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Post-COVID fiscal rules: a central bank perspective

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Abstract

Regarding a prospective reform of the European Stability and Growth Pact (SGP) it seems rather consensual that a simplified framework should take account of the prevailing macroeconomic context and enhance the balancing of sustainability and stabilisation considerations. This paper provides simulation analysis for the euro area and individual countries with a view to assessing the short- and longer-term budgetary and macroeconomic implications of a move to a two-tier system with an expenditure growth rule as single operational indicator linked to a debt anchor. Compared to the status quo, our analysis suggests that expenditure growth targets which take account of the ECB's symmetric 2% inflation target can improve the cyclical properties of the framework. In particular, providing additional fiscal accommodation in a low inflation environment would enable monetary policy to operate more effectively, especially in the vicinity of the effective lower bound, thereby improving the synchronisation of fiscal and monetary policies. The link to a longer-term debt anchor at the same time ensures a transition towards the Treaty's debt reference level.

Keywords: European fiscal rules, monetary and fiscal policy interactions, debt sustainability

JEL Classification: E63, H50, H60

Non-technical summary

European fiscal rules were designed some thirty years ago with the primary aim to ensure sustainable public finances in the Economic and Monetary Union (EMU) and to avoid that fiscal profligacy in individual countries spills over in the form of higher inflation and interest rates. The fear was that such externalities would interfere with the European Central Bank's (ECB) primary objective to ensure price stability. Since the signing of the Maastricht Treaty in 1992 the economic landscape has changed dramatically: Longer-term economic trends, including globalisation and demographics, have resulted in a secular decline in interest rates and lower inflation. These dis-inflationary trends were reinforced by a series of major recessions, first in 2009 and 2012 in the context of the Great Financial Crisis (GFC) and recently related to the COVID-19 pandemic.

During episodes when the monetary policy maker is constrained by the ELB the interplay between fiscal and monetary policies becomes particularly important since a mutual reinforcement of the two can ensure a swifter achievement of macroeconomic stabilisation objectives (Report of the work stream on monetary-fiscal policy interactions, 2021). In this context, it is frequently argued that an overhaul of the European fiscal rules is necessary to achieve a better trade-off between output and debt stabilization (Blanchard et al., 2021).

In autumn 2021 the European Commission relaunched its economic governance review with the stated aim to reflect on the implications of the prevailing economic conditions for debt sustainability risks and the rules of the Stability and Growth Pact (SGP) and to build a consensus on the way forward well in time for 2023. A fairly broad consensus seems to have emerged on a revised SGP to be less complex and build on a debt anchor and an expenditure rule as single operational indicator to guide Member States‘ fiscal policies (see e.g. Alloza et al. (2021)).

Against this background, this paper provides simulation analysis to assess a move to a two-tier system building on an expenditure growth rule linked to a debt anchor. As an innovation to the SGP reform discussion, an inflation-adjusted expenditure growth-rule is shown to achieve an automatic counter-cyclical modulation of adjustment requirements, i.e. fiscal space is created when inflation (as measured by the growth rate of the GDP deflator)

is low while the rule becomes more constraining when inflation is above target. From a monetary policy perspective, such a synchronisation of fiscal and monetary policy could be desirable, especially in episodes when the central bank is operating close to the effective lower bound. For the euro area on average, under the baseline path for inflation based on the latest European Commission forecast, this would reduce adjustment requirements compared to the case of a non-adjusted rule and support the synchronisation of fiscal and monetary policies. Including interest spending under the rule to capture the low inflation and interest environment has less direct and quantitatively more limited effects compared to the inflation adjustment given the sluggish feed-through of market rates to sovereign implicit interest rates.

The simulations also suggest that moving to the above described two-tier fiscal framework for most countries, notably those with relatively low debt ratios, would create fiscal space which could be used for additional public investment in support of the green and digital agenda. Countries with relatively high debt ratios on the other hand would need to implement more restrictive fiscal policies compared to the existing framework to ensure a moderate convergence towards the debt reference value. Explicit investment protection via a netting-out of (parts) of nationally financed investment could provide additional budgetary room for manoeuvre but would come at the cost of adverse debt dynamics.

1 Introduction

European fiscal rules were designed some thirty years ago with the primary aim to ensure sustainable public finances in the Economic and Monetary Union (EMU) and to avoid that fiscal profligacy in individual countries spills over in the form of higher inflation and interests rates. The fear was that such externalities would interfere with the European Central Bank's (ECB) primary objective to ensure price stability. When the Maastricht Treaty was signed in 1992, consumer price inflation in the European Union countries had averaged around more than 5% over the preceding decade while long-term interest rates were just below 10%. Debt on average stood at some 68% of GDP. Since then the economic landscape has changed dramatically. Longer-term economic trends, including globalisation and demographics, have resulted in a secular decline in interest rates and lower inflation. These dis-inflationary trends were reinforced by a series of major recessions, first in 2009 and 2012 in the context of the Great Financial Crisis (GFC) and recently related to the COVID-19 pandemic. Substantial fiscal stabilisation measures to counter the macroeconomic downturn and the recession itself have resulted in an increase in debt to 100% of GDP in the euro area, in some countries well beyond. At the same time, 10yr government bond rates lie around zero on average while current inflation projections see inflation below the ECB's 2% target in the medium-term.

These developments have important implications for macroeconomic policy frameworks (Bartsch et al., 2020; Blanchard and Summers, 2019). As a result of its strategy review, the ECB has revised its monetary policy framework in July 2021, notably to account for the effective lower bound (ELB) as an occasionally binding constraint when reacting to dis-inflationary shocks with standard interest rate policies. Non-standard measures such as asset purchases have therefore become part of the central bank's standard toolkit while also committing to an "especially forceful or persistent monetary policy action when the economy is close to the effective lower bound".[1] It is also argued that fiscal policies should play a more important stabilisation role in a low interest environment (Blanchard, 2019; Coenen et al., 2020), also in view of its increased effectiveness in such circumstances (Christiano et al., 2011). The Report of the work stream on monetary-fiscal policy interactions (2021)

[1] See the ECB's monetary policy strategy statement published on 8 July 2021.

discusses the interplay between both policies with a particular focus on episodes when the monetary policy authority is operating close to the ELB. Simulation analysis in the report suggests that a proper synchronisation can support a swifter achievement of macroeconomic stabilisation objectives. Using a simple DSGE framework, Hauptmeier et al. (2022) show that fiscal policy rules that account for both output and inflation gaps improve welfare by reducing the frequency of lower bound episodes and therefore the related distortions. In this context, it is argued that an overhaul of the European fiscal rules is necessary to achieve a better trade-off between output and debt stabilization (see, e.g., Blanchard et al. (2021)).

In early 2020 the European Commission launched its economic governance review with the stated aim to carefully reflect on the implications of the prevailing economic conditions for debt sustainability risks and the rules of the Stability and Growth Pact (SGP).[2] While the review had been put on hold because of the COVID-19 crisis which also led to the triggering of the SGP's general escape clause (GEC), the European Commission relaunched the discussion on the governance review in autumn 2021 with the aim to build a consensus on the way forward well in time for 2023. By now, several options for reform have been put forward by academics and policy institutions (Bénassy-Quéré et al., 2018; European Fiscal Board, 2020b; Martin et al., 2021). It appears that a broad consensus has emerged that a revised SGP should be less complex and build on a debt anchor linked to an expenditure rule as operational indicator to guide Member States' fiscal policies (see also Alloza et al. (2021)). It has been argued, for example by the EFB, that such a reformed fiscal framework should ideally be in place when the GEC is deactivated in 2023 as currently intended by the European Commission. A particular focus of a prospective SGP reform will also lie on the question of how rising investment needs related to the green and digital transformation can be reflected in the European fiscal framework. Golden rule frameworks which constrain current but not investment spending are not without problems given possible incentives for governments to reclassify spending in order to circumvent the rule (European Fiscal Board, 2019).

Against this background this paper provides stylised simulation analysis to assess the longer-term budgetary and macroeconomic implications of a return to country-specific fiscal surveil-

[2]See the European Commission's communication triggering the economic governance review from 05 February 2020.

lance under the SGP framework both at the national and the euro area aggregate level. The simulations factor in dynamic fiscal multiplier effects based on the so-called Basic Model Elasticities (BMEs), a tool developed within the Eurosystem.[3] A range of parametric reform options are evaluated against the current status quo in order to gauge the scope for enhancing the stabilisation properties of the SGP framework while at the same time ensuring sustainable public finances in EMU. A particular emphasis of this analysis lies on options to ensure a better synchronisation of fiscal and monetary policies via an adjustment of the fiscal surveillance indicators for prevailing macroeconomic conditions. Along the lines of Hauptmeier and Kamps (2020) the analysis accounts for deviations of inflation from the central bank's 2% target. The treatment of interest spending under the fiscal rules constitutes an additional aspect of interaction with monetary policy which is analysed. Finally, the simulations evaluate the implications of (net) investment protection.

As a benchmark, we first analyse the budgetary and macroeconomic effects of a return to an implementation of the SGP framework as observed prior to the COVID-19 crisis (both for individual countries and the EA aggregate). Concretely, we assume that countries with deficits above 3% of GDP implement a structural adjustment in line with the average observed under historical EDP procedures. In case of a deficit ratio below 3% broad compliance with the requirements of the preventive arm of the SGP is deemed sufficient. These benchmark simulations are compared with a system in which an expenditure growth target (calibrated on the basis of the SGP's expenditure benchmark indicator) is linked to a debt anchor. Here we simulate different speeds of debt adjustment where we treat the SGP's current "1/20th rule" (i.e. annual reduction of debt by 5% of the distance to the 60% debt reference value) as the upper bound. The simulations suggest that for countries with high debt ratios and relatively less favourable interest-growth differentials the current parametrisation of the SGP debt rule would imply substantial adjustment requirements which appear difficult to achieve in practice. Moving to a lower debt adjustment of 3% helps to somewhat alleviate the adjustment burden while ensuring transition towards the reference value. Nevertheless, the implied consolidation effort over the coming years, notably 2023 and 2024, remains significant in an economic recovery environment in which inflation is still expected to remain below target.

[3] General equilibrium effects are not captured in the simulation analysis.

We therefore go on to analyse the impact of applying an inflation-adjusted expenditure growth-rule linked to the debt anchor. By adjusting the applicable expenditure growth rates for inflation above and below the ECB's 2% target such a rule achieves an automatic counter-cyclical modulation of adjustment requirements, i.e. fiscal space is created when inflation (as measured by the growth rate of the GDP deflator[4]) is low while the rule becomes more constraining in times of above target inflation (see also Claeys et al. (2016)). From a monetary policy perspective, such an automatic synchronisation of fiscal and monetary policy could be desirable, especially in episodes when the central bank is operating close to the effective lower bound. For the euro area on average, this would reduce adjustment requirements in the coming years, given that the European Commission Autumn 2021 forecast projects inflation below the ECB's inflation target as of 2023. We also assess the stabilisation properties of the inflation-adjustment in the presence of persistent inflation shocks around our baseline assumption. These scenarios highlight the automatic stabilisation properties of the rule which removes the pro-cyclicality embedded in the current SGP framework. While the rule in principle would operate symmetrically for countries with above and below target inflation, it could be useful to allow for temporary overshooting in the aftermath of lower bound periods, in line with the new ECB monetary policy strategy. As an alternative to the inflation-adjustment, an interest spending adjustment to the expenditure rule - as suggested by Villeroy de Galhau (2021) - is simulated to internalise changes in interest spending. However, such an adjustment has less direct and smaller effects compared to the inflation adjustment given the sluggish feed-through of market rates to sovereign implicit interest rates. The simulations also suggest that moving to the above described two-tier fiscal framework for most countries, notably those with relatively low debt ratios, would create fiscal space which could be used for additional public investment. Supportive fiscal policies could therefore strengthen the post-Pandemic recovery. Countries with relatively high debt ratios however would need to turn to a somewhat restrictive fiscal stance as of 2023 to ensure a moderate convergence towards the debt reference value. Still, the compound fiscal stance when also factoring in increases in national spending financed by RRF-grants would remain supportive in 2023 and 2024 in these cases. Explicit investment protection via a netting

[4]The GDP deflator constitutes a broad indicator of underlying domestic price developments (including in the public sector) and is typically less volatile than the HICP, given that, for example, it is less affected by import price developments. Recently, this latter aspect has become important in a context of volatile commodity prices.

out of (parts) of nationally financed investment could provide additional budgetary room for manoeuvre but would come at the cost of adverse debt dynamics.

The paper proceeds as follows. Section 2 provides conceptual considerations regarding different SGP reform options. Section 3 then describes the simulation methodology, the underlying data and assumptions. The baseline results are provided in section 3.2 before moving to the implications of alternative scenarios for inflation in section 3.3. The question of how investment needs can be captured under a revised SGP framework is then discussed and analysed in section 4. Conclusions are drawn in Section 5.

2 SGP reform: conceptual considerations

The Stability Growth Pact (SGP) has frequently been criticised for its complexity and incoherence of the different fiscal rules, generating a fairly broad consensus on the need for reform (Kamps and Leiner-Killinger, 2019). Moreover, reliance on unobservable output gaps when defining Member States' fiscal adjustment requirements in real-time makes the framework prone to pro-cyclicality (Hauptmeier and Leiner-Killinger, 2020). Streamlining the SGP framework to a system based on a single operational indicator, notably an expenditure rule linked to a debt anchor, is therefore widely seen as a promising avenue for reform. In principle both features are already contained in the present rules.

The so-called expenditure benchmark (EB) has been introduced in the preventive arm of the SGP in the context of the 2011 reform. The basic idea of this indicator is to compare the growth rate of government expenditure with a benchmark rate of medium-term potential GDP growth. Several non-discretionary factors are netted out in order to derive the so-called modified expenditure aggregate (MEA):

$$MEA_t = TE_t - INT_t - CUNB_t - (INV_t - \frac{1}{4}\sum_{i=-3}^{1} INV_{t+i}) - EUT_t - OO_t$$

where TE_t denotes total government expenditure in bn. euros, INT_t interest payments, EUT_t revenues from the EU budget, $CUNB_t$ cyclical unemployment expenditure, OO_t one-off measures and INV_t government investment (which is smoothed over four years to take account of the volatility of this spending item). The growth rate of the modified expenditure

aggregate net of discretionary revenue measures (DRM_t)

$$g_t = \Delta MEA_t - \frac{DRM_t}{MEA_{t-1}}$$

is then compared to the 10-year geometric average potential GDP growth rate ($\overline{y}_t^{p10}$), taking into account growth rates from $t-5$ to $t+4$. The average potential growth rate is inflated using the GDP deflator at time t (y_t^{def}). The fiscal stance as a ratio to GDP as measured by the expenditure benchmark indicator then reads:

$$EBstance_t \approx \left[(\overline{y}_t^{p10} - g_t^r) + (y_t^{def} - g_t^{nc})\right] \frac{mea_{t-1}}{1 + y_t^n} \tag{1}$$

where mea_{t-1} labels the main expenditure aggregate as a ratio to GDP and y_t^n the growth rate of nominal GDP.[5] Note that the expenditure benchmark effectively sets a real spending growth target g_t^r which is transformed into a nominal growth ceiling by applying the GDP deflator in the same year (medium-term reference rate). This can be seen from the second term in square brackets which cancels out given that the nominal component of the spending rule $g_t^{nc} = y_t^{def}$. Compared to the structural balance - the standard indicator used to assess the fiscal effort under the SGP framework - the expenditure benchmark has a number of advantages (Mohl and Mourre, 2020). First, it does not rely on a real-time estimate of the output gap but rather on a ten-year average nominal potential growth rate which is less prone to ex-post revisions and therefore reduces volatility. Second, revenue developments - except for discretionary tax changes - are disregarded which avoids the pro-cyclicality of the structural balance related to the occurrence of revenue windfalls and shortfalls. Finally, expenditures are under the direct control of the government which facilitates implementation. Therefore, many reform proposals, including European Fiscal Board (2020a), advocate the expenditure benchmark as the single operational indicator in the SGP framework. At the same time, the expenditure benchmark relies on an assessment of the impact of discretionary revenue measures which also introduces estimation uncertainty, also in view of the lack of a commonly agreed method.

Two features of the EB imply an interaction with monetary policy. First, the GDP deflator growth rate y_t^{def} is used to transform the benchmark rate into a nominal growth rate against which government spending developments are assessed. This implies that in times of lower

[5] Note that for ease of exposition equation 1 omits two cross products which are of minor quantitative relevance.

inflation the fiscal rule requires lower spending growth and vice versa, implying a pro-cyclical response to nominal shocks. Hauptmeier and Kamps (2020), in the context of the SGP debt rule, argue in favor of gearing the fiscal policy to the ECB's 2% target, which can be achieved by correcting for deviations of actual inflation from the target. This serves the purpose of an enhanced counter-cyclical modulation of adjustment requirements which would also help to better align fiscal policies in euro area Member States with the ECB's monetary policy objective to achieve price stability. Conceptually, it is straightforward to adjust the EB indicator accordingly, namely by setting $g_t^{nc} = 2\%$ in equation 1. This would imply that in times of below-target inflation spending growth could be higher than under the current rules and vice versa. It is important to stress that the inflation-adjustment of the expenditure rule is based on the growth rate of the GDP deflator rather than HICP inflation. The GDP deflator constitutes a broad indicator of underlying domestic price developments (including in the public sector) and is typically less volatile, given that, for example, it is less affected by import price developments. Recently, this latter aspect has become important in a context of volatile commodity prices. Such stability is a desirable feature for a fiscal policy rule while still, over longer periods, the HICP and the GDP deflator show similar average inflation.

Second, interest spending - which in the current fiscal framework is entailed only in the structural balance but not in the expenditure benchmark - could be included in the MEA as an alternative approach to internalise the prevailing interest rate environment as suggested by Villeroy de Galhau (2021). The argument would be that to the extent that changes in debt servicing costs reflect adjustments in the monetary policy stance it could be desirable to adjust the budgetary space under the rules accordingly, i.e. increased fiscal space when monetary policy loosens and vice versa. Given the sluggish feed-through of changes in the monetary policy stance to sovereign interest burdens such adjustment could turn out to be ill-timed. The inclusion of interest payments into the MEA would imply that changes in this spending item would need to be compensated for by adjusting other spending categories. In the case of declining interest spending this would free up budgetary room to increase the growth rate of other spending items. An increase in the interest burden would however require lower spending elsewhere.

The 60% of GDP debt reference value constitutes the debt anchor of the SGP framework. The so-called debt reduction benchmark governs the speed of adjustment towards this an-

chor. Conceptually, debt needs to evolve according to

$$d_t^* = (1-\alpha)(d_{t-1} - \hat{d}) + \hat{d} \tag{2}$$

where d_t^* denotes the intermediate gross government debt target ratio at time t, α the speed of adjustment (5% under the current framework) and $\hat{d}$ the debt anchor, i.e. 60% of GDP. Plugged into a standard debt motion equation one arrives at the condition

$$\alpha(d_{t-1} - \hat{d}) = pb_t - \frac{i_t - y_t^n}{1 + y_t^n} d_{t-1} \tag{3}$$

where pb_t labels the primary balance ratio in year t, i_t the (nominal) implicit interest rate on debt and y_t^n the nominal GDP growth rate. In a next step we can rearrange equation 3 in order to calibrate the expenditure aggregate of the EB in line with the debt adjustment requirement α. In our stylised setting the expenditure growth target fiscal adjustment is defined ex-ante (i.e. in $t-1$) based on projected outcomes for the underlying fiscal and macroeconomic variables at time t:

$$g_t^* = \Big[d_{t-1} \big(\frac{i_t - y_t^n}{1 + y_t^n} \big) - \alpha(d_{t-1} - \hat{d}) + nrev_t \Big] \frac{1 + y_t^n}{mea_{t-1}} - 1 \tag{4}$$

where g_t^* denotes the targeted growth rate in the main expenditure aggregate and $nrev_t$ the net revenue ratio (revenue net of cyclical unemployment spending which is excluded from the MEA and ageing costs). An adjustment for the 2% inflation target along the lines of Hauptmeier and Kamps (2020) can now be achieved simply by adjusting g_t^* for the inflation gap:

$$g_t^{*infadj} = g_t^* + (0.02 - y_t^{def}) \tag{5}$$

This modification ensures an automatic counter-cyclicality of the expenditure stance. Concretely, the expenditure stance loosens when inflation grows below the target (and vice versa). The inflation-adjusted rule would have a tendency to gear all countries individually to the ECB's symmetric inflation target, implying a compression of inflation differentials to the extent that adjustments in the fiscal policy stance cause price effects via the demand side. In times of generally low inflation such compression in inflation differentials could help to avoid regional deflation as the ECB targets euro area-wide inflation. To cater to all European Union countries, the adjustment could be expressed as allowing for the central

bank inflation target (which can vary between EA and other member countries) rather than 2 percent for all members.

What has been described in this section is a framework that combines existing features of the Stability and Growth Pact, notably linking the expenditure benchmark of the preventive arm of the SGP with the debt reduction benchmark. Such a two-tier system would be significantly less complex than the current system of rules combining mutually inconsistent targets on various indicators. A number of re-calibrations have been discussed with a view to strengthen counter-cyclicality and achieving a better synchronsation of fiscal and monetary policy. It has also been argued, e.g. by European Fiscal Board (2020b) and Hauptmeier and Kamps (2020), that the current speed of debt adjustment required by the SGP's 1/20 rule appears overly demanding for high debt countries. The following simulation analysis will therefore also look at the implications of setting α to lower levels.

3 Simulation analysis

In order to quantitatively assess the macroeconomic and budgetary implications of moving to a two-tier system of fiscal rules as described in Section 2, i.e. an expenditure growth rule linked to a debt anchor, this section presents simulation analysis for selected euro area countries and the euro area aggregate. In line with the European Commission's latest Debt Sustainability Monitor (European Commission, 2021) we cover the period up to 2031. Our analysis assumes a return to country-specific surveillance under the SGP framework as of 2023 which corresponds to the expected deactivation of the GEC in 2023. The current status quo of SGP rules will serve as a benchmark to evaluate the implications of different parametrisations of a simplified two-tier system.

3.1 Methodology and data

As a starting point of our simulation analysis we compute multi-annual debt targets over N periods according to

$$d^*_{0+N} = (1-\alpha)^N (d_0 - \hat{d}) + \hat{d} \tag{6}$$

where d_0 labels the starting debt ratio and d_{0+N} the intermediate debt target at the end of the simulation horizon. We set the debt anchor $\hat{d} = 60\%$ of GDP in line with the Treaty's debt reference level but simulate different speeds of debt adjustment. The current SGP debt benchmark envisages $\alpha = 0.05$ as the speed of debt adjustment which we treat as the upper bound. In addition our simulations capture lower speeds of $\alpha = 0.03$ and $\alpha = 0.01$, respectively. Since we cover the period from 2023 to 2031, $N = 9$. Note that the SGP's debt rule envisages an averaging over three years. Our approach therefore implies a longer-term smoothing of adjustment requirements.

In a next step, we can compute the constant growth rate g^* which if implemented as of 2023 ensures that the intermediate debt target is met at the end of the simulation horizon, i.e. in 2031. This is done by solving the following equation:

$$d_0 * \prod_{t=0}^{N}(1+\psi_t) - d_{0+N} - \Gamma\Big(nrev_t - \frac{(1+g^*)^j}{1+y_t^n} mea_{t-1}\Big) = 0 \tag{7}$$

where $\psi_t = \frac{i_t - y_t^n}{1+y_t^n}$ and $\Gamma = \sum_{t=0}^{N}\Big[\prod_{j=t+1}^{N}(1+\psi_t)\Big]$.

As regards data sources, the simulations build on the latest European Commission's Macroeconomic database AMECO (Autumn 2021 Economic Forecast). As of 2024, fiscal and macroeconomic assumptions are in line with the European Commission's 2020 Debt Sustainability Monitor (DSM). The latest T+10 assumptions for potential GDP growth rates are taken from the Output Gaps Working Group of the Economic Policy Committee.

In line with the European Commission's baseline assumptions, underlying for example the debt sustainability analysis presented most recently in the 2020 DSM, we assume that output gaps gradually close within three years after the end of the projection horizon of the European Commission forecast, i.e. between 2024 and 2026. The closure of the output gap happens via adjustments to real GDP growth rates which otherwise equal potential growth. The cyclical component of the budget balances - incl. cyclical unemployment benefits - closes in line with the output gap within three years. The growth rate of the GDP deflator is assumed to gradually converge towards 2% within 7 years, also in line with the latest DSM. Interest payments are computed applying assumed implicit interest rates again taken from the DSM 2020.[6] Net ageing costs assumptions are incorporated based on

[6]See tables A.2 - A.4 in the appendix for an overview of the main macroeconomic assumptions underlying

the European Commission's 2021 Ageing Report. Stock flow adjustments and discretionary revenue measures are assumed to be zero as of 2024.

Debt ratios are then simulated to 2031 based on the above mentioned assumptions and the time-constant expenditure growth target g^*. The macroeconomic impact of fiscal adjustments required by the fiscal rules is incorporated on the basis of dynamic fiscal multipliers based on the so-called Basic Model Elasticities (BMEs). The BMEs are a tool developed within the Eurosystem and based on the forecasting models in use in the national central banks to assess the impact of changes in assumptions (including fiscal assumptions) on macroeconomic variables. While being used frequently for policy analysis, it is important to highlight that the BME elasticities with respect to fiscal shocks are obtained under the assumption of fixed central bank interest rates and government bond yields and do not reflect general equilibrium effects. At the same time Bankowski et al. (2021) show that the fiscal multipliers for the euro area obtained from the BMEs are broadly consistent with those embedded in a larger scale semi-structural macroeconomic model for the euro area.[7]

We use fiscal multipliers for real GDP growth and GDP deflator inflation based on averages for all Euro Area Member States. The elasticties are estimated up to 4 years, thereby enabling us to simulate dynamic effects of fiscal adjustments on real GDP growth and the GDP deflator. Based on the BMEs we can simulate shocks to five fiscal variables: direct taxes and social security contributions, indirect taxes, transfers, government consumption and government investment. To mimic a generic fiscal shock, whereby 50% of the shock comes from the revenue and 50% from the expenditure side, we weigh those five shocks according to their average shares in total expenditures and revenues for the period 2013 - 2019. The cumulative impact over 4 years on real GDP growth from such a shock is around 0.74p.p. (for a 1p.p. expansionary fiscal shock) and 0.24p.p. on GDP deflator inflation.[8] In line with the baseline assumption of output gap closure, any fiscal adjustment induced deviation of the output gap from its baseline path is offset within 3 years by adjusting real GDP growth.

our simulation analysis.

[7]The BMEs are discussed in more detail in European Central Bank (2016)

[8]For details, see figures A.1 and A.2 in the annex.

3.2 Results

3.2.1 Speed of debt adjustment- baseline simulations

Our analysis starts with a comparison of different speeds of debt adjustment under a two-tier framework with the current status quo of SGP rules, serving as a benchmark. In particular, as mentioned in section 3.1, we analyse three different parametrisations for the debt rule, i.e. $\alpha = 0.05/0.03/0.01$. For the year 2023, for which the baseline includes fiscal projections from the latest European Commission forecast, we deviate from the implied spending growth target of our debt adjustment rule if the baseline shows a larger fiscal effort. This implies that if for 2023 $g_{2023} < g^*$, g_{2023} is kept and equation 7 is applied as of 2024 by taking into account the fiscal adjustment in 2023. In cases where $g_{2023} \geq g^*$, g^* is taken as of 2023. Note that in the cases of Belgium and Portugal $g_{2023} \geq g^*$ for $\alpha = 0.05$ and $\alpha = 0.03$. For $\alpha = 0.01$ this only holds for Belgium. The low projected spending growth rates for 2023 also reflect the reversal of emergency measures introduced during the COVID-19 pandemic.

The fiscal adjustment under the current framework is estimated as follows: First, in a year in which the deficit ratio lies above 3% of GDP, countries are assumed to be subject to an excessive deficit procedure (EDP) and therefore implement an adjustment in line with the historically observed adjustment under previous EDP's (i.e. an annual improvement in the structural balance of 0.35p.p. of GDP). Second, when the deficit ratio is below 3% of GDP countries are assumed to be subject to the preventive arm of the SGP. Adjustment requirements are therefore modulated according to the matrix of adjustment requirements[9], depending both on the level of debt as a ratio to GDP and the cyclical conditions (as measured by the size and sign of the output gap and real GDP growth).[10]

Table 1 provides an overview of our baseline simulation results for euro area countries and the euro area aggregate. Column (1) shows the starting debt ratio in 2022 which for the euro area lies at almost 98% of GDP with significant cross-country heterogeneity. The same holds true for primary balance ratios in 2022 which range from slightly above zero to deficits

[9] See SGP Code of Conduct (p. 56).

[10] We assume that broad compliance with these requirements is sufficient, i.e. a 0.25p.p. of GDP deviation margin is subtracted, since in practice a more limited adjustment is sufficient to avoid procedural steps under the significant deviation procedure (SDP).

of 4.7% of GDP. Interest-growth differentials - as measured by the difference between the implicit interest on government debt and nominal GDP growth - are projected to remain favourable throughout the projection horizon (column (3) shows averages over 2023/31). As highlighted in equation 3, these three parameters together with the speed of debt adjustment α essentially determine the size of the adjustment, notably the expenditure growth target. As mentioned above, we assume fiscal adjustment to start in 2023 and compare different adjustment speeds α (to be achieved on average over the period up to 2031) to the estimated fiscal consolidation under the current SGP rules. Columns (4)-(6) show the fiscal adjustment as implied by equation 1 and the simulated debt ratio at the end of the simulation horizon, i.e. in 2031. Note that $\alpha = 0.05$ constitutes the adjustment speed under the current debt rule of the SGP, implying achievement of the debt reference level of 60% of GDP within twenty years. Fiscal multiplier effects of the assumed annual fiscal adjustment are factored in the debt simulations as explained in section 3.1. As can be seen from column (5), the euro area average annual fiscal adjustment needed to ensure a debt adjustment in line with $\alpha = 0.05$ amounts to 0.5p.p. of GDP over 2023/31 and 0.7p.p. over 2023/24. As expected, particularly tight expenditure stances are required in countries with high debt ratios, sizable primary deficits to start with and less favourable interest-growth differentials. To comply with the intermediate debt target Italy, for example, would require 1.2p.p. of annual adjustment throughout the simulation horizon. Relatively high adjustment needs are also observed for other high debt countries.

Gradually reducing the speed of debt adjustment lowers the annual consolidation requirements while at the same time limiting the reduction in government debt. For the euro area $\alpha = 0.03$ would imply the need to tighten by around 0.3p.p. of GDP per year until 2031.[11] Still for some of the countries with less favourable starting positions, the adjustment would need to be significant and persistent. Moving to $\alpha = 0.01$ would on the other hand not imply a significant reduction of debt ratios compared to their starting positions in 2022. As can be seen from columns (13)-(15) the historical SGP scenario envisages an adjustment of 0.4p.p. over the 2023-31 period, similar to the debt rule with adjustments of $\alpha = 0.03$. [12] Note

[11]Note that deviations between short-term and long-term fiscal adjustments mainly reflect the adjustments for 2023, which in many countries lie above the required adjustments under the different rules.

[12]The expenditure growth rate for the SGP scenario is calculated such that the change in the structural balance matches the requirements under the current SGP as described in 3.2.1

that in line with the observed implementation in recent years, the adjustment requirements under the SGP scenario hardly differentiate among countries, i.e. countries with relatively high debt ratios do not need to consolidate more than ones with relatively low levels.

Table 1: Overview of debt adjustment

	d_0	$pb^{1)}$		$\overline{i-y}^{2)}$	d_{2031}	$\overline{adj}_{2023/24}$	$\overline{adj}_{2023/31}$	d_{2031}	$\overline{adj}_{2023/24}$	$\overline{adj}_{2023/31}$	d_{2031}	$\overline{adj}_{2023/24}$	$\overline{adj}_{2023/31}$	d_{2031}	$\overline{adj}_{2023/24}$	$\overline{adj}_{2023/31}$
% of GDP	2022	2022	2023	2023/31		$\alpha = 0.05$			$\alpha = 0.03$			$\alpha = 0.01$			historical SGP	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
BE	113.1	-3.7	-3.6	-2.0	94.3	1.2	1.1	99.5	1.1	1.0	105.4	0.9	0.8	118.5	0.4	0.5
DE	69.2	-2.0	-0.1	-2.7	64.4	0.4	-0.0	65.3	0.4	-0.1	66.4	0.4	-0.1	57.8	0.6	0.2
EE	20.4	-2.5	-2.1	-5.0	32.9	0.3	-0.3	28.9	0.3	-0.1	24.0	0.4	0.1	21.2	0.3	0.2
IE	52.3	-1.0	0.4	-4.2	52.9	0.9	-0.1	52.1	0.9	-0.1	51.2	0.9	-0.0	39.6	1.2	0.4
GR	196.9	-1.4	1.3	-1.4	150.3	0.3	0.4	161.8	0.1	-0.0	174.5	-0.2	-0.6	159.6	-0.0	0.0
ES	118.2	-3.1	-2.1	-1.5	104.5	0.7	0.8	109.9	0.6	0.6	116.0	0.5	0.3	113.8	0.6	0.4
FR	113.7	-4.2	-2.5	-2.1	102.6	0.8	0.8	107.5	0.6	0.6	113.1	0.5	0.4	112.2	0.5	0.4
IT	151.4	-2.9	-1.4	-1.0	130.4	1.2	1.2	138.9	1.0	0.9	148.4	0.8	0.5	150.6	0.6	0.6
CY	97.6	0.2	0.4	-2.0	84.3	0.2	0.1	87.9	0.1	-0.0	92.1	0.1	-0.2	74.8	0.6	0.3
LV	50.7	-3.6	-1.4	-3.1	53.6	1.1	0.1	52.7	1.1	0.2	51.5	1.1	0.2	47.0	1.1	0.4
LT	44.1	-2.9	-0.9	-3.9	48.6	0.8	-0.0	47.0	0.9	0.0	45.0	0.9	0.1	38.6	0.8	0.4
LU	25.6	0.3	0.4	-3.5	34.3	-0.2	-0.6	30.8	-0.2	-0.4	26.7	-0.1	-0.3	14.4	0.0	0.2
MT	62.4	-4.7	-3.6	-3.0	65.3	0.6	0.5	65.5	0.6	0.5	65.8	0.6	0.5	66.6	0.7	0.4
NL	56.8	-1.7	-0.7	-2.1	59.3	0.6	0.2	59.0	0.6	0.3	58.7	0.6	0.3	54.1	0.6	0.5
AT	79.4	-1.4	-0.4	-2.4	73.0	0.3	0.1	74.9	0.3	0.1	77.0	0.2	-0.0	67.8	0.5	0.3
PT	123.9	-1.1	-0.5	-1.0	105.0	0.9	0.9	111.2	0.7	0.7	122.1	0.4	0.3	115.6	0.6	0.6
SI	76.4	-3.9	-3.2	-3.4	75.4	0.7	0.6	77.0	0.6	0.6	79.0	0.6	0.5	82.4	0.5	0.5
SK	60.0	-3.1	-2.1	-3.6	61.9	0.3	0.3	61.9	0.3	0.3	61.9	0.3	0.3	57.4	0.3	0.4
FI	71.2	-2.0	-0.8	-2.9	66.0	0.4	-0.0	67.0	0.4	-0.0	68.2	0.4	-0.1	60.8	0.6	0.2
EA	97.9	-2.7	-1.2	-2.2	86.9	0.7	0.5	90.5	0.6	0.3	94.6	0.5	0.2	90.8	0.6	0.4

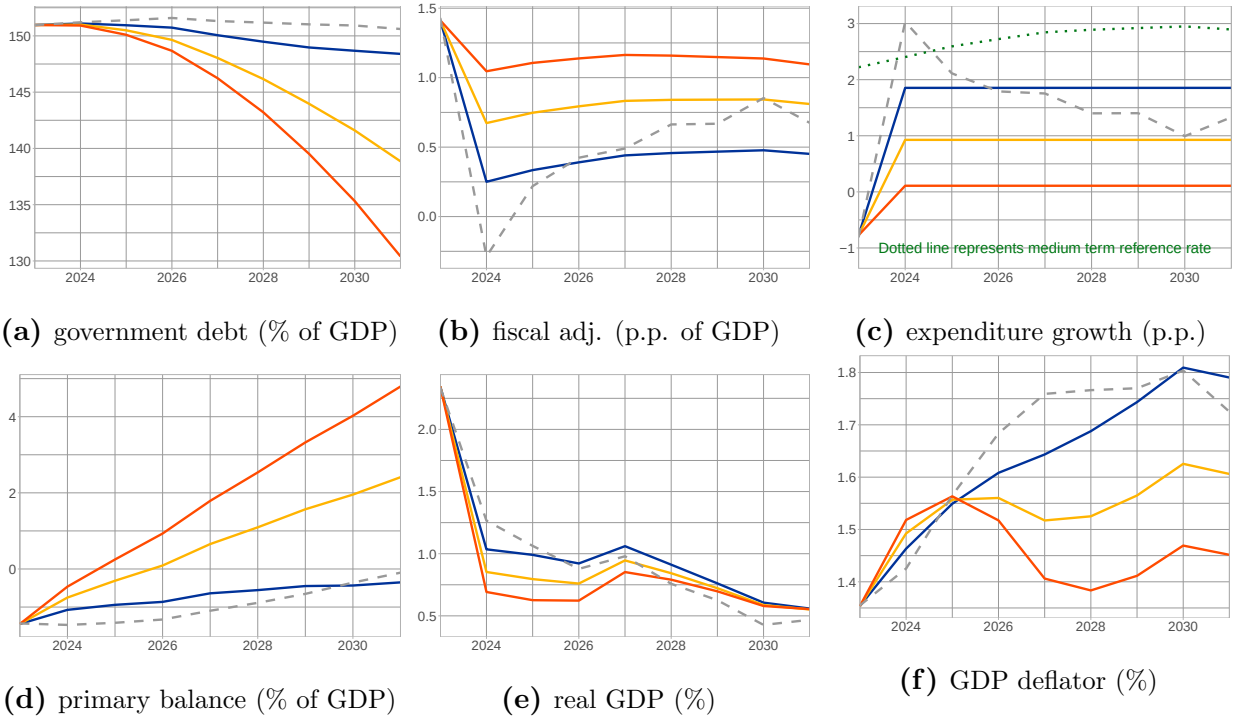
Source: AMECO and own computations

[1)] For 2023 the primary balance is taken from the latest European Commission forecast.

[2)] Interest-growth differentials are shown in percent.

Figure 1: Debt adjustment scenarios (Italy, 2023-31)

$\alpha = 0.05$ (red) / $\alpha = 0.03$ (yellow) / $\alpha = 0.01$ (blue) / SGP scenario (dashed gray)



(a) government debt (% of GDP) **(b)** fiscal adj. (p.p. of GDP) **(c)** expenditure growth (p.p.)

(d) primary balance (% of GDP) **(e)** real GDP (%) **(f)** GDP deflator (%)

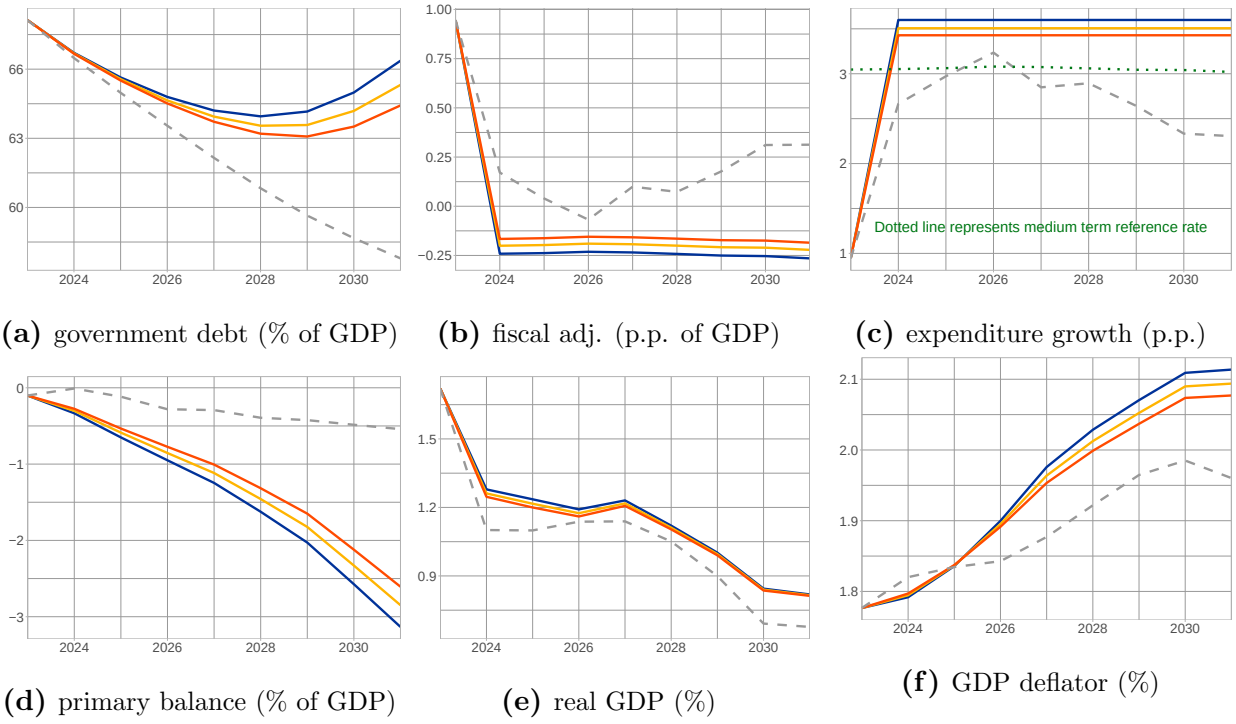
Source: AMECO and own computations

Notes: For 2023 the adjustment is based on the European Commission 2021 autumn forecast unless it falls short of the rule-based adjustment requirement.

Zooming into individual countries, figure 1 shows that for Italy - given its strong increase in public debt in the context of the COVID-19 crisis - historically observed fiscal consolidation under the EDP would not be sufficient to put debt as a ratio to GDP on a downward path. A debt rule with an adjustment coefficient $\alpha = 0.03$ on the other hand would imply a more restrictive policy stance, putting the debt ratio on a significant downward trajectory. This would require spending growth to be capped at just below 1% per year as can be seen from chart 1c, significantly below the nominal medium-term reference rate. Under the current parametrisation of the debt rule (i.e. $\alpha = 0.05$) expenditures would only be allowed to grow marginally. Figures 1e and 1f show the macroeconomic effects of the different adjustment scenarios based on the dynamic fiscal multipliers on real GDP and GDP deflator growth described in section 3.1. This highlights the trade-off between the sustainability and stabilisation objective, notably for countries with high debt ratios.

Figure 2: Debt adjustment scenarios (Germany, 2023-31)

$\alpha = 0.05$ (red) / $\alpha = 0.03$ (yellow) / $\alpha = 0.01$ (blue) / SGP scenario (dashed gray)



(a) government debt (% of GDP) **(b)** fiscal adj. (p.p. of GDP) **(c)** expenditure growth (p.p.)

(d) primary balance (% of GDP) **(e)** real GDP (%) **(f)** GDP deflator (%)

Source: AMECO and own computations

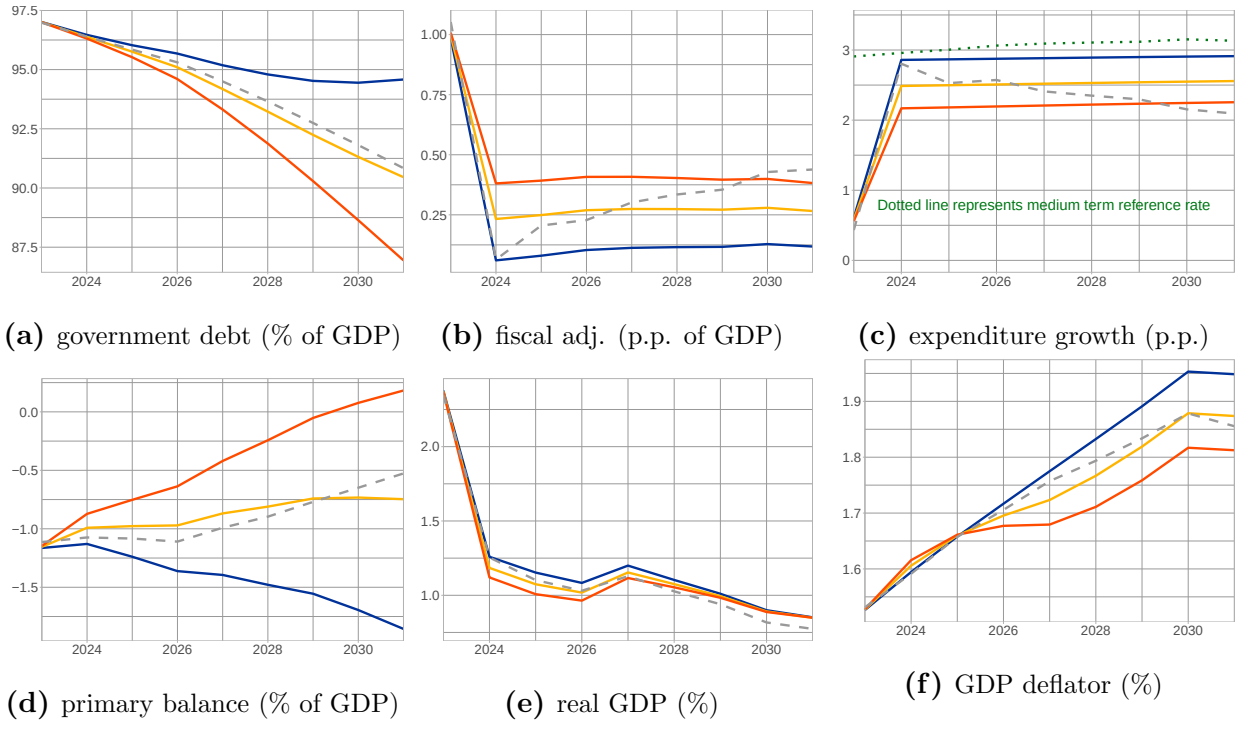
Notes: For 2023 the adjustment is based on the European Commission 2021 autumn forecast unless it falls short of the rule-based adjustment requirement.

Germany on the other hand - despite a significant rise in government debt related to COVID-19 - shows a starting position of government debt in 2022 which remains around 10p.p. of GDP above the 60% debt reference level while the projected favourable interest-growth differential and small interest burden limit adverse debt dynamics. At the same time, the Autumn 2021 Commission forecast suggests that the unwinding of the COVID-19 related stimulus measures would imply a balancing of the primary fiscal position in 2023. Therefore, the two-tier system implies budgetary room for manoeuvre under any of the α calibrations compared to the estimated SGP adjustment. Additional fiscal space would therefore imply higher growth and inflation due to lower macroeconomic feedback effects compared to the SGP scenario.

Figure 3 provides an overview of the aggregated budgetary and macroeconomic effects for the euro area as a whole. Debt stabilisation is achieved under any of the debt rule calibrations

Figure 3: Debt adjustment scenarios (Euro area, 2023-31)

$\alpha = 0.05$ (red) / $\alpha = 0.03$ (yellow) / $\alpha = 0.01$ (blue) / SGP scenario (dashed gray)



(a) government debt (% of GDP) **(b)** fiscal adj. (p.p. of GDP) **(c)** expenditure growth (p.p.)

(d) primary balance (% of GDP) **(e)** real GDP (%) **(f)** GDP deflator (%)

Source: AMECO and own computations

as well as in the estimated SGP scenario. The trade-off between reducing government debt and macroeconomic stabilisation is visible in charts 3e and 3f, i.e. a steeper downward debt trajectory as achieved when setting $\alpha = 0.05$ comes at the cost of more significant fiscal adjustment and therefore stronger adverse fiscal multiplier effects on growth and inflation.

3.2.2 Accounting for inflation and interest developments

We go on to analyse the parametric changes to the expenditure benchmark indicator discussed in section 2. In particular, we aim to highlight the fiscal and macroeconomic implications of, first, gearing the medium-term reference rate of the expenditure benchmark to the 2% inflation objective of the ECB and, second, including interest spending in the main expenditure aggregate (as discussed in section 2) .

Both adjustments imply that the operational indicator which guides the fiscal adjustment

towards the debt anchor is linked to a monetary-policy relevant variable. Setting the GDP deflator growth rate at the 2% inflation target increases counter-cyclicality by increasing the fiscal space under the rule in times of inflation below the target and vice versa. As highlighted above this enhances the synchronisation of fiscal and monetary policy. Including interest spending in the MEA instead implies that the budgetary room for manoeuvre increases when the interest burden declines and vice versa. Movements in the interest spending ratio reflect many factors including the level of debt and its maturity composition, fundamental developments driving (sovereign) interest rates but also the monetary policy stance. Monetary-policy induced changes in interest rates will gradually impact on implicit interest rates as new debt is issued and old debt is rolled-over. Compared with automatically accounting for the 2 percent inflation target, the link to the monetary policy objective is therefore less direct.

Table 2 provides an overview of the simulation results when accounting for inflation and interest spending, reporting adjustment needs when the debt rule is calibrated at $\alpha = 0.03$. Comparing columns (2) and (3) shows that shorter-term annual fiscal adjustment requirements in 2023 and 2024 would be reduced - on average in the euro area - when the expenditure rule accounts for the fact that GDP deflator growth is projected to fall short of 2% in the latest European Commission forecast. Concretely, the fiscal consolidation during these years would be reduced by around 0.2p.p. of GDP compared to the case without inflation adjustment (and also 0.2pp of GDP compared to the SGP scenario), providing additional fiscal space in these two years. Note that these will also be the years in which many euro area Member States are expected to absorb sizable grants from the Recovery and and Resilience Facility (RRF), notably to finance government investment. Factoring this in, chart 4b highlights that the euro area as a whole could still maintain a supportive fiscal policy stance in the post-pandemic phase (the sizable adjustments in the baseline for 2023 captures the unwinding of COVID-19 related stimulus). Particularly pronounced downward shifts in the consolidation requirements are observed in Spain (around 0.4p.p. of GDP) as well as in Italy, France, the Netherlands, Portugal and Belgium (around 0.2p.p. of GDP). As the GDP deflator growth rate is assumed to gradually converge to 2% over the simulation horizon, the inflation adjustment yields more limited effects when looking at longer-term average adjustment requirements over 2023-31 as can be seen when comparing columns (5)

and (6).[13] Adjusting the spending rule for the projected decline in interest spending as a ratio to GDP yields around 0.1p.p. of GDP lower annual consolidation requirements over 2023/24 when looking at the euro area average (comparing column (4) and (2)). The largest impact is observed for Spain.

[13]For the euro area aggregate the difference in the average adjustment for 2023-31 between $\alpha = 0.03$ and the inflation adjustment lies at just below 0.1p.p.

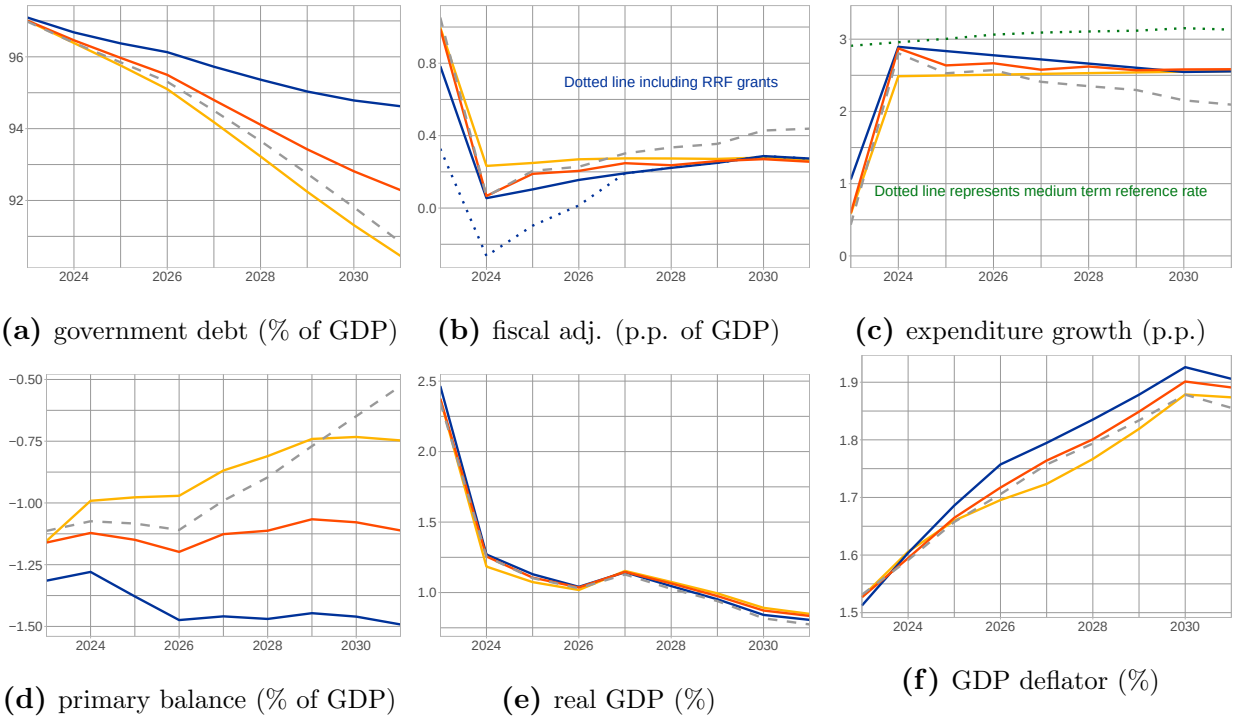
Table 2: Debt adjustment when accounting for inflation and interest rate developments

	d_0	$\overline{adj}_{2023/24}$			$\overline{adj}_{2023/31}$			d_{2031}		
% of GDP	2022	$\alpha = 0.03$	infl.-adjusted	int.-adjusted	$\alpha = 0.03$	infl.-adjusted	int.-adjusted	$\alpha = 0.03$	inf.-adjusted	int.-adjusted
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
BE	113.1	1.1	0.9	1.0	1.0	0.9	0.9	99.5	102.9	101.9
DE	69.2	0.4	0.3	0.3	-0.1	-0.1	-0.1	65.3	67.4	67.1
EE	20.4	0.3	0.5	0.3	-0.1	-0.0	-0.1	28.9	25.5	28.8
IE	52.3	0.9	0.8	0.9	-0.1	-0.1	-0.1	52.1	54.8	53.3
GR	196.9	0.1	-0.6	0.0	-0.0	-0.3	-0.1	161.8	174.8	163.6
ES	118.2	0.6	0.2	0.4	0.6	0.4	0.5	109.9	118.5	113.4
FR	113.7	0.6	0.4	0.5	0.6	0.5	0.6	107.5	113.2	109.8
IT	151.4	1.0	0.8	1.0	0.9	0.7	0.8	138.9	144.7	139.8
CY	97.6	0.1	-0.2	0.2	-0.0	-0.2	-0.0	87.9	95.3	88.4
LV	50.7	1.1	1.1	1.1	0.2	0.2	0.2	52.7	52.5	53.5
LT	44.1	0.9	0.9	0.9	0.0	0.0	0.0	47.0	46.9	46.8
LU	25.6	-0.2	-0.1	-0.1	-0.4	-0.4	-0.4	30.8	29.1	30.2
MT	62.4	0.6	0.5	0.7	0.5	0.4	0.5	65.5	69.2	65.3
NL	56.8	0.6	0.4	0.5	0.3	0.2	0.2	59.0	63.4	60.4
AT	79.4	0.3	0.3	0.3	0.1	0.1	0.0	74.9	74.0	76.3
PT	123.9	0.7	0.5	0.7	0.7	0.6	0.6	111.2	115.9	113.3
SI	76.4	0.6	0.5	0.6	0.6	0.5	0.5	77.0	80.0	79.5
SK	60.0	0.3	0.4	0.2	0.3	0.3	0.2	61.9	60.6	64.4
FI	71.2	0.4	0.5	0.5	-0.0	0.0	-0.0	67.0	64.2	67.0
EA	97.9	0.6	0.4	0.5	0.3	0.3	0.3	90.5	94.6	92.3

Source: AMECO and own computations

Figure 4: Scenarios accounting for inflation / interest (Euro area, 2023-31)

$\alpha = 0.03$ (yellow) / $\alpha = 0.03$ plus infl. adjustment (blue) / $\alpha = 0.03$ plus int. adjustment (red) / SGP scenario (dashed gray)



(a) government debt (% of GDP) **(b)** fiscal adj. (p.p. of GDP) **(c)** expenditure growth (p.p.)

(d) primary balance (% of GDP) **(e)** real GDP (%) **(f)** GDP deflator (%)

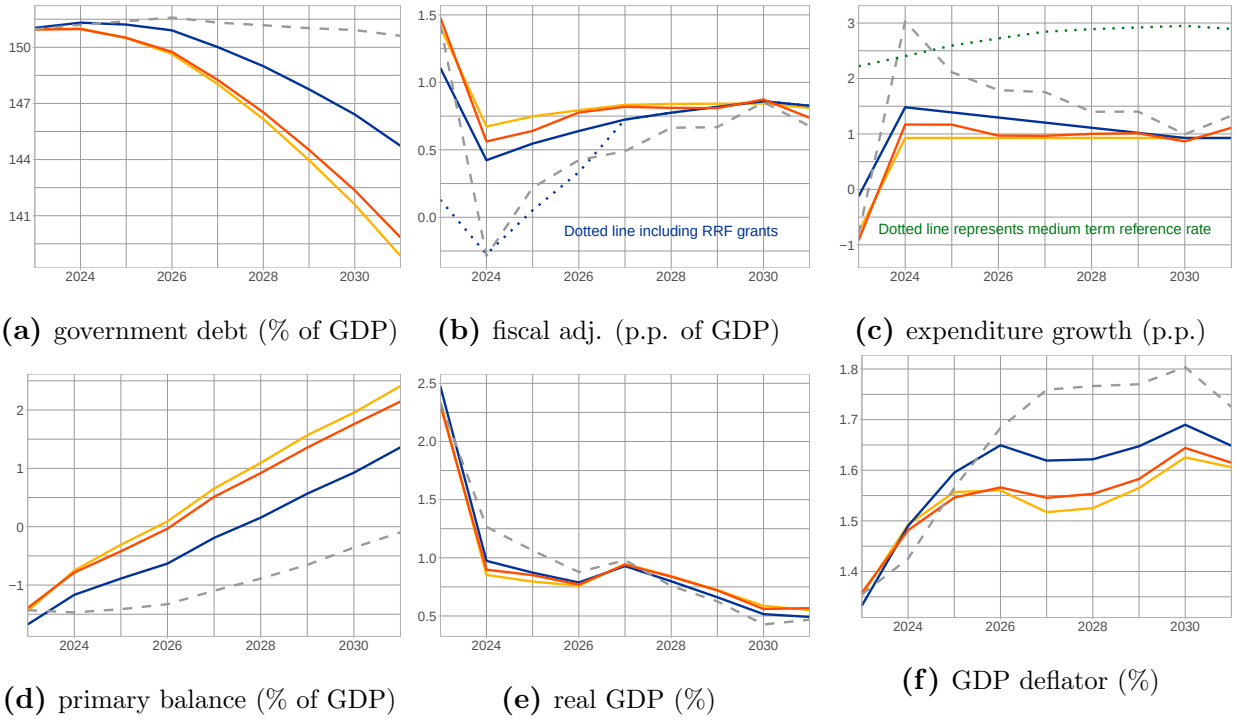
Source: AMECO and own computations

Figure 4 shows detailed simulation results for the euro area. As can be seen from chart 4a, in the case of inflation adjustment (blue line) the aggregate debt trajectory is shifted upwards and above the corresponding line for the SGP scenario. This captures the impact of the inflation adjustment related to the undershooting of the 2% inflation target which creates fiscal space under the rule compared to the SGP scenario. The additional room for budgetary manoeuvre in times of below-target inflation is used to loosen the fiscal policy stance and therefore pushes up the real growth trajectory and with a time lag also the GDP deflator growth rates (as can be seen in charts 4e and 4f). The alternative interest spending adjustment (see red lines) also yields some short-term budgetary relief since debt burdens are projected to continue to decline. However, the effects are more limited in quantitative terms.

Moving to the individual country perspective, Italy is an interesting case study since the two-tier framework with an adjustment parameter of $\alpha = 0.03$ already implies higher fis-

Figure 5: Scenarios accounting for inflation / interest (Italy, 2023-31)

$\alpha = 0.03$ (yellow) / $\alpha = 0.03$ plus infl. adjustment (blue) / $\alpha = 0.03$ plus int. adjustment (red) / SGP scenario (dashed gray)



(a) government debt (% of GDP) **(b)** fiscal adj. (p.p. of GDP) **(c)** expenditure growth (p.p.)

(d) primary balance (% of GDP) **(e)** real GDP (%) **(f)** GDP deflator (%)

Source: AMECO and own computations

cal consolidation than under the SGP scenario. This is related in particular to the less favourable fiscal starting position which is true for several countries with elevated debt ratios (incl. France, Belgium, Spain and others). The inflation-adjustment would however reduce the near-term adjustment requirements and imply a gradual phasing-in of the consolidation required to gear debt towards the anchor. Chart 5c highlights this gradualism, showing a convergence towards the expenditure growth target needed to comply with the debt target. Moreover, Italy - similar to several other countries with high debt - receives particularly sizeable support from the RRF which again would help to keep the fiscal policy stance more supportive (as can be seen in chart 5b). The gradual phasing-in of the adjustment on the other hand implies a more limited decline in the debt ratio over the simulation horizon. Still, under the two-tier framework with an inflation-adjusted spending rule, Italy's debt ratio in 2031 would be lower than under the SGP scenario.

3.3 Alternative inflation scenarios

One of the intended implications of the parametric changes to the expenditure benchmark discussed above is to improve the stabilisation properties of the fiscal rules in the presence of macroeconomic shocks, notably nominal shocks. In this section, we therefore analyse how the inflation-adjustment mechanism in the spending rule operates in the presence of persistent inflationary shocks with respect to our baseline trajectory for GDP deflator growth, concretely a +/- 100bps shift. These scenarios are intended to be of purely stylised nature and should not be understood as error bands around our baseline trajectory. Furthermore, we assume that inflationary shocks trigger monetary policy reactions which in turn affect implicit interest rates on sovereign debt.[14]

Figure 6 provides an overview of the fiscal and macroeconomic implications for the euro area. The charts show deviations from the corresponding fiscal rules under the baseline scenario. Solid lines capture the impact of the negative inflation shock and dashed lines of the positive inflation shock.[15]

As can be seen from chart 6b the adjustment requirement under the SGP scenario is indirectly affected by the impact on the implicit interest rate mentioned above. Note that the effects are symmetric. For expositional convenience we use the disinflationary shock as example. Since the structural balance includes interest spending, a lower debt burden frees up space to increase other spending items and therefore provides scope for fiscal loosening (the grey solid line in chart 6b takes negative values). In contrast, the adverse effect of a lower growth rate of the GDP deflator on interest-growth differentials implies rising debt dynamics and therefore larger adjustment needs under the two-tier system with the unadjusted expenditure benchmark. This therefore results in a tightening policy stance compared to the baseline (the solid yellow line takes positive values). We also observe that the interest spending adjustment of the spending rule to some extent reduces this pro-cyclicality

[14]Concretely, we assume that in the case of a 100bp disinflationary shock the implicit interest rate on government declines by 0.12p.p. with respect to the baseline assumption on impact, gradually increasing to 0.64p.p. by the end of the simulation horizon.

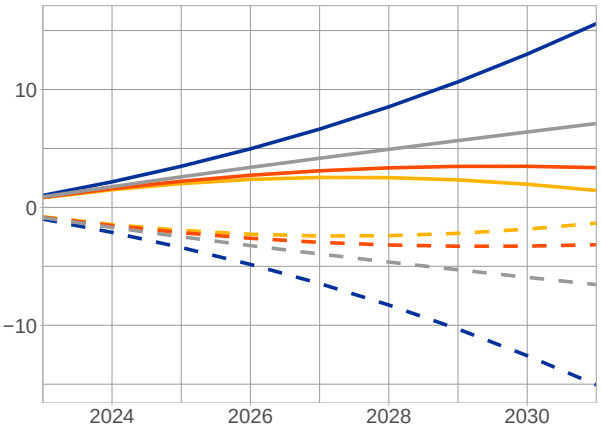
[15]The alternative inflation scenarios, as well as the baseline to which they are compared, do not account for the adjustments in 2023 included in the latest EC forecast. This is done to only display the effect of the different inflation paths on the adjustment requirements under the rules and not on the sufficiency of the adjustments in 2023 included in the latest EC forecast.

but cannot overcompensate it given the lagged feed-through of lower market rates into implicit interest rates on sovereign debt. The inflation-adjusted expenditure benchmark rule however shows a pronounced counter-cyclical pattern, given that rising inflation gaps with respect to the 2% inflation target immediately increase the fiscal space under the rule (and the other way around if inflation gaps decline). From a monetary policy perspective this appears to be a desirable feature since policy stances are automatically aligned. Especially, in ELB episodes such automatic fiscal loosening in the presence of disinflationary shocks would support an appropriate macroeconomic policy mix.

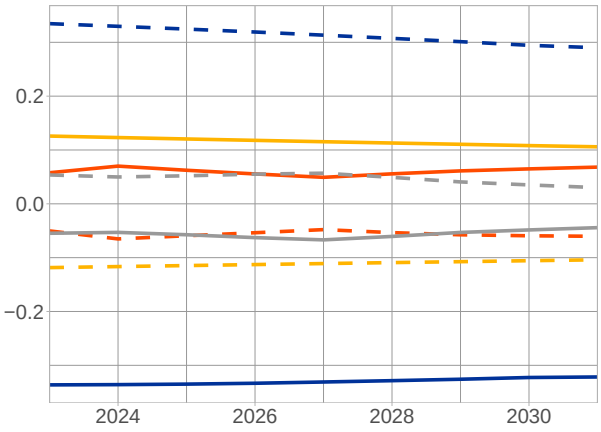
Charts 6e and 6f show the implications for growth and inflation, notably the cushioning effect of the inflation-adjusted rule in the alternative inflation scenarios. Note that after an initial deflationary impact related to the fact that the fiscal shock also comprises changes in indirect taxes, up to around 15% of the inflation shock are cushioned via automatic counter-cyclical spending responses.

Figure 6: Debt adjustment scenarios - low / high inflation (Euro area, 2023-31)

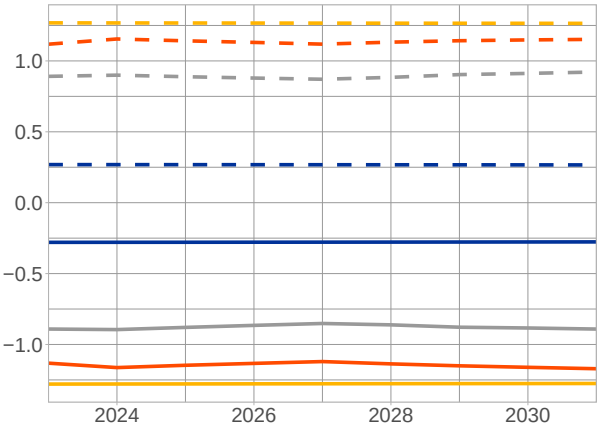
$\alpha = 0.03$ (yellow) / $\alpha = 0.03$ plus infl. adjustment (blue) / $\alpha = 0.03$ plus int. adjustment (red) / SGP scenario (gray) / solid lines: low inflation shock / dashed lines: high inflation shock



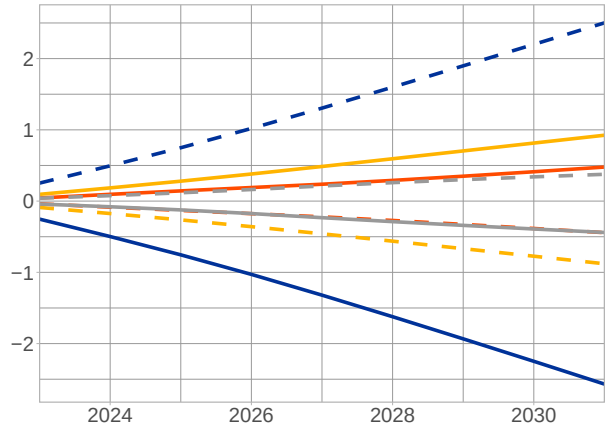
(a) government debt (% of GDP)



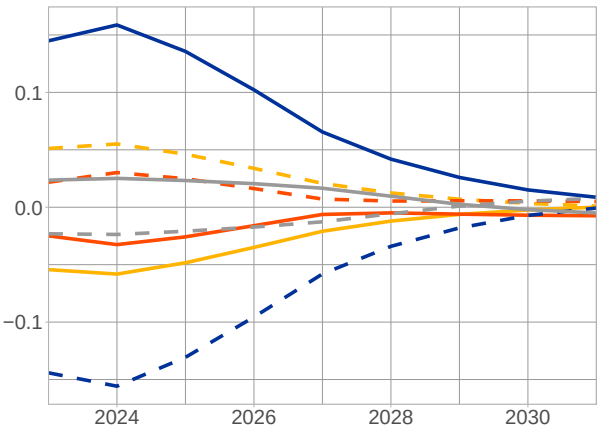
(b) fiscal adj. (p.p. of GDP)



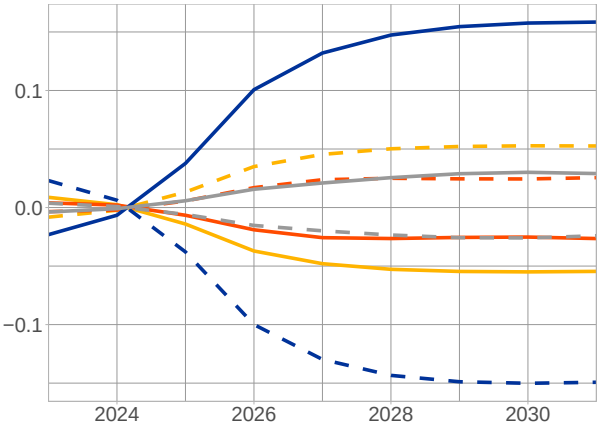
(c) expenditure growth (p.p.)



(d) primary balance (% of GDP)



(e) real GDP (%)



(f) GDP deflator (%)

Source: AMECO and own computations

Notes: Charts 6a - 6e in deviations to the corresponding baseline. In the case of the GDP deflator shown in chart 6f deviations are net of the shock itself.

As can be seen from charts 6a and 6c, lower (higher) adjustment requirements under the spending rule increase (decrease) primary deficits and as a result the debt trajectory when inflationary shocks are cushioned. Note that government debt also rises (decreases) in the SGP scenario given that the shock to the GDP deflator exerts a denominator and snowball effect. However, the inflation-adjustment adds to this, given the counter-cyclical changes in the target growth rate for government spending. Debt trajectories deviate to a lesser extent from the baseline given the pro-cyclical fiscal reaction in the nominal debt rule ($\alpha = 0.03$; see yellow lines).

4 Squaring SGP reform and investment needs

There has been an ongoing discussion of the possible constraining effects of the SGP framework for government investment which in many countries has been on a declining trend since the Great Financial Crisis (GFC). While the operationalisation of the so-called investment clause in 2015 and 2016 aimed at protecting investment during downturns its effectiveness has been assessed as limited (European Commission, 2020b). The European Fiscal Board (2020a) discusses various options to protect investment under the European fiscal rules, also pointing to the caveats of a general exemption of public investment from the budget balance ("golden rule"). The practical experience with such rules has shown deficiencies especially when the targeted investment is not well defined, leaving room for interpretation and the possibility for a reclassification of spending to fit under the rule. In an earlier proposal, the EFB therefore argued in favor of an operationalisation based on a net investment concept or specific investments related to common European growth strategies, while also highlighting the difficulties in calculating net investments. In the euro area, net investment ratios have declined significantly compared to the levels seen before the GFC. In 2019 net investment stood at only around 0.1% of GDP while the average ratio in the euro area amounted to 0.7% of GDP over 2000-07.

In our stylised analysis we therefore assume that the observed decline in net investment ratios is offset which would imply a permanent increase in the euro area investment of around 0.6p.p. of GDP. In terms of magnitude this lies at the lower end of current estimates for additional investment needs related to the green transition (European Commission,

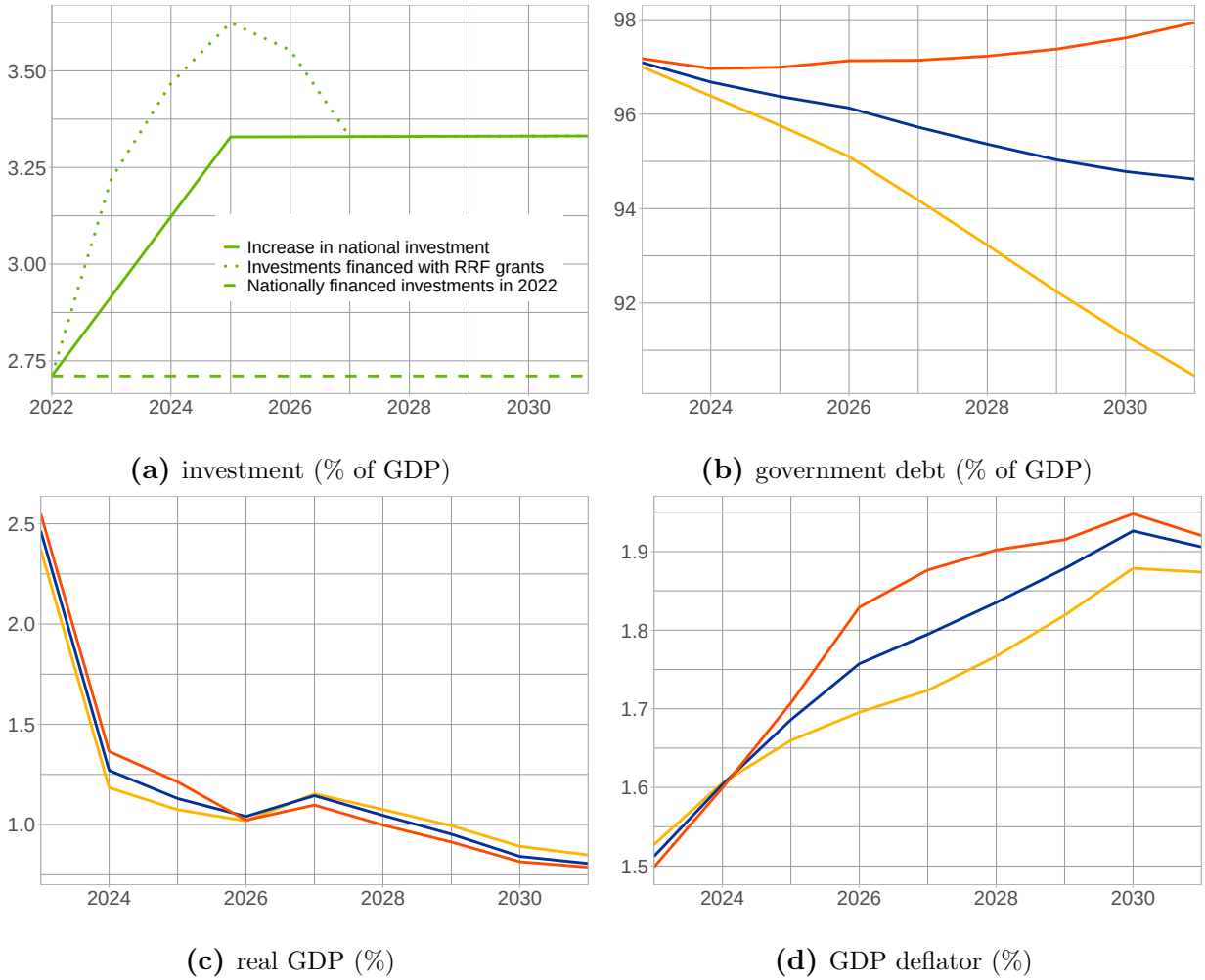
2020a). Figure 7 shows the implications of a gradual (three-year) increase of nationally financed investment[16] as a ratio to GDP by the above mentioned amount. As can be seen from chart 7a, excluding net investment from the spending rule and assuming the discussed trajectory would gradually increase the euro area investment ratio to around 3.3% (excluding RRF-financed public investment). The increase in government investment would imply higher budget deficits and therefore an upward sloping debt trajectory over most of the simulation horizon. Deficit effects are partly offset by favourable fiscal multiplier effects related to the investment increase (see charts 7c and 7d). While our simulations are broadly in line with empirically observed multipliers for government investment (see, e.g., Ilzetzki et al. (2013)) such favourable macroeconomic effects in practice may be somewhat more limited in the current circumstances, considering that EU Member States are already striving for a substantial investment-push in the context of the Recovery and Resilience Facility (RRF). Administrative capacities and implementation lags may therefore become a binding constraint for additional national investment increases.

At the same time, it is important to recall that a move from the current SGP implementation practice to an (inflation-adjusted) expenditure growth rule combined with a moderate debt adjustment speed would already create fiscal space for many countries. This budgetary room for manoeuvre on average would be sufficient to compensate for the simulated convergence towards historical net investment ratios and therefore would not require an explicit netting out of this spending from the expenditure growth rule. For some countries, notably those with high debt ratios, adjustment requirements compared to the current status quo of rules would however need to increase to ensure a moderate convergence towards the Treaty's debt reference level. Increased investments may however also be financed through the creation of fiscal space by cutting inefficient or environmentally harmful expenditures or through the increased revenues from carbon taxation. At the same time, high debt countries also tend to be the countries which receive particularly large grants from the RRF to support investment and structural reforms.

[16]Nationally financed investment is computed by subtracting the share of investment that is financed via RRF-grants.

Figure 7: Debt adjustment scenarios - accounting for investment (Euro area, 2023-31)

$\alpha = 0.03$ (yellow) / $\alpha = 0.03$ plus infl. adjustment (blue) / $\alpha = 0.03$ plus int. adjustment and investment protection (red)



(a) investment (% of GDP)

(b) government debt (% of GDP)

(c) real GDP (%)

(d) GDP deflator (%)

Source: AMECO and own computations

5 Conclusions

The discussion on the reform of the Stability and Growth Pact is taking centre stage as the Commission has relaunched its economic governance review. Two objectives of a prospective reform of the Pact seem rather consensual: First, a simplified framework should take account of the prevailing macroeconomic context and enhance the balancing of sustainability and stabilisation considerations. Second, it should reflect increasing investment needs related inter alia to the green transition.

On the basis of simulation analysis for the euro area and individual countries we highlight the possible beneficial effects of a move to a two-tier fiscal framework which combines an inflation-adjusted expenditure growth rule with a debt anchor, requiring a moderate pace of debt adjustment. Compared to the existing 1/20 debt rule of the SGP, such a framework would result in economically and politically more feasible adjustment requirements, notably for the countries that will exit the COVID-pandemic with in some cases very high debt ratios. For low debt countries, the rule would create fiscal space with respect to a return to the previously observed implementation of the existing SGP framework. Such fiscal space would be available to support increasing public investment needs.

Taking account of the ECB's 2% inflation target in the spending rule would in addition enhance the counter-cyclicality of the SGP framework. This should not be seen as a subordination of fiscal policy to the ECB's monetary policy but rather as an adjustment of the current expenditure rule of the SGP which is calibrated in real terms while government budgets are usually designed in nominal terms. Concretely, the envisaged rule would create fiscal space in times when inflation is below target and vice versa. From a monetary policy perspective, such an automatic synchronisation of fiscal and monetary policies could be desirable, especially in times when the central bank is operating close to the effective lower bound. While the rule in principle would operate symmetrically for countries with above and below target inflation, it could be useful to allow for temporary overshooting in the aftermath of lower bound periods, in line with the new ECB monetary policy strategy. Compared to the current framework, the two-tier framework - by solely relying on the expenditure benchmark - would reduce the pro-cyclicality related to the structural balance approach which is flawed by the estimation uncertainty underlying the output gap.

In sum, the two-tier framework sketched in this paper would help to internalise the prevailing macroeconomic context and thereby could support a gradual phasing-in of the necessary fiscal consolidation to address debt overhangs in the aftermath of the COVID-19 pandemic. Such fiscal consolidation would take place in parallel to the absorption of sizable RRF grants for investment.

In terms of feasibility, it is important to note that the parametric reform options discussed in this paper build on existing indicators and rules of the SGP framework and therefore

would not require a comprehensive overhaul. In particular, a change of the Treaty would not be required. The move towards a simplified two-tier system would however require a streamlining of the existing fiscal surveillance procedures and therefore changes of the relevant regulations.

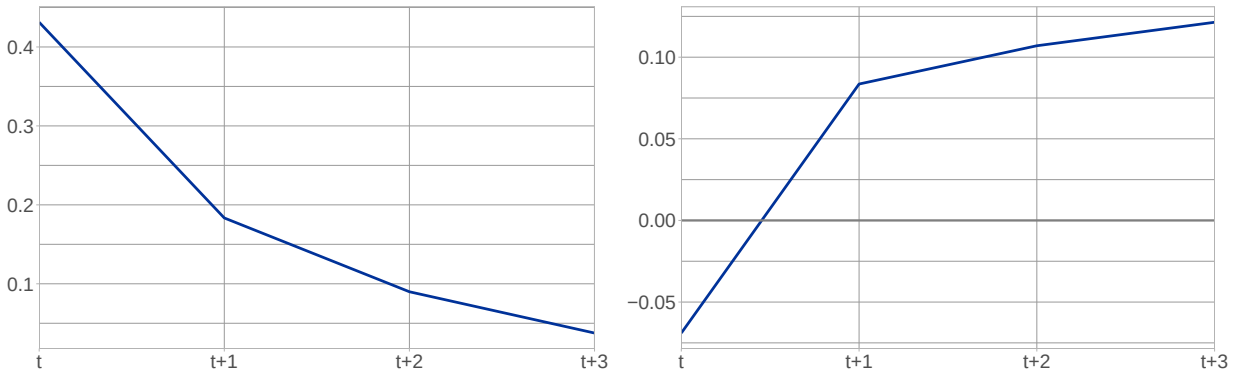
A Appendix

Table A.1: Selected variables in 2022

	d_0	pb_0	y_0^r	y_0^{def}	Output gap	int_0	i_0	inv_0
BE	113.1	-3.7	2.6	2.3	-0.2	1.4	1.3	3.0
DE	69.2	-2.0	4.6	2.4	0.2	0.5	0.7	2.6
EE	20.4	-2.5	3.7	3.0	-0.8	0.1	0.4	6.0
IE	52.3	-1.0	5.1	2.0	2.7	0.7	1.4	2.5
GR	196.9	-1.4	5.2	0.9	-0.7	2.5	1.3	4.3
ES	118.2	-3.1	5.5	1.6	-1.9	2.1	1.9	2.7
FR	113.7	-4.2	3.8	1.4	0.1	1.1	1.0	4.0
IT	151.4	-2.9	4.3	1.5	-0.2	2.9	2.0	3.2
CY	97.6	0.2	4.2	1.6	0.8	1.6	1.6	2.9
LV	50.7	-3.6	5.0	2.9	-0.6	0.6	1.4	7.1
LT	44.1	-2.9	3.6	2.6	-0.8	0.3	0.6	3.6
LU	25.6	0.3	3.7	2.2	-0.8	0.1	0.5	4.3
MT	62.4	-4.7	6.2	1.8	-1.7	1.1	1.9	4.9
NL	56.8	-1.7	3.3	1.7	0.6	0.4	0.7	3.7
AT	79.4	-1.4	4.9	2.2	0.3	0.9	1.2	3.3
PT	123.9	-1.1	5.3	1.8	-0.0	2.3	1.9	3.0
SI	76.4	-3.9	4.2	1.8	2.1	1.3	1.8	6.5
SK	60.0	-3.1	5.3	4.7	0.1	1.1	2.0	4.2
FI	71.2	-2.0	2.8	2.0	-0.6	0.4	0.6	4.8
EA	97.9	-2.7	4.3	1.9	-0.0	1.2	1.2	3.2

Source: AMECO

Figure A.1: Macroeconomic multipliers of a 100bp fiscal loosening

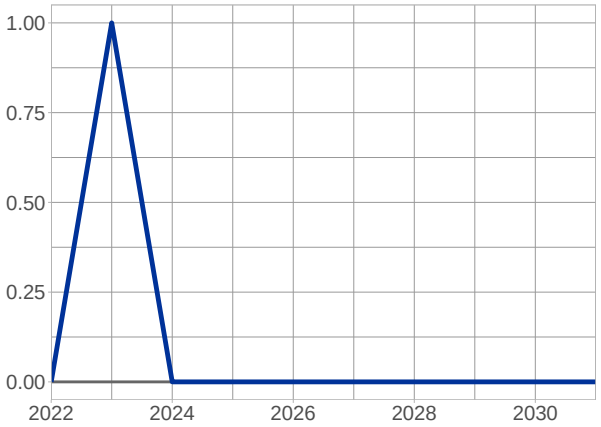


(a) Real GDP growth (in pp) **(b)** GDP deflator inflation (in pp)

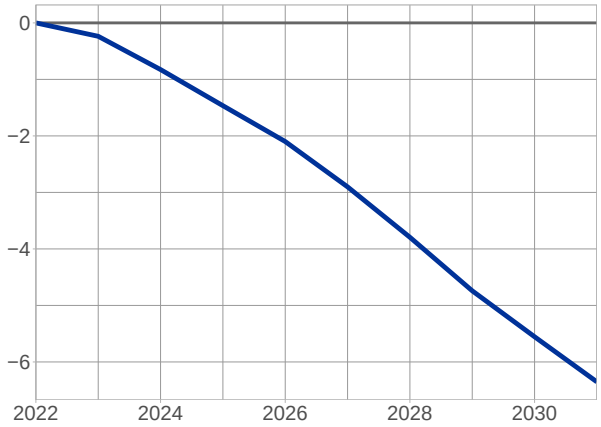
Source: ESCB and own calculations

Notes: The shock is calibrated to originate half from the revenue and half from the expenditure side. The budgetary items which are shocked are direct taxes and social security contributions and indirect taxes on the revenue side, and government investment, government consumption and transfers on the expenditure side. The share of the items in the shock are calculated based on the Euro Area countries average share of them between 2012 and 2019.

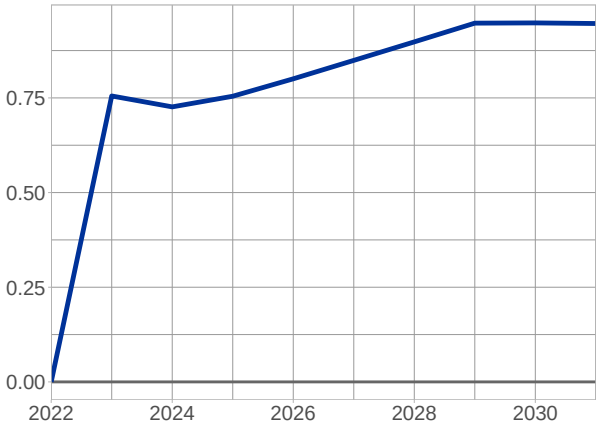
Figure A.2: 100bp consolidation shock - differences to baseline



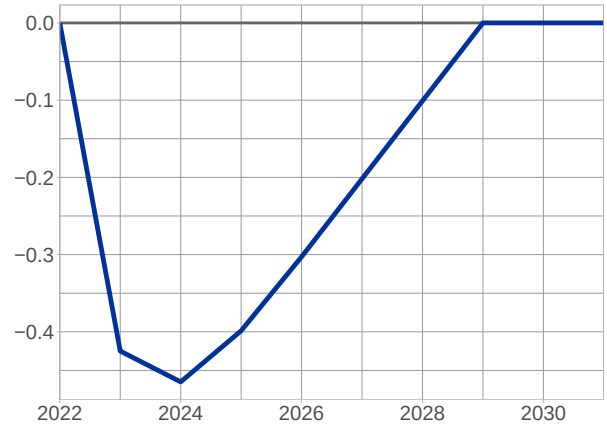
(a) fiscal shock (% of GDP)



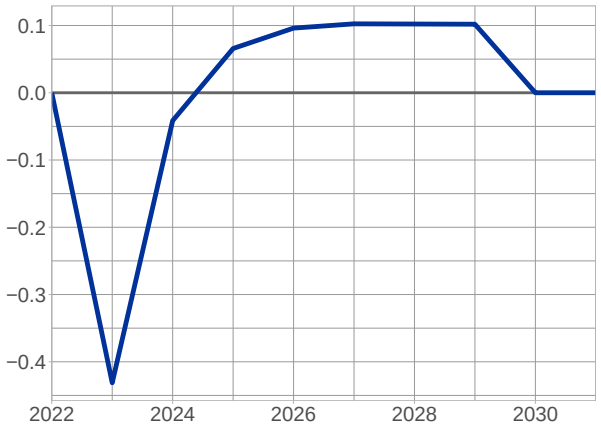
(b) government debt (% of GDP)



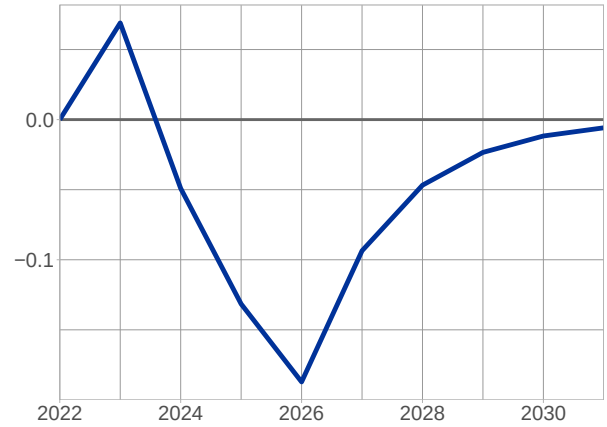
(c) budget balance (% of GDP)



(d) output gap (% of potential GDP)



(e) real GDP (%)



(f) GDP deflator (%)

Source: AMECO, ESCB and own computations

Notes: The shock is a permanent increase in the budget balance of 1pp of GDP in 2023. The impacts shown in (b)-(f) are symmetric to a 1pp decrease in the budget balance. The assumptions underlying (b)-(f) apart from the multipliers shown in A.1 are: i. we assume that shocks to real GDP growth will not have persistent effects on the output gap, thus we adjust real GDP growth after a fiscal shock in T to ensure that the output gap returns to its baseline path by T+3. Given the lagged structure of the multipliers, the output gap is fully closed only by T+7; ii. any fiscal adjustment induced deviations of GDP deflator inflation from the baseline trajectory in year T is reduced by half in T+1 and closed by T+2.

Table A.2: Real GDP growth in baseline scenario

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
BE	2.6	1.9	1.5	1.3	1.2	1.1	1.0	0.9	0.8	0.7
DE	4.6	1.7	1.2	1.1	1.1	1.2	1.1	1.0	0.8	0.8
EE	3.7	3.5	3.5	3.3	3.2	2.8	2.9	2.9	2.9	2.9
IE	5.1	4.1	4.3	4.1	3.9	4.1	3.7	3.3	2.8	2.3
GR	5.2	3.6	0.9	0.8	0.8	1.3	1.2	1.2	1.1	1.1
ES	5.5	4.4	1.2	1.1	1.0	1.1	0.9	0.8	0.7	0.5
FR	3.8	2.3	1.0	0.8	0.7	0.9	0.9	0.9	0.9	0.9
IT	4.3	2.3	1.1	1.1	1.1	1.2	1.0	0.9	0.7	0.6
CY	4.2	3.5	2.0	1.8	1.6	1.9	1.8	1.8	1.8	1.8
LV	5.0	4.0	2.0	1.7	1.6	1.7	1.8	1.8	1.7	1.7
LT	3.6	3.4	3.1	2.8	2.8	2.2	2.1	2.0	2.0	2.0
LU	3.7	2.7	2.8	2.8	2.8	2.2	2.0	1.8	1.7	1.7
MT	6.2	4.8	2.8	2.6	2.6	2.5	2.6	2.7	2.7	2.6
NL	3.3	1.6	0.9	0.7	0.7	0.7	0.6	0.5	0.4	0.4
AT	4.9	1.9	1.2	1.2	1.2	1.3	1.3	1.1	1.0	1.1
PT	5.3	2.4	1.1	0.9	0.8	0.8	0.7	0.6	0.5	0.5
SI	4.2	3.5	2.5	2.4	2.4	3.0	2.8	2.7	2.5	2.5
SK	5.3	4.3	2.8	2.4	2.3	2.5	2.5	2.6	2.6	2.6
FI	2.8	2.0	1.3	1.2	1.1	1.1	1.1	1.1	1.3	1.3
EA	4.3	2.4	1.3	1.2	1.1	1.2	1.1	1.0	0.9	0.9

Source: AMECO and own computations.

Notes: For 2022 and 2023 the table displays data from AMECO. For 2024 to 2026 the growth rates are equal to potential GDP growth (taken from the latest T+10 assumptions of the Output Gap Working Group of the Economic Policy Committee) and adjusted to ensure the output gap closure within 3 years as of 2024. As of 2026 the real GDP growth rates are in line with potential GDP growth.

Table A.3: GDP deflator inflation in baseline scenario

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
BE	2.3	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0
DE	2.4	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.0
EE	3.0	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.0	2.0
IE	2.0	1.4	1.5	1.6	1.6	1.7	1.8	1.9	2.0	2.0
GR	0.9	0.4	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.0
ES	1.6	0.9	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.0
FR	1.4	1.4	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.0
IT	1.5	1.4	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.0
CY	1.6	1.0	1.2	1.3	1.5	1.6	1.7	1.9	2.0	2.0
LV	2.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
LT	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
LU	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0
MT	1.8	1.5	1.6	1.7	1.7	1.8	1.9	1.9	2.0	2.0
NL	1.7	1.5	1.6	1.6	1.7	1.8	1.9	1.9	2.0	2.0
AT	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
PT	1.8	1.4	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.0
SI	1.8	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.0
SK	4.7	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0
FI	2.0	2.3	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0
EA	1.9	1.5	1.6	1.6	1.7	1.8	1.9	1.9	2.0	2.0

Source: AMECO and own computations.

Notes: For 2022 and 2023 the table displays data from AMECO. For 2024 to 2030 the growth rates are such that by 2030 the GDP deflator inflation is at 2%.

Table A.4: Implicit interest rates in baseline scenario

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
BE	1.3	1.2	1.2	1.1	1.0	1.0	0.9	0.9	0.8	0.8
DE	0.7	0.6	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2
EE	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
IE	1.4	1.5	1.4	1.3	1.1	1.2	1.1	1.1	1.0	1.0
GR	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.2	1.2
ES	1.9	1.8	1.4	1.4	1.3	1.2	1.3	1.3	1.3	1.3
FR	1.0	0.9	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6
IT	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9
CY	1.6	1.4	1.8	1.7	1.7	1.6	1.7	1.6	1.7	1.6
LV	1.4	1.2	1.3	1.0	1.0	0.8	0.8	0.8	0.9	0.9
LT	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.9
LU	0.5	0.4	1.1	0.8	0.8	0.9	0.9	1.0	1.0	1.1
MT	1.9	1.8	1.8	1.9	1.7	1.8	1.6	1.7	1.6	1.7
NL	0.7	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
AT	1.2	1.2	1.2	1.0	0.9	0.9	0.8	0.8	0.7	0.8
PT	1.9	1.9	1.8	1.7	1.7	1.6	1.7	1.6	1.6	1.6
SI	1.8	1.7	1.5	1.3	1.2	1.1	1.1	1.0	1.0	1.0
SK	2.0	2.0	1.4	1.3	1.2	1.1	1.1	1.1	1.1	1.1
FI	0.6	0.5	0.7	0.5	0.5	0.5	0.6	0.6	0.6	0.6
EA	1.2	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8

Source: AMECO and own computations.

Notes: For 2022 and 2023 the table displays data from AMECO. For the other years the implicit interest rate assumptions are taken from the European Commission's 2020 Debt Sustainability Monitor.

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