

A BALANCE SHEET APPROACH TO GENERAL GOVERNMENT FINANCE: THE LEGACY OF THE CRISIS IN SELECTED EURO AREA COUNTRIES

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Abstract

The recent financial crisis has strengthened the debate on the gross debt indicator. As it does not take into account the assets side of government balance sheets, this measure only tells part of the recent story, a story in which many governments undertook complicated financial operations that transformed their public finances and created significant contingent liabilities. The European Commission and Eurostat have been central to the interpretation of the rules regarding the statistical and methodological treatment of these interventions. This paper takes a comprehensive look at standard government debt measures in the euro area. Given the complex reality spawned by the financial crisis, a balance sheet approach is adopted with regard to direct interventions by governments in the financial sector and special attention is given to off-balance-sheet contingent liabilities.

JEL Classification: H12,H61,H63,H81

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1) Introduction

The notable increase in government debt during the recent crisis was attributable not only to cyclical and/or discretionary changes in deficits but also to government intervention to support the financial stability of the euro area. Several governments provided financial assistance to their banking sectors; these measures led to a deterioration in traditional budgetary indicators, but were supposed to be temporary in nature and have no structural impact on public finances. In addition, governments provided explicit guarantees to financial institutions which have no direct impact on government finances but pose a potential fiscal risk should they be called.

Gross public debt was the most affected indicator and became the major source of weakness and concern for the sustainability of public finances in the euro area; at the same time, the reality was far more complex, as a glance at government balance sheets demonstrates. Large increases in public debt were accompanied by acquired assets in the banking sector and shifts in their financial portfolio and cash reserve.

The need to look at a broader set of data encompassing gross financial liabilities, financial and non-financial assets (net worth) and off-balance-sheet liabilities became crucial to evaluate the state of public finances. New strands of literature developed to assess different governments' debt metrics, with the aim of looking beyond the traditional measures of general government deficit and debt. At the same time concern about transparency and comparability of euro area countries' financial positions triggered an enrichment in statistical guidance, as well as the provision of new datasets on government financial operations and contingent liabilities.

In this paper we present an in-depth look at government balance sheets for the euro area countries drawing on multiple data sources. We intend to offer a complete and comparable picture of fiscal sustainability and fiscal risks, while bearing in mind that there is no single best indicator or univocal ranking for countries.

We will refer to the Government Finance Statistics and non-financial assets data published by Eurostat and the ECB. The analysis will include recent data up to 2015. While the availability of data on financial operations is complete for 2015, a comprehensive dataset on non-financial assets is not always available. Hence a measure of non-financial assets will be estimated for few countries.

Several empirical works have been published in the last few years on general government indicators and balance sheets; this paper remains in the same path, providing the most up to date picture of developments over the period 2008-2015.

The paper is structured as follows. In Section 2 we discuss the various issues involved in defining and measuring several gross debt indicators, which differ in terms of coverage, instruments and valuation. Beyond trends in liabilities, we focus on financial and non-financial assets trends of the general government sector during the crisis. In Section 3 we examine the transformation in euro area governments' balance sheets over the period 2008-2015 as a consequence of banking restructuring plans approved by the Commission under State aid rules. To this end we review the treatment of the financial interventions in the statistical context. This section also provide an evaluation of net fiscal costs and losses associated with the amounts of aid granted. We also consider additional potential losses connected to outstanding government guarantees before presenting our conclusions.

2) Concepts of general government debt

Public debt may be assessed on the basis of a broad set of indicators, which has gradually been enriched in the European Statistics alongside the strengthening of the surveillance on fiscal and macroeconomic imbalances in the euro area.

General government gross debt is the headline indicator, where gross means that no assets are deducted from liabilities. There are different measures of gross debt, depending on coverage, instruments and valuation rules adopted. These different dimensions can provide different results for gross debt according to individual country debt characteristics.

The definition of gross debt in the Excessive Deficit Procedure (EDP) does not take into account all the available information. Other indicators could be analysed to further qualify the debt position of a country, even in terms of the sustainability of its public finances.

The balance sheet approach is a step in this direction as it considers a broader set of liabilities together with financial assets. Comparing changes in the stock of government liabilities to corresponding changes in the stock of assets or in net worth/net debt can enhance evaluations of fiscal sustainability.

Net debt is indeed one of the "other relevant factors" of EDP assessments. It, with a reverse sign, is the basis of Intertemporal Net Worth (INW), which in the European Commission analysis represents the *stock measure* of long-term sustainability, when the best-known indicator *S2* is the *flow measure*¹. The balance sheet shows total asset levels — non-financial and financial — as well as liabilities stocks outstanding, which enables the following to be derived: net worth as total assets minus total liabilities, and financial net worth as total financial assets minus total liabilities" (ESA 2010).

2.1 - Government assets and liabilities: main definitions and measurement issues

2.1.1 Measures of gross debt

The stock of gross debt can be considered as sum of liabilities.

There is a specific definition of government debt for the EDP which departs from the total stock of liabilities, in terms of both scope of liabilities accounted for and valuation. The Maastricht debt (or EDP debt) is defined as gross debt of general government outstanding at the end of the year, consolidated at the general government level². It covers the following liabilities: currency and deposits (AF.2); securities other than shares excluding financial derivatives (AF.3); and loans (AF.4):

$$\text{Maastricht debt} = \text{AF.2} + \text{AF.3} + \text{AF.4}$$

Maastricht debt excludes several liabilities such as pension liabilities, insurance technical reserves and other accounts payable³. Financial derivatives are also excluded due to the lack of a principal amount to be repaid at

¹INW is given by net worth minus the discounted sum of all future primary balances required to secure intertemporal sustainability; public debt and the discounted value of future government expenditure, including the projected increase in age-related public spending, need to be covered by the discounted value of future government revenues. *S2* shows the upfront adjustment to the current structural primary balance required to stabilise the debt to GDP ratio over the infinite horizon, including financing for additional expenditure arising from an ageing population.

² Council Regulation (EC) No 479/2009, as amended by Commission Regulation (EU) No 220/2014.

³ Other accounts payable, which also include trade credits and advances, are an important category which deserves particular attention, notably because of the past debate on the decision to exclude these liabilities from Maastricht debt. In particular, it is worth noting that

maturity. Liabilities in shares and other equities, which are rarely seen in government's account⁴, are not by definition debt instruments because they do not require payment of interest and/or capital⁵.

Debt instruments are calculated at their face value (where applicable) instead of market value; that is the key principle for valuing positions (and transactions) in financial instruments and in the balance sheet context. Hence Maastricht debt is not affected by market fluctuations or by changes in market interest rates and excludes unpaid accrued interest, resulting in a less volatile measure of debt.

In ESA 2010 (as well as ESA 95) there is no specific definition of government debt. The core equivalent concept is total financial liabilities, which involves a wider list of financial instruments than included in Maastricht debt: monetary gold and special drawing rights (AF.1), currency and deposits (AF.2), debt securities (AF.3), loans (AF.4), financial derivatives (AF.7) and other accounts payable (AF.8). Equity (AF.5) and insurance, pension and standardised guarantee schemes (AF.6) are included only in a few cases of specific units classified inside the government sector.

$$\text{Stock of government liabilities under ESA 2010 (at the end of year N)} = \\ AF.1 + AF.2 + AF.3 + AF.4 + AF.7 + AF.8 + AF.5 \text{ (if any)} + AF.6 \text{ (if any)}$$

The stock of government liabilities in ESA 2010 terms is valued at market price.

Note that ESA 2010 always excludes some liabilities such as:

- provisions for expected but uncertain future payments arising from past events;
- liabilities of entities regarded as government subsidiaries in other accounting systems but outside the general government sector in national accounts;
- contingent liabilities, including (i) guarantees, (ii) public-private partnerships recorded off balance sheet of government and (iii) liabilities of government controlled entities classified outside government, (iv) pension entitlements under unfunded government defined benefit employer pension schemes or social security pension funds.

In the following figure, we will compare the following three definitions of government gross debt:

1. Maastricht debt valued at face values, which will be called *Maastricht debt EDP*;
2. Maastricht debt valued at market values, based on the Government Finance Statistics, which will be called *Maastricht Debt GFS*;
3. The sum of stocks of total financial liabilities, which will be called *Total Liabilities*.

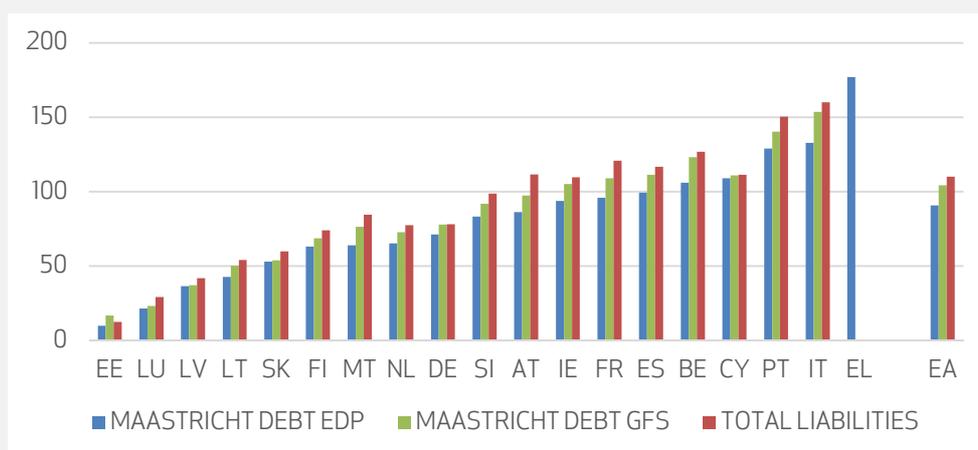
Figure 2.1 illustrates the level of debt/GDP in 2015 for euro area countries; countries are sorted from lowest to highest based on the EDP debt.

governments could in theory reduce their need to issue Maastricht debt instruments by using credit facilities that are recorded under other accounts payable.

⁴ In general, equity liabilities (AF.5) are not recorded for any government units. However, at a more aggregated level of government subsectors, equity liabilities can appear if entities have been classified inside the general government sector as a result of the market/non-market test.

⁵ In the IMF's *Public Sector Debt Statistics: Guide for Compilers and Users* a debt instrument is defined as "a financial claim that requires payment(s) of interest and/or principal by the debtor to the creditor at a date, or dates, in the future".

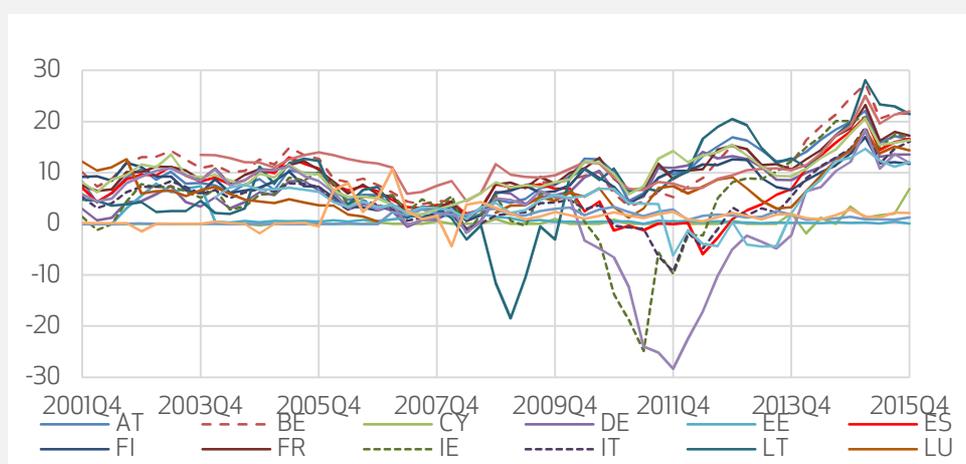
Figure 2.1 - General government gross debt, different definitions⁶
2015 (% of GDP)



Source: Eurostat

Considering the first two definitions of debt, those that refer to the sum of liabilities held in EDP instruments (currency, securities, loans), the transition from face value to market value generally involves a significant increase in debt, by 13.5 percentage points of GDP for the euro area as a whole (15 per cent of the debt), 7 per cent on average for the Netherlands and Germany, 12 per cent on average for France, Spain and Ireland, and 19 per cent on average for Belgium and Italy.

Figure 2.2 - Long-term debt securities - valuation differences
(market value-face value as % of face value)



Source: Eurostat

Using market value or face value for the liabilities may not make any big difference in prosperous economic times, but it could lead to significantly different results in times of sovereign debt crisis, when the market value of debt securities issued by countries perceived as being in difficulties tends to significantly decrease. Similarly, the market value of assets could suffer a sharp decrease in times of financial crisis and thus considerably deviate from their face value or nominal value (Eurostat, 2014). Indeed, the main valuation difference derives from long-term securities.

The time series of the difference between liabilities in long-term securities in the two different valuations for euro area countries (Figure 2.2) shows huge fluctuations in the crisis years for almost all countries. In Italy, if

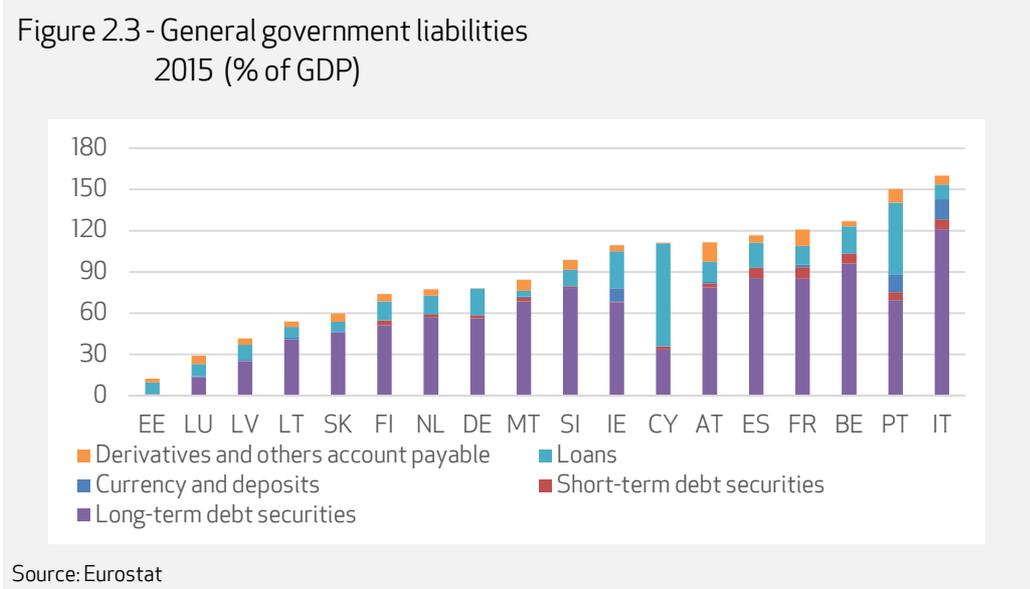
⁶ For Greece, there are no data available other than debt EDP.

valued at market prices, the stock of long-term bonds is lower by 9 per cent at the end of 2011 while it is higher by 16 per cent at the end of 2015; the fluctuations in the value of securities are even greater in Ireland and Portugal, which at the height of the crisis were valued by the market at about 20/30 per cent less than their face value, while at the end of 2015 they had been re-evaluated by 17 per cent and 12 per cent respectively compared to the face value. The effects of the very low level of interest rates achieved at the end of 2015 became very intense for almost all countries.

Overall, financial instruments not included in Maastricht debt (derivatives and other accounts payable) have a weight slightly under 6 per cent of GDP for the euro area as a whole (the difference between the green and the red bars in Figure 2.1). Among the main countries it ranges from 0.1 per cent of GDP in Germany to 11.9 per cent in France. These are generally other accounts payable, and mainly trade credits, while only Italy and Ireland have non-zero values in derivatives, at 1.9 and 0.5 per cent of GDP, respectively (1.2 and 0.5 per cent of total liabilities).

In general the relative position, namely the rankings of the countries, changes only for Cyprus and Malta when one considers liabilities valued at market prices: the first because it presents no differences between the three definitions, and the second because it presents, on the contrary, a very pronounced difference between the different indicators.

Among the main countries, Italy has the highest debt in all three measures considered; the Netherlands has the



lowest if we consider the EDP valuation, along with Germany when we consider market prices.

For most countries, long-term debt securities have the greatest relative weight among the debt instruments (Figure 2.3): 64 per cent of total liabilities on average, and more than 70 per cent in high-debt countries (except for Portugal, which has a high share of loans). The shares in short-term instruments are quite small; currency and deposits show a significant share only in Italy, Portugal and Ireland, and short-term debt securities exceed 5 per cent of total liabilities only in France, Spain and Belgium.

2.1.2 Balance sheet

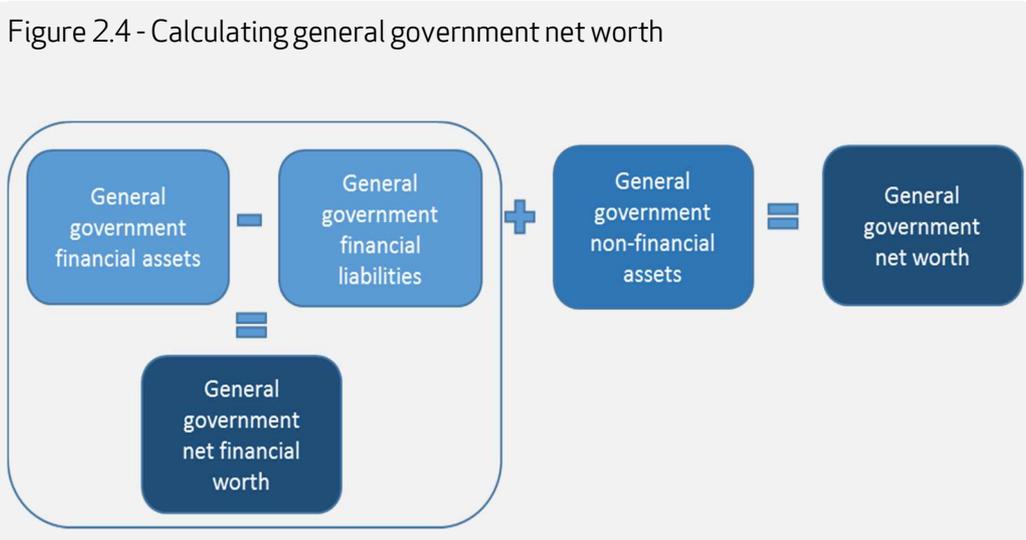
According to the ESA 2010 definition, “a balance sheet is a statement, drawn up for a particular point in time, of the values of assets economically owned and of liabilities owed by an institutional unit or group of units. (...) The stock of the assets and liabilities recorded in the balance sheet are valued at the appropriate prices, which are

usually the market prices prevailing on the date to which the balance sheet relates, but for some categories at their nominal values”.

For institutional sectors the balancing item on the balance sheet is net worth. Net worth is thus measured as the difference between gross financial liabilities and the sum of financial and non-financial assets.

$$W = FA - FL + pK,$$

where W is net worth, FA financial assets, FL financial liabilities, and pK non-financial assets (K public capital, p the value of a unit of public capital).



Taking into account government’s asset holdings it could help to give a more complete picture of fiscal sustainability, as long as:

1. assets can be sold to reduce the government’s gross debt;
2. assets can help increase the government’s receipts.

The net worth concept can be helpful in assessing the long-term sustainability of fiscal positions and intergenerational equity.

The risk associated with a given level of gross debt will be different depending on whether the debt is counterbalanced by a high or low level of assets and, in the same way, an increase in public debt will change the assessment depending on whether or not it reflects a corresponding change in the stock of government assets.

Finally, a high level of assets has a favourable effect on the intertemporal budget constraint. Government solvency requires that the sum of government assets and the present discounted value of future taxes equal the sum of outstanding government liabilities and the present discounted value of future spending. In other words, future taxes (T) have to equal the difference between future spending (G) and the government’s net worth (W):

$$\sum_{t+1}^{\infty} T_i (1+r)^{t-i} \geq \sum_{t+1}^{\infty} G_i (1+r)^{t-i} - W_t$$

2.1.3 Net financial worth/debt

As for the gross debt concept, restricting the number of categories used on the liabilities and/or the assets side one could derive many types of measures of net debt. Generally, net government debt measures are grouped into three categories:

- net financial worth;
- liquidity measures;
- other net government debt measures (Eurostat, 2014a).

The first concept, net financial worth, is the difference between financial liabilities and financial assets, based on market value:

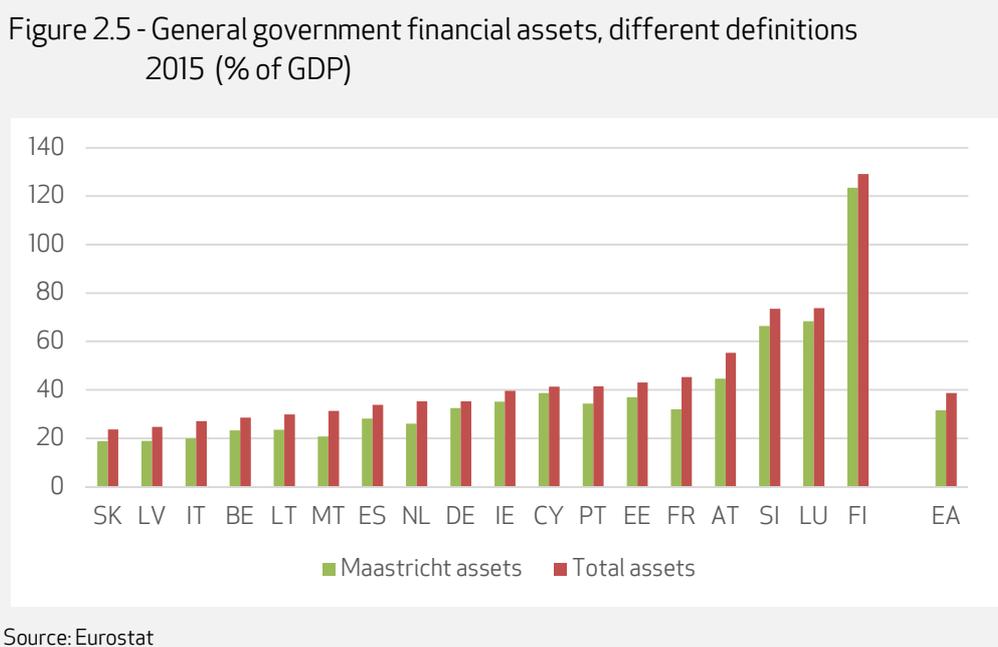
$$NFW = FA - FL$$

Net financial worth is the first indicator, mostly for the availability and reliability of data, so it can be calculated easily for euro area countries.

“Net financial worth could be also viewed as an important component of the link between net borrowing/lending (equal to net acquisition of all financial assets less net increase in all liabilities) and the change in debt. It could thus be used as a basis for analysing net financial transactions and the stock-flow adjustment, i.e. the difference between the change in government debt (stock) and the government deficit/surplus (flow) for a given period”. (Eurostat, 2014a).

$$\Delta NFW_t \equiv B_t + \Delta V_t$$

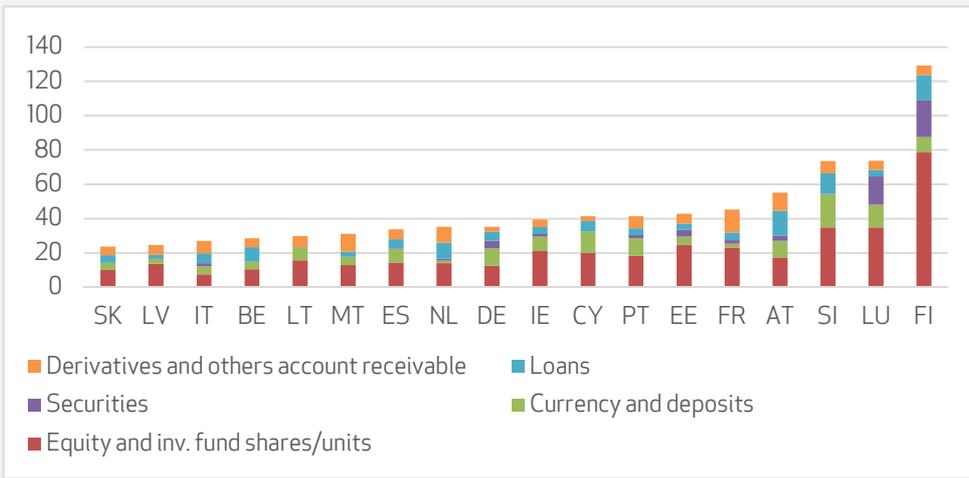
where ΔNFW is the change in the net financial worth, B the fiscal balance (that equals the difference between transactions in financial assets and transactions in financial liabilities) and ΔV the change in financial assets due to valuation changes (fluctuations in market prices or in exchange rates) and, in general, other than government operations (Milesi-Ferretti, Moriyama 2004).



The value of financial assets is below 40 per cent of GDP for the euro area as a whole: 31.6 per cent if we consider the stocks of main financial instruments (called Maastricht assets in Figure 2.5), 38.7 per cent if we consider the stock of total assets. Only few countries clearly exceed this average value: Austria, Slovenia, Luxembourg and Finland. Looking at the composition of the asset stocks, what distinguishes this group of countries is the share of assets held in equity and investment fund shares and securities, which is significantly higher than average. The exception is Austria, which has a more balanced composition of assets, and a particularly high level of loans (Figure 2.6).

As the liquidity of assets is important in the evaluation of risk, to the extent that assets could be sold more or less quickly for debt reduction, a second category of net debt definition is based on liquid assets. At the international level there is no agreement on what can be considered liquid, which makes it difficult to implement this approach. Indeed, the most liquid instrument, currency and deposits, represents a small share of total assets in all countries.

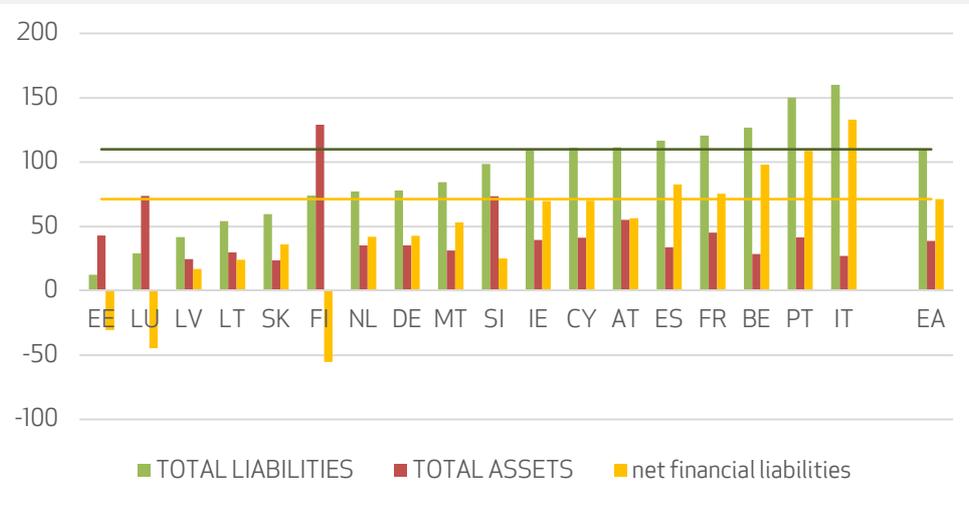
Figure 2.6 - General government assets
2015 (% of GDP)



Source: Eurostat

Figure 2.7 shows the value of net financial liabilities in 2015, together with the value of assets and liabilities, as a percentage of GDP. In Luxembourg and Finland the value of the assets is even higher than that of liabilities, and the value of net liabilities is negative (or positive for net wealth). The same is true for Estonia, where a very low level of financial liabilities, 12.4 per cent of GDP, is associated with a value of more than 42 per cent of financial assets arising from equities, close to 25 per cent of GDP. Governments with the highest debt, however, own lower-than-average assets and are in the most vulnerable positions even when you consider the net debt (Belgium, Portugal, Italy). France is an exception, with a high level of equities and other accounts receivable.

Figure 2.7 - General government assets, liabilities and net financial liabilities
2015 (% of GDP)



Source: Eurostat

2.1.4 Non-financial assets and net worth

To conclude, non-financial assets should be taken into account to define a broader concept of total net worth/net debt.

Non-financial assets are composed of produced assets (outputs from production processes) and non-produced assets (tangible and intangible) such as natural assets, contracts, leases, licences, permits, goodwill and marketing assets. Both produced and non-produced assets can be important sources of wealth and revenues for governments. Rental of a government-owned building, road tolls, vignettes for use of specific roads, charges for use of a sports centre or entry fees to a public building are examples of receipts for the use of produced assets; royalties paid for the extraction of oil and in general payments for using assets made under leases, franchises, or concessions are examples of receipts for the use of non-produced assets.

Table 2.1 - General government non-financial assets in 2014 (2013 figures in italics)
(% of GDP)

	Produced non-financial assets	Fixed assets and inventories (net)	Total fixed assets (net)	Dwellings (net)	Other buildings and structures (net)	Non-produced non-financial assets (net)	Natural resources (net)	Contracts, leases and licences (net)	Purchases less sales of goodwill and marketing assets (net)
Belgium		<i>39.1</i>	37.7	<i>0.0</i>	32.8				
Czech Republic	124.8	124.8	118.0	<i>5.9</i>	104.0	175.8	175.8	0.0	0.0
Denmark			49.3	<i>0.0</i>	34.6				
Germany			45.4	<i>1.0</i>	38.8				
Estonia		<i>48.0</i>	<i>46.9</i>		<i>36.5</i>				
Ireland									
Greece		<i>67.7</i>	<i>67.7</i>		<i>49.1</i>				
Spain									
France	56.3	56.3	55.2	<i>2.8</i>	45.4	34.1	34.1	0.0	0.0
Italy			55.9	<i>3.3</i>	45.1				
Cyprus									
Latvia	<i>154.3</i>	<i>154.2</i>	<i>152.2</i>		<i>133.3</i>				
Lithuania					<i>59.3</i>				
Luxembourg			59.5	<i>0.1</i>	55.4				
Hungary	<i>112.3</i>	<i>112.3</i>	<i>112.2</i>		<i>102.0</i>				
Malta									
Netherlands		60.9	60.9	<i>0.5</i>	53.3				
Austria			60.7	<i>0.2</i>	50.4				
Poland		<i>33.9</i>	<i>33.5</i>		<i>24.3</i>				
Portugal		<i>81.6</i>	<i>81.2</i>		<i>65.8</i>				
Slovenia		<i>63.8</i>	<i>61.4</i>		<i>47.6</i>				
Slovakia				<i>4.2</i>					
Finland	58.6	58.6	57.6	<i>0.7</i>	46.5	0.0			
Sweden	<i>73.9</i>	<i>73.9</i>	<i>72.3</i>		<i>57.1</i>				
United Kingdom	56.0	56.0	55.9	<i>0.9</i>	42.1	0.0			

Source: Eurostat

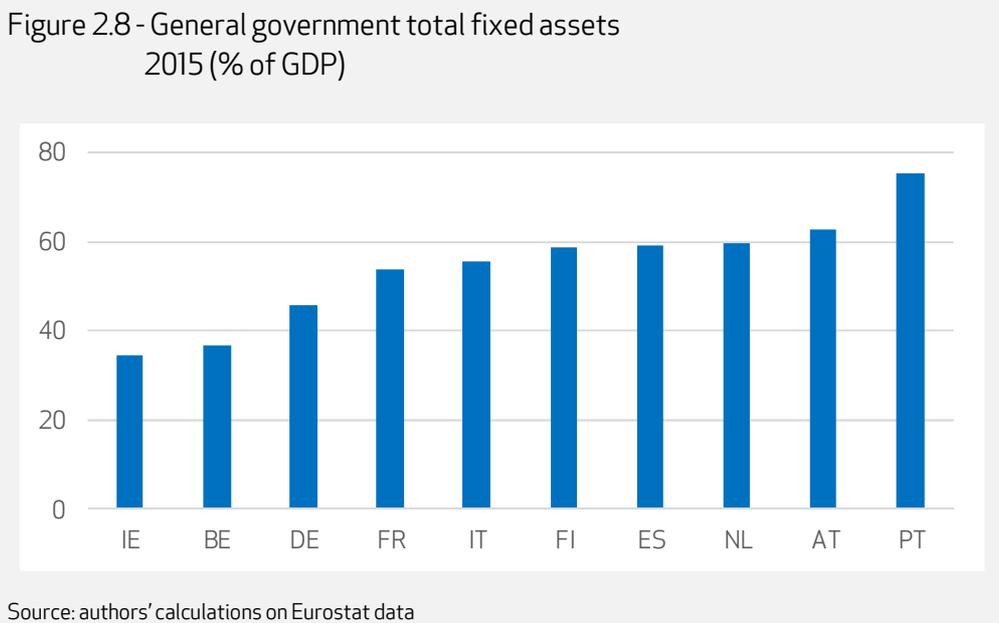
While the European statistics are complete and comparable between countries with respect to financial assets, a complete set of data on governments' non-financial assets is not currently available for many countries⁷.

Table 2.1 illustrates the availability of these data for governments in 25 EU countries in the Eurostat database. As we can see, data relating to non-produced non-financial assets are available only for the Czech Republic and France. However, we can focus on fixed assets, which represent the holding in physical capital as a result of the accumulation of the investment activity.

Although it is not straightforward to consider feasible the sale of these assets to reduce the debt burden, they are nevertheless important in assessing the fiscal position of a country. This importance refers both to the fact that they are a source of revenues, as mentioned above, and to the fact that they represent a contribution to the accumulation of the fixed capital of the country, a long-term growth driver which, in turn, influences fiscal sustainability.

A complete set of data is available for total fixed assets for a large set of euro area countries but not for all, as no data are available for Ireland or Spain and for Portugal the data are available only for two years.

However, we estimated the time-series of the non-financial capital stock for some euro area countries, according to the classical Perpetual Inventory Method, as suggested in Milesi-Ferretti and Moriyama, 2004.



On average at the end of 2015 the value of fixed capital amounted to 55 per cent of GDP in the countries considered, around 35 per cent in Ireland and Belgium, 63 per cent in Austria and over 75 per cent in Portugal.

⁷Several methodological and valuation issues are involved with regard to non-financial assets data, and methodologies are not yet consolidated.

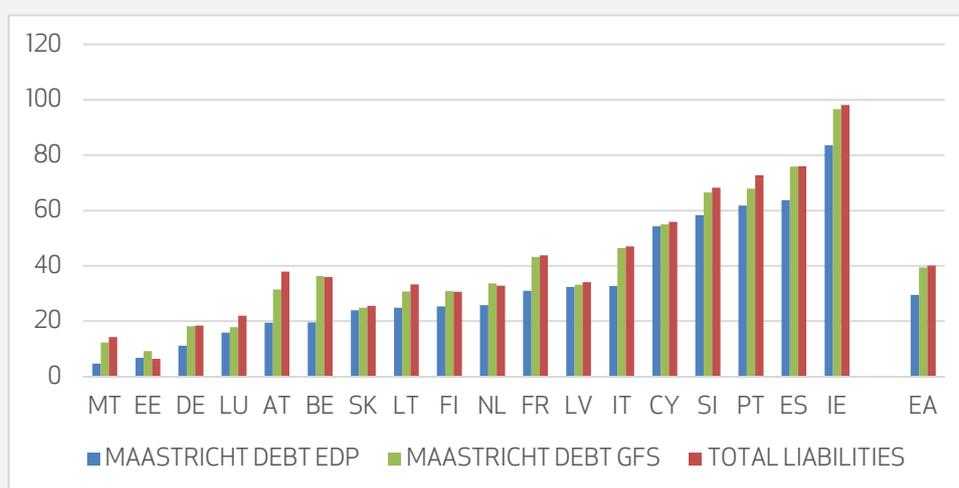
2.2 - Trend during the crisis

2.2.1 Change in debt

In this paragraph, because the emphasis is on the effects of the financial crisis, we present a picture of the changes in the stocks of government liabilities between 2007 and 2014, while 2015 is analysed separately as the first year marking the exit of the crisis.

The general government debt-to-GDP ratio increased by 27.1 percentage points in the euro area between 2007 and 2014. Ireland suffered the biggest increase, and Portugal and Spain recorded much higher increases than the area average, while Germany was the least affected of the major countries (Figure 2.9). The increase in the Italian debt is slightly higher than that for the euro area as a whole. If valued at market prices, the stocks of liabilities are subject to much higher increases for some countries, e.g. Belgium and France, and generally for the more peripheral countries affected by the sovereign debt crisis (Italy, Spain, Ireland).

Figure 2.9 - Increase in general government gross debt, different definitions 2007-2014 (% of GDP)



Source: Eurostat

To better understand how government finances were affected by the financial crisis in general and by financial sector support in particular, we can in the first instance break up the government debt increase into its three main driving factors: the primary balance, the snow ball effect (which captures the difference between the interest rate paid to service government debt and the growth rate of the economy), and the deficit-debt adjustment (*dda*, the amount of change which is not reflected in the deficit, such as privatisation receipts, financial transactions, and all adjustments needed to define the scope, the valuation and consistency between the non-financial and financial balance).

Table 2.2 summarises the cumulative values for the euro area of the contributions of these three components to the change in the debt ratio in selected periods: the years of the crisis, the seven previous years, and 2015.

Table 2.2 - EDP debt-to-GDP ratio and its drivers
Euro area (% of GDP)

	2000-07	2007-14	2014-15
Change in debt	-3.1	29.5	-1.5
Primary balance (-)	-9.8	8.1	-0.3
Snow ball effect	2.9	13.7	-0.3
Deficit-debt adjustment	3.9	7.7	-0.9

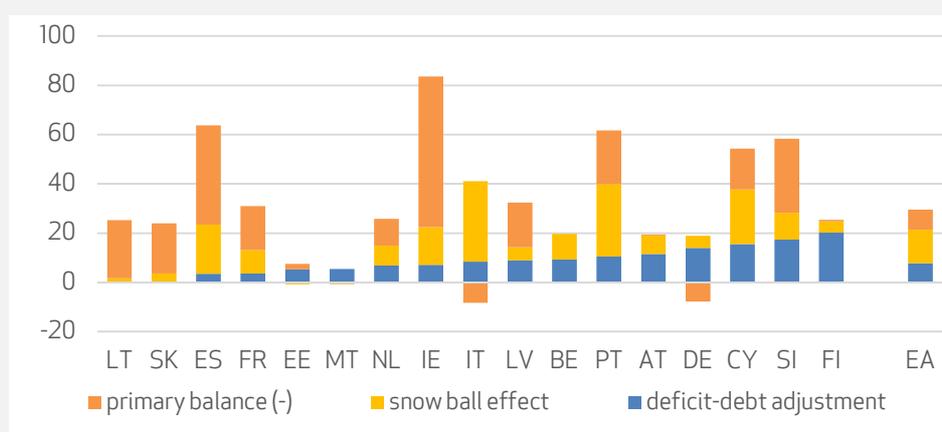
Source: Eurostat

During the crisis, the rise in government debt was mostly driven by the snow ball effect, which explains almost half of the rise (13.7 percentage points while in the previous period it was 2.9). The snow ball effect was particularly unfavourable in the early years of the crisis, due to the economic downturn, while in recent years its relative importance has started to decline, as a consequence of low interest rates and cyclical recovery.

The sharp deterioration of the primary balance during the crisis led to an increase of 8 percentage points in the debt ratio, while in the previous seven years it had decreased by almost 10. This was, among other things, the result of higher primary expenditure, reflecting the role of automatic stabilisers, as well as discretionary fiscal policy measures. The latter also include some non-structural financial sector assistance measures. Moreover, lower government revenues following the cyclical downturn and the rebalancing process also contributed to the worsening of the primary balance via so-called second-round effects, as the decline in employment, corporate profits and asset values, triggered by the financial crisis, resulted in lower revenues.

Lastly, the debt increase was driven by deficit-debt adjustments. These had several causes. Among them are those financial sector support measures that did not affect the primary balance, but did affect general government debt, such as governments' acquisition of equities at market prices or the provision of government loans to the financial sector (which will be described in Section 3.2).

Figure 2.10 - General government EDP debt ratio and its drivers 2007-2014
(% cumulative changes)



Source: authors' calculations on Eurostat data

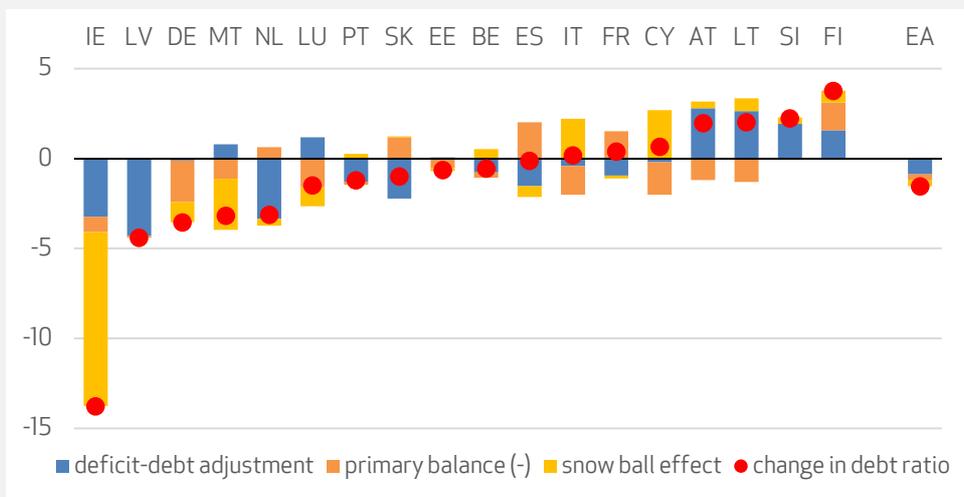
Looking at the composition of debt changes across countries (Figure 2.10), we note that a relatively greater weight of the *dda* occurred in countries where the debt grew less (except Cyprus and Slovenia). In countries

where debt increased more than the average, the main cause was actually rather the deterioration of the primary balance (Spain, Ireland) or the snow ball effect (Portugal).

Finally, Figure 2.11 shows the debt change in 2015 broken down into the three specific factors.

For the first time in eight years, at the end of 2015 most euro area countries recorded a reduction in their debt-to-GDP ratio. Among the major countries, the debt ratio of Spain, France and Italy still increased, even if only slightly. For the first two countries, the increase arose from primary deficits; for Italy, from a still unfavourable contribution of the snowball effect. The stock flow adjustment was generally favourable and contributed around 1 percentage point to debt relief for the euro area as a whole. For some countries the reduction associated with financial transactions was close to 5 percentage points (Ireland and the Netherlands, for example), reflecting sales of financial assets previously acquired to support financial institutions (Section 3.2).

Figure 2.11 - Change in general government EDP debt ratio
2014-2015 (% of GDP)



Source: authors' calculations on Eurostat data

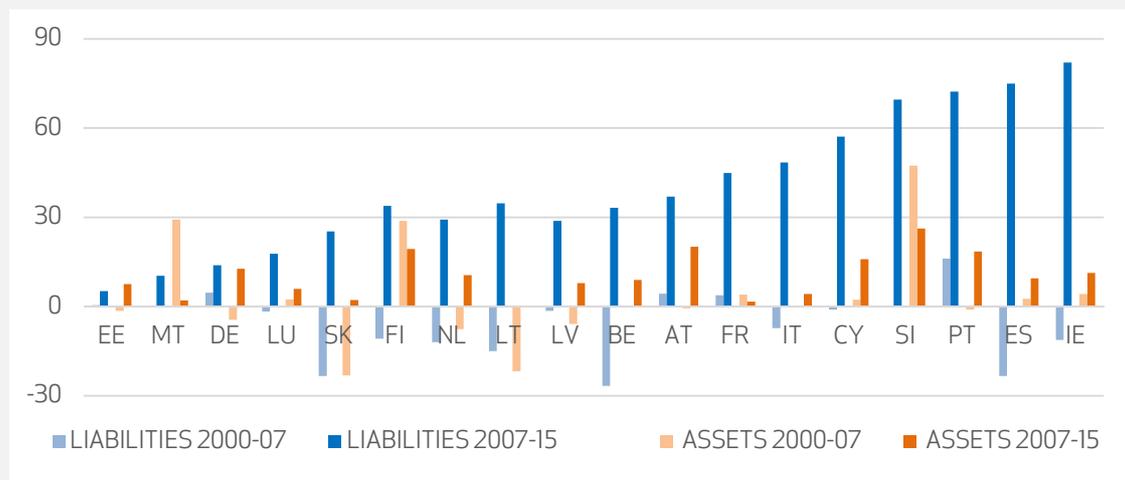
2.2.2 Change in assets and liabilities

The largest contribution recorded by *dda* during the crisis with respect to the pre-crisis period inevitably reflects more significant changes in the stock of assets. Figure 2.12 summarises these changes, comparing the cumulative increases in assets and liabilities in the years of the crisis (the darker bars) and in the previous seven years (the lighter bars).

It clearly emerges that the two periods are quite different. With regard to liabilities, significant generalised increases occurred during the crisis, while in the first years of the decade 11 countries recorded falls in the liabilities-to-GDP ratio and the remaining countries recorded only small increases (about 3 percentage points of GDP), with the exception of Portugal (16 percentage points). In the same way, assets generally increased more in the crisis period, mainly reflecting government interventions to support the financial sector.

Austria, Germany, Ireland, the Netherlands and Portugal increased their stock of assets on average by 16 percentage points of GDP in 2007-14, whereas in the previous seven years they had reductions. A particularly high rise was recorded in Slovenia and Finland; in this case, however, it was even more marked than in the previous seven years. France and Italy, among the larger countries, did not modify their stock of public assets.

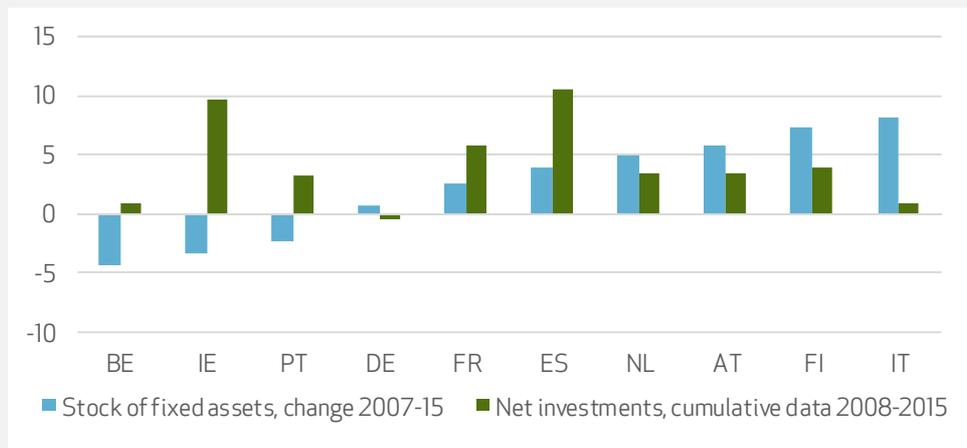
Figure 2.12 - Increase in liabilities and assets
2000-2007, 2007-2014 (% of GDP)



Source: Eurostat

Turning to the variation in non-financial assets, during the crisis an accumulation in fixed capital emerged for most countries (Figure 2.13). However, this is not true for those countries that accumulated more liabilities. Therefore, considering the non-financial assets, underlying conditions do not improve for these countries. In Ireland, for example, we estimated that the incidence of fixed-capital/GDP accumulated by the government fell, and increased only marginally in Spain, while it increased by 6.5 percentage points in the Netherlands, 4.1 percentage points in France, and 3.7 in Austria.

Figure 2.13 - General government total fixed assets and net investments
(% of GDP)



Source: authors' calculations on Eurostat data

Figure 2.13 shows the variation of the estimated physical capital together with the cumulative net investments. The cumulative net public investments can be considered a measure of the change in the capital stock of the government (Ynesta et al., 2013, Bloch and Fall, 2015).

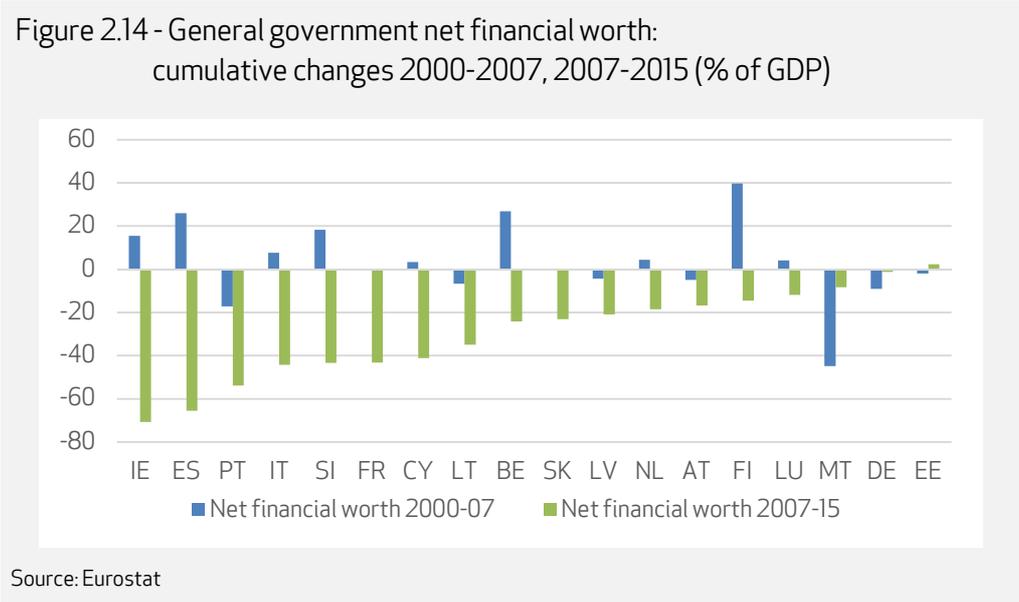
However, as the graph shows, changes in the estimated physical capital differ from the accumulated net investment, often to a significant degree. The level of capital stock is actually influenced by investment spending, by the depreciation of the capital stock and, not least, by changes in the implicit price deflator that in some countries caused a huge devaluation of the capital stock. In Ireland, for example, the crisis years were

characterised by an accumulation of net investments but significant decrease in investment deflator meant that this increase did not turn into an increase in the capital stock at current prices. At the same time, nominal GDP growth was quite robust lowering the capital to GDP ratio.

2.2.3 Change in net worth

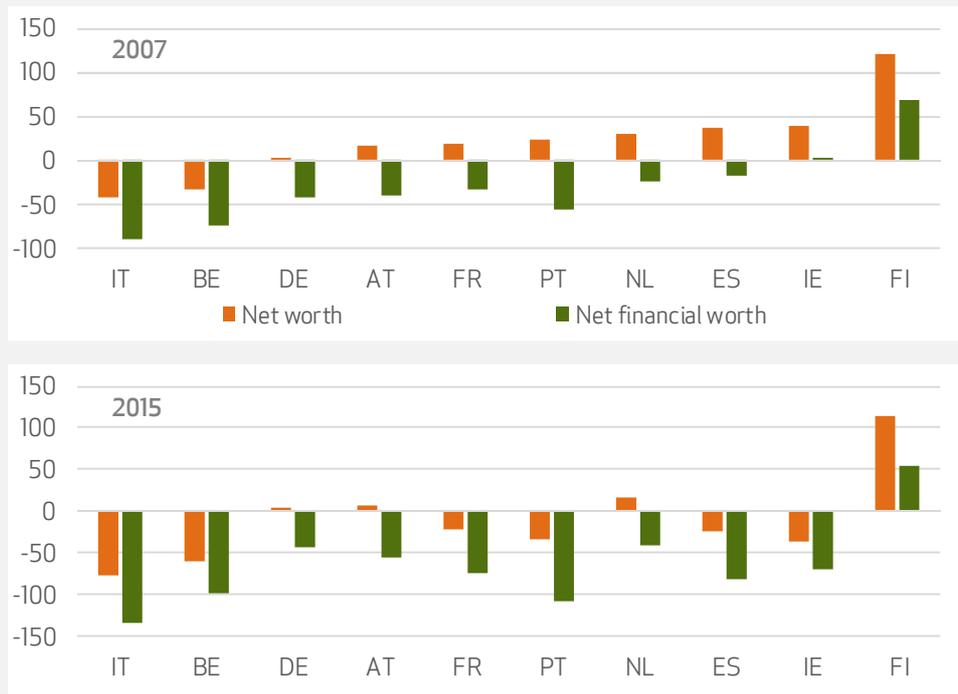
The accumulation of financial assets did not balance the accumulation of liabilities and net financial worth fell over recent years in all countries except Estonia, which showed modest changes both in assets and in liabilities (Figure 2.14). Ireland, Portugal and Spain are the countries recorded the major reduction in net financial worth.

In the pre-crisis period, by contrast, around half of euro area countries achieved an increase in net financial worth and only Malta recorded significant falls, together with, to a lesser extent, Portugal and Germany.



For some countries we can include estimated non-financial assets and calculate a total net worth indicator. Figure 2.15 shows financial net worth side by side with the total net worth indicator (financial assets + fixed capital - financial liabilities as a percentage of GDP) in 2007 and 2015. In 2007 for the majority of countries the sum of financial assets and fixed capital was greater than liabilities; only Italy and Belgium recorded a negative net worth ratio while net financial worth was positive only in Finland among the countries considered. The picture is very different in 2015; the total net worth indicator worsened, and only remained (marginally) positive in the Netherlands, Austria and Germany. With the exception of Belgium and Ireland, the worsening was less intense in total net worth than in net financial worth.

Figure 2.15 - Net worth indicators
2007 and 2015 (% of GDP)



Source: authors' calculations on Eurostat data

3) A balance sheet approach to fiscal policy during the European financial crisis

During the financial crisis euro area witnessed specific non-structural fiscal operations⁸ to rescue distressed financial institutions. Governments supported banks with recapitalisation (including liquidation aid) and asset relief programmes (implying the creation of defeasance structures, i.e. a bad bank). Explicit contingent liabilities were provided to financial institutions, such as time-restricted guarantees for interbank loans or bonds and raising coverage thresholds for guaranteed bank deposits.

Because of the importance of the restructured banks in the European system the amounts of aid granted were significant: €718 billion at the end of 2015. Increased liabilities accounts for the major part of this amount (€508 billion), while one-off guarantees account for the rest.

Recently legislative arrangements have been introduced to minimise the reliance on public financial support in bank losses and recapitalisations⁹, but legacies from past government bailouts still exist, either in the form of fiscal costs or in the form of fiscal risks due to the actual amount of outstanding government guarantees.

In any analysis of government balance sheets, it is important to be clear as to what liabilities and assets are included and how they are being measured (Barnes and Smith, 2013). This is the aim of this section of the paper, which specifically analyses government financial sector support in the form of financial assets and liabilities acquired and guarantees granted to financial institutions since the beginning of the European financial crisis. This comprehensive look at government balance sheets draws on a quite recent data source made available by Eurostat¹⁰, the Eurostat Financial Crisis Tables, and on another, even more recent data set on contingent liabilities collected by Eurostat in the context of the reinforcement of the EU economic governance (Council Directive 2011/85/EU) and available from 2015¹¹,

3.1 - A classification of non-structural financial sector assistance measures

Around 25 per cent of the entire European banking sector has been restructured with EU State aid rules and obviously all these measures have had significant effects on public balance sheets (European Commission, 2015).

Some of the aid granted to financial institutions was new in magnitude and in contents, and it emerged that standards for reporting and compiling government statistics (SNA) were incomplete. The nature of fiscal interventions and the evolving statistical framework resulted in challenges for Eurostat, which has developed further methodological guidance on how to record these operations¹² and set up a supplementary dataset to ensure transparency and homogeneous statistical recording of public interventions to support financial institutions.

⁸ Because of the nature of these operations (non-structural and temporary) they are also treated in a special manner in the Stability and Growth Pact and are excluded from the calculation of the structural effort.

⁹ EU Parliament and Council Regulation 806/2014 of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund; EU Parliament and Council "Bank Recovery and Resolution Directive" (BRRD) of 15 May 2014, to be transposed into national legislations before the end of 2014, for measures to be applied from 1 January 2015. European Commission, 2016.

¹⁰ Eurostat, 2016a, *Supplementary table for reporting government intervention to support financial institutions* <http://ec.europa.eu/eurostat/web/government-finance-statistics/excessive-deficit/supplementary-tables-financial-crisis>.

¹¹ <http://ec.europa.eu/eurostat/web/government-finance-statistics/contingent-liabilities>.

¹² Complete references can be found in European Commission, 2013.

Indeed, government involvement helped restore the financial systems and the Commission and Eurostat have been central to the interpretation of statistical recording principles.

As illustrated in synoptic Table 3.1, depending on the specific nature of the assistance measures, the impact can be on the fiscal deficit and/or on assets and liabilities and it can imply indirect revenues (fees for granting guarantees, dividends and interest from acquired debt securities and equities).

Table 3.1 - Accounting framework for general government assistance to the financial sector, 2008-2015

	direct impact on assets and liabilities	direct impact on fiscal balance
Financial transactions		
Loans	✓	
Debt securities	✓	
Equity and investment fund shares/units at market price	✓	
Other assets and liabilities from entities reclassified from national sector to general government without transactions. Assets and liabilities of newly established government defeasance structures	✓	
Capital transfers		
Interest payable	✓	✓
Capital injections recorded as deficit-increasing (capital transfers)	✓	✓
Other capital transfers (e.g. asset purchase above market price)	✓	✓
Calls on guarantees	✓	✓
Debt assumption	✓	✓
Indirect revenues		
Guarantee fees receivable		✓
Interest receivable		✓
Dividends receivable		✓
Contingent liabilities		
Liabilities and assets outside general government under guarantee		
Securities issued under liquidity schemes		
Special purpose entities (1)		

1). Special purpose entities included here are those where government has a significant role, including a guarantee, but which are classified outside the general government sector. Their liabilities are recorded outside the general government sector (as contingent liabilities of general government).

Source: Eurostat, *Supplementary tables for reporting government interventions to support financial institutions*.

Capital injections to support distressed financial institutions have to be recorded as a capital transfer, i.e. they impact on the budget balance because they are large, infrequent “something for nothing” transfers of wealth from governments to a public or private corporation. In other words, a capital transfer must be recorded when a government provides funds for public purposes to cover expected future losses (or repetitive losses) or to purchase assets (new equity, impaired assets or loans) with a price indisputably exceeding the market price or with a price which is difficult to determine. The same logic is suitable for calls on guarantees.

When a government provides funds and receives in return financial assets of equal value on which it expects dividends (unquoted shares, new equity at market prices, loans and/or debt securities), the operation must be recorded as a financial transaction. It implies a change in assets as well as a change in liabilities. An increase in financial assets does not contribute to changes in the budget balance, but liabilities will increase as long as the government needs to issue new debt to finance the transaction.

Non-performing bank assets can be removed from banks' balance sheets and transferred to a defeasance structures. With regard to the statistical treatment of these new asset management vehicles created by governments to purchase and manage assets from distressed banks, Eurostat suggested that the methodological rule permitting the structure to be classified outside governments is ownership¹³. Publicly owned asset management vehicles affect government's balance sheet and entities reclassified from the financial sector to the general government sector (i.e. bank nationalisations) also affect government assets and debts.

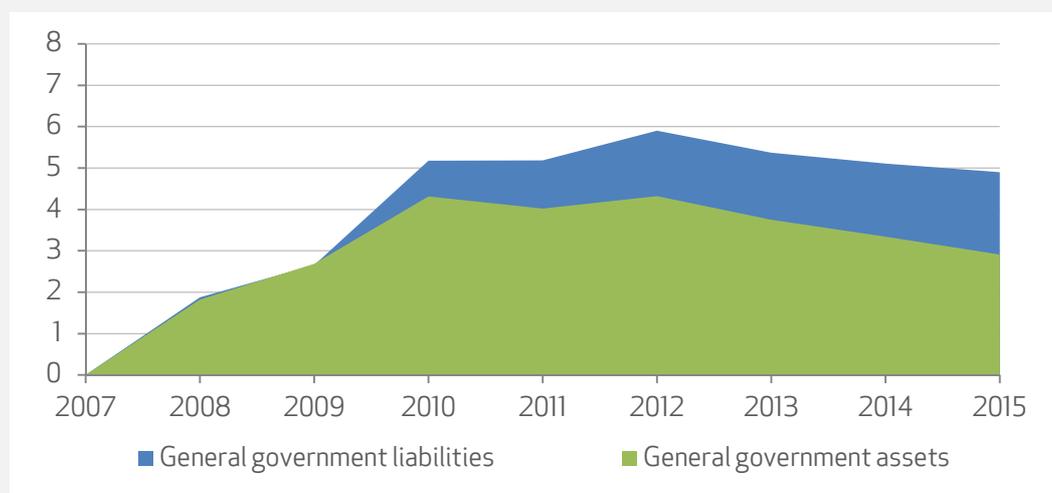
It should be remembered that in the case of publicly owned asset management companies, the proceeds from the sale of assets can offset the fiscal costs related to government interventions.

3.2 - The net fiscal cost of financial sector support

Between 2008 and 2015 public debt in the euro area grew from 64.9 per cent to 90.7 per cent of GDP. In the same period, owing to financial sector assistance the euro area governments' liabilities increased by 4.9 per cent of GDP (€509 billion), while the budget balance deteriorated by a cumulated 2 per cent of GDP (€198 billion), Figure 3.1.

Using data compiled by Eurostat¹⁴ we estimated that for the euro area countries accumulated gross financial sector assistance measures amounted to more than 8.5 % of their GDP.

Figure 3.1- Impact of interventions to support financial institutions, euro area (% of GDP)



Source: authors' calculations on Eurostat data

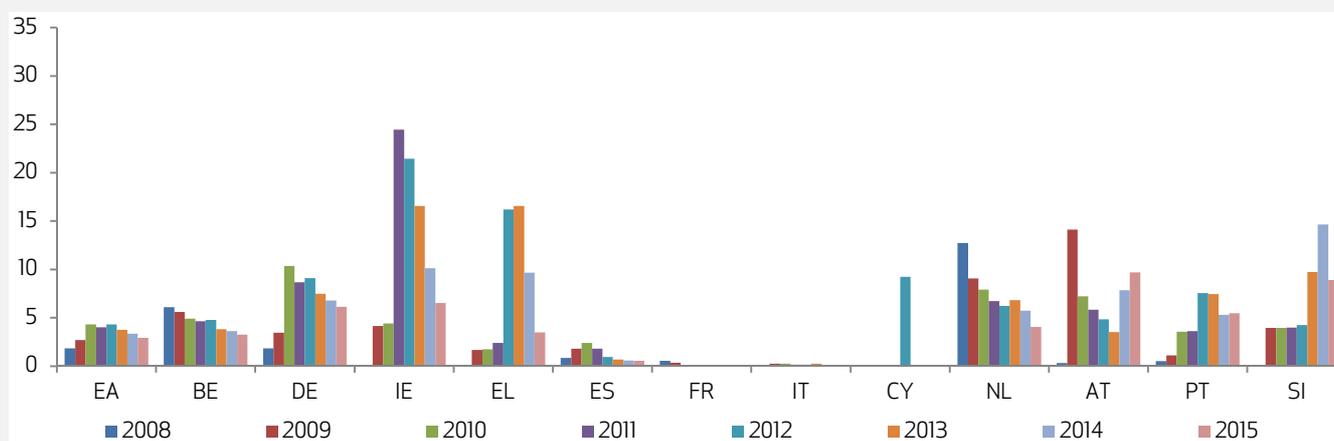
Although these support measures account for only a limited portion of the total deterioration of public finance in the last eight years, they mask strong differences between European countries. As illustrated in Table 3.2 in Italy and France there were no debt increases related to the financial crisis, while in Greece, Germany, Ireland and Austria financial sector support accounted for around 50 per cent or more of the overall debt increase.

¹³ "Majority privately-owned special purpose entities which are established for a short temporary duration and have a sole purpose to address the financial crisis, even if they receive a government guarantee, are to be recorded outside the general government sector if the expected losses that they will bear are small in comparison with the total size of their liabilities. This latter condition may be determined, for example, by the extent and form of collateral arrangements which are in place". Eurostat, 2009:

¹⁴ See Eurostat, 2016a.

At the same time, financial institutions transferred assets to governments. The acquisition of financial assets increased, albeit modestly compared to liabilities, because of valuation problems (e.g. in some cases the investments in the banking sector had been heavily written down, as in the case of Cyprus, Ireland, Greece and Spain) and because of a recovery from injections of capital into the banking sectors through asset sales (as in the case of Ireland, Belgium and the Netherlands); see Figures 3.2 and 3.3.

Figure 3.2 - Stock of government assets to support financial institutions (% of GDP)



Source: authors' calculations on Eurostat data

Over the period considered the assets acquired reached a peak at 4.3 per cent of GDP in 2012 (while the liabilities peaked at 5.9 per cent in the same year) to then shrink to 2.9 per cent in 2015, as indicated in column B of Table 3.2. Hence, at the end of 2015, on average the euro area governments still held a share of the acquired assets (loans, debt securities and equities).

The net acquisition of financial assets was particularly pronounced in Germany, Ireland, Portugal, the Netherlands, Slovenia and Austria, being above 5 per cent of GDP. Some of these assets are recorded at market prices, hence their decrease during the period may reflect a valuation effect (in some cases the value of bank investments has been written down, e.g. Cyprus, Ireland, Greece and Spain) and/or a recovery from the injections of capital into the banking sector through asset sales (Fig.3.2-3.3).

Table 3.2 is the core of this section and is a valuable record of the main interactions between governments and financial sectors for 12 euro area countries in the last years. It provides both an idea of the fiscal costs of financial sector support up to 2015 and a measure of the future potential recovery rate from these costs.

In column C we account for the deficit-increasing measures (capital transfers net of realised revenues from financial support, columns D minus E). Deficit-increasing capital transfers played a role in Ireland (above 25 per cent of GDP), Greece, Cyprus and Slovenia, while in other countries their extent was limited. In Italy until the end of 2014 the financial assistance measure implied only net revenues. The main part of these capital transfers can be assumed to be an irreversible loss.

In particular, in 2015 government interventions to support financial institutions, albeit modestly, still influence government budget balance: the recapitalisation aimed at covering banks' accumulated losses accounted for 0.2 per cent of euro area GDP (€16.3 billion), contributing to an additional enlargement in the cumulated deficit-increasing capital transfers from 1.9 per cent of GDP in 2014 to 2 per cent in 2015.

The difference between the sum of the deficit and net acquisition of financial assets, which we call "net fiscal cost" in line with European Central Bank (Economic Bulletin n° 6, 2015), can be different to the total EDP debt

impact because of different valuation methods (nominal value versus market value) and other adjustments (e.g. reclassifications of defeasance structures inside the government sector without transactions)¹⁵.

In sum, for the period 2008-2015 on average for the euro area we estimate an approximate gross fiscal cost of over 8.5 per cent of GDP. Part of this has been recovered because the net fiscal cost for the taxpayer at the end of 2015 is 4.9 per cent of GDP (€500 billion). On average for the euro area the accumulated losses that cannot be recovered amount to 2 per cent of GDP, while the share of acquired assets which in theory will be possible to dispose of in future is 2.9 per cent of GDP at the end of 2015.

The figures regarding net acquisition of assets, this legacy from past government bailouts, do not imply that governments will be able to recover all of the cost. They can be considered as an evidence of what governments can potentially still recover, but effective recovery rates will depend on the exit strategies governments adopt to reduce their involvement in the financial sector and some specific features, such as the quality of acquired assets and market conditions.

IMF (Laeven et al., 2008) estimates that Sweden and Norway were able to reach a recovery rate of 80-90 per cent of budgetary outlays five years after the 1991 crisis, while Japan had recovered only about 1 per cent of the budgetary outlays five years after the 1997 crisis. However, by 2008 the recovery rate for Japan had increased to 54 per cent. Hence, a euro area recovery rate at 40 per cent of the total budgetary outlays after eight years cannot be considered too successful. However, the fiscal costs should also be weighed against the economic and social benefit of stabilising the financial sector.

A recent work (European Commission, 2015a) provided an evaluation of how effective the government financial system bailout have been. The results are that the aid has paid off because supported banks have bounced back after implementing a considerable part of their restructuring plans. The Table 3.2 however reveal that in 2015 there was still a need for new government aid to the banking sector rather relevant in Austria, Cyprus, Greece, Portugal and Slovenia.

Table 3.2 - Government financial assistance measures, 2008-2015
(% of GDP at current prices and contribution to 2015 budget balance)

	2008-2015							2015	
	Change in total liabilities A	Change in total assets (net acquisition of financial assets) B	Cumulated net impact on budget deficit C = D-E	Expenditure (capital transfers, interest payable, called guarantees) D	Indirect revenues (interest receivable, dividends, guarantee fees) E	Net fiscal cost F = B+C	Change in government debt G	Budget deficit/GDP	Impact of financial support
Euro area	4.9	2.9	2.0	3.0	1.0	4.9	25.8	2.1	0.2
Belgium	3.4	3.2	0.4	2.2	1.8	3.6	19.1	2.6	0.0
Germany	7.4	6.1	1.3	2.9	1.6	7.4	7.6	-0.7	0.0
Ireland	31.8	6.5	21.7	29.2	7.5	28.3	69.9	2.3	0.8
Greece	25.7	3.5	16.8	22.7	5.9	20.3	73.8	7.2	4.1
Spain	4.7	0.6	4.2	4.9	0.7	4.7	63.7	5.1	0.1
France	0.1	0.0	0.0			0.0	31.4	3.5	0.0
Italy	0.1	0.1	0.0	0.1	0.2	0.1	33.0	2.6	0.1

¹⁵ In the countries where the differences are relevant there were important losses on assets (shares and other equities in the case of Cyprus and Ireland and complicated debt securities restructuring operations in Greece). For Austria and Slovenia the difference is due to a recent reclassification of a defeasance structure inside the government.

Cyprus	21.0	0.0	9.5	10.4	0.9	9.5	55.0	1	0.9
Netherlands	4.3	4.1	0.6	2.0	1.4	4.7	22.7	1.8	-0.1
Austria	9.1	8.0	3.4	4.5	1.1	11.3	21.4	1.2	0.5
Portugal	11.5	5.5	7.0	8.1	1.1	12.5	60.6	4.4	1.6
Slovenia	17.0	8.9	13.7	14.8	1.1	22.6	60.5	2.9	1.6

Source: authors' calculations on Eurostat's *Supplementary tables for reporting government interventions to support financial institutions*.

3.3 - Contingent liabilities: looking beyond the government balance sheet

In previous sections we investigated “how much is owed” by governments, although in some cases this has been complicated by valuation difficulties when comparing different financial instruments and by conceptual differences across measures. However, simply “adding up” different categories of assets and liabilities can be misleading, particularly for contingent liabilities that are uncertain and have different probabilities of being realised¹⁶.

Guarantees issued by governments on liabilities and assets of other parties constitute the most common form of contingent liabilities. Guarantees will become actual costs and impact on the public deficit only in the event they are called. Until then, they are not recorded in core national accounts.

During the last eight years, governments have provided explicit one-off guarantees to financial institutions, such as guarantees for different kinds of assets and liabilities¹⁷. In addition to these, some governments also granted guarantees for the financing of asset management vehicles created to acquire and then sell impaired assets.

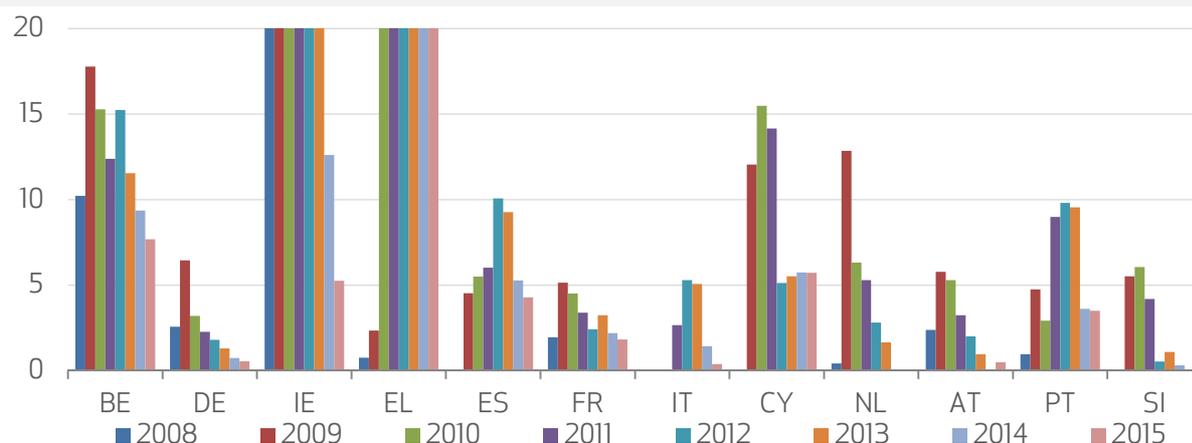
According to the Eurostat¹⁸ Financial Crisis Tables examined in section 3.2, the level of government guarantees related to the financial crisis peaked at 8.3 per cent of GDP in 2009 (€767 billion). From 2012 onwards government guarantees declined steadily, to 2.0 per cent of GDP in 2015 (€208 billion) and just a small fraction of these guarantees were called (0.04 per cent of GDP). However, these figures may be somewhat misleading and understate the true realisation of contingent liabilities in the period 2008-2015.

¹⁶ See Barnes and Smyth, 2013.

¹⁷ Such as issued bonds, interbank deposits, senior unsecured debt, asset-backed securities and dated subordinated debt. In this paper we consider only the value of governments' active guarantees related to assistance to financial institutions and it is important to note that general government guarantees on bank deposits are not included here.

¹⁸ Eurostat, 2016a.

Figure 3.3 - Level of contingent liabilities (% of GDP)



Source: authors' calculations on Eurostat data

It is true that governments scaled down their support because financial stability had been re-established, but a closer look at the Financial Crisis Tables shows that part of the guarantees were converted into debt. Some governments stepped in to cover obligations of heavily restructured financial institutions, purchasing their previously granted impaired assets, as in the case of Germany, Ireland, Slovenia and Cyprus. At the same time Ireland, the Netherlands and Austria had to reclassify financial entities, to which they had previously granted guarantees, inside the general government sector. This implies that the respective government guarantees are no longer recorded but the gross government debt increased accordingly¹⁹.

Recognising the importance of risks associated with contingent liabilities, in the context of the Enhanced Economic Governance package (the "six pack") EU Member States have been required to report information on contingent liabilities. Eurostat has dedicated a new additional data collection to address the topic and the data were published for the first time in February 2015²⁰. In some cases the reported data are not complete/exhaustive, but it is the first time total contingent liabilities have been recorded and compared for all EU Member States. The time series currently cover four years, 2010-2014, are reported at nominal value and their information corresponds to the total stock of debt guaranteed by government units²¹.

¹⁹ The rules governing the treatment of government-owned defeasance structures were re-examined with the introduction of ESA 2010. Indeed, it was agreed that the Irish Bank Resolution Corporation (IBRC) be classified in the general government sector with effect from mid-2011; the same was the case for Austria with KA Finanz AG in 2014 and the Netherlands with Propertize, the *bad bank* formed from the nationalisation of SNS REAAL's property finance division in 2013.

²⁰ European Commission, 2015b; <http://ec.europa.eu/eurostat/web/government-finance-statistics/contingent-liabilities>.

²¹ Data cover both one-off and standardised guarantees. A one-off guarantee is defined as individual, and guarantors are not able to make a reliable estimate of the risk of calls. One-off guarantees are linked to debt instruments (e.g. loans, bonds). An additional breakdown is available for one-off guarantees granted to public corporations and financial corporations. Standardised guarantees are guarantees that are issued in large numbers, usually for fairly small amounts, along identical lines. It is not possible to estimate precisely the risk of each loan being in default but it is possible to estimate how many, out of a large number of such loans, will default. Examples are mortgage loan guarantees, student loan guarantees, etc. Guarantees are not recorded except in the case of standardised guarantees. In ESA 2010, when a standardised guarantee is granted, a liability should be recorded in the government's balance sheet that is equal to the present value of expected calls under the guarantees, net of any recoveries. According to the agreed data specifications, data do not include government guarantees issued within the guarantee mechanism under the European Financial Stability Facility (EFSF - since the liabilities of the EFSF guaranteed by Member States are predominantly included in the debt of Member States issuing such guarantees directly), derivative-type guarantees (when they meet the definition of a financial derivative and are recorded correspondingly in national accounts), deposit insurance guarantees and compatible schemes (given that these are covered by separate frameworks) and guarantees issued on events the occurrence of which is very difficult to cover via commercial insurance (like earthquakes, large-scale flooding, nuclear accidents, certain art exhibitions etc., given very large uncertainties in establishing the value of such guarantees). European Commission, 2015b.

As illustrated in Table 3.3, comparing the data provided by the Financial Crisis Tables with this more recent dataset on total one-off guarantees for 2014, the latest available year, it appears that a group of important countries aside from the “usual suspects” are bearing higher fiscal risks than that signalled by the first dataset. Total one-off guarantees are valued at more than 10 per cent of GDP for Belgium, Germany, Austria and Slovenia. One possible explanation is that in the new dataset total one-off guarantees are relative to all debt instruments (e.g. loans and bonds) in public and financial corporations, not only to those which are crisis-related.

Table 3.3 - Guarantees
(% of GDP)

	Total one-off guarantees*	Total guarantees relating to assistance to financial institutions**
Belgium	11.6	7.69
Germany	16.4	0.57
Ireland	11.3	5.26
Greece	28.0	25.41
Spain	12.8	4.29
France	4.5	1.84
Italy	2.7	0.39
Cyprus	15.9	5.74
Netherlands	4.0	0.00
Austria	26.5	0.50
Portugal	7.1	3.51
Slovenia	12.4	0.00

*Source: Data on contingent liabilities collected by Eurostat in the context of the reinforcement of EU economic governance (Council Directive 2011/85/EU) (2014).

**Source: Supplementary table for reporting government intervention to support financial institutions (2015).

On average for the euro area the stock of guarantees to the financial sector has been on a declining trend since 2012, and other things equal, this trend may be seen as a first indication of evolution of fiscal risk. The most euro area countries show continuously decreasing guarantees, suggesting they have addressed the majority of issues in their banking sectors. However, a few countries (Austria, Portugal and Cyprus) reported a new accumulation or no decrease in guarantees at the end of 2015, signalling a potential need to provide support to their financial systems over the near term.

Although the probability of these guarantees being realised may not be extremely high (Bova et al., 2016), the recent experience has demonstrated that guarantees are sometimes transformed into debt and they need to be closely monitored.

Conclusions

The financial and economic crisis which started in 2008 has resulted in entirely new conditions for public finances all over the euro area, especially hitting public debt. The debt has increased for cyclical and discretionary measures both to support domestic demand and to stabilise the European financial sector.

Together with a gradually increasing concern regarding the fiscal situation and the extent of provisions in the EU budgetary surveillance framework, the debate on the advantages and shortcomings of various indicators of government accounts has intensified. Traditional indicators, such as public debt and deficits, are being placed side by side with the evolution of assets (in addition to government liabilities) and obligations to incur losses if risks materialise (contingent liabilities). The analysis carried out in this paper confirms that the crisis period indeed marked a sharp break with previous years in all indicators considered.

The first message coming from this analysis is that, despite its concision, the traditional indicator EDP debt and its dynamic deliver a reliable picture of the strengths or weaknesses of a country, but provide only a partial view when evaluating the medium- to long-term sustainability of public finances.

If we consider the headline indicator on government debt, as defined in the Excessive Deficit Procedure (EDP), the worst performance over the past eight years has been recorded by Ireland, Spain and Portugal, whose debt/GDP increased on average by more than double that of the euro area as a whole. This trend reflects the worst underlying conditions in the face of recession, highlighted by the particularly unfavourable contribution of the primary balance. Here, too, Ireland and Spain are the worst performers. This is due both to the adverse cyclical effects and to the discretionary measures in favour of bank bailouts.

Set against higher deficits and debt are acquisitions of financial assets. Does this mean a less deteriorated position in terms of net financial wealth? In a way, yes, as the case of Ireland shows, because it has gained a relatively high amount of assets while for Spain the increase was just above the euro area average. However, the consideration of the stock of assets does not change the relative position with respect to the impact of the crisis; Spain and Ireland are the countries with less favourable performance even if one considers net financial wealth. Similarly, if we also consider non-financial assets, underlying conditions do not improve for these two countries because of the significant process of internal devaluation they have undertaken in the last few years.

The second message is that using a balance sheet oriented approach helps to gather future implications on how borrowed money is used, hence the balance sheet analysis gives an idea of the potential amount which could be recovered in the future.

In relation to past government bailout costs, this approach permits a detailed evaluation of the state of play concerning fiscal costs and potential recovery rates, given the governments' strategies to reduce their involvements in the financial system. For the euro area over the period 2008-2015 the cumulated gross financial sector assistance measures impacted more than 8.5 per cent of GDP, while net fiscal costs amounted to 4.9 per cent of GDP. For the euro area as a whole, financial acquired assets that could be sold or privatised amount to 2.9 per cent of GDP.

The government exit strategies to reverse anti-crisis measures through the sale of acquired assets are well under way in Ireland, but also for other countries such as the Netherlands and Slovenia. These strategies are as yet undeveloped in Germany and Austria, where the governments still hold a large ownership of previously saved banks.

State aid to the European banking sector between 2008 and 2012 has been effective in permitting a return to long-term viability but the latest available information shows that in 2015 there has been further need for government aid to withstand renewed stress in the banking system in Austria and Slovenia as well as in Ireland, Cyprus and Portugal.

The third message is that simply “adding up” different categories of assets and liabilities can be misleading, particularly for contingent liabilities in the form of public guarantees, as they are uncertain and have different probabilities of being realised, hence representing a fiscal risk. The large use of guarantees made by governments during the crisis prompted the Commission to require full disclosure on all guarantees.

Looking ahead, the EU’s new legal and institutional framework for the banking sector should ensure better financial stability while minimising taxpayer involvement. A grey area in the outlook for public finances will nevertheless remain and is related to the amount of government guarantees. These risks, although having a low probability of realisation, are high even in some of the “virtuous” countries, such as Germany and Austria, but according to recent information it is only for the latter that financial risks may still be on the rise.

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Annex 1 Classification of assets and liabilities and valuation methods

Table A1.1 - Classification of government financial assets and liabilities, ESA 2010 and ESA-based GFS (source: ESA 2010)

Financial assets/liabilities	Assets	Liabilities
AF.1 - Monetary gold and SDRs		
AF.2 - Currency and deposits	✓	✓
AF.3 - Debt securities	✓	✓
AF.4 - Loans	✓	✓
AF.5 - Equity and investment fund shares	✓	
AF.6 - Insurance, pension and standardised guarantee schemes	✓	✓
AF.7 - Financial derivatives and employee stock options		✓
AF.8 - Other accounts receivable/payable	✓	✓

Valuation methods for government financial assets and liabilities

Market valuation is the key principle for valuing positions (and transactions) in financial instruments. Financial instruments are identical to financial claims. They are financial assets that have corresponding liabilities. The market value is that at which financial assets are acquired or disposed of, between willing parties, on the basis of commercial considerations only, excluding commissions, fees and taxes. In determining market values, trading parties also take account of accrued interest.

market value = nominal value + revaluations arising from market price changes

Nominal valuation reflects the sum of funds originally advanced, plus any subsequent advances, less any repayments, plus any accrued interest. Nominal value is not the same as **face value** (or redemption price), which is the amount that the debtor has to repay to the holder at maturity.

The ESA values balance sheet items at market value, except for three specific instruments: currency and deposits (AF.2), loans (AF.4) and other accounts receivable/payable (AF.8). For those three instruments, the values recorded in the balance sheets of both creditors and debtors are the amounts of principal that the debtors are contractually obliged to repay to the creditors, even in cases where the loan was traded at a discount or premium, including interest accrued.

Table A1.2 - Classification of non-financial assets (source: ESA 2010)

Non-financial assets
AN.1 Produced non-financial assets
AN.11 Fixed assets by type of asset
AN.111 Dwellings
AN.112 Other buildings and structures
AN.113 Machinery and equipment
AN.114 Weapons systems
AN.115 Cultivated biological resources
(AN.116) (Costs of ownership transfer on non-produced assets) ¹
AN.117 Intellectual property products
AN.12 Inventories by type of inventory
AN.121 Materials and supplies
AN.122 Work-in-progress
AN.123 Finished goods
AN.124 Military inventories
AN.125 Goods for resale
AN.13 Valuables
AN.131 Precious metals and stones
AN.132 Antiques and other art objects
AN.133 Other valuables
AN.2 Non-produced non-financial assets
AN.21 Natural resources
AN.211 Land
AN.212 Mineral and energy reserves
AN.213 Non-cultivated biological resources
AN.214 Water resources
AN.215 Other natural resources
AN.22 Contracts, leases and licences
AN.221 Marketable operating leases
AN.222 Permits to use natural resources
AN.223 Permits to undertake specific activities
AN.224 Entitlement to future goods and services on an exclusive basis
AN.23 Purchases less sales of goodwill and marketing assets

Annex 2 Composition of general government assets and liabilities

Table A2.1 - General government assets and liabilities, 2007q4, 2015q4, % of total (source: authors calculations based on ECB data)

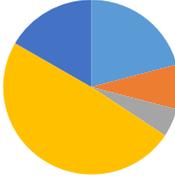
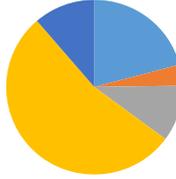
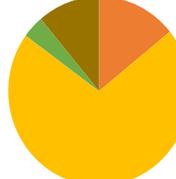
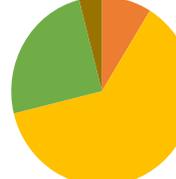
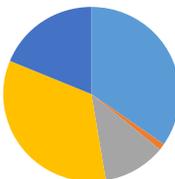
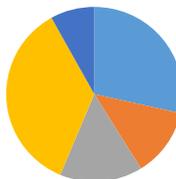
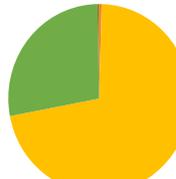
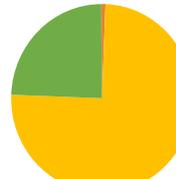
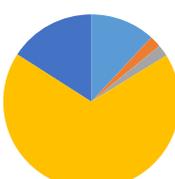
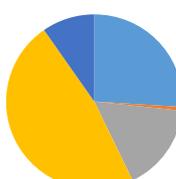
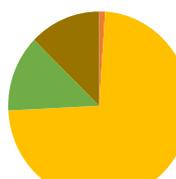
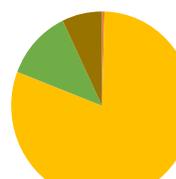
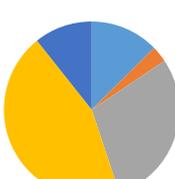
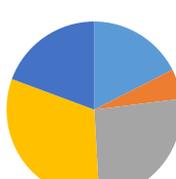
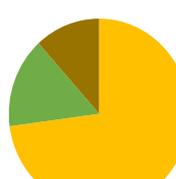
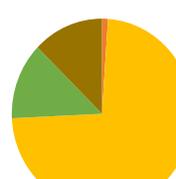
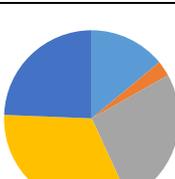
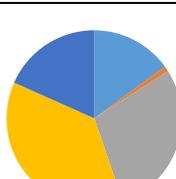
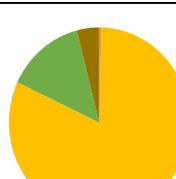
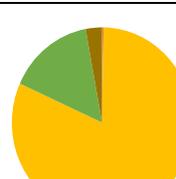
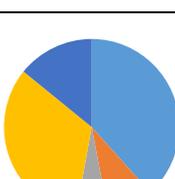
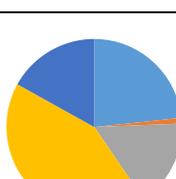
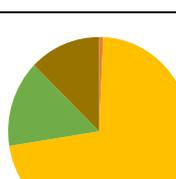
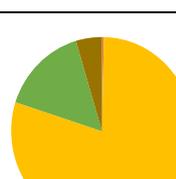
	ASSETS		LIABILITIES	
	2007	2015	2007	2015
IRELAND				
GERMANY				
SLOVENIA				
AUSTRIA				
BELGIUM				
SPAIN				

Table A2.1 - General government assets and liabilities, 2007q4, 2015q4, % of total (source: authors calculations based on ECB data)

	ASSETS		LIABILITIES	
	2007	2015	2007	2015
FRANCE				
ITALY				
CYPRUS				
NETHERLANDS				
PORTUGAL				