



Conselho das Finanças Públicas
Portuguese Public Finance Council

Public Debt

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The series entitled “*Notebook*” comprises short texts dealing with matters relating to the specific mission of the Portuguese Public Finance Council in order to help interested parties to better understand and evaluate matters included in areas that concern the Council.

These are occasional short papers, normally under ten pages length, directed to a wide audience.

The Portuguese Public Finance Council was set up by Budget Framework Law (Law no. 22/2001 of 20 August, with the wording given by Law no. 37/2013 of 14 June) and its Statutes were approved by Law no. 54/2011 of 19 October. The Council's mission is to conduct an independent assessment of the consistency, compliance with the stated objectives and the sustainability of public finances, while promoting fiscal transparency, so as to contribute to the quality of democracy and of political economic decisions and so strengthen the State's financial credibility.

This Notebook incorporated the information available until 27 September 2013.

Public Debt

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Lisbon, October 2013

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1 INTRODUCTION

Public sector statistics provide essential data for monitoring the public finance position. Within the European Union (EU) they make it possible to check compliance with the criteria laid down in the *Maastricht* Treaty, under which Member-States are obliged to comply with specific fiscal discipline rules, in particular to maintain public account deficits below the threshold of 3% of GDP benchmark and public debt levels below 60% of GDP.

In the present context of a public finance crisis, these statistics assume a key role in the evaluation of general government accounts and are also a basis for assessing Portugal's performance, as regards the fiscal policy targets agreed with official creditors under the current Economic and Financial Adjustment Program (EFAP).

Under its duty to enlighten citizens in general, the Portuguese Public Finance Council believes it is opportune to publish this Notebook, given the current concerns on the high level of public debt.

2 PUBLIC DEBT

2.1 CONCEPTUAL FRAMEWORK | WHAT METHODOLOGICAL FRAMEWORK IS USED FOR CALCULATING DEBT?

The conceptual framework for general government statistics prepared by the statistical authorities in Portugal and in the EU is the European System of National and Regional Accounts (ESA95)¹. It is a system of accounts that provides for a statistical representation of the transactions that take place in the economy between institutional sectors and by branch of activity. General government is an important institutional sector of the economy and given the specific nature of its activities, compiling statistical information in this sector has to comply not only with the rules laid down in ESA95, but also with additional rules set out in the Manual on Government Deficit and Debt, as well as additional guidelines published by [Eurostat](#).

The general government national accounts are broken down into financial accounts and non-financial accounts², following the classification given to the economy as a whole. General government debt may be calculated from the financial accounts which represent, in a structured and consistent manner, the statistical information relating to the general government's financial assets and liabilities.

From 2014 onwards ESA95 will be replaced by a new conceptual framework - ESA2010³ - that lays down new rules regarding sector delimitation that will have an impact on the level of public debt.

¹ Approved by Council Regulation (EC) no. 2223/96 of 25 June.

² The Bank of Portugal is responsible for the financial accounts, while the non-financial accounts are compiled by the Portuguese Statistical Authority (Statistics Portugal - INE).

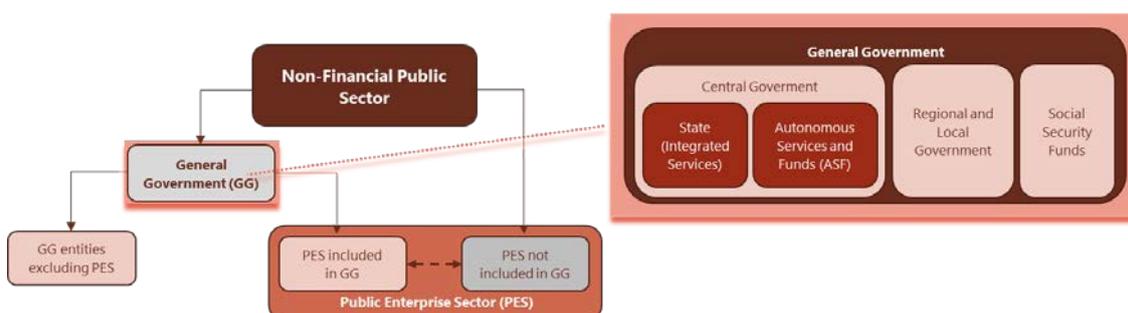
³ Approved by Regulation (EU) no. 549/2013 of the European Parliament and of the Council of 21 May.

2.2 SECTOR DELIMITATION | WHICH ENTITIES CONTRIBUTE TO PUBLIC DEBT?

At a given point in time the level of public debt depends, among other factors, on the set of entities included in the general government sector. Therefore the definition of this universe is especially important when compiling general government statistics.

The public sector is composed by entities controlled by the general government, which in national accounts may be classified in three institutional sectors: general government, non-financial corporations and financial corporations⁴. The general government institutional sector corresponds only to the public entities whose output is supplied free of charge or at prices not economically significant, which is intended for individual or collective consumption, and is financed by compulsory payments from other institutional sectors.

Chart 1 – Non-Financial Public Sector



Therefore to determine which non-financial entities form part of the general government sector (scope), it is necessary to assess the nature of their activities. As a rule, entities involved in the supply of goods and services, on a non-market basis and/or in the redistribution of income and wealth, are clearly included in this sector. For the remaining entities that operate under general government control the market test is used (see Box 1)⁵.

Once the scope of entities that comprise this sector has been defined, they are grouped by subsector according to the general government level that controls them and according to their territorial scope, hence giving rise to the central government, regional and local government and social security subsectors. The first subsector includes the State as well as autonomous services and funds which comprise non-market public enterprises. The regional and local government subsector covers, in addition to the regional governments and local authorities, the non-market regional and local public enterprises. Social security funds comprise the national and regional public entities whose core business is the management of social security schemes⁶.

⁴ Public entities that pursue financial activities are included in financial corporations, with the exception of the publicly financed asset management vehicles (Parvalorem and Parups).

⁵ ESA2010 introduces additional criteria, in particular qualitative criteria. For example, the criteria of the purchaser of the output states that a public producer that sells only to the general government, and is the only supplier of those goods or services, it is presumed to be a non-market producer, unless it competes with a private producer.

⁶ Up to 2006 this subsector included the Civil Servants Pension Agency. Since then, the system has been closed to new subscribers, and has been since then, classified in the central government subsector (State).

Box 1 – Delimitation of the general government sector – the market test

Government entities may be classified as market or non-market producers. Determining whether an entity is a non-market producer is based on a quantitative criterion, given by the ratio of sales to production costs. An entity is considered to be a non-market producer if its annual sales do not cover at least 50% of its costs over a sustained multi-year period.

Sales are defined as revenue from the provision of goods or services at economically significant prices, that is to say, prices which influence the quantities produced and consumed. Sales exclude all payments received from general government (transfers), unless they are granted to other producers undertaking the same activity (compensation payments). The relevant production costs correspond, as a rule, to the operating costs which include compensation of employees, intermediate consumption, consumption of fixed capital and taxes net of subsidies on production.

The new conceptual framework, ESA2010, to be applied from 2014 onwards, will introduce new rules for sector delimitation, namely the inclusion of financial costs (interest) when calculating the market ratio. These new criteria may lead to the inclusion of more public enterprises in the scope of general government, which will consequently have an impact on the level of public debt.

2.3 CONCEPTS | HOW MANY DEFINITIONS OF PUBLIC DEBT EXIST AND WHICH IS THE MOST RELEVANT?

Within the public finance statistics we can find a variety of public debt concepts which differ according to the financial instruments they take into account and the valuation criteria used. Note that *contingent liabilities*⁷, as well as *implicit liabilities* arising from future commitments, namely regarding public pension schemes, are not, under the current regulations, taken into account when calculating public debt.

The most commonly used definitions are those determined in accordance with ESA95 and the *Maastricht* criteria. Even though ESA95 does not provide a specific definition of public debt, the debt stock corresponds to the total liabilities in the general government balance sheet, which is a gross and consolidated figure, valued at market prices. It is a gross debt concept as it only takes into account liabilities, unlike the net debt concept in which the sector's assets are subtracted to gross debt to arrive at a net figure. Public debt is also a consolidated figure, which means that debt between entities of the same sector is cancelled out⁸. The valuation rule for the liabilities making up the public debt is their market value which favours the investor/creditor perspective⁹.

Thus, in the context of the national financial accounts, public debt (ESA95) is equal to the sum of liabilities in the following instruments: (i) currency and deposits, (ii) securities other than shares, (iii) loans, (iv) shares and other equity, (v) insurance technical reserves and (vi) other accounts receivable/payable¹⁰.

⁷ They represent the existence of a State obligation that will only arise if a certain event takes place. Examples: the granting of guarantees and sureties to third parties, as well as financial and legal contingencies stemming from concession agreements and public-private partnerships (PPP), not shown in the company accounts, such as readjustments, counter payments and financial subsidies.

⁸ Debt held by general government entities, which was issued by entities from the same sector. For example, public debt instruments issued by the State and held in the asset portfolio of the Social Security Financial Stabilisation Fund are excluded.

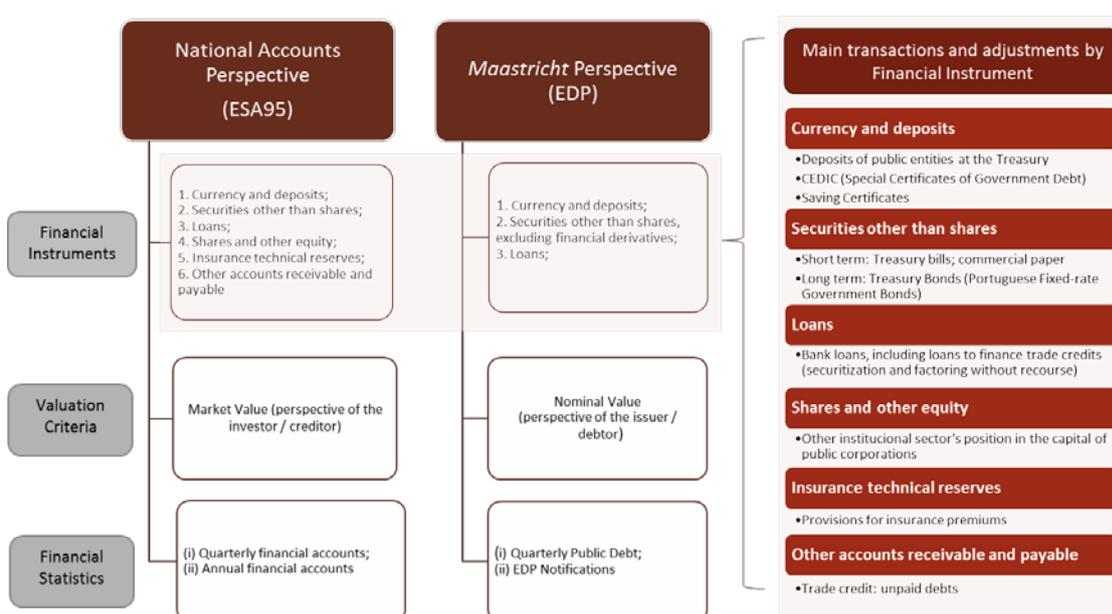
⁹ It represents the value debt instruments held by the investor would have if they were sold on the secondary market at the time the evaluation takes place.

¹⁰ These financial instruments appear on both the asset and liability side of the financial accounts. When calculating the debt only liabilities recorded under these instruments are taken into account. Instruments (iv) and (v) record zero values since within the general government sector there are no entities held partially by other institutional sectors, nor are there insurance company or pension fund provisions, given that the general government universe does not include this type of units.

However, the definition of general government debt that is relevant in the context of budgetary surveillance – debt according to the *Maastricht*/EDP definition¹¹ - differs from the total stock of liabilities defined in ESA95, both in terms of the instruments considered and valuation rules. It is also a gross and consolidated debt concept but it is less wide-ranging and it is valued according to a different criteria. Under the *Maastricht* definition, debt does not include, among other securities, equity and other shares, financial derivatives, nor other accounts receivable/payable¹², in particular trade debts. The valuation rule of this debt concept is the nominal value, that is to say, the value that the general government (issuer/debtor) will have to pay at the end of the contract.

This concept of public debt is regularly monitored by the national and European authorities, and it is used to gauge whether the 60% of GDP limit laid down in the Treaty on the Functioning of the European Union has been met.

Chart 2 – Public debt concepts in the context of EU financial statistics reporting



Source: Bank of Portugal.

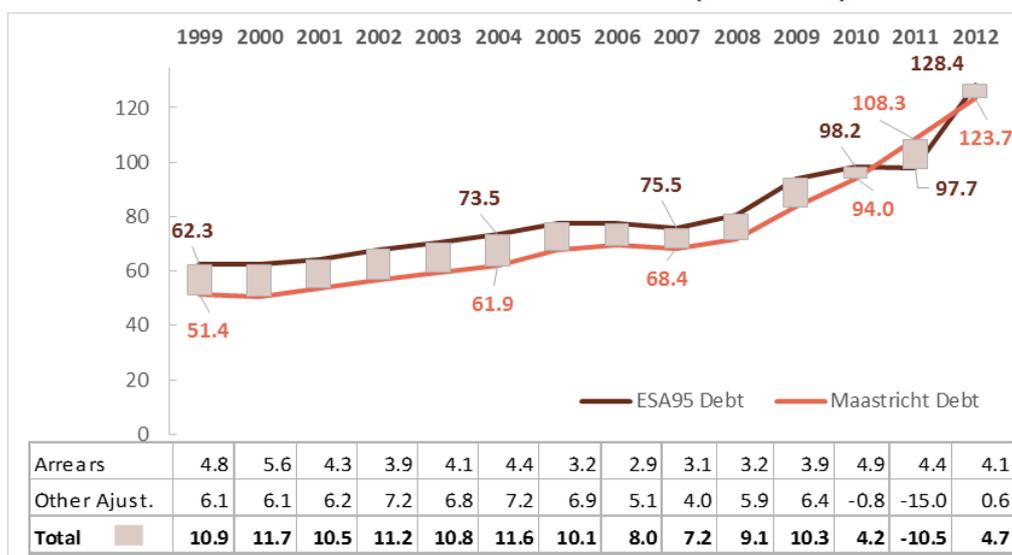
Public debt statistics compiled under both these concepts lead to different results. In Portugal, the ESA95 debt tends to be higher than the *Maastricht*/EDP debt figure. This trend was reversed in 2011 as a result of the sharp devaluation of government bonds in the secondary market (with a corresponding increase in yields)¹³.

¹¹ Excessive Deficit Procedure (Regulation (EC) no. 3605/93 of 22 November 1993).

¹² Other accounts payable are financial rights created as the counterpart to a financial or non-financial operation whenever there is a lag in the corresponding payment. Other accounts receivable correspond, for example, to overdue payments for services.

¹³ It represents the effective return on a fixed rate government bond, taking into account the price for which it was acquired and the coupon rate it pays periodically. The yield does not represent the interest rate at which the issuer is being financed, but rather the return that the investors who purchased those instruments will earn annually until the maturity date. The yield varies in line with the risk premium, which reflects, at each moment in time, the market's assessment of the probability of full refund at maturity.

Chart 3 - ESA95 debt versus Maastricht debt (as % of GDP)



Source: Bank of Portugal. CFP calculations.

An even more limited concept of public indebtedness was devised under the EFAP. In order to assess compliance with the debt ceiling laid down in the program, several adjustments are made to the *Maastricht* debt. Of particular significance is the deduction of Treasury deposits and State financial support to the banking sector recapitalisation.

In a narrower sense, another indicator can be used to monitor the change in public debt: the State direct debt. Although it only reflects this subsector's liabilities, it accounts for a significant share of public debt. This concept and the *Maastricht* debt concept share the liability categories and the valuation criteria, with the exception of the capitalisation of interest on savings certificates, which is excluded from the *Maastricht* debt definition.

Box 2 – Other public debt concepts

A number of other concepts related to public debt and used to define debt by type, nature, maturity, negotiability or creditor are worthy of mention:

- Direct debt:** debt for which the State (or another public entity) is the direct debtor, to be paid out of its revenue.
- Indirect debt:** group of contingent liabilities resulting above all from guarantees and sureties or other liabilities which the general government may be required to bear subsidiarily.
- Internal debt:** Financial (debt) instruments that are held by resident creditors.
- External debt:** Financial (debt) instruments that are held by non-resident creditors.
- Tradable debt:** Financial (debt) instruments whose valuation depends on market movements and which are traded on the primary and/or secondary market. Example: Treasury bonds, Treasury bills.
- Non-tradable debt:** Financial (debt) instruments which are not traded on the market. Example: savings certificates, Treasury certificates, special public debt certificates.
- Floating debt:** short-term public debt intended to be fully written down by the end of the fiscal period in which it was issued, and aimed above all at liquidity support.
- Funded debt:** medium and long-term public debt intended to be fully written down in fiscal periods following that in which it was issued.
- Perpetual debt:** debt consisting of loans under which the State is obliged to pay a particular annual interest, but is under no obligation to refund the capital although it may have this option (redeemable loans).

More detailed information on debt instruments can be found at the [IGCP](#) website.

3 CHANGES IN PUBLIC DEBT LEVEL

3.1 STOCK-FLOW ADJUSTMENT | WHY IS THE INCREASE IN DEBT NOT EQUAL TO THE BUDGET DEFICIT?

Although the increase in public debt is mainly due to the need to finance the general government deficit, other factors may influence the change in public debt, in absolute terms. The stock-flow adjustment is the difference between the deficit and the change in debt over a given period. Its analysis is fundamental to understand the link between these two public finance indicators¹⁴.

The stock-flow adjustment is the result of several factors:

- (i) *Accounting records* which stems from the fact that national accounts deficits follow accrual principles whereas debt is a cash concept;
- (ii) *Valuation effect* resulting, for example, from the change in the exchange rate on debt denominated in a foreign currency or from a change in the debt market price;
- (iii) *Financial asset transactions*, where the purchase/sale of financial assets leads to an increase/decrease in debt but the transaction has no impact on the deficit;
- (iv) *Transactions involving other liabilities not included in debt*, such as financial derivatives and "other accounts payable"; and
- (v) Other volume changes in debt (see point 3.2).

Table 1 – Examples of factors that explain the stock-flow adjustment

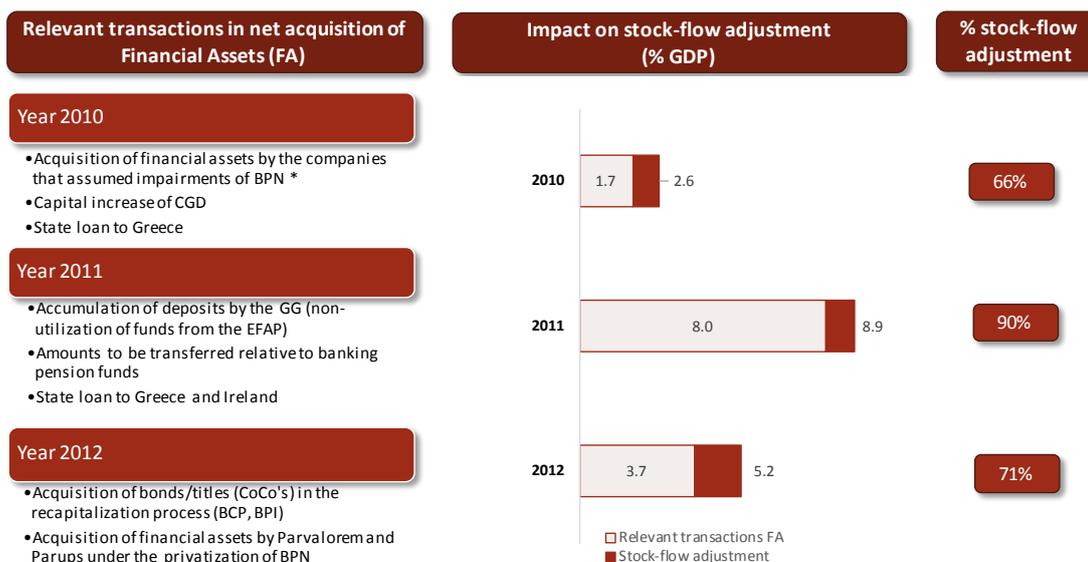
| Explanatory factors | Main adjustments and transactions | Aggregates | Financial instruments |
|---|---|---|---|
| (i) Accounting records | Time adjustment for taxes and social contributions . | Net acquisition of financial assets | Other debts |
| | Cash-accrual adjustments of the NHS and CGA, and general government arrears* | Financial liabilities not included in debt | |
| | Difference between interest accrued and paid. | Other volume and price changes of liabilities | |
| (ii) Valuation effect | Appreciation/depreciation of foreign-currency debt, issuances and redemptions above/below nominal value, among others. | Other volume and price changes of liabilities | |
| (iii) Transactions in financial assets | Acquisition of securities, government loans; sale of shares in the context of privatization, among others. | Net acquisition of financial assets | Currency and deposits Securities other than shares Shares and other equity Loans |
| (iv) Transactions in other liabilities not included in debt | Financial instruments that are irrelevant for the purposes of Maastricht debt. | Financial liabilities not included in debt | Financial derivatives |
| (v) Other volume changes | Reclassification of entities to the general government ; partial or total cancellation by creditors of nonperforming credits. | Other volume and price changes of liabilities | |

Notes: This table sets out the main transactions and adjustments that explain the stock-flow adjustment each Member-State reports to Eurostat under the EDP notification; * non-financial debt.

Of the three aggregates that explain the stock-flow adjustment (see Table 1), the "net acquisition of financial assets" has been the most significant in recent years. The impact of the main transactions, in the years in which higher adjustments were recorded, is shown in the chart below.

¹⁴ A positive stock-flow adjustment figure means an increase in debt greater than the budgetary deficit or a debt reduction lower than the budgetary surplus. A negative stock-flow adjustment figure represents an increase in debt smaller than the budgetary deficit or a debt reduction greater than the budgetary surplus. For more detailed information see [Eurostat](#).

Chart 4 – Main financial asset transactions impacting on the stock-flow adjustment



Source: State General Account 2010-2012, Bank of Portugal Annual Report (2010-2012) and Banco BIC Annual Report (2012). CFP calculations. | Notes: * Difference between liabilities incurred by these companies included in public debt and the capital transfer that had an impact on the budget balance. The value of the acquisition of CoCo's (debt instruments that can be converted into capital) is net of repayments.

3.2 METHODOLOGICAL CHANGES | WHAT OTHER FACTORS CAN IMPACT THE DEBT LEVEL?

Sometimes general government statistics undergo major updates as a result of methodological changes or of reviews in the classification of certain transactions or entities, without changing the national accounts basis¹⁵. These changes may impact the budget deficit and the public debt or just one of these indicators, consequently affecting the stock-flow adjustment.

Under ESA95 the compilation of public accounts requires a thorough analysis of general government transactions, in order to better understand their nature and the role of this sector in those transactions. Regardless of the rebasing's¹⁶ that occur, under the Excessive Deficit Procedure (EDP) this analysis must be conducted periodically to public units (by applying the quantitative criterion - see Box 1) and to general government transactions with other institutional sectors, particularly when envisaging public enterprises.

On the occasion of the 2006 rebasing (which has been in use since June 2010) several public entities were reclassified, falling within the scope of various subsectors of the general government. Here, note should be made of the impact on public debt of the inclusion of the State television company (RTP - Rádio Televisão Portuguesa) and four state companies of the Regional Government of Madeira. However, in the context of the successive EDP notifications,

¹⁵ When rebasing national accounts, new sources of information are included and data compiling methods and procedures are updated. A change in the basis results in a break in series, hence the previous series are retroplated so as to provide comparability over time.

¹⁶ Since ESA95 was adopted, changes to the base year of national accounts were introduced with reference to 1995, 2000 and 2006. A new change with reference to 2010/2011 is underway and the results should be disclosed in 2014.

there have been several reassessments leading to the reclassification of a number of other entities that now fall within the scope of the general government:

- In 2011: Metropolitano de Lisboa, EP; Metro do Porto, S.A.; REFER — Rede Ferroviária Nacional, EPE; Parvalorem, S.A.; Parups, S.A. (the last two are special purpose vehicles set up when the BPN bank was nationalised);
- In 2012: DEFLOC — Locação de Equipamentos de Defesa, S.A.; DEFAERLOC — Locação de Aeronaves Militares, S.A.;
- In 2013: TRANSTEJO — Transportes do Tejo, S.A. and a SOFLUSA — Sociedade Fluvial de Transportes, S.A.

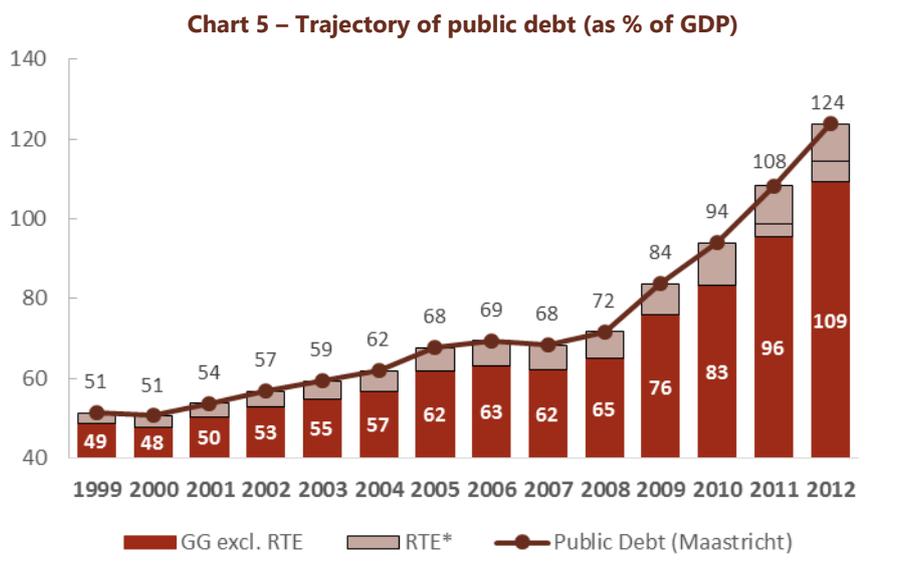
Transactions that are considered contingent liabilities and hence are not recorded as general government debt¹⁷ should nevertheless be monitored¹⁸, as the nature of these transactions may change and lead to their reclassification. Such a situation arose in the 2011 and 2012 reports, in which transactions relating to public-private partnerships (SCUT Norte Litoral and Costa de Prata in 2011 and SCUT Algarve in 2012) were reclassified.

4 PUBLIC DEBT DEVELOPMENTS (MAASTRICHT DEFINITION)

4.1 DEBT TRAJECTORY | WHAT HAS BEEN THE EVOLUTION IN PUBLIC DEBT?

The change in the public debt ratio (*Maastricht* definition) shows the indebtedness of the entities that fall within the scope of the general government. This universe has expanded steadily, in the context of the rebasing of national accounts and to the reclassification of several transactions and entities that occurred afterwards.

Although these reclassifications took place in distinct years, their impact on debt was not confined to the year in which they occurred. To avoid breaks in series, the public accounts of previous years were revised, so as to include in their aggregates the impact of the reclassified entities' activities, thus maintaining consistency throughout the series of statistics and their comparability.



¹⁷ For example transactions involving guarantees provided and the classification of liabilities concerning PPP.

¹⁸ Under the EDP [supplementary table](#) containing this information will be reported.

Source: Bank of Portugal. CFP calculations. | Note: * Most relevant reclassifications of transactions and entities (RTE), not including treasury loans (upper area of the column). The debt financed by the State/Treasury, only relevant in 2011 and 2012, has been added (lower area).

The level of public debt has increased sharply since the end of 1990's when it was below the *Maastricht* threshold (60%). From 2004 onwards that reference was exceeded, leading to an additional rise of 10 percentage points (p.p.) of GDP in the following four years. Since the end of 2008, the debt ratio has recorded a sharp rise of 52 p.p. of GDP (from 72% to 124% of GDP in 2012), due to annual increases which were always greater than 10 p.p. The growth in the debt ratio was heightened by the fall in nominal GDP.

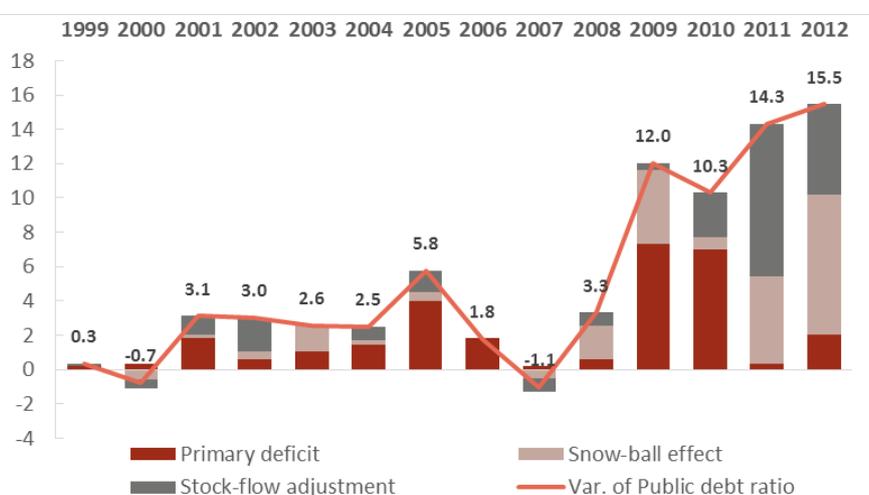
The developments over the last four-year period (2009-2012) can be explained mainly by the increase in debt of the entities that already fell within the scope of general government before it was expanded. Over this period those entities were responsible for 44 p.p. of the 52 p.p. of GDP rise in the debt ratio. The remaining 8 p.p. of GDP (approximately 15% of the total) is explained by the increase in debt of the reclassified entities and transactions, as well as the increase in the State's debt in order to fund the reclassified public enterprises (RPE), substituting for the financial market.¹⁹

The breakdown of the 72 p.p. of GDP rise in the debt ratio from 1999 to 2012 assumes approximately the same proportions as the increase verified in the last four years and the general government universe, (excluding reclassifications of entities and transactions and RPE financing), was responsible for 60 p.p. of this increase.

4.2 DYNAMICS OF THE DEBT | WHAT EXPLAINS THE TREND IN THE DEBT RATIO?

As shown in the previous section, the public debt ratio has shown an upward trend over the last decade and a half. With the exception of 2000 and 2007, the debt ratio recorded an increase every year, which was due, to a large extent, to the impact of successive primary deficits (40% of the total), and to a lesser extent by the adverse dynamics between interest rates and output growth (the so called snowball effect- see Box 3), and the stock-flow adjustment (each of which contributed 30%).

Chart 6 – Dynamics of public debt (as % of GDP)



¹⁹ State financing of the RPE totalled 5.4% of GDP at the end of 2012.

Source: Bank of Portugal. CFP calculations.

However, from 1999 to 2012 two subperiods can be identified during which the factors that explain the change in debt are different: one up to 2010, corresponding to the period before the adjustment program, and the other coinciding with implementation of the EFAP (2011-2012).

From 1999 to 2010 the increase in debt can be largely explained by the accumulation of primary deficits which accounted for around 60% of the change. The snowball effect explains around 21%, while the remaining increase was a result of stock-flow adjustments.

In 2011 and 2012, the deterioration in the debt ratio was due, almost entirely, to the stock-flow adjustments (48%)²⁰ and to the snowball effect (45%). The latter arose entirely from the difference between the implicit (nominal) public debt interest rate²¹ and the (nominal) GDP growth rate, the magnitude of which was aggravated by the sharp economic downturn. These two years, with the adjustment program already underway, recorded a significant decline in the primary deficit²², which explains the minor contribution of this factor to the change in the debt ratio (8%), when compared to previous years.

Box 3 – Snowball effect

The need to finance budget deficits gives rise to an accumulation of public debt. This accumulation stems from the inter-temporal budget restriction which, ignoring monetary financing is given by:

$$D_t = DEF P_t + r_t D_{t-1} + D_{t-1} + AJ_t$$

where D is debt, t is the year, $DEF P$ the value of the primary deficit, r the nominal interest rate of debt and AJ is the stock-flow adjustment (in regard to the last item see subsection 3.1)

For the purposes of analysis it is more important to express this restriction relative to output. Representing the output ratios by lower case letters and the nominal rate of GDP growth by γ produces:

$$\Delta d_t = def p_t + \frac{r_t - \gamma_t}{1 + \gamma_t} d_{t-1} + aj_t$$

The change in the debt ratio compared to output depends upon a number of factors, namely the annual primary deficit, the stock-flow adjustment and the relationship between the interest rate of debt and the rate of economic growth. Disregarding the stock-flow adjustment, when the interest rate exceeds the nominal growth in output, the change in the debt ratio to output is greater than the budget deficit ratio, so the greater this difference the faster the public debt ratio will grow (and vice-versa). Under these conditions, the ratio of debt to GDP increases automatically, even with a primary balance. This effect is known as the snowball effect.

The term "snowball effect" conveys the idea that, as with an avalanche, the size of the snowball increases automatically as it rolls down the slope. Likewise in the case of public debt – even if the budget produces a primary balance (a balance between revenue and expenditure, excluding interest) – if the interest due is not totally offset by the economic growth it will lead to more debt, automatically increasing its ratio to GDP.

If the stock-flow adjustment is overlooked, when the dynamics are adverse, that is to say when the interest rate exceeds economic growth, stabilisation of the debt ratio calls for a primary surplus. The above formula makes it possible to calculate the primary balance required to stabilise the debt to output ratio.

²⁰ Accumulation of deposits and support for the banking sector recapitalisation (see Chart 4).

²¹ It corresponds to the ratio between the year's interest and the debt stock in the previous year.

²² Partially explained by the implementation of temporary measures, such as the transfer of banking pension funds and the extraordinary income tax surcharge.

LINKS OF SPECIAL INTEREST

Bank of Portugal, [Statistical Bulletin](#)

CFP, [Reports](#)

DGTF, [State-Owned Enterprise Sector](#)

Eurostat, [Government finance statistics](#)

IMF, [Government finance statistics](#)

IGCP, [Debt Instruments](#), [Annual Report](#) and [Monthly Bulletin](#)

INE, [National Accounts](#)

