



BANK ĊENTRALI TA' MALTA  
EUROSISTEMA  
CENTRAL BANK OF MALTA

# THE SUSTAINABILITY OF MALTESE GOVERNMENT DEBT

## BOX 4: THE SUSTAINABILITY OF MALTESE GOVERNMENT DEBT<sup>1</sup>

### Introduction

This Box assesses the sustainability of Maltese general government debt over different horizons. It updates previous debt sustainability analyses (DSA) published by the Bank.<sup>2</sup>

The term ‘sustainability’ as used throughout this study is in line with the IMF’s definition; sovereign debt is sustainable if the country is able to finance its policy objectives and service the resulting debt, without resorting to unduly large adjustments which could otherwise compromise its stability.

DSAs examine the sustainability of government debt in the short term (in terms of the ability to finance the government balance and maturing debt) and in the medium-to-long term (via risks stemming from contingent liabilities, the macro economy and financial linkages).<sup>3</sup>

### Scenario analyses

Scenario analyses offer a medium-term assessment of debt sustainability and form the basis of all conventional DSA exercises. This Box outlines the resulting debt paths from 2017 to 2027 under two different scenarios, which explore different fiscal policies the Government may pursue over this horizon.

This analysis applies scenario specific assumptions up to 2021. However, common assumptions determine the forecast path of selected variables across both scenarios from 2022. Firstly, real GDP growth from 2022 onwards is set according to the following formula:<sup>4</sup>

$$y_t = c_1 y_{t-1} + (1 - c_1) y_t^p + c_2 \Delta spb_t - c_3 og_{t-1}$$

where  $y_t$  represents the real GDP growth rate and is a function of potential output growth  $y_t^p$ , the change in the structural primary balance  $\Delta spb_t$  and the lagged output gap  $og_{t-1}$ . Parameters  $c_1$  and  $c_3$  ensure that real GDP growth eventually converges with potential output and hence the output gap is closed. Parameter  $c_2$  represents the short-term fiscal multiplier, i.e. the degree to which fiscal policy affects economic growth.

From 2022 onwards the path of inflation, which in this Box is measured by growth in the GDP deflator, is assumed to remain at just below two per cent, in line with the ECB’s target for inflation over the medium term, while the level of the DDA is assumed to revert to its long run average.

Forecasts for government debt exist for different types of maturity: short-term debt (that is, debt which matures within one year), long-term debt maturing in one year and non-maturing long-term debt. Maturing debt is assumed to be rolled over. The share of each category of debt is assumed to eventually return to its long-run average.

<sup>1</sup> Prepared by John Farrugia, a Principal Economist within the Economic Analysis Department of the Central Bank of Malta. The views expressed are those of the author and do not necessarily reflect the views of the Central Bank of Malta. Any errors are the author’s own.

<sup>2</sup> This study uses the national accounts and general government vintages up to the third quarter of 2018, published in December 2018 and January 2019, respectively. Therefore, this exercise makes use of an additional year of data compared with the assessment in the 2017 *Annual Report*.

<sup>3</sup> For further details on government debt dynamics and fiscal sustainability, see Farrugia, J. and Grech, O. “The Sustainability of Maltese Government Debt Revisited”, in Grech, A.G. and Zerafa, S. (eds.), *Challenges and Opportunities of Sustainable Economic Growth: the Case of Malta*, Central Bank of Malta, 2017.

<sup>4</sup> This formula is in line with the approach detailed in ECB Occasional Paper 185(2017).

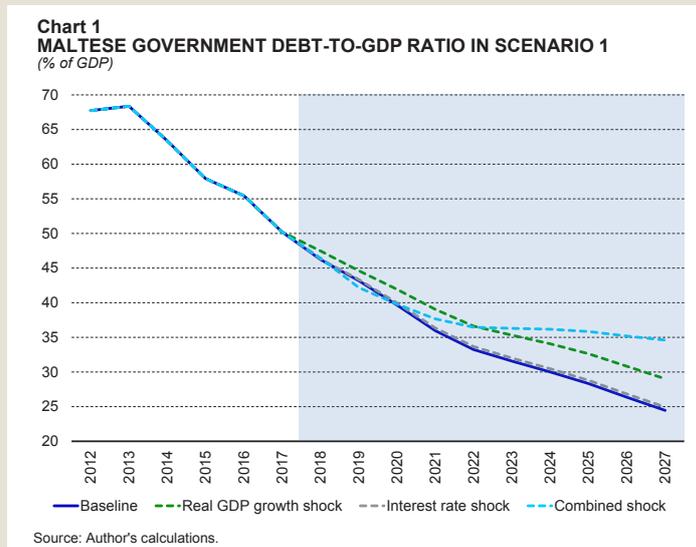
For each maturity category of debt, dedicated interest payment projections are based on separate interest rate forecast paths. Interest rates for short-term and debt maturing in one year are computed by applying a spread on euro area interest rate projections provided by the ECB.<sup>5</sup> Interest rates on non-maturing debt are based on the maturity profile of Malta Government Bonds outstanding at end September 2018.

No temporary fiscal measures are assumed to take place throughout the extended forecast horizon.

### Scenario 1 – assuming government fiscal targets are met

This scenario explores the outcome on the debt if Government adheres to its fiscal target – ensuring an annual surplus in structural terms, excluding inflows from the IIP. Forecasts for macro and fiscal items in the period 2018-2021 are in line with the Government’s latest projections, set out in the 2019 Budget and Draft Budgetary Plan. The primary balance path post 2021 is set such that, overall, the structural balance net of IIP receipts remains in surplus.<sup>6</sup> The forecast path for the main determinants of debt is shown in Table 1.

On the basis of these assumptions, the general government debt is expected to decline from 50.2% of GDP in 2017 to 24.5% by 2027 (see Chart 1,



**Table 1**  
**BASELINE SCENARIO ASSUMPTIONS: MAIN DETERMINANTS OF DEBT**

Per cent

	Baseline scenario 1		Baseline scenario 2	
	2018-2021 average	2022-2027 average	2018-2021 average	2022-2027 average
Real GDP growth rate	5.2	3.3	4.7	3.6
Inflation (GDP deflator growth rate)	1.9	1.9	2.1	1.9
Interest rate applied to				
Short-term debt	0.2	1.5	0.2	1.5
Long-term debt maturing within a year	1.4	1.9	1.4	1.9
Non-maturing long-term debt	3.9	3.9	3.9	3.9
DDAs (% of GDP)	0.9	0.5	0.9	0.5
Primary balance (% of GDP)	2.8	1.9	3.2	-0.3

Source: Author's calculations.

<sup>5</sup> The euro area interest rate projections were provided by the ECB as part of the common set of assumptions underlying the Eurosystem's December 2018 Eurosystem staff projections.

<sup>6</sup> IIP revenue is forecast separately and is assumed to decline gradually over time.

**Table 2**  
**NATURE OF SHOCKS APPLIED TO BASELINE SCENARIOS**

	Magnitude	Applied to	Nature	Impact
<b>Shock to real GDP</b>	1/2 of standard deviation of historic real GDP growth	Real GDP growth	Permanent (from 2018 onwards)	Denominator effect (debt level held constant but GDP declines)
<b>Shock to interest rate</b>	1/2 of standard deviation of interest rates on maturing debt	Interest rates on short-term and maturing debt	Permanent (from 2018 onwards)	Numerator effect (higher coupon payments but no offsetting fiscal consolidation)
<b>Combined shock</b>	1/4 of standard deviation of historic real GDP growth and interest rates on maturing debt	Real GDP growth and interest rates. Primary balance allowed to react to close output gap	Permanent (from 2018 onwards)	Numerator and denominator effects (worsening nominal balance and lower GDP)

baseline scenario). Since this scenario assumes that Government maintains its policy of fiscal consolidation, the debt ratio exhibits a clear downward trend throughout the forecast period.

The resulting baseline debt projections were also subjected to a series of shocks (see Table 2). Overall, the debt ratio is expected to remain on a downward trajectory, except in the case of the combined shock, where the debt-to-GDP ratio would stabilise for some years. The highest debt ratio results from the combined shock, when Government is assumed to loosen fiscal policy in response to slowing economic growth. However, as the scenario assumes that Government remains committed to a surplus in structural terms, the overall level of debt remains low, standing at 34.6% in 2027.

Owing to the low level of interest rates at the start of the forecast period, an interest rate shock is expected to exert a negligible impact on the debt. On the other hand, owing to the denominator effect, a pure shock to GDP growth would have a significant impact on the debt ratio, even if fiscal policy does not react to the slowdown in output.

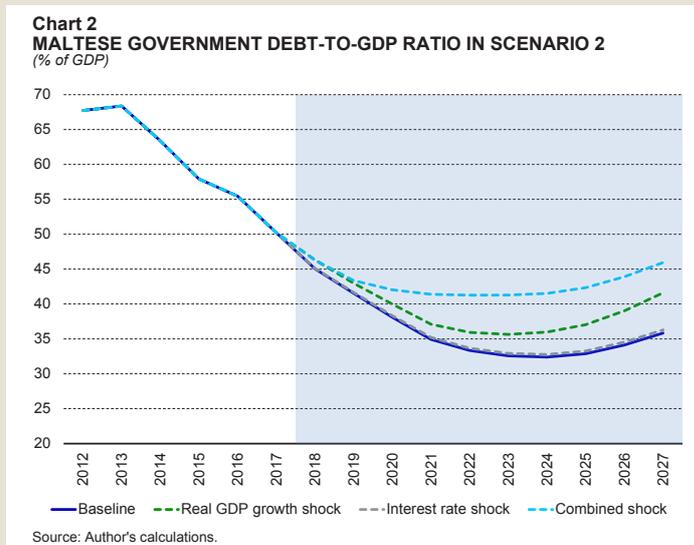
#### *Scenario 2 – assuming fiscal policy reacts to changes in indebtedness*

This scenario assumes that, following the improvement in public finances and decline in the debt ratio observed in recent years, Government relaxes its stance and adopts a looser fiscal policy after 2021. The degree with which the fiscal balance varies in response to changes in the debt ratio is governed by a fiscal reaction function.<sup>7</sup> Forecasts for macro and fiscal items in the period 2018-2021 are based on the Bank's latest forecasts, published in February 2019. Following this period, the primary balance is assumed to react to previous years' debt levels and the output gap according to the fiscal reaction function.

In the baseline scenario, the decline in the debt ratio is arrested and even reversed by the end of the forecast period. The resulting debt ratio is thus significantly higher compared with the forecast

<sup>7</sup> Fiscal reaction functions are based on the idea that fiscal policy is likely to react to changes in the debt ratio, with governments generally counteracting rising debt levels by improving the primary balance, and vice-versa. In this exercise, the function is estimated under an error-correction framework, in which the long run reaction of the primary balance to the debt ratio is also conditioned by short term changes in lagged public debt and the output gap. The regression results provide evidence of a positive and significant fiscal reaction to rising indebtedness.

outcome in baseline scenario 1. However, by 2027, the resulting debt ratio – at 35.8% – is still significantly below the 2017 starting point (see Chart 2). According to other scenarios as detailed in Table 2, shocks to real GDP growth and the combined shock exert the largest impact on the debt ratio profile. This is in line with the forecast shocks under scenario 1. However, the resulting debt ratios in this scenario are more elevated, reaching 45.9% of GDP in the combined shock scenario.



### Heat map of indicators

This section assesses a number of indicators which, according to the literature, are highly relevant for debt sustainability in the short and long term. For ease of analysis, the threat each indicator poses to the debt ratio is colour coded – red indicates a high threat, yellow indicates a medium threat and a green signals a low threat to sustainability. The heat map is presented in Table 3. Most of the thresholds used to grade these indicators are sourced from the EC's *Fiscal Sustainability Report* series.

Overall, the degree of risks from these indicators is limited, even when viewed from a historical perspective. The share of short-term debt in the total is low, averaging 6.5% between 2016 and 2017. Consequently, debt needs to be rolled over at less frequent intervals and thus refinancing risks are limited. Government also benefits from lower interest payments, resulting from 'locking in' a larger share of debt at the prevailing (low) coupon rates for a longer period of time.

As government debt is mainly held by Maltese residents, is issued in euro and largely issued at a fixed coupon rate, it is not vulnerable to sudden changes in investor appetite, exchange rate risks or interest rate risks. At the same time, the spread on Maltese ten-year bonds is not deemed to be excessively high and is hence regarded as safe by the market.

The heat map also includes a series of indicators on macro-financial risks and competitiveness risks. These indicators are also used by the Commission when determining whether the country suffers from excessive macroeconomic imbalances. If left unchecked, such imbalances can adversely affect the rate of economic growth and the health of the Maltese financial sector, thereby requiring some form of Government assistance.

From a macro-financial perspective, the main risks stem from the relatively high share of NPLs in the total loans extended by the core domestic banks. Nevertheless, it is encouraging to note that this share has been on a declining path since 2014. This partly reflects cyclical factors, but also measures by Maltese banks to reduce their expose to such risks.

Implicit liabilities, in the form of ageing costs (pensions, healthcare and long-term care), form another significant risk to sustainability. According to the Commission's latest *Ageing Report* projections, Malta is set to have the second highest increase in age-related spending in the European Union between 2016 and 2070. In this period, pension spending is expected to increase by 2.9 percentage points of GDP, while healthcare and long-term care costs are expected to rise by 2.7 points and 1.4 points, respectively, for a total increase in ageing costs of 6.8 points. This is 5.6 percentage points higher than the EU average. However, Malta's current spending on social security as a proportion of GDP is currently well below the EU average and is expected to remain so till at least 2040.<sup>8</sup>

Government-guaranteed debt in Malta has been relatively high over the past couple of decades. In 2017, it stood at 9.6% of GDP, above the average ratio of guaranteed debt amongst euro area countries. In addition, around half of this debt is concentrated in the energy sector.<sup>9</sup> However, the share of guaranteed debt has declined somewhat recently.

**Table 3**  
**HEAT MAP**

	2012	2013	2014	2015	2016	2017
<b>Structure of debt</b>						
Share of short-term debt	Green					
Change in share of short-term debt (y-o-y)	Green					
Share of foreign currency denominated debt	Green					
Share of debt with variable interest rate in GDP	Green					
Share of debt held by non-residents	Green					
<b>Liquidity risks</b>						
Gross financing needs (% of GDP) (High/Low risk)	Green					
Net financing needs (% of GDP)	Green					
10-year government bond spread over AAA rated EA spot rates	Green					
<b>Macro-financial risks</b>						
Private sector debt (% of GDP)	Green					
Private credit flow (% of GDP)	Green					
Net international investment position (% of GDP)	Green					
Share of NPLs to gross loans: core banks	Red					
Change in share of NPLs (core banks) (y-o-y)	Green					
Bank loans-to-deposits ratio (core banks)	Green					
Change in nominal house prices (y-o-y)	Green					
<b>Competitiveness risks (High/Low risk)</b>						
ULCs (% change over 3 years)	Green					
Real EER (% change over 3 years)	Green					
Current account balance (3-year average as % of GDP)	Green					
Export market shares (% change over 5 years)	Green					
<b>Implicit/contingent risks</b>						
Commission Ageing Report: 2016-2070 ageing costs (pp of GDP)	Red					
General government guarantees (% of GDP)	Red					

Source: Author's calculations.

<sup>8</sup> In Malta, spending on social benefits excluding those in kind amounted to 9.5% of GDP in 2017, whereas the figure for the EU average stood at 15.8%.

<sup>9</sup> See National Audit Office Malta (2018). "Annual Audit Report: Public Accounts 2017" for further details.

**Conclusion: Is government debt sustainable?**

According to the scenario analysis, the government debt-to-GDP ratio is expected to remain low in the medium term. It would embark on an upward path if Government adopts a looser fiscal policy compared with the current targets, especially if this takes place in a period of slower economic growth. Nevertheless, if this is the case, the trajectory of the debt path is not deemed explosive – that is, it does not increase at a sudden and extraordinary pace.

According to the heat map of additional indicators, government debt is considered low risk from a liquidity perspective, with risks arising from the high level of implicit and contingent liabilities, as well as the level of NPLs of credit institutions, though these risks have diminished somewhat in recent years.

Overall, the updated DSA shows that Maltese government debt is sustainable according to the definition set out at the start of this Box. However, a more positive assessment can be achieved if Government reduces its level of guarantees and carries out periodic reviews of the pension system to balance adequacy needs with sustainability considerations. The authorities should remain vigilant and act decisively if any additional competitiveness and macro-financial risks arise. At the same time, Government should adhere to its commitment towards fiscal discipline, particularly during economic upturns, as this enables the creation of sufficient fiscal space that would allow room for fiscal manoeuvre to counter potential adverse shocks in the future.