Conselho das Finanças Públicas
*Portuguese Public Finance Council*

# Fiscal Risks and Public Finance Sustainability

**Portuguese Public Finance Council Report**

**No. 08/2018**

**July 2018**

The Portuguese Public Finance Council is an independent body, set up by article 3 of Law no. 22/2011 of 20 May that introduced the 5th amendment to the Budgetary Framework Law (Law no. 22/2001 of 20 August, republished by Law no. 37/2013 of 14 June).The final version of its Statutes was approved by Law no. 54/2011 of 19 October.

The Council began its work in February 2012 and its 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 Report uses the information available up to 16 June 2018.

In the publications section at www.cfp.pt, a spreadsheet containing all the figures used to build the charts and tables in this Report is available for download.

# Contents

# List of Charts

## List of Tables

# EXECUTIVE SUMMARY

The Portuguese economy reacted well to the recovery in the European and international economies in 2017 and the macroeconomic and fiscal outcomes it achieved in recent years were better than initially forecast by national and international institutions. The efforts made by recent governments to achieve budget balance and lower public indebtedness led to an improvement in the country's borrowing terms, as well as an improved sovereign risk rating. Given its vulnerabilities, the Portuguese economy must remain on the budget consolidation path if it is to increase its resilience to shocks from an adverse external environment. Prudent public finance management during the favourable phases of the business cycle and the defining of strategies that strengthen the economy's resilience to shocks, both internal and external, are the essential foundation for fiscal policy and the structural reforms to be undertaken.

However, some very important fiscal risks remain at the various levels reviewed in this Report on Fiscal Risks and Public Finance Sustainability, which is the first in a new series of the Portuguese Public Finance Council (CFP) publications and will be updated every two years. Recognition of these risks and regular attempts to identify and quantify their impact are key to sound public finance management, since this is the only way to create the conditions for fiscal policy to cushion the impact of economic fluctuations and therefore to increase the resilience of economy to shocks.

The CFP has focused its risk analysis on five areas: macroeconomic performance, public revenue, public expenditure, contingent liabilities and public debt. In this Report *risk* means a measure of uncertainty as to the possible deviation from the expected outcome of a variable, which may be positive or negative. *Sustainability* means the State's ability to honour its commitments made to its citizens and creditors.

From our analysis we conclude that the main risks underlying the budgetary forecasts and consequently public finance sustainability stem from failure to achieve the growth path defined in the macroeconomic scenario used, due to direct consequences for forecast revenue and, to a lesser extent, public expenditure.

These macroeconomic risks flow from the business cycle and long-term growth potential. In the case of the business cycle, whilst it is sure that the economy will experience times of expansion and contraction, their extent is variable and the timing of downturns is uncertain as the forecasting models cannot easily predict them. Based on GDP developments from 1977 to 2017, the probability that Portugal is in recession in any one year is around 15%. Assuming the probability of a recession is independent every year, the probability of the Portuguese economy being in recession at any time over a five-year period is approximately 55%. On average a recession in Portugal "costs" 3.1% of GDP and the Portuguese economy takes the same length of time to recover to the previous GDP level as the duration of the recession itself, except for the last two recessions. As for the recession during the global financial crisis of 2008, the Portuguese economy can be expected to return to its pre-crisis real GDP level during 2018.

In the long-run and in the absence of shocks to the economy, economic growth flows from the performance of potential output. This is a concept linked to aggregate supply. The level and performance of potential output is dependent upon the capital stock, the labour force and the developments seen in the productivity of these factors (capital and labour). Thus, demographic trends constitute one of the most important structural developments for any country. Population growth provides for increased economic potential and, in normal conditions, develops slowly and predictably. At this level the *Ageing Report 2018* projections highlight a downturn risk underlying the Portuguese economy's potential growth in the medium to long-term. Overall the projections point to a decline in the Portuguese population from 2015 to 2070 of over 2.3 million people and the working population (15-64 years of age) is expected to drop sharply even if there is net immigration.

The labour productivity (resulting from the combination of the factors and calculated as real GDP / total hours worked in the economy ratio) is expected to return to a growth rate of 1.4% in the long-term (equal to the average growth rate during the pre-financial crisis period, 1996-2007). This outlook for sustained growth in productivity may make up for the decline in the working population, but carries high risks, given the high degree of instability revealed by the statistics. Particular attention is drawn to the risk of the low productivity growth pattern recorded in the post-crisis period (0.6% from 2008-2017; -0.2% from 2014-2017) and to a recovery that falls short of pre-crisis levels. In fact, the persistent slowdown in productivity during the post-crisis period has been seen in the advanced economies generally, although it is not so easy to explain and is unclear if the previous long-term trend will return. The projection used in the *Ageing Report 2018* and in this report's long-term projections may therefore be a risk factor that brings with it a demanding expectation from the standpoint of the economic policies that have to sustain it.

In Portugal there is a significant correlation between changes in public revenue and GDP. This sensitivity to business cycle fluctuations reflects the automatic stabiliser nature of tax (and social contributions) revenue. However, the way in which the stabilising function of fiscal policy was managed for some time, which led to an increase in budget deficits that was not sufficiently offset by similar decreases in times of economic growth, forced the country to adopt measures (very often in a procyclical manner during the economic slowdown) aimed at correcting the unsustainable imbalances. Most measures have been applied to the revenue side leading to its persistent growth both in absolute terms and as a percentage of GDP. Accordingly, there has been a significant increase in the tax burden, that was particularly marked during the financial crisis, and in sovereign debt. It was only from 2014 onwards that the tax burden stabilised at 34 to 35% of GDP. Increasing the tax burden to overcome borrowing requirements brought about by the business cycle constitutes a major fiscal risk, since it tends to reinforce the effects of the economic contraction.

In addition, while the tax burden in Portugal stood at 34.4% in 2016, below the EU average of 38.8%, this differential is merely apparent and the country faces a risk should it attempt to increase the tax effort required from economic agents. This risk comes from the fact that some of the countries that compete with Portugal, especially in terms of attracting investment, have tax burden ratios even further below the European average and from the

investment and from the perception expressed by business people as to the negative impact of taxation on potential investment decisions.

This fiscal risk is enhanced by the fact that in recent years there has been an increase in the concentration of PIT and CIT among a smaller number of taxpayers. Being dependent upon less taxpayers (households and companies) brings the added risk of individual (idiosyncratic) behaviour acting as a constraint on a significant share of tax revenue, for instance, opting for more favourable tax jurisdictions.

As for expenditure, between 1995 and 2010 Portuguese GDP at current prices doubled while expenditure grew two and one-half times. Over the course of the Economic and Financial Assistance Programme (EFAP) and in the following years rates of growth were lower and, according to CFP projections, they even tend to stabilize. Expenditure on compensation of employees and social transfers accounts for almost 75% of adjusted primary expenditure, a relative weight that has been on the rise since 1995 (when it accounted for 66.5% of that aggregate), making it the main factor in the rise in public expenditure. These are inflexible items of expenditure and their use for fiscal consolidation purposes brings very considerable political costs and they are strongly affected by external factors such as changes in population.

Demographic changes are the deciding factor in public finance sustainability on the expenditure side. The combination of increased life expectancy and lower birth rates, plus lower net immigration enhances the ageing of the population and has a direct impact on public expenditure. Spending linked to the ageing of the population (mainly pensions and health care) has risen continuously over the years, bringing economic, fiscal and social challenges. According to the recent medium and long-term expenditure projections published in *Ageing Report 2018*, an additional effort will be required in terms of public finance to retain the level of social benefits currently available. Regarding health expenditure, the European Commission's projection for Portugal is an increase of 2.4 p.p. of GDP from 2016 to 2070, the second highest figure for the European Union as a whole.

Contingent liabilities are potential liabilities that only become actual costs if certain events arise. They can result from formal commitments such as contractual government guarantees or public-private partnerships (PPP), or from informal liabilities that involve a considerable degree of public commitment such as liabilities taken on by public corporations, even if they fall outside the scope of general government. In aggregate terms total contingent liabilities in Portugal increased from 70.5% to 76.5% of GDP from 2013 to 2016, which is above the average for EU Member-States (41.3% in 2016). However, the last three years for which figures are available have seen a decrease due mainly to contingencies linked to financial sector support becoming actual expenditure.

The impact of financial sector support as a result of the international crisis was felt in a large number of developed countries and, in the case of the euro area, revealed the fragilities that have persisted since it was created. Such support was particularly important in Ireland (21.6% of GDP in 2010), in Cyprus (8.5% of GDP in 2012) and in Slovenia (10.2% of GDP in 2013). In Spain the support peaked at 3.6% of GDP in 2012. In Portugal, this type of support amounted

to 8.6% of GDP up to 2017, but has taken a more diluted form, with the main transactions involving BPN (from 2010 to 2014), BES (2014), BANIF (2013 and 2015) and CGD (2012 and 2017).

Portugal is the EU country that has the largest GDP percentage of off-balance sheet liabilities relating to PPP (3.2%), which is 2.1 p.p. of GDP above the EU average, followed by Slovakia (3.1% of GDP), Hungary (1.7% of GDP) and the UK (1.5% of GDP).

This Report contains a debt sustainability analysis for the next 15 years. This is an extension of the time horizon used in the Public Finance: Position and Constraints 2018-2022 Report that the CFP published in March 2018, which simulates the sensitivity of the debt ratio to external shocks, on the basis of a central scenario that includes detailed information on the next four years and the trends underlying the long-term exercise in *Ageing Report 2018*. Based on these assumptions, public debt as a percentage of GDP falls in the early years of the projection. This is due above all to the build-up of primary surpluses and the favourable dynamic effect, with the GDP growth effect more than offsetting the unfavourable impact of interest. Thus, the projection points to public debt falling from 125.7% in 2017 to 106% of GDP in 2022. From 2023 onwards, the decrease is less marked given the assumption of lower primary balances and GDP growth rates, converging towards to 94.7% of GDP in 2033. The sensitivity analysis points to a debt ratio that is highly sensitive to shocks to GDP growth rate and to the assumed primary balance. Therefore, actual changes of +1 p.p. and -1 p.p. in GDP growth imply that debt will be 71.6% to 122% of GDP, respectively, in the final 15 years of the projection.

# 1 OVERVIEW

The Portuguese Public Finance Council (CFP) is launching a new series of publications called "Fiscal Risks and Public Finance Sustainability ", which will be updated every two years.

Since 2015 the CFP has published medium-term projections for the main macroeconomic and fiscal variables. This exercise is not designed to predict the change in those variables but rather to analyse probable developments under a no-policy-change scenario. Therefore, these projections are a means of assessing the effect of those policies on the medium-term stability of the economy and public finance, and a basis for any changes to be introduced. This report extends the analysis time horizon in order to assess the impact on public finance and public debt sustainability, in particular, and to achieve broader identification and analysis of the related factors and risks.

When publishing its projections, the CFP always highlights the uncertainty that marks them and flows from both internal and external factors. Extending the analysis time horizon represents an increase in that uncertainty, but it also implies taking into account trends that cannot be ignored, such as demographics, technological shocks and the impact of the build-up of financial assets and liabilities on borrowing conditions. That explains the need to specify the risks, shocks and pressures that – given Portugal's experience of fiscal – policy could shift budget or macroeconomic variables away from the expected paths and influence long-term public finance sustainability.

In this context risk means the probability of a deviation from the expected outcome of a variable, which may be a positive or negative. Risks may take different forms and have various causes, internal or external, financial or otherwise, economic, political, demographic or natural. On top of that they have very different frequencies, from economic cycles which are certain to occur, although there is always uncertainty as to their causes, timing and intensity. Other risks arising at different intervals include natural disasters, conflicts and geopolitical tension, as well as factors such as demographics where changes, while predictable, are slow and tend to be ignored in short/medium-term projections but which are a decisive factor in the medium/long-term. Recognition of these risks and regular attempts to identify and quantify their impact are key to the sound management of public finance. This is the only way to create the conditions for fiscal policy to mitigate the effects of economic fluctuations and so increase the economy's resilience to shocks.

Once the immediate impact of the international financial crisis is overcome, this report is a first look at "Fiscal risks and public finance sustainability". As we gain experience and more information becomes available the report will improve in the future, especially as regards the ability to analyse the State balance sheet developments, currently unavailable, and a deeper treatment of contingent liabilities, which in this edition are less thoroughly analysed than their importance requires. The scope and availability of information which goes beyond developments in the economic framework are key to the quality of decision making and to their objective evaluation. Analysis of the available data, albeit insufficient, is a first step to recognising its importance, which this report seeks to achieve.

In addition to this overview the report contains an introduction (Chapter 2). Chapter 3 sets out and explains the definition of fiscal risks used in this document and how they relate to public finance sustainability. Chapter 4 sets out the more important macroeconomic risks and briefly discusses how they impact on public finance. Chapter 5 undertakes an analysis of the more important risks to public revenue, while the following chapter discusses the risks to expenditure, in particular those relating to an ageing population. Chapter 7 sets out the risks resulting from contingent liabilities which affect public accounts. Chapter 8 includes analysis of the sustainability of Portuguese public debt, while the ninth and final chapter summarises the results of the analyses on the subject publicized by the European Commission and the International Monetary Fund.

The CFP continues to develop and further its work in this paramount field. In addition to gathering, processing and promoting the disclosure of the information to which it has access, the CFP continues to develop tools for a better analysis and decision making. The field of public debt sustainability deserves special attention in this regard. For instance, from among the technical resources we possess, we assign priority to the developing of stochastic simulation methods to build scenarios for changes in public debt that will go beyond the deterministic approach of the models described here. While at the same time recognising the importance of institutional factors and the history of decision making and the perception of risks in this area, we feel it will be useful to deal with them in this first look at the subject.

# 2 INTRODUCTION

The Portuguese economy reacted well to the recovery in the European and international economies in 2017and the macroeconomic and fiscal outcomes it achieved were better than initially forecast by national and international institutions. The efforts made by the Government to achieve budget balance and lower public indebtedness led to an improvement in the country's borrowing terms, as well as an improved sovereign risk rating. Given its vulnerabilities, the Portuguese economy must remain on the budget consolidation path if it is to increase its resilience to shocks from an adverse external environment. In fact, the economy continues to present a high level of public and private indebtedness, which not only increases the impact of any less favourable macroeconomic development but also calls for more strict and prudent use of the availability financial capacity. Despite the important adjustment made in this decade and the slowdown in the indebtedness ratios seen since 2013, in March 2018 private sector indebtedness exceeded 200% of GDP, while in the public sector (including public corporations) it was over 160% and total indebtedness of the non-financial sector funded externally stood at 102% of GDP.

These indicators clearly point to the need for policies that can reduce the impact of the negative risks to which the economy is exposed and at the same time boost the positive impacts. Prudent public finance management during the favourable phases of the business cycle and the defining of strategies that strengthen the economy's resilience to shocks, both internal and external, are the essential foundation for those policies. Building such a foundation requires creating and continually improving a risk assessment system, based on the international information available and developing and completing it as regards the Portuguese economy. This report is a step in that direction.

The main risks underpinning the budgetary forecasts mainly flow from the achieving of the growth path inherent in the macroeconomic scenario, with direct implications at the level of expected revenue and, to a lesser extent, public expenditure. In the positive phases of the business cycle, both components contribute to decrease the budget deficit, although this contribution is reversed when the economic framework becomes unfavourable. This effect is desirable to the extent it is caused by automatic stabilisers which should help to mitigate the impact of a recession. However, if the government is to take advantage of this mechanism it must possess the ability to borrow under favourable terms, normally ensured by monetary policy, but also dependent upon a favourable assessment on the part of investors as to the economy's solvency. That solvency establishes the link between short-term management and the long-term public finance sustainability, to the extent that solvency depends, on the one hand, on the level, make up and rate of accumulation of public debt and, on the other, on the sustained capacity for economic growth.

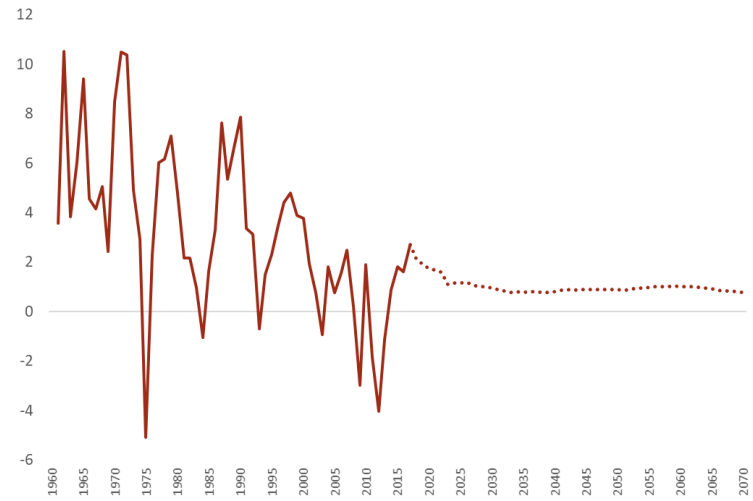
When defining fiscal policy, account must be taken of the more or less continuous possible pressure on public revenue and expenditure, and mechanisms must be included to accommodate the impacts of inevitable future shocks. Thus, on the revenue side attention must be paid to the structural developments in the economy, taking into account a range of factors, such as technological progress and international politics, and, not least, tax evasion. On the expenditure side there are multiple pressures, in particular those linked to health care

and pensions, which are especially affected by the ageing population, while other items of general government expenditure are also important such as compensation of employees, infrastructure maintenance, land management and environmental matters.

An important document that analyses long-term changes in the Portuguese economy and its prospects within the European context is the *Ageing Report* published by the European Commission. A comparison of the figures up to 2017 and the long-term projections for GDP set out in the latest version, reveals significant differences between the observed period – from 1961 to 2017 – and the projected period, from 2018 to 2070. In the former, from 1961 to 2017, the change in GDP reflects the external and internal shocks to the Portuguese economy and shows a downward trend in economic growth rates. The *Ageing Report 2018* projections do not include any shock, as they are based on a no-policy-change scenario, with a rate of change in nominal GDP of around 3%. Therefore, that report foresees (potential) growth of 1% in the Portuguese economy, a figure below average annual growth from 1961 to 2017 (see Chart 1).

Nevertheless, a look at the statistical series does not allow us to ignore a clear risk linked to long-term economic cycle events. International recessions occur, and while their duration and intensity vary, they impact on the Portuguese economy which tends to suffer more than its trading partners. Thus, the output level affected by a cyclical depression tends not to recover fully in the subsequent cyclical expansion, thereby reducing long-term potential growth. One explanation for this difference is the fact the Portuguese economy has not created the conditions to implement stimulus policies when an international recession arises. Indeed, Portugal tends to stimulate the economy in favourable periods, which gives a procyclical nature t economic policies, resulting in a high degree of instability which penalizes investment and potential economic growth (Chart 1).

**Chart 1 – Portuguese real GDP growth rate** (change %)




Source: European Commission (AMECO) (1961 to 2017); CFP (2018 to 2022); *Ageing Report 2018* (2023-2070).

The need to correct this trend reinforces the importance of complying with European obligations that Portugal has assumed to reduce the structural deficit and the public debt

ratio. Experience shows the vulnerability that stems from the combination of a series of factors to be found in the Portuguese economy, namely: (i) the high degree of public and private indebtedness financed externally; (ii) the heavy weight of taxation and the tax wedge[1]; (iii) the heavy weight of public expenditure; (iv) the low potential growth; (v) the low level of household savings; and (vi) the unfavourable demographics.

In light of this combination the definition of fiscal policy and the associated public policies must take into account the fiscal risks that the adopted policies should seek to reduce, in particular taking advantage of the favourable phases of the business cycle, in order to mitigate the impacts of the unfavourable phases.

The following chapters seek to identify the major risks to Portuguese public finance, focusing initially on a medium-term time horizon (five years), then extending it, to gauge public finance sustainability over a 15-year period. The analysis gives priority to negative risks, above all to public expenditure, since they may have the greatest effect on the public accounts and the country's socioeconomic well-being, recommending measures aimed at reducing them.

This report has benefitted from the information provided regularly by the Ministry of Finance, the National Statistics Authority (INE), the Public Debt Management Agency (IGCP) and the Bank of Portugal (BoP). The CFP thanks all the entities contacted for their support and explanations that were essential to the preparation of this document.

[1] Defined as the sum of taxes on income and employee and employer social contributions, excluding family benefits, as a percentage of total labour costs (sum of gross salary and employer's social contributions). It is commonly referred to in the literature as the "tax wedge".

# 3 FISCAL RISKS AND SUSTAINABILITY

## 3.1 RISKS: DEFINITION, CLASSIFICATION AND QUANTIFICATION.

In this report risk means the probability of a deviation from the expected outcome of a variable, which may be a positive or negative. Fiscal risks may force fiscal revenue or expenditure to deviate from expectations or forecasts (IMF, 2009). These risks arise from macroeconomic shocks, from failure to achieve the planned results of fiscal policy measures, from unexpected events or from contingent liabilities, which are obligations conditional upon the occurrence of specific events. For their part contingent liabilities may be explicit (defined by law or contractually) or implicit (such as financial and/or capital injections to offset the damage caused by a natural disaster or support to the financial system, for example).

Fiscal risks may be classified by source (as a result of government action or external events), frequency (a single or recurrent event), degree of correlation to other risks (due to a common cause or not) or the robustness of the forecasting methods, among others.

Recent empirical and wide-reaching analysis of the origin of fiscal risks identified eight major risk groups (IMF, 2016; Bova et al, 2016), which are described in Table 1.

**Table 1 - Source of budget risks**

| Type | Definition | Freq. (years) | Cost (% GDP) |
|---|---|---|---|
| Macroeconomic shocks | Decrease in nominal GDP growth rate | 1/12 | 9.0 |
| Financial sector | Financial institutions bail-outs | 1/24 | 10.0 |
| Legal cases | Legal procedures against governments | rare | 8.0 |
| Subnational governments | Financial bail-outs of local governments | rare | 4.0 |
| State-owned enterprises | Governmental help | rare | 3.0 |
| Non-financial private enterprises | Governmental help | rare | 1.5 |
| Natural disasters | - | rare | 1.5 |
| Public-private partnerships | Financial bail-out of projects | rare | 2.0 |

Source: Bova et al (2016). | Note: freq.= frequency.

As regards the nature of the risks, it should be recalled that fiscal shocks tend to be large scale and have a negative impact, as governments tend to foresee positive fiscal shocks and include them in their forecasts. On top of that, history shows that the various shocks have a high degree of correlation (Bova et al, 2016). Macroeconomic downturns are followed by crises in the financial sector, collapses among public corporations and subnational governments and other contingent liabilities. According to the International Monetary Fund (IMF), only one-third of the deterioration in the public debt ratio during the global financial crisis was directly due to macroeconomic dynamics, while the remaining two-thirds was the result of other fiscal risks (IMF, 2012).[2] Attention is drawn to another important feature: the non-linearity of the effects of fiscal shocks. Large shocks tend to have far more severe consequences for public finance than small shocks. That is because fiscal inflexibility makes it impossible to make a speedy adjustment to primary expenditure in the short-term. Another

[2] International Monetary Fund, 2012, "Fiscal Accountability, Transparency and Risk" (Washington).

factor is the spending increase flowing from the automatic stabilisers, which leads to both an increase in debt as a percentage of GDP and a decrease in the latter (IMF, 2016).

Given the definition of risk, it can be said that a fiscal risk is a possible deviation from medium-term projections for expenditure and/or revenue and consequently budget balance and public debt. Therefore, it is important to identify correctly the source and nature of fiscal risks, so that fiscal policy is devised in such a way as to minimise the possible impacts of their occurrence.

In the fiscal policy documents, Stability Programme (SP) and State Budget (SB), the Government includes sensitivity analyses and risk identification, by comparing its forecasts with those of other entities that publish forecasts for the Portuguese economy. The SB and SP also include sensitivity analysis of the external assumptions (oil price and external demand shocks) and analysis of fiscal strategy risks (guarantees granted to the banking sector and to other entities, public-private partnerships and negotiations in progress). In addition, those documents contain analysis of the fiscal risks linked to demographic changes and the management of State direct debt (refinancing, interest rate, exchange rate and credit risks). The 2018 SB Report (only in Portuguese) also contained a brief analysis of the fiscal risks relating to Local and Regional Government.

This document identifies the main risks that fiscal policy must face in regard to revenue, expenditure and the impact on general government balance, in terms of both fiscal stability (over the next five years) and public finance sustainability (over the next fifteen years). Particular attention is paid to the negative risks, not merely because experience shows they arise more often, but also because they bring difficulties.

## 3.2 FISCAL RISKS AND PUBLIC FINANCE SUSTAINABILITY

The notion of sustainability seems to be fairly intuitive. Generally speaking something is sustainable if it can continue indefinitely. In the world of economics, the broadest definition of sustainability happens to be that of sustainable development, which is development that meets current needs without compromising future generations' ability to meet their own needs. Despite being intuitive that definition involves three types of judgement: what are the current needs, what will be the future needs and which are the resources that restrict the satisfaction of one or the other. Most discussions of sustainability end up focusing on how to make such judgements. In the narrower field of public finance, sustainability may be seen, also in a fairly intuitive manner, as the ability to ensure that General Government avoids insolvent positions, allowing the State to honour its commitments to citizens and creditors. That is to say, it ensures the provision of sufficient goods and services for the current generation without putting at risk their provision under similar conditions to future generations.

The debate over the definition of public finance sustainability has followed the progress of economic theory.[3] The most common way to deal with topics relating to the sustainability of

[3] A good summary can be found in Balassone and Franco (2000), page 23 et seq.

fiscal policy and public finance is expressed in the so-called intertemporal budget constraint, which says that the current value of future General Government primary balances (net of interest payments) should be at least equal to the initial value of public debt. In other words, the difference between the current values of public revenue and expenditure (excluding debt interest) should be sufficient to pay what is owed at the time sustainability is assessed.

The simple fact that the process requires forecasts for revenue (which for the sake of simplification we may deem to be solely taxes and social contributions) and public expenditure (associated with the provision of public services, social purposes and the servicing of public debt) for long periods highlights the complexity of the exercise. To predict the amount that can be collected in the future it is necessary to forecast the wealth the economy will generate and the share of that wealth that can be appropriated by the State in order to fund the cost of its activities, which also requires a projection. Even if we assume that it is possible to devise in a theoretical and politically neutral manner the "heroic assumptions"[4] that the various exercises require, the level of uncertainty will always be very high and the consequences of forecasting, projection and judgement errors may be costly. However, this does not mean the exercise is worthless, rather than its principal merit lies in eliminating the more serious forecasting errors: which come from ignoring the future impact of decisions and favouring only immediate results. Therefore, sustainability analysis must be regularly updated and be transparent in terms of the assumptions made and methods employed.

We will look at two examples of public finance sustainability definitions: one focused more on flows and the other focused more on the debt stock generated by fiscal policy. For the International Public Sector Accounting Standards Council (IPSAS)[5], the following aspects of public finance sustainability are important:

1. Fiscal capacity: is the ability of an entity to meet financial commitments, such as the servicing and repayment of debt and liabilities to creditors, on a continuing basis over the period of the projections without increasing levels of taxation
2. Service capacity: is the extent to which (i) the entity can maintain services at the volume and quality provided to current recipients at the reporting date and (ii) meet obligations related to entitlement programs for current and future beneficiaries.
3. Vulnerability: is (i) the extent to which an entity is fiscally dependent upon funding sources outside its control, […] and (ii) the extent to which an entity has powers to vary existing taxation levels or other revenue sources and to create new sources of taxation and revenue

From another standpoint, public debt sustainability is reflected in the capacity to service the accumulated debt at any time (European Central Bank (ECB), 2012). This condition implies that governments should ensure, simultaneously:

[4] "All require heroic assumptions about economic and social trends, such as rates of growth, price changes, and life expectancy." [Schick, 2005, p. 115]

[5] IFAC (2011).

1. Solvency: Government compliance with the intertemporal budget constraint, that is, the current value of expected future primary surpluses must be greater than or equal to the current value of public debt;
2. Liquidity: a short-term concept relating to the Government's ability to retain access to financial markets, thus ensuring the borrowing required to repay contracted debt (capital and interest) and cover any additional needs arising from the economic cycle.

### 3.3 WHY DO WE NEED SUSTAINABLE PUBLIC FINANCE?

Ensuring access to markets under reasonable conditions requires control over the fiscal situation, so as to ensure that the borrowing to which the economy resorts ensures growth that is large enough to service the contracted debt. This places an important constraint upon fiscal policy, especially when there is a high level of accumulated debt stock and the economy's potential growth has not accompanied the degree of indebtedness (as is the case in Portugal).

All borrowers run risks, namely in terms of interest rates and continued access to markets. These may stem from internal decisions but also from external factors that affect the economic or financial framework. In the case of the Portuguese State the ability to minimise the risks associated with the economy or international financial markets depends upon the quality of the budgetary process and the linkage between fiscal policy and sectoral policies. Therefore, an important line of discussion is how to promote a sustained and significant increase in the economy's capacity to grow and in its potential output. Indeed, as defended by the ECB (2016),[6] a steadfast effort to continue with structural and fiscal reforms with a view to enhancing the long-term GDP growth potential is key to sustainability, and is especially important in a context of low real growth and low inflation.

In these fields future depends upon the ability to devise suitable policies that take the long view, are coherent and match the external constraints the economy faces. In particular, policies concerning pensions, health care and long-term care are key to preventing unsustainable fiscal pressures in the long run. Today's taxpayers fund the pensions, health and long-term care systems by paying taxes and social contributions, with a view not just to guaranteeing access to health care and social benefits in the present but also a similar level of such services in the future.

The important interactions between public finance and the economy which need to be foreseen are, however, difficult to quantify. Public expenditure on health and education should increase the production potential and the population's productivity, but the level of spending in itself cannot guarantee the expected and desired outcome. Public investment must create the conditions for improved and swifter economic growth, but not all investment will bring about that outcome. Taxes affect households' disposable income and corporate investment, thus influencing economic growth and the expected level of taxation itself.

The potential growth of a small, open economy is also dependent upon the ability to devise economic policies suited to global economic developments, capable of ensuring lasting

[6] *Financial Stability Review*, November 2016, ECB.

competitiveness. In the case of structural policies, their relationship to fiscal policy is formed by their impact on growth and external indebtedness. Even if they are concentrated in the private sector, they influence the economic risk premium and accordingly the costs of production and the ability to attract investment. For its part fiscal policy also influences competitiveness, either directly, for example through tax policy, or indirectly by affecting confidence in the economy's borrowing capacity.

For these reasons it is important to analyse regularly public finance sustainability in Portugal, a country which has had difficulty in achieving the required fiscal adjustment and potential growth in a lasting manner. Although there is no consensus as to a suitable debt ratio level, we know that persistent high levels make economies more vulnerable to macroeconomic shocks, reducing the space for countercyclical fiscal policies, and they may have implications for economic growth, especially if the debt is funding non-productive expenditure.

A number of studies[7] suggest that the factors needed to reduce public debt include fiscal adjustments, measures for enhancing economic growth (for instance, structural reforms) and financial policy measures. The literature also suggests that public debt consolidations appear to be more successful when they are based on permanent cuts in current expenditure. Therefore, the budget balance is not the sole goal of fiscal policy, as its makeup is equally important when considering the goals of efficiency and social and intergenerational equity.

Basically, a fiscal policy that contributes to lasting economic growth and which is fair to current and future generations may only be achieved when society takes these goals into account. The European rules[8] are merely tools for achieving a greater goal, i.e. creating the conditions to increase potential economic development and so sustain the improved well-being of all those who live and work in Portugal now and in the future. The idea of maintaining debt ratios at prudent levels, below the 60% limit laid down in the Stability and Growth Pact (SGP) is only aimed at creating sufficient fiscal space to accommodate possible adverse macroeconomic shocks, as well as to meet the projected costs of an ageing population.

[7] See Nickel, C., Rother, P. and Zimmerman, L., "Major public debt reductions: lessons from the past, lessons for the future", *Working Paper Series*, No 1241, ECB, 2012; Baldacci, E., Gupta, S. and Mulas-Granados, C., "Restoring Debt Sustainability After Crises: Implications for the Fiscal Mix", *IMF Working Paper*, WP/10/232, 2010; and Abbas, S., Akitoby, B., Andritzky, J., Berger, H., Komatsuzaki, T. and Tyson, J., "Dealing with High Debt in an Era of Low Growth", *IMF Staff Discussion Note*, SDN/13/07, September 2013.

[8] See Stability and Growth Pact

# 4 MACROECONOMIC RISKS

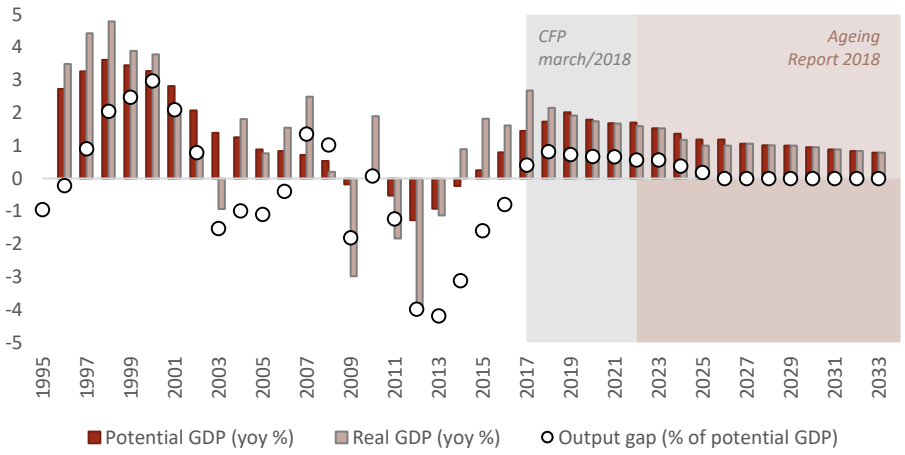
When classifying risks, macroeconomic developments are identified as the source of the largest and most frequent fiscal risks. Economic shocks take various forms and how they are transmitted to public finance is complex. This section, as stated above, mainly analyses risks that contribute to a downturn and have an impact in the medium to long-term. The analysis looks at both the longer-term aspects, focusing on growth in labour productivity and potential output, and the medium-term, where the risks linked to economic cycles stand out.

## 4.1 POTENTIAL GDP AND RISKS TO LONG-TERM GROWTH

In the long-term and in the absence of shocks to the economy, economic growth flows from potential output developments. This is a concept linked to an economy's aggregate supply and its level, and growth depends upon capital stock, the labour force and the performance total productivity of these factors (capital and labour). The concept of potential output is decisive when projecting public expenditure and tax revenue in the long-term. Thus, potential growth strongly influences health and sustainability of public finance.

However, potential output is an unobserved variable and as such has to be estimated.[9] The degree of accuracy of the estimate is a source of uncertainty that depends, among other factors, of the methodology employed. This requires special care, since the estimated results differ according to the body that produces them and to the time the estimate was produced. This last point is the main weakness of all the methods, especially when they are used at times marked by major short/medium-term instability, which is directly reflected in the long-term estimate.

**Chart 2 – Potential growth, real growth and output gap**




Sources: INE, CFP and *Ageing Report 2018* (baseline scenario).

This Report uses the common methodology adopted by the European Union to estimate potential output. The common methodology is based on the production function method. The exercise published herein extends the potential output projections in the CFP's latest

[9] See Almeida and Félix (2006) for a summary of the various potential output calculation methods.

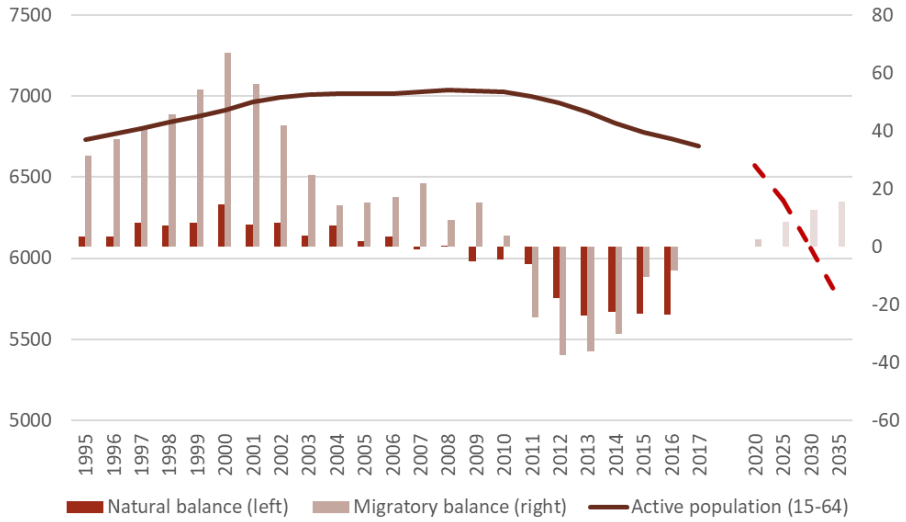
macro-fiscal scenario (March 2018) to 2023-2033. It assumes a gradual closing of the output gap for three years (2023-2025) and convergence in the long-term (2026-2033) towards the potential growth underlying the baseline scenario assumptions of *Ageing Report 2018* (European Commission, 2017). Chart 2 shows the dynamics of potential output, real GDP and the output gap from 1995 to 2033.

In the long-term – assuming that the capital-output ratio remains unchanged (a common restriction in the potential output calculation method employing the Cobb-Douglas production function) – the economy's dynamism is determined by population growth and growth in total factor productivity. Thus, productivity growth is a key factor in a society's economic well-being. In this way the risks associated with potential output growth are contingent upon the availability of the labour factor and the output that each unit can produce.

### 4.1.1 Population and employment

Demographic changes are some of the most structural developments a nation undergoes. Population growth enables an economy's potential to grow and, in normal conditions, changes in a slow and predictable manner.

**Chart 3 – Population change in Portugal** (thousands of persons)




Sources: Eurostat and *Ageing Report 2018* (baseline scenario).

The *Ageing Report 2018* projections, shown in Chart 3, highlight the downturn risk underlying the Portuguese economy's potential growth in the medium to long-term. The population of working age (15-64 years) shows a sharp downward trend even if there is net immigration. This trend follows the downward path of total population, which has been brought about by a combination of the fall in the birth rate and successive net emigration since 2010.

**Chart 4 – Participation rate** (%)

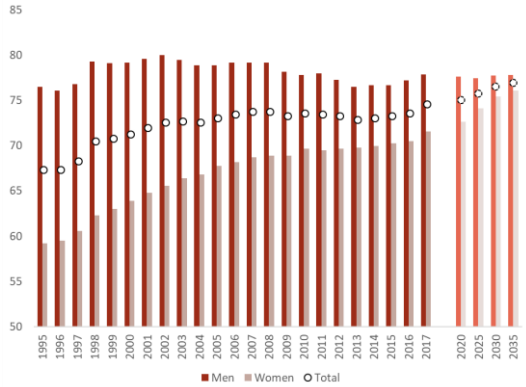
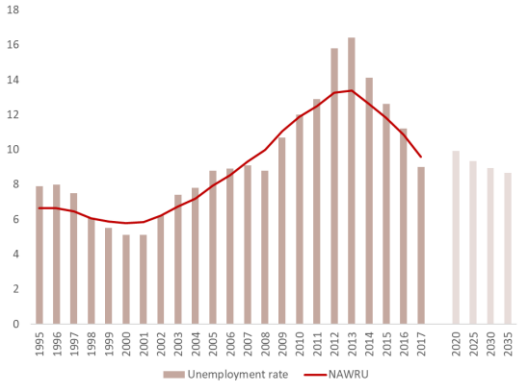



**Chart 5 – Unemployment rate and NAWRU** (%)




Sources: Eurostat, European Commission (AMECO) and *Ageing Report 2018* (baseline scenario).

They also contribute to potential growth, although in a limited way, to the participation rate and the benchmark unemployment rate. The participation rate has seen a slight rise in recent years due mainly to the growing contribution of women's participation in the labour market, which offset the relative stabilisation of men's participation (Chart 4). The latest projections point to the trend continuing, which in the long-term will minimise the difference between the two participation rates.

The benchmark unemployment rate, shown in Chart 5 through the Non-Accelerating Wage Rate of Unemployment (NAWRU), is another labour supply constraint underlying the potential output calculation.[10] As with potential output it is a latent variable, where the estimate degree of accuracy depends upon the methodology employed. The figures shown in Chart 5 suggest that NAWRU will see a downward trend, in line with the unemployment rate, while remaining 3 p.p. above the figures estimated for the beginning of the sample. Note that the recovery in the labour market in 2017 was not included in the *Ageing Report 2018* projections which are based on 2016.

### 4.1.2 Labour productivity

The outlook for the change in labour productivity, calculated as the ratio between real GDP and total hours worked in the economy, points to a growth rate of 1.4% in the long-term, which matches the average rate recorded in the period prior to the global financial crisis, 1996-2007 (Chart 6). This outlook carries high risks, given the marked instability of the statistical series. Particular attention is drawn to the downturn risk should the pattern of low productivity growth recorded during the post-crisis period continue (0.6% from 2008-2017 and -0.2% from 2014-2017). This has implications for potential growth and economic well-being, as mentioned in the previous section. The risk is the greater because the slight increase projected for productivity growth in the long-term stems in essence from the likelihood of negative growth rates for total hours worked.

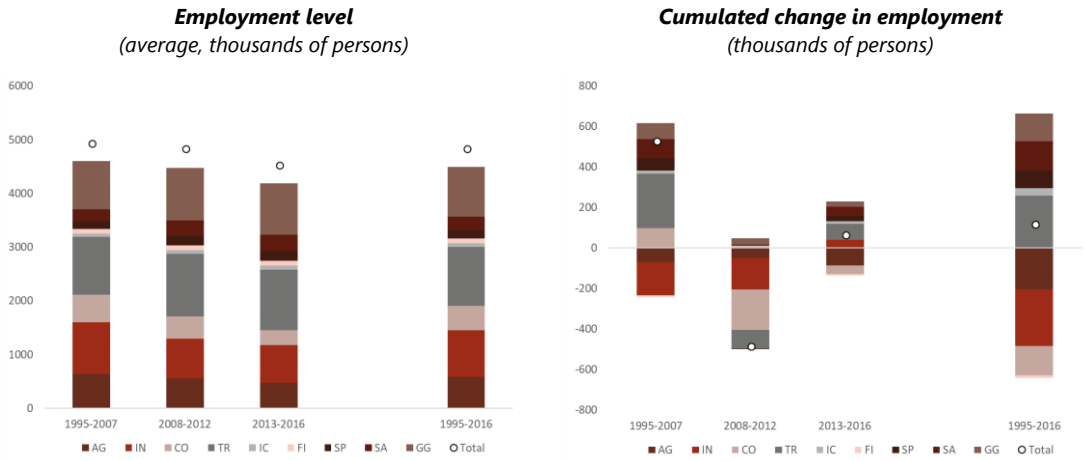
[10] See, for example, Lendvai *et al.* (2015) for a review of the implications of using an alternative concept to the benchmark unemployment rate, and Centeno *et al.* (2010) who describe a methodology based on the NAWRU concept for Portugal.

**Chart 6 – Labour productivity growth and contributions**


Sources: Eurostat, CFP and *Ageing Report 2018* (baseline scenario).

The persistent slowdown in post-crisis productivity has been seen in most advanced economies, although the explanation for that fact is still unclear and a return to the previous long-term trend is uncertain. A section of the literature on the so-called productivity puzzle stresses the role of the financial sector in the efficient allocation of resources within the economy.[11]

**Chart 7 – Employment by industry, 1995-2016**




Note: AG – Agriculture, forestry and fishing; IN – Industry; CO – Construction; TR – Retail trade and repair of motor vehicles, means of transport, warehouses, accommodation and catering; IC – Information and communication; FI – Finance and insurance; SP – Professional, technical and scientific activities; SA – Administrative and support services; GG – General government and defence, social security, education, health and social work.

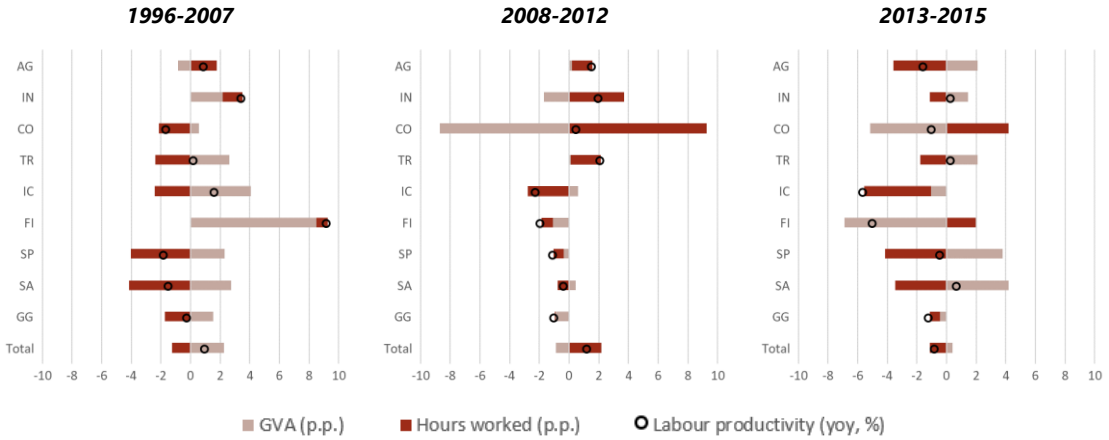
Sources: INE and CFP calculations.

[11] See, for example, Duval *et al.* (2017) as regards a set of advanced economies; Patterson *et al.* (2016) and Riley *et al.* (2015) for studies on the United Kingdom.

A graphic representation of the change in employment in the major economic fields (Chart 7), shows that there have been significant employment loses in sectors where there has been higher productivity growth (IN, Industry and FI, Finance and Insurance) and an increase in employment in sectors linked to Trade (TR), Support services (SA) and General Government (GG), where productivity is relatively low (Chart 8).

The allocation of resources to businesses where productivity is able to increase more is key to ensuring long-term growth.

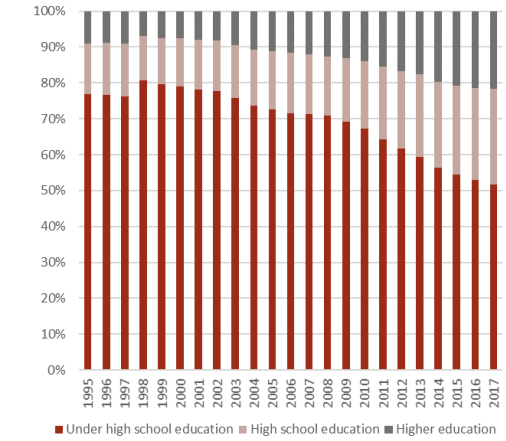
**Chart 8 – Labour productivity growth and contributions by industry**




Sources: INE and CFP calculations. (See note to Chart 7)

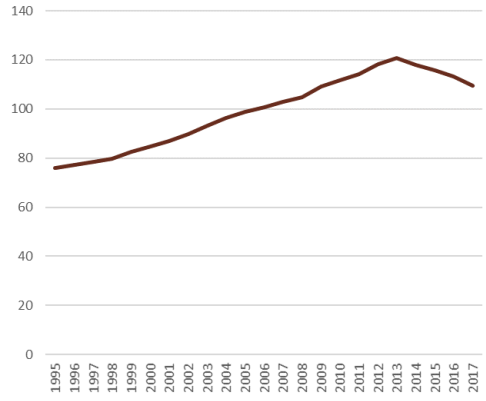
Generally speaking, labour productivity increases when employees have access to more and better capital, when the average quality of the labour force (education, technical skills, etc.) is high, and when other factors – such as research and development, new technology or, in general, production efficiency gains – improve total factor productivity. In Portugal, the low level of capital per employee, the still lower level of education (despite the positive changes) and the successive changes in qualifications strategy, or what may even be called the non-definition of a "skills strategy"[12], continue to restrain labour productivity (Charts 9 and 10).

**Chart 9 – Educational attainment level** (weight on total)




Source: Eurostat.

**Chart 10 – Net capital stock per person employed** (thousand euros, 2010 prices)




Source: European Commission (AMECO).

[12] See, for example, Araújo (2017) and http://www.oecd.org/skills/ for an OECD framework.

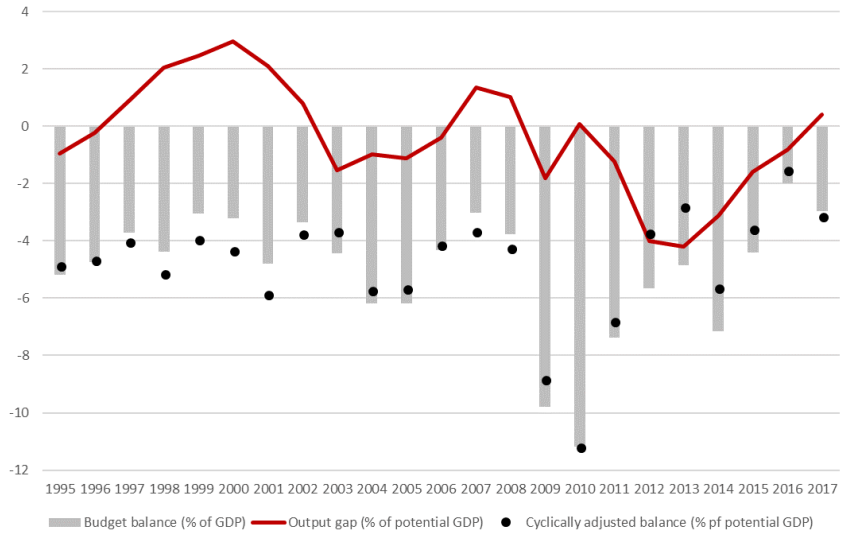
## 4.2 RISKS UNDERLYING ECONOMIC CYCLES IN PORTUGAL

A significant portion of the fiscal risks is not caused by actions or phenomena directly linked to fiscal policy in the strictest sense, but by the effects resulting from the impact of the economic cycle on revenue and expenditure. These effects, to a large extent the result of international conditions, are of special significance to small, open economies such as the Portuguese.

### 4.2.1 Output gap: 1995-2017

The output gap (the difference between observed real output and potential output) provide an indication as to the economy's position in regard to the economic cycle (Chart 11).

**Chart 11 – General government budget balance, cyclically adjusted balance and output gap**




Sources: INE, CFP and European Commission (AMECO).

A perception of an economy's position in the economic cycle is essential to define a suitable countercyclical policy that will help correcting the macroeconomic imbalance and ensure public finance sustainability.

Cyclical fluctuations in GDP have a direct impact on public finance by means of the automatic stabilisers, which play a permanent role of fiscal policy that must act over the entire economic cycle, to cushion the scale of the fluctuations. The automatic stabilisers act on both the revenue side (reducing/increasing tax and contributory revenue, especially from progressive income taxes), and the expenditure side (for instance via the expenses and revenues relating to social protection)[13]

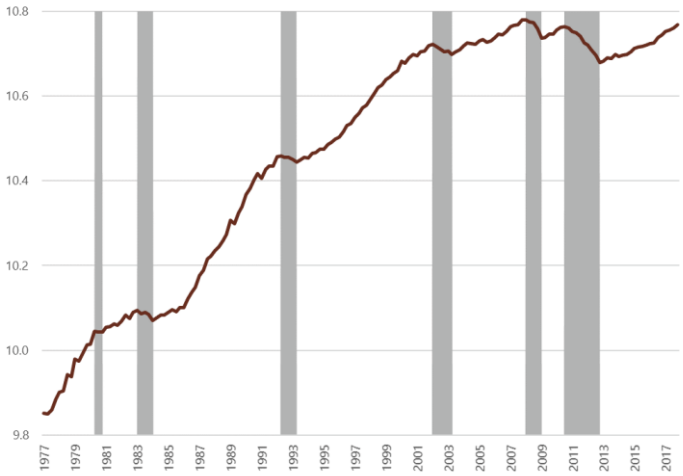
In Portugal, the estimates shown in Chart 11 indicate that, from 1995-2017 observed output was between 4.2% below potential output in 2013 and 3% above potential output in 2000. During this period there was no overall positive budget balance, with the lowest figure being witnessed in 2010 (a deficit of 11.2% of GDP) and the highest in 2016 (a 2% deficit).

[13] The working of the automatic stabilisers may be complemented by a discretionary, counter-cyclical fiscal policy (*e.g.*, public investment).

### 4.2.2 Nature of economic cycles in Portugal since 1977

Since this section looks at the downturn risks and uses the classic economic cycle concept, it is time to analyse recessions in Portugal.[14] Recession periods are marked by a loss of tax revenue due to the shrinking of the tax bases, which, along with the increased spending on unemployment benefit and the greater expenditure inflexibility, leads to a build-up of budget deficits and the steady loss of fiscal space. Therefore, the probability of recession periods represents an important downturn risk for the public finance position if there is no symmetrical change during the favourable cycle phases.

**Chart 12 – Quarterly real GDP (logarithm), 1977-2017**




Note: The shaded areas represent recession periods in Portugal.
Sources: Bank of Portugal (long quarterly series) and CFP calculations.

Taking a similar approach to the National Bureau of Economic Research's (NBER) dating committee, a recession is deemed to have occurred when there has been in decline in GDP by volume for at least two consecutive quarters. As per Rua (2017), the Bry-Boschan (1971) algorithm was applied to logarithmic series of GDP by volume from 1977-2017, and this identified six periods of recession (Chart 12). This implies that the probability of a recession occurring in Portugal in any one year is approximately 15% (6/41).

Using a binomial distribution and assuming that the probability of a recession is independent every year, we find that the probability of the Portuguese economy being in recession at any one time over a five-year period is approximately 55%.[15]

[14] Rua (2017) deals in more detail with the dating of economic cycles in Portugal.

[15] These calculations follow the approach adopted by the Office for Budget Responsibility (OBR) in the 2017 *Fiscal Risks* report. Using the same methodology, the OBR concluded that for the UK the probability of its economy being in recession at any one time over a five-year period is approximately 50%.

**Table 2 – Recessions in Portugal since 1977**

| *Peak* | *Trough* | *Consecutive quarters of falling output* | *Peak-to-trough fall in output (%)* | *Quarters for output to regain pre-recession peak* |
|---|---|---|---|---|
| 1980 Q2 | 1980 Q4 | 2 | 0,2 | 1 |
| 1983 Q1 | 1984 Q1 | 4 | 2,3 | 5 |
| 1992 Q2 | 1993 Q2 | 4 | 1,5 | 4 |
| 2002 Q1 | 2003 Q2 | 5 | 2,4 | 4 |
| 2008 Q1 | 2009 Q1 | 4 | 4,3 | - |
| 2010 Q3 | 2012 Q4 | 9 | 8,1 | 20 |
| *Average* | | 5 | 3,1 | |

Sources: Bank of Portugal (long quarterly series) and CFP calculations.

Table 2 shows the six periods of recession identified. The shortest recession lasted for two quarters and the longest for nine, with the latter corresponding to the sovereign debt crisis in Portugal. In this case the magnitude of the decline in GDP is proportional to the duration of the recessions. In the largest recession real GDP fell by 8.1%.

On average a recession costs 3.1% of GDP. The average duration of a recession is five quarters, which contrasts sharply with an average length of twenty quarters for booms, which means that on average the Portuguese economic cycle is 25 quarters long. On average the Portuguese economy took the same number of quarters as the duration of the recession to recover to the pre-crisis GDP level, with the exception of the last two recessions. The Portuguese economy is expected to return to the level prior to the two latest recessions (associated with the global financial crisis and the sovereign debt crisis) only in 2018.

### 4.2.3 Economic cycles and public finance

A typical recession is marked by a real drop in income, accompanied by declines in private consumption, private investment and the price of assets, plus a rise in the unemployment rate. Tax revenue shrinks and public expenditure usually increases as a percentage of nominal GDP.

In order to use the quarterly statistics for general government in public accounting terms, it was necessary to reduce the sample to the 1999-2017 period. Table 3 and Chart 13 show the changes in public finance in the economic cycles during this period, when the expenditure ratio followed an upward path even during the peak of an economic cycle, with the exception of a slight fall in 2008-2009.

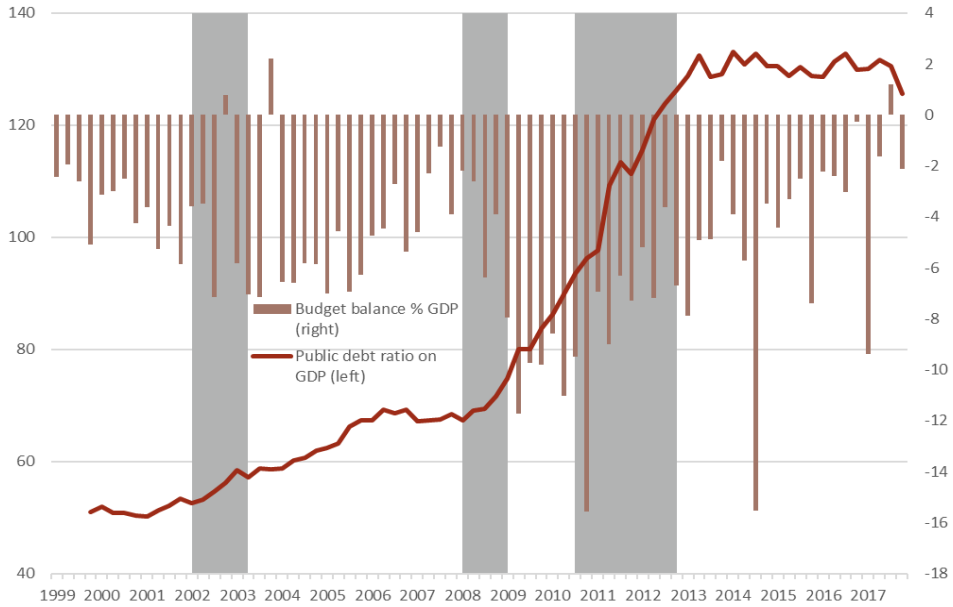
**Table 3 - Public finances and the economic cycles, 1999-2017**

| Cycle | | Phase of the cycle | Cumulated gains/losses in economic cycles (%) | | | Ratio average (% of GDP) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total revenue | Total Expenditure | Nominal GDP | Total revenue | Total Expenditure | Social benefits | GG compensation of employees | Budget balance | Public debt |
| *1999 Q1* | *2001 Q4* | E | 17.4 | 27.1 | 19.2 | 39.3 | 42.9 | 11.1 | 13.6 | -3.7 | 51.3 |
| *2002 Q1* | *2003 Q2* | R | -2.2 | 6.5 | 2.8 | 39.3 | 43.3 | 12.0 | 14.1 | -4.4 | 55.4 |
| *2003 Q3* | *2007 Q4* | E | 26.6 | 17.3 | 22.2 | 41.0 | 45.7 | 13.9 | 13.9 | -4.7 | 64.6 |
| *2008 Q1* | *2009 Q1* | R | -3.9 | 8.6 | -3.2 | 40.9 | 45.5 | 14.7 | 13.0 | -4.6 | 70.5 |
| *2009 Q2* | *2010 Q2* | E | 9.2 | 6.2 | 2.6 | 39.6 | 49.7 | 16.1 | 14.2 | -10.2 | 84.0 |
| *2010 Q3* | *2012 Q4* | R | -1.8 | -8.1 | -7.7 | 42.9 | 50.6 | 17.4 | 12.5 | -7.7 | 110.8 |
| *2013 Q1* | *2017 Q4* | E | 12.7 | 0.0 | 17.4 | 43.8 | 48.1 | 17.5 | 11.6 | -4.3 | 130.2 |

Notes: *E* stands for Expansion and *R* for Recession; account was taken of social transfers other than in kind. Accumulated gains/losses in economic cycles are relative to the variable itself.

Sources: INE (quarterly national accounts by institutional sector) and CFP calculations.

**Chart 13 – Government balance and public debt, 1999-2017** (% of GDP)




Note: The shaded areas represent recession periods in Portugal during the sample period.

Sources: INE (quarterly national accounts by institutional sector), Bank of Portugal and CFP calculations.

This subsample covers three recession periods. In average terms the last recession caused the largest budget deficit (7.7%). It was marked by the Economic and Financial Assistance Programme (EFAP), and led to a procyclical policy of cuts in public expenditure during the recession in order to preserve the economy's external borrowing capacity.

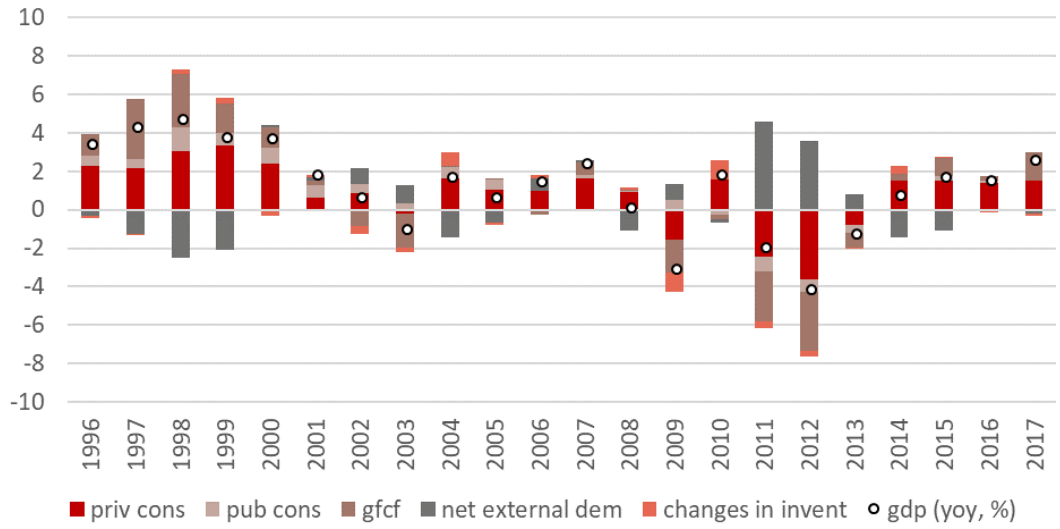
Management of the stabilisation function in Portugal, through discretionary policies, led to a build-up of budget deficits and to a permanent increase in the public debt ratio, which accelerated sharply from the time of the outbreak of the international recession in 2008 (Chart 13). The consequences of this fiscal policy stance were compounded by the fact that some of the more inflexible spending items remained on an upward path as a percentage of nominal GDP, erasing the fiscal space needed to respond to periods of economic contraction. In recent years this path has been corrected for total expenditure, where the ratio has dropped by 2.5 p.p., while social transfers other than in kind, have stabilised at around 17.5%. The

maximisation of the downturn risks associated with the permanent effects of the economic cycles on public finance now depends on future developments: a continuation of the latest countercyclical dynamic or, on the other hand, a return to the previous pattern.

## 4.3 RISKS ASSOCIATED WITH THE MAKEUP OF GDP GROWTH

The composition of GDP is very important to the formation of tax revenue, as some GDP items generate more tax revenue than others. However, those items are not necessarily the ones who make the largest contribution to potential GDP growth.

**Chart 14 – Contributions for real GDP growth (p.p.), 1996-2017**




Sources: INE and CFP calculations.

Chart 14 shows that the variable which, on average, contributed the most to the growth in GDP by volume, broken down in terms of expenditure, was private consumption. It is also the item that generates most tax revenue, in particular VAT (Value-Added Tax) and excise duties. However, in a small, open economy private consumption normally contains a high level of imports.[16] So, while its growth generates revenue, it has also lesser impact on GDP growth and puts pressure on external indebtedness.

On the other hand, private investment and net exports generate little tax revenue directly, but can have a more important impact on economic growth and borrowing capacity in both the short and medium to long-terms.

In Portugal the contribution of investment to real GDP growth was insufficient even to maintain the economy's capital stock following a decline in the construction sector that began at the start of the first decade of the 21st century. As stated earlier the low growth in investment in recent years led to a decrease in capital per employee, contributing to the stagnation in labour productivity and restricting potential growth in the long-term. Therefore, weak investment growth constitutes a downturn risk, since it penalises the economy's potential growth.

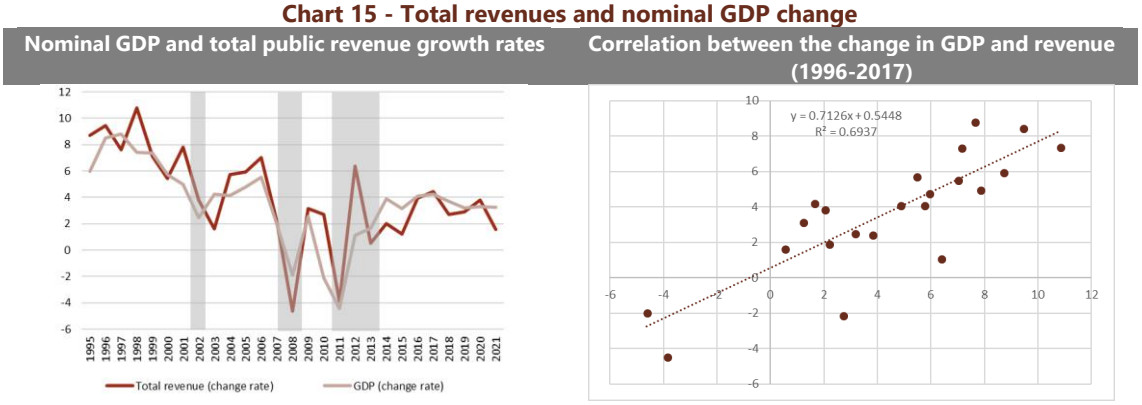
[16] See Box 2 "The imported content of global demand in Portugal", Bank of Portugal Economic Bulletin, December 2017, for a broader view of the imported contents of overall demand in Portugal.

Net exports are an important component for generating wealth. Although they make a less direct contribution to tax revenue, exports generate income, in the form of profits and salaries which are subject to a number of taxes, and they fuel consumption and employment which are themselves generators of tax and contributory revenue. In addition, exporting companies tend to be more efficient (Arnold, 2015; Wagner, 2012), so their dynamism is reflected in the economy's potential growth. The largest risk underlying exports is their external nature and their reliance on the external economic environment to which a small, open economy is exposed. As changes in the economy and Portuguese public finance have shown, this is the main reason for calling attention to the stabilising function of fiscal policy over the entire course of the economic cycle, so as to avoid the build-up of budget deficits that increase the economy's vulnerability to that environment.

# 5 RISKS TO REVENUE

In Portugal there is a significant correlation between changes in public revenue and GDP. This sensitivity to economic cycle fluctuations reflects the nature of the automatic stabiliser that is tax policy. However, the way the stabilising function of fiscal policy was managed for some time and the increase in budget deficits in times of crisis have forced the country to adopt corrective measures, which end up producing persistent growth in revenue, in both absolute terms and as a percentage of GDP.

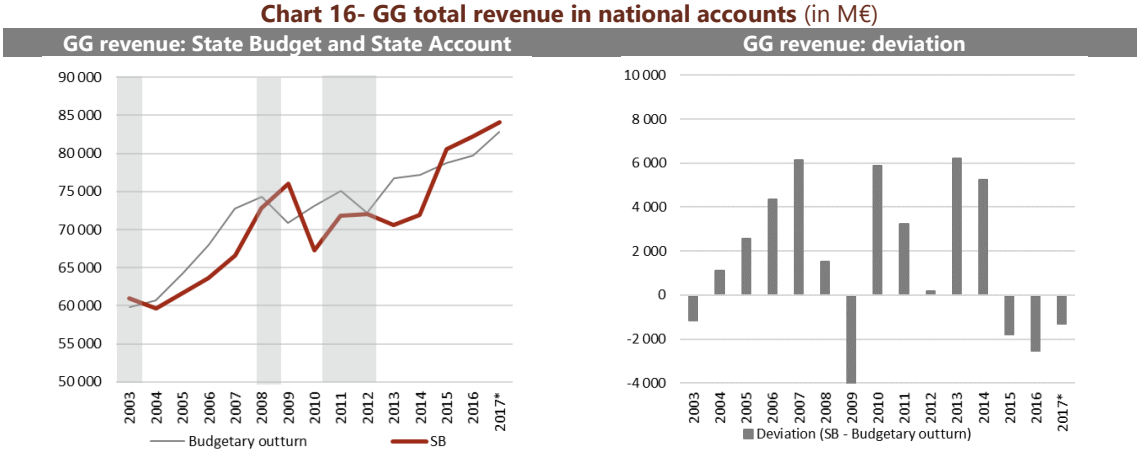
**Chart 15 - Total revenues and nominal GDP change**




Source: European Commission (AMECO) and INE; CFP calculations.

The introduction of measures that tend to increase tax and contributory revenue or other revenue during the downward phases of the economic cycle resulted from the need to comply with the budget objectives required to preserve the economy's external borrowing capacity. Thus, over the 15 years for which consistent information is available in national accounts, it was generally possible to comply with the objectives set out in the annual budgets, even at those time when the economy shrank the most, which meant that up to 2014 most annual deviations between the forecast and the budget outturn were positive.

**Chart 16- GG total revenue in national accounts** (in M€)

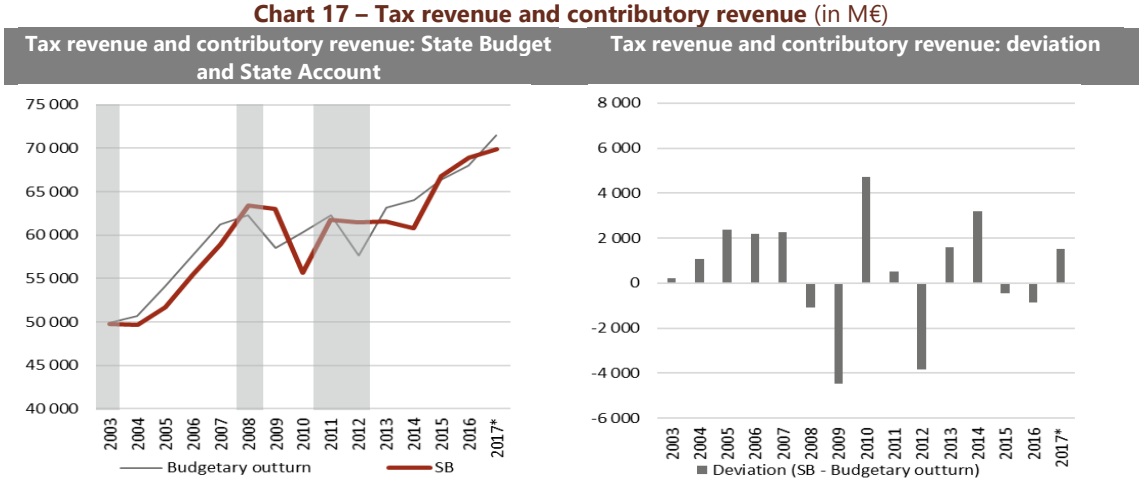



Sources: INE and Ministry of Finance.

Taking into consideration only tax and contributory revenue, which is more directly dependent upon economic cycles, most of the observed deviations were positive, that is to say, the State collected more taxes than was forecast at the time the SB was prepared. On top of that, the correction of negative deviations in the balance led to a systematic increase

in revenue, although within any one year it may have been offset by another kind of non-tax and non-contributory revenue.

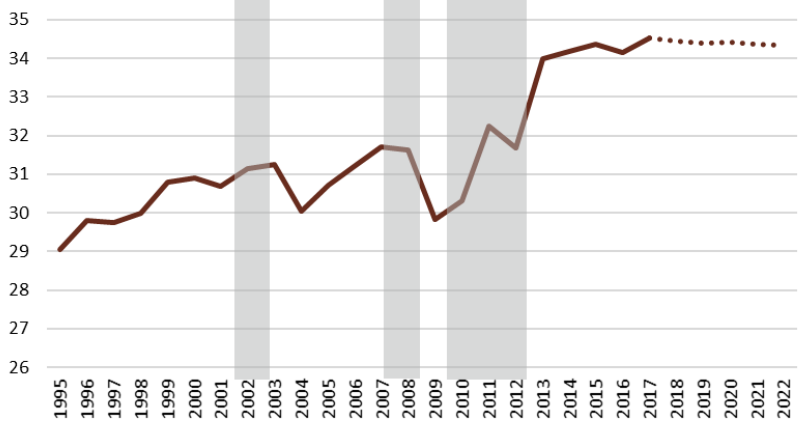
**Chart 17 – Tax revenue and contributory revenue** (in M€)




Sources: INE and Ministry of Finance.

These developments have led to a persistent increase in the tax burden, which was particularly sharp in the period of the financial and sovereign debt crises, although it has stabilised in recent years at between 34% and 35% of GDP.

**Chart 18 - Tax burden** (in % of GDP)

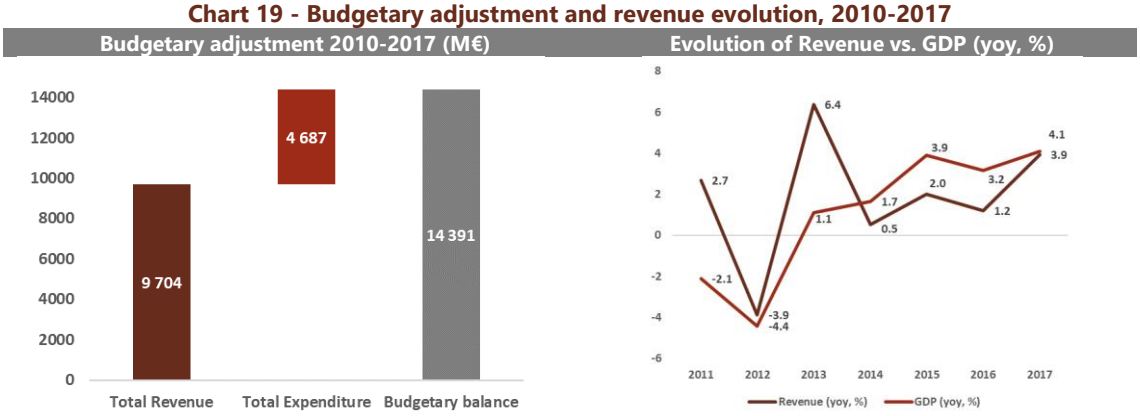



Source: European Commission (AMECO) and CFP projections.

## 5.1 PAST DEVIATIONS IN REVENUE FORECASTS

From 2010 to 2017 total revenue grew by 9 704 M€ (13.3%, equal to 7.3 p.p. of GDP), and made by far the largest contribution (67.4%) to the budgetary adjustment of 14 391 M€ that has been undertaken since the beginning of the decade.

**Chart 19 - Budgetary adjustment and revenue evolution, 2010-2017**




Source: INE.

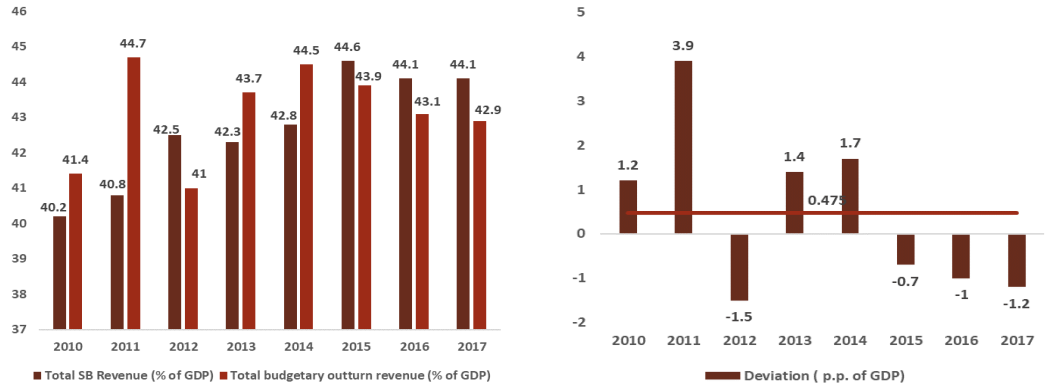
In fact, the ability to implement measures that increase revenue and to achieve the results forecast for the respective aggregates has mitigated the risks of non-compliance with fiscal goals, and is the main tool for correcting the imbalances identified in the GG balance. From 2010 to 2017, the sums for total revenue in the original SB's for each year deviated, on average, 0.5 p.p. of GDP from the outcomes calculated by the statistical authority in its first annual outturn calculations[17]. However, that average deviation is influenced by the fact that over the period 2011 to 2015, policy measures had been adopted that impacted on revenue, and in 2011 and 2013[18] they contributed to the final revenue outturn exceeding the SB forecast.

Over the last three years, and after the conclusion of the EFAP, the total revenue outturn has fallen short of the figure projected in the various budgets, which suggests a trend to overestimate non-tax and non-contributory revenue, particularly sales and capital revenue, despite macroeconomic performance being better than expected. Should this trend continue, without being offset by spending constraints throughout the year, the risk of not reaching fiscal targets will increase in the future.

[17] The SB forecast is compared to the statistical authority's first revenue outturn calculation so as to remove any effects of later revisions of the figures which the MF could not have included in its forecast when preparing the SB.

[18] In 2011, a PIT surcharge was collected for which legislation was only passed in August , while at the end of the year banking sector pension funds were incorporated in Social Security. In October2013, a scheme for the exceptional settlement of tax debts was approved.

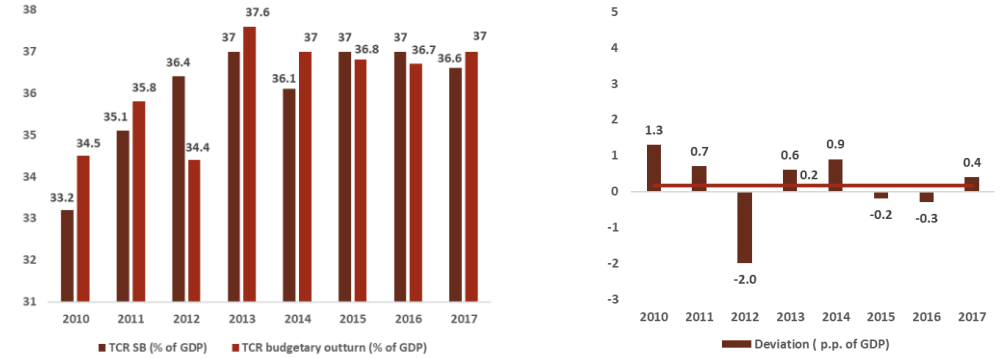
**Chart 20 – Total revenue: SB vs. Budgetary Outturn, 2010-2017**




Source: INE and Ministry of Finance. Note: Comparison of the SB and the outturn published in the first INE note on the budgetary outturn for the respective year, with the exception of 2010 because the first publication did not contain sufficient details. Therefore, in 2010 the information used relates to 2010 but was only published at the time the 2011 account was closed. The horizontal line in the right-hand chart indicates the average deviation from the forecasts, in p.p. of GDP, over the years concerned.

From 2010 to 2017, the MF forecasts relating to tax and contributory revenue were, on average, 0.2 p.p. of GDP above the actual outturn. Social contributions and taxation are the most important components in GG revenue and, on average, accounted for 84% of total GG revenue from 2010 to 2017. As a percentage of GDP, tax and contributory revenue totalled 36.2%, which represented an average deviation of 0.5% compared to the average of the initial revenue forecasts in the SBs produced over the period concerned. In the last three years, the deviations in regard to tax and contributory revenue were -0.03 p.p. of GDP, less than the average for the last eight years, pointing to an improvement in the accuracy of the MF forecasts for these items. Nonetheless, it must be stressed that in 2016 tax and contributory revenue benefitted from a scheme for the extraordinary settlement of tax debts[19], which had not been included in the initial budget and which resulted in revenue equal to 0.3% of GDP.

**Chart 21 – Tax and contributory revenue: SB vs. Budgetary Outturn, 2010-2017**




Source: INE and Ministry of Finance. Note: Comparison of the SB and the outturn published in the first INE note on the budget outturn for the respective year, with the exception of 2010 because the first publication did not contain sufficient details. Therefore, in 2010 the information used relates to 2010 but was only published at the time the 2011 account was closed. The horizontal line in the right-hand chart indicates the average deviation from the forecasts, in p.p. of GDP, over the years concerned.

[19] The extraordinary debt settlement scheme (PERES in Portuguese) was approved by Decree-Law no. 67/2016 of 3 November 2016.

As regards non-tax and non-contributory revenue, the forecasts in the last eight budgets show an average positive deviation of 0.2 p.p. of GDP compared to the verified outturns. In absolute terms that deviation was equal to that seen in tax and contributory revenue, but it is more significant in relative terms, to the extent that over the 2010-2017 period non-tax and non-contributory revenue accounted, on average, for just 16% of total GG revenue and 6.9% of GDP. This meant that the there was an average deviation of +2.9% compared to the average initial revenue forecast of the various SB's (against the -0.6% for tax and contributory revenue). However, that positive deviation was strongly influenced by the figure recorded in 2011, mainly as a result of incorporating banking sector pension funds in Social Security. Conversely, in the last three years (post-EFAP), this revenue aggregate experienced a growing negative deviation, contributing towards total GG revenue not reaching the level initially forecast. If this trend continues in future exercises it will increase the risk of not meeting the budget targets, leading to additional pressure on expenditure control.

**Chart 22 – Non-tax and non-contributory revenue, SB vs. Budgetary Outturn, 2010-2017**

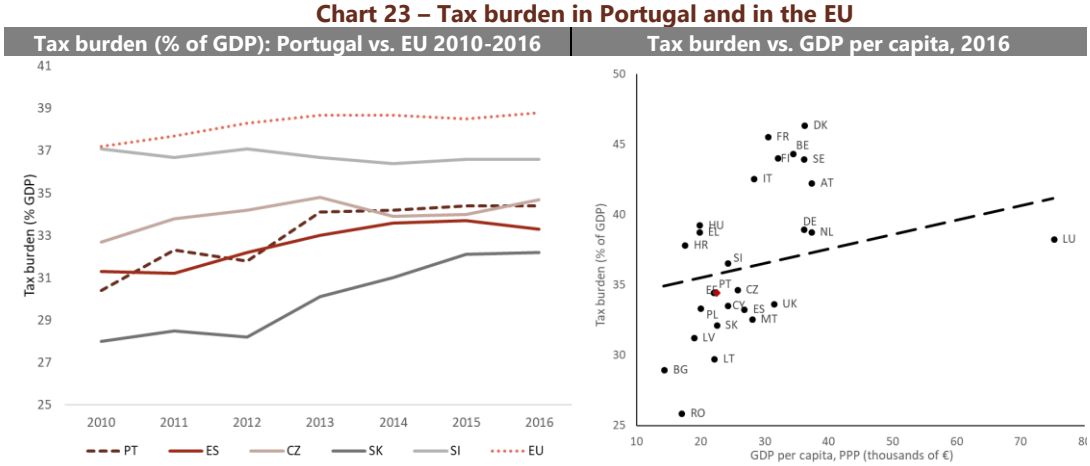

Source: INE and Ministry of Finance. Note: Comparison of the SB and the outturn published in the first INE note on the budget outturn for the respective year, with the exception of 2010 because the first publication did not contain sufficient details. Therefore, in 2010 the information used relates to 2010 but was only published at the time the 2011 account was closed. The horizontal line in the right-hand chart indicates the average deviation from the forecasts, in p.p. of GDP, over the years concerned

## 5.2 RISKS TO TAX BASES AND THE CONCENTRATION OF TAX REVENUE AMONG A LOW NUMBER OF TAXPAYERS

Portugal's membership of an economic block where capital and labour have full mobility and the increasing worldwide liberalisation require that decisions as to the level and makeup of the tax burden take into account existing practices in other countries, which constrain how it affects the national economy. In 2016, the tax burden in Portugal was 34.4% (below the 38.8% recorded in the EU). If we look at the trend line that compares GDP per capita to the tax burden, we find that Portugal sits below the line (Chart 23). However, despite the apparent slack as regards the tax burden, Portugal runs a risk if it attempts to increase the fiscal effort demanded of the economic agents concerned. Such risk is due to the fact that some of the countries that compete with Portugal, especially in terms of attracting investment, have tax burden ratios even further below that line. Therefore, any future increase in the tax burden should take that limitation into consideration. In point of fact the mobility of labour and capital, particularly within the EU but also globally, allows economic agents to choose the

most favourable tax jurisdictions. This involves a risk of increased taxation as well as the adoption of measures that complicate the tax system, making it less stable.

**Chart 23 – Tax burden in Portugal and in the EU**



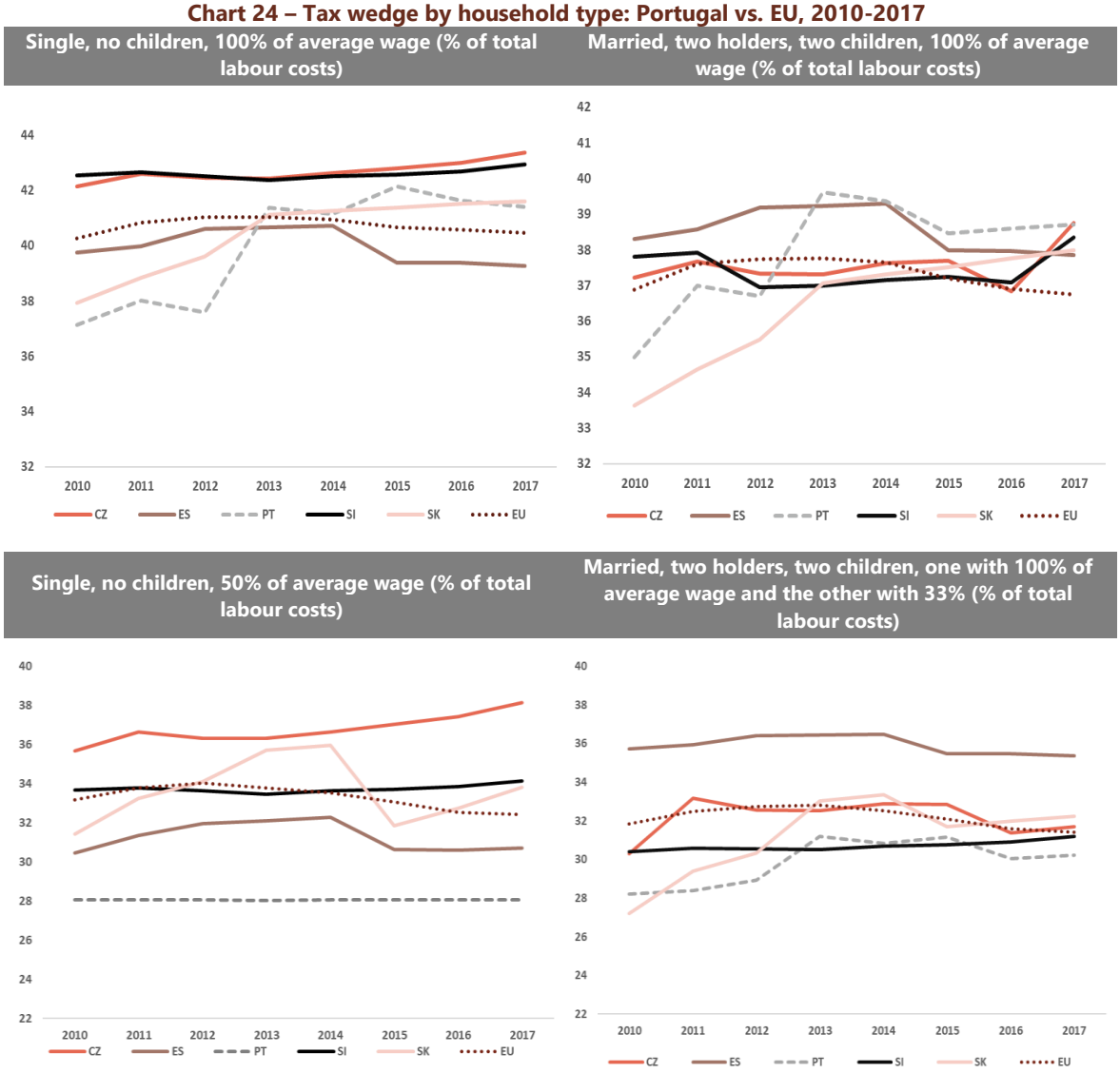

Source: Eurostat

The tax wedge[20] reveals a characteristic of Portuguese tax competitiveness. Indeed, as the chart below shows the tax wedge in Portugal is above the EU average for taxpayers who earn an average wage in the country, regardless of their personal situation (single or married with children). Even to the point that in a household with two children where both adults earn an average salary, Portugal has the highest tax wedge (together with the Czech Republic) of all the countries included in the sample[21]. However, Portugal stands out as the more competitive State of those selected in terms of people in the same personal situations earning below average salaries.

[20] See footnote 1.

[21] The countries were selected on basis of a similar GDP per capita in terms of Purchasing Power Parities (PPC).

**Chart 24 – Tax wedge by household type: Portugal vs. EU, 2010-2017**




Source: European Commission.

In Portugal, both the weight of taxation on companies and businesses' perception of the impact of taxes on investment decisions may pose a risk as regards CIT revenue. The average level of taxation on the profits of companies[22] registered in Portugal is worse than both the EU average and that of countries with a similar level of development[23]. In regard to business people's perception as to the negative impact of taxation on potential investment decisions, Portugal stands out for the wrong reasons, since in 2016 it was ranked 109th out of the 137 economies analysed by the *Global Competitiveness Report 2017-18*[24], and came off worse in a comparison with those countries that traditionally compete with it to attract capital, such as Spain, Czech Republic and the Slovak Republic. Thus, since capital is traditionally more

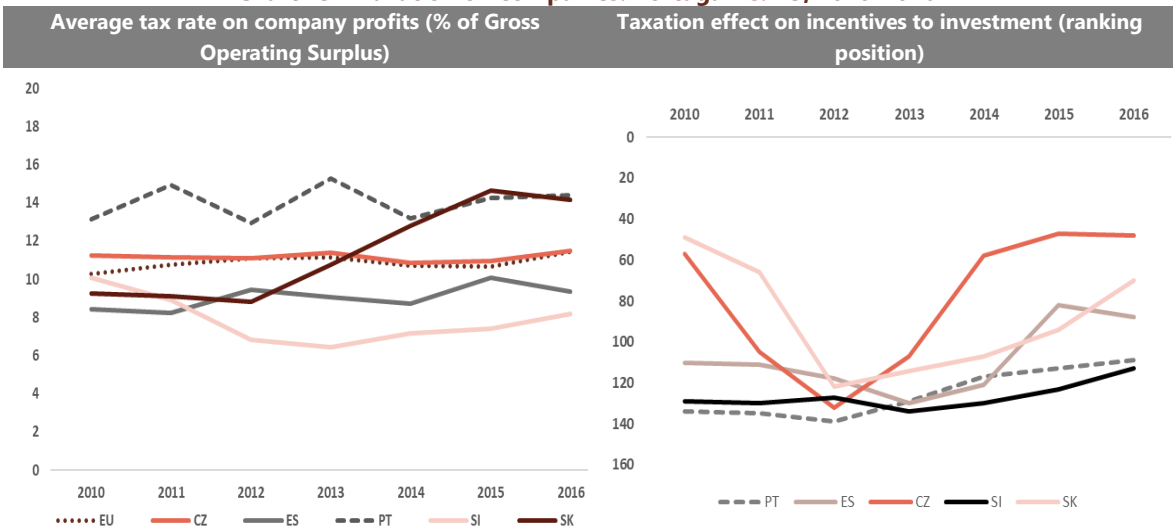
[22] Measured as the ratio of taxes paid on corporate profits and the sum of the gross operating surplus of financial and non-financial companies.

[23] Measured by the level of GDP per capita in terms of Purchasing Power Parities (PPC).

[24] World Economic Forum (2017): http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf

mobile than labour, Portugal's apparent lack of tax competitiveness when measured by those two indicators and against countries that compete directly with it within the EU may jeopardise future CIT revenue if companies choose to move for tax purposes.

**Chart 25 – Taxation on companies: Portugal vs. EU, 2010-2016**




Source: Eurostat and *World Economic Forum* (WEO). Note: The chart on the right is based on information from the WEO *Global Competitiveness Reports* and ranks countries according to the responses to a survey conducted among business people in the countries concerned. The question asked was: "*In your country, to what extent do taxes reduce the incentive to invest?*"

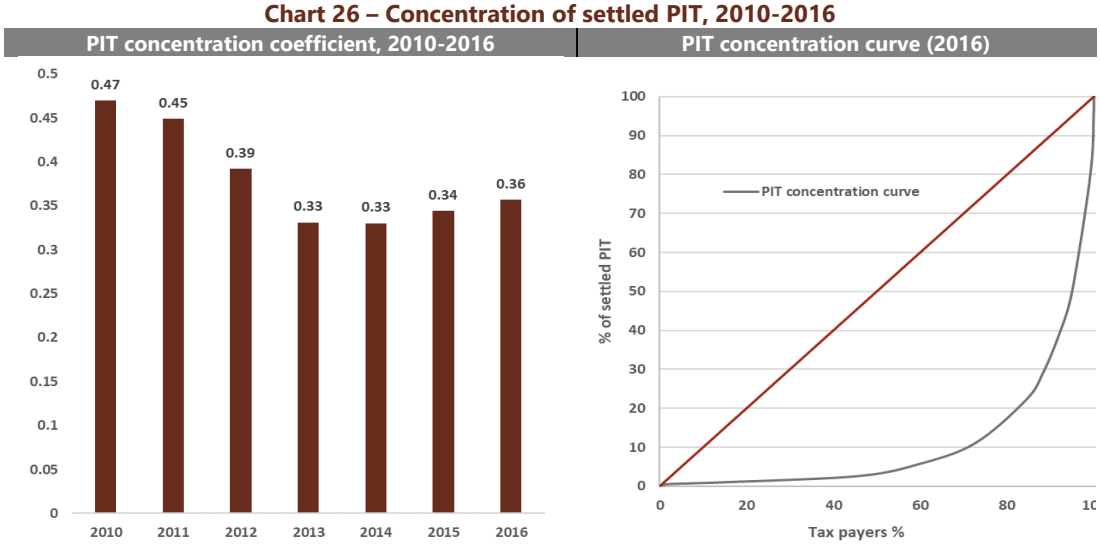
The risk of lost revenue associated with the possibility of labour and capital changing location varies not only with the level of taxation but also with the degree of concentration of the settlement of taxes on labour and capital revenue. In 2017 taxes on labour and capital revenue (PIT and CIT) accounted for 38.8% of total tax revenue and for 22.8% of total GG revenue. In this context, it is necessary to examine the levels of concentration of the settlement of those taxes, since if such settlement is concentrated in a small number of economic agents, it poses the risk of losing a considerable share of revenue should a few of them opt to move to another tax jurisdiction. For the same level of CIT and PIT concentration, the risk of revenue loss is greater in the CIT case, since capital tends to be more mobile than labour because, in theory, a corporation has more economic, technical and legal means to select and change its tax jurisdiction.

The PIT settlement concentration declined between 2010 and 2016, which means the number of people paying that tax increased. From 2010 to 2016 there was a deconcentration in PIT revenue, which – from the standpoint of assessing the risk linked to the loss of revenue due to the mobility of labour –benefits the Portuguese State, since compared to the beginning of the decade the percentage of taxpayers settling tax increased. In 2016 8% of households accounted for the settlement of 61% of PIT, which corresponds to a concentration coefficient of 0.36. In 2010, 6% of households accounted for 62.3% of tax paid which is equal to a concentration coefficient of 0.47.

Note, however, that among the figures analysed in Chart 26 the minimum degree of PIT settlement concentration was achieved in 2013 and 2014, and the concentration has risen

again since then. From the standpoint of the PIT concentration risk, this change is undesirable and should be monitored. In truth the tax system for private individuals is once again more dependent upon sums paid by a smaller number of households. In 2016 around 20% of taxpayers accounted for 80% of the settled PIT.

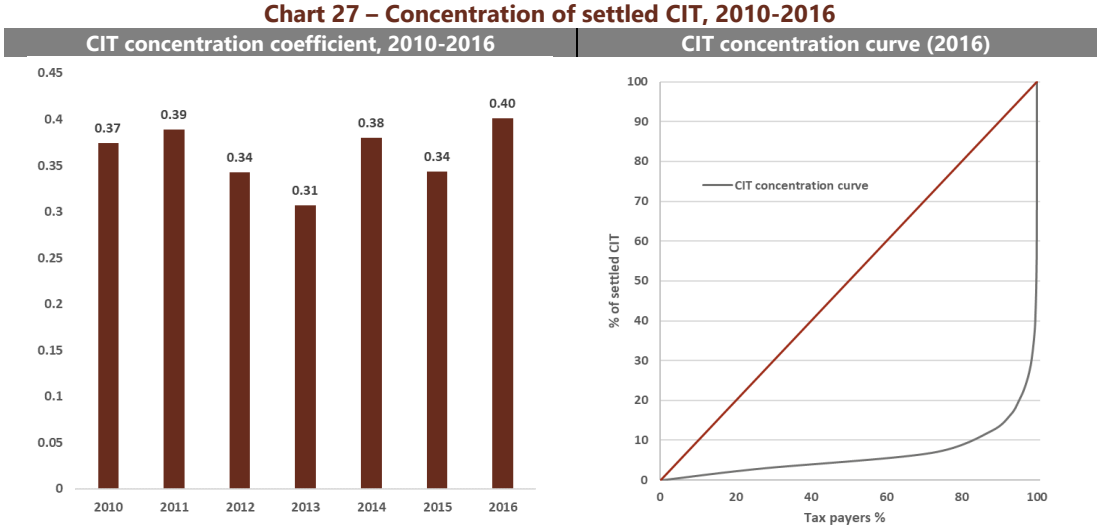
**Chart 26 – Concentration of settled PIT, 2010-2016**




Source: AT. CFP calculations. Note: The concentration coefficient goes from 0 to 1 and should be interpreted in line with the Gini coefficient: a score of 0 means that all taxpayers pay the same amount while a score of 1 means a single taxpayer pays the entire tax. The concentration curve is calculated and interpreted as a Lorenz curve.

Following a decline from 2010 to 2013, the CIT concentration coefficient has been on the rise and reached this decade highest level in 2016. From the beginning of the decade this tax concentration coefficient was 0.37. This figure indicates a lower concentration than that of PIT, which in terms of CIT revenue concentration risk management would appear to be suitable bearing in mind the matters discussed above. Up to 2013 the CIT settlement concentration coefficient fell, achieving a record low (0.31) and remained below the PIT concentration coefficient (0.33). However, after that tax year, the CIT concentration coefficient began to rise until it reached 0.4 in 2016. This figure is higher than that recorded for PIT (0.36) and reveals that 57.3% of the tax collected came from 0.4% of taxpayers. Note that in 2010 that percentage of taxpayers accounted for 52.2% of the settled CIT revenue. Therefore, two aspects should be monitored in the coming years: the first is the fact that the CIT concentration coefficient is higher than that of PIT, and the second is the upward trend in this indicator in the last three years, pointing to a higher degree of risk for CIT revenue. Less than 20% of companies account for 90% of total CIT collected.

**Chart 27 – Concentration of settled CIT, 2010-2016**




Source: AT. CFP calculations. Note: The concentration coefficient goes from 0 to 1 and should be interpreted in line with the Gini coefficient: a score of 0 means that all taxpayers pay the same amount while a score of 1 means a single taxpayer pays the entire tax. The concentration curve is calculated and interpreted as a Lorenz curve.

Another risk factor affecting GG revenue is related to the existence of tax gaps, considering that if it expands it would affect the level of tax revenue collected in theory, considering the number of tax events occurring within a particular jurisdiction and the tax revenue actually collected. To the extent that tax revenue depends upon the direct State-taxpayer relationship, its level will always depend on the tax system's ability to collect various taxes effectively. Accordingly, the less effective the tax system the greater the fiscal risk, since, on top of the sums not collected due to the existence of policy measures commonly known as tax expenditure, there are taxpayers who, intentionally or otherwise, do not pay in full the tax that they legally owe. Therefore, the size of and changes in this indicator are decisive when gauging the level of risk affecting tax revenue and, in a broader sense, total GG revenue.

From 2010 to 2015 the VAT gap[25] in Portugal decreased and was below the EU average. In the recent past for which information is available[26], that gap has narrowed from 13.34% of theoretical VAT in 2010 to 11.46% in 2015. This 1.88 p.p. of theoretical VAT decrease was greater than the 1.21 p.p. of theoretical VAT fall seen across the EU. As a result, the Portuguese VAT gap was below the European average at the end of period considered (2015). Also, in comparison to EU countries with levels of development similar to Portugal[27], the national VAT gap was equal to the median for the countries concerned. That change was particularly significant after 2013 (drop of 4.37 p.p. from 2013 to 2015), which shows that Portugal implemented effective measures in terms of tax system efficiency, that meant a smaller percentage of potential VAT revenue was lost. Therefore, the risk associated with the

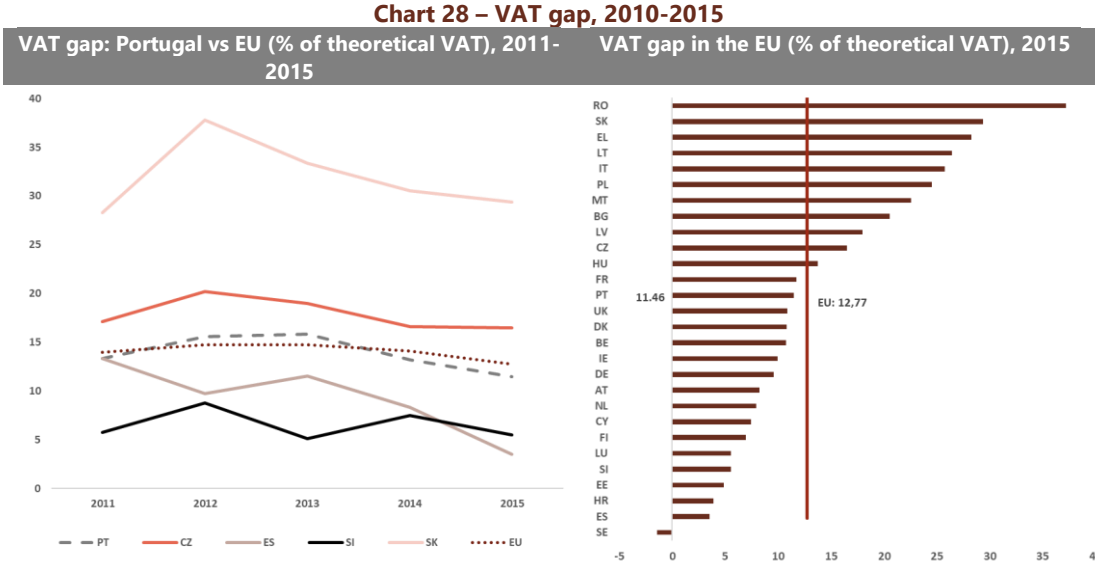
[25] It represents the difference between theoretical VAT revenue (if the legal rates were applied to transactions) and VAT actually collected. It is therefore more of a compliance gap, to the extent that it does not include the gap created by tax policy options adopted by the legislator (policy gap).

[26] The European Commission calls for annual studies to gauge the VAT gap. The latest study analyses the period from 2010 to 2015. Information on this subject and the link to the report can be found here.

[27] Measured by the level of GDP per capita in terms of Purchasing Power Parities (PPC).

loss of revenue due to the existence of a sizeable parallel economy that the tax authority cannot fight was also mitigated over the period in question.

**Chart 28 – VAT gap, 2010-2015**



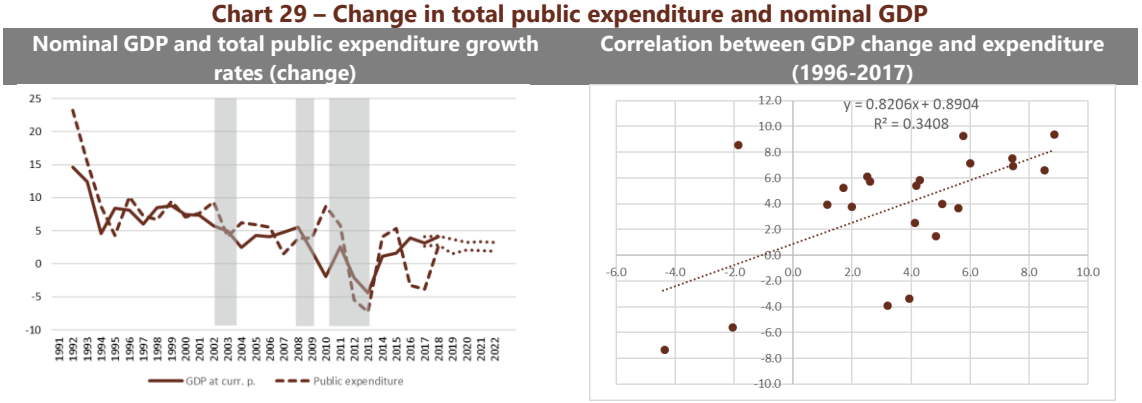

Source: Belkindas et al. (2017).

# 6 RISKS TO EXPENDITURE

## 6.1 EXPENDITURE DEVELOPMENTS AND DEVIATIONS FROM THE FORECASTS

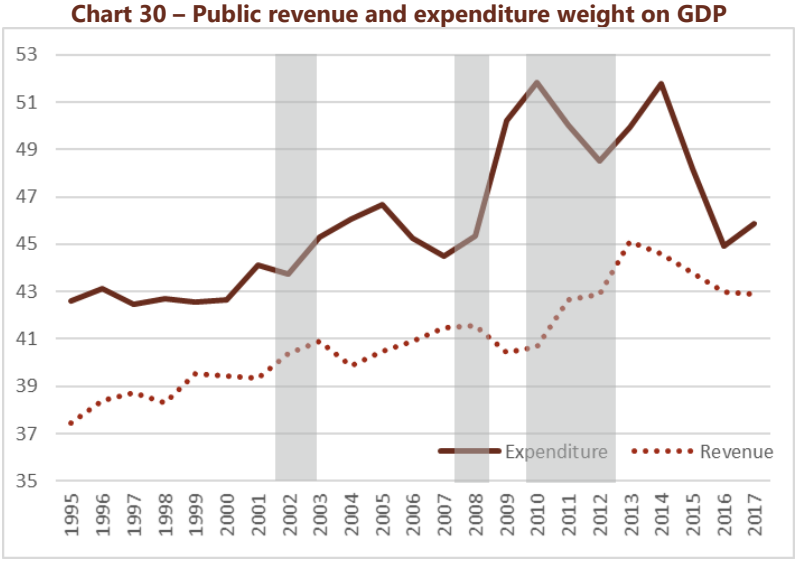
As with revenue, there is a correlation between total public expenditure and GDP developments, although it is less marked. As shown in Chart 29, expenditure tends to be less flexible and grow faster. From 1995 to 2010 expenditure grew by 150%, while Portuguese GDP at current prices doubled (grew by around 100%). During the EFAP period and in the following years growth rates were lower and, according to the CFP projections, even tended to stabilise. However, expenditure inflexibility continues to be a severe fiscal risk.

**Chart 29 – Change in total public expenditure and nominal GDP**




Source: European Commission (AMECO) and CFP projections.

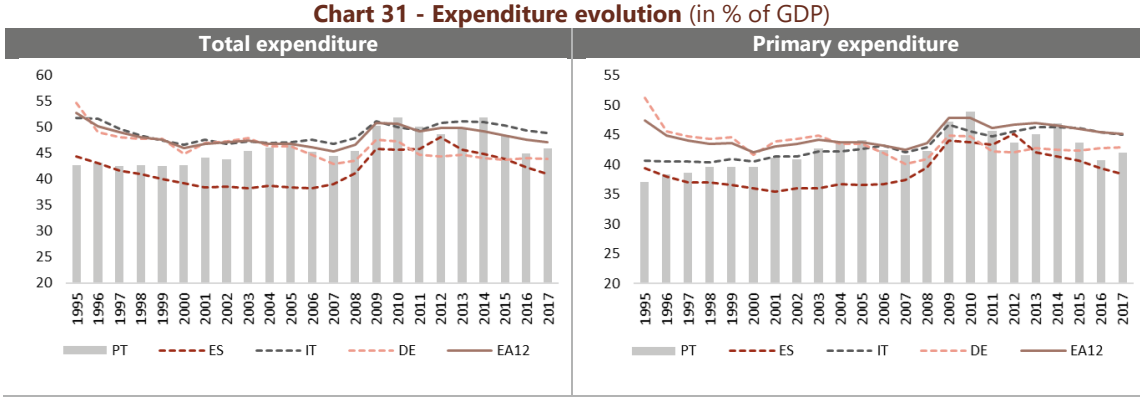
**Chart 30 – Public revenue and expenditure weight on GDP**




Source: European Commission (AMECO).

Since 1995 public expenditure has seen almost continuous growth, mainly as a result of the provision of public services and social transfers. As a percentage of GDP, Portuguese public expenditure has followed, albeit with a lag, growth in its European counterparts, converging towards the euro area average up to 2009, a path that was interrupted by the EFAP.

**Chart 31 - Expenditure evolution** (in % of GDP)




Source: European Commission (AMECO).

In nominal terms, primary expenditure, net of temporary measures and special factors, more than doubled from 1995 to 2005, recording an increase of 111% in 10 years (Table 4). This trend was less marked in 2006 and 2007, and then accelerated in 2008 and 2009, before dropping off from 2010 to 2012 with the introduction of pay cuts and the suspending of holiday and Christmas bonuses for General Government employees and cuts to pensions funded by Social Security and the Civil Servants Pension Agency (CGA). In 2013 and 2014 the downward trend in spending suffered a U-turn, mainly due to the impact of Constitutional Court (CC) decisions which blocked the suspension of holiday and Christmas bonuses and the pay cut[28] laid down in the State Budget for 2014. Finally, since 2016 adjusted expenditure has resumed an upward path, reflecting above all the full restoring of civil service pay and the updating of social transfers (Table 4).

Compensation of employees together with social transfers accounted for almost three-quarters (74.1%) of adjusted primary expenditure, and their relative weight has risen since 1995 when they represented 66.5% of that aggregate, making them the main factor in public expenditure increases.

**Table 4 – Evolution of adjusted public expenditure**

| | 1995 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total expenditure** | 37 951 | 74 054 | 75 214 | 78 060 | 81 093 | 88 116 | 93 237 | 88 112 | 81 719 | 85 032 | 89 598 | 86 669 | 83 371 | 88 550 |
| *in % of GDP* | *42.6* | *46.7* | *45.2* | *44.5* | *45.3* | *50.2* | *51.8* | *50.0* | *48.5* | *49.9* | *51.8* | *48.2* | *44.9* | *45.9* |
| Compensation of employees | 11 093 | 23 044 | 22 916 | 23 007 | 23 491 | 24 608 | 24 611 | 22 614 | 19 688 | 21 317 | 20 515 | 20 349 | 20 881 | 21 270 |
| Social benefits | 10 865 | 25 780 | 27 053 | 28 342 | 29 946 | 32 917 | 33 452 | 33 325 | 33 010 | 34 785 | 34 088 | 34 711 | 35 113 | 35 616 |
| Interest on debt | 4 929 | 4 046 | 4 599 | 5 174 | 5 556 | 5 218 | 5 268 | 7 604 | 8 214 | 8 258 | 8 483 | 8 210 | 7 761 | 7 475 |
| Temporary measures and special factors | 0 | 202 | 0 | -195 | -1 157 | 112 | 4 824 | 1 158 | 580 | 700 | 6 186 | 2 463 | -34 | 4 286 |
| **Adjusted primary expenditure** | 33 022 | 69 806 | 70 614 | 73 081 | 76 693 | 82 786 | 83 145 | 79 350 | 72 924 | 76 074 | 74 929 | 75 996 | 75 644 | 76 789 |
| *in % of GDP* | *37.1* | *44.0* | *42.5* | *41.6* | *42.9* | *47.2* | *46.2* | *45.0* | *43.3* | *44.7* | *43.3* | *42.3* | *40.8* | *39.8* |

Sources: INE and CFP. Note: Adjusted primary expenditure excludes interest payments and the impact of temporary measures and special factors.

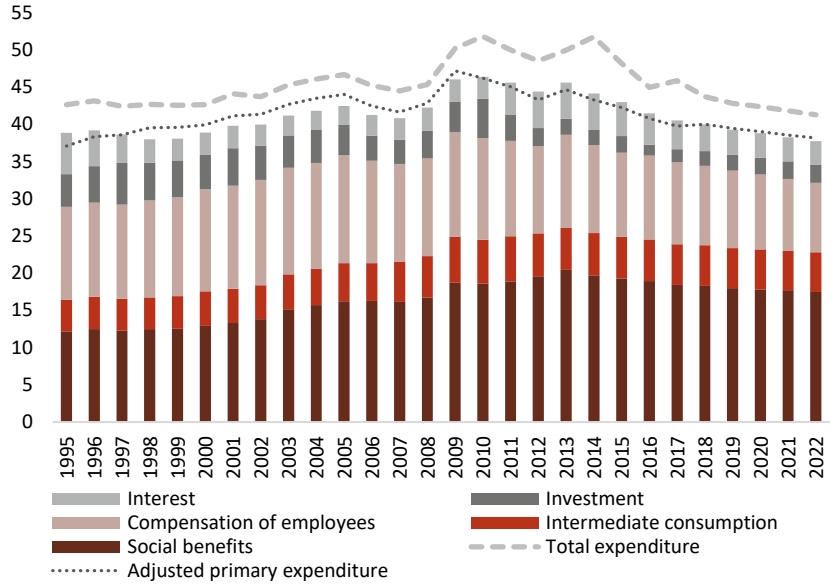
From 2018 until 2022 the developments projected by the CFP[29] point to a decrease, as a percentage of GDP, in total and adjusted expenditure that is explained by the decline in the relative weight of compensation of employees and social transfers. That projection – which

[28] Constitutional Court Decision of 5 April 2013 – which ruled that the 2013 holiday bonus be restored; and Constitutional Court Decision of 30 May 2014 – banned the pay cut laid down in the State Budget for 2014, and the pay cuts in force from 2011 to 2013 were applied once again.

[29] Available at http://www.cfp.pt/wp-content/uploads/2018/03/CFP-REL-02-2018-EN.pdf.

assumes that existing measures and planned measures that have been described in sufficient detail to estimate their fiscal impact remain in force – points to a decrease in compensation of employees as a percentage of GDP and in absolute terms from 2020 onwards. This development reflects above all (i) nominal GDP growth; (ii) savings through wage drift (the difference in the wages of employees who retire at the end of their career and those of new recruits); (iii) the impact of the gradual unfreezing of promotions; and (iv) the civil service hiring rule[30].

**Chart 32 - Evolution and composition of total public expenditure** (yoy %)




Sources: INE and CFP | Notes: 1995-2017 INE statistics, 2018-2022 figures calculated by the CFP; published in the "Public Finance: Position and Constraints 2018-2022" report; adjusted primary expenditure consists of expenditure net of debt interest and temporary measures and special factors.

As for social transfers expenditure, its relative weight in GDP is projected to fall, although it will rise in absolute terms as a result of: (i) the restoring of the annual updating of Social Security and CGA pensions, (ii) the extraordinary updating of pensions worth less than 1.5 times the Social Support Index (SSI) and (iii) the new rules for penalty free early retirement without applying the sustainability factor for employees who have paid social contributions for many years, in keeping with the latest demographic projections. Attention must be drawn to the contribution of unemployment benefit expenditure to the observed decrease in social transfers expenditure[31], which highlights the importance of the cyclical changes to the economy and the outlook for economic growth and employment. Unemployment benefit expenditure grew steadily until 2013 when it totalled 1.6% of GDP and then fell from 2014 onwards at an average annual rate of 0.2 p.p. of GDP to stand at 0.7% of GDP in 2017.

[30] In 2018, hiring of two new civil servants for every three that leave (3 for 2 rule); in 2019 hiring of four new civil servants for every five that leave (5 for 4 rule) and from 2020 onwards the level of public employment is assumed to be stable.

[31]

| % do PIB | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Taxa de desemprego | 1,2 | 1,2 | 1,5 | 1,6 | 1,3 | 1,0 | 0,8 | 0,7 |

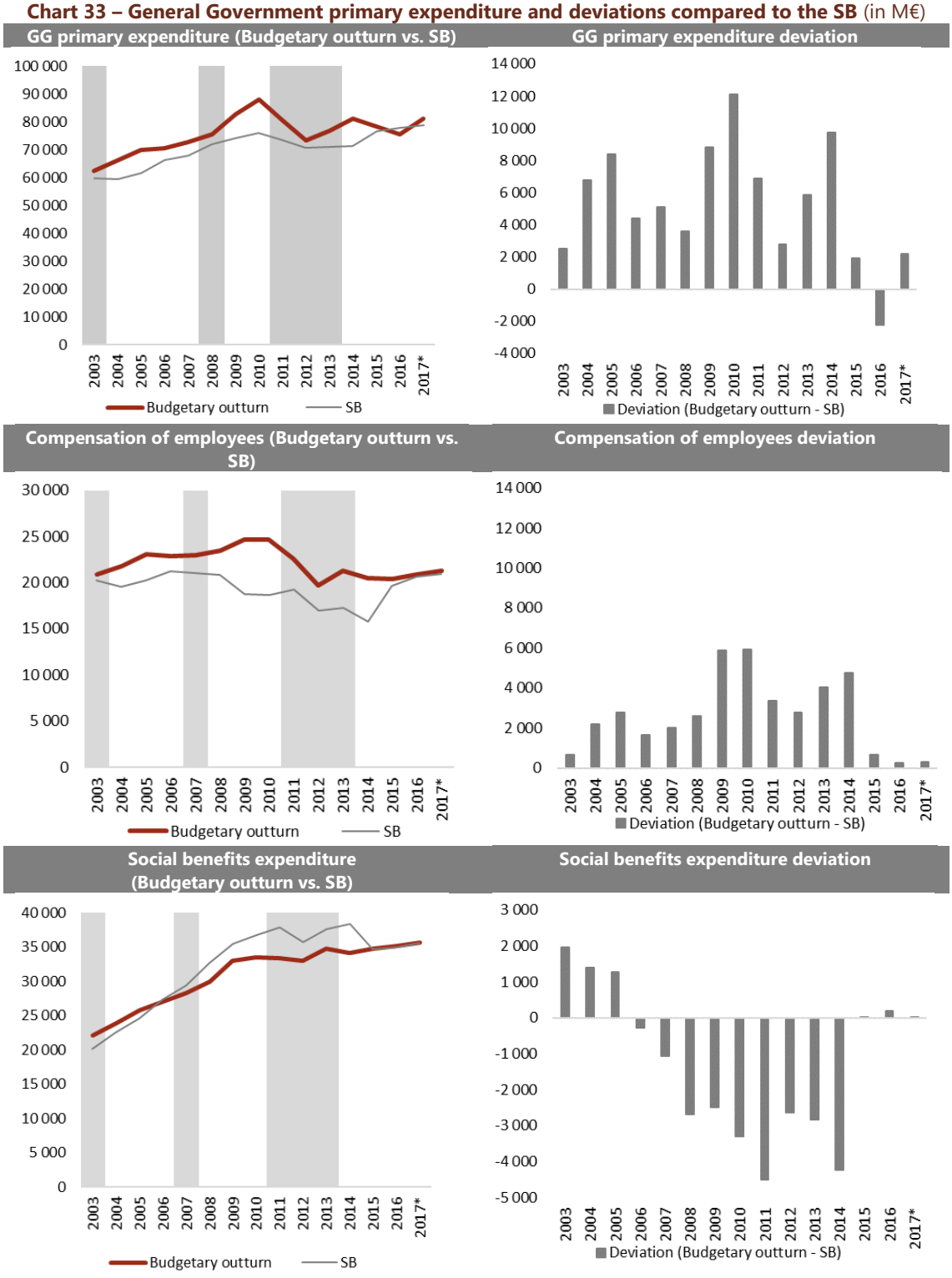
The risks inherent in the public expenditure path are contingent on the choices made as to the provision of public goods and services and social transfers, where the changes depend, on the one hand, on the combination of demand (volume effect) and the indexes used to calculate the updates (inflation and GDP, which correspond to the price effect) and, on the other hand, on any new policy measures that are adopted.

A comparison of the outturns of the above items and the forecasts in the State Budgets for 2003 to 2017 shows that compensation of employees saw significant deviations, as the annual outturns were superior to the forecasts (Chart 33), which underlines the risk as to their future performance. The risk associated with the developments in compensation of employees and social transfers, which largely determine the behaviour of General Government expenditure, is increased by the possibility that this underestimation continues, bearing in mind, among other impacts, the gradual unfreezing of civil service promotions and the new rules governing penalty free early retirements for those who have paid contributions for many years, as well as the increasing uncertainty as to compliance with the civil servants hiring rule – as yet unseen – and health sector expenditure.

Although they have a smaller impact, the risks stemming from other pressures on current primary expenditure (such as those relating to intermediate consumption and social transfers in kind) run in the same direction and may prove to be greater than assumed in the projections. Pressure on these items arises mainly as regards the health sector expenditure and the running of a number of levels of general government.

Thus, it is extremely important to devise tools and mechanisms that face these risks. Expenditure developments are mostly dependent on policies adopted in the past, which generate expectations and give rise to management practices, and it is politically and technically very complex to change them. This results from the need to devise new structural and selective instruments that are capable of exercising quantitative and qualitative control over expenditure. The spending reviews that have become common in developed countries must provide the basis for that control, which must take a medium-term stance and follow a systematic methodology that guarantees improvements in the decision-making process, based on the defining of priorities, with a view to ensuring better use of available resources.

**Chart 33 – General Government primary expenditure and deviations compared to the SB** (in M€)




Source: INE, Ministry of Finance and CFP calculations.

Public expenditure management in Portugal is still a long way off from using this type of mechanisms, which should not be confused with across the board spending cuts nor savings seen from a one-off standpoint. Moreover, it supposes the existence of tools, which even when laid down in the legislation have proved difficult to implement or have been put off.

The budgeting of programmes and the effective establishment of an accounting system capable of providing the information required are classic examples in this field.

The accrual accounting system defined in the Public Accounts Official Plan (POC-P) in 1997 was not implemented nor coordinated across general government for almost twenty years. The Budgetary Framework Law (BFL) of 2015 set out a new accrual system – the General Government Accounting Standardisation System (SNC-GG) – adapted to the changes to international standards that had taken place in the meantime. This system is founded on three pillars[32] and was the basis for a multiannual budgetary framework for expenditure, defining binding limits for each Ministry (from year t to t+4), consistent with the goals set in the Stability Programme and including the revenue projection broken down by the source of finance. Its adoption by general government as a whole should provide the information required to budget for programmes (as provided for in the law) integrated in a system designed to allow programme costs to be monitored and evaluated, as well as to hold the respective managers accountable.

These are the essential bases of a public expenditure management system, structured according to the goals defined by the Government in a multiannual framework, that sets priorities and promotes the efficiency of public spending and provides for the scheduling and monitoring of their implementation. The setting of priorities suited to a prudent restriction of resources and which seek to ensure their better use is even more important because most spending decisions have implications that go far beyond their annual budget, especially so in the cases of social spending, which is strongly influenced by factors such as the economic cycle, demographics, the environment and technology, whose impact is felt after some time. Among the social protection systems, the ageing of the population places direct pressure on pensions spending as the number of pensioners increases, mainly among people who have paid social contributions in full and over many years, and at the same time the number of taxpayers falls. The health systems are under pressure from the increasing demand for care due to the ageing of the population, and this together with technological advances increases the costs involved in providing health care.

## 6.2 RISKS TO SOCIAL EXPENDITURE AND PENSIONS

### 6.2.1 Costs of an ageing population

Expenditure associated with an ageing population, and relating mainly to pensions and health, has seen continual growth over the years, which has brought economic, fiscal and social challenges. According to the latest medium and long-term expenditure projections published in *Ageing Report 2018*, additional efforts will be needed in terms of public finance in order to retain the level of benefits currently granted (Chart 38).

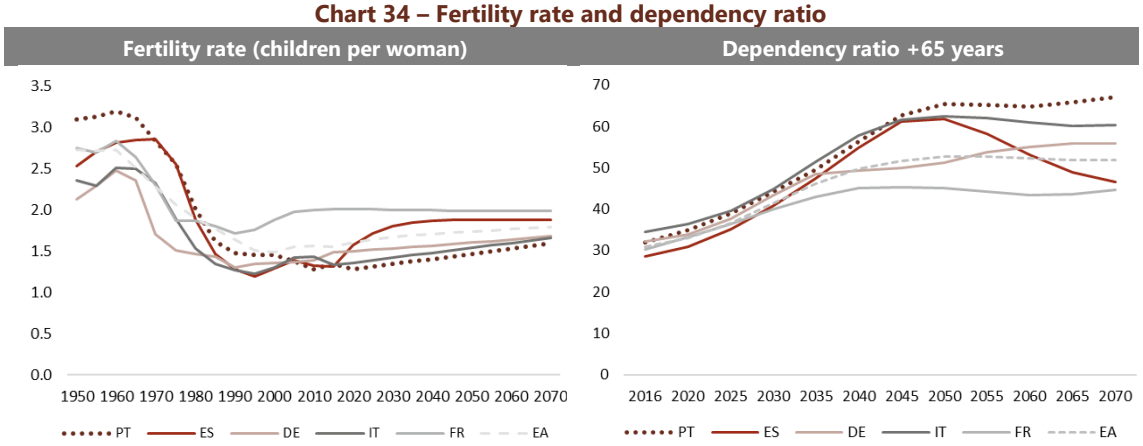
Demographic changes are key to public finance sustainability. The combination of longer life expectancy and lower birth rates, plus lower net immigration increases the ageing of the population and its impact on the economy, revenue and public expenditure. The strong

[32] The three public accounting systems: i) budget accounting; ii) financial accounting; and iii) management accounting.

growth in expenditure brings challenges for policy decision-makers, may call for alternative sources of financing and imply future increases in taxes and/or Social Security contributions and has the potential to distort economic decision-making and, at the end of the day, economic growth. In the majority of developed countries these risks are strengthened by the rapid increase of the public indebtedness ratios seen in recent years.

According to the demographic projections undertaken by Eurostat in 2018[33], the dependency ratio[34] more than doubled (from approximately 32.1% to 67.2%) over the period 2016 to 2070, due to changes in the demographic structure in Portugal, as well as the majority of European Union Member-States (Chart 34, right-hand panel). In Portugal, the increase in the dependency ratio will be higher than the EU average and should intensify from 2030 to 2045, mainly as a result of the U-turn in the birth rate that has already been observed (Chart 34, left-hand panel).

**Chart 34 – Fertility rate and dependency ratio**



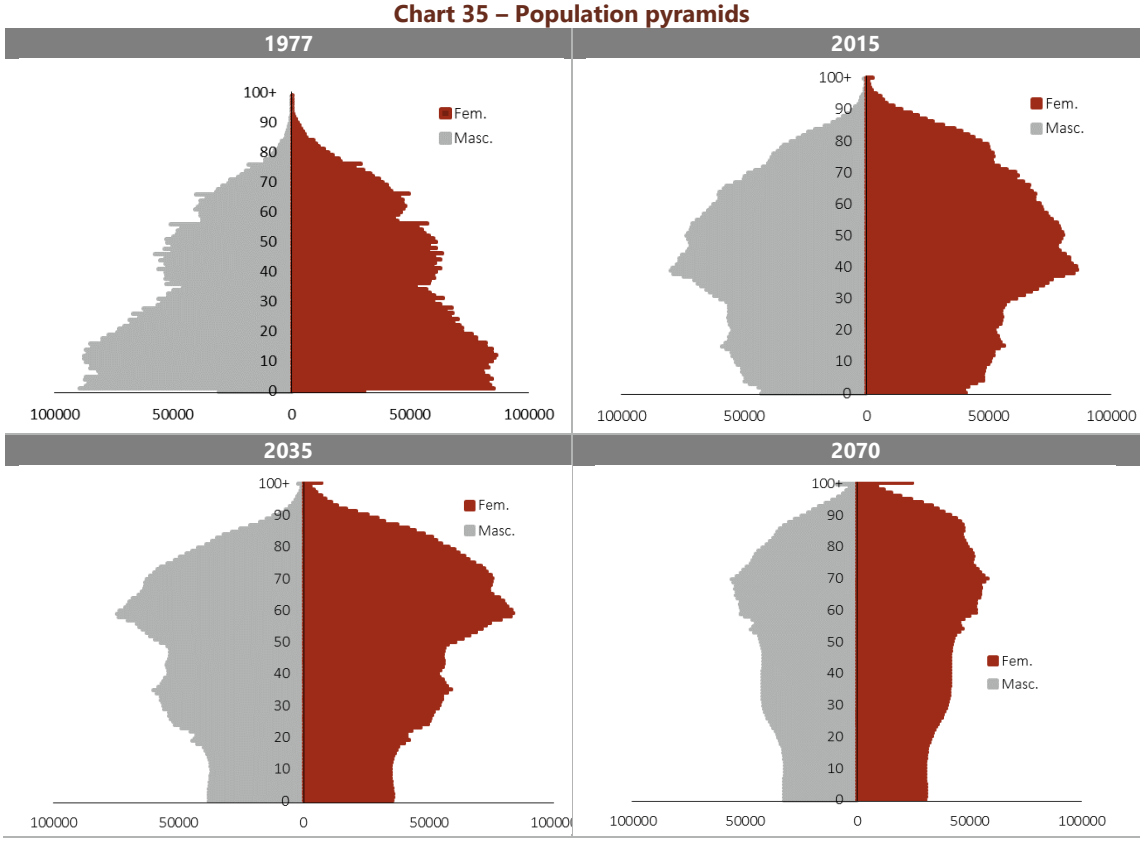

Source: Eurostat and United Nations. CFP calculations.

The change in the population's age structure stems from the combined effect of the decline in the fertility rate, the recent gains in life expectancy and the slowdown in immigration, which leads to a significant shrinkage in the age bands below 30 years and an increase in the population aged over 60. Overall the projections point to a decrease in the Portuguese population from 2015 to 2070 of over 2.3 million people (Chart 35). The ageing population projection in line with Eurostat's EUROPOP2015 exercise can be seen in the charts below, which set out the patterns for men and women.

[33] EUROPOP2015.

[34] The ratio between the population aged over 65 year and the population aged 15 to 64 years.

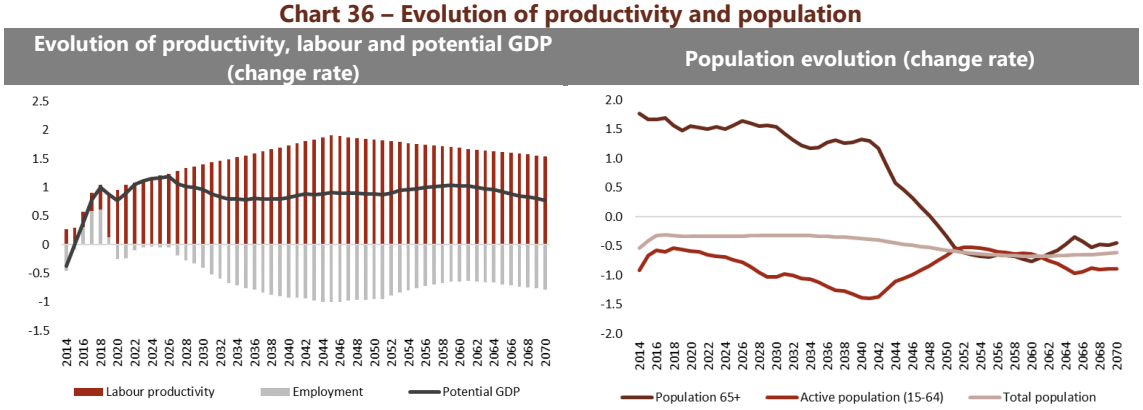
**Chart 35 – Population pyramids**




Sources: INE, Eurostat and CFP calculations.

The combination of demographic changes and the projections for productivity and economic growth influence the pension systems financed under an intergenerational pay-as-you-go system, as well as the ability to fund a public health care system, and so they put at risk public finance sustainability.

**Chart 36 – Evolution of productivity and population**

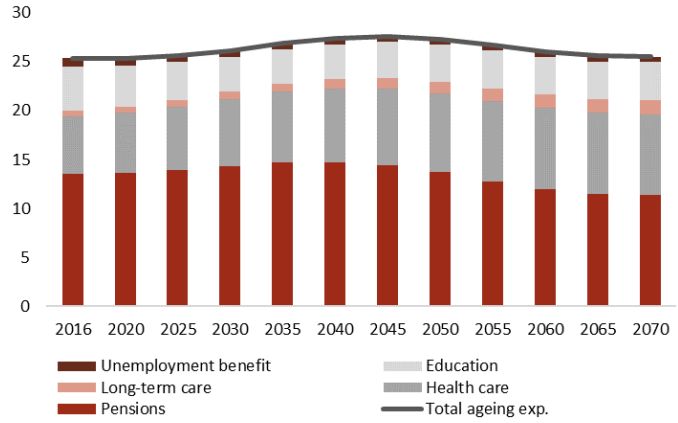



Source: *Ageing Report 2018*. CFP calculations.

Taking into account the expenditure linked directly to demographics, the projections for Portugal point to the near stabilisation of this expenditure, since it is the country that has the tenth lowest growth from 2016 to 2070. This deterioration is basically explained by the

growth in expenditure on health care, which from 2016 to 2070 should rise by 2.4 p.p.[35] of GDP, the second highest figure for the EU as a whole, where the projected increase is 0.9 p.p. for the same time horizon. Health and long-term care are the items expected to see the largest increase in percentage of GDP terms.

**Chart 37 - Projections for public expenditure associated to ageing for Portugal**
(baseline, in % of GDP)




Source: *Ageing Report 2018*. | Note: figures as a percentage of GDP.

### 6.2.2 Pensions

In a time of demographic changes many Member States have introduced reforms to their pension systems in order to strengthen their financial sustainability, in particular in the recent period of accumulating budget deficits, which has consequences for public debt ratios, within a stronger framework of economic governance at the European Union level. Those reforms place special emphasis on a change in the legal retirement age (LRA), its link, in some countries including Portugal, to average life expectancy, penalties for early retirement, bonuses for extending working life, the introduction of sustainability factors, harmonisation of the LRA for men and women and changes to the rules on the updating and indexing of pensions. These measures have contributed to the increase in the eligibility requirements and a decrease in the value of the benefits under the pension systems, thereby reducing the pensions systems' projected generosity in future decades.

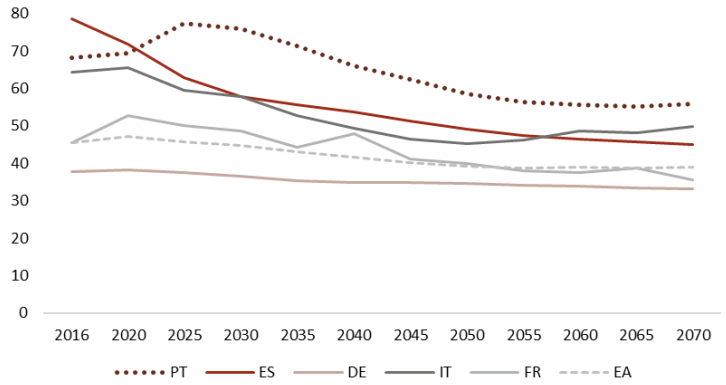
Despite the unquestionable contribution of pension system reforms to their financial stabilisation, future challenges to social sustainability may arise in the future. Portugal has recorded the ninth highest drop in the replacement rate[36], going from 68.3% in 2016 to 55.9% in 2070 (Chart 13). Despite this decrease there have been improvements in this indicator compared to the previous projection (from 57.5% in 2013 to 30.7% in 2060 in *Ageing Report 2015*), which can be explained by: (i) the application of a sustainability factor to early retirement pensions; (ii) the increase in the legal retirement age in line with the average life

[35] In AR2015 the variation was 2.5 p.p. of GDP.

[36] Ratio between the average number of new pensioners and the average wages in the economy at the time of retirement.

expectancy; (iii) the abolishing of the extraordinary solidarity contribution; (iv) the end of the suspension of the normal updating of pensions; and (v) the extraordinary updating of pensions laid down in SB/2017 and SB/2018.

**Chart 38 – Gross replacement rate** (%)




Source: *Ageing Report 2018*, European Commission. | Note: * takes into account public contributory system pensions.

In Portugal's case, the expected decrease in the future value of contributory system pensions could place additional pressure on the non-contributory system. In fact, as the value of pensions approaches the legal minimum, the larger the number of beneficiaries that will have access to the supplementary benefits provided under the non-contributory system, such as the social support for the elderly (CSI in Portuguese).

An assessment of the "suitability" of future benefits under pension systems is a complex subject, and it is important to gauge the impact those reforms will have on ensuring the distribution of an adequate level of earnings to the current generation of old-age pensioners and of future generations.

Based on *Ageing Report 2018*, the outcomes of the projections, under a no-policy-change scenario, point to an increase in expenditure related to ageing in the euro area of 1.1 p.p. of GDP from 2016 to 2070. These increases are, in essence, the result of the projected change in long-term care and health care, while spending on pensions and unemployment benefit will decrease. For Portugal the projected increase in ageing related expenditure over the same time period is considerably lower than the EU average, and stands at 0.1 p.p. of GDP. Public expenditure strictly related to ageing (excluding expenditure on unemployment benefit) should increase by 1.4 p.p. of GDP in the EU and euro area and by 0.4 p.p. in Portugal.

There is a decrease in spending on pensions over the course of the projection. The influence of demographic changes (dependency ratio) is offset, from 2040 onwards, by the benefits ratio[37] and the cover ratio[38] and the effects of the labour market[39].

**Table 5 – Contributions to changes in pensions expenditure** (in % and p.p. of GDP)

| | 2016-20 | 2020-30 | 2030-40 | 2040-50 | 2050-60 | 2060-70 | 2016-70 |
|---|---|---|---|---|---|---|---|
| Change in pensions expenditure | 0.1 | 0.7 | 0.4 | -1.1 | -1.7 | -0.6 | -2.2 |
| Dependency ratio effect | 1.2 | 3.3 | 3.7 | 2.4 | -0.1 | 0.4 | 10.9 |
| Cover ratio effect | -0.7 | -1.2 | -1.0 | -0.9 | -0.4 | -0.5 | -4.6 |
| Benefit ratio effect | 0.1 | -0.4 | -1.5 | -2.2 | -1.5 | -0.4 | -5.9 |
| Labour market effect | -0.4 | -0.8 | -0.5 | -0.2 | 0.3 | -0.2 | -1.9 |
| Residual effect | -0.1 | -0.2 | -0.3 | -0.2 | 0.0 | 0.0 | -0.7 |

Source: *Ageing Report 2018* and MF/ MTSSS - Portugal Country Fiche, 2018 *Ageing Working Group pension projection exercise*.

The benefit ratio decreases over the entire time horizon of the projection, with the exception of the early years, which is explained by the extraordinary increase in pensions in 2017 and 2018, which also had an impact in 2019. The cover ratio reflects the combined effects of greater growth among the population aged over 65 compared to the population aged 50 to 64, the decrease in the number of orphans entitled to a survivor's pension and, finally, the rise in the legal retirement age. Note also the impact of the labour market, where the negative contribution is due above all to the decline in the working population aged 20 to 64 during the first three decades of the projection, as well as the extension of the period in which social contributions are payable due to the raising of the legal retirement age.

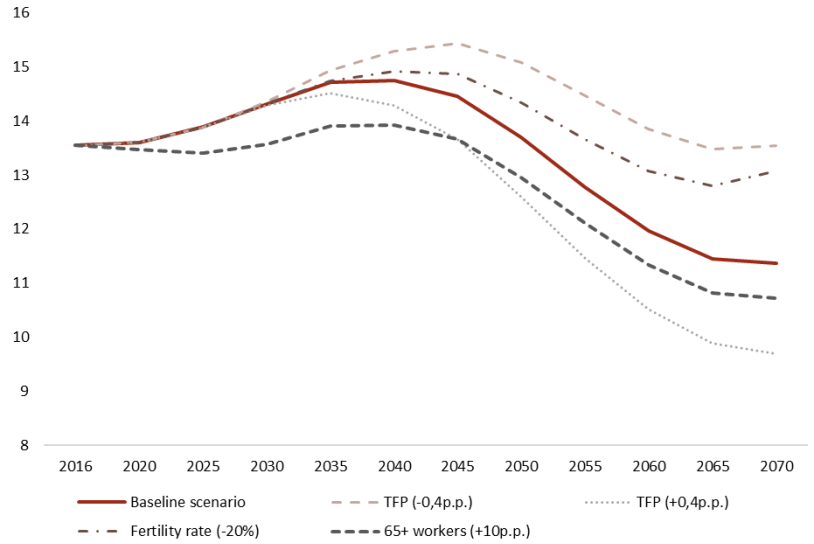
As in any projection exercise, especially a long-term one, there is uncertainty as to the assumptions underlying the pensions spending projections. Therefore, *Ageing Report 2018* contains a series of alternative scenarios aiming at demonstrating the sensitivity to changes in the main assumptions. Changes were made to two types of variable: demographic and macroeconomic. Note that public expenditure on pensions is highly sensitive to the expected productivity developments.

[37] The benefit ratio is equal to the average pension as a percentage of GDP divided by the number of hours worked (labour productivity per hour worked).

[38] Cover ratio expresses the relationship between the number of pensioners and the population over 65 years of age.

[39] The labour market effect is the ratio between the population aged 20 to 64 and the number of hours worked by employees aged 20 to 64.

**Chart 39 – Projections for pensions related public expenditure - baseline and alternative scenarios**
(in % of GDP)




Source: *Ageing Report*, 2018. | Note: PFT – Total factor productivity.

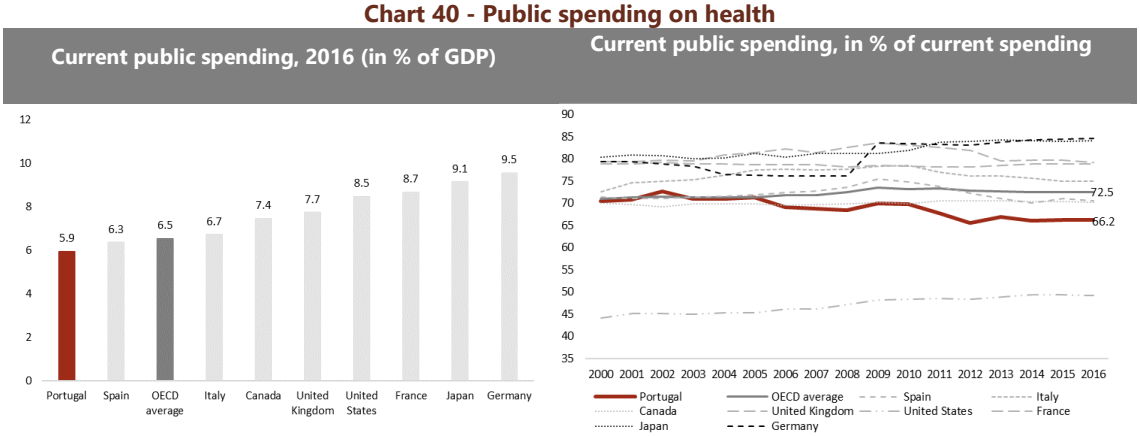
However, the very significant difference to be found between the projections published in 2015 (*Ageing Report 2015*) and those published this year in terms of the replacement rate[40], deserves a more detailed explanation, to clarify doubts about both of them. From 2015 to 2017 there was no significant change in the rules of access to old age pensions that could justify a difference of almost 100% in the replacement rate applicable at the end of the projection time horizon. In Portugal, a number of entities, including the CFP, have come to highlight the unavailability of the information required to replicate and evaluate the official projections, which is a factor that worsens perception of the risks in this field.

## 6.3 EXPENDITURE ON HEALTH AND LONG-TERM CARE

The Portuguese health system is a mixed finance system. The public component is essentially financed by taxes. The level of financial resources assigned to the National Health Service (NHS) is defined in the State Budget and transferred to the Ministry of Health, which is responsible for the allocation of resources between public health care providers and third parties. The private health subsystems also provide health services by way of voluntary membership in return for payment of a risk premium. It is noted that as Portugal has a current public expenditure ratio lower than the OECD average (Chart 40), it is also one of the countries where public expenditure has less weight in total health expenditure.

[40] The replacement rate published in *Ageing Report 2015* fell by 26.7 p.p. from 2013 to 2060 to end at 30.7%, versus the 55.7% currently projected for 2060 in *Ageing Report 2018*).

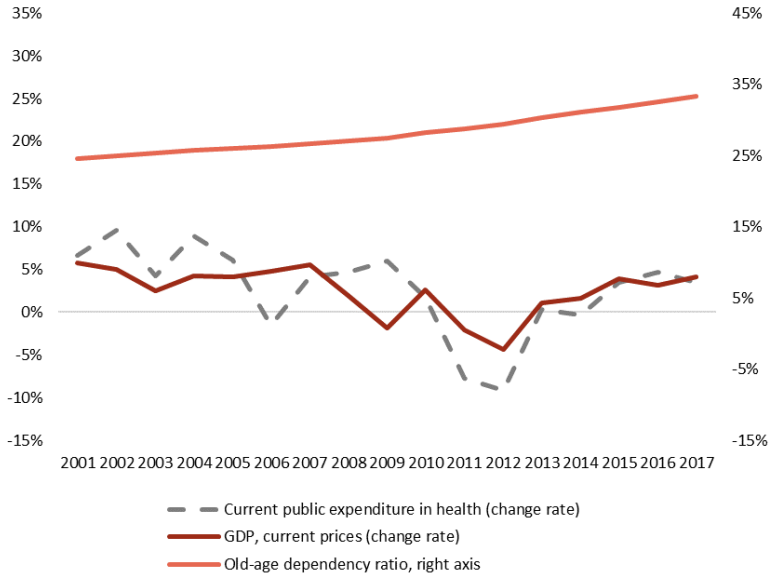
**Chart 40 - Public spending on health**




Source: OCDE, *Health Data*, 2017.

From 2001 to 2005 Portugal experienced current public expenditure on health growth rates higher than the GDP growth rates (Chart 41). In the second half of the decade there was no clear trend, as annual growth rates in expenditure were both higher and lower than GDP growth. However, the adjustment made since 2010 is clear: the average growth in spending on health was 5.4% from 2001 to 2007, which compares with a rate of -0.8% from 2011-2017.

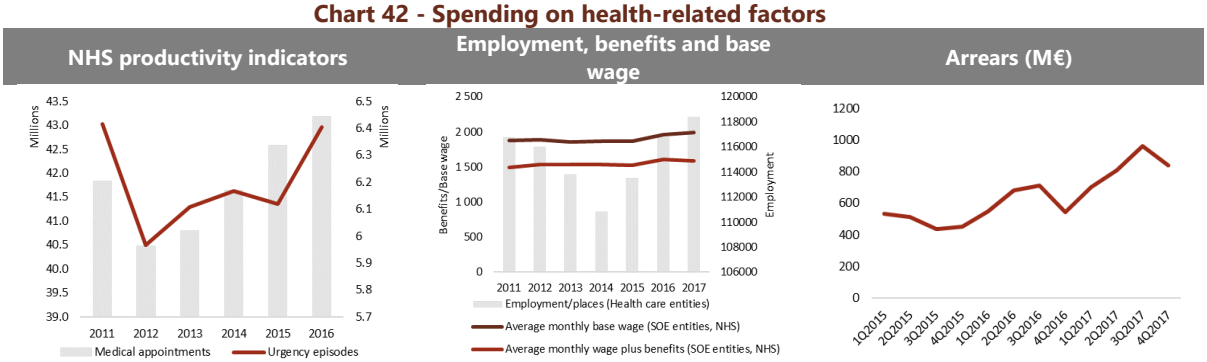
**Chart 41 - Public spending on health, GDP and dependency ratio, Portugal**




Source: INE.

The combination of pressures on costs (Chart 42), as a function of the increase in volume and the value of health care provided, and public expenditure budgeting and management practices poorly suited to the sector, makes health expenditure a significant fiscal risk.

**Chart 42 - Spending on health-related factors**




Source: ACSS. Source: DGAEP. Source: DGO.

Notes: medical consultations = medical consultations in primary health care and in hospitals; employment, benefits and base wage for mainland Portugal; SOE = State owned enterprises; NHS = National Health Service; health entities = health centre groupings + NHS state owned enterprises + public institute type hospitals; health subsector and state hospital payments in arrears.

The medium and long-term quantification of that risk requires health expenditure projections on the basis of hypothetic scenarios, which are drawn up by defining basic and varying assumptions for expenditure drivers. The drawing up of alternative scenarios complements the expenditure projections in line with the baseline scenario, under a no-policy-change assumption. Given the various possible combinations, when conducting health expenditure projections, the European Commission defined a series of admissible scenarios. In particular, the variables included in each scenario define assumptions as to population changes (EUROPOP2015 data), the health spending profile by age (an approximation to the population's state of health), the basis of cost developments and the elasticity of demand. The scenarios used are described in Table 6.

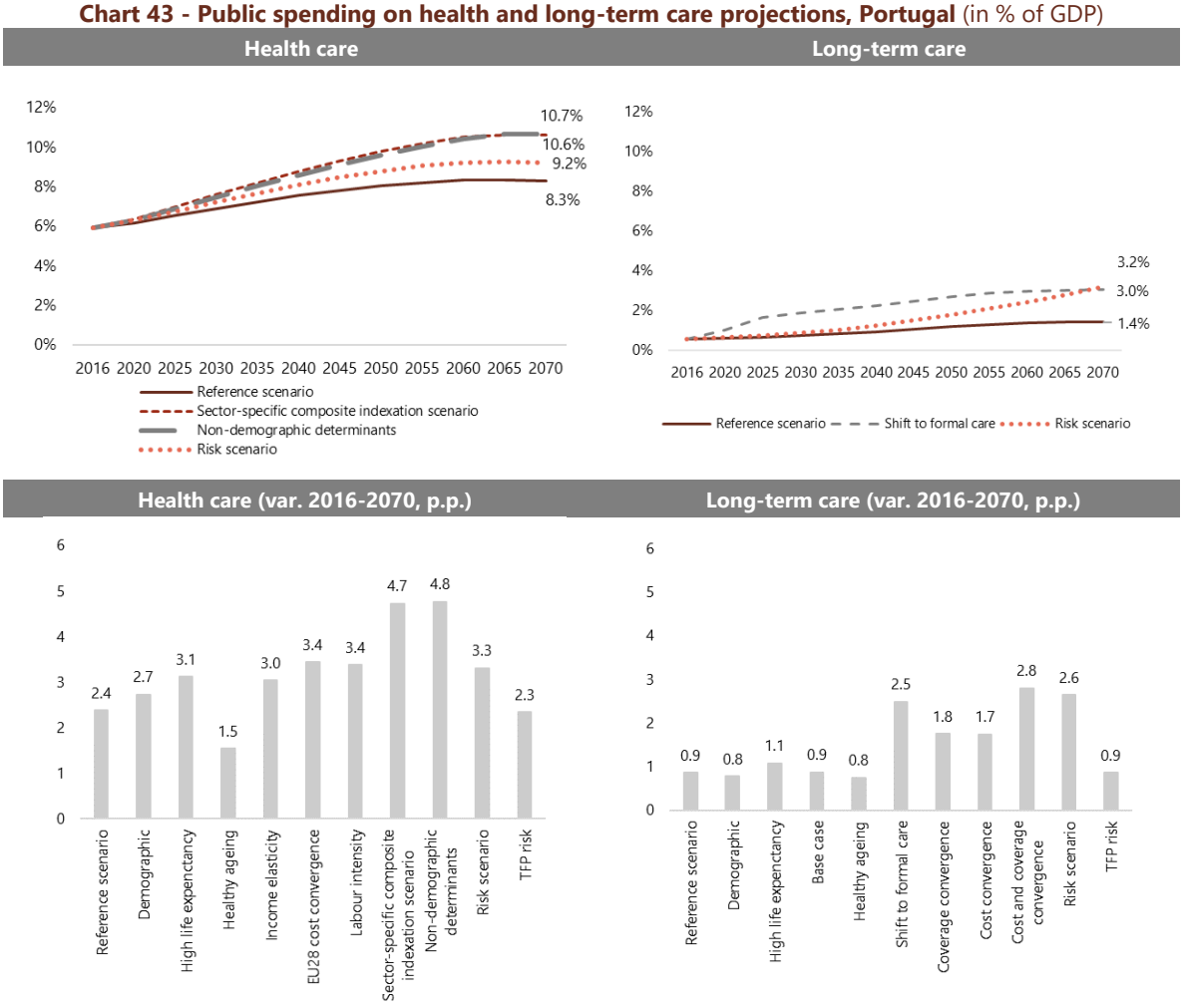
**Table 6 - Health care spending projection scenarios, assumptions**

| Scenario | Reference | Risk | Non-demographic determinants | Sector-specific composite indexation |
|---|---|---|---|---|
| **Population projection** | EUROPOP2015 | EUROPOP2015 | EUROPOP2015 | EUROPOP2015 |
| **Age-related expenditure profiles** | profiles shift by half the change in age-specific life expectancy | profiles shift by half the change in age-specific life expectancy | profiles held constant over the projection period | profiles held constant over the projection period |
| **Unit cost development** | GDP per capita | GDP per capita | GDP per capita | input-specific indexation |
| **Elasticity of demand** | 1,1 in 2016 to 1 in 2070 | 1,4 in 2016 to 1 in 2070 | 1,4 in 2016 to 1 in 2070 | 1 |

Source: European Commission (2017).

For Portugal, the health care public expenditure projection points to a rise of 2.4 p.p. of GDP in 2070 against the 2016 figure in the reference scenario and of 3.3 p.p. in the risk scenario. Major pressure on the non-demographic factors may raise expenditure by another 2.4 p.p. Cost developments in line with productivity growth in the sector would result in projected public expenditure of 9.2% of GDP in 2070, compared with a figure of 5.9% in 2016 (Chart 43). Regardless of the scenario chosen, these projections, highlight the existence of a positive fiscal risk to public finance sustainability in the medium and long-term, as current public expenditure on health in 2070 will be significantly higher than that seen in 2016 (from 1.5 p.p. to 4.8 p.p.).

**Chart 43 - Public spending on health and long-term care projections, Portugal** (in % of GDP)




Source: *Ageing Report 2018*.

The projection for spending on long-term care points to growth from 0.5% of GDP in 2016 to 1.4% of GDP in 2070, bearing in mind the reference scenario. If we assume informal care will be replaced by formal care there will be an additional increase in expenditure of 1.6 p.p. of GDP compared to the 1.4% projected in the reference scenario in 2070 (Chart 43). However, spending on long-term care is subject to one of the highest degrees of uncertainty in the cost of ageing projection. Portugal has a diffuse long-term care system that is highly dependent on informal care provided and/or funded directly by families, which is still not properly reflected in the *Ageing Report 2018* projections. Longer working lives, urbanisation and the decrease in the size of households should lead to this care passing to the formal economy and could result in public expenditure higher than assumed in this exercise.

# 7 CONTINGENT LIABILITIES

## 7.1 DEFINITION

Contingent liabilities are potential liabilities that only become genuine costs if certain events arise. They can take the form of formal commitments such as contractual government guarantees or public-private partnerships (PPP), or result from informal liabilities that involve a considerable degree of public commitment such as liabilities taken on by public corporations, even if they fall outside the scope of general government. In this section they are referred to as "general contingent liabilities".

The need to react to serious economic crises give rise to another type of State contingent liability, that is of a discontinuous nature, but, as in the case of the international financial crisis, can potentially be of a very significant scale. Therefore, both types of contingent liability deserved to be analysed individually.

Data on general government contingent liabilities is collected in accordance with the methodology laid down by Eurostat which, since 2009, has also collected and published specific information on general government contingent liabilities relating to the financial sector.[41] The publication of these date is aimed at increasing the transparency of public finance in the European Union, thus ensuring the comparability of the data and providing a broader view of the potential impact of Member-States financial positions.

## 7.2 GENERAL CONTINGENT LIABILITIES

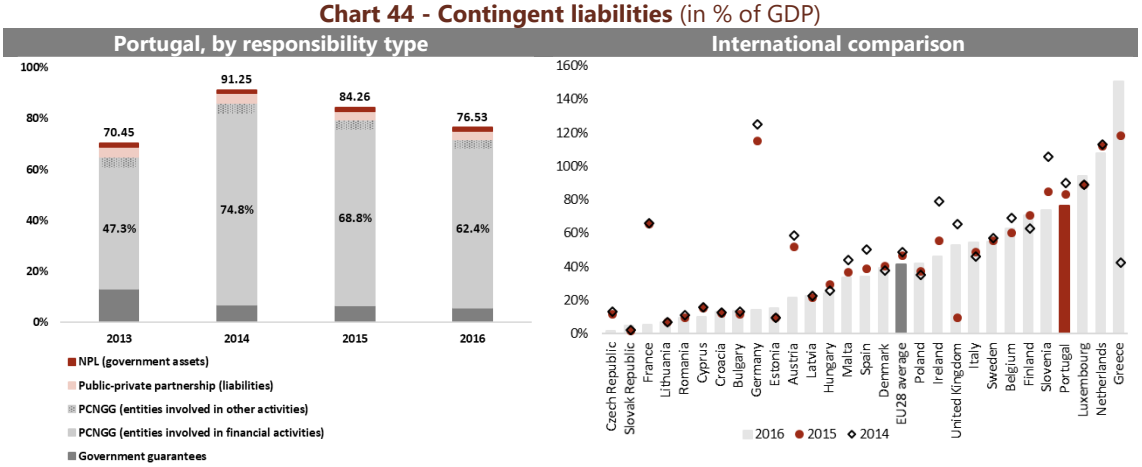
In aggregate terms total liabilities in Portugal (76.5% of GDP) are higher than the average among European Union Member-States (41.3% of GDP) in 2016 and increased from 70.5% to 76.5% of GDP from 2013 to 2016, although there has been a steady decline in the last three years (Chart 44). The sharp rise seen in 2014 stemmed from financial sector support measures and is an example of the seriousness of the risks posed by these liabilities and their potential impact on public finance.

In comparative terms, while the relative weight of contingent liabilities has been falling systematically since 2014, Portugal still recorded the fourth highest figure[42] in the European Union in 2016, ranking below only Greece (150.8%), Netherlands (108.0%) and Luxembourg (94.4%), which adds medium and long-term risks to public finance sustainability, particularly in regard to public corporations not included in the general government sector (the so-called non-reclassified public corporations or NRPC).

[41] http://ec.europa.eu/eurostat/web/government-finance-statistics/contingent-liabilities.

[42] Under the Eurostat approach a single risk may be reflected in two or more indicators. For instance, governmental guarantees granted to NRPC are included in NRPC liabilities and in guarantees, which implies the potential risk has been overestimated.

**Chart 44 - Contingent liabilities** (in % of GDP)




Source: Eurostat. | Notes: NPL = non-performing loans; PPP = public-private partnerships; PCNGG = public corporations not included in the general government sector.

Portugal had 352 public corporations not included in the general government sector at the end of June 2018, most of which belonged to Central Government (162 corporations) and Local Government (165 corporations), while the remainder were owned by the Regional Governments of the Azores (16 corporations) and Madeira (9 corporations). [43]

## 7.3 LIABILITIES RELATED TO THE FINANCIAL SECTOR

It is common knowledge that the impact of interventions in the financial sector as a consequence of the international crisis took place in a large number of developed countries and in the case of the euro area revealed the fragilities that have existed since it was created, particularly in the realm of the financial system. In this context the interventions were especially important in Ireland (reaching 21.6% of GDP in 2010), in Cyprus (8.5% of GDP in 2012) and in Slovenia (10.2% of GDP in 2013). In Spain, the support peaked at 3.6% of GDP in 2012.[44]

Due to the severity of the crisis various measures were taken and mechanisms were devised to better control the sector risks and reduce their impact on budget deficits. However, it is an on-going process, and until now there is no consensus as to the key features of the European Deposit Guarantee Scheme, especially as regards sharing risk and implementing additional measures to reduce risk in the banking sector.

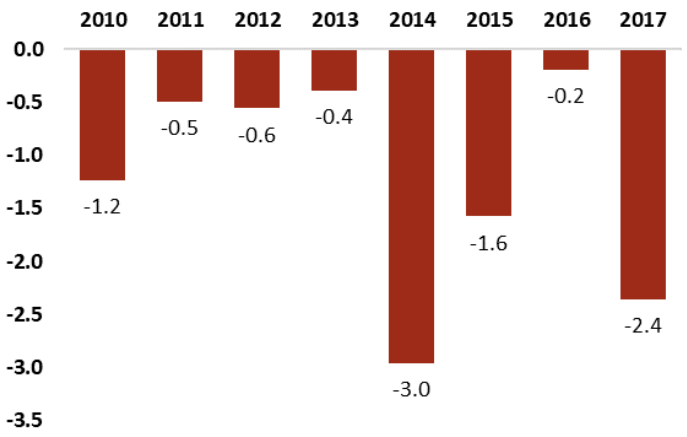
In Portugal the impact of the international crisis was strongly strengthened by the built-up fragilities in both the financial sector and public finance and the economy itself. In the financial sector the crisis revealed the vulnerability flowing from excessive private

[43] In accordance with the classifications used in the European System of National and Regional Accounts 2010 and Bank of Portugal Instruction no. 25/2014, the NRPC can be found in the following sectors: (i) Central Bank (1 corporation); (ii) Non-financial companies belonging to the public sector (284 corporations, mainly in the environment sector – water and waste – and transports); (iii) Monetary financial institutions belonging to the public sector (4 corporations); (iv) Other financial intermediaries, financial auxiliaries and captive and lending institutions belonging to the public sector (29 corporations); and (v) Investment funds except money market funds belonging to the public sector (34 corporations). The full list can be found at https://www.bportugal.pt/en/page/list-institutions-statistical-purposes.

[44] Supplementary tables for reporting government interventions to support financial institutions.

indebtedness and the enormous leverage in the banking sector, based largely on short-term funds from external sources. In addition to solving liquidity problems, it became clear there was a need for stricter regulation in the realms of supervision and financial stability, in particular the requirements for capital and bank restructuring. The main support provided as a result of the crisis and the more demanding regulations was related to the BPN (from 2010 to 2014), BES (2014), BANIF (2013 and 2015) and CGD (2012 and 2017) settlements and was equal to 8.,6% of GDP.

**Chart 45 - Impact on the deficit of the banking system support interventions** (in % of GDP)




Source: Eurostat. Note: Net effect.

Following the direct impact of the financial crisis on the profitability of the banking sector there was, as stated in the Bank of Portugal (BoP) Financial Stability Report[45], an extended period of abnormally low interest rates which, while justified by the need to stimulate economic recovery, was a constraint on the systems' already fragile profitability, and could act as a stimulus to imprudent risk taking and a brake on the need to reduce indebtedness in the non-financial sector.

The banking system stabilisation that has been underway in the country and in the euro area, the restructuring of banking system business models and the strengthening of the European institutional architecture remain key to reducing the probability of new risks arising.

In Portugal, non-performing loans (NPL)[46] are still one of the main risks to the financial stability of the national banking system, despite the improvement resulting from the decrease in the NPL ratio and the increase in the impairment losses cover ratio. However, their level

[45] https://www.bportugal.pt/sites/default/files/anexos/pdf-boletim/ref_06_2018_pt.pdf.

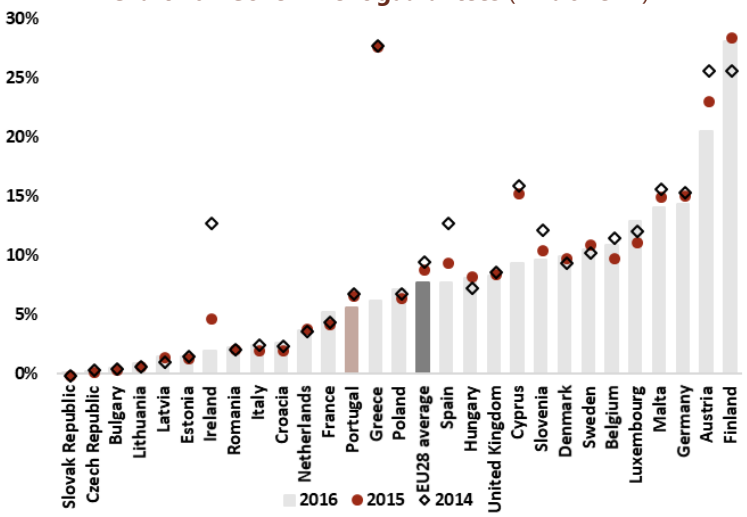
[46] In line with the European Banking Authority, the Bank of Portugal classifies as NPL all loans that meet one of the following conditions (i) material exposures with payments at least 90 days past-due (quantitative criterion); (ii) it is deemed improbable that the debtor will fully comply with its obligations without possible guarantees (qualitative criterion); (iii) impaired assets, except impairments for losses incurred but of which the institution is as yet unaware; and (iv) credit in default as per the prudential concept defined in the Capital Requirements Regulations (CCR).

(which remains high) and the high exposure to real estate are still banking sector vulnerabilities, and constitute a risk to public finance.

## 7.4 GUARANTEES GRANTED, PUBLIC-PRIVATE PARTNERSHIPS AND PUBLIC CORPORATIONS

Generally speaking, guarantees granted by the Government are not subject to the same degree of fiscal scrutiny as actual expenditure. The potential and deferred nature of their potential cost tends to introduce a bias towards minimising the expected cost[47]. The analysis shown in Chart 46 covers the data on guarantees granted by general government, which may become genuine Government liabilities if certain conditions arise.

**Chart 46 - Government guarantees** (in % of GDP)




Source: Eurostat.

Guarantees granted by governments are the most common form of contingent liabilities and, according to the latest data published by Eurostat which relate to 2016, the most significant levels are to be found in Finland (28.0% of GDP) and Austria (20.5%), followed by Germany (14.3%). The Member-States with the lowest level of guarantees granted, below 1%, are the Slovak Republic (0.03%), the Czech Republic (0.3%), Bulgaria (0.5%) and Lithuania (0.9%). The Portuguese figure in 2016 was below the European Union average (5.6% of GDP), a figure lower than recorded in the two previous years (Chart 46). The nature of the guarantees differs between Member-States, since although most guarantees are granted by Central Government, in some countries Local Government grants a significant level of guarantees, as in Denmark, Finland and Sweden. There is another group of countries, to which Portugal belongs,[48] in which a considerable portion of the guarantees granted are linked to financial institutions, above all in 2013 and 2014, due to the financial crisis.

The analysis undertaken by the national authorities divides guarantees into (i) guarantees granted to the banking sector and (ii) guarantees granted to "Other Entities". This concept differs from the standardised concept employed by Eurostat, applicable in all European Union

[47] IMF, 2016. Analyzing and Managing Fiscal Risks – Best Practices.

[48] Belgium, France, Hungary, Ireland, Luxembourg, Poland, Portugal and Spain.

countries. In 2017, debt stock guaranteed by the State to banking institutions, referred to as Credit Institutions (CI) in the Guarantee Portfolio[49], totalled 2 800 M€. As for guarantees granted to "Other Entities", excluding those granted to the banking sector, debt stock guaranteed by the State was 15 500 M€.

**Table 7 – Granted guarantees**

(in M€)

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| **Entities included in Central Government** | 13 224 | 12 367 | 11 815 | 11 898 | 11 210 |
| Parvalorem | 3 318 | 2 885 | 2 591 | 2 290 | 1 995 |
| Metropolitano de Lisboa | 2 813 | 2 671 | 2 570 | 2 486 | 2 398 |
| Infraestruturas de Portugal* | 2 845 | 2 761 | 2 907 | 2 801 | 2 700 |
| CP-Caminhos de Ferro Portugueses | 812 | 767 | 722 | 679 | 643 |
| EDIA-Emp. Des. Infra-estruturas do Alqueva | 545 | 538 | 532 | 525 | 512 |
| Metro do Porto | 951 | 900 | 799 | 745 | 690 |
| Parque Escolar | 1 050 | 1 035 | 996 | 983 | 934 |
| Fundo de Resolução | 0 | 0 | 0 | 656 | 566 |
| Fundo de Contragarantia Mútua | 161 | 204 | 234 | 344 | 466 |
| PARUPS | 728 | 605 | 465 | 390 | 307 |
| **Entities excluded from the Central Government** | 1 949 | 1 778 | 1 718 | 1 629 | 1 376 |
| AdP -Águas de Portugal | 1 388 | 1 382 | 1 373 | 1 327 | 1 276 |
| STCP - Soc. Transportes Colectivos do Porto | 220 | 100 | 100 | 100 | 100 |
| CARRIS | 341 | 297 | 245 | 202 | 0 |
| **Regional Administrations** | 988 | 1 106 | 1 195 | 1 186 | 1 398 |
| Madeira Autonomous Region | 988 | 1 106 | 1 195 | 1 186 | 1 398 |
| **Others**** | 16 349 | 5 697 | 5 542 | 3 742 | 1 511 |
| Novo Banco (ex BES) | 4 750 | 3 500 | 3 500 | 1 800 | 0 |
| BCP | 4 250 | 0 | 0 | 0 | 0 |
| Caixa Geral de Depósitos | 3 600 | 0 | 0 | 0 | 0 |
| BANIF*** | 850 | 0 | 0 | 0 | 0 |
| **Total** | **32 512** | **20 948** | **20 270** | **18 456** | **15 494** |

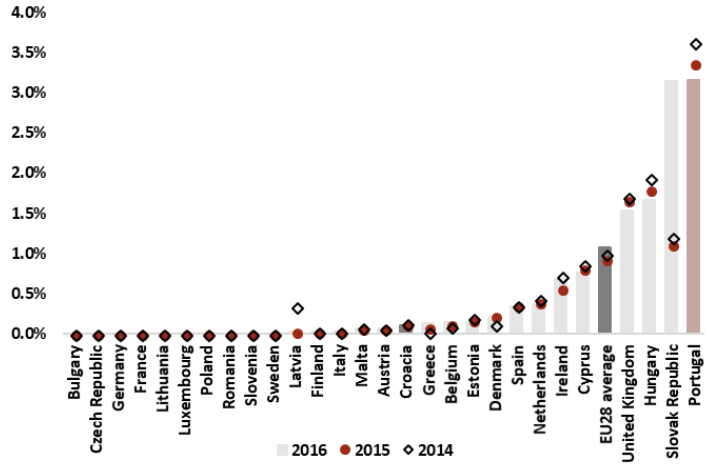
Source: DGTF. | Notes: * The years 2013 and 2014 correspond to the sum of the guarantees granted to the former corporations *Estradas de Portugal (EP)* and *REFER*. ** Includes other public entities most of them not included in general government, private entities and countries with which Portugal cooperates. *** Includes BANIF-Banco Internacional do Funchal and BANIF-Banco de Investimento.

The value of the guarantees granted has seen a sharp fall since 2013, which is explained above all by the decline in guarantees granted to Banking Institutions (Table 7), partly as a result of settlements and the respective direct government intervention which transformed them into actual expenditure.

PPP's have the potential to improve the efficiency of infrastructure provision, which requires a suitable definition and division of risks between the public and private sectors. As with guarantees, the potential and deferred nature of possible costs may lead to bias when assessing and sharing those risks, making them an important source of deferred expenditure for the State. According to Eurostat (Chart 47) Portugal is the country in the European Union that has the highest weight of such liabilities as a percentage of GDP (3,2%), and is 2.1 p.p. above the European Union average, followed by the Slovak Republic (3.1%), Hungary (1.7%) and the UK (1.5%).

[49] In the Stability Programme the Guarantee Portfolio is described as an instrument by which the Portuguese State can guarantee, up to the sum of 2 800 million euros, the fulfilment of commitments made by Credit Institutions – currently NOVO BANCO and BCP- to the European Investment Bank (EIB), for a period of seven years maturing in 2020, and most transactions shall benefit from bank guarantees, so as to reduce the risk taken on by the State.

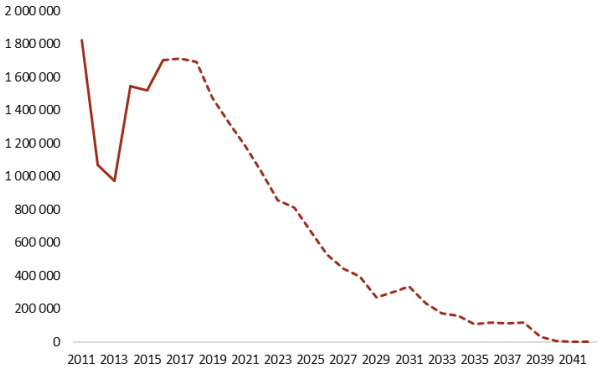
**Chart 47 – Off-balance PPP** (in % of GDP)




Source: Eurostat.

According to the figures in the SB/2018 Report, the estimated cost of PPP's in the road, rail, health and security sectors was 1 700 M€ in 2017, and it should be noted that the liability curve has already exceeded its maximum.

**Chart 48 - PPP net obligations** (in M€)



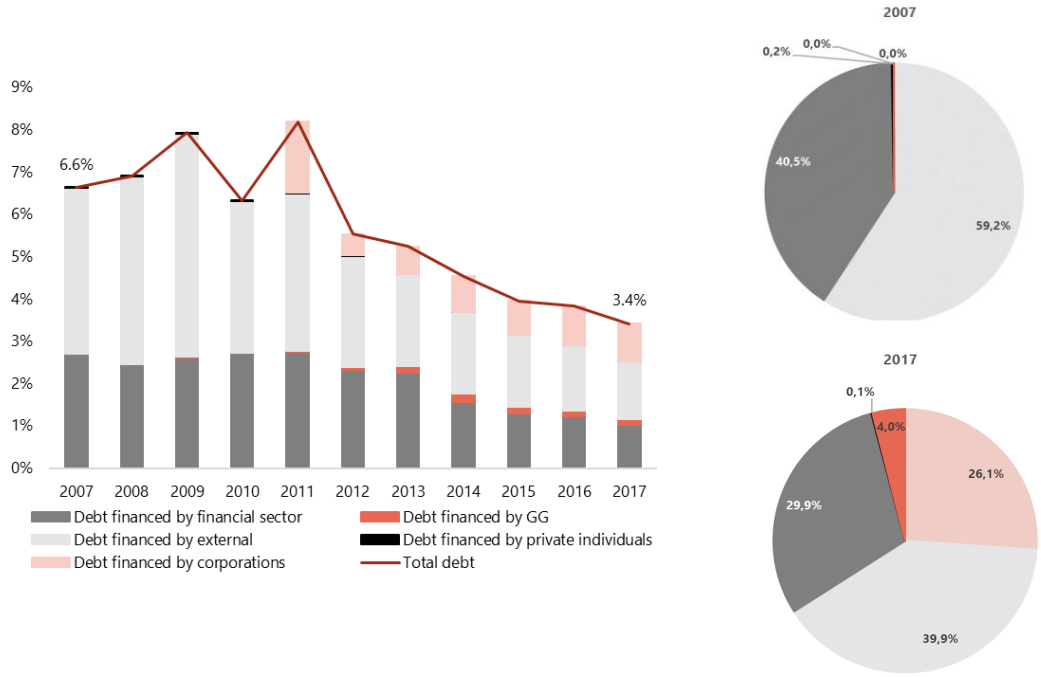

Source: PPP Annual Bulletin - 2012, 2013, 2015 and 2016; 2018 State Budget Report (projections for 2017 onwards). Notes: sums in thousand Euros; at current prices up to 2017; at constant prices (2018) for 2018 to 2042; includes public-private partnerships in the road, rail, health and security sectors. These figures are not directly comparable to Eurostat data.

As regards public corporations, the change in the financial position of those classified within the scope of GG has a direct impact on the State Budget, which includes the associated revenue and expenditure as a whole. The borrowing requirements are also ensured by the State Budget through the Treasury and their indebtedness is supervised by the sectoral ministries and the Ministry of Finance.

The public entities not included in the general government sector are in a different situation. In this case the fiscal risks refer to any difficulties these corporations may have in fully meeting their obligations and also to the dividends to be transferred to the State. Although these entities total debt as a percentage of GDP has fallen by 3.2 p.p. in the last 10 years (Chart 49), the change in the structure of the holders of that debt must be stressed. In the case of debt held by GG, despite the decline in 2017 vs. 2014, there was accumulated growth of 0.13 p.p.

of GDP from 2007 to 2017. Debt held externally and by the financial sector fell, while debt held by companies grew by 0.9 p.p. of GDP.

**Chart 49 - Public corporations classified outside general government** (in % of GDP)




Source: Bank of Portugal. Note: GG – general government; figures not comparable with Chart 44, because Eurostat records total liabilities of public entities classified outside general government.

# 8 ANALYSIS OF PUBLIC DEBT SUSTAINABILITY

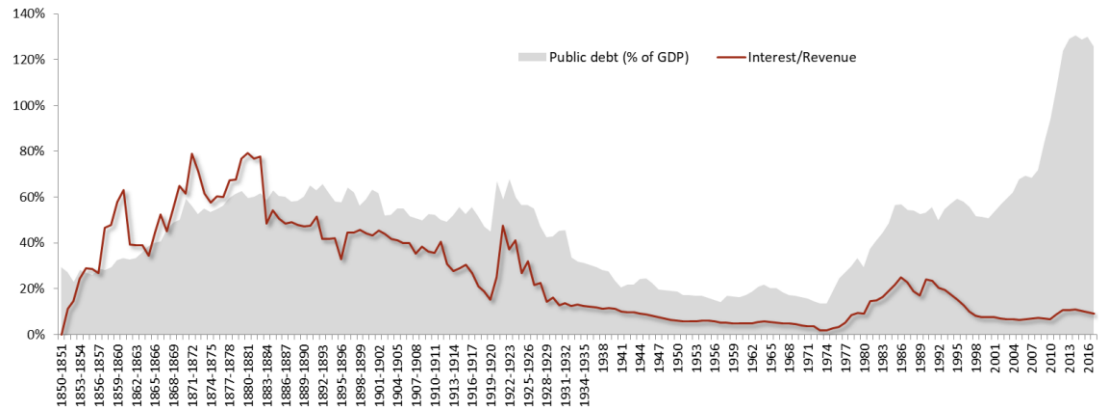
## 8.1 BRIEF HISTORY

Until the 1930's Portugal's financial history was characterised by a high degree of instability in both public finance and banks. During the 19th century that instability grew, culminating in the debt crisis of 1890-1893, which had repercussions for the following decades. International events, such as the opening of the ports in Brazil that put an end to the Portuguese navy's trade monopoly which had been the source of a large share of the country's tax revenue, the Barings crisis in 1890, and the First World War (1914-18), originated financial crises in Portugal. That pattern confirms two of the basic characteristics of the Portuguese economy over the centuries: its dependency on the exterior and the vulnerability resulting from seeing it as the country's source of financial resources, which were ensured by a monopoly over their use and so did not give rise to the development of national resources capable of promoting the resilience to withstand external shocks.[50]

During the period known as *Estado Novo* (New State), which began in 1926, this instability came to an end, by means of a strict control over public expenditure and the limitation of the State's role in the social sectors. However, this was short-lived since during this period it was not possible to overcome the economy's underdevelopment, promote its opening up to the outside world and to internal competition or reduce its dependency on the State. A drastic change in public finance management, with the adoption of a rigid balanced budget principle, led to a decrease in public debt up to the beginning of the 1970's. External debt was fully settled in 1940, and public debt was fully financed by the domestic market.[51]

From 1974 onwards, the economic policy stance changed radically with a sharp U-turn in the State's role in the social fields and the country's administration was reorganised. In the fiscal field the strict application of the balanced budget principle was dropped.

**Chart 50 - Evolution of the General Government budgetary position in Portugal** (in % of GDP)




[50] Two important works that discuss these topics are Landes, David S. (2001) – *A Riqueza e a Pobreza das Nações*. Gradiva; Lains, Pedro and A.F. da Silva, orgs. (2005) – *História Económica de Portugal, 1700-2000*. Lisboa: ICS, Imprensa de Ciências Sociais.

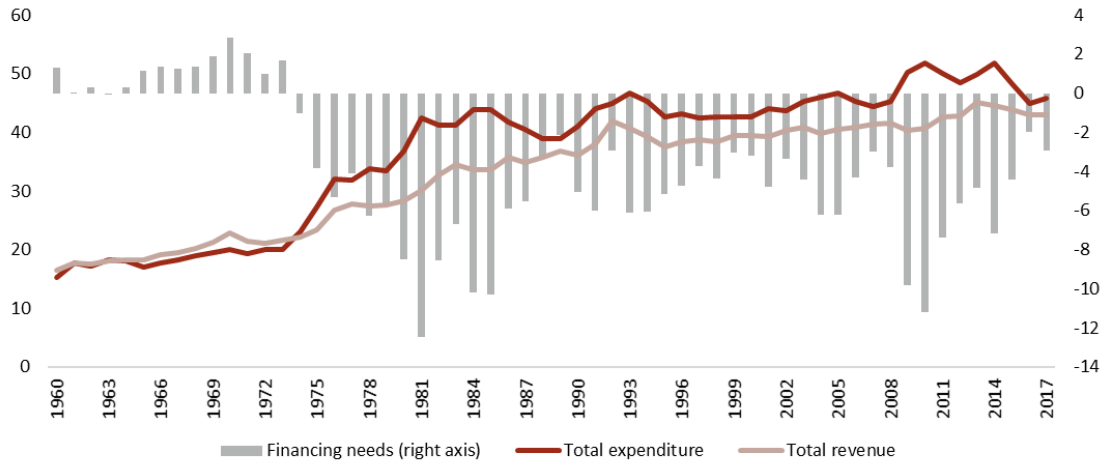
[51] See Marinheiro (2006)

Source: Marinheiro (2006), INE and Bank of Portugal.

The public debt ratio once again recorded a clearly upward trend (Chart 50). Up to 1985, this was mainly explained by the sharp increase in spending resulting from growth in the wage bill, transfers to regional and local government and from attempts to control inflation by fixing administered prices which led to the build-up of great deficits in public corporations. The development of the Social State, which was a feature of the new regime, did not have a major impact over this period because it was introduced gradually and the process had begun under the previous regime, notably in terms of education and health. In the case of pensions, the system benefitted greatly from the country having a predominantly young population, reinforced by the return of emigrants from Europe and the colonies which ensured the Social Security system produced surpluses.

From 1986, when Portugal joined the European Union, the country's debt ratio enjoyed a period of relative stability, as a result of the increase in economic growth and the initial decline in the weight of public expenditure, despite the increase in the weight of investment, partially funded by European Union aid, mitigating its impact on debt and at the same time driving an increase in domestic demand, both consumption and investment.

**Chart 51 - GG net financing needs in a long-term perspective** (in % of GDP)



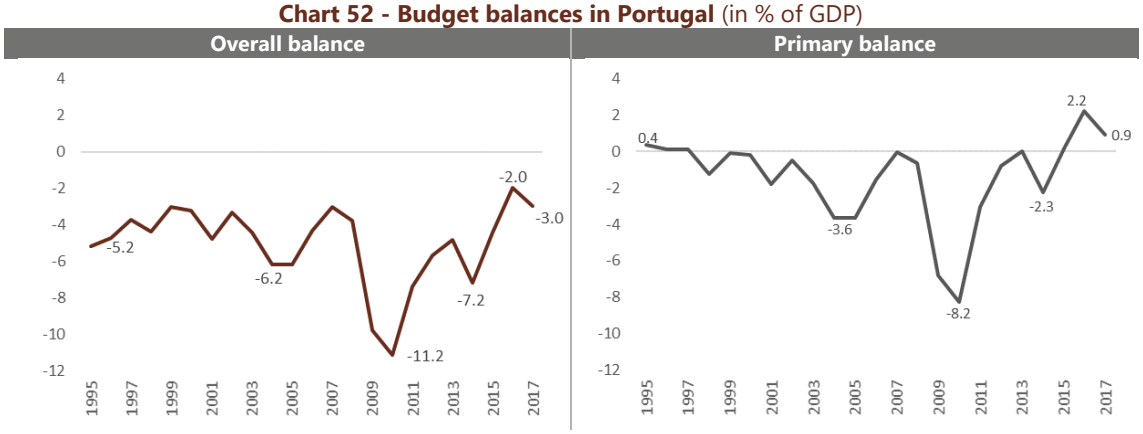

Sources: Bank of Portugal, Long Series (1960-1994) and European Commission (AMECO) (1995-2017).

From the start of the 1990's, budget deficits grew again, although they benefitted from lower interest rates, an effect that was enhanced first by the prospect of and later by actual membership of the Economic and Monetary Union at the end of the decade. The stabilisation of the debt ratio, which oscillated slightly around 55% of GDP from 1986 to 2000, also reflected the impact of the privatisations that accompanied membership of the EU, the revenue from which was used to repay debt.

Membership of the euro area and the resulting easier access to borrowing contributed to the build-up of budget deficits, mainly financed externally, as the counterpart to a growing external deficit. However, the accumulation of those deficits, especially after 2000, plus the economic policy stance acted as a boost to domestic demand and to investment in non-tradable sectors rather than to competitiveness, and ended up compromising economic

growth and giving rise to exceptionally high levels of external debt (public and private). The triggering of the international financial crisis would finally uncover once more the nation's financial vulnerability, imposing the need for a new, swift adjustment to public finance.

**Chart 52 - Budget balances in Portugal** (in % of GDP)



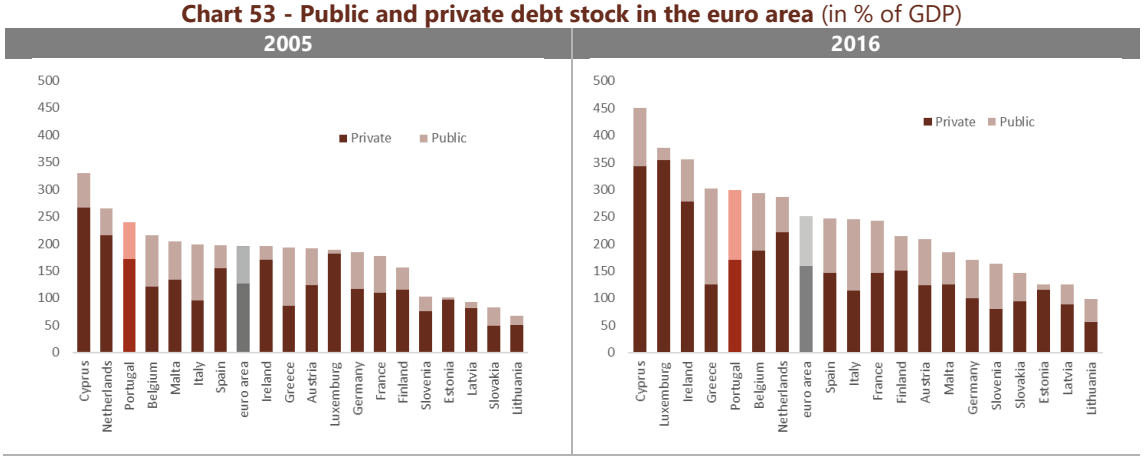

Source: INE. CFP calculations.

Fiscal policy was focussed on short-term effects and political cycles and its impact on fiscal sustainability was devalued, which meant almost always that economic policy was procyclical and led to an increase in the public debt and external debt ratios. Therefore, efforts to reduce the economy's historic vulnerability and the ability to implement countercyclical polices when crises arise should concentrate on the correction of that outlook and on fiscal risks and debt sustainability.

## 8.2 WHAT HAS CHANGED SINCE THE CRISIS?

One consequence of the financial crisis was the fast growth in public debt in most advanced countries. This stemmed from the convergence of a series of risks which the pre-crisis policies exacerbated rather than mitigated. The previous sections illustrate these risks and the Portuguese economy's performance which, in 2005, had the third largest debt stock – public and private – in the euro area (Chart 53).

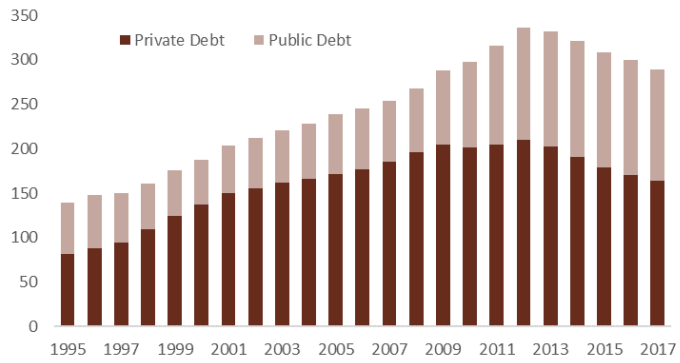
**Chart 53 - Public and private debt stock in the euro area** (in % of GDP)




Source: European Commission.

From 2008 onwards and as a consequence of the economic and financial crisis, Portuguese public debt ratios rose significantly, reaching record highs at levels above most comparable countries within the euro area.

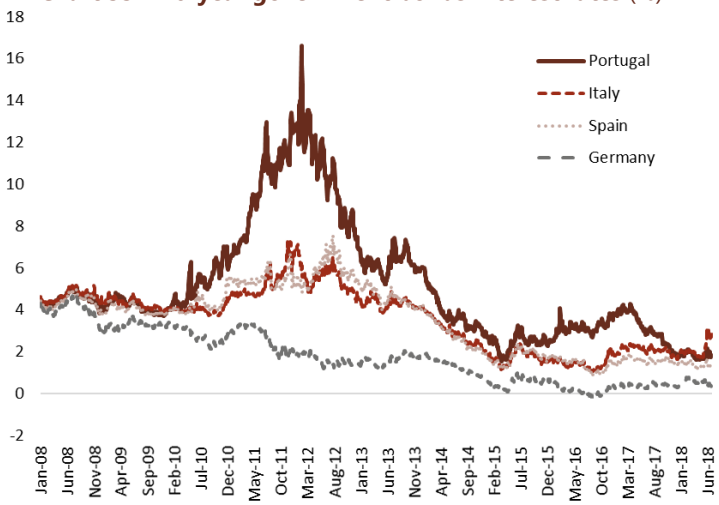
**Chart 54 – Public and private debt stock evolution in Portugal** (in % of GDP)




Source: European Commission.

The vulnerability built up in the Portuguese economy and the sudden U-turn in the financial markets' perception of risk led to a sharp increase in the cost of borrowing and to difficulties in accessing international markets. These factors that were compounded by the concentration in the short-term of external finance got by the banking system. The increase in the cost of finance in 2011 and 2012 is partially linked to the successive downgrading of Portugal's public debt rating to below investment grade. The fiscal adjustment undertaken in 2011/12 meant that, from the end of that year, the public debt risk premium inverted its upward path, a trend that was reinforced in the second half of 2014 and above all in 2017. On top of this effect there was the ECB monetary policy, following the speech by Mario Draghi (speech by Mario Draghi) which undertook to take the measures required to put an end to the crisis in the euro area.[52] (Chart 55).

**Chart 55 – 10-year government bonds interest rates** (%)

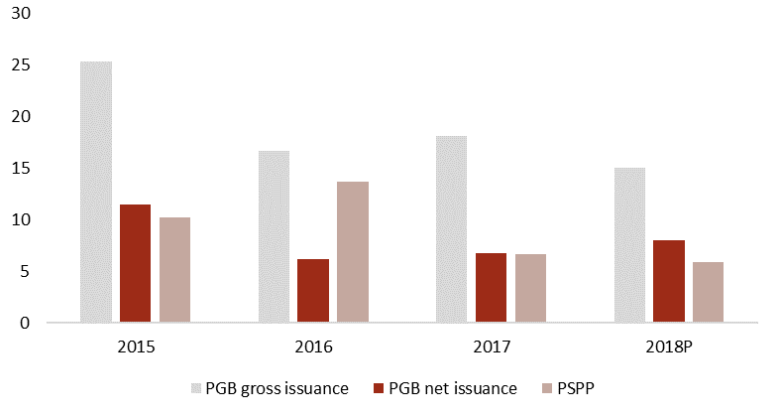



Source: IGCP.

[52] https://www.ecb.europa.eu/press/key/date/2012/html/sp120726.en.html.

In addition to the fiscal adjustment undertaken, the favourable performance in 2017 reflects the improvement in the economic climate in the euro area, which had a direct impact on Portugal, leading to the upgrading to the country's credit rating to investment level by the *Standard & Poor's* (S&P) and *Fitch* agencies in September and December of that year, respectively. This change took place within a framework of lower purchases under the ECB's asset purchase programme that began in March 2015. While the programme remains an important player in the Portuguese public debt market, its relative position has declined.

**Chart 56 – Government bonds issuance** (in billion €)



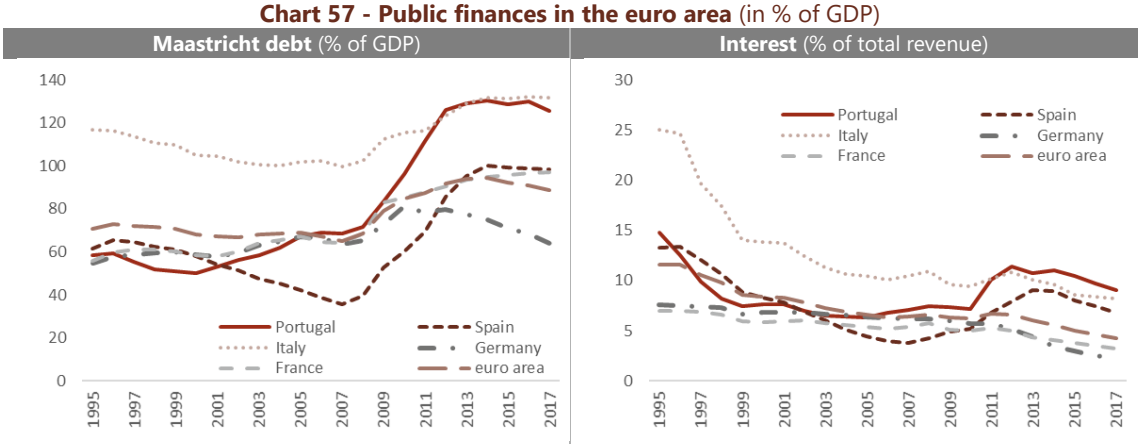

Source: IGCP and ECB. CFP calculations. | * Projection of gross and net issues of Treasury Bonds (TB) for 2018 includes MTN issues, as stated in the presentation to investors by the IGCP on 16 March 2018. It has been assumed that purchases under the PSPP in 2018 remain equal to the average of the 1st quarter of 2018.

In 2017 average interest rates for public debt fell in both the short and long-term, especially for longer maturities, due to the early repayment of IMF loans to the sum of 10 000 M€.

Despite the progress seen, at the end of 2017 Portugal was still one of the most indebted countries in the euro area. Ranked fifth, its combined public and private gross debt stock was lower than that of Greece, Cyprus, Ireland and Luxembourg, although in the case of the latter the debt stock corresponds to a very high level of assets, which is not the case in Portugal. (Chart 53).

Since the bankruptcy of the US bank Lehman Brothers in 2008, Portuguese sovereign public debt has seen strong growth, as in most euro area countries, (Chart 57), and this development was especially notable in countries that had already had high levels in the past.

**Chart 57 - Public finances in the euro area** (in % of GDP)




Source: European Commission. CFP calculations.

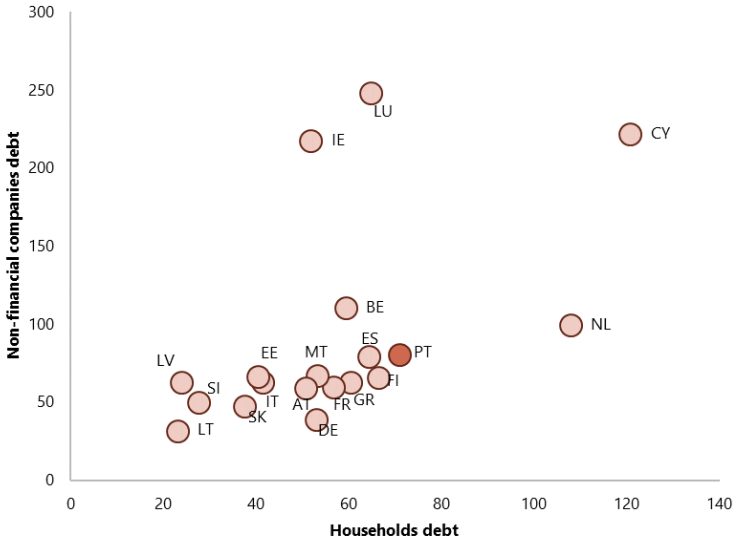
The rapid build-up of government debt in an environment of greater financial instability and lower growth has increased the need for an assessment of government debt sustainability.[53] For a long period monitoring of the European rules[54] was discontinuous and superficial, relying mainly on the national authorities' ability to guarantee compliance. More recently monitoring by the European institutions has become more wide-reaching and coordinated in the different stages of the budget process. That change spotlighted the failings in the Portuguese budgetary framework and led to the reforms laid down in the Budgetary Framework Law (BFL – Law no. 151/2015 of 11 September). Despite its shortcomings in some areas, it represents an important effort to improve the quality of fiscal policy and public expenditure management decisions.

Nonetheless, despite the growing monitoring and greater public awareness of the debate on public finance sustainability, the weight of Portugal's debt stock will continue to act as a constraint of the economy in the coming years, while the public and private economic agents undertake a deleverage effort.

[53] ECB, Monthly Bulletin, April 2012.

[54] Treaty on the Functioning of the European Union (TFUE), Regulation (EU) No. 1175/2011, Regulation (EU) No. 1176/2011, Regulation (EU) No. 1174/2011, Regulation (EU) No. 1173/2011, Regulation (EU) No. 473/2013, Regulation (EU) No. 472/2013.

**Chart 58 - Households and non-financial sector debt in 2016** (in % of GDP)




Source: European Commission. CFP calculations. Note: a list of abbreviations is provided as an annex.

## 8.3 RISKS TO PUBLIC FINANCE SUSTAINABILITY

The major risks to debt sustainability in the euro area remain high. At the end of 2016, the ECB[55] called attention to the fall in nominal GDP growth, the remaining risks of support to the financial sector and the inadequate structural reforms, together with the growing political uncertainty. Already in 2018,[56] the ECB has confirmed that the financial stability environment remains favourable, but points to risks that still should have been taken into account in the euro area as a whole, in particular (i) the effects of a possible correction in asset values; (ii) concerns as to banks' capacity to play their intermediation role due to their poor financial performance and the structural challenges they face, and (iii) the risks resulting from the high public and private debt levels,. For these reasons the improvement in the borrowing conditions the euro area is enjoying could be reversed quickly if a negative scenario materialises.

To mitigate the risks associated with possible increases in interest rates or a sudden stop, a series of economic, financial and demographic indicators that provide for regular evaluation of the vulnerability of economies and public finance should be systematically monitored. The demographic risks are particularly important within a framework of population ageing and contraction. The financial risks, for their part, include the net position of international investment, the makeup of external debt, contingent liabilities and non-performing credit. Below is a brief presentation of some of the risks associated with public finance sustainability in Portugal.

External financing restrictions are one of the main constraints on the working of the Portuguese economy. This is shown in a fairly clear manner in the Net International

[55] ECB, *Financial Stability Review*, November 2016.

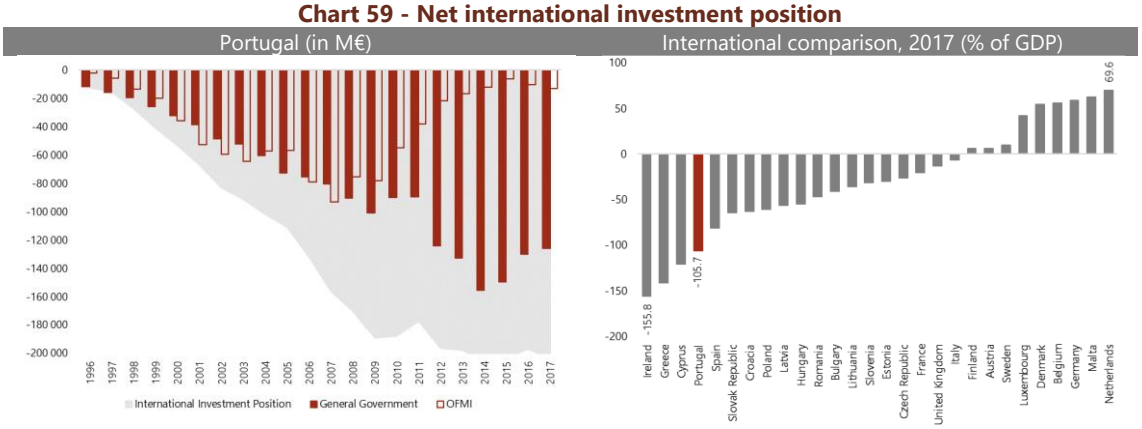
[56] *Financial Stability Review*, May 2018: https://www.ecb.europa.eu/pub/fsr/html/ecb.fsr201805.en.html#toc2.

Investment Position (NIIP), which combines the country's external financial assets and liabilities of resident institutional sectors. This aggregate acts as an indicator of a country's solvency and vulnerability to international markets and reflects flows of different types, from direct and/or foreign investment to debt retention/accumulation. The more negative the ratio between NIIP and GDP, the greater will be the negative risk flowing from fluctuations in the international financial markets.

In 1996, the first year in the series for which data are available, Portugal was almost in equilibrium, resulting to a large extent from the limited access to international markets and from the high exchange risk associated with loans in foreign currencies. Joining the euro area eliminated this risk and eased that access, which was used by the various institutional sectors and led to a significant increase in the debtor balance.

That change is particularly evident in the performance of the negative net position of General Government and other monetary financial institutions (OMFI).[57] In response to the reduced access to the international financial markets which preceded the EFAP, General Government increased its exposure significantly, and took the financial sector's place as the raiser of finance for the economy, mainly through loans linked to the adjustment programme. Compared to the other countries in the euro area, Portugal had the fourth most negative NIIP in 2017, only surpassed by Ireland, Greece and Cyprus.

**Chart 59 - Net international investment position**




Source: Bank of Portugal. Note: OMFI – other monetary financial institutions.

Source: European Commission. CFP calculations.

## 8.4 CFP PORTUGUESE PUBLIC DEBT SUSTAINABILITY ANALYSIS SCENARIOS

The tool used to build public debt scenarios consists of a deterministic model, based on the debt dynamics equation. According to the algebraic expression of debt accumulation, the change in the ratio of debt to GDP is determined by the primary balance, by the snowball

[57] Banks, Mutual Societies and Money Market Funds.

effect (interest effect and growth effect) and also by one-off stock-flow adjustment, as for example the use of deposits, support to the financial sector and privatization revenue.

### 8.4.1 Brief introduction

*"Uncertainty is the nemesis of all projections, and more so for those that span generations."*
Allen Schick, 2005

A scenario is an attempt to define and quantify a possible future.[58] To that end this report details the assumptions underlying the central scenario and each of the alternative scenarios resulting from the simulated shocks.

The scenarios covering debt/GDP ratio developments presented in this chapter cover a 15-year time horizon, beginning in 2018. That time period was deemed the most appropriate for the desired goals: working with a period of 15 years has the advantage of allowing observation of a possible future in which actions taken today will have a decisive influence and in which the causal relationship can still be perceived.

Although it is certain that the analysis of public finance sustainability matters gains by incorporating longer time horizons (up to 50 years), where any long-term imbalances can be mitigated by corrective actions taken in the present, the need to make assumptions as to prices, interest and growth developments so far into the future increases the uncertainty to such an extent that any assumption is to a large degree arbitrary.

The methodology the CFP has employed in this chapter is based on the debt sustainability analysis models included in the exercises published annually by the EC. Those models take a deterministic approach based on a no-policy-change scenario, where the exogenous variables are those used in the debt dynamics equation (see Box 1). The main differences between the model used here and that of the EC lie in the fact that the latter uses a breakdown of the primary balance[59] and includes the snowball effect only for the forecast horizon (up to 2017). As regards the model time horizon the CFP methodology takes into consideration a longer period (up to 2033), than the EC (2028).

The tool used by the CFP to build the public debt scenarios is a deterministic model (Box 1). The change in the debt/GDP ratio is defined by the primary balance, by the snowball effect (interest effect and GDP growth effect) and by revenue from currency issues or seigniorage and one-off stock-flow adjustments, such as the use of deposits, support to the financial sector that is not included in the deficit and revenue from privatisations. The CFP does not

[58] "Scenarios are stories about the future. They represent relevant, plausible, challenging and divergent stories about the future context for an issue and its stakeholders. One cannot expect any given scenario to come true as it stands. Scenarios are not predictions, preferences or forecasts. Rather, the process of developing and using scenarios is intended to help actors generate learnings and insights, both from exploring each scenario individually and from comparing and contrasting them." (World Economic Forum (2011), Scenarios for the Mediterranean Region, Geneva.)"

[59] The European Commission breaks the primary balance down into: structural primary balance, accumulated fiscal effort, cyclical component, one-off and temporary measures, cost of ageing, property income and revenue.

consider revenue from seigniorage[60] nor stock-flow adjustments over the projection period[61], since no information is available to support long-term assumptions about that variable.

**Box 1 – Public debt dynamics equation**

For the sake of simplicity, we will analyse an economy in which public debt is issued only in the national currency.

Assuming that $i_t$ is the nominal interest rate in the period $t$ and $M_t$ is the monetary base in period $t$, the government budget constraint implies that the sum of primary expenditure ($G_t$) and expenditure on interest (calculated at the rate in force at $t$ on the value of debt at the end of the previous period, ($i_t D_{t-1}$) is equal to the total revenue available. This consists of total revenue (net of financial asset and liability transactions) $T_t$, new debt ($D_t - D_{t-1}$), change in the primary currency in circulation ($M_t - M_{t-1}$) and stock-flow adjustments, $A_t$. This approach assumes that government has the monopoly over the monetary base and that it has the right to the respective revenue from seigniorage, $M_t - M_{t-1}$. Symbolically the public budget constraint in the period $t$ (or the short-term restriction) is given by equation (1):

$$G_t + i_t D_{t-1} = T_t + (D_t - D_{t-1}) + (M_t - M_{t-1}) + A_t \qquad (1)$$

Rearranging the expression, we get:

$$D_t = D_{t-1} + i_t D_{t-1} + T_t - G_t - (M_t - M_{t-1}) - A_t \qquad (2)$$

where $T_t - G_t$ is the primary balance (primary deficit symmetry) and $i_t D_{t-1} + G_t - T_t$ represents the overall government deficit. To simplify the notation, let $B_t \equiv T_t - G_t$ and $\Delta M_t \equiv M_t - M_{t-1}$. Dividing the two sides of (2) by $Y_t$, and using the new notation gives:

$$\frac{D_t}{Y_t} = \frac{(1+i_t)}{Y_t} D_{t-1} - \frac{B_t}{Y_t} - \frac{\Delta M_t}{Y_t} - \frac{A_t}{Y_t} \qquad (3)$$

For the purposes below, it is convenient to define the ratios in relation to GDP in the following manner: $d_t \equiv D_t/Y_t$, $b_t \equiv B_t/Y_t$, $s_t \equiv \Delta M_t/Y_t$ e $a_t \equiv A_t/Y_t$.

Equation (3) then becomes:

$$d_t = \frac{(1+i_t)Y_{t-1}}{Y_t} d_{t-1} - b_t - s_t - a_t . \qquad (4)$$

The nominal GDP growth rate can be broken down into two terms, one which reflects the growth in the economy's volume and the other growth in general prices or the output deflator. Taking $y_t$, $g_t$ and $\pi_t$ as the growth rates in period $t$ of nominal GDP, real GDP and the deflator, respectively, produces the defintion

[60] Income accruing to central banks (which may be interest on loans granted or earnings from assets purchased) through the issuing of coins and notes. For further information see the ECB webpage

[61] With the exception of the change in deposits and the prepaid margin, taken into account until 2022.

$$1+y_t=(1+g_t)(1+\pi_t)\ . \tag{5}$$

In the same way, the nominal interest rate ($i_t$) may be broken down into the actual component ($r_t$) and the inflation component, employing the change in the output deflator as an indicator of the inflation rate. Thus,

$$1+i_t=(1+r_t)(1+\pi_t) \tag{6}$$

Inserting (5) and (6) in equation (4) and since $Y_t \equiv Y_{t-1}(1+y_t)$, gives:

$$d_t = \frac{(1+r_t)(1+\pi_t)}{Y_{t-1}(1+g_t)(1+\pi_t)} D_{t-1} - b_t - s_t - a_t$$

Which can be simplified to:

$$d_t = \frac{1+r_t}{1+g_t} d_{t-1} - b_t - s_t - a_t \tag{7}$$

The expression (7) is commonly referred to as the debt dynamics equation. It says that the debt in period *t* is equal to a certain fraction of the debt in the previous period minus the primary balance, seigniorage revenue and stock-flow adjustments, and all these variables are measured in terms of percentage of nominal GDP. In truth equation (7) is nothing more than a different way of expressing the budget constraint that government faces in period *t*. Both of them are *mere accounting identities*. They do not incorporate any theory, any mental framework that seeks to explain the behaviour of any public or private, economic agent. Nor do the two equations indicate the fiscal policy and monetary policy options required.

For the sake of expediency, we define the factor that multiples $d_{t-1}$ as $\alpha_t$ where $\alpha_t \equiv (1+r_t)/(1+g_t)$. Equation (7) is said to be dynamic because *time* plays a role in determining the debt in period *t*. That role consists of the effect that past debt has on present debt. For normal values of real interest rates and real growth, the numerator and the denominator of $\alpha$ are positive, and so $\alpha$ will also be positive. So, for any given $\alpha$, the larger the debt accumulated at the end of the previous period, the greater the current debt. It is also noted that $\alpha$ is a capitalisation factor, thus it may lead to the term $\alpha_t d_{t-1}$ being interpreted economically as the capitalized value for today of past debt. In fact, $r_t$, being the real implicit interest rate for debt stock, legitimises that interpretation: it shows the opportunity cost of the capital tied up in the public debt. The real output growth rate, being positive, makes this opportunity cost less onerous for government, when measured in GDP units, as is the case with equation (7). As a result, $d_{t-1}/(1+g_t)$ is commonly referred to as the *economic growth dividend*.

This algebraic digression can be used to deduce another equation that is often used in CFP analysis of the budget outturn, namely when explaining the change in the debt that arose in the year in question. Subtracting $d_{t-1}$ from both sides of the equation (7) and then simplifying gives:

$$\Delta d_t = \frac{r_t - g_t}{1+g_t} d_{t-1} - b_t - s_t - a_t \quad (8)$$

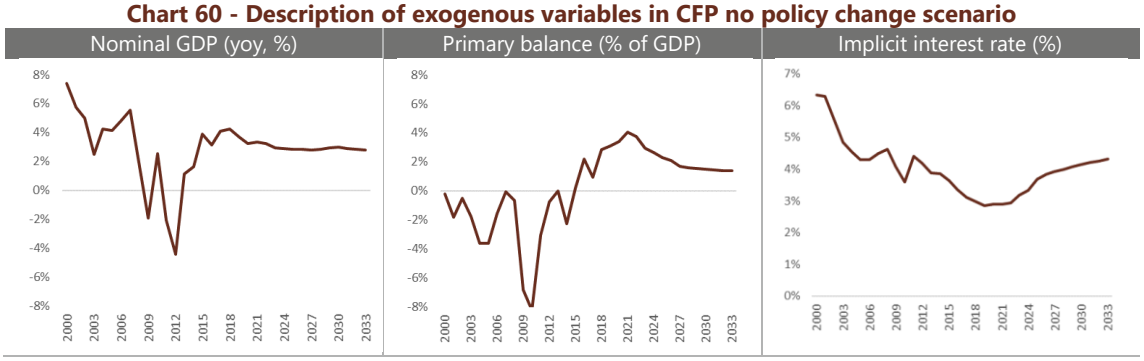
It says that the indebtedness (*i.e.,* change in debt) that arose in period t stems from the *snowball effect*, the primary balance, seigniorage revenue and stock-flow adjustments. Arithmetically the snowball effect is equal to the expression $\left[(r_t - g_t)/(1+g_t)\right] d_{t-1}$, which combines the real interest rate, the real growth rate and the debt at the end of the previous period. Another version takes into account the nominal interest rate and nominal growth.

To return to the main topic of this chapter, the debt dynamics equation (7) is important because it is the starting point for the CFP sustainability analysis. If this exercise is applied to the Portuguese economy two simplifications to the equation (7) are possible. The first relates to seigniorage revenue. Since Portugal is a member of the euro area it is affected by two basic Treaty rules: the budget authority is banned from obtaining finance by issuing money and the monetary authority is independent of the budget authority. So, the CFP analysis assumes that $s_t = 0 \ \forall t$ . The second rule relates to stock-flow adjustments. These may be positive or negative and cannot be forecast in the medium and long-term because they are normally a consequence of casuistic policy options determined by unexpected or hard to foresee events as regards their timing and value (for example, the financial assistance given to banks). Given that the time horizon is the far-off future, up to fifteen years after the initial period, no information is capable of upholding any value for those adjustments over the years of the projection. Therefore, it is assumed that $a_t = 0 \ \forall t$ .

Box 1 describes the debt dynamics equation as a function of real GDP growth and the real interest rate. However, the CFP model uses these data in nominal terms, and so it relays on three exogenous variables: nominal GDP growth, the primary balance and the implicit debt interest rate (also nominal). The data used are those to be found in the INE series up to 2017. For the first five years of the projection (2018-2022), the CFP used the figures in the no-policy-change macroeconomic scenario published by the CFP in March 2018. From 2023 onwards the changes in nominal GDP, the primary balance and the implicit public debt interest rate are those assumed by the European Commission (*2018 Debt Sustainability Monitor and Sustainability Indicators*, EC) plus CFP calculations.

Under the assumptions made, nominal growth in nominal GDP is deemed to average 3.5% from 2018 to 2022. From 2023 the average change in nominal GDP is 2.9%, converging to 2.8% in the final two years of the projection time horizon. This nominal growth is based on an inflation rate of 1.7% in 2018, converging to 2% from 2023 onwards. The primary balance stands at 2.2% of GDP in 2016 and 0.9% of GDP in 2017. From 2018 to 2022 the average projection for the primary balance is 3.4%, before it falls gradually to 1.4% in 2033, which is a favourable assumption in light of past performance. The implicit interest rate is expected to remain stable from 2018-2022 at 2.9%, and then rise steadily to 4.3% by the end of the projection period, returning to the level of the average implicit interest rate seen previously (2005-2011).

**Chart 60 - Description of exogenous variables in CFP no policy change scenario**




Source: Bank of Portugal, European Commission, CFP, INE and MF. CFP calculations.

**Table 8– Exogenous variables source**

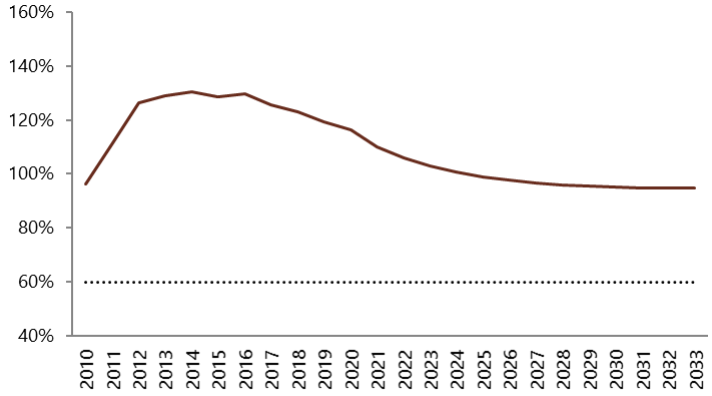
| Variable | Historical source | Source 2018-22 | Source 2023-2033 |
|---|---|---|---|
| GDP nominal (tvh, %) | INE | CFP | CFP and CE |
| Primary balance (% of GDP) | INE | CFP | CFP and CE |
| Implicit interest rate (%) | BoP and MF* | CFP | CFP and CE |

Source: CFP.

Notes: * They correspond to statistical series calculated by the CFP using data from the sources indicated. Linear interpolations were used to calculate the primary balance.

According to these assumptions, the public debt/GDP ratio falls during the early years of the projection. This drop will depend above all upon the build-up of primary surpluses and a favourable dynamic effect, meaning that the effect of GDP growth should more than offset the unfavourable impact of interest, going from 125.7% of GDP in 2017 to 106% of GDP in 2022. From 2023 onwards, the decrease is less marked, and is explained in the main by the projected lower primary balances and GDP growth rates, reaching 94.7% of GDP in 2033 (Chart 61).

**Chart 61 - CFP and EC no policy change scenario, Maastricht debt** (in % of GDP)




Source: Bank of Portugal, European Commission, CFP, INE and MF. CFP calculations.

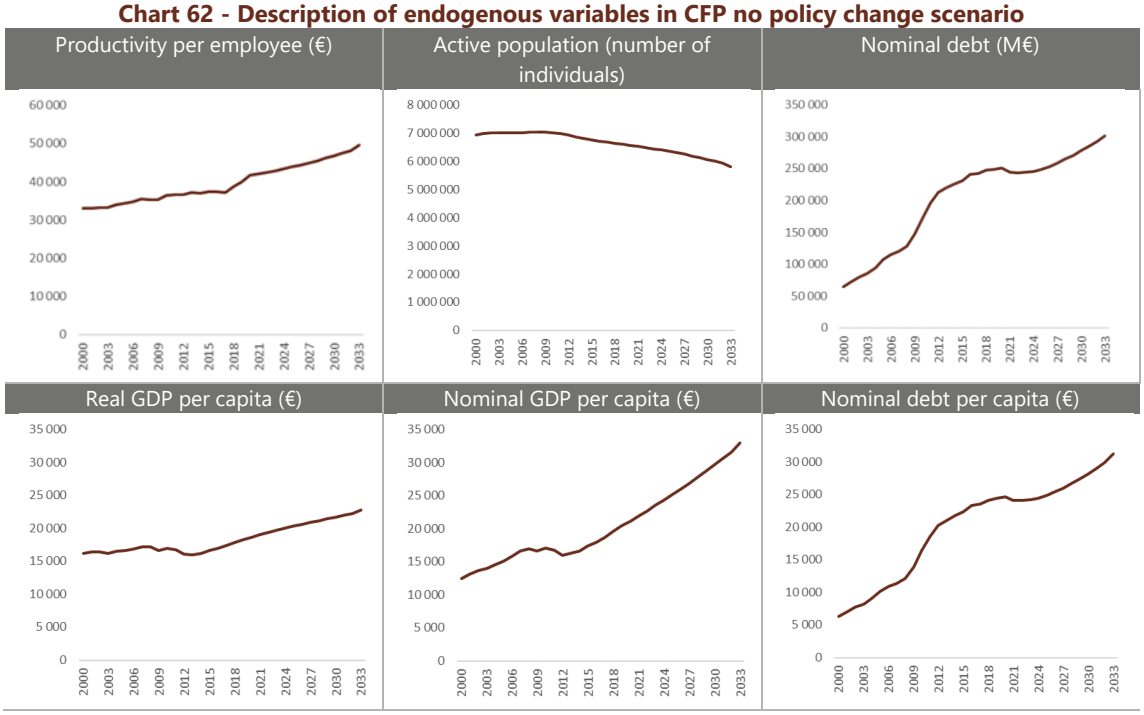
Note that this projection is subject to great uncertainty. However, despite the fact that they are unlikely to materialise, no-policy-change scenario projections serve two useful purposes:

showing how public finance will perform in a relatively distant future if the projected fiscal path arises and acting as a basis for estimating the impact of changes in policy.[62]

Since a scenario is an exercise that explains and quantifies a possible path, this report details, the assumptions underlying the central scenario and the alternative scenarios. The nature of the model exogenous variables (nominal GDP growth, primary balance and the implicit debt interest rate) for the possible path is provided. The report also looks at changes in other variables which, while they were not employed as inputs in the CFP methodology, do help to frame the debt ratio path in each scenario from a broader economic standpoint.

In a no-policy-change scenario, a gradual increase in productivity per employee is expected, from 37 100 € in 2017 to 49 600 € in 2033. On the contrary, the working population will continue to decline, going from 6.7 million people in 2017 to 5.8 million in 2033. The projection for nominal debt in 2033 is 309 800 M€, compared to 242 600 M€ at the end of 2017. In this scenario, nominal debt per capita is higher than nominal GDP per capita until 2027, then the relationship is inverted for the remainder of the projection time horizon, to stand, respectively, at 32 100 € and 33 000 € in 2033, compared to 23 500 € and 18 700 € in 2017. Real GDP per capita increases from 16 500 € in 2015 to 22 200 € in 2032.

**Chart 62 - Description of endogenous variables in CFP no policy change scenario**




Sources: INE, Bank of Portugal, CFP and European Commission. Projections and CFP calculations.

These endogenous variables are part of the CFP macroeconomic scenario published in March 2018, in *Public Finance: Position and Constraints 2018-2022* and the *Ageing Report 2018* published by the EC, which includes the demographic statistics (total population, employed population and working population) from Eurostat (EUROPOP 2015) and from the 2018 *Debt Sustainability Monitor*.

[62] Schick, Sustainable Budget Policy: Concepts and Approaches, 2005.

**Table 9 – Endogenous variables source**

| Variable | Historical source | Source 2018-22 | Source 2023-2033 |
|---|---|---|---|
| Productivity per employee (%) | INE* | CFP | CE |
| Working population (nº of people) | INE* | CFP and CE | CE |
| Nominal debt (M€) | BoP | CFP and BoP | CFP |
| Real GDP per capita (€)* | INE* | CFP and EUROPOP * | CE* |
| Nominal GDP per capita (€)* | INE* | CFP and EUROPOP * | CE* |
| Nominal debt per capita (€) | BoP* | CFP, BoP and EUROPOP * | CFP and CE* |

Source: CFP. | Note: * They correspond to statistical series calculated by the CFP using data from the sources indicated.

### 8.4.2 Sensitivity analysis

In the alternative scenarios set out in this section sensitivity analysis is conducted for each exogenous variable (nominal GDP growth, primary balance and implicit debt interest rate), and also a simultaneous shock that encompasses the previous three. The shaded areas represent the changes in the public debt ratio path with symmetrical shocks of 0.5 p.p. and 1 p.p. in the named variables.

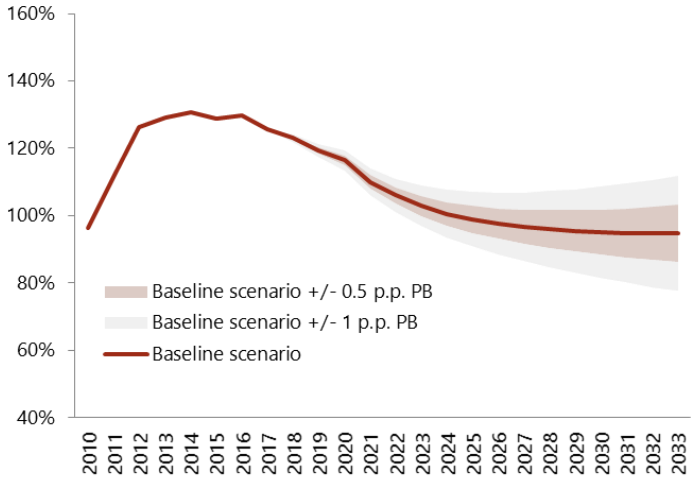
The nominal GDP growth rate is the variable where the changes have the greatest impact on the debt path. On the other hand, the implicit interest rate is the variable where the changes have the least influence on the debt path compared to the no-policy-change scenario, given that any change only affects the new debt issued each year.

#### 8.4.2.1 Primary balance shock scenario

Given the nature of the no-policy-change scenario, a change in the primary balance would affect nominal debt and nominal debt *per capita*, assuming all other things would be the same. Note, however, that in addition to its impact on debt dynamics the primary balance has a very significant reputational effect on how public finance sustainability is perceived and tends to have a positive or negative impact on sovereign risk and therefore on the interest rate.

Compared to the no-policy-change scenario, where debt is 94.7% of GDP in the final year of the projection, a positive shock of 1 p.p. to the primary balance over the entire projected period would give rise to debt accounting for 77.6% of GDP in 2033, while a primary balance 1 p.p. lower would result in a debt ratio of 111.8% of GDP in that year.

**Chart 63 – Sensitivity analysis to changes in primary balance** (in % of GDP)




Sources: Bank of Portugal, European Commission, CFP and INE. CFP projections and calculations.

#### 8.4.2.2 Implicit interest rate shock scenario

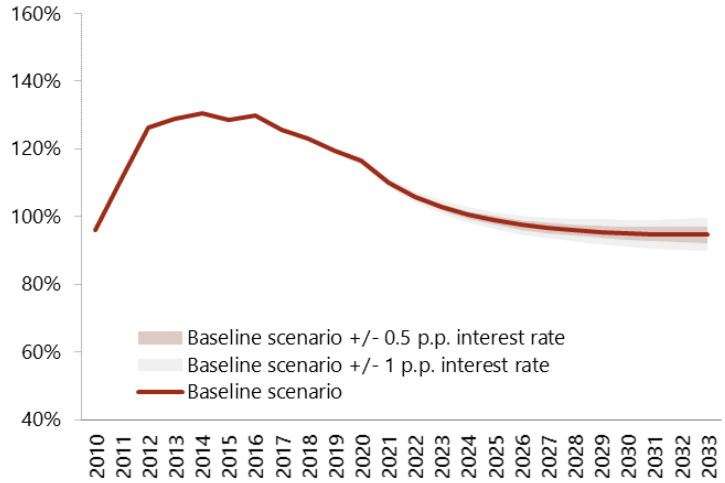
Compared to the remaining sensitivity analysis scenarios, a shock to the implicit interest rate is the one which gives rise to the smallest oscillation in nominal debt. However, this situation is a result of the mechanical nature of the projection model used.

If the increase in the interest rate stems from an overall change in market conditions (that is if it does not constitute an increase in the country's specific sovereign risk) then it is natural that it will not have a very significant influence on growth by way of the economy's borrowing terms. However, if the rise in the interest rate stems from an increase in the sovereign risk premium, then this exercise loses its ability to explain the path, as such an increase could pose a high risk for the economy with implications for competitiveness and investment.

For the purposes of the implicit interest rate shock, 28.4%[63] of debt is deemed to be refinanced each year, and only that percentage is subject to the change in the interest rate. A positive shock (+1 p.p.) and a negative shock (-1 p.p.), identical to those described above, produce a public debt ratio of 99.7% and 89.9% of GDP, respectively. Despite the relatively small impact of the gradual changes in interest rate on the debt path, we wish to stress that in crisis situations their scale and impact may become very relevant in terms of how the economy is perceived as a risk by the financial markets and by the rating agencies. For instance, it is recalled that the increase in spreads versus Germany, which began in 2010 and peaked at the beginning of 2012, together with the downgrading of Portuguese debt, meant that the country was excluded from investment portfolios. From June 2011 to June 2012 secondary market interest rates were over 10% on maturities up to 10 years, compared to the 6.6% at the end of 2010 (a much larger shock than the 1 p.p. considered here).

[63] The figure of 28.4% is equal to the average (2000-2017) of short-term debt and Treasury Bonds issued annually, weighted by their respective weight in outstanding debt.

**Chart 64 - Sensitivity analysis to changes in implicit interest rate** (in % of GDP)




Sources: Bank of Portugal, European Commission, CFP, IGCP, INE and MF. CFP projections and calculations.

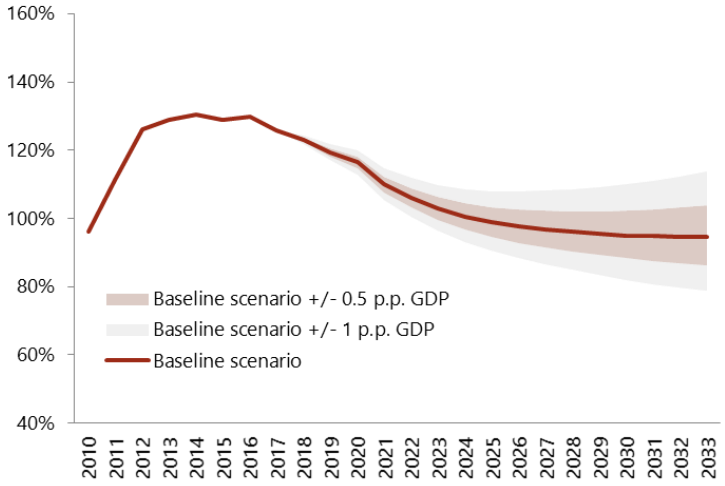
#### 8.4.2.3 Nominal GDP growth shock scenario

Inflation has been assumed to be constant and equal to the no-policy-change scenario, and is therefore the difference in nominal GDP growth compared to the central scenario affected by shocks to real GDP growth. These are also reflected in real GDP *per capita* and in productivity per employee (since the total population remains the same as in the no-policy-change scenario).

Changes of the same magnitude in GDP growth (real changes of +1 p.p. and -1 p.p.) imply that debt will be between 71.6% and 122% of GDP, respectively, in the last 15 years of the projection. When analysing the sensitivity of public debt to changes in GDP, the elasticity of primary balance to changes in GDP was deemed to be 0.45. This assumption is based on the premise that the changes in GDP growth rate impact on the budget variables, both on the revenue side – indirect taxes, direct taxes and social contributions – and the expenditure side in terms of social transfers. The elasticity figure was calculated on the basis of the average elasticity between the primary balance and the GDP in the last ten years (2007-2017), excluding 2010[64]. It is noted that experience shows that negative shocks that have an impact of over 1% on GDP are very common (see chapter 4). Although these shocks are not permanent they introduce significant disturbances in the public finance and accumulated debt paths.

[64] In 2010 the rates of change in both variables are outliers, so the decision was taken to exclude this value when calculating the average elasticity (should this value be included the elasticity would be 0.11%).

**Chart 65 - Sensitivity analysis to changes in GDP growth** (in % of GDP)




Sources: Bank of Portugal, European Commission, CFP, INE and MF. CFP projections and calculations.

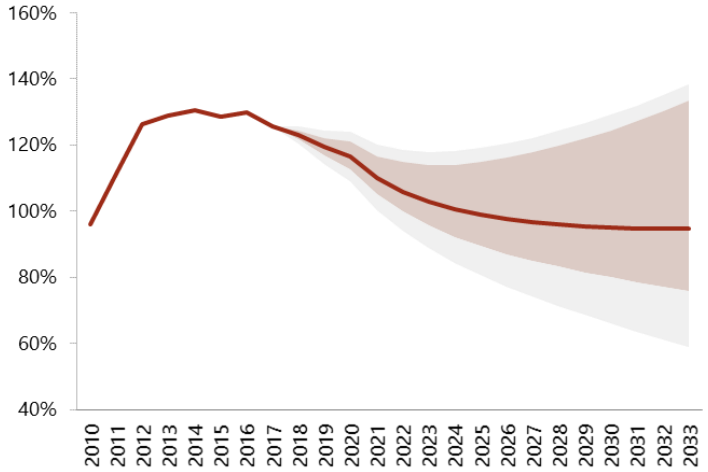
#### 8.4.2.4 Simultaneous shock scenario

In the simultaneous shock (see the chart below) the shaded areas represent changes in the public debt ratio path given shocks of -/+0.5 p.p. and +/-1 p.p. in GDP growth, in the primary balance and in the implicit interest rate (for the debt financed each year).

The bands that represent a less favourable development in one endogenous variable against the no-policy-change scenario illustrate the scenarios in which the economy is hit by three adverse simultaneous shocks (both 0.5 p.p. and 1 p.p.), that is to say, when there is a decline in GDP and in the primary balance, and a rise in the implicit interest rate. In the same way, the bands that represent a more favourable change against to the no-policy-change scenario reveal scenarios where there are increases in GDP growth and the primary balance plus a decrease in the implicit interest rate.

In a simultaneous shock where the increase in the primary balance and GDP growth is 1 p.p. and there is a decrease of 1 p.p. in the implicit interest rate, public debt would be equal to 59.1% of GDP in 2033. In the worst scenario, diametrically opposed to the last one, public debt would stand at 138.4% in the last year of the projection.

**Chart 66 – Sensitivity analysis to a simultaneous shock (GDP, interest rate and PB)** (in % of GDP)




Sources: Bank of Portugal, European Commission, CFP, IGCP, INE and MF. CFP projections and calculations.

# 9 OTHER SUSTAINABILITY ANALYSES IN THE CONTEXT OF THE EUROPEAN RULES

This chapter looks at the results of the sustainability analysis conducted by the EC and the IMF as they are institutions that play an active part in monitoring Portuguese economic and fiscal policies. Note that the EC shares responsibility with the Portuguese Government for devising economic and fiscal policies, given that Portugal is required to comply with the European budget rules[65] monitored within the context of the European Semester.

In its most recent update of the *Debt Sustainability Monitor* (DSM) the EC publishes the short-term (S0), medium-term (S1) and long-term (S2) sustainability indicators. They are solvency indicators that measure a country's ability to pay current public debt through the expected current value of future primary balances (intertemporal budget constraint) including the forecast increase in public expenditure due to the ageing population. These indicators differ as regards their time horizon, finite (S1) or infinite (S2), and the fact that S1 includes a decreasing or stable debt ratio at a particular level up to 2032. When developing these indicators consideration is also given to the no-policy-change assumption (no discretionary changes to expenditure or revenue) across the projection entire time horizon.

The EC debt sustainability analysis (DSA)[66] may be broken down into three timescales:

- Short-term: assessed by S0, a composite indicator made up of 28 variables that measure the risk of a macroeconomic, fiscal or financial stress episode arising in the following year. It calculates the risk of rollover and analyses the debt profile's balance from the standpoints of maturity, currency and investor base;
- Medium-term: the assessment is made using two instruments (S1 and DSA) for a 15-year period. A country is deemed to face sustainability challenges when at least one of them points in this direction:
    - **S1**: measures the additional adjustment effort required, in terms of a cumulated gradual improvement in the structural primary balance over the 5 years following the last year of the EC forecasts CE (i.e., from t+3 to t+8) to reach public debt-to-GDP ratio of 60% in 2032. It includes future expenditure arising from an ageing population. The intervals used to assess a country's sustainability challenges based on indicator S1 are as follows: i) S1 less than zero, signifying low risk; ii) S1 between 0 and 2.5 (thus requiring a structural primary balance adjustment of up to 0.5 p.p. of GDP per year until 2024), classified as medium risk; iii) S1 greater than 2.5 (requiring a structural primary balance adjustment of over 0.5 p.p. of GDP per year), which is classified as a high risk.
    - **DSA**: the CE uses a no-policy-change baseline scenario. In this scenario the Commission's forecasts are used in the first two years of the projection, and then it is assumed that fiscal policy remains the same over the projection time horizon.

[65] Treaty on the Functioning of the European Union (TFUE), Regulation (EU) No. 1175/2011, Regulation (EU) No. 1176/2011, Regulation (EU) No. 1174/2011, Regulation (EU) No. 1173/2011, Regulation (EU) No. 473/2013, Regulation (EU) No. 472/2013.

[66] DSA – Debt Sustainability Analysis.

The CE calculates various alternative scenarios including: a baseline scenario with no ageing costs; a scenario based on historic averages; a scenario where the primary balance is calculated by means of a fiscal reaction function; a MTO convergence scenario that complies with the European Budget Rules; and a scenario that uses the Stability Programme figures. Mention must also be made of the standard and enhanced tests the Commission undertakes on short-term and long-term interest rates as well as GDP. There are also tests for inflation, primary balance and interest rate shocks. The variables tested are changed in all periods up to the end of the projection time horizon.

- Long-term (up to 2070): the S2 indicator shows the upfront adjustment to the current structural primary balance that is required to stabilise the debt-to-GDP ratio over the infinite horizon, so this adjustment remains constant indefinitely. Therefore, it does not indicate any value for the debt ratio. As with S1 it includes the costs of an ageing population. The long-term sustainability indicator S2 uses the following intervals when assessing the sustainability challenge: i) if S2 is less than 2, the country is designated a low risk; ii) if S2 is between 2 and 6 the country is assigned a medium risk; iii) if S2 is greater than 6 the classification is that of a high risk.

As for the IMF, debt sustainability analysis has two components: external debt and public debt, plus a forecast horizon of 5 years. Each component consists of a baseline scenario and sensitivity tests, which test the various assumptions for policies, macroeconomic variables and the cost of borrowing, including the possible materialisation of contingent liabilities, and also analyse debt profile vulnerability. Portugal's DSA is conducted according to the model for countries with access to the market (a model also exists for developing countries), complemented by reference indicators that divide the countries into two groups: "high scrutiny" and "low scrutiny". For advanced economies these indicators are:

- Public debt-to-GDP ratio of over 60%;
- Gross borrowing requirements greater than 15% of GDP;
- Exceptional access to IMF loans;

If a given economy exceeds one of these limits it is placed into the "high scrutiny" group, and it subject to more detailed analysis by way of growth, fiscal and debt profile risk indicators, namely:

- Accumulated adjustment to primary balance in the last 3 years (% of GDP)
- Rate of growth coefficient (ratio of standard deviation/average)
- Spreads compared to Germany or the USA (base points)
- External borrowing requirements (% of GDP)
- Public debt held by non-residents (% do total)
- Public debt in foreign currencies (% do total)
- Annual change in percentage of short-term debt in the original maturity (%)

Analysis is also undertaken of the realism of the assumptions and, as with EC practice, alternative scenarios to the baseline scenario:

- scenario based on historic averages;
- scenario with constant primary balance;
- macroeconomic variable shock scenarios (single shocks and combined shocks);
- scenario with materialisation of contingent liabilities.

In the IMF's analysis (with the exception of the historic scenario which is altered across the projection entire time horizon), the variables are altered for periods *t+1* and *t+2*, before returning to the assumptions made in the baseline scenario from *t+3* onwards.

### *Advantages and limitations of the methodologies used by the EC and IMF*

The EC calculates the sustainability indicators (S0, S1, S2) that combine into a single number a large quantity of information, which provides a quantification of the adjustment required of the structural balance in order to achieve a particular debt ratio or to stabilise the debt ratio over an infinite time horizon. Nonetheless, any simplification has its limitations. The results should take into account the deficit profile as well as its makeup (revenue and expenditure). In addition, none of the indicators provide any qualitative signal about the ideal debt ratio. The S1 indicator assumes the maximum limit laid down in the Stability and Growth Pact (60%) while the S2 indicator does not include any specific ratio, and a country may not need to make an adjustment according to this indicator yet at the same time have a very high debt ratio provided that over an infinite time horizon it is able to repay its debt. On the other hand, their design makes them very sensitive to the initial values assumed for the structural primary balance and debt, to the values assumed for the medium and long-term variables and the time horizon in question.

In its public debt sustainability analysis, the European Commission incorporates other relevant factors, in particular the structure of public debt, contingent liabilities and general government assets. Therefore, it is the sign and magnitude of the indicator that matters more than the exact value. The aim of the indicators is to indicate the need for a budget adjustment (signal) and give an approximation of its magnitude.

As for the IMF, the degree of detail used in its DSA model in regard to General Government revenue and expenditure and especially the debt structure (maturity, currency and holders) is certainly one of the model advantages, providing for greater adaptation in each case and greater scrutiny of the idiosyncrasies of the economy in question. However, one of the most obvious limitations is that the projection time horizon is relatively short compared to other analyses. A five-year period does not provide for medium or long-term considerations, which can limit the information used to devise policies that bring about intergenerational equity. The large number of indicators that complement the DSA, which are used by the IMF to classify countries according to certain benchmarks, has the advantage of anchoring the debt projections made by the model.

### *Assessment of Portuguese public finance sustainability*

Table 10 shows the EC analysis for Portugal, as per the June 2018 update of the *Debt Sustainability Monitor*, which relies on the EC Spring forecasts, published in May 2018, and the long-term projections in *Ageing Report 2018*.

**Table 10 – Assumptions for Portuguese public finance sustainability analysis by the EC**

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Real GDP growth (%) | 1.6 | 2.7 | 2.3 | 2.0 | 0.9 | 0.6 | 0.6 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 |
| Nominal GDP growth (%) | 3.2 | 4.1 | 3.7 | 3.4 | 2.4 | 2.3 | 2.6 | 2.9 | 2.9 | 2.8 | 2.8 | 2.8 | 2.8 |
| Primary balance (% GDP) | 2.2 | 0.9 | 2.7 | 2.8 | 2.6 | 2.3 | 2.0 | 2.0 | 1.9 | 1.9 | 1.8 | 1.7 | 1.6 |
| Structural primary balance (% potential GDP) | 2.2 | 2.8 | 2.5 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| Public debt (% GDP) | 129.9 | 125.7 | 122.5 | 119.5 | 117.5 | 115.9 | 114.5 | 112.8 | 111.5 | 110.3 | 109.5 | 108.9 | 108.5 |
| Implicit interest rate (%) | 3.4 | 3.1 | 2.9 | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.4 | 3.5 | 3.7 | 3.8 | 3.9 |

Source: *Debt Sustainability Monitor*, European Commission.

Using the four tools referred to above, the EC analysed the Portuguese public debt sustainability from three moments in time:

- ***S0***: the indicator is below the critical threshold for Portugal, which points to no high risks being expected in the short-term. However, the budget indicators that complement this analysis point to some weaknesses, such as the high level of gross and net debt stock and the high level of borrowing requirements as a percentage of GDP. Furthermore, the international investment position, household net savings and the level of and (positive) change in loans in risk of non-compliance expose Portugal to external shocks and the volatility of the financial markets. The maturity structure and the debt investor base (residents *vs*. non-residents) should also be monitored closely.
- ***S1***: in the medium-term, where the objective is to obtain a debt-to-GDP ratio of 60% in 2032, the risks are high for Portugal, as S1 stands at 4.4 p.p. of GDP, above the high-risk threshold. That means that an additional accumulated adjustment (compared to the no-policy-change baseline scenario) of 6.7 p.p. in the structural primary balance will be required to achieve a debt ratio of 60% by 2032.
- ***DSA***: the latest debt sustainability analysis (DSA) of June 2018 considered an implicit interest rate of 3.1% in 2017, rising to 3.9% in 2028 and inflation converging towards 2% by 2024. The EC considers Portuguese public debt to be on a sustainable path, although vulnerable to negative shocks, such as lower nominal GDP growth than expected, an increase in the cost of borrowing and a smaller fiscal consolidation effort. In the no-policy-change baseline scenario the debt ratio is expected to decline gradually until the end of the forecast's time horizon. The debt path starts out at 125.7% in 2017, and debt ratios of 122.5% and 119.5% of GDP in 2018 and 2019, respectively, are forecast. In the medium-term, in 2028, the outlook is for a debt ratio of 108.5% of GDP.
- ***S2***: due to the reforms in the pensions system and the decrease in the costs of an ageing population, the indicator does not point to major risks. S2 stands at 0.7 p.p., making Portugal a reduced risk in the long-term.

According to the last IMF assessment of Portugal' sustainability (published in February 2018), Portuguese debt was expected to follow a downward path, at a rate higher than projected by the EC. The baseline scenario suggests debt as a percentage of GDP will be 108% in 2023.

**Table 11 – Assumptions for Portuguese public finance sustainability analysis by the IMF**

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|
| Real GDP growth (%) | 1.5 | 2.6 | 2.2 | 1.8 | 1.5 | 1.2 | 1.2 | 1.2 |
| Nominal GDP growth (%) | 3.0 | 4.2 | 3.7 | 3.3 | 3.2 | 2.9 | 2.9 | 2.9 |
| Primary balance (% GDP) | 2.2 | 2.7 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| Structural primary balance (% potential GDP) | 2.9 | 2.7 | 2.4 | 2.0 | 1.8 | 1.8 | 1.7 | 1.7 |
| Public debt (% GDP) | 130.1 | 125.7 | 121.7 | 118.4 | 115.4 | 112.7 | 110.4 | 108.0 |
| Implicit interest rate (%) | 3.4 | 3.1 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 2.9 |

Source: *Sixth Post-Programme Monitoring Discussions*, *Article IV Consultation*, IMF (2018).

According to that institution this development is subject to various risks, in particular the high debt stock (125.7% of GDP in 2017 compared to the 85% of GDP benchmark for advanced economies), contingent liabilities, namely the negative impacts of the banking sector and expenditure control, especially payment of arrears, above all in the health sector. While the projections reflect existing fiscal policies, the IMF highlights the continuity of the fiscal consolidation, which includes the implementation of the new Budgetary Framework Law and full compliance with the *Lei dos Compromissos* (Commitments Law), is necessary to ensure the downward trend takes place.

The IMF stress tests show the debt path to be less vulnerable to negative shocks than previous analyses. In the various scenarios published debt continues to fall, with the exception of the scenario that combines a macro-fiscal shock with the materialisation of contingent liabilities (equal to 10% of GDP). In such circumstances debt would rise to 136% of GDP in 2020, and remain stable over the course of the projection time horizon. In the scenario with lower GDP growth (- 1 p.p.), debt would stand at 127% of GDP in 2020, and then fall at a slower rate than in the baseline scenario. On the other hand, an increase in the cost of borrowing would only have an impact in the medium-term, leading to a slower decrease in debt stock as a percentage of GDP (111% of GDP in 2023).

### *Conclusions as to the approaches to the Portuguese position*

In their latest publications on DSA, the EC and IMF expect Portuguese public debt to follow a more favourable path, while remaining vulnerable to some risks, due, above all, to the high debt stock as a percentage of GDP combined with the reduced space for fiscal consolidation. For the EC Portugal also has a high medium-term public finance risk, pointing to the S1 and DSA indicators in this subject. It is classified as low, long-term sustainability risk, on the condition that it retains a high structural primary balance in the long-term. In addition, the IMF highlights the possible negative impact of non-performing loans, of changes in ECB monetary policy and, lastly, the adverse effects caused by fluctuations in the economic cycles in Portugal and in its main trading partners. Both institutions stress the vulnerability to shocks, which underlines the importance of continuing the fiscal consolidation effort and of implementing structural reforms that encourage growth, which are essential to guarantee the debt ratio will continue to fall in the respective projection time horizons.

# REFERENCES


Almeida, V. and R. Félix (2006). "Calculation of potential output and output gap for the Portuguese economy." Bank of Portugal, Economic Bulletin, Autumn 2006.

Araújo, S. (2017). "Improving qualifications in Portugal." OECD, No. 1405, OECD Publishing, Paris.

Arnold, J. (2015). "Boosting Export Performance in Portugal." OECD Economics Department Working Papers, No. 1257.

Balassone, F. and Franco, D. (2000). "Assessing fiscal sustainability: a review of methods with a view to EMU, in 'Proceedings of a Banca d'Italia workshop on Fiscal Sustainability'.

Belkindas, M., M. Bonch-Osmolovskiy and G. Poniatowski (2017). "Study and Reports on the VAT Gap in the EU-28 Member States: 2017 Final Report," CASE Reports 0492, CASE-Center for Social and Economic Research.

Bova, E., M. Ruiz-Arranz, F. Toscani, and H. E. Ture (2016). "The Fiscal Costs of Contingent Liabilities: A New Dataset", IMF Working Paper 16/14 (Washington: International Monetary Fund).

Bry, G and C. Boschan (1971). *Cyclical Analysis of Time Series: Selected Procedures and Computer Programs*. National Bureau of Economic Research, New York.

Centeno, M., J. Maria, and A. Novo (2010). "How to Measure Unemployment? Implications for NAIRU." Bank of Portugal, Economic Bulletin, Verão 2010.

European Commission (2017). "The 2018 Ageing Report. Underlying Assumptions and Projection Methodologies." European Economy, Institutional Paper 065.

European Commission (2018). "The 2018 Ageing Report. Economic & Budgetary Projections for the 28 EU Member States (2016-2070)." Institutional Paper 079.

Duval, M., M. Hong, and Y. Timmer (2017). "Financial frictions and the great productivity slowdown." International Monetary Fund, IMF Working Paper WP/17/129.

International Monetary Fund (2009). "Fiscal Risks. Sources, Disclosures and Management" (Washington).

International Monetary Fund (2016). "Analyzing and Managing Fiscal Risks – Best Practices" (Washington).

IFAC (2011), "Reporting on the Long-Term Sustainability of a Public Sector Entity's Finances", International Public Sector Accounting Standards Board, International Federation of Accountants, Ontario

Lendvai, J., M. Salto, and A. Thum-Thysen (2015). "Structural unemployment vs. NAWRU: implications for the assessment of the cyclical position and the fiscal stance." European Economy. Economic Papers 552.

Patterson, C., A. Şahin, G. Topa, and G. Violante (2016). "Working hard in the wrong place: A mismatch-based explanation to the UK productivity puzzle." *European Economic Review*, 84, pp. 42-56.

Riley, R., C. Rosazza-Bondibene, and G. Young (2015). "The UK productivity puzzle 2008-13: evidence from British businesses." Bank of England, Bank of England working papers 531.

Rua, A. (2017). "Dating of economic cycles in Portugal." *Economic Studies Magazine*, Vol III-1, Bank of Portugal.

Wagner, J. (2012). "International trade and firm performance: A survey of empirical studies since 2006." *Review of World Economics*, Vol. 148, No. 2, pp. 235-267.

World Economic Forum (2017). "The Global Competitiveness Report 2017-2018", Geneva: World Economic Forum, 09/2017

# LIST OF ABBREVIATIONS

| Abbreviations | Meaning |
|---|---|
| AMECO | annual macro-economic database of the European Commission |
| BANIF | Banco Internacional do Funchal |
| BES | Banco Espírito Santo |
| BFL | Budgetary Framework Law |
| BoP | Bank of Portugal |
| BPN | Banco Português de Negócios |
| CC | Constitutional Court |
| CFP | Portuguese Public Finance Council |
| CGA | Civil Servants Pension Agency |
| CGA | Civil Servants Pension Agency |
| CGD | Caixa Geral de Depósitos |
| CIT | Corporate Income Taz |
| CIT | Credit Institutions |
| CSI | social support for the elderly |
| DAS | debt sustainability analysis |
| DSM | Debt Sustainability Monitor |
| ECB | European Central Bank |
| EFAP | Economic and Financial Assistance Programme |
| EIB | European Investment Bank |
| EU | European Union |
| FI | Finance and Insurance |
| GDP | Gross Domestic Product |
| GG | General Government |
| IGCP | Portuguese Treasury and Debt Management Agency |
| IMF | International Monetary Fund |
| IN | Industry |
| IPSAS | International Public Sector Accounting Standards Council |
| LRA | Legal Retirement Age |
| M€ | Million euros |
| MF | Ministry of Finance |
| MTO | medium term objetive |
| MTSSS | Ministry of Labour, Solidarity and Social Security |
| NAWRU | Non-Accelerating Wage Rate of Unemployment |
| NHS | National Health Service |
| NIIP | Net International Investment Position |
| NPL | non-performing loans |
| NRCP | non-reclassified public corporations |
| OMFI | other monetary financial institutions |
| PIT | Personal Income Tax |
| POC-P | Public Accounts Official Plan |

| | |
|---|---|
| PPC | Purchasing Power Parities |
| PPP | Public-private partnerships |
| SA | Support services |
| SB | State Budget |
| SGP | Stability and Growth Pact |
| SNC-GG | General Government Accounting Standardisation System |
| SOE | State Owned Enterprises |
| SP | Stability Programme |
| SSI | Social Support Index |
| TR | Trade |
| VAT | Value-Added Tax |
| WEO | World Economic Forum |

# COUNTRY CODES

| Country | Code | Country | Code | Country | Code | Country | Code |
|---|---|---|---|---|---|---|---|
| Belgium | BE | Greece | EL | Lithuania | LT | Portugal | PT |
| Bulgaria | BG | Spain | ES | Luxembourg | LU | Romania | RO |
| Czech Republic | CZ | France | FR | Hungary | HU | Slovenia | SI |
| Denmark | DK | Croatia | HR | Malta | MT | Slovakia | SK |
| Germany | DE | Italy | IT | Netherlands | NL | Finland | FI |
| Estonia | EE | Cyprus | CY | Austria | AT | Sweden | SE |
| Ireland | IE | Latvia | LV | Poland | PL | United Kingdom | UK |

Conselho das Finanças Públicas
Praça de Alvalade, n.º 6 – 10.º, 1700-036 Lisbon, Portugal
TEL +351 211 024 400 | FAX +351 211 021 870
www.cfp.pt