



Conceptual issues related to the definition of government debt¹

João Cadete de Matos*

Banco de Portugal, Lisbon, Portugal – jcmatos@bportugal.pt

Sérgio Branco

Banco de Portugal, Lisbon, Portugal – jscbranco@bportugal.pt

Filipe Morais

Banco de Portugal, Lisbon, Portugal – fmmorais@bportugal.pt

Abstract

This paper discusses several concepts with regard to the definition of public debt, in particular possible changes related to the delimitation of the public sector and to the range of financial instruments included and its valuation.

Firstly, it describes the different definitions of government debt that can be found in macroeconomic statistics. It considers the advantages and disadvantages of the various concepts, namely by taking into account the different coverage of entities and instruments and the different ways to value them.

This analysis is supplemented by looking at net debt measures, which are especially relevant in times of financial crisis, when governments tend to hold more financial assets. From here, the paper examines the arguments that support possible changes in the government debt definition, in particular on some conceptual issues raised recently regarding the definition of the so-called Maastricht debt, which is the concept commonly used in Europe to measure the indebtedness level of a country's general government. In this respect, recent discussion focused on the possible inclusion of trade credits in the definition of the Maastricht debt and the possible valuation of debt at nominal value rather than face value.

Possible advantages of taking into account, for fiscal policy purposes, the debt of the whole public sector rather than just the debt of the general government sector are also analysed. In a nutshell, we can say that the latter indicator may be seen as showing a more comprehensive and accurate portrait of the financial position of governments. Finally, the challenge that contingent liabilities may pose to the definition of public debt is addressed.

Keywords: public debt; national accounts; financial accounts; government finance statistics.

1. Introduction

Government debt is one of the most relevant macroeconomic indicators. It is used to evaluate the financial health of governments and, often, of the country as a whole. However, despite some efforts to harmonize the definition, it is still not possible to find a consensual framework. Several "layers" of debt can be identified (see Figure 1). The most restrictive ones are easier to compile but show an incomplete picture of the government's situation, whilst broader definitions may show a more accurate situation but are more demanding in terms of the compilation system. Another issue to take into account is the fact that data users (*e.g.*, academics, investors, voters) tend to compare government debt across countries. Therefore, consistent frameworks are highly desirable.

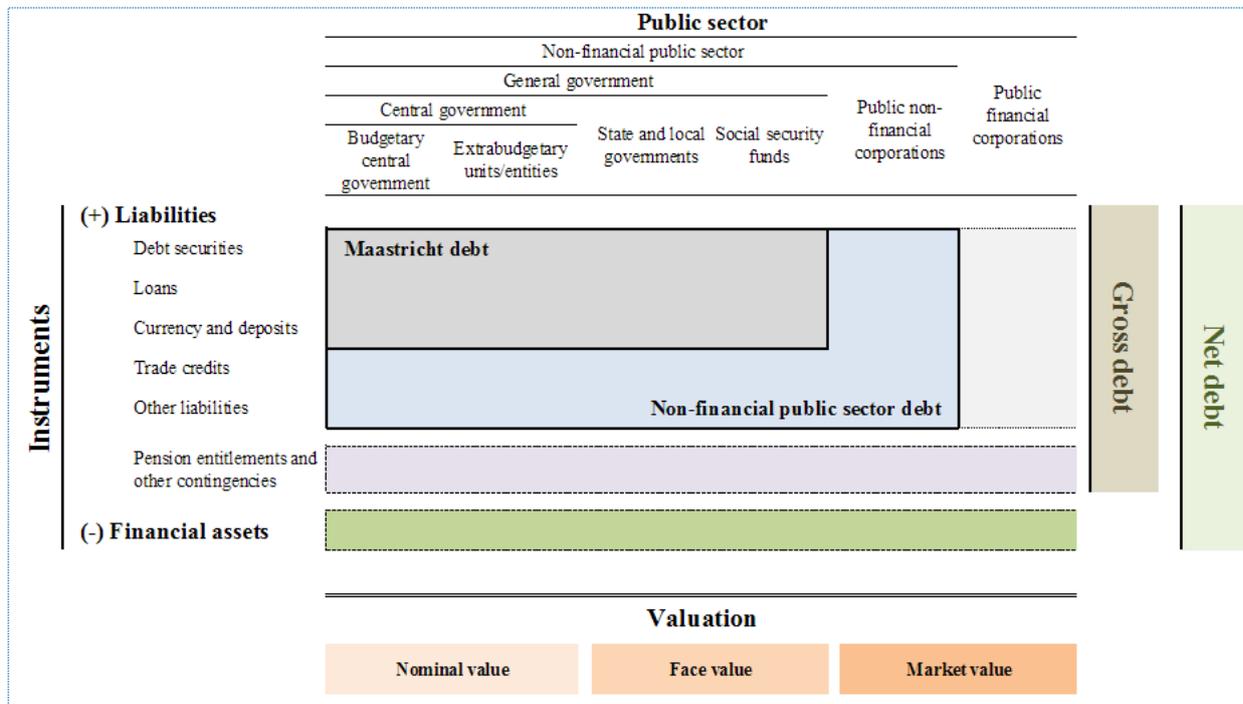
In section 2, we present the most commonly used concept of debt in Europe – *i.e.*, the so-called Maastricht debt – and identify other definitions of government debt, discussing their advantages and disadvantages. Several definitions of net debt measures are also covered in this section. In section 3, we depart from the concept of Maastricht debt by changing coverage and valuation. A more comprehensive

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measure is introduced in section 4, followed by a section about contingent liabilities of the general government sector. We conclude the paper in section 6 by identifying some challenges for the near future.

Figure 1 – Different definitions of government debt



2. Different definitions of government debt and net debt measures

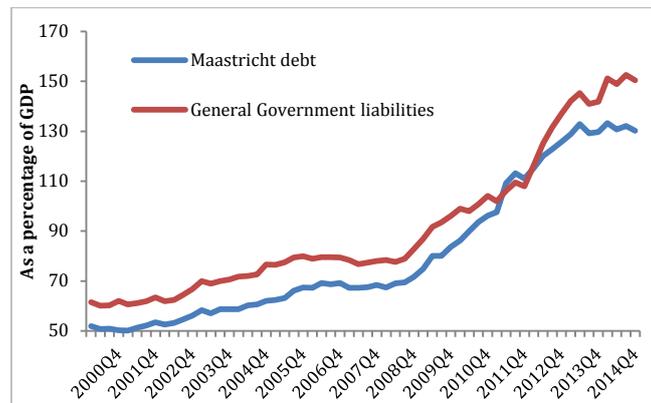
The Treaty on the European Union (originally signed in Maastricht in 1992) established the process of Economic and Monetary Union (EMU) and defined the convergence criteria that specified the conditions required for a country to participate in the common currency. It also established the way in which multilateral fiscal surveillance is organized. The instruments of multilateral surveillance for achieving medium-term balanced budgets are defined in the Protocol on the Excessive Deficit Procedure (EDP) that is annexed to the Maastricht Treaty, which specifies that the deficit to GDP ratio must not exceed 3 percent and the debt to GDP must not exceed 60 percent of GDP.

European Union (EU) legislation defines government deficit and gross debt with reference to the European System of National and Regional Accounts (ESA), which is broadly consistent with the System of National Accounts (SNA) but has been written specifically by and for the EU. Gross debt, also called Maastricht debt, is constituted by the liabilities of general government at face value in currency and deposits, debt securities and loans according to ESA definitions.

It should be noted that, although the calculation of the debt indicator uses ESA as a reference, it differs in some ways from the stocks in ESA financial accounts. Therefore, the indicator is not fully integrated in the framework of national accounts, the main differences being: (i) Maastricht debt excludes some financial instruments, such as financial derivatives and other accounts payable (which include trade credits); (ii) Maastricht debt is an end-of-period position at face value, which corresponds to the amount contractually agreed by general government to repay creditors at maturity, different from the valuation at market prices used in national accounts; and (iii) Maastricht debt is defined on a gross basis, *i.e.*, it is not netted by the corresponding government assets. Figure 2 illustrates the difference between general government liabilities compiled in the context of ESA stocks accounts and the Maastricht debt for Portugal.



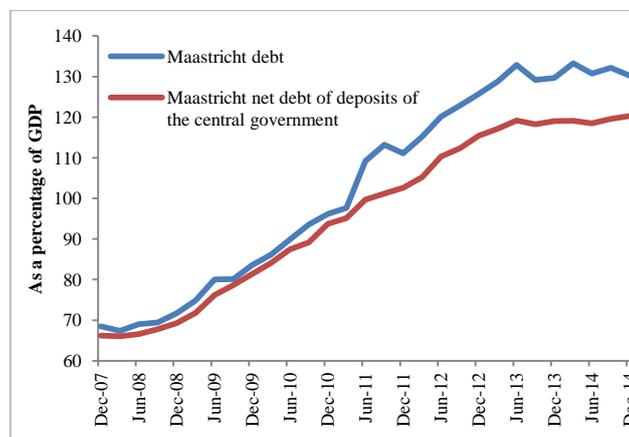
Figure 2 – Difference between general government liabilities and public debt, for Portugal



In this context, an aggregated measure of debt may result of the total liabilities derived from the financial accounts (stocks). This measure corresponds to the sum of all liability instruments, in accordance with ESA 2010 definition – *i.e.*, liabilities in gold and special drawing rights, currency and deposits, debt securities, loans, equity and investment fund shares or units, insurance, pension and standardised guarantee schemes, financial derivatives and employee stock options, and other accounts payable. This measure has the advantage of having the same valuation of the deficit/surplus of general government. However, it is also a gross measure by not considering the financial assets. This could be overcome if a net financial worth concept is considered, which corresponds to the total value of its financial assets minus the total value of its outstanding liabilities.

Another definition of gross debt is established by the International Monetary Fund (IMF). According to the Guide for Compilers and Users of the Public Sector Debt Statistics, “total gross debt, often referred to as ‘total debt’ or ‘total debt liabilities’, consists of all liabilities that are debt instruments. 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.” Thus, all liabilities of the total liabilities derived from the financial accounts are considered debt, except for liabilities in the form of equity, investment fund shares, financial derivatives and employee stock options. According to the IMF, for risk management purposes it could be useful to focus on a net debt concept. For instance, debt may have been incurred to fund assets that will generate income to meet liabilities. A concept of net debt, according to the IMF is then calculated as the previous gross debt minus financial assets corresponding to debt instruments.

Figure 3 – Maastricht debt and Maastricht net debt of deposits of central government, for Portugal





A more restricted concept of net debt is developed by the Eurostat, considering the Maastricht debt minus the financial assets corresponding to debt instruments also included in Maastricht debt (currency and deposits, debt securities and loans). It should be noted that the definitions of net debt type measures are especially relevant in times of financial crisis, when governments tend to hold more financial assets.

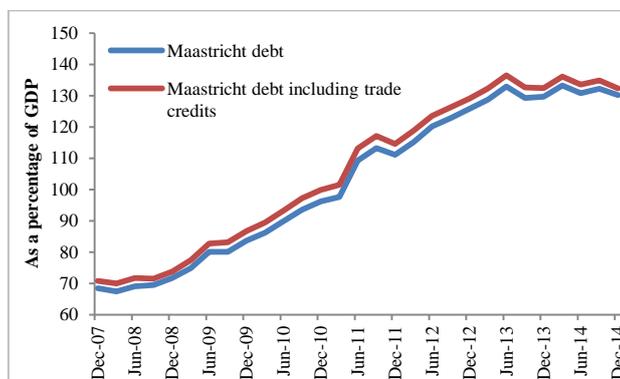
Some countries, like Portugal, publish their own net debt measures, *i.e.* Maastricht debt net of central government deposits (see Figure 3). The rationale for choosing this definition is the fact that recently the Portuguese government has issued significant amounts of debt in order to create cash reserves. However, at international level, there is currently no agreed common definition for net government debt.

3. The inclusion of trade credits and changes in valuation of debt

Departing from the most commonly used concept of debt in Europe, the Maastricht debt presented above, this section discusses the possible inclusion of trade credits in the definition of the Maastricht debt and the possible valuation of debt at nominal value rather than face value².

Trade credits are compiled for financial accounts and the expenditure financed by trade credits is included in the calculation of government deficit. However, they are not part of the definition of the Maastricht debt. Since significant accumulation of trade credits has been identified in many European Union Member States in recent years, the exclusion of trade credits in the current definition of the Maastricht debt appears to be something to be discussed in the future. In fact, trade credits are, in some cases, an alternative to financing through classic debt securities or bank loans. In the case of Portugal, trade credits granted to general government units are compiled in a monthly basis and shown as a component of government debt (see Figure 4).

Figure 4 – Maastricht debt and Maastricht debt including trade credits, for Portugal



In order to approximate the definition of debt to the national accounts definition, the replacement of “face value” by “nominal value” could also be considered, given that the first can be a misleading indicator of the value of the debt to investors. As referred in Dias *et al* (2014) the comparison of debt stocks can generate misleading conclusions due to different ways to compensate debt holders for the capital invested. For example, different results may arise when the debt is issued at discount or if the interest is paid through coupons.

Face value does not reflect the amount of the debt that will be redeemed by the debtor, in particular because it does not include interest accrued but not paid. This has also particular implications for the recording of zero-coupon bonds and similar instruments in the sovereign debt market for which the face value is different from the nominal value.

² According to the SNA, nominal value refers to the amount the debtor owes to the creditor, which comprises the outstanding principal amount including any accrued interest. Face value is the undiscounted amount of principal to be repaid.

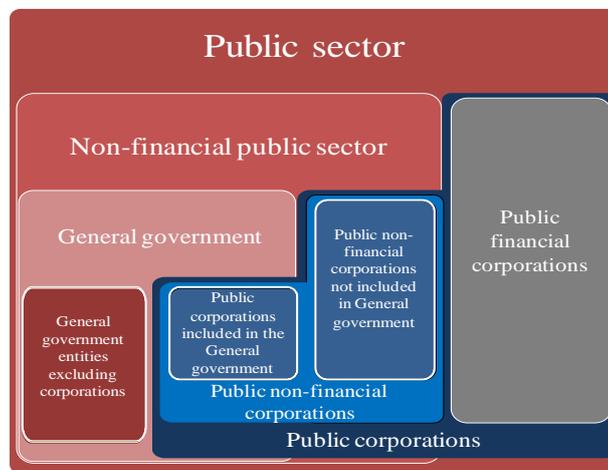


4. A more comprehensive measure

Concerning fiscal policy purposes, the debt of the whole public sector rather than just the debt of the general government sector could be an indicator showing a more comprehensive and accurate portrait of the financial position of governments.

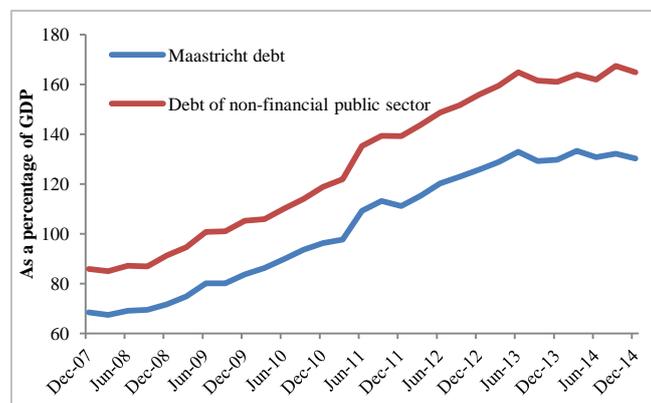
The public sector includes the public institutional units classified in the institutional sectors of general government, non-financial corporations and financial corporations (see Figure 5). Public institutional units are entities which are controlled by general government, *i.e.* whose general policy is determined by government. Public institutional units can be market or non-market producers. Non-market units are the ones for which less than half of their production costs are covered by sales. In this context sales are deliveries of goods or services at economically significant prices, *i.e.* prices which influence the amounts produced and consumed.

Figure 5 – Delimitation of the public sector



In turn, general government sector only includes non market public institutional units. It can be broken down into three subsectors: central government; regional and local government; and social security funds. The public sector debt includes, in addition to the debt of general government entities, the debt of other public institutional units. In this respect, *Banco de Portugal* regularly publishes on the indebtedness of the non-financial public sector which includes general government and non-financial public corporations not included in general government (see Figure 6). Apart from the enlarged institutional sector coverage, it also includes monthly data on general government debt, as well as a breakdown of debt by financing institutional sector.

Figure 6 – Maastricht debt and debt of non-financial public sector, for Portugal





5. Future liabilities of the general government sector

Another aspect that may be analyzed in the future is the fact that governments often incur in contingent liabilities. In particular, during financial crisis governments tend to increase the amount of guarantees granted, which are used to ease the access of certain entities (namely banks) to credit. Guarantees are not a liability of government but they constitute a risk of having additional debt in the future, if those guarantees are called.

Pension entitlements of public social insurance schemes may also be seen as future responsibilities of governments. The SNA provides for the calculation of these entitlements of households *vis-à-vis* the general government. Although the general government may change the amount of pensions that are going to be paid in each moment, the age of retirement, and other conditions, it may be useful to consider that there is an amount of pensions to be paid in the future. If this is the case, however, it should also be considered that contributions are paid by workers and employers to finance social security and, therefore, this liability of the general government.

Other off-balance-sheet liabilities that represent significant risks for the sustainability of government finances may also be taken on board, such as liabilities due to long-term contracts (*e.g.* public-private partnerships) and non-performing loans granted by government agencies (student loans, import / export loans, etc.).

These items will potentially become future liabilities of the general government sector and, as such, are a challenge to take into account in the definition of public debt in the near future.

6. Conclusions

The definition of public debt is not a closed concept. Different possibilities for alternative measures of government debt may be discussed. The definition of debt used in the European Union is one of the most restrictive concepts that can be used in terms of sector delimitation, valuation, instrument coverage and netting.

The concept might be enlarged by including all of the public sector and not only the general government (showed by the horizontal enlargement in the diagram in Figure 1). Other financial instruments may also be included, such as trade credits (vertical expansion in the diagram). Debt could also be considered net by taking into account the investment of government in financial assets. The valuation of debt could follow the concepts defined in ESA 2010, *e.g.* nominal value or market value.

An important challenge also to take into account in the definition of public debt is the treatment of future liabilities of governments, namely pension entitlements of public social insurance schemes, guarantees granted, and other off-balance-sheet liabilities.

References

- Dias, Daniel A., Christine Richmond, and Mark L. J. Wright (2014). *The Stock of External Sovereign Debt: Can we Take the Data at 'Face Value'?* Journal of International Economics, vol. 94, no. 1, pp. 1-17.
- Banco de Portugal (2012), General Government Statistics, Supplement 2/2012 to the October 2005 issue of the Statistical Bulletin.
- Council Regulation (EC) No 479/2009 of 25 May 2009 on the application of the Protocol on the excessive deficit procedure annexed to the Treaty establishing the European Community.
- Manual on Government Deficit and Debt – Implementation of ESA 2010 – 2014 edition (2014), Eurostat.
- Measuring net government debt: theory and practice (2014), Eurostat.
- Public Sector Debt Statistics: A Guide for compilers and users (2013), International Monetary Fund.
- Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union.
- System of National Accounts (2008), United Nations.