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## Squaring the circle in Euroland? Some remarks on the Stability and Convergence Programmes 2010-2013

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Institut für Makroökonomie  
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# Working Paper

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## **Squaring the circle in Euroland?**

### **Some remarks on the Stability and Convergence Programmes 2010-2013**

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#### **Abstract**

It is generally held, from both a global and a European perspective, that the three most important objectives for the years to come are 1) the reduction of current account imbalances, 2) the reduction of public deficits, and 3) the reduction of unemployment. This paper argues that the Stability and Convergence Programmes (SCPs) for the period 2010-2013, submitted by the euro area member states to the European Commission in January/February 2010, will not achieve all three objectives. Indeed, under current circumstances, the simultaneous realisation of these objectives would be like “squaring a circle”. We show that the SCPs rely on rather optimistic assumptions about private sector demand and GDP growth, given the degree of fiscal consolidation. At the same time, they imply that current account imbalances in EMU would remain quite significant until 2013. Our analysis is mainly based on a few simple accounting identities and places special emphasis on Germany. It leads us to conclude that, in the absence of a drastic deterioration of private financial balances, the only way to achieve the GDP growth rates projected in the SCPs (and, ideally, current account rebalancing) would be for the governments of surplus countries to be prepared to run higher deficits over the next few years. This would be more “fiscally responsible” than the current focus on deficit reduction. Failure to do so may result in persistently high unemployment in the years to come and may threaten the European Monetary Union.

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## 1. Introduction

The global economy in general and the European Monetary Union (EMU) in particular face serious challenges in the years ahead. At present, politicians and financial investors are very concerned with the question of whether Greece and other “deficit countries” should be “rescued” by the other, seemingly more “financially responsible” EMU countries in case of solvency problems.

Less superficially, it is generally held, from both a global and a European perspective, that the three most important objectives for the years to come are 1) the reduction of current account imbalances, 2) the reduction of public deficits, and 3) the reduction of unemployment.

This paper argues that the Stability and Convergence Programmes (SCPs) for the period 2010-2013, submitted by the member states to the European Commission in January/February 2010, will not achieve all three objectives. While we do briefly consider alternative policy recommendations, which necessarily involve some degree of judgment, our main conclusions are essentially derived from assessing the SCPs in the light of some very simple accounting identities: Whereas the European Stability and Growth Pact (SGP) focuses exclusively on the government deficit (which should not exceed 3 per cent), we attempt to render explicit the assumptions inherent in the national SCPs about overall macroeconomic development in terms of the financial balances of all three sectors in the economy (private, public and foreign).

The paper proceeds as follows. In the next section, we briefly discuss the importance of each of the three objectives outlined above. In section 3, we recall some simple macroeconomic accounting relationships which need to be taken into consideration when attempting to achieve these objectives. Based on this reminder, section 4 offers a brief discussion of how to assess the “sustainability” of government, private and foreign sector financial balances in the context of EMU. Section 5 looks at the macroeconomic development in EMU since 1999, and section 6 puts the national SCPs for 2010-2013 in perspective. We show that they rely on rather optimistic assumptions about GDP growth and imply that current account imbalances in EMU would remain quite significant until 2013. In particular, it seems highly unrealistic (and also not desirable) that private financial balances in countries with current account deficits and high private sector indebtedness fall back to zero or even become negative. By con-

trast, in countries with a large current account surplus, net private saving is (implicitly) projected to further increase to 8 or 9 per cent of national GDP. We look in some greater depth at the case of Germany, because it is the largest EMU economy and has an extremely large current account surplus. In section 7, we show what would have to happen in each EMU member state, in terms of sectoral financial balances, if current account rebalancing were to actually take place, at least to a larger extent, by 2013, while maintaining the assumptions about GDP growth and fiscal consolidation of the national SCPs. We argue that the implications of this counterfactual exercise for the evolution of private financial balances and the growth contributions of private demand in the surplus countries are highly unrealistic. In the concluding discussion, we outline an alternative solution: In the absence of a drastic deterioration of private financial balances, the surplus countries will have to accept sustained public deficits over the next years. If our simple analysis is correct, but governments in surplus countries are not prepared to use fiscal policy rather aggressively in the years to come, then it is very likely that the SCPs, by focusing on reducing public deficits, will lead to long-lasting stagnation with high levels of unemployment in the euro area.

## **2. The three objectives: reducing current account imbalances, public deficits and unemployment**

### **2.1 Reducing current account imbalances**

The global imbalances are generally recognised as one of the major macroeconomic distortions that led to the global economic crisis starting in 2008. It is also argued that the reduction of global imbalances is one of the essential preconditions for a sustainable global recovery and for the stabilisation of the world economy more generally (e.g. Blanchard and Milesi-Ferretti, 2009; Horn et al., 2009; IMF, 2009).

The world's largest deficit countries are the UK, the U.S, and Spain, with current account deficits of, respectively, 2.7, 5.2, and 10 per cent of national GDP in 2007. The most important surplus countries are China (11 per cent), Germany (7.9 per cent) and Japan (4.8 per cent) (see figure 1).

The euro area as a whole has had only small current account balances with the rest of the world since its creation in 1999. Yet, within the euro area, current account imbalances have

become very substantial over the past years (see table 1). While in Germany and the Netherlands the current account surpluses have reached about 8 per cent of national GDP by 2007, some other countries such as Greece, Portugal and Spain have run current account deficits of more than 10 per cent of national GDP. The resulting foreign indebtedness of these countries is seen as one of the main reasons for the speculative attacks against these countries on the financial markets (as apparent in the currently high credit default swap spreads and long-term bond yields, see figure 6).

## **2.2 Reducing public deficits**

In all EMU countries except Finland, public deficits in 2009 were higher than the 3 per cent of GDP allowed for by the Stability and Growth Pact (SGP). In Greece, Ireland and Spain the public deficit even exceeded 10 per cent of GDP, in France and Portugal it was close to 8 per cent of GDP. The euro area average was 6.4 per cent of GDP (see table 2).

The European Commission expects all EMU countries to abide by the 3 per cent limit by 2013. The SGP even states that the member states should keep their government budget close to balance over the medium term. The public debt-to-GDP ratio, which has significantly increased during the present crisis from 69.3 per cent to 78.2 per cent on average (see figure 5), should not exceed 60 per cent of GDP.

In Germany, the so-called “debt brake” – written into the Constitution in 2009 – furthermore states that the “structural” deficit of the federal government must not exceed 0.35 per cent from 2016 onwards. And Germany’s regional governments will no longer be allowed to run any structural deficits at all from 2020 onwards.

## **2.3 Reducing unemployment**

Unemployment in the euro area has increased heavily since 2007. In Spain, the unemployment rate reached almost 20 per cent in 2009, in Ireland it has more than doubled to 11.7 per cent since 2007, and for most countries it is expected to reach 10 per cent or more in 2010 (see figure 7).

In some countries, and most strikingly in Germany, the rise in unemployment has so far remained relatively moderate. Yet, as part-time work schemes and the reduction of working-time accounts will fade out in the near future, unemployment is expected to rise in Germany as well, should economic growth remain weak.

As a consequence, in so far as unemployment and GDP growth are linked, relatively high GDP growth rates will be necessary over the next years to effectively fight unemployment (and, thereby, avoid even more social unrest).

### **3. The interrelatedness of sectoral financial balances: a quick reminder**

The following accounting identity holds:

- (1) Public financial balance + Private sector financial balance + Financial balance of the foreign sector = 0.

This simply means that any particular sector in the economy cannot run a surplus, without the remaining two sectors of the economy running a joint deficit of exactly the same magnitude. If one country runs a current account surplus, then at least in one other country the government or the private sector has to run a financing deficit, and so on.

The European debate mainly focuses on public sector balances<sup>1</sup> (and their implications for public debt-to-GDP ratios), and, more recently, also on current account balances<sup>2</sup> (and foreign debt-to-GDP ratios). The national SCPs also provide projections for the balances of these two sectors. This obviously has immediate implications for the financial balance of the private sector in each country, although these implications are often not discussed explicitly.

Given certain assumptions, the (projected) evolution of the financial balances of the three sectors also has implications for the (projected) growth contributions of the different components of GDP (see Appendix for a more detailed discussion). To see the link between the composition of GDP and sectoral financial balances, simply note that:

(2)  $GDP = C + I + G + X - M,$

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<sup>1</sup> The government deficit is equal to the negative of the public financial balance.

<sup>2</sup> The current account balance is equal to the negative of the financial balance of the foreign sector.

where

C = Private consumption,

I = Private investment,

G = Government expenditures in final goods,

X = Exports,

M = Imports,

and that

$$(3) \quad \text{GNI} = \text{GDP} + \text{NIA},$$

where

GNI = Gross national income,

NIA = Net income received from abroad.

Gross national income will be used to derive consumption, saving (S) and tax payments to the government net of government transfer payments and subsidies (NT).

$$(4) \quad \text{GNI} = \text{C} + \text{S} + \text{NT},$$

It follows from (3) and (4) that

$$(5) \quad (\text{NT} - \text{G}) + (\text{S} - \text{I}) + [(\text{M} - \text{X}) - \text{NIA}] = 0,$$

where  $(\text{NT} - \text{G})$ ,  $(\text{S} - \text{I})$ , and  $[(\text{M} - \text{X}) - \text{NIA}]$  are the financial balances of the public, private and foreign sectors, respectively.

#### **4. When are financial balances “unsustainable”?**

The financial balances of the three sectors necessarily sum to zero. Unfortunately, we only observe the balances ex post, and not the ex-ante “desired” financial balances. Clearly, any particular sector will only be able to adjust its financial balance in the desired way if one or



both of the other two sectors *wish* to adjust their (joint) financial balance by the same amount in the opposite direction. If this is not the case, and the sum of the *desired* balances exceeds, or falls short of, zero, then national income will adjust to bring the *actual* balances in accordance with each other.<sup>3</sup>

When private demand is weak, the private sector financial balance is typically positive and large (or increasing). Clearly, when desired private saving exceeds desired private investment and foreign demand is equally insufficient, i.e.  $(X - M) < (S - I)$  (ex ante), in the absence of government intervention there will be involuntary unemployment as a result of insufficient aggregate demand. In such a case, the government can attempt to reduce unemployment by reducing the desired public sector financial balance. This is what governments did in the current crisis (but also before). Yet, over the medium term such a policy may imply that the government deficit and the public debt-to-GDP ratio eventually increase to what many fear to be “unsustainable” levels.

There is, as a general proposition, no clear-cut economic criterion which would indicate what “unsustainable” really means, but the SGP states that it is not sustainable for any country to run government deficits of more than 3 per cent and to have a public debt-to-GDP ratio of more than 60 per cent<sup>4</sup> (the further stipulation being a balanced government budget over the medium term). In the analysis that follows, we simply take the 3 per cent rule of the SGP as a given, to be attained by 2013.

If one believes that public deficits can be “too large”, it follows almost by definition that there are also limits to the extent to which the private sector can be allowed to run a surplus. Clearly, if large current account imbalances – generally also viewed as unsustainable – are to be avoided, then this together with the upper limit for government deficits automatically sets an upper limit for the private surplus.

From this perspective, however, one would certainly have to argue further that private deficits should not become “too large” either, as this would increase the danger of a solvency crisis. More generally, it would seem that the government financial position cannot be considered “sustainable” when the private sector financial position is not, as the government would ulti-

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<sup>3</sup> See Godley et al. (2008) and Hatzius (2003) for more detailed expositions of the financial balances approach.

<sup>4</sup> Under the assumption of a long-run average nominal GDP growth rate of 5 per cent, the public debt-to-GDP ratio will not exceed 60 per cent in the long run, if the government deficit does not exceed 3 per cent.

mately have to bail out private debtors in a private debt crisis (or drastically increase its deficit to pay for the economic and social costs of such as crisis).<sup>5</sup>

To sum up, once it is argued that the financial balance of any particular sector may be “unsustainable”, this logically implies that the balances of the two other sectors would equally be “unsustainable” (irrespective of how this is defined).

## **5. Financial balances and macroeconomic development in the euro area, 1999-2009**

Figure 2 shows average real growth contributions for selected EMU member states for 1999-2007. Looking also at table 1, it can be seen that those countries with relatively strong private demand growth tended to show lower, and sometimes even negative private financial balances.

Figures 3 to 5 show the evolution of private and public debt-to-GDP ratios in selected member countries since 1999. It can be seen from the yields on 10-year government bonds in figure 6 that financial markets seem to consider the domestic debt-to-GDP ratios to have attained “unsustainable” levels in some countries. At present, (rumours about) speculative pressures are focused on countries such as Greece, Ireland, Italy, Portugal and Spain. Notice, however, that the public debt-to-GDP ratio used to be significantly lower in Spain or Ireland than, for instance, in Germany. Yet, in both countries public indebtedness has drastically increased during the past two years, as a consequence of rising unemployment and solvency problems in the private sector.

As can be seen from tables 1 and 2, private financial balances have heavily increased in all countries from 2007 to 2009. This increase was most pronounced in those countries where private net saving was negative in recent years and private indebtedness was high.

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<sup>5</sup> As an example, in Ireland the public debt-to-GDP ratio used to be very low until recently, but it tripled between 2007 and 2009 as a result of the current crisis. Similarly, over the past two years, the Spanish government had to run very large deficits and substantially increase the public debt relative to GDP, after it had run surpluses for several years before (while the private sector had very high deficits during the real estate boom).

## **6. Assumptions and implications of the national Stability and Convergence Programmes for 2010-2013**

The financial balances for the 16 EMU member states can be written as a system of 16 equations with 48 variables. Moreover, the current account balance of the euro area as a whole vis-à-vis the rest of the world is given by the sum of the current account balances of the 16 member states. Tables 1 and 2 show this system of equations for the years 2007 and 2009, respectively.

The projected public financial balances and current account balances as a percentage of GDP for 2010-2013 are shown in table 3 (a). These projections have immediate implications for the financial balances of the private sector in each country and for the financial balance of the rest of the world vis-à-vis the euro area as a whole. Because the stability programmes also provide data on projected GDP growth, we can express the financial balances in euros as well as in per cent of GDP. Table 3 (b) shows the projected real growth contributions and figure 7 the projected unemployment rates for 2010-2013 for some selected countries. Note that almost all countries expect to reduce or to at least prevent a further increase in unemployment compared to 2009. Table 4 shows the implications of the stability programmes for the financial balances of all sectors for 2013.

First, it should be noted that the assumptions about GDP growth rates appear quite optimistic, given the degree of fiscal consolidation: Already from 2011 onwards, almost all countries expect to grow by 2 per cent per year in real terms (see table 3 (b)), and some even expect to grow much faster. Even more strikingly, the SCPs are based on a number of discomfoting further assumptions that are not always made explicit:

- 1.) The euro area as a whole would improve its current account position by 1.3 percentage points of GDP. This would seem to imply that exporters in the euro area benefit from strong global demand. Hence, if global rebalancing is nonetheless to take place and the large deficit countries, in particular the U.S. and the UK, attempt to reduce their deficits, the EMU SCPs increase the pressure on the world's large surplus countries, in particular China and Japan, to stimulate domestic demand and reduce their surpluses.

- 2.) Within EMU, current account imbalances would persist, although they would be somewhat lower, as compared to 2007. Germany would increase its current account surplus from around 4 per cent of GDP in 2009 to 5.5 per cent in 2013, the Netherlands would increase their surplus from a bit more than 3 per cent to more than 6 per cent. On the other hand, Greece and Spain would still run deficits of 4 and 3.5 per cent, respectively, with Italy and France continuing to run deficits as well.
  
- 3.) Private financial balances in the deficit countries would worsen dramatically by 2013 (0.3 per cent of GDP in France, -2 per cent in Greece, 3.3 per cent in Ireland, 1.4 per cent in Italy, and -0.5 per cent in Spain), while in the surplus countries private net saving would further increase (5.6 per cent in Austria, 5 per cent in Belgium, 8.5 per cent in Germany, 9.25 per cent in the Netherlands). The reason is that deficit countries expect GDP growth to be driven – as in the past – by private sector demand, while surplus countries expect GDP growth to be – once again – driven by exports.

In a nutshell: when the SCPs are put in context, it becomes clear that given their successful implementation the three objectives outlined in section 2 would not be simultaneously realised by 2013: government deficits would be brought down to 3 per cent of GDP and GDP growth would be relatively strong (although unemployment would remain very high in many countries). But the implications of this are both unrealistic and undesirable: current account imbalances would be entrenched, and those countries in which the increase in private indebtedness had been particularly strong during the years prior to the financial crisis (see figures 4-5) would rely on renewed private demand booms, implying zero or even negative net private saving. The implicit assumptions about private financial balances for 2013 seem particularly heroic for France, Greece, Italy and Ireland. It is quite remarkable that the stability programmes expect private financial balances to decline very quickly by 5, 6 or more percentage points of GDP in these countries. By contrast, surplus countries such as Germany and the Netherlands would continue to run private sector surpluses of around 8 or 9 per cent of GDP.

It is equally remarkable that Germany as the largest economy within EMU (about one quarter of euro area GDP), plans to continue to run very large current account surpluses. Of course, it may not be an easy task to change the pattern of economic growth immediately. But in the German SCP not a single sentence could be found that would indicate that the German authorities perceive the export-led growth strategy as a problem for the stability of EMU. In-

stead, it is argued that Germany's "particularly export-oriented manufacturing sector" will benefit more than other countries from the (expected) "upturn in global demand", because the German export industry is "very price competitive (in) international comparison" as a result of "a long period of market wage moderation" (SCP, Germany, p. 20). As more than 40 per cent of Germany's exports go to other EMU countries (and more than 60 per cent to European Union member states), Germany's growth strategy continues to rely heavily on sustained deficits (public or private) in other European countries. Moreover, because non-EMU countries can adjust their price competitiveness vis-à-vis Germany via changes in the nominal exchange rate (while EMU member countries obviously cannot), Germany seems to openly advocate bringing current account imbalances within EMU back to the pre-crisis level.

In fact, despite the strategy of continued export-led growth, the German SCP makes very optimistic assumptions about the growth contribution of domestic demand: 1.5 percentage points for 2011-2013 is quite large in historical comparison. In the period 1999-2007 the average joint growth contribution of the government and private sectors was 0.65 percentage points (0.88 when inventories are not included), the average growth contribution of private demand was 0.49 percentage points (0.73 without inventories), and only in three years (1999, 2000, 2006) was it higher than 1 percentage point. It is furthermore clear that the real growth contribution of government expenditure will not be much larger than 0.1 percentage points as a result of the fiscal consolidation plan and thus lower than before. Private demand in Germany contracted only quite moderately in 2009: the growth contribution was -2.06 percentage points (-1.33 without inventories) and private consumption actually grew in 2009. In fact, this is not really surprising given that private demand grew so slowly even before the crisis. And the hitherto rather moderate increase in unemployment has also helped stabilise private consumption. Interestingly, the contraction of domestic demand in 2009 was smaller than in 2002, when it came to -2.25 percentage points (-1.68 without inventories), which was followed by three years of very sluggish growth (the average real growth contribution of private and government demand was respectively 0.12 and 0.00 percentage points of GDP in 2002-2005). Nevertheless, the most recent German SCP projects domestic demand to contribute 1.5 percentage points to GDP for three consecutive years in 2011-2013 (implying a growth contribution of private demand of about 1.4 percentage points on average) – and the private financial balance to remain as high as 8.5 per cent of GDP in 2013. The projected pattern of growth in Germany for 2009-2013 is illustrated in figure 8.

We leave it to readers to decide whether they find the assumptions made in the SCPs of other countries more realistic than those made by the German authorities. Yet, it should be clear that if the largest economy within EMU fails to achieve its plans, then this would almost automatically imply that most of the other member states will have failed to realise theirs.

## **7. Alternative scenarios for reducing government deficits, current account imbalances and unemployment rates in the euro area by 2013**

Given the assumptions about GDP growth from the SCPs, we can easily determine what would have to happen to private financial balances, if both public deficit reduction and a more significant current account rebalancing were to actually take place in the euro area by 2013.

This is shown in table 5, where it is further assumed that the current account of the euro area as a whole remains constant as a percentage of the euro area GDP. This assumption would be justified if the recovery of global demand turned out to be weaker than apparently expected by the public authorities within EMU. In this counterfactual exercise, we maintain the assumptions about government deficits from the national SCPs. We then assume, albeit somewhat arbitrarily, that all countries with current account deficits in 2009 will reduce their deficits to 1.5 per cent of their respective national GDPs by 2013. Note that even such major rebalancing would still imply quite a substantial deterioration in the private financial balances of the deficit countries (for instance, it would be 1.5 per cent in France and Spain, compared to respectively 6.01 and 5.88 per cent in 2009). Finally, we assume that the surplus countries will contribute to the implied reduction of their surpluses in proportion to the size of their respective surpluses in 2009. Based on these assumptions, we can again solve our system of equations for the 16 private financial balances.

As an illustration, we also show, in figure 9, what our assumptions would imply for the composition of growth in the largest surplus country, Germany, over the period 2010-2013. In these calculations (see Appendix for further details), we take into account the 2010 fiscal stimulus package and the announced strategy of fiscal consolidation to be implemented from 2011 onwards. Clearly, the domestic demand boom required by these assumptions stands in stark contrast with the German growth pattern projected in the SCP (see figure 8), which would replicate the pre-crisis export-led growth model.

It should be clear that the scenario from figure 9 is even more unrealistic than that in figure 8. There do not seem to be any good reasons to expect the private sector to desire substantially higher spending relative to income over the next years. Given our assumptions, the implied growth contribution of private sector demand would have to be about 2.6 percentage points per year from 2011 onwards. Even if we assume that the deficit countries reduce their current account deficits to only 2 or 3 per cent in 2013<sup>6</sup>, keeping all other assumptions constant, the annual private growth contribution in Germany would have to come to about 2.4 and 2.0 percentage points, respectively, in 2011-2013 (even though we quite unrealistically assume that the current account surplus starts to decrease (and hence private demand to increase quite strongly) already in 2010, see figure 9 and Appendix). Of course, this seems even more illusory than the projections in the official German SCP.

Yet, as recalled in section 3 above, if the *ex ante* plans of both the public and foreign sectors are to improve their respective financial balances, GDP will be negatively affected, unless the private sector *desires* to worsen its balance by an equivalent amount.

Should the private sector not desire to reduce its financial balance to the required extent, the only way to achieve the projected growth rates given current account rebalancing, would be for the government to *willingly accept* higher public deficits over an extended period of time. It is clear from the analysis above that the German government may well have to accept deficits of significantly more than 5 per cent of GDP for several years, if the officially projected GDP growth rates and current account rebalancing are to be achieved within EMU. Although such a policy would currently be considered a breach of the “debt break”, the deficit would still appear quite modest by international standards.<sup>7</sup>

## 8. Concluding discussion

In this paper, our aim was to render explicit and to put into context the assumptions underlying the Stability and Convergence Programmes (SCPs) of the EMU member states for 2010-

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<sup>6</sup> This would imply that the private financial balance in the deficit countries will be as low as 1 or 0 per cent of GDP, if the government deficit is reduced to 3 per cent.

<sup>7</sup> In fact, from the perspective of global imbalances, it seems rather irritating that Germany as one of the world's largest surplus countries wants to reduce the federal financial balance to approximately zero per cent of GDP by 2016, whereas the U.S. as the world's largest deficit country is projecting a deficit of more than 5 per cent for 2015, according to the Office of Management and Budget. This is all the more surprising as Germany is the only country (apart from Japan), for which the European Commission provides data, where real total government expenditure shrank (!) during 1998-2008 (the EU-15 average real growth rate of total public expenditure was 1.8 per cent per year).

2013. We have shown that the rather optimistic assumptions about GDP growth and fiscal consolidation rely on a drastic deterioration of private financial balances in the deficit countries, strong global demand allowing the euro area to run a current account surplus vis-à-vis the rest of the world, and the entrenchment of current account imbalances within EMU. Rebalancing current accounts at acceptable growth rates clearly requires stronger domestic demand in the surplus countries. Taking the case of EMU's largest economy, Germany, as an illustration, we have argued that it would, in historical perspective, be very risky to rely on the expectation of a private sector demand boom. Hence, the only way to achieve the GDP growth rates projected in the SCPs (and, ideally, current account rebalancing) would be for the governments of surplus countries to run higher deficits over the next few years.

The approach chosen to argue the point is in a way almost embarrassingly simple. We hardly say anything about the behavioural mechanisms underlying desired changes in financial balances. To what extent do macroeconomic policies, unit labour cost differentials, demographic factors, productivity growth differentials, and so on, play a role in determining actual financial balances? And how do we know whether a particular financial balance is "sustainable" in one country and not in the other? It would be beyond the scope of this article to address these questions. Instead, we simply take it for granted that 1) the Stability and Growth Pact deems government deficits above 3 per cent "unsustainable" for EMU member states, 2) current account imbalances within EMU have been and still are "too large", and 3) reduced unemployment and high economic growth is "desirable" for the years to come. It should have become clear that, under current circumstances, the simultaneous realisation of these three objectives is like squaring a circle.

It should be noted that our counterfactual exercises involve several more or less arbitrary assumptions, and we are more concerned with qualitative conclusions rather than with putting precise numbers on them. For instance, we do not say anything about whether (or under which conditions) it is realistic to assume that EMU countries with current account deficits would benefit from a reduction in the current account surpluses of Germany and other surplus countries as implied by net exports and hence GDP. These questions would clearly deserve closer attention but would require one to make stronger assumptions than we deemed necessary in this paper.



Despite these qualifications, our simple calculations seem to strongly suggest that EMU governments, particularly in countries with high current account surpluses and low foreign indebtedness, should be prepared in the years to come to “desire” substantially higher government deficits than projected in the SCPs. If they do not – eyeing net exports to other euro area countries – it would seem rather hypocritical and irresponsible to criticise the high foreign debt and lack of “fiscal responsibility” of those countries with current account deficits. In fact, sustained government deficits in the surplus countries may turn out to be the only way to effectively “rescue” the European Monetary Union.

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## Appendix: Calculation of growth contributions (figure 9)

As before, we define the three financial balances as

$$(A1) \quad \text{PFB} = \text{Private financial balance} = S - I,$$

$$(A2) \quad \text{GFB} = \text{Government financial balance} = T - G - \text{NTR},$$

$$(A3) \quad \text{FFB} = \text{Financial balance of the foreign sector} = M - X - \text{NIA}.$$

where

S = Private saving,

I = Private investment,

T = Tax receipts including social security contributions,

G = Final government expenditures in final goods,

NTR = Net transfers from the government to the private and foreign sectors (interest payments on public debt, social security benefits and subsidies, foreign aid, etc.),

NIA = Net income received from abroad (including government and private transfers).

We want to calculate the growth contributions of  $(C + I)$ ,  $G$ , and  $(X - M)$  between  $t$  and  $t + i$ .

Because of  $\text{GDP} = C + I + G + (X - M)$ ,

the growth contributions are given by

$$(A4) \quad \begin{aligned} & (\Delta \text{GDP}_{t+i}) / \text{GDP}_t \\ &= (\Delta C_{t+i}) / \text{GDP}_t + (\Delta I_{t+i}) / \text{GDP}_t + \Delta G_{t+i} / \text{GDP}_t + [\Delta(X - M)_{t+i}] / \text{GDP}_t. \end{aligned}$$

We know  $\text{PFB}_t$ ,  $\text{GFB}_t$ ,  $\text{FFB}_t$ ,  $\text{GDP}_t$ ,  $C_t$ ,  $I_t$ ,  $G_t$ ,  $(X - M)_t$  (variables observed for  $t = 2009$ ) and we make assumptions about  $\text{PFB}_{t+i}$ ,  $\text{GFB}_{t+i}$ ,  $\text{FFB}_{t+i}$ ,  $\text{GDP}_{t+i}$  (for  $i = 1, 2, 3, 4$ ), which are either based on the German SCP, or implied by our assumptions in table 5. Of course, we only have to calculate the growth contributions of  $G$  and  $(X - M)$  from (A2) and (A3), and we will then also know the joint nominal growth contribution of  $(C + I)$  via (A4).

From (A3) it follows that

$$(A5) \quad \begin{aligned} & \Delta \text{FFB}_{t+i} / \text{GDP}_t \\ &= \Delta(M - X)_{t+i} / \text{GDP}_t - \Delta \text{NIA}_{t+i} / \text{GDP}_t \end{aligned}$$

It seems reasonable to assume that<sup>8</sup>

$$(A6) \quad [\text{FFB} - (M - X)] / (M - X) = \gamma = \text{const.}$$

It would then follow that

$$(A7) \quad \Delta(X - M)_{t+i} / \text{GDP}_t = -1 / (1 + \gamma) * (\Delta \text{FFB}_{t+i} / \text{GDP}_t)$$

---

<sup>8</sup> In Germany, the current account balance and net exports have closely tracked each other over the past years.

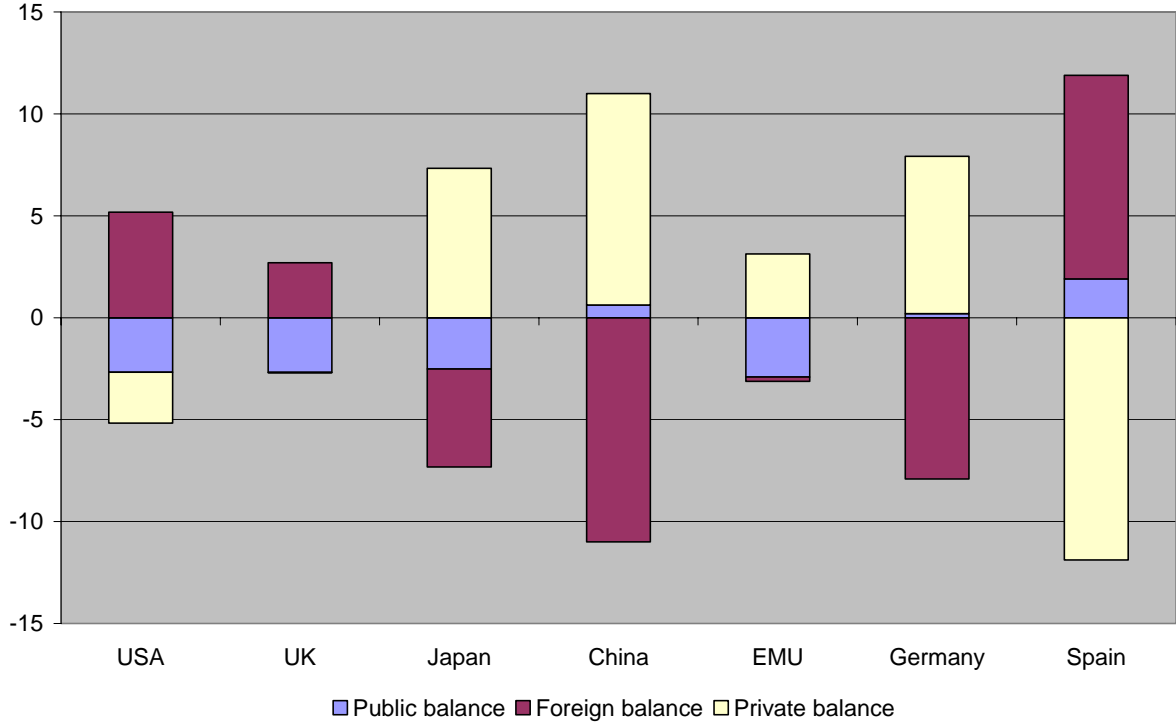
In figure 9 of the main text, we assume that the foreign financial balance is reduced in four equal steps from 2010 to 2013.

Analogously, from (A2) it follows that

$$(A8) \quad \begin{aligned} \Delta GFB_{t+i}/GDP_t \\ = \Delta T_{t+i}/GDP_t - \Delta G_{t+i}/GDP_t - \Delta NTR_{t+i}/GDP_t. \end{aligned}$$

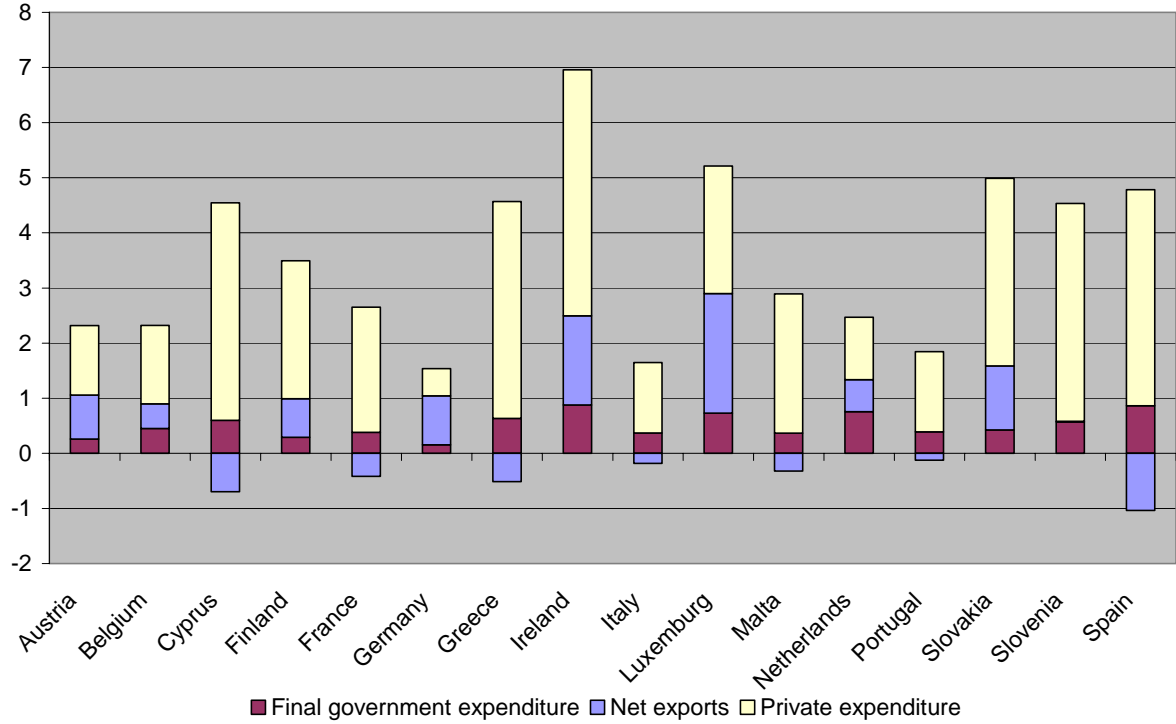
Based on assumptions about changes in T and NTR, we can calculate  $\Delta G_{t+i}/GDP_t$ . In figure 9 of the main text, our assumptions are calibrated to ensure that the growth contributions of G correspond to the projections of the German SCP. We further assume that the price deflator increases at the same rate for all GDP components to calculate the real growth contributions for all sectors.

**Figure 1:** Financial balances in selected countries, 2007, in per cent of GDP



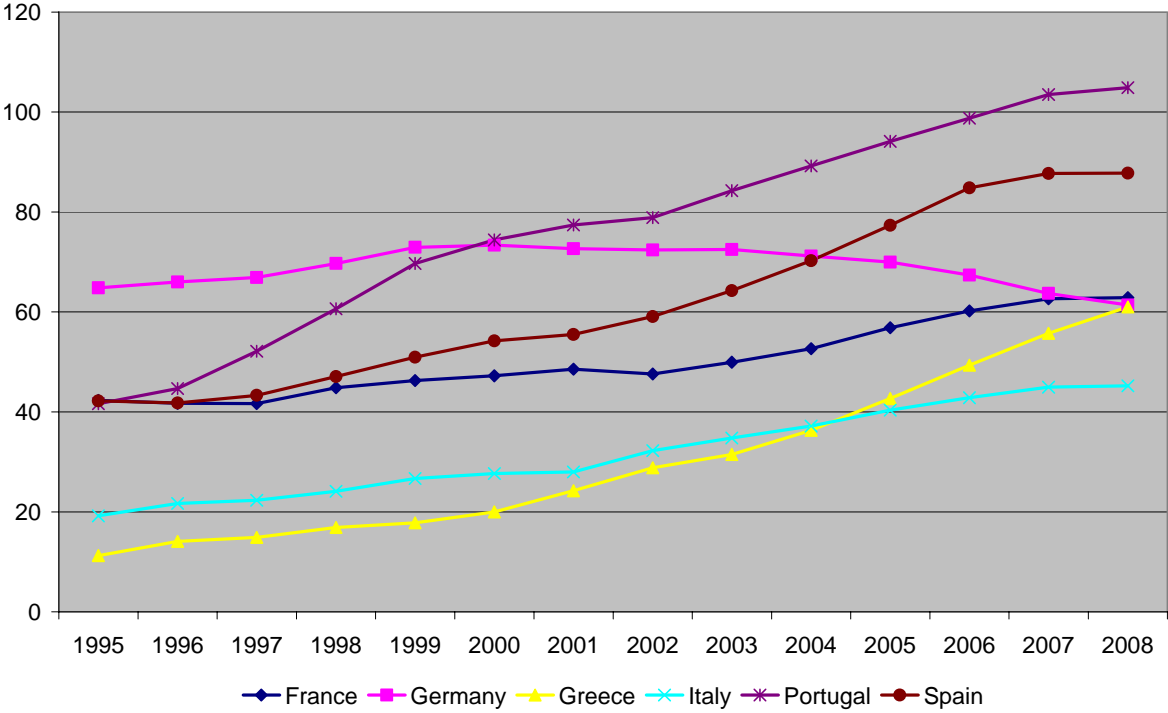
Source: AMECO, IMF, authors' calculations.

**Figure 2:** Real growth contributions, euro area countries, 1999-2007 average, in percentage points



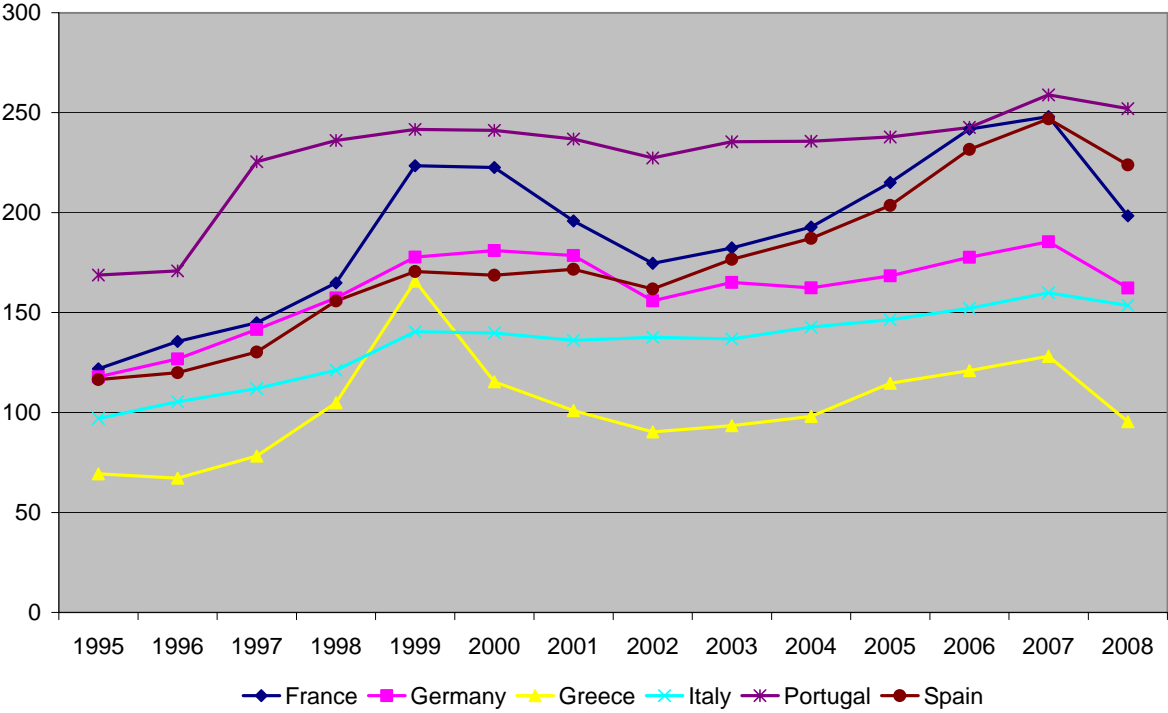
Source: AMECO, authors' calculations.

**Figure 3:** Private household debt relative to GDP, selected countries, 1995-2008, in per cent



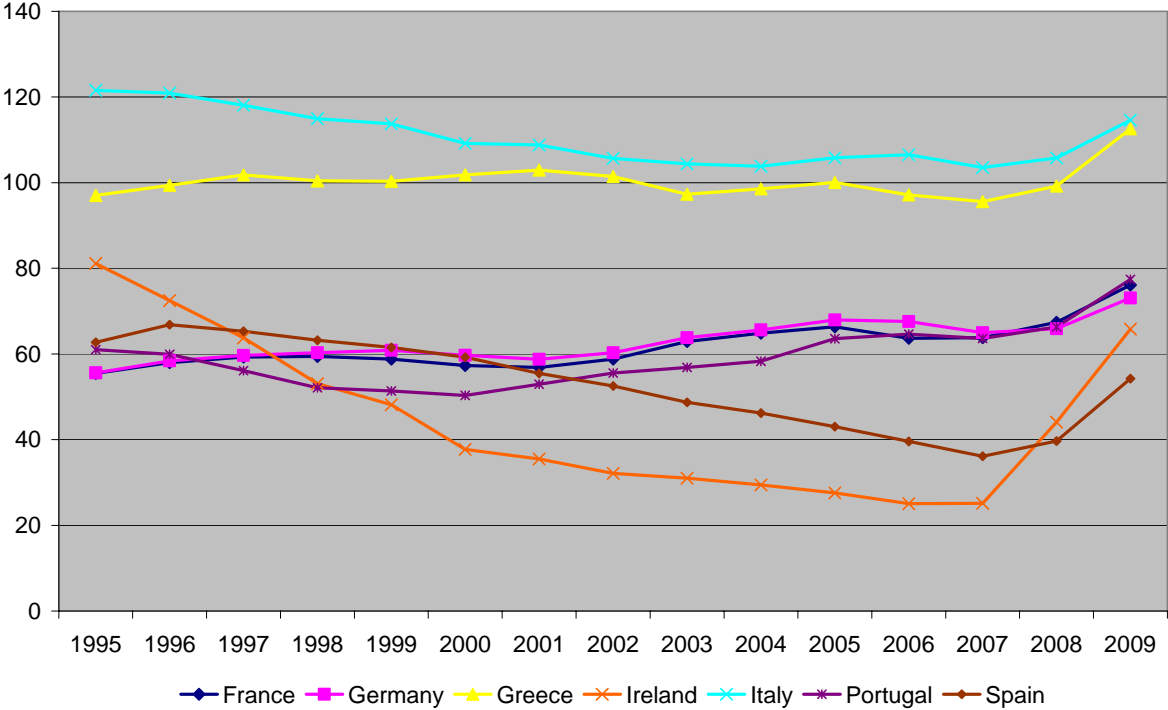
**Source:** AMECO, Ecwin, authors' calculations.

**Figure 4:** Liabilities of non-financial corporations relative to GDP, selected countries, 1995-2008, in per cent



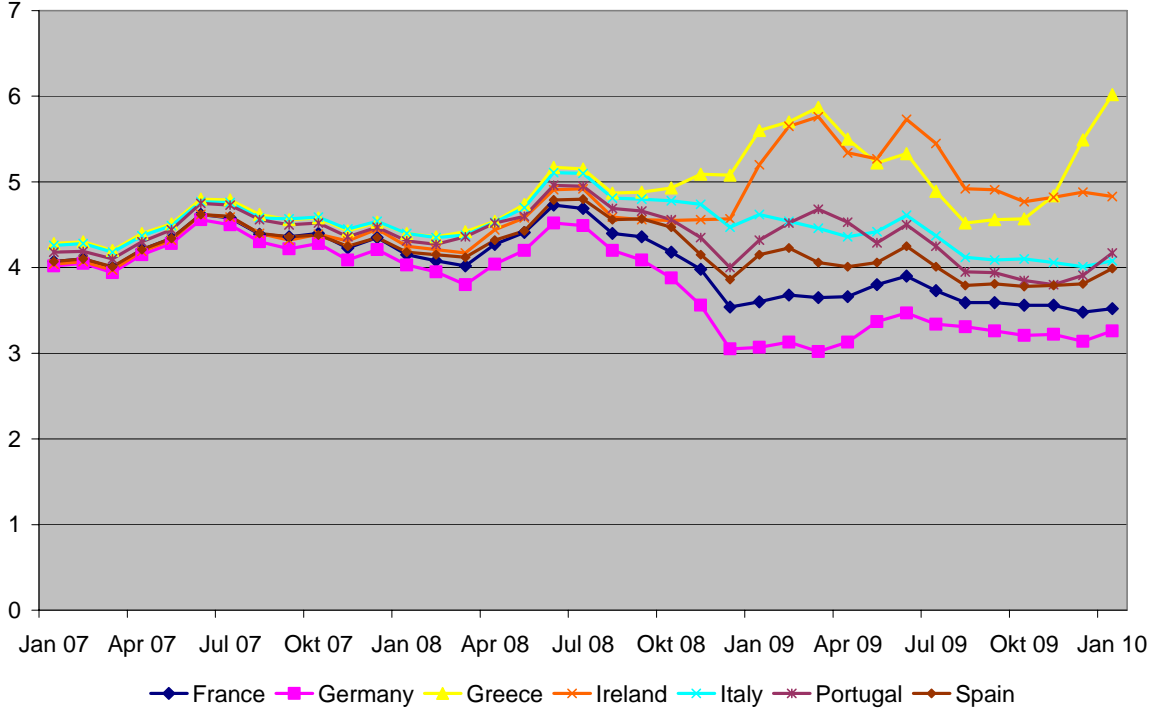
**Source:** AMECO, Ecwin, authors' calculations.

**Figure 5:** General government consolidated debt relative to GDP, selected countries, 1995-2009, in per cent



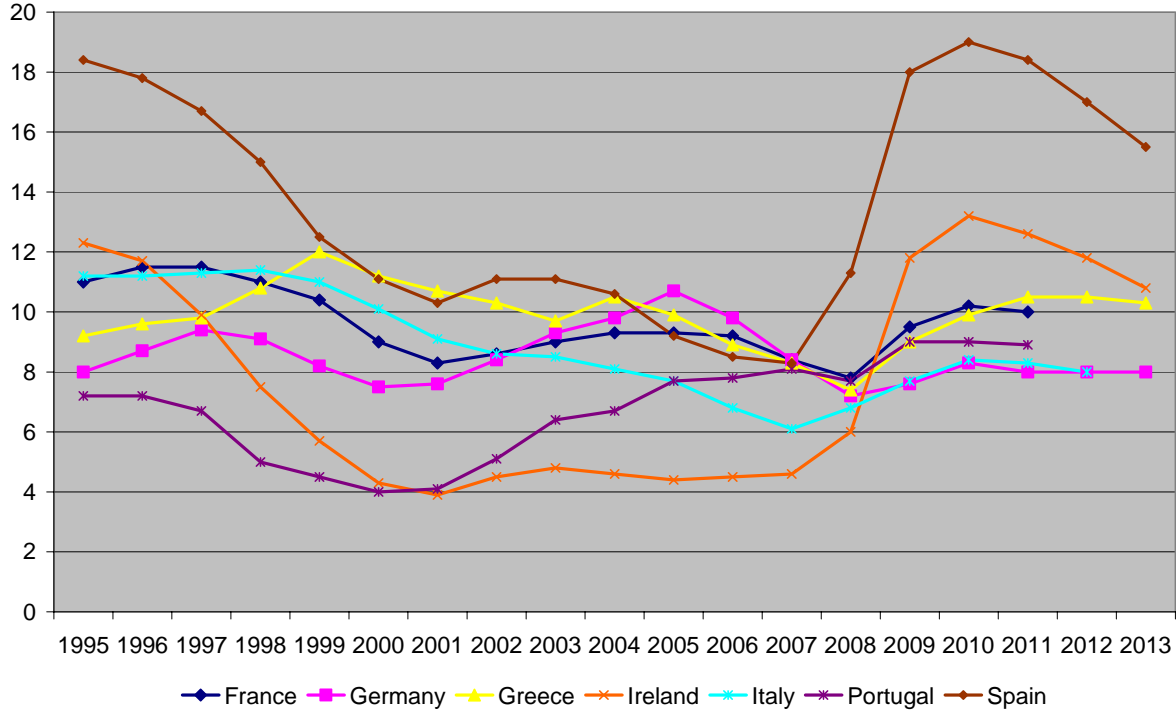
**Source:** AMECO, authors' calculations.

**Figure 6:** 10-year government bond yields, selected countries, January 2007-February 2010



**Source:** ECB, authors' calculations.

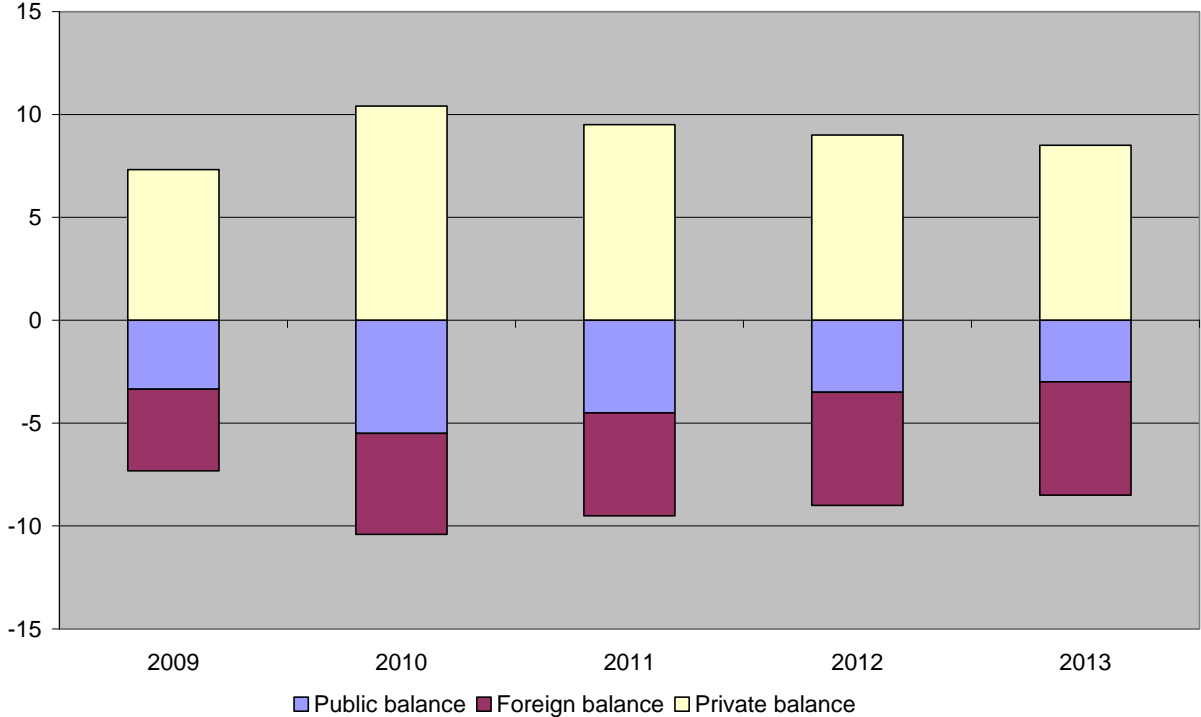
**Figure 7:** Unemployment rate, selected countries, 1999-2013



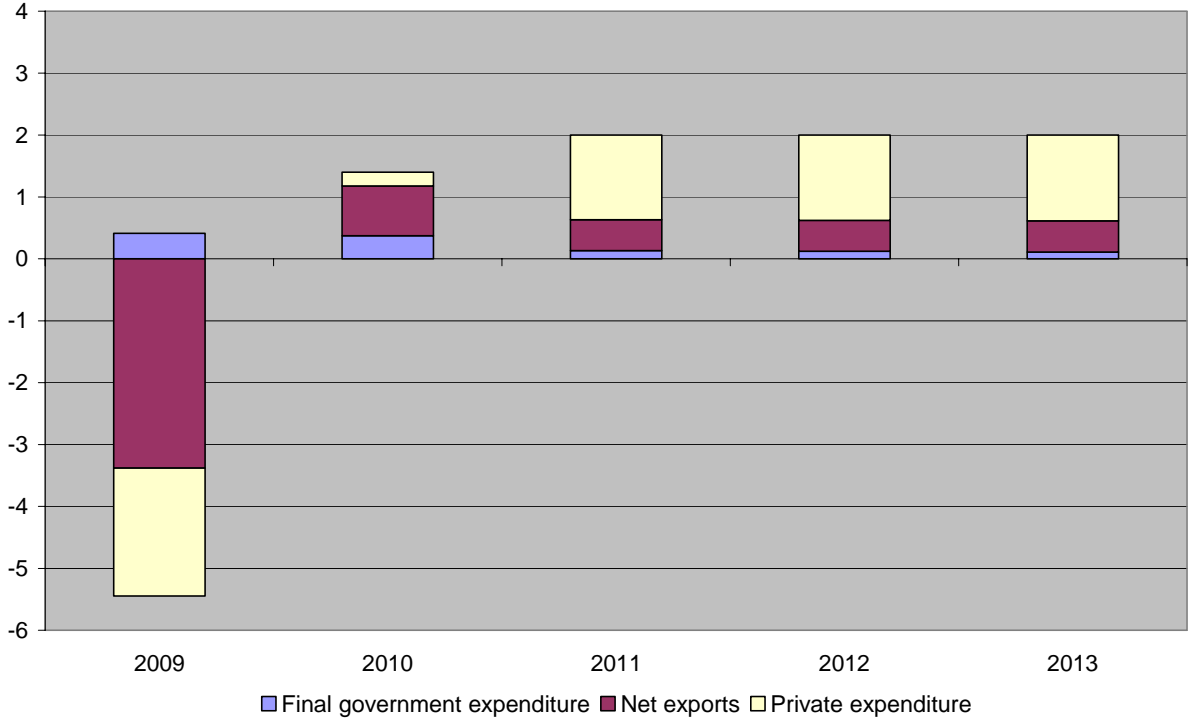
**Source:** AMECO, Stability and Convergence Programmes 2010, authors' calculations. The projections for 2010-2013 are based on AMECO estimates for France and Portugal and taken from the Stability and Convergence Programmes for the other countries.

**Figure 8:** Pattern of GDP growth in Germany, 2009-2013, according to the German Stability and Convergence Programme

**a) Financial balances, in per cent of GDP**



**b) Real growth contributions, in percentage points**

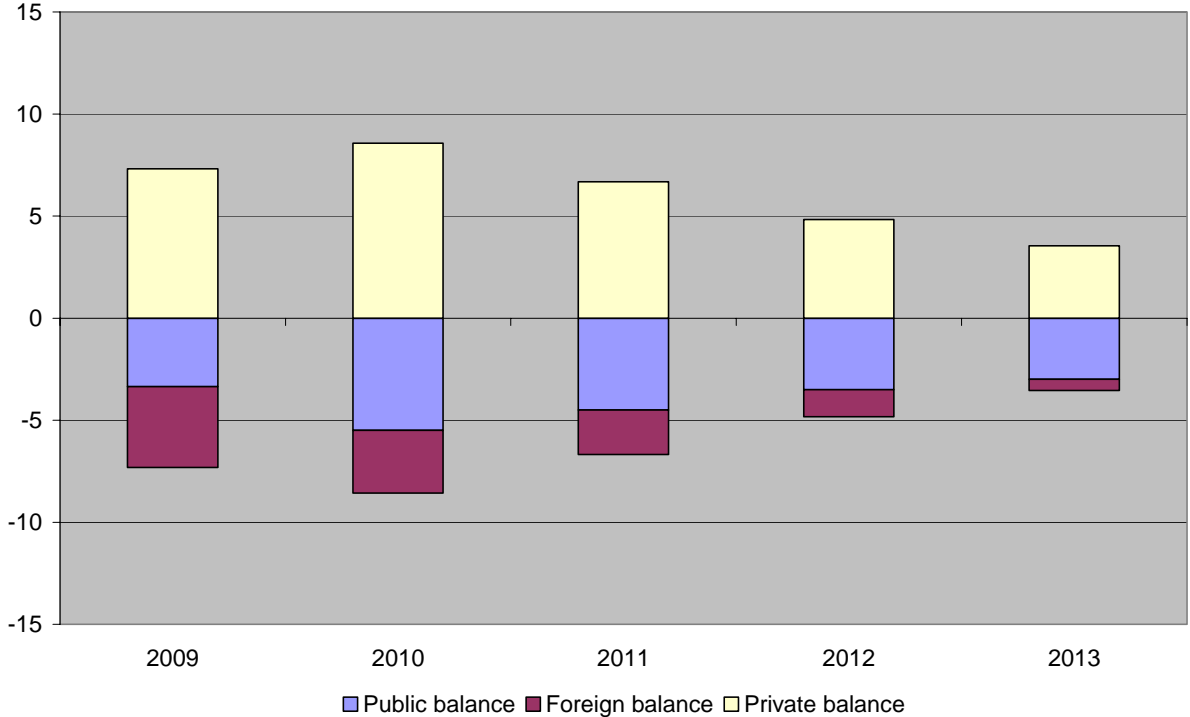


**Source:** German Stability and Convergence Programme 2010 and authors' calculations.

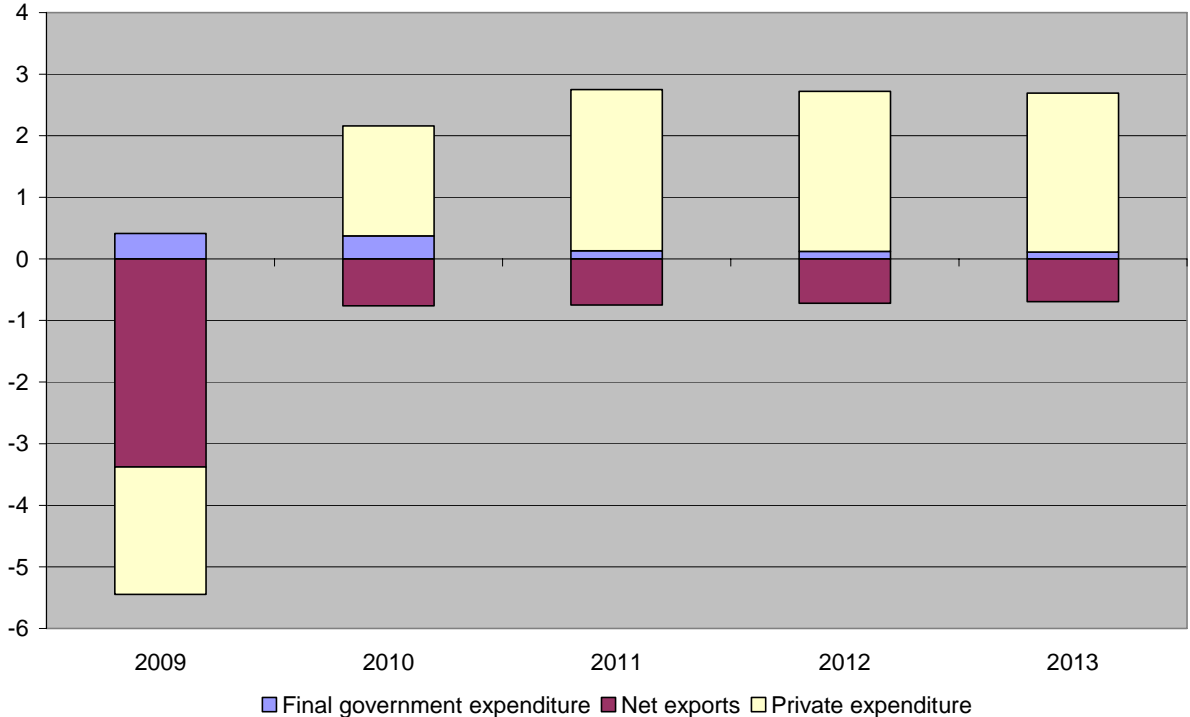


**Figure 9:** Pattern of GDP growth in Germany, 2009-2013, given more significant rebalancing within the euro area (based on the SCP's assumptions about public deficits and growth)

**a) Financial balances, in per cent of GDP**



**b) Real growth contributions, in percentage points**



**Source:** Table 5 and Appendix; authors' calculations.

**Table 1:** Financial balances, euro area countries, 2007

	In per cent of GDP			In billions of euro			In per cent of EMU GDP			GDP in billions of euro	
	Public	Foreign	Private	Public	Foreign	Private	Public	Foreign	Private		
Austria	-0.55	-3.36	3.91	-1.50	-9.09	10.59	-0.02	-0.10	0.12	270.78	Austria
Belgium	-0.20	-3.82	4.02	-0.66	-12.79	13.46	-0.01	-0.01	0.02	334.95	Belgium
Cyprus	3.46	12.01	-15.47	0.54	1.87	-2.41	0.01	0.02	-0.03	15.60	Cyprus
Finland	5.23	-4.04	-1.20	9.41	-7.25	-2.15	0.10	-0.08	-0.02	179.66	Finland
France	-2.71	2.27	0.44	-51.32	42.99	8.33	-0.57	0.48	0.09	1894.65	France
Germany	0.20	-7.91	7.71	4.88	-192.13	187.25	0.05	-2.13	2.08	2428.20	Germany
Greece	-3.66	14.73	-11.07	-8.29	33.36	-25.07	-0.09	0.37	-0.28	226.44	Greece
Ireland	0.25	5.34	-5.59	0.47	10.12	-10.60	0.01	0.11	-0.12	189.75	Ireland
Italy	-1.50	1.80	-0.29	-23.23	27.75	-4.52	-2.59	0.31	2.28	1544.92	Italy
Luxemburg	3.68	-9.71	6.03	1.38	-3.64	2.26	0.02	-0.04	0.03	37.46	Luxemburg
Malta	-2.18	6.96	-4.78	-0.12	0.38	-0.26	0.00	0.00	0.00	5.45	Malta
Netherlands	0.19	-8.54	8.35	1.10	-48.55	47.46	0.01	-0.54	0.53	568.66	Netherlands
Portugal	-2.59	9.79	-7.20	-4.22	15.95	-11.74	-0.05	0.18	-0.13	163.05	Portugal
Slovakia	-1.66	4.54	-2.88	-1.02	2.79	-1.77	-0.01	0.03	-0.02	61.50	Slovakia
Slovenia	0.02	4.55	-4.57	0.01	1.57	-1.58	0.00	0.02	-0.02	34.57	Slovenia
Spain	1.91	9.99	-11.89	20.07	105.12	-125.19	0.22	1.17	-1.39	1052.73	Spain
Average/Total	-0.01	2.16	-2.16	-52.50	-31.55	84.05	-2.91	-0.22	3.13	9008.37	Average/Total

**Note:** Sometimes the three balances do not sum to zero due to rounding.

**Source:** AMECO, authors' calculations.

**Table 2:** Financial balances, euro area countries, 2009

	In per cent of GDP			In billions of euro			In per cent of EMU GDP			GDP in billions of Euro	
	Public	Foreign	Private	Public	Foreign	Private	Public	Foreign	Private		
Austria	-4.34	-1.42	5.76	-11.96	-3.91	15.88	-0.13	-0.04	0.18	275.54	Austria
Belgium	-5.89	-0.61	6.50	-19.97	-2.08	22.05	-0.22	-0.02	0.24	339.06	Belgium
Cyprus	-3.50	11.64	-8.13	-0.60	2.01	-1.40	-0.01	0.02	-0.02	17.25	Cyprus
Finland	-2.80	-1.06	3.86	-4.92	-1.87	6.79	0.02	-0.02	0.00	175.76	Finland
France	-8.25	2.26	5.99	-160.43	44.01	116.41	-1.78	0.49	1.29	1943.44	France
Germany	-3.36	-3.96	7.32	-80.26	-94.84	175.09	-0.89	-1.05	1.94	2392.05	Germany
Greece	-12.66	8.81	3.85	-30.44	21.18	9.26	-0.34	0.24	0.10	240.43	Greece
Ireland	-12.48	3.14	9.35	-20.50	5.15	15.35	-0.23	0.06	0.17	164.21	Ireland
Italy	-5.27	2.42	2.84	-80.82	37.19	43.63	-0.90	0.41	0.48	1533.80	Italy
Luxemburg	-2.20	-9.39	11.58	-0.82	-3.52	4.35	-0.01	-0.04	0.05	37.53	Luxemburg
Malta	-4.52	3.23	1.29	-0.26	0.18	0.07	0.00	0.00	0.00	5.67	Malta
Netherlands	-4.67	-3.12	7.79	-26.84	-17.91	44.75	-0.30	-0.20	0.50	574.83	Netherlands
Portugal	-7.95	10.21	-2.26	-12.91	16.57	-3.66	-0.14	0.18	-0.04	162.34	Portugal
Slovakia	-6.26	5.81	0.45	-4.15	3.85	0.30	-0.05	0.04	0.00	66.27	Slovakia
Slovenia	-6.34	0.76	5.57	-2.25	0.27	1.98	-0.02	0.00	0.02	35.48	Slovenia
Spain	-11.23	5.36	5.88	-117.83	56.19	61.64	-1.31	0.62	0.68	1049.05	Spain
Average/Total	-6.36	2.13	4.23	-574.97	62.49	512.48	-6.30	0.69	5.61	9012.68	Average/Total

**Note:** Sometimes the three balances do not sum to zero due to rounding.

**Source:** AMECO, authors' calculations.

**Table 3:** Projections of the Stability and Convergence Programmes, 2010-2013**a)** Projected public and foreign financial balances, in per cent of GDP

	Public financial balance				Foreign financial balance			
	2010	2011	2012	2013	2010	2011	2012	2013
Austria	-4.7	-4	-3.3	-2.7	-2.4	-2.7	-2.8	-2.9
Belgium	-4.8	-4.1	-3	-3				
Cyprus								
Finland	-3.6	-3	-2.3	-1.9	-1.2	-1.5	-1.8	-2
France	-8.2	-6	-4.6	-3	2.8	2.8	2.7	2.7
Germany	-5.5	-4.5	-3.5	-3	-4.9	-5	-5.5	-5.5
Greece	-8.7	-5.6	-2.8	-2	6.6	5.9	4.9	4
Ireland	-11.6	-10	-7.2	-4.9	0.6	1.2	1.6	1.6
Italy	-5	-3.9	-2.7	-2.7	1.6	1.3	1.3	
Luxemburg	-3.9	-3	-2.1	-1.1				
Malta	-3.9	-2.9	-2.8		3.6	2.2	1.4	
Netherlands	-6.1	-5	-4.5	-3	-5.75	-6.25	-6.25	
Portugal								
Slovakia	-5.5	-4.2	-3	-3	3.2	2.7	1.9	
Slovenia	-5.7	-4.2	-3.1	-1.6	0.2	-0.1	-0.6	-0.3
Spain	-9.8	-7.5	-5.3	-3	4.2	3.8	3.6	3.5

b) Projected GDP growth, 2010-2013, in percentage points\*

	Real growth contribution of domestic demand				Real growth contribution of external balance				Nominal GDP growth			
	2010	2011	2012	2013	2010	2011	2012	2013	2010	2011	2012	2013
Austria	0.7	0.9	1.2	1.4	0.8	0.6	0.7	0.5	2.1	2.9	3.4	3.6
Belgium	1.5	1.5	2		0	0.2	0.2		2.4	3.6	4.1	
Cyprus												
Finland	0.1	1.8	2.6	2.3	0.5	0.5	0.9	0.7	1.9	4	5.7	5.2
France	1.4	2.6	2.5	2.4	0	-0.1	0	0	2.5	4	4.3	4.3
Germany	0.6	1.5	1.5	1.5	0.8	0.5	0.5	0.5	2	3	3	3
Greece	-1.63	1.19	1.25	1.8	1.32	0.31	0.65	0.71	1.1	3.4	3.7	4.3
Ireland	-4	2	2.7	2.7	2.4	1.3	1.7	1.5	-2.23	5.58	6.68	6.47
Italy	0.9	1.7	1.9		0.1	0.2	0		2.6	3.8	3.9	
Luxemburg	1.7	2.3	-0.5	-0.3	0.8	0.7	3.3	3.2	3.9	5.4	4.3	4.4
Malta	1.9	2	2.2		-0.8	0.3	0.7		3.5	5	5	
Netherlands	0.25	1.25	1.25		1.25	0.75	0.75		1.5	3	3	
Portugal												
Slovakia	2	3	3.9		-0.1	1.1	1.5		6	7.4	9	9
Slovenia	-0.3	1.3	3.4	2.8	1.4	1.2	0.3	0.7	1.4	4.6	6	5.7
Spain	-1.4	1.4	2.6	3	1.1	0.4	0.3	0.1	0.2	3.3	4.9	5.2

\*Real GDP growth is the sum of the growth contributions of the domestic demand and the external sector balance.

**Source:** Stability and Convergence Programmes 2010.

**Table 4:** Financial balances, euro area countries, 2013, according to the Stability and Convergence Programmes

	In per cent of GDP			In billions of euro			In per cent of EMU GDP			GDP in billions of euro	
	Public	Foreign	Private	Public	Foreign	Private	Public	Foreign	Private		
Austria	-2.70	-2.90	5.60	-8.37	-8.99	17.37	-0.08	-0.09	0.17	310.10	Austria
Belgium	-3.00	-2.00	5.00	-11.69	-7.80	19.49	-0.11	-0.08	0.19	389.79	Belgium
Cyprus	-3.00	4.00	-1.00	-0.59	0.78	-0.20	-0.01	0.01	0.00	19.51	Cyprus
Finland	-1.90	-2.00	3.90	-3.94	-4.14	8.08	-0.04	-0.04	0.08	207.12	Finland
France	-3.00	2.70	0.30	-67.61	60.85	6.76	-0.66	0.59	0.07	2253.70	France
Germany	-3.00	-5.50	8.50	-79.98	-146.64	226.62	-0.78	-1.43	2.20	2666.13	Germany
Greece	-2.00	4.00	-2.00	-5.44	10.87	-5.44	-0.05	0.11	-0.05	271.84	Greece
Ireland	-4.90	1.60	3.30	-9.43	3.08	6.35	-0.09	0.03	0.06	192.53	Ireland
Italy	-2.70	1.30	1.40	-47.61	22.92	24.69	-0.46	0.22	0.24	1763.37	Italy
Luxemburg	-1.10	-7.00	8.10	-0.49	-3.13	3.63	0.00	-0.03	0.04	44.75	Luxemburg
Malta	-2.80	1.40	1.40	-0.19	0.10	0.10	0.00	0.00	0.00	6.79	Malta
Netherlands	-3.00	-6.25	9.25	-19.13	-39.85	58.97	-0.19	-0.39	0.57	637.55	Netherlands
Portugal	-3.00	3.50	-0.50	-5.56	6.49	-0.93	-0.05	0.06	-0.01	185.43	Portugal
Slovakia	-3.00	1.90	1.10	-2.69	1.70	0.99	-0.03	0.02	0.01	89.63	Slovakia
Slovenia	-1.60	-0.30	1.90	-0.67	-0.13	0.80	-0.01	0.00	0.01	42.16	Slovenia
Spain	-3.00	3.50	-0.50	-35.95	41.94	-5.99	-0.35	0.41	-0.06	1198.27	Spain
Average/Total	-2.73	-0.13	2.86	-299.35	-61.94	361.29	-2.91	-0.60	3.51	10278.68	Average/Total

**Source/Note:** Stability and Convergence Programmes, authors' calculations. When projections end in 2012, we assume that the respective GDP growth rates and financial balances remain unchanged in 2013. We assume that the government deficit in those countries, which have not yet submitted their SCPs (Cyprus and Portugal), will be 3 per cent in 2013. We also assume, somewhat arbitrarily, that nominal GDP growth in Cyprus is 1.1, 3.4, 3.7 and 4.3 per cent in 2010-2013, and 0.2, 3.3, 4.9, and 5.2 per cent in Portugal. Sometimes the three balances do not sum to zero due to rounding.

**Table 5:** Financial balances, euro area countries, 2013, given more significant rebalancing within the euro area

	In per cent of GDP			In billions of euro			In per cent of EMU GDP			GDP in billions of euro	
	Public	Foreign	Private	Public	Foreign	Private	Public	Foreign	Private		
Austria	-2.70	-0.19	2.89	-8.37	-0.60	8.97	-0.08	-0.01	0.09	310.10	Austria
Belgium	-3.00	-0.08	3.08	-11.69	-0.32	12.01	-0.11	0.00	0.12	389.79	Belgium
Cyprus	-3.00	1.50	1.50	-0.59	0.29	0.29	-0.01	0.00	0.00	19.51	Cyprus
Finland	-1.90	-0.14	2.04	-3.94	-0.29	4.22	-0.04	0.00	0.04	207.12	Finland
France	-3.00	1.50	1.50	-67.61	33.81	33.81	-0.66	0.33	0.33	2253.70	France
Germany	-3.00	-0.55	3.55	-79.98	-14.58	94.56	-0.78	-0.14	0.92	2666.13	Germany
Greece	-2.00	1.50	0.50	-5.44	4.08	1.36	-0.05	0.04	0.01	271.84	Greece
Ireland	-4.90	1.50	3.40	-9.43	2.89	6.55	-0.09	0.03	0.06	192.53	Ireland
Italy	-2.70	1.50	1.20	-47.61	26.45	21.16	-0.46	0.26	0.21	1763.37	Italy
Luxemburg	-1.10	-1.21	2.31	-0.49	-0.54	1.03	0.00	-0.01	0.01	44.75	Luxemburg
Malta	-2.80	1.50	1.30	-0.19	0.10	0.09	0.00	0.00	0.00	6.79	Malta
Netherlands	-3.00	-0.43	3.43	-19.13	-2.75	21.88	-0.19	-0.03	0.21	637.55	Netherlands
Portugal	-3.00	1.50	1.50	-5.56	2.78	2.78	-0.05	0.03	0.03	185.43	Portugal
Slovakia	-3.00	1.50	1.50	-2.69	1.34	1.34	-0.03	0.01	0.01	89.63	Slovakia
Slovenia	-1.60	1.50	0.10	-0.67	0.63	0.04	-0.01	0.01	0.00	42.16	Slovenia
Spain	-3.00	1.50	1.50	-35.95	17.97	17.97	-0.35	0.17	0.17	1198.27	Spain
Average/Total	-2.73	0.77	1.96	-299.35	71.26	228.08	-2.91	0.69	2.22	10278.68	Average/Total

**Note:** Sometimes the three balances do not sum to zero due to rounding.

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