DEBT, ASSETS AND IMBALANCES IN THE EURO AREA
AN AGGREGATE VIEW

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The recent developments in the euro area have shown how important it is that the various economic sectors pay attention to their financial positions. In the literature, the approach to analyse these positions is often partial, focusing on the government sector or just on the gross debt, as in the case of Reinhart and Rogoff (2010) and Cecchetti *et al.* (2011). This paper conducts an aggregate analysis of the debt positions of the euro area countries, taking account not only of the public debt but also of private sector debt and the financial assets of the various sectors (net debt). On the basis of this analysis, it emerges that euro area countries differ extensively in terms of their total net debt. In a context of hampered financial integration, the euro area might benefit from a reduction of these differences.

Keywords: Euro, financial crisis, Debt, Imbalances, Balance of payments, Net international investment position, Flow-of-funds, Economic governance.

The recent developments in the euro area have shown how important it is that the various economic sectors pay attention to their financial positions and particularly to the sustainability of their debt levels. The attention usually focuses on the government sector. Despite the Maastricht Treaty and the Stability and Growth

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Pact provisions, many euro area governments have not succeeded in reducing their gross debt to a level that can be considered sustainable, *inter alia* in the light of the financial crisis and the rising costs of population ageing.

In response, the euro area authorities have reformed and strengthened economic governance at the European level. Under the impetus of the new Treaty on Stability, Coordination and Governance ("Fiscal Compact") and the "Six Pack", not only public finances will be monitored more closely, but also general macroeconomic imbalances within the so-called macroeconomic imbalance procedure (MIP), in which debt indicators relating to both the public and private sector have an important weight.

In this context, this paper takes an aggregate view at the size of debt and compares the euro area countries' total indebtedness, that is the total of the public sector's debt and that of the other non-financial sectors, namely households and non-financial corporations. Furthermore, aggregate net debt indicators are constructed, in which the financial assets held by the various sectors also are taken into account.

Such an analysis shows that the euro area can be divided in two types of countries, on the one hand "deficit countries", which have a high net debt level, and on the other hand "surplus countries", where the gross debt is largely counterbalanced by the domestic sectors' financial assets and, as a result, the debt level is less problematic. On the basis of this aggregate net debt, also known as the net external assets (or net international investment position) with the sign reversed, the paper illustrates the connection between debt and competitiveness issues. Whereas a partial approach to the debt problem, by focusing on government gross debt only, is currently giving rise to a series of measures in order to reduce the public debt level, this aggregate analysis rather puts the euro area shortcomings down to the balance of payments of the Member States.

This view relates to a recent but growing literature citing other reasons than just public debt as the cause of the euro area crisis, such as Lane and Pels (2011), who point to current account imbalances, or Sinn and Wollmershäuser (2011), who likewise mention the current account differences, but who furthermore draw atten-

tion to a stagnating flow of funding from the "northern" to the "southern" EMU countries. Werner (2011) highlights bank lending to non-productive projects and Pisani-Ferry (2012) focuses on both fiscal and monetary economic policy constraints in the euro area. Finally, De Grauwe (2011) points to poor economic governance that focuses too much on the consolidation of public finances, and calls for more coordination and cooperation between the Member States. The latter point is also raised by Geeroms *et al*. (2011), along with a policy proposal for the issuance of debt instruments in the EMU backed by all Member States. This paper seeks to contribute to this literature by outlining a macroeconomic framework in which, taking indebtedness as a starting point, the link between debt and balance of payments imbalances is shown.

The paper is structured as follows. In Section 1, the various sectors' indebtedness in the euro area countries is compared. However, since debt levels vary greatly according to the definition used, this part begins with an overview of several debt definitions at the macroeconomic level. Section 2 looks at the relevance of these debt concepts for macroeconomic performances and/or financial stability. In Section 3, the link is established between debt and balance of payments problems by using a country's aggregate net debt; this part also divides the euro area into deficit and surplus countries. Section 4 focuses on the recent adjustments of these positions by using the sectors' financial balances, these being the difference between their revenue and expenditure. Within the euro area, a number of relationships can be identified for the development of these financial balances, both between the public and private sector and between the so-called surplus and deficit countries. Based on these findings, policy conclusions are drawn in Section 5. Section 6 concludes.

1. Sectoral debt positions in the euro area countries

1.1. Macroeconomic debt concepts

At the macroeconomic level, the national financial accounts are the best source for calculating the debt ratio of the various sectors, because these accounts present an overview of all financial assets

and liabilities for each institutional sector[2]. However, the debt level is very dependent on the debt definition used. Various debt indicators can be calculated on the basis of the national financial accounts. So, the following concepts can be considered:

— Non-consolidated *versus* consolidated debt: on a consolidated basis, the calculation does not include financial transactions conducted within the same sector (for example lending between non-financial corporations);

— Gross *versus* net debt: financial assets are deducted from gross debt to calculate net debt.

Of course, the debt level also depends on the financial instruments regarded as debts. In line with the definition used by the European Commission (2012) in the context of the macroeconomic imbalance procedure (MIP), this paper defines a sector's gross debt as the funding obtained *via* "loans" (AF.4, in accordance with the financial accounts terminology) and *via* "securities other than shares" (or debt securities) (AF.3)[3].

This definition applies the broadest possible debt concept taking account of the current quality of the underlying data. Narrower definitions are limited to the more accurately measured bank credit (taken from statistics provided by monetary financial institutions), but omit a substantial part of the funding of the sectors, particularly that of non-financial corporations. Conversely, broader definitions also include trade credit, for example, though the estimate is of lesser statistical quality.

As already stated, this paper analyses a country's aggregate debt position, taking account not only of the public debt but also of the debt of the non-financial private sectors, namely households (including non-profit institutions serving households) and non-

2. The national financial accounts (also known as the flow-of-funds accounts) form part of the national accounts and show the financial flows and corresponding stocks of an economy, broken down by institutional sector and financial instrument. Helped by recent improvements in their statistical quality and availability, they form a rich data source for analysing the causes and developments of the financial crisis in the euro area. They are published jointly by the European Central Bank (ECB) (quarterly basis) and the European Commission (annual basis). For a description of their use and applications, see Winkler (2010) and ECB (2011). For the United States, experience with such data goes back to Copeland (1952).

3. In the case of the government sector this definition also includes funding *via* "currency and deposits (AF.2)" and excludes "financial derivatives (AF.34)", following the terms of the Maastricht Treaty. However, these two categories are often negligible in relation to total debt.

financial corporations. The financial sector's debts are disregarded, because including them would lead to double counting; the debt of the financial corporations sector (S.12 in the statistical standards), which consists largely of financial intermediaries, is ultimately held by a domestic or external non-financial sector.

1.1.1. Non-consolidated versus *consolidated debt*

In contrast to the analysis of the public debt, the analysis of the private sector's debt position is less developed. For example, in the case of the private sector there is no accurate reference value such as the Maastricht Treaty's 60 per cent of annual GDP for public (or more precisely general government sector) debt. There is also much less of a consensus on the calculation of the private sector's debt ratio. In the case of the public debt, again in accordance with the Maastricht Treaty, the consolidated gross debt concept is used. In the case of the non-financial private sector there is less unanimity, and different concepts are often used simultaneously, sometimes owing to the absence of data. For instance, the "scoreboard" which the European Commission (2012) uses for its macroeconomic imbalance procedure refers to the non-consolidated gross debt for the private sector, partly because the consolidated debt concept is at this moment not available for each country.

Nonetheless, it is possible to draw up consolidated figures for most EU Member States on the basis of the specifications of the financial accounts, which provide information on the counterpart of each financial transaction. For that purpose, the financial transactions conducted within each resident sector are disregarded.

While non-consolidated data are primarily useful for getting an overview of the sectors' funding structure, consolidated data seem more suitable for assessing a sector's financial soundness. Indeed, lending between corporations—particularly between members of the same group—is generally more stable than bank lending and can be regarded as less risky in that respect. Moreover, it is difficult to make an international comparison of the estimated lending between non-financial corporations, *inter alia* because the classification of some finance companies (for example multinationals' treasury centres) is not always consistent, so that they are sometimes included in the non-financial corporations sector and sometimes not.

The difference between the consolidated and the non-consolidated data relates to a country's financial structure. For most sectors, the difference is generally small; the national financial accounts are actually compiled on the assumption that no financial transactions take place between households, so that—for this sector—the non-consolidated data are equal to the consolidated data, by definition. The biggest differences are usually recorded for non-financial corporations, since, as noted above, these may include certain finance companies which are not part of the financial sector.

1.1.2. Gross debt versus *net debt*

Up to now, our focus has been on gross debt, so that no account is taken of any holdings in the form of financial or non-financial assets, possibly counterbalancing those debts. The focus on gross debt is in many respects strange, certainly since policy makers concentrate on the sustainability of the debt positions, or in other words the associated insolvency risk. Sustainability studies are conducted almost exclusively for public debt, but they could equally be applied to the debt of the private sector. Although sustainability is a very popular and widespread concept among economists to underpin an economic policy that leads to a future economic environment which is stable and sound, there is no consensus on exactly how sustainability should be measured. In most cases "the law of motion of government debt" is used, according to which future changes in the debt ratio can be ascribed to movements in the primary balance, interest rate, growth rate and inflation[4]. However, there is a consensus that a projected exponential increase in the debt ratio can be regarded as unsustainable, and that many macroeconomic variables, including assets, must be taken into account in such a sustainability study. Although the assets are not explicitly mentioned in the law of motion of government debt, various public debt sustainability studies take them implicitly into account, for example by deducting them in advance from gross debt[5], to arrive in fact at a net debt figure.

4. For an overview of various sustainability studies concerning public finances, see Balassone *et al*. (2011).
5. Technically they form part of the so-called "stock-flow adjustments" (European Commission, 2011).

For the government, the debate over whether or not the assets should be taken into account could be somewhat overstated, because the government's assets, particularly its financial assets, are often small (see also Hartwig Lojsch *et al.*, 2011). As such, the difference between gross and net debt may in fact not be very relevant. However, nothing could be further from the truth for the private sector, which normally holds more assets than it has debts. A risk analysis of the private sector's financial position based solely on gross debt may therefore be very misleading, because the assets form a buffer which can—to a varying extent—be used to meet repayments. Nevertheless, certain assets, such as owner-occupied residences, can be less readily used than other more liquid assets, such as savings account balances. This paper will therefore only deduct financial assets from total financial liabilities for the purpose of calculating net debt, which corresponds to net financial liabilities or net financial assets with the sign reversed[6].

Our preference for net debt rather than gross debt is also supported by the "financial accelerator mechanism" (Bernanke and Gertler, 1989), which can be considered as the workhorse of modern macroeconomic models analysing the mutual relationship between financial and real developments. This mechanism assumes an inverse relationship between the external finance premium (the difference between the cost of external and internal funds) and the net wealth of the borrower in a context of asymmetric information. To the extent that net wealth is procyclical (for example owing to rising financial asset prices or profits during a boom phase), the extra interest cost will consequently fall (rise) in a boom (recession), further stimulating (curbing) economic growth. In their seminal study of the impact of sectoral balance sheet positions on macroeconomic activity, Bernanke and Gertler thus also attribute a crucial role to net debt or net wealth.

6. Within the system of national accounts, a distinction is made between net debt and net financial liabilities (*i.e.* liabilities—financial assets), with the latter also including non-debt instruments such as equities. However, for simplicity, this paper treats net debt as being identical with net financial liabilities by calculating net debt as the difference between total liabilities and total financial assets, including equities in both. The transition from gross to net debt in this paper is therefore given by: net debt = gross debt + equity financing - total financial assets including equities.

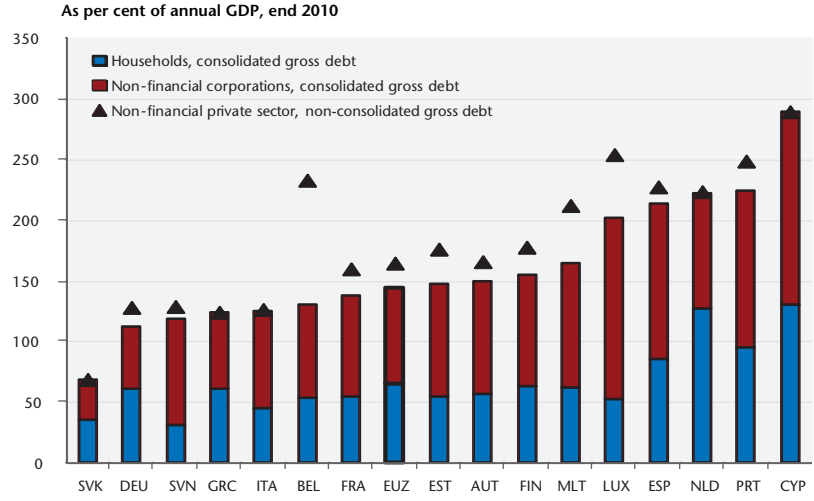
However, net wealth may present an optimistic picture of the financial situation if the asset price valuation is high or uncertain. Moreover, the capacity of the assets to be used as a basis for financing debts in times of crisis may be called into question, certainly in the event of a liquidity crisis or fire sales (Tirole, 2011). In that context, gross debt positions or other leverage indicators may become more important as a risk indicator. However, as already stated, this paper takes only financial assets into account, which in the case of the portfolio of the non-financial private sector are often highly liquid (for example savings accounts), even in the event of a liquidity crisis. As such, the error incurred by taking all financial assets fully into account, as in net debt or net wealth, is undoubtedly smaller than the error made when disregarding these assets, as in the case of gross debt.

1.2. Comparison between euro area countries

A comparison of the sectoral debt positions of the various euro area countries immediately shows that, in order to obtain an accurate assessment of the debt positions, it is necessary to be aware of the sometimes considerable differences between the various debt concepts (Table appendix).

The difference between consolidated and non-consolidated gross debt (Figure 1) may be substantial, in particular in the case of non-financial corporations. Thus, at the end of 2010 the non-consolidated gross debt ratio of non-financial corporations in Belgium stood at 179.7 per cent of GDP, compared to a consolidated figure of 77.5 per cent. Also in Luxembourg the non-consolidated debt is much higher than the consolidated debt. These differences are mainly attributable to lending between non-financial corporations, which is substantial in Belgium and Luxembourg. That may be due to the presence of corporate treasury centres which conduct financial transactions primarily for multinationals; the dividing line between these entities—classified as non-financial corporations—and financial corporations is thin. Their presence is often motivated by tax reasons, and/or the proximity of major financial centres. Their lending, which inflates their assets and liabilities to the same degree, and is in a second step also recorded as a liability of the final borrower, distorts the debt ratio of non-financial corporations.

Figure 1. Consolidated and non-consolidated gross debt of the non-financial private sector



Source: European Commission.

It therefore makes more sense to base an international comparison on the consolidated debt ratio, certainly since the estimation of financial transactions between non-financial corporations is statistically uncertain and may present some methodological differences, as indicated by the fact that lending between non-financial corporations in Slovakia and Greece is zero according to the national financial accounts.

A comparison of the consolidated gross debt ratio of the non-financial private sector (households and non-financial corporations) reveals widely divergent values. Countries such as Slovakia and Greece have a relatively low debt ratio (68.8 per cent and 124.1 per cent of GDP respectively at the end of 2010). The euro area average is 144.2 per cent of GDP. Conversely, in Cyprus, Portugal, the Netherlands, Spain and Luxembourg, the debt ratio exceeds 200 per cent of GDP.

There are also differences in the distribution of this private debt between firms and households. As in the euro area as a whole, the household debt ratio is lower than that of non-financial corporations in most countries. In the Netherlands, Germany and Slovakia, however, household debts exceed those of non-financial corporations.

The household debt ratio also exhibits large differences across countries. In the euro area, the average debt ratio at the end of 2010 was 65.3 per cent of GDP. Households in Slovenia, Slovakia and Italy have a relatively low debt ratio, of less than 50 per cent of GDP. At the other end of the spectrum are the Netherlands, Cyprus and Ireland where the debt ratio exceeds 100 per cent of GDP.

These significant differences can often be linked to institutional and fiscal factors. For instance, the high debt ratio of Dutch households is due partly to a favourable tax regime for first-time home buyers, whereby the interest charges on a mortgage loan are tax deductible for a maximum period of 30 years. Moreover, the Dutch mortgage market, just like that in Ireland, offers the option of home equity withdrawal, making it possible to borrow against an increase in the value of the home due to rising house prices to serve consumption or investment purposes. In addition, in 2010 more than half of the outstanding mortgage loans in the Netherlands were interest-only loans (De Nederlandsche Bank, 2011), which means that the borrower pays only the interest charges during the term of the loan and does not repay the principal until the loan expires. These conditions result in a higher household debt level, which should however be put into perspective. It is important to understand that such a tax climate also alters household behaviour on the assets side. For instance, it is usual for Dutch households to build up assets with a view to redeeming the principal at the end of the loan. Consequently, as a corollary to the high debt ratio in the Netherlands, the level of household assets is also high[7] and should thus be taken into account when assessing the sustainability of the debt position.

An assessment of the debt position of the private sector as a whole on the basis of net rather than gross debt reveals a totally different picture: the Netherlands and Luxembourg top the ranking of the countries with the smallest debt burden. In their case, the private sector's assets far exceed its debts, so that on a net basis there is actually no longer a debt; instead, there are net financial assets. At the end of 2010 these stood at 154.0 per cent and

7. Note that a large part of the financial assets of Dutch households consist of pension fund reserves (around 60% of their total financial assets at the end of 2010), given the capitalization pension system. However, even when those assets are excluded, their financial assets still averaged some 120% of GDP.

106.2 per cent of GDP, respectively, in Luxembourg and the Netherlands. Also in Belgium, Italy, Germany, Malta, France and Austria the private sector's assets exceeded its debts. In the other euro area countries the assets fall short of the outstanding gross debt, so that the private sector in those countries still has debts on a net basis, the highest figures being recorded in Ireland and Estonia (around 110 per cent of GDP at the end of 2010). For the private sector of the euro area as a whole, net financial assets amounted to 43.7 per cent of GDP.

Whereas—in the context of the financial crisis and the debt crisis—the ranking of the countries on the basis of the private sector's gross debt looked somewhat surprising, with Greece and Slovakia among the stronger countries, and the Netherlands and Luxembourg among the countries with the highest gross debt, a ranking based on net debt provides a better indication of the resilience which the various euro area countries have displayed during the crisis.

The same analysis can be applied to the general government sector, although as already stated, the role of the assets here is generally less important. Also the difference between non-consolidated and consolidated gross debt is generally small for the government sector. In most countries, the government sector holds only 10 per cent of its own paper. In Belgium and Austria this fraction is somewhat higher, probably on account of the federal structure of these countries.

Countries with a high public debt are well known. In the euro area, Greece, Italy and Belgium had the highest debt ratio at the end of 2010. The euro area's average government consolidated gross debt ratio stood at 85.3 per cent of GDP. Only five of the 17 Member States (namely Estonia, Luxembourg, Slovenia, Slovakia and Finland) had a debt ratio below the Maastricht criterion of 60 per cent of GDP.

As in the case of the private sector, it is also possible to calculate a net debt ratio for the government sector. Since public financial assets are generally small, a classification of the countries on the basis of net government debt produces a similar outcome to a classification based on gross debt. Once again, Greece, Italy and Belgium have the highest government debt ratio. In contrast to the

situation for the private sector, the public sector only succeeds in recording net financial assets in a small minority of cases[8]; this applies to Estonia, Luxembourg and Finland. In the case of Estonia and Luxembourg, this positive position is primarily attributable to their governments' low gross debt, rather than to the size of their assets. Finland is an exception, with government financial assets amounting to 113.4 per cent of GDP at the end of 2010. However, Finland is a special case, because as a consequence of a national decision in 1993, government assets also include the pension assets built up with private employment pension institutions under the second pillar (OECD, 2010). While this creates a distortion for the net concept between the private and public sector, that is no longer the case if one considers the aggregate net position for the total economy (public and private sector together). This position will be discussed in the next section.

2. Link to economic growth and financial stability

The increased focus of economic policy on debt positions can be primarily attributed to a concern that a high debt level is detrimental to macroeconomic performances such as GDP growth. The events in the euro area have shown that excessive debt may also undermine financial stability, which in turn risks hampering economic growth.

Indeed, leading studies recently have confirmed that a high debt ratio is associated with lower economic growth. Reinhart and Rogoff (2010) demonstrate this negative relationship for public debt on the basis of a dataset covering 20 advanced economies over the period 1946-2009. Cecchetti *et al.* (2011) generalize this conclusion to the debt ratio of the total economy on the basis of a smaller dataset of 18 countries over the period 1980-2006. Both studies assume that the relationship is non-linear, and that the debt ratio only becomes detrimental for economic growth above a specific threshold value. Reinhart and Rogoff (2010) conclude that a public debt ratio of more than 90 per cent of GDP is associated

8. These net financial assets may be only temporary in view of the rising costs of population ageing. The latter costs can be seen as an implicit government liability which is not at present recorded on the government's balance sheet in the national accounts. If these costs were to be included in its liabilities, all governments would probably have net financial liabilities.

with lower GDP growth than if the public debt is smaller[9]. Cecchetti *et al.* (2011) confirm this threshold and furthermore put the threshold for the debt of both households and non-financial corporations separately, also in the region of 85-90 per cent of GDP[10]. However, the results for the private sector, particularly for households, are found to be less significant. Note that also the results of Reinhart and Rogoff (2010) for the public debt are debatable as shown in Nersisyan and Wray (2010).

The importance of these thresholds and the associated conclusions should furthermore be taken with caution in view of the differences between the various debt concepts illustrated in this paper. The threshold rules are formulated in very general terms and may in our view lead to inappropriate policy conclusions. First, both studies concentrate solely on the gross debt ratio. Furthermore, in Reinhart and Rogoff (2010) certain debt concepts are used alternatively. For instance, in their study the public debt ratio of European countries is the consolidated debt ratio, while in the case of the United States it is the non-consolidated debt ratio. At the end of 2009 the consolidated debt ratio in the United States was only 53 per cent of GDP, while the non-consolidated ratio stood at 84 per cent of GDP; this means that, in reality, the United States was much further away from the threshold than Reinhart and Rogoff assumed[11]. Moreover, our analysis showed that the debt ratios for both the public and the private sector differ widely between countries. For some countries, it would thus imply an unrealistic effort to respect a general defined threshold value[12], whereas in the past those countries have not necessarily produced

9. In practice, GDP growth is roughly 1 per cent lower for the median of the group of countries with debts in excess of 90 per cent of GDP, compared to the group of countries with debts of less than 30 per cent of GDP (and 4 per cent for the average of these groups).

10. This study examines the effect on the growth of GDP per capita. A 10 per cent of GDP higher public debt ratio would cut the growth rate of GDP per capita by 0.1 per cent. The effect on this growth rate caused by an excessive private debt ratio would amount to roughly half of that figure.

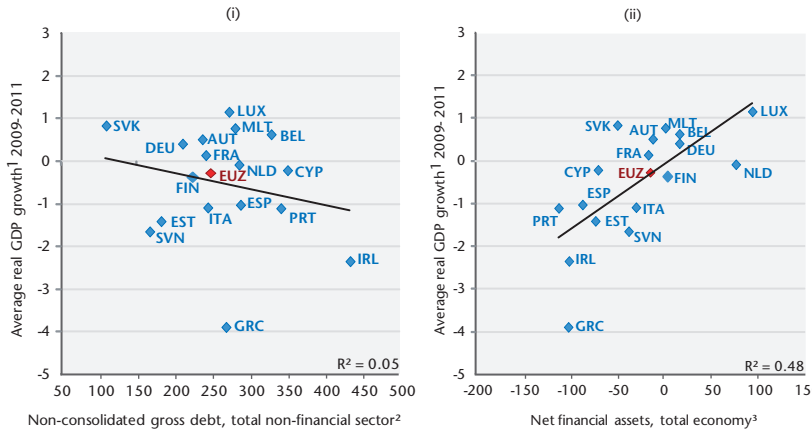
11. Note that Reinhart and Rogoff use central government debt, *i.e.* debt of the federal state, opposed to general government debt used in this paper, which includes apart from the debt of the federal state also the debt of the states and the local level.

12. These threshold values also found their way to economic policy. For example, in its MIP, the European Commission uses a threshold of 160 per cent of GDP for aggregate non-consolidated private debt. However, according to the Commission, this threshold should be seen as a warning signal and not as a target.

the growth performance which, in theory, they should have obtained on the basis of these papers' findings.

To arrive at a more nuanced view, we analyse in this paper the link between the debt level and GDP growth for both the non-consolidated gross debt and net debt ratios[13] of the economy as a whole[14]. A scatter plot linking the average real GDP growth over the period 2009-11 and the level of first the gross debt ratio and second the net financial assets, *i.e.* net debt with the sign reversed (Figure 2), allows the following conclusions to be drawn.

Figure 2. Gross debt (i) and net financial assets (ii) *versus* GDP growth



1. Average annual real GDP growth over the period 2009-11.
2. As per cent of annual GDP, end 2010.
3. Difference between total financial assets and financial liabilities of the domestic sectors, as per cent of GDP, end 2010.
Sources: European Commission, ECB.

For the euro area, there is no significant relationship between a country's gross debt ratio and its real GDP growth over the most recent period (2009-11). For example, the total gross debt ratio of the Greek economy is close to the average, whereas its growth performance is the weakest in the euro area. On the other hand,

13. The results for the consolidated gross debt ratio are not commented on here, but the conclusions are broadly the same as those for the non-consolidated gross debt ratio.
14. Aggregate gross debt at the level of the total economy corresponds to the gross debt of the non-financial sectors. Net debt includes the financial sector, but the latter's contribution to net debt is generally close to zero owing to the definition used (liabilities—financial assets) and the virtual equality between both sides of the balance sheet of the financial sector in the national financial accounts.

Luxembourg's debt ratio is similar to that of Greece, but its growth performance during the crisis was far stronger. The gross debt ratio is therefore not sufficiently discriminating to separate the weak from the strong growth countries over the most recent period in the euro area.

The situation is different for net financial assets (or net debt with the sign reversed). The link between net financial assets and the recent growth performance is remarkably strong and positive. The higher the ratio of net financial assets, the higher was economic growth over the period 2009-11; the lower the net financial assets ratio, the weaker the growth performance was. Again, the conclusion is that net debt is more significant for explaining macroeconomic performances than the gross debt ratio. The policy conclusions which can be drawn from this relationship may be at odds with those of Reinhart and Rogoff (2010) and Cecchetti *et al*. (2011), as argued in the rest of this paper.

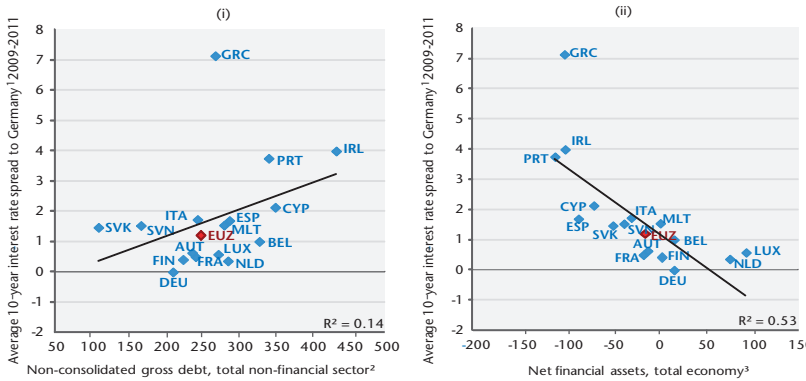
Like these two leading studies, we do not demonstrate any causal relationship between the debt ratio and economic growth, but at most a correlation. It should be noted that there might be a reverse causality, in which lower growth leads to a higher debt ratio (*via* lower government revenues or lower GDP). The same argument can be applied to net debt. Moreover, our analysis is confined to the most recent period. It is not our intention to generalize this relationship, since we believe that the broader economic context may influence it[15].

The same exercise also illustrates the link between the debt positions of the countries and financial stability in the euro area. In the light of the sovereign debt crisis, we measure the financial instability of the countries on the basis of their average interest rate spread against Germany on benchmark government bonds with a maturity of 10 years over the period 2009-11 (Figure 3). Again, there is no clear link with the total gross debt ratio for this variable (Reinhart *et al*. (2012) largely confirm the absence of a clear link between, in their case, the level of gross public debt and the level of real interest rates), whereas the link with net financial assets is highly significant. Consequently, during the sovereign debt crisis,

15. The analysis by Cecchetti *et al*. (2011, see footnote 39) does not produce the same results as Reinhart and Rogoff (2010) regarding the impact on economic growth. They attribute these divergent results to a different sample period, which implies that the conclusions are indeed sensitive to the chosen time period and are difficult to generalize.

net financial assets were a robust indicator of countries with a vulnerable financial position. That finding is all the more powerful, given the general focus on the gross debt ratio, which also prevails among financial market participants. It shows that the financial markets, whether consciously or not, rightly take other factors into account to determine the financial soundness of a country, such as net financial assets.

Figure 3. Gross debt (i) and net financial assets (ii) *versus* 10-year interest rate spread



1. Average monthly 10-year government bond interest rate spread to Germany over the period 2009-11 in per cent. No data available for Estonia.
2. As per cent of annual GDP, end 2010.
3. Difference between total financial assets and financial liabilities of the domestic sectors, as per cent of GDP, end 2010.
Sources: European Commission, ECB.

3. Debt and balance of payments imbalances

As shown in Section 1 and 2, a country's net financial assets are a much more comprehensive debt indicator than gross general government debt, for example, or the gross debt of the private sector. The latter two indicators adopt a very partial approach to the debt issue, considering only one sector of the economy and disregarding the assets possibly offsetting the debts. In contrast, a country's net financial assets combine all sectors and take account of their financial assets as well as their debts. The total net financial assets, which—like the other debt indicators in this paper—are taken from the national financial accounts, correspond in conceptual terms to the net international investment position, compiled

on the basis of balance of payments information[16]. Although the two are conceptually the same, there may be differences between them in practice, owing to different valuation rules for outstanding assets and liabilities.

In addition, net financial assets illustrate the link between debt and competitiveness, as they indicate a country's aggregate net debt, namely its net creditor (+) or debtor (-) position relative to the rest of the world. Leaving aside valuation effects, an improvement in that position is only possible if the country records a surplus on its current account[17]. This illustrates the connection between debt and competitiveness which, at aggregate level, are closely interlinked. Indeed, in the end, the only way for a country to repay its national debt is to generate current account surpluses, which may require an improvement in competitiveness. The competitiveness position is therefore one of the elements which determines the sustainability of the debt position.

On the basis of net financial assets, the differences between the euro area countries are striking (Figure 4). Only a few countries have net financial assets (at the end of 2010 this was the case for Luxembourg, the Netherlands, Belgium, Germany, Finland and Malta). The other countries have net financial liabilities relative to the rest of the world; in Portugal, Greece and Ireland these liabilities exceed their GDP. Ranking the countries according to their net financial position clearly reveals the euro area countries perceived as risky during the crisis (Portugal, Ireland, Italy, Greece and Spain). Except for Italy, these countries are at the bottom of the ranking.

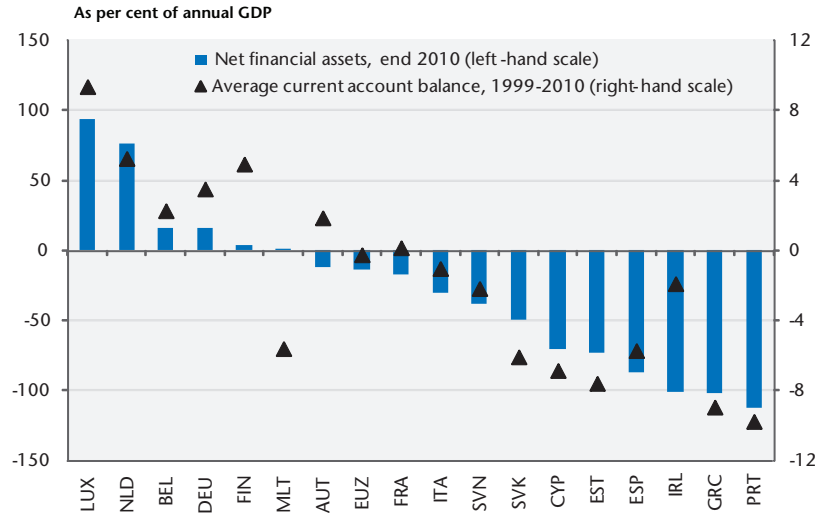
Another striking point is that the euro area as a whole has a fairly balanced external position. At the end of 2010, the net financial liabilities of the euro area came to only 13.9 per cent of a year's GDP. It can therefore be argued that the euro area as a whole, like the countries with net financial assets, is financially sound. These figures also put a different perspective on the debt problem of the

16. We base the analysis on net financial assets from the national financial accounts, and not on the net international investment position, primarily in view of the consistency of net financial assets with the calculated gross debt indicators.

17. To be precise, on the total of the current and capital account. Apart from valuation effects, net financial assets correspond to the cumulative balances on the current and capital accounts. In most cases, however, the capital account balance is negligible compared to the current account balance.

euro area and of certain countries. Rather than a debt problem, the euro area's difficulties can be defined as a deviation between balance of payments positions. Some countries have accumulated considerable debt positions relative to the rest of the world, notably to other euro area members, while other have accumulated assets. In the end, the euro area's difficulties could best be described as reflecting the heterogeneity of the Member States in that respect (as such, while the situation is sustainable for the euro area as a whole, this is not the case at the level of the Member States).

Figure 4. Net financial asset position and current account balance



Sources: European Commission, ECB.

To analyse the dynamics of these net asset positions and their possible correction, it is useful to divide the euro area countries into surplus and deficit countries. Since the size of the net financial assets is determined partly by volatile valuation effects—which are beyond the scope of this paper—we base our criterion for the division into deficit and surplus countries also on the average current account balance of the Member States over the period 1999-2010 (Figure 4). If the latter is positive while the country has a negative net asset position, the country is nevertheless classified among the surplus countries. In the opposite case, if the current account balance is negative while the net asset position is positive, the country is classified among the deficit countries. On the basis of

this criterion, the euro area counts six surplus countries (Luxembourg, the Netherlands, Belgium, Germany, Finland and Austria) and eleven deficit countries (Ireland, Portugal, Greece, Spain, Estonia, Cyprus, Slovenia, Slovakia, Italy, France and Malta)[18]. The classification of Austria and Malta is due to their current account. Note that the classification is by no means fixed, and also depends on the chosen period. In particular, the current account balance of some countries has recorded a trend over the years, which is in contrast to their classification. For instance, since 1999 the current account balance of Belgium and Finland declined considerably, although the balance was still positive at the end of 2010. Conversely, Estonia's current account has improved notably since 1999 and even records a positive balance since the end of 2009.

The fact that the classification is by no means fixed is in itself a sign that corrections are possible. In view of the relationship demonstrated in Section 2 between these net asset positions and macroeconomic performances, the deficit countries would benefit from eliminating their negative position. That would also lead to a more stable euro area, with more balanced external positions. This may require some coordination at the European level, whereby the surplus countries also might have to undergo some changes in their external position. The new macroeconomic imbalance procedure offers a useful tool to achieve such adjustement.

4. Adjustment of debt positions *via* the financial balances of the sectors

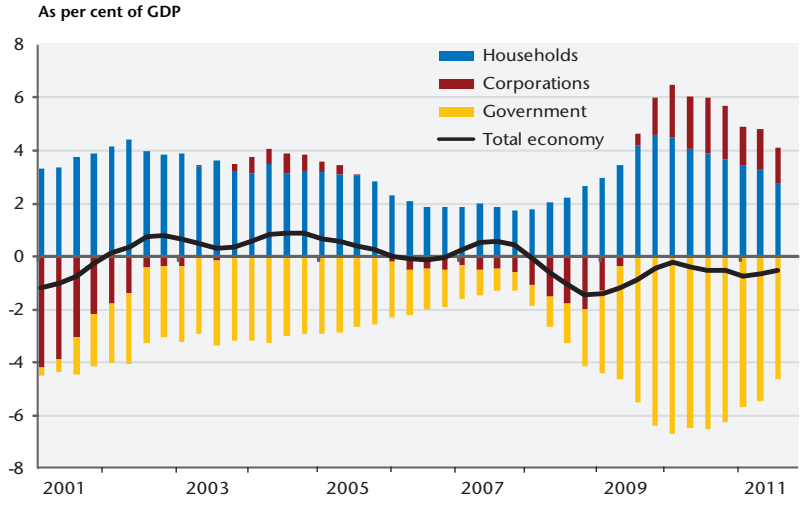
Changes in the stock of net financial assets take place *via* the aggregate net lending or borrowing of the domestic sectors, also known as their net lending to (+) or borrowing from (-) the rest of the world. These financial balances result from movements in income and expenditure. Leaving aside valuation effects, a positive financial balance leads to an improvement in net financial assets, and a negative balance leads to a deterioration. The development of the financial balances therefore offers a picture of the changes in net financial asset positions, for which, as previously argued, a

18. A similar breakdown of the euro area countries in two groups in the context of the sectoral financial accounts has been carried out by the ECB (2012).

reduction of the differences between the euro area countries would be desirable. In practice, this means that the deficit countries need to increase their net savings. The surplus countries can also help to reduce this difference. That might entail some coordination of economic policy at European level, since the policy choices of the various countries in a currency union have a significant impact on one another, as the pattern of financial balances in the euro area has shown.

The pattern of the financial balances over the first ten years in the euro area implies a number of relations, both between the behaviour of the private and government sectors and between the deficit and surplus countries. These relations follow in accounting terms from the quasi-equilibrium recorded by the euro area as a whole relative to the rest of the world. Since the start of EMU, the net savings of the euro area have been extremely stable. Since 1999 the financial balance has fluctuated between -1.5 per cent and +1.0 per cent of GDP (Figure 5). The euro area recorded small net savings from 2002 until 2007, while in other years there were slight net dissavings. The modest financial balances are directly linked to the absence of substantial deficits or surpluses on the current account of the euro area as a whole.

Figure 5. Financial balances: sectoral net lending (+) / net borrowing (-) in the euro area*



* Four-quarter cumulated sum.
Source: ECB.

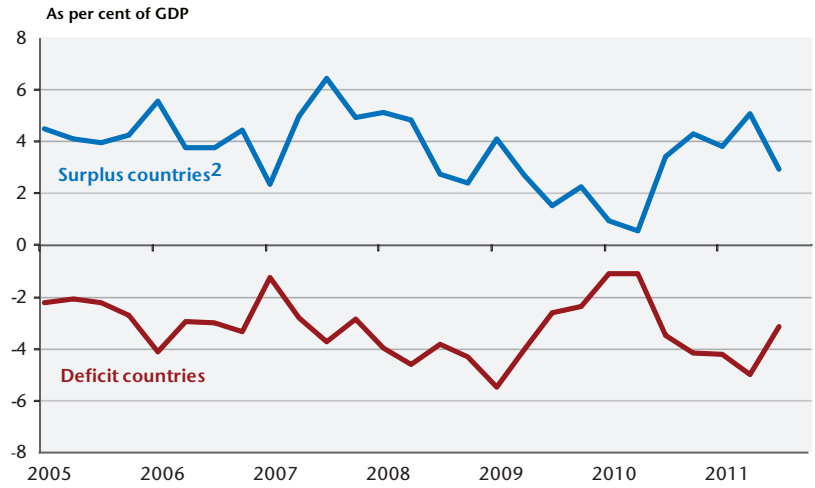
Given the external equilibrium at the level of the euro area, financial balances of the private and government sectors are the mirror image of one another, as are the balances of the surplus and deficit countries. In the past, increases in private sector savings, have partly offset in the euro area increases in government deficits. Likewise, improvements of the government balance have been associated with a fall in private net savings. However, the connection between these balances does not indicate any causal direction. The opposing movements can be attributed to Ricardian effects, according to which the private sector increases its savings when public finances weaken, or to an active role for fiscal policy in stabilising economic activity ("leaning against the wind''). In the past, this offsetting behaviour has avoided excessively negative effects on GDP growth of rising savings in either the private or the public sector. At the level of the economy, this compensatory behaviour turned out to be feasible since the aggregate net financial balance did not record any significant deficit.

There exists a similar relationship between the deficit and surplus countries (Figure 6). That relationship is best viewed in accounting terms from the angle of the external equilibrium recorded by the euro area as a whole. To the extent that this external balance remains unchanged, for example in the absence of an external demand stimulus due to a euro depreciation, this means that the scope for net savings in the deficit and surplus countries is given. For given net exports of the euro area, rising net savings in one group of countries must be associated with declining net savings in the other group of countries. The economic interpretation of this is that competitiveness improvements and hence rising net savings in one group of countries trigger a fall in net savings in the other group. Or that improvements in net exports of one group of countries can only be achieved if the other group of countries increases its net imports. If net exports of the euro area are unchanged[19], improvements in some Member States' financial balance (by increases in net exports) thus necessarily

19. In a way, EMU and the associated fact that Member States cannot devalue their currency has made it more difficult to manipulate net financial assets. A devaluation could lead to a sudden rise in net exports and thus in net savings (leaving aside valuation effects). In the absence of that option, countries with a problematic net financial position cannot rectify it as readily as in the past.

imply that other euro area countries will increase their net borrowing more strongly (by rising net imports).

Figure 6. Financial balances: net lending (+) / net borrowing (-) of surplus and deficit countries[1]



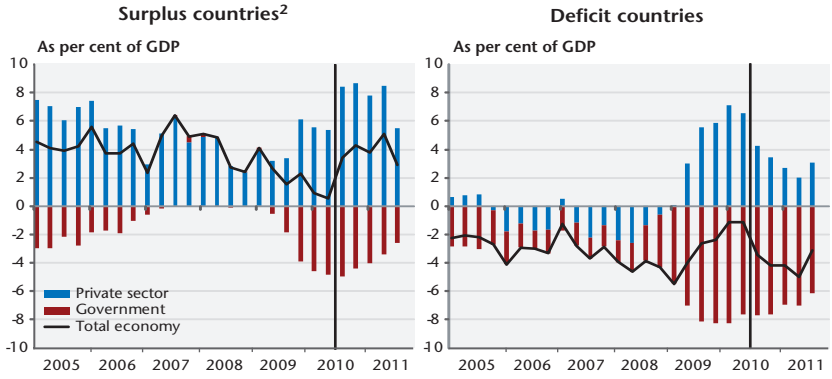
1. Four-quarter cumulated sum.
2. Netherlands, Belgium, Germany, Finland, Austria and Luxembourg.
Source: ECB.

Dividing the euro area into deficit and surplus countries provides a picture of the link between the financial balances of the euro area countries, and thus of their recent saving results. For simplicity, the breakdown of the economies is limited to the private and government sectors, with no breakdown between households and non-financial corporations (Figure 7).

Over the period from 2009 to mid-2010, the financial crisis led to a substantial deterioration in public finances in both country groups. The deficit countries in particular recorded a sharp rise in budget deficits. By mid-2010, the average came to around 8 per cent of GDP in the deficit country group; in the surplus countries, the budget balance deteriorated from a pre-crisis balanced budget to a deficit of almost 5 per cent of GDP. However, in accordance with the historical pattern, these rising deficits were accompanied by an increase in private savings. The expansion in private savings was most marked in the deficit countries and actually led to a less negative aggregate financial balance. By contrast, the aggregate

financial balance of the surplus countries declined, though it remained positive. The reason for the sharp improvement in the financial balance of the private sector in deficit countries is mainly due to the position of corporations, which in turn may be linked to the various measures taken to promote competitiveness, including a relatively more favourable development of unit labour costs. Up to mid-2010 a rebalancing between the countries seems thus to have been initiated, with the deficit countries increasing their aggregate net savings and the surplus countries reducing them.

Figure 7. Financial balances: sectoral net lending (+) / net borrowing (-) of surplus and deficit countries[1]



1. Four-quarter cumulated sum.
2. Netherlands, Belgium, Germany, Finland, Austria and Luxembourg.

Source: ECB.

However, the sovereign debt crisis and the ensuing general focus on reducing debt positions may have turned the attention away from rebalancing needs. Since mid-2010 both surplus and deficit countries have cut their government deficit. At the end of 2011, the average budget deficit had fallen to below the Maastricht Treaty's reference value of 3 per cent of GDP in the surplus countries; in the deficit countries, an average budget deficit of 6 per cent of GDP still looked problematic. However, unlike in the past, in the surplus countries, this was not accompanied by a net dissaving of the private sector. On the contrary, probably with a view to reduce their own debts, the private sector maintained a substantial level of savings. The aggregate net savings of the surplus countries thus increased further. Again, the deficit

countries presented a mirror image, with higher net borrowings from the rest of the world[20]. The improvement in public finances was more than compensated by a considerable fall in private savings. Although this could point to a positive Ricardian effect, this nevertheless seems rather unlikely in view of the state of public finances. It seems more likely that the reduction in net savings in these deficit countries is due to the harsh economic situation which in some cases even led to a fall in GDP.

5. Policy conclusions: net financial assets as the yardstick

On the basis of an aggregate analysis of the debt positions of the euro area countries, taking account not only of government debt but also of private sector debt and the financial assets of the various sectors, this paper has shown that the aggregated net debt or the net financial asset position is an interesting policy variable, particularly for evaluating a country's financial stability. Corroborating the empirical and theoretical evidence described in Section 2, some additional evidence for that conclusion is presented in this section.

Although it is common to focus on the sustainability of government finances, partly as a result of the convergence criteria outlined in the Maastricht Treaty, this paper wants to stress that a country's solvency may also be determined by the financial position of the private sector. This aggregate financial position of an economy is summarized in a country's net financial assets, defined as the difference between the financial assets and financial liabilities of the domestic sectors. The theoretical and empirical evidence described in Section 2 already illustrated that this aggregate position is important to determine an economy's solvency. Note the distinction between a country's solvency and the government's solvency, which is in fact not always made[21]. The behaviour of the private sector may cause major differences between the two. For instance, the government often has net debts while in some cases

20. Sinn and Wollmershäuser (2011) draw attention not only to these differences, which are also reflected in the current account balance, but also to the existence of capital flight from the 'southern' to the 'northern' countries. In case of capital flight the underlying imbalances (that is those on the current account) tend to become less sustainable since they can no longer be financed privately.

the country has net financial assets. The total net financial assets seem to be crucial for assessing a country's solvency, although they might be equally decisive to determine a government's solvency.

The reason for this is that the domestic private sector is able to finance the government in case the economy is characterised by net financial assets. The government therefore does not necessarily need to depend on the international capital market to finance its deficits. It might rely on an extensive tax base which it can use, by a tax increase, at least to partly fund its deficits. The room for such a strategy is of course limited due to its repercussions on competitiveness and—depending where the ideal Laffer-taxation rate is situated—also on taxation revenues. Apart from taxation, the government can also draw on a voluntary basis on domestic savings for debt financing. A funding operation conducted by the Belgian government at the end of 2011 demonstrates that such a mechanism is not purely theoretical. As well as applying to the international capital market, the Belgian government regularly calls on private savings *via* its "State notes" (financial instrument specifically for retail savers resident in Belgium). At the end of 2011, these State notes were issued at a time when financial markets were experiencing severe tensions, and were charging the Belgian government a very high interest rate. The Belgian government offered private investors the possibility to subscribe to government paper on the same terms. The issue was a great success and the Belgian Treasury raised a total of €8.6 billion *via* this instrument in 2011, enough to cover 20 per cent of its total gross borrowing requirement in that year (National Bank of Belgium, 2012). This illustrates the point that a transfer of private savings to the public sector is not purely theoretical. Although this funding flow was partly due to the relatively high interest rate offered on State notes, it shows that the government of a country with net financial assets may be less dependent on the international capital market, and thus can tolerate a higher debt. The aggregate net

21. Since the Maastricht Treaty, a public deficit has often been associated with an external imbalance, and consequently a deterioration in net financial assets of a country. This explains why government deficits are often the reason why the financial markets impose a risk premium on the country or on its 'currency', although that risk premium should, in principle, depend on a currency's total supply and demand, namely the net lending (+) / borrowing (-) relative to the rest of the world, or in cumulative terms, its net financial assets.

financial assets are therefore a key solvency indicator, for both the country and the government, as already illustrated in Section 2.

The net financial assets are also relevant in constructing a solution for the euro area, certainly in view of the balanced position of the euro area as a whole. This equilibrium indicates that the euro area countries are capable of resolving the Member States' funding problems themselves, provided that capital flows take place between Member States. Countries with international (private and public) reserves, that is the surplus countries, can use those reserves to finance the deficit countries. That puts the European Union (2012) initiatives concerning possible recourse to the international reserves of countries such as China to finance the euro area countries in another light. These plans aim to set up a special purpose vehicle funded by China and other growth countries, which would then grant loans to the euro area Member States. This implies a recourse to China's international reserves, which would in principle be the same as resorting to the international reserves of the surplus countries in the euro area.

Finally, the net financial assets can be used as a guide for the assessment of euro area exit costs and thus the feasibility of such an event. An exit country would immediately have to cope with a devaluation. Such devaluation would mean a revaluation of the external debt so that, expressed in the devalued currency, it would further increase. As shown in Section 2, the net external debt already exceeds GDP in a number of Member States, making it unlikely for such an exit country to meet its liabilities, and will thus be forced into default. Since much of this debt is owed to the other euro area countries, this would also imply substantial losses for the remaining Member States, making an exit less likely.

6. Conclusion

This paper presents an aggregate analysis of the debt positions of the euro area countries. It takes account not only of government debt but also of private sector debt and the financial assets of the various sectors. Taking account of financial assets to assess the financial position is in line with the approach of Bernanke and Gertler (1989) and complements the analyses of gross debt positions by Reinhart and Rogoff (2010) and Cecchetti *et al.* (2011).

On the basis of this analysis, it emerges that euro area countries differ extensively in terms of their total net (external) financial assets. In a context of hampered financial integration, the euro area might benefit from a reduction of these differences in external financial positions (by rebalancing current accounts). This implies that the deficit countries (countries with a negative net financial asset position or an aggregate net debt) should increase their net savings, preferably by improving their competitiveness. The surplus countries (countries with net financial assets) can help to reduce this difference by taking account of the need for the deficit countries to become more competitive.

Reducing the differences between external financial positions in the EMU seems to be crucial since current account imbalances in the Member States of a currency union can only be maintained if there is close financial integration. However, the experience of the financial crisis has shown that the financing of current account deficits in the euro area cannot be taken for granted. In that context, the EU's new macroeconomic imbalance procedure, which also monitors the external position of a country, for example by means of the net international investment position, is warmly welcomed.

This paper's findings open up various avenues for future research. In particular, there is a need for a better understanding of the causes of the external imbalances in the euro area, their recent development and the appropriate ways of correcting them—for example by closer coordination of economic policy between the various countries—and the contribution of the new EU economic governance in that regard. For assessing the financial position it is preferable to take account of assets as well as liabilities. In addition, there is a need to know more—within the limits imposed by data availability—about the characteristics of those assets and liabilities (maturity, liquidity) and how they relate to the various sectors. Microeconomic data can be useful here. Finally, the impact of valuation effects on the net asset position and the composition of the assets could also be examined, in view of their importance illustrated in this paper, for example in assessing the costs of a country's potential exit from a monetary union.

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Appendix

Table. Debt ratios, euro area (As per cent of annual GDP, end 2010)

	Non-financial corporations		House-holds	Total private sector[1]	General government		
	Non-consolida-ted, gross	Consolida-ted, gross	Gross[2]	Net[3]	Non-consolida-ted, gross	Consolida-ted, gross	Net[3]
Euro area	99.3	78.9	65.3	-43.7	92.3	85.3	57.6
Belgium	179.7	77.5	53.1	-96.5	109.7	96.2	80.2
Germany	66.5	50.2	61.6	-71.0	87.4	83.2	50.6
Estonia	121.6	93.3	54.5	109.2	7.1	6.7	-36.5
Ireland	222.4	n.a.	118.9	111.1	n.a.	92.5	50.5
Greece	63.4	63.4	60.7	15.6	n.a.	144.9	89.4
Spain	141.6	128.2	85.7	46.1	67.8	61.0	39.8
France	104.7	82.3	55.1	-41.9	93.3	82.3	58.8
Italy	81.4	80.4	45.0	-69.0	124.7	118.4	99.1
Cyprus	159.2	158.9	130.1	n.a.	104.9	61.5	n.a.
Luxembourg	201.6	149.3	52.3	-154.0	20.1	19.1	-49.9
Malta	149.3	102.0	62.7	-58.0	74.4	69.0	51.8
Netherlands	96.3	94.9	127.1	-106.2	71.7	62.9	34.4
Austria	109.0	93.0	56.8	-31.8	84.9	71.8	43.7
Portugal	153.1	128.8	95.5	48.6	104.0	93.3	63.5
Slovenia	97.7	87.3	31.1	36.9	47.0	38.8	0.8
Slovakia	32.9	32.9	35.9	34.6	45.7	41.0	24.7
Finland	114.8	92.1	62.9	65.1	53.0	48.3	-65.1

1. Including the financial sector.
2. For households, the consolidated concept equals the non-consolidated concept since the financial transactions between households in the financial accounts are assumed to be zero.
3. Net debt calculated as the difference between total financial liabilities and total financial assets. A negative sign indicates that assets exceed liabilities.
n.a. = data not available.
Sources: European Commission, ECB.

Part 3

FISCAL RULES
RÈGLES BUDGÉTAIRES