European countries lost competitiveness relative to Germany, which contributed to the deterioration of their current account balances. Ireland improved, but still ran a current account deficit due to

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[8] The Balassa-Samuelson effect implies that higher productivity growth in the tradable sector leads to higher wage increases that spill over to the non-tradable sector because of cross-sector labour mobility, thereby resulting in substantial price rises there. See Rogoff (1996) for more details, as well as EEAG (2002, Chapter 4, p. 49–50).

[9] Rising prices also imply a negative effect on competitiveness to the extent that the measured productivity increase also results from a productivity increase in the non-tradable goods sector. In the extreme case scenario, if all sectors exhibit the same productivity increase, the full price increase relative to Germany shows a loss in competitiveness.

Figure 2.9

Price and productivity changes, and the current account

a) Measured with GDP per employee.
Source: Eurostat, last accessed 10 December 2012.

prices in the periphery leads to a long period of stagnation and mass unemployment in the periphery due to the downward rigidity of prices and wages. Internal devaluation through rising prices in the core does not lead to recession in the periphery. The core, however, is required to bear the cost of higher inflation in terms of internal and international wealth redistribution, which is likely to trigger substantial political resistance. In addition, higher inflation may also undermine the stability of the monetary union.

a deficit in its income balance, as we have seen earlier. Greece, on the other hand, lost less competitiveness than Italy and Spain, but still ran the largest deficit in the group.

2.3 Rebalancing in the euro area: current account balances

2.3.1 Internal versus external devaluation

Countries of the European periphery need to devalue, i.e. to become cheaper relative to the countries of the core to reduce their imbalances. This boosts exports and reduces imports, thereby improving the current account. In principle, there are three ways of implementing this kind of devaluation:

i) Exit and external devaluation
ii) Internal devaluation through falling prices in the periphery
iii) Internal devaluation through rising prices in the core.[10]

This subsection discusses the main costs, benefits and risks of the different scenarios.

If exit and external devaluation can be performed quickly, there should be no loss of output and employment in principle. However, such devaluation calls into question the stability and persistence of the monetary union. Internal devaluation through falling

An important distinguishing aspect concerns a currency mismatch effect in the balance sheets of companies and banks.[11] By virtue of both external devaluation and internal devaluation through price cuts, the burden of the foreign currency debt rises, which creates problems for domestic debtors and may drive banks and firms into bankruptcy. Supply declines as a result, while output and employment may also be negatively affected. The effect on exports, and hence on the current account, depends on how domestic producers that supply intermediate goods for exporters are affected by the currency mismatch.

As we pointed out in EEAG (2011), the fact that internal devaluation via price cuts distorts the internal balance sheets of companies of the real economy is often overlooked. Let us consider the balance sheet of a typical domestic company: its assets include real-estate property and equipment, and its liabilities include domestic bank debt. After an internal price cut following the burst of a real-estate bubble, the value of reproducible assets is likely to fall together with that of newly produced goods, but the value of the bank debt remains unchanged, pushing up the company's debt ratio to potentially dangerous levels and leading to a wave of bankruptcies. This problem can only be avoided by resorting to an open devaluation after an exit from the currency union, as both internal credit contracts and asset prices would be converted to the new currency in that case.

If internal devaluation occurs through rising prices in the core, there is no adverse balance sheet effect in the periphery. However, as savers in the core suffer wealth

[10] Internal devaluation can be achieved via a combination of the latter two, i.e., via a rise in the price level in the core exceeding that in the periphery. For expositional simplicity we focus on these two cases only.

[11] See Krugman and Taylor (1978).

losses, there is political resistance to such a policy in the core. If inflation in the core is higher than inflation in the periphery, price stability in the euro area, which is the ECB's foremost and only mandate according to the Maastricht Treaty, could be undermined.

The ultimate goal of any devaluation is to stimulate the economy. While existing empirical evidence supports the argument that large external devaluations improve the current account, the effect on output is mixed. Freund and Warnock (2007) analysed 26 current account reversals between 1980 and 2003 in OECD countries. They found that output growth slows down during the adjustment process. Using a data set on emerging and developing countries between 1960 and 2006, a more recent study by Bussière et al. (2012) finds that large devaluations are typically preceded by a decline in output, but followed by growth.[12] More precisely, the contraction observed around the time of large devaluations is typically caused by factors that lead to this devaluation. After the devaluation, however, the economy is twice as likely to experience positive growth within a year than to experience negative growth.

However, external devaluation is associated with a major additional difficulty[13] that can lead to loss of output and employment in the short run. External devaluation requires an exit from the euro area, which, in turn, requires the redenomination of assets, liabilities, contracts and prices into the new currency. This is no simple matter. Firstly, the redenomination must be swift and unanticipated in a country, leaving a strong currency to adopt a weak one;[14] otherwise there will be a run on financial assets. Both financial and non-financial firms' balance sheets are put under strain before an exit, leading inevitably to a loss of employment, output and export in the short run. Secondly, the redenomination should be complete in the sense that all contracts, including all debt contracts, wage contracts and price tags, are to be redenominated into the new currency. Otherwise, the government creates a currency mismatch, which has the negative short run

balance sheet effect on output and employment after exit described above.

Unfortunately, however, it is difficult to implement redenomination in a democracy on an unanticipated basis. The process requires legislation by parliament preceded by discussions with stakeholders, including representatives of banks, firms, unions, and consumer associations etc. Implementation measures, such as distributing the new currency across the country and resetting teller machines, require extensive planning and organization and involve a large number of people.[15] In short, redenomination tends to be anticipated, hence any attempt to exit a strong currency and to adopt a weak one is usually preceded by a run on assets.[16] Secondly, it is also hard to make redenomination complete. If the government redenominates external liabilities, this would amount to default by a country on all of its external debt (public and private). However, if external liabilities are not redenominated, and an exit is anticipated, domestic lenders will transfer as many domestic liabilities abroad as possible in order to make their internal liabilities external and protect their values from devaluation. Given the large degree of integration of the financial markets within the euro area, this process is not very difficult. Hence a currency mismatch of some size is bound to emerge after any country's exit from the currency union, with its well-known negative balance sheet effects.[17]

The government may try to limit the undesired consequences of any anticipated euro exit by introducing capital control and deposit freezing well before any preparation for an exit gets under way. However, even implementing such measures requires some preparation and discussion. The government, for example, has to decide what type of deposits should be frozen, how and for how long.[18] The precise nature and legality of capital control within the euro area also need to be clarified before implementation. Under all circumstances the currency conversion should be carried out quickly over a weekend and, if necessary, a subsequent bank holiday. It remains unclear whether a bank holiday time frame exists that is long enough to complete the preparation, debate and enactment of

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[12] See also Gupta et al. (2003).
[13] Leaving a currency union is complicated, and there are several issues that a country needs to solve. Capital Economics (2012) provides an extensive and detailed analysis of what is involved in exiting a currency union. See also Born et al. (2012).
[14] If a country leaves a weak currency to adopt a strong one, there will be no run on assets. For example, if Greece leaves the euro to adopt the drachma, there will be a run on assets in Greece. If Germany leaves the euro to adopt the deutsch mark, there will be no run on assets in Germany.

[15] Recall the planning and organization that was required to distribute the euro notes across the euro area.
[16] Eichengreen (2010) argues that this is the primary reason why it is very costly to leave a currency union and why member states are unlikely to do so.
[17] See Yeyati and Blejer (2010) for a vivid description of the problems stemming from redenomination based on the Argentine experience in 2001–2002.
[18] Some withdrawal must be allowed, otherwise households and firms cannot function. The question is how much and how frequently? Should there be different rules for different firms or households, etc.? Even discussing such issues may lead to widespread panic.

all the legislation necessary for an exit, but also short enough so that households and firms do not run out of cash. Some form of capital controls will probably have to be maintained even after the conversion until the exchange rate is stabilized, otherwise expectation-driven capital flight may ensue after the new currency is introduced.

The major difficulty is bank note conversion, which usually takes time. Hence a quick implementation of the exit would require converting all bank deposits, wage contracts, credit contracts and price tags to the new currency (e.g. by just changing the euro to drachma symbols and keeping all the numbers in the contracts), while initially keeping the euro coins and notes in circulation and turning them into a permanent gift to domestic citizens. New domestic bank notes could be printed and issued thereafter. This would immediately establish a dual currency system of the kind existing today in many Eastern European countries and Turkey with strong incentives both for firms and households to write euro contracts again, but it would make it possible to accelerate realignment. In any case, under any scenario, the community of states should support the exit process by alleviating some of the external debt and helping out with subsidies for sensitive imports, which are essential for the working of the economy.

Exits from currency unions are difficult, but not uncommon in history. In 1993 the Czechoslovakian state split and two separate currencies were formed. In 1979 Ireland gave up the pound and adopted its own currency. In 1924 the Scandinavian currency union with Sweden, Norway and Denmark was dissolved; and prior to World War I, Greece exited from the Latin Currency Union. All in all, Nitsch (2005) counted 128 exits from currency unions in the post-war period 1948 to 1997. However, he finds that exits from a currency union usually occur when inflation differentials are large between members, or when there is a change in the political status of a member (countries break up or regain independence).

When a country devalues externally, the currency depreciates quickly, export and import prices adjust relatively fast. Hence, the current account is likely to improve in the short run. When a country devalues internally, on the other hand, export and import prices adjust relatively slowly. Hence, the positive effect on the current account takes time to materialise. This must mean that the country will need external finance for a longer period of time and that the poten-

tial write-off of losses on the part of foreign private or public debtors will be larger. However, it also means that the costs of potential negative balance sheet effects will be spread over time under internal devaluation, instead of being realized swiftly under an external devaluation.

The main difficulty arising from an internal devaluation through price and wage cuts is that it drives a country into a period of stagnation and mass unemployment, which undermines the stability of society and may lead to social unrest. This is the reason why economists with otherwise divergent views, like Keynes and Friedman, have both highlighted the costs of internal devaluations. Today, youth unemployment in Spain and Greece, two countries that are struggling to organize a process of internal devaluation within the euro area, is above 50 percent; and there have been riots of increasing intensity in the streets, despite the fact that only a tiny part of the total devaluation required has already been achieved, as described below. All in all, the overvalued countries of Southern Europe are stuck in a trap from which there is no easy escape. All of the options seem problematic and it is unclear, which is the least problematic.

Let us now turn to the policy dilemma of the core countries. While a periphery country may feel that keeping the euro is the better option, core countries could cut their financial support to limit their write-off losses, thereby forcing the periphery country out of the currency union. The costs and benefits of such an action depend on different kinds of contagion effects.

Firstly, there is a risk of a speculative contagion. If a periphery country exits the euro, it leaves behind euro denominated liabilities, which are held as assets in the euro area. Uncertainty about the value of these assets could lead to widespread panic and a run on euro area banks similar to events following the collapse of Lehman Brothers. Although we do not exclude the possibility that an exit may generate contagion, we believe this to be less likely than some suggest. The shock, which hit the financial markets in the United States in October 2008, was so severe due to the opaque nature of the markets for the financial products traded by these institutions. It was unclear who held the counter-party risks, and how these assets were distributed across different institutions. The market for government bonds, on the other hand, is transparent. The risk of contagion due to a lack of

market transparency is significantly lower than it was in October 2008. Moreover, this risk could be reduced by announcing sudden and extensive debt relief. If such debt relief were to be extensive, and if external devaluation were to be performed quickly, it could even stabilise expectations given that devaluation, whether external or internal, was the only way to improve a country's current account. The Greek bail-in of spring 2012 was by far the biggest in history (Gulati et al., 2012). Prior to the bail-out, many warned that it would give rise to a Lehman-like crisis, but these warnings failed to materialise.

Secondly, there could be political contagion. A currency union is meant to be a permanently fixed exchange-rate regime. An exit would demonstrate that the union does not satisfy this criterion. This would open the door for currency attacks on other periphery countries in the euro area in the form of a run on their government bond markets. High yields for a sufficiently long period of time would make the debt dynamics unsustainable, eventually forcing the other periphery countries out of the euro area and leading to an eventual break down of the whole enterprise. The likelihood of such an attack is difficult to predict. However, over the last three years there have been several occasions on which governments in the periphery have had problems issuing new debt because of market conditions. Policy-makers currently seem to think that the long-run benefits of a single currency are higher than the costs of preventing it from falling apart.

Thirdly, there is the moral hazard contagion. If an exit is ruled out by the community of states, this is likely to recreate the pre-crisis situation under the existing institutional arrangements of the euro area, whereby risk premiums would artificially be eliminated and the true effective rates of return of the periphery countries would be driven below those in the core countries (see EEAG, 2012, which includes a proposal on how to change the existing arrangements). This effect may have been at work after the decisions of September 2012, in particular the ECB's unlimited-bond purchase decision, the German Supreme Court's approval of the ESM, and the German Government's turnaround from a policy of tolerating a Greek exit to a promise of supporting Greece's on-going participation.[19] All of this has reduced risk premiums on Southern government bonds. Whether the existing premiums remain too high or too low is hard to judge. However, it can be argued that the Eurosystem's ultimate problem was that it created too much investor safety, thus undermining the watchdog function of the capital market by creating a system of overly soft budget constraints (Sinn, 2012). As chapter 4 of this year's report points out, the debt mutualisation scheme of finance minister Hamilton after the foundation of the United States of America had a similar effect in that it induced a period of excessive borrowing, leading to a credit bubble bursting in the period from 1838 to 1842, driving the majority of US states into bankruptcy and undermining the stability of the new nation.

2.3.2 How to devalue internally

For the time being, the policy decisions of the euro area countries have placed little emphasis on the moral hazard effect and seem to have paved the way towards internal devaluations. So let us now turn our attention to the question of how such devaluations can actually be achieved. There are several policy measures at a government's disposal.

Firstly, nominal wage changes have a relatively strong effect on price level changes. Cutting nominal wages, and subsequently controlling wage growth, is the most direct way to reduce the price level or substantially slow down its rise. Lowering unit labour costs both in goods and service production seems to be necessary for successful adjustment. Although governments do not control wages in the business sector directly, they can still have a strong influence on market wages. They can cut and control public sector wages, which affect market wages. Moreover, they can step in to facilitate nominal wage agreements between employees and employers for a period of time to reduce the pressure of nominal wage increases on prices.

Secondly, policy-makers may use fiscal tools to manipulate the price level and relative price, i.e. they can carry out fiscal devaluations. Among others Calmfors (1998) suggested fiscal policy instruments that can change the relative prices between tradables and non-tradables, and between home and foreign goods if policy-makers shift fiscal revenues from labour to consumption taxes.[20] Cutting labour taxes, and particularly social security contributions, leads

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[19] See Arghyrou (2012) for a summary and analysis of events in Greece since the beginning of the crisis, and EEAG (2011, Chapter 3) for an analysis of the period before the crisis.

[20] For a complete general equilibrium treatment of the problem see Farhi et al. (2011).

to a reduction in the costs of labour. This, ceteris paribus, leads to a reduction in export prices and the price level. In addition, an appropriate value-added tax (VAT) increase makes the labour tax reduction revenue neutral. The advantage of the VAT increase from a devaluation point of view is that it is levied according to the destination principle, i.e. it is a tax on imports, with exports receiving rebates and effectively eliminating all taxes levied on intermediate stages of production. This ultimately increases the internal prices of imports and the decline in export prices leads to expenditure switching from foreign to domestic goods. In addition, depending on the relative size of the labour tax cut and VAT increase on non-tradables, and on the relative size of the non-tradable sector, fiscal policy can also lead to a decline in the relative price of non-tradables, thereby generating switches from tradables to non-tradables.

The recent empirical study by de Mooij and Keen (2012) suggests that this idea may work in practice. They use an unbalanced panel of 30 OECD countries between 1965 and 2009 to study the effect of fiscal devaluation on net exports. According to their benchmark result, a revenue neutral social security contribution cut and a corresponding VAT increase amounting to 1 percent of GDP lead to an increase in net exports of between 0.9 percent and 4 percent of GDP. This is a significant effect that could be exploited by the periphery countries in the euro area to increase their competitiveness.

The only drawback in the context of the European crisis could be that the Southern crisis countries have traditionally based their tax systems on indirect, rather than direct taxation. Carrying out an internal devaluation of the kind described above would therefore require the euro area to disharmonise its tax systems even further.

Thirdly, a country can regain its competitiveness through faster productivity growth. At a given wage level, faster productivity growth reduces unit labour costs without provoking the resistance of unions and hence enables firms to reduce their prices.

Fourthly, expectations regarding rapid convergence with the euro area core are one of the factors responsible for generating the current account deficits in periphery countries prior to the crisis. However, the crisis most likely led to a downward revision of these expectations. If the expectations about future income growth were reduced, so were expectations

about future consumption. This leads to an increase in savings and a reduction in aggregate demand, which decreases the pressure on the price level and improves the current account. Thus, the fall in demand should slow down inflation in the periphery compared to the core, leading to an internal devaluation in the periphery.

2.3.3 How much devaluation is needed?

The theoretical discussion on how to implement devaluation needs to be complemented by quantitative considerations. There are three crucial questions related to the need for depreciation. How do we define rebalancing, how much real depreciation is needed in the GIIPS countries to achieve this rebalancing, and how can such depreciation be achieved.

Any definition of rebalancing requires the assumption that the international investment position of the country relative to GDP is stable at some level. This may or may not require a balanced current account. A meaningful quantitative assessment of the sustainability of the international investment position requires a general equilibrium analysis. Goldman Sachs (2012) has recently carried out such an analysis for the euro area.[21] This analysis uses a general equilibrium framework, which focuses on how goods are reallocated across countries as the real exchange rate changes when the supply of tradable and non-tradable goods is given in each country. Thus, it solely focuses on how much real exchange rate adjustment is needed to make expenditure switching between home and foreign tradable goods on the one hand, and between tradable and non-tradable goods on the other, sufficiently large so that the implied current account adjustment implies a sustainable foreign liability position. The analysis also assumes that the adjustment will last for about ten years, and requires that the net foreign investment position is stabilized between ± 25 percent of GDP.

The calibrated Goldman Sachs model implies that Portugal is required to make the largest real exchange rate adjustment. A 35 percent depreciation is required by Portugal to make its international investment position sustainable. Greece and Spain require 30 percent and 20 percent depreciations, respectively, while the fig-

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[21] They use a variant of the framework of Obstfeld and Rogoff. See Obstfeld and Rogoff (2005) for a canonical open economy model to analyse current account adjustment.
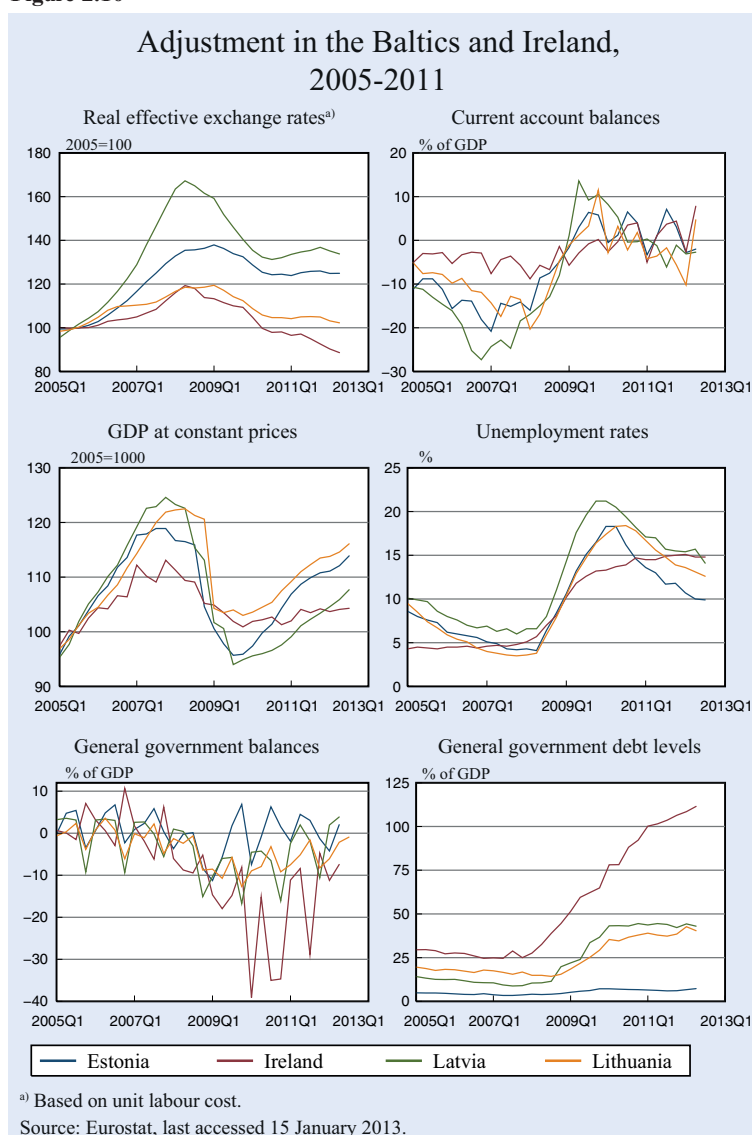
ure for Italy is lower at around 10–15 percent. Finally, the smallest real exchange rate depreciation of around 0–5 percent is required from Ireland. At the same time, the real exchange rate of Germany should appreciate by 25 percent.[22] The study also calculates the size of the inflation differentials implied by the depreciations/appreciations required. Assuming an average inflation rate of 2 percent in the euro area, the Goldman Sachs (2012) study concludes that inflation of around 4 percent in Germany and the rest of the core euro area countries together with zero inflation in the periphery is required for the rebalancing process to be completed in about 10 to 15 years.

2.3.4 Lessons from the Baltics and Ireland

Four member countries of the European Union have undergone an internal devaluation since 2007. These four countries are two members of the euro area, Ireland and Estonia, and the two other Baltic countries that maintained a fixed exchange rate during the crisis period. This section reviews their adjustment process.

Figure 2.10 summarises the main macroeconomic indicators of these four countries. All four countries carried out a substantial internal devaluation while maintaining the fixed exchange rate. Latvia and Ireland devalued by over 25 percent from the peak to the trough of their exchange rate indexes. Estonia and Lithuania devalued less, but still by over 15 percent. All of the countries markedly improved upon their pre-crisis current account balance as a result, with Latvia moving from a deficit of over 20 percent of GDP to a surplus of over 10 percent of GDP within just a few years. This adjustment, however, was very costly both in terms of output and employ-

Figure 2.10

Adjustment in the Baltics and Ireland, 2005-2011

a) Based on unit labour cost.
Source: Eurostat, last accessed 15 January 2013.

ment. The output loss was between 15–25 percent, with the largest loss recorded in Latvia and the smallest in Ireland. The Baltic countries have been growing strongly since this output trough, but they are still a fair way off their pre-crisis output levels, while Ireland's output, on the other hand, remains fairly flat. As for unemployment, it jumped to around 20 percent in the Baltic countries before dropping to around 15 percent, and to 10 percent in the case of Estonia. Unemployment in Ireland rose gradually, reaching 15 percent at the beginning of 2012. Finally, government balances have also improved since the beginning of the crisis. Government debt has risen significantly in all countries apart from Estonia. The increase was particularly large in Ireland, where the deficit increased not only because of the recession, but also because of the bail-out of its banks. However, it must be emphasised that pub-

[22] When calculating the requisite depreciations, potential valuation effects on the net international investment position are taken into account.

lic debt levels remained low in the Baltic countries, which helped their economies during the adjustment period.

The lessons to be drawn from the adjustment experience of the Baltic countries are rather controversial[23] and it is debatable whether they offer an example to be followed. The adjustment was achieved partially through wage cuts and partially by improving productivity through reducing employment. Both led to a fall in aggregate demand, hence to a large output loss. To restore labour productivity growth after such an output loss, a large reduction in employment was inevitably required. Was the internal devaluation successful? This question is hard to answer without knowing the extent to which these countries were overvalued before the crisis. The negative effect of appreciation on competitiveness was certainly offset to some extent by rapid productivity growth. However, it remains to be seen whether the devaluations carried out in the Baltic countries were sufficient to achieve rebalancing.

The recession in Ireland was driven by a sharp contraction in aggregate demand due to the collapse of the construction sector. Overall, the decline in aggregate demand led to deflation, and hence realignment.[24] The GDP deflator declined by 6.5 percent between 2008 and 2011, and by about 15 percent between 2006 and 2012. However, the depreciation of sterling also contributed to this decrease, since imports from Britain, which are significant, became cheaper.

Overall the austerity measures that resulted in the necessary internal devaluation were costly in terms

of output and employment, both in the Baltics and in Ireland. In the absence of counterfactual evidence, we will never know whether these countries could have achieved the adjustment at a lower cost if they had devalued their currency. Past experience suggests that this may have been possible, although the currency mismatch would have caused problems. Why did they not devalue externally? This may have been more difficult for Ireland because it could only do so by leaving the euro. Latvia and Lithuania, on the other hand, had only pegged their currency to the euro and could have devalued more easily. According to the Latvian Prime Minister, Valdis Dombrovskis, Latvia did not opt for external devaluation because it would have violated the entry conditions governing a switch from ERM II to the euro.[25] Yet the cost of postponing entry to the euro by few years does not seem particularly high compared to the loss of output and employment subsequently experienced by the country. However, if postponing the entry to the euro were also viewed by market participants as a signal of a broader policy and institutional regime change, abandoning the peg could have proven very costly for a country that was just recently regaining its independence and with institutions supporting the market economy that were still evolving.

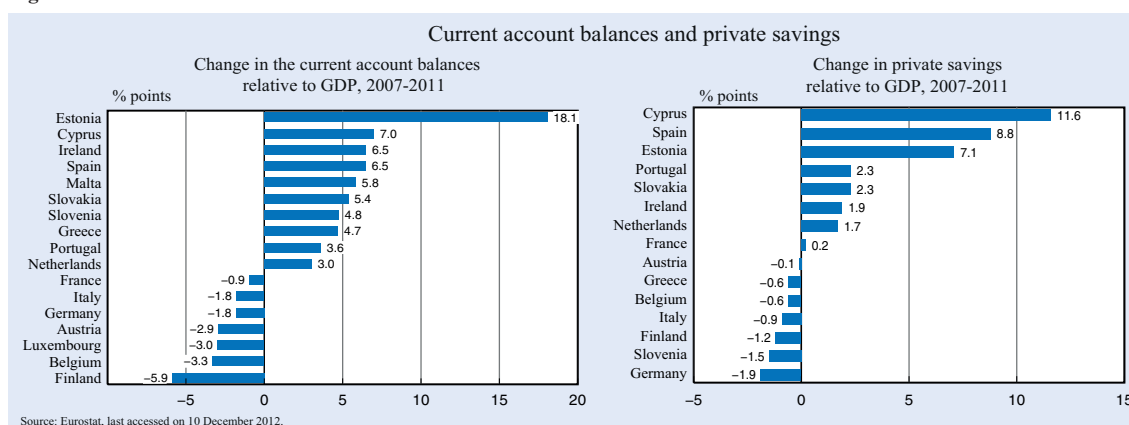### 2.3.5 Adjustment in progress: internal devaluation in the periphery since 2008

Since the beginning of the crisis, there has been adjustment in the periphery of the euro area, or if we include Italy, in the GIIPS countries; but the timing and the scale of adjustment has been heterogeneous. The left panel of Figure 2.11 shows that Spain and

[23] See Aslund (2012), Blanchard (2012), Krugman (2012) and Sinn (2012) among others.
[24] See Lane (2011) for further details about the Irish crisis.

[25] Speech given at the Munich Economic Summit, see Dombrovskis (2010).

Figure 2.11

Current account balances and private savings

Change in the current account balances relative to GDP, 2007-2011
% points

Estonia	18.1
Cyprus	7.0
Ireland	6.5
Spain	6.5
Malta	5.8
Slovakia	5.4
Slovenia	4.8
Greece	4.7
Portugal	3.6
Netherlands	3.0
France	–0.9
Italy	–1.8
Germany	–1.8
Austria	–2.9
Luxembourg	–3.0
Belgium	–3.3
Finland	–5.9

Change in private savings relative to GDP, 2007-2011
% points

Cyprus	11.6
Spain	8.8
Estonia	7.1
Portugal	2.3
Slovakia	2.3
Ireland	1.9
Netherlands	1.7
France	0.2
Austria	–0.1
Greece	–0.6
Belgium	–0.6
Italy	–0.9
Finland	–1.2
Slovenia	–1.5
Germany	–1.9

Source: Eurostat, last accessed on 10 December 2012.

Ireland have improved their current account balance by about 6 percent of GDP in the last four years, while Greece and Portugal recorded 4.7 and 3.6 percentage point improvements. The current account balance only deteriorated in Italy, which had a relatively small current account deficit before the crisis. Overall, the pattern we observe is that the current account typically improved in countries that started out with a deficit, and worsened in countries that started out with a surplus. Figure 2.4 shows that Ireland, Greece, Portugal and Spain have improved their balance on goods markedly since 2007 and continued to improve their balance on services. It was the negative balance on income that dragged down their current account.

The most remarkable adjustment was carried out by Estonia, which improved its current account balance by almost 20 percentage points over the four year period. If we look at the counter part of this adjustment in private savings on the right panel of Figure 2.11, we see that households in Spain, Portugal and Ireland adjusted to the crisis environment by increasing their savings, and contributing substantially to the reduction of their current account deficits. In contrast, private savings declined in Italy and Greece. Without significant improvement in private savings, it is doubtful whether rebalancing can be successful in the long run. This is because higher demand at home due to lower savings will eventually push the price level up at home, thereby leading to a real appreciation.
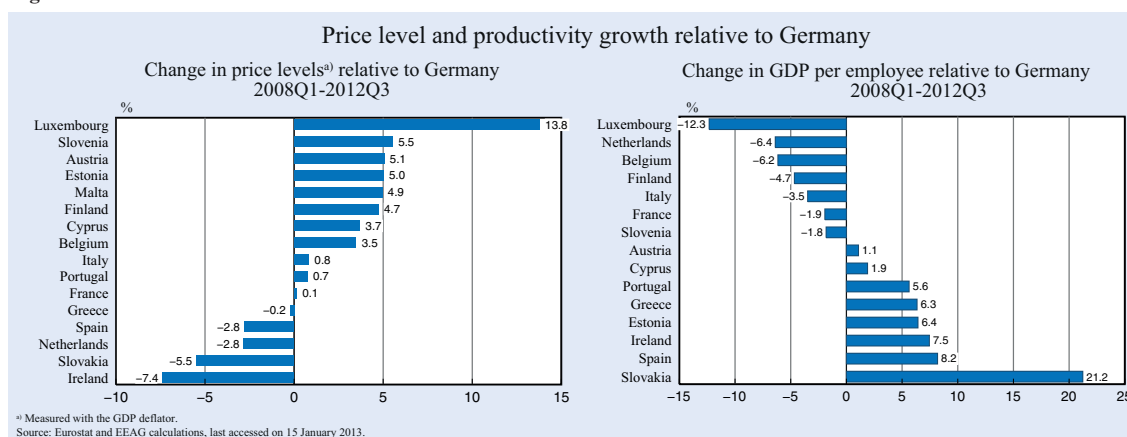
Unfortunately, most of the improvements in current accounts seem to be due to mere income effects. Given that the crisis drove down incomes and created rising mass unemployment, imports declined with incomes, while exports remained relatively more sta-

ble. This sort of adjustment is not what the euro area needs to achieve stabilisation. It requires a substitution away from imports and towards domestic products driven by changes in relative prices, i.e. by a real devaluation.

As far as this criterion is concerned, however, there has been little improvement in the euro area. The price level in Ireland relative to Germany fell by 7.4 percent between Q1 of 2008 and Q3 of 2012, as shown by Figure 2.12. Spain depreciated by 2.8 percent relative to Germany, whereas Greece retained its respective relative price level with Germany. Italy and Portugal appreciated slightly over this period.

As noted above, such real appreciation may not have a negative impact on competitiveness if there is an equally strong aggregate average productivity increase resulting from a productivity increase in the tradable goods sector only. The right panel of Figure 2.12 shows the changes in GDP per employee relative to Germany. Firstly, it is worth noting that Ireland and Spain not only depreciated internally between Q1 of 2008 and Q3 of 2012, but also improved their productivity markedly. Secondly, although the price level of Greece and Portugal did not change much, both countries managed to improve their productivity levels. Hence, they might have improved their competitiveness relative to Germany insofar as the true decrease in tradables prices was larger than the GDP deflator shows as, according to the Balassa-Samuelson effect, the wages and prices of non-tradables rose with a differential productivity increase in the tradables sector. There is some uncertainty with this interpretation, however, because export prices in most crisis countries increased relative to the GDP deflator. Only in Spain it fell a bit. Thus, even if there was a
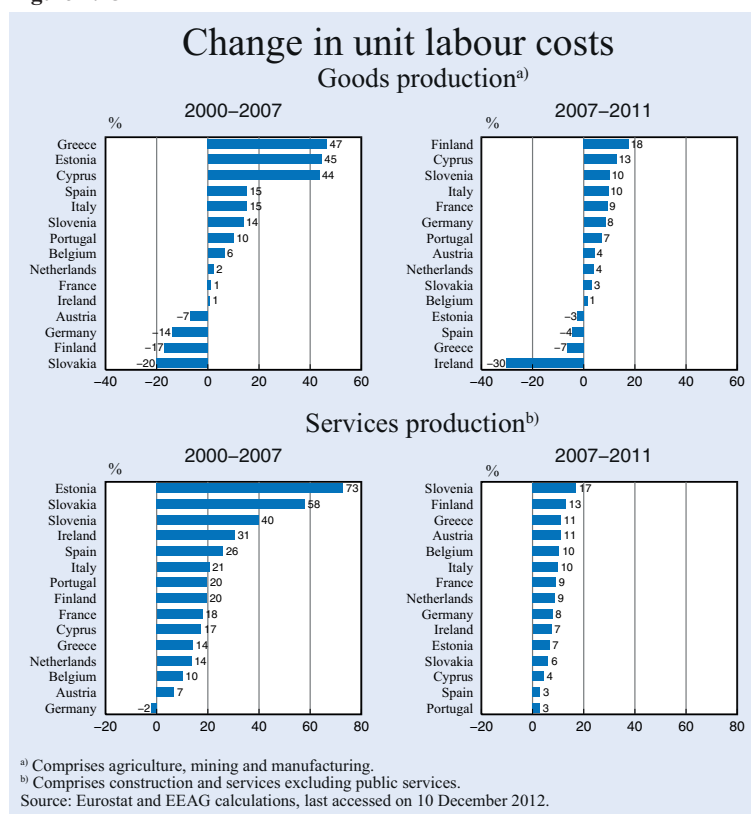
Figure 2.12

Price level and productivity growth relative to Germany

Change in price levels[a] relative to Germany
2008Q1-2012Q3

	%
Luxembourg	13.8
Slovenia	5.5
Austria	5.1
Estonia	5.0
Malta	4.9
Finland	4.7
Cyprus	3.7
Belgium	3.5
Italy	0.8
Portugal	0.7
France	0.1
Greece	–0.2
Spain	–2.8
Netherlands	–2.8
Slovakia	–5.5
Ireland	–7.4

Change in GDP per employee relative to Germany
2008Q1-2012Q3

	%
Luxembourg	–12.3
Netherlands	–6.4
Belgium	–6.2
Finland	–4.7
Italy	–3.5
France	–1.9
Slovenia	–1.8
Austria	1.1
Cyprus	1.9
Portugal	5.6
Greece	6.3
Estonia	6.4
Ireland	7.5
Spain	8.2
Slovakia	21.2

[a] Measured with the GDP deflator.
Source: Eurostat and EEAG calculations, last accessed on 15 January 2013.

Balassa-Samuelson effect at work, inflation of tradable goods unrelated to the Balassa-Samuelson effect appears to be larger in most countries, as in the period before the crisis. Of course, if there is no differential productivity increase between tradables and non-tradables, the change in price levels cannot be attributed to the Balassa-Samuelson effect. In all events, the message as far as Italy is concerned is not very encouraging. Price level changes indicate a small real appreciation, but productivity deteriorated relative to Germany. The country's competitiveness is therefore likely to have declined since 2008.

An alternative measure of competitiveness is unit labour costs, which are defined as the ratio of wage per unit of time and labour productivity. Figure 2.13 shows the change in nominal unit labour costs broken down by type of production (goods versus services) and by time period (2000–2007 and 2007–2011). The first important observation is that unit labour costs increased significantly in Greece prior to the crisis in goods production, but less so in the other Southern European countries or in Ireland. In contrast, unit labour costs fell in Germany and in several other countries in goods production. Unit labour costs in services obey a different dynamic. They increased prior to the crisis in all countries apart from Germany. The second observation is that the increase in unit labour costs has slowed down considerably since the crisis. It fell in Ireland, Spain and Greece in goods production. However, it has shown faster growth in Greece in services production than previously. Overall, changes in unit labour costs suggest that cost competitiveness is improving in the crisis hit countries. It is improving fast in Ireland, slower in Spain, and to a mixed degree in Greece and Portugal, where it is improving in one type of production, but slightly deteriorating in the other. Unlike the changes in price levels, however, changes

Figure 2.13

Change in unit labour costs
Goods production[a)]

Services production[b)]

a) Comprises agriculture, mining and manufacturing.
b) Comprises construction and services excluding public services.
Source: Eurostat and EEAG calculations, last accessed on 10 December 2012.

in unit labour costs suggest some improvements in cost competitiveness in the Southern periphery.[26] However, it should be emphasised that a decline in unit labour costs does not in itself improve competitiveness, but only insofar as it makes it easier for firms to reduce their prices, which is ultimately required to improve competitiveness and rebalance current accounts via a substitution effect, i.e. without increasing unemployment. Should nominal wages remain unchanged, there is a good chance that such a decline in unit labour costs does improve competitiveness. However, as the price level comparison in Figure 2.12 suggests, this process is still in its early stages.
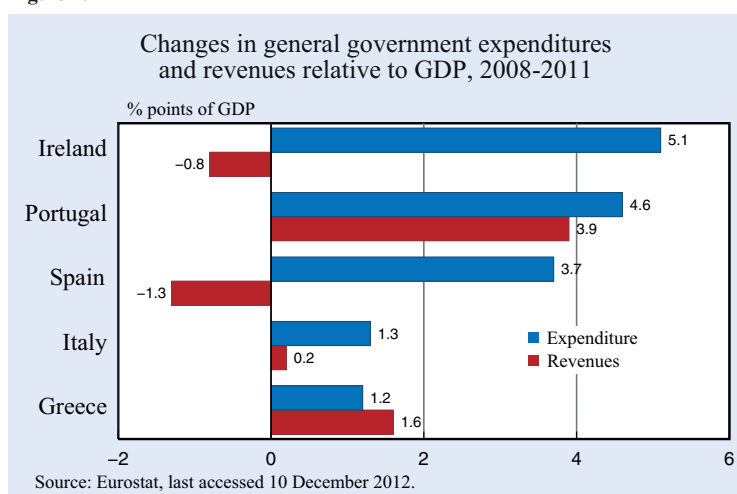
2.4 Rebalancing in the euro area: government balances

Current account balances must also be consistent with the balance between saving and investment. This is partly the balance between government saving and investment. The GIIPS countries also need to make eventual adjustment to their fiscal balances. Such an adjustment, however, can take several years.

However, the immediate concern is how to design a fiscal policy such that it credibly commits policy-mak-

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[26] There is a drawback in unit labour cost comparisons insofar, however, as statistical improvements might result from wiping out firms with high unit labour costs first if the economy goes into a recession, as it currently does. Thus, the improvement in unit labour costs might be an artefact with little information about competitiveness.

Figure 2.14

Changes in general government expenditures
and revenues relative to GDP, 2008-2011

% points of GDP

Ireland	Expenditure 5.1	Revenues –0.8
Portugal	4.6	3.9
Spain	3.7	–1.3
Italy	1.3	0.2
Greece	1.2	1.6

■ Expenditure
■ Revenues

Source: Eurostat, last accessed 10 December 2012.

ers to a deficit reduction plan that is consistent with long-term external and internal sustainability on the one hand, and also allows for some counter-cyclical fiscal policy on the other. During a sovereign debt crisis the danger faced by policy-makers is that if they reduce the deficit sufficiently to make the fiscal adjustment credible for market participants today, it may well lead to output losses tomorrow, requiring further adjustments.

It therefore makes more sense to focus on which fiscal policy mix, i.e. combination of expenditure cuts and tax increases, is most appropriate at the time that a crisis strikes. Appropriately designed fiscal adjustment may even prove to have a positive effect on output.[27] The general lesson from the empirical literature on this topic is that a fiscal adjustment based largely on reducing expenditure is more likely to be more successful, and longer lasting than adjustment based on tax increases.[28] In addition, fiscal adjustment based on expenditure cuts is likely to boost output, particularly when it is combined with growth-oriented reforms such as the liberalization of labour and goods markets.

Figure 2.14 shows the change in government expenditure and revenues between 2008 and 2011. It is interesting to see that the two countries that increased revenues relative to GDP significantly during this period were Greece and Portugal. These are the two countries where adjustment is slow. Given

that GDP was falling in this period, adjustment required significant increases in tax rates, leading to higher distortions and to a negative effect on supply. More emphasis on expenditure cuts might have made the adjustment faster in Greece and Portugal as it did in Ireland.[29]

2.5 Conclusions

Europe is in the grip of three interrelated crises: a balance-of-payments crisis, a sovereign debt crisis and a banking crisis. Although progress has been made to resolve the sovereign debt and banking crises in the last four years, policy-makers have devoted little attention to the balance-of-payments problem. A credible strategy for getting the euro back on track also needs to address this issue.

Since 2000 large imbalances have accumulated in the euro area in the form of current account deficits and surpluses. In the euro area periphery in particular, Greece, Portugal, Spain and Ireland have run persistent current account deficits with mostly high growth, investment and house price bubbles (Portugal being an exception); while the Northern core of the euro area, and most notably Germany, have run a persistent current account surplus with declining house prices and low investment. Given that the capital market is no longer willing to finance their current account deficits, the periphery countries need to devalue in order to regain competitiveness and reduce their dependence on foreign credit. The key policy question is whether they should pursue internal or external devaluation; or whether a periphery country should remain within, or exit the euro area. The answer to this question is not clear because the preferred route of internal adjustment through inflation in the core may not be available, but deflation will result in severe distortions in company balance sheets. An external devaluation, on the other hand, may entail high contagion costs, although it improves the incentives for debtor countries not to overstretch their credit limits. In addition, it also requires the redenomination

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[27] There is an on-going debate over whether the results regarding an expansionary fiscal contraction are robust or not. Alesina and Perotti (1997), and Alesina and Ardagna (1998, 2012) argue that it is possible to design such a policy. In contrast, Guajardo et al. (2011) argue that the empirical evidence on the existence of such a policy is not robust. See Ramey (2011) for an overview of the literature about the effects of government expenditures.
[28] See Alesina (2012), Alesina and Ardagna (1998, 2012), Alesina et al. (2012), and von Hagen and Strauch (2001).

[29] The Irish expenditure figures are misleading in the sense that they include the cost of bailing-out the Irish banks.

of assets, liabilities and contracts prior to exit, which is likely to cause severe disruption in the short run. Given that, for the time being, policy-makers have decided to exclude the exit option, the emphasis of economic policy must be on seeking possibilities for internal devaluations. As we showed, a fiscal devaluation by replacing direct with indirect taxes would be a possibility worth considering.

Since the beginning of the crisis, the countries of the periphery have all been undergoing adjustment, albeit to varying degrees. Whereas the Irish adjustment went a long way and Spain has made some progress in terms of productivity increases, the Portuguese, and particularly the Greek adjustments seem to be slow, to say the least. Against this background, the competitiveness crisis currently impacting some of the euro area countries looks set to continue for quite some time to come.

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