General Government debt: a quick way to improve comparability

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In simple words the General Government debt is the sum of liabilities of the General Government sector. In the current financial crisis, market participants monitor carefully the evolutions of the government indebtedness across countries. Comparisons between different countries are possible owing to the commonly used methodology based on the System of National Accounts (SNA).

Starting from these common concepts different debt definitions can be compiled according to five dimensions: sector coverage, instrument coverage, consolidation type, netting (gross/net) and valuation method. Financial instruments could cover all government liabilities, broad debt (which includes pension liabilities and trade credit) and core debt (currency & deposits, debt securities and loans). Debt can be measured at face value, nominal value and market value. Finally, debt can be consolidated or not, i.e. the liabilities that are at same time assets of the same government sector can be netted out or not. An alternative way to present the General Government debt is to deduct the assets from their liabilities, resulting in a net debt concept. To have a better picture of future debt developments, data on unfunded pension liabilities are recommended.

International organisations use different options to elaborate their well-known Economic Outlook forecasts. This paper will show how the impact of the different options used for each of the three above dimensions can be measured. A standardised way to compare government debt will be proposed, which will allow a comparison of the forecasts made by international organisations.

Keywords: Public debt; debt valuation; debt consolidation; gross and core debt.

1. Introduction

Public finance data are very important indicators to monitor the financial status of one major economic agent, i.e. the government. Since the financial crisis which has led to sovereign crisis in Europe, these data are further scrutinised. International organisations and national statistical authorities provide a large variety of public debt indicators with various characteristics. However, all these debt indicators are not always strictly comparable. The main discrepancies in reporting of government debt figures relate to five dimensions: sector coverage, instrument coverage, consolidation type, netting (gross/net) and valuation method. This large number of configurations is even more complicated by the fact that metadata sometimes do not provide a full picture of these dimensions.

Even if large progress have made in terms of standardisation of public debt statistics by the international organisations which have published extended detailed standards, there are still progress to be made in terms of standardised data.

In this context, we tried to propose a consistent set of indicators which are as much as possible comparable across countries.

2. Section 2 The System of National Accounts (SNA) framework and the government debt dimensions

Comparing government debt data across countries is challenging if the national compiling institutions do not follow a common framework. Fortunately, the SNA handbook[1] provides a universally accepted framework to facilitate this type of comparisons. Following the SNA, the financial instruments included in the liabilities of the government sector are the monetary gold, SDRs, currency & deposits,

[1] See System of National Accounts (2008).

debt securities, loans, equity and investment fund shares, insurance, pension and standardised guarantee schemes, financial derivatives and employee stock options, other accounts receivable/payable (see graph 1).
Even if the framework is standardised, national institutional characteristics can always hamper somewhat the cross-country comparability. For instance, countries where the government employee pension liabilities are unfunded show lower liabilities than the ones with funded pension system. Moreover, only a minority of countries collect systematically data on the above-listed instruments. For instance statistics on trade credit or on derivatives are not yet collected everywhere. Another source of discrepancy between countries is the SDRs liabilities that are registered as liabilities of the government in some countries, but in others as liabilities of the central bank. In this context, to facilitate cross-country comparisons, the coverage of the debt has been limited to three financial instruments: currency & deposits, debt securities and loans. The BIS refers to this concept as government core debt or credit to the government. From the instrument coverage point of view, the core debt is identical to the European Maastricht debt.[2]

Comparison of the instrument coverage of the various debt concepts

Graph 1

SNA2008 financial instruments	**All liabilities**	**Broad debt**	**Core debt**
	(OECD-EO)	(IMF-WEO)	(BIS)
Monetary gold (F11)	X		
SDRs (F12)	X	X	
Currency and deposits (F2)	X	X	X
Debt securities (F3)	X	X	X
Loans (F4)	X	X	X
Equity and investment fund shares (F5)	X		
Insurance, pension and standardized guarantee schemes (F6)	X	X	
Financial derivatives and employee stock options (F7)	X		
Other accounts receivable/payable (F8)	X	X	

Historically, the **sector coverage** of the "public debt" was limited to the central government because the indebtedness of other subsectors of the government was very often not substantial but in some cases also not precisely known. It is still partially the case today but in an always more limited number of countries. Credit to local authorities and social security have to be added to the central government debt because one can consider that one single entity is "responsible" for the operations of the government sector. Therefore, as much as possible, the BIS statistics on government debt cover the general government. Public enterprises' debt can obviously also impact the general government debt, especially when their borrowing is guaranteed by the government. However, their activity is more like that of private firms than of government entities; also their share in the national production can vary substantially from country to country and over time. Comparing public debt, ie the debt including public enterprises, across countries would bare biases in comparison of government debt. Therefore public enterprises have been kept outside the sector coverage of the government debt.
To summarise and using the Dippelsman and al classification[3], we have focused on the Government Level 3 and Debt instrument 2 without SDRs (GL3/D2).
As a rule, the entries in the SNA are not consolidated. However, **consolidation** may be relevant for the general government sector. The focus is often on the amount owed to non-government units. Consolidation still allows breaking down the debt of the general government sector between central government and other public subsectors. It should be noted that the BIS did not follow the same option

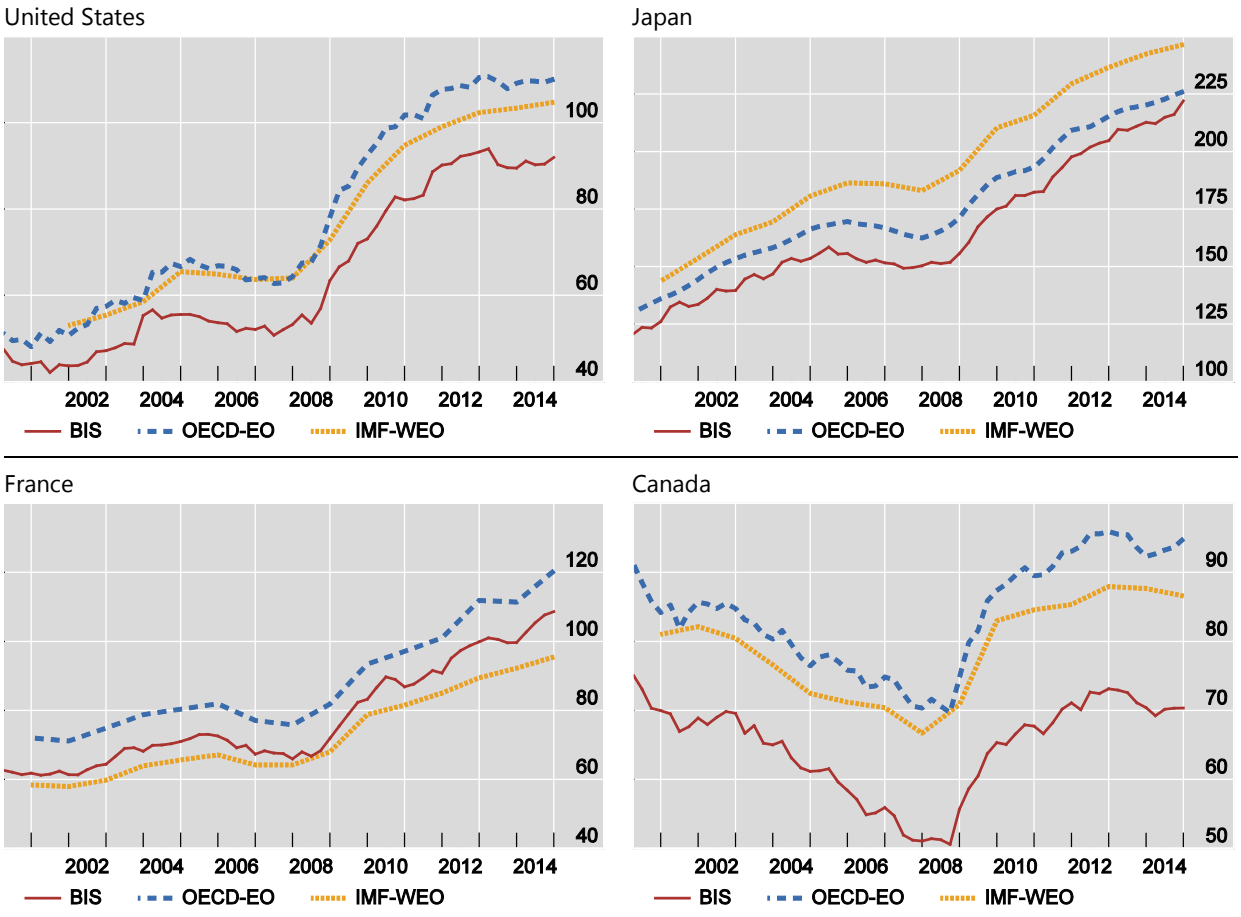
[2] See Eurostat for the definition of the Maastricht debt.
[3] See Dippelsman et al (2012) for a detailed description of the five dimensions of public debt.

for the data on "Credit to the private sector"[4], which covers the corresponding liabilities for the non-financial corporations and households. By opposition to the government sector, it is common practice that data on the private sector debt are not consolidated, in line with the higher degree of independence private sector economic units benefit compared to the public sector. For most purposes, such as assessing debt sustainability, it is not relevant in the private sector whether the source of credit is e.g. a bank or another corporate.

The SNA recommends that **valuation** of all assets and liabilities in a balance sheet should use observable market prices. However, no market values are observable for loans and currency &deposits, which can consequently only be compiled at face or nominal value. "Debt securities" is the only item of the core debt which can be valued at market prices. Some debt statistics do not follow the SNA general principle on valuation and show debt data valued at nominal or face value. This reflects the point of view of the debtor. The BIS statistics on government debt offers both debtor's and creditor's point of view. Market valuation of government debt is consistent with the valuation of the BIS statistics on credit to the private sector. This allows an aggregated picture of the indebtedness of the non-financial sector.

Comparisons of government debt from different sources

As a percentage of GDP — Graph 2



Sources: IMF, *World Economic Outlook*, April 2015; OECD, *Economic Outlook*, June 2015; BIS calculations.

[4] See Dembiermont et al (2013} for the description of the data set on the credit to the private non-financial sector.

3. Section 3 Cross-country comparison of the Credit to general government

The BIS data set on government debt covers 40 countries following the options mentioned above. Data are sourced from international databases available with the IMF, World Bank, OECD, ECB and Eurostat but they have been cross-checked with national central banks and statistical offices.

In graph 2, BIS data on government debt is compared with reference data like the IMF World Economic Outlook (WEO), which is based on a gross debt concept (i.e. including insurance, pensions and other accounts payable), and OECD Economic Outlook (EO), which shows the government gross liabilities. Some country data are adjusted by these institutions to improve cross-country comparability. In general, the amount of core debt shown in the BIS data is smaller than the OECD EO all liabilities data and the IMF WEO broad debt data. In the case of the United States, BIS data are lower than the ones following the two other concepts because they do not include the other accounts payable, which mainly consists of trade credit. For Canada, the unfunded pension liabilities and the other accounts payable explain why the BIS debt is much smaller than OECD total liabilities and IMF broad debt.

4. Section 4 Comparison of valuation methods

The compilation of government debt, at face, nominal or market value can sometimes generate very different results. Until recently, the valuation impact has been the playground of fiscal specialists as it is usually rather limited in size. The drop of the market value of the Greek public debt in 2010 as well as the sharp fall of government bond yields globally observed in 2014 has shed some light on this issue.

General government core debt: valuation effects[1]

As a percentage of GDP — Table 1

	End-2007			End-2014		
	At market value	At nominal value	Valuation effects	At market value	At nominal value	Valuation effects
Australia	8.4	8.2	0.3	34.7	31.3	3.5
Canada	51.0	47.8	3.2	70.3	63.9	6.4
France	65.9	64.4	1.5	108.6	95.5	13.1
Germany	64.1	63.7	0.3	82.0	74.5	7.5
Greece	105.6	103.2	2.5	170.3	177.1	–6.8
Ireland	24.4	23.9	0.5	121.4	107.7	13.7
Italy	105.3	99.7	5.5	151.4	132.0	19.4
Japan	150.4	149.7	0.7	222.0	212.2	9.8
Portugal	72.6	68.4	4.2	140.3	130.2	10.1
Spain	36.4	35.5	0.9	110.5	97.7	12.8
United Kingdom	46.3	43.6	2.7	107.2	89.3	17.8
United States	53.1	50.6	2.5	92.1	88.2	4.0
Simple average of above	*65.3*	*63.2*	*2.1*	*117.6*	*108.3*	*9.3*
Euro area	*66.8*	*65.0*	*1.8*	*106.0*	*92.0*	*14.0*

[1] Debt levels at market value refer to consolidated "core debt", which covers debt securities, loans and currency & deposits. Valuation effects are estimates of the difference between debt securities valuations at market prices and nominal prices. The valuation effect is estimated simply as the difference between the reported market and nominal values of consistent debt aggregates.

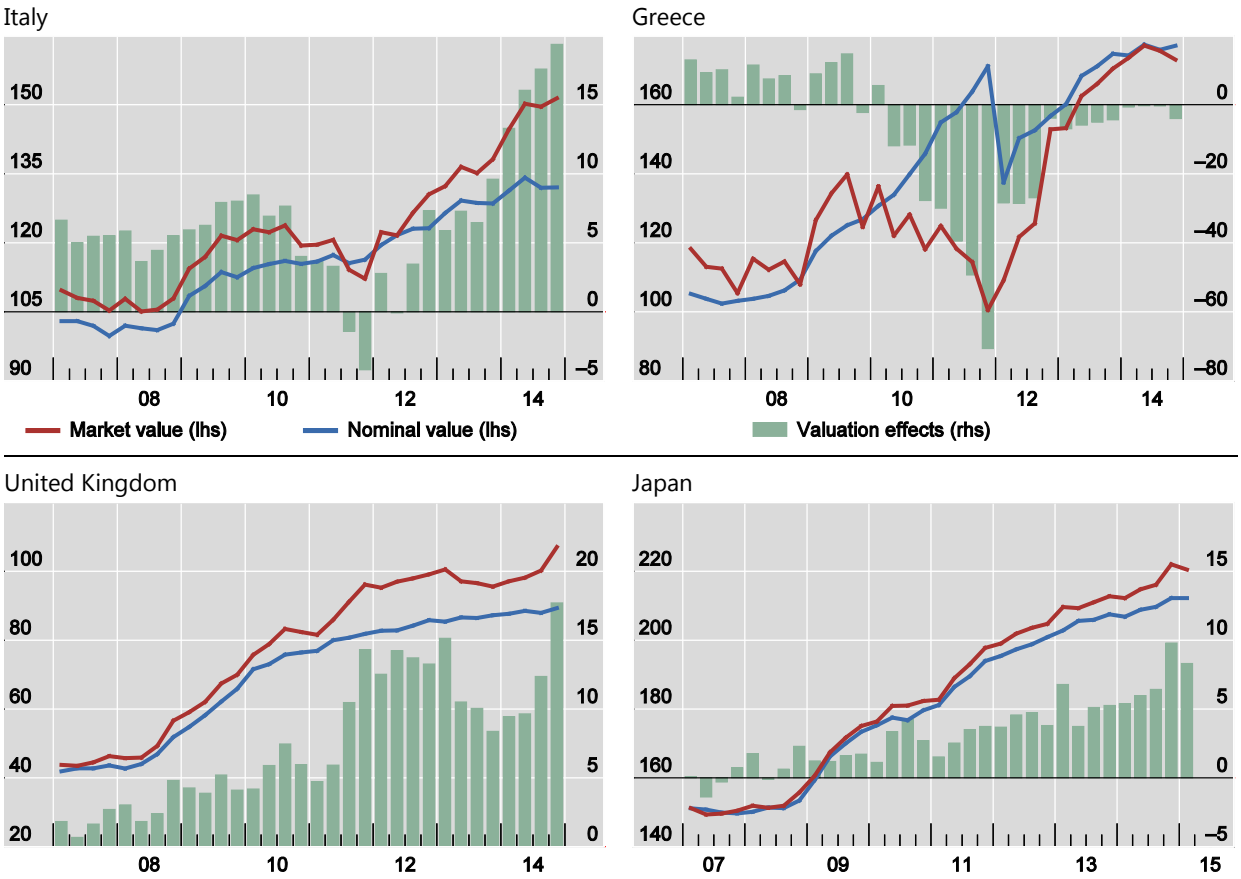
Sources: ECB; Eurostat; national data; BIS estimates.

Government debt data published by international organisations, central banks or statistical offices do not follow the same valuation method. To gauge the impact of the valuation on the debt level, one needs to identify data sets which are perfectly comparable, i.e. whose all dimensions (but valuation) are identical. No difference in instrument coverage, sector coverage, consolidation and netting should be observed so that the valuation effect is clean of any other influences.

Table 1 illustrates these valuation effects. Before the beginning of the financial crisis, in 2007, the difference between the government core debt, valued at market prices, was in average 2.1 percentage point of GDP higher than the same debt expressed at nominal value. In 2014, after the drop in government yields, the average difference between the core debt at market and nominal value grew to 9.3 percentage points of GDP, with spikes, respectively at 19.4 and 17.8 percentage points of GDP for Italy and United Kingdom. From a debtor point of view, it is clear that the nominal value will be the preferred option as this valuation method gives a lower result than the market valuation. In this sense, The Maastricht debt, which requires the valuation at face or nominal value gives a more favourable picture of the indebtedness.

General government core debt: valuation effects[1]

As a percentage of GDP — Graph 3



[1] Debt levels are based on BIS measure of core debt which includes debt securities, loans and currency & deposits. Valuation effects are the difference between debt securities valuations at market prices and nominal prices.

Sources: Eurostat; ECB; national data; BIS estimates.

The graph 3 shows the evolution of the market and nominal value of the government core debt for some countries. In Italy, the valuation effect stated to decrease when the yields

increased at the end of 2010. Yields peaked at the end of 2011 reducing sharply the market value, which become inferior to the nominal value in the second half of 2011. Since then the sharp decrease of the yields have boosted the market value which superseded in 2014 Q3 the nominal value by more than 17 percentage points of GDP. In Greece, the government bond rates were at very low levels at the fall 2009 and were above 24 percent at the end of 2011. This sharp increase pushed the market value far below the nominal value of the debt. The increase of the market value since then is due to the replacement of debt securities by loans from international organisations, which the SNA recommends to value at nominal value.

5. Conclusions

Limiting the scope of the government debt to three debt instruments allows a better comparability across countries without changing dramatically the general picture of the government indebtedness. Market valuation allows summing up the credit to the government and to the private non-financial sector to obtain the credit to the non-financial sector. However, one should keep in mind that this valuation shows, in periods of sharp fall of debt securities yields, a higher level of indebtedness.

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