EUROPEAN CENTRAL BANK

EUROSYSTEM

Towards a single performance indicator in the EU's fiscal governance framework

Nicholai Benalal, Maximilian Freier,
Wim Melyn, Stefan Van Parys, Lukas Reiss

An assessment of the expenditure and structural balance rules in the European fiscal governance framework

No 288 / January 2022

Contents

Abstract

A key element of the European reform agenda is to simplify the EU fiscal governance framework by moving towards a single debt anchor and a single operational indicator as the basis for formulating fiscal targets and assessing compliance. This paper puts forward an in-depth analysis of two alternative fiscal performance indicators currently used in the EU fiscal framework: the change in the structural balance and the expenditure benchmark. Comparing these two indicators allows us to identify options for the design of a fiscal performance measure – such as assumptions on cyclical adjustment and the inclusion of fiscal variables – and assess their policy impact. Our paper finds that the expenditure benchmark used in the EU fiscal governance framework has advantages over the change in the structural balance. However, it still has scope for improvement. The paper also shows that taking account of interest payments in the expenditure benchmark would make fiscal policy more supportive of the monetary policy stance.

Keywords: EMU, euro area, fiscal governance, Stability and Growth Pact.

JEL classification: C54, E62, E65, F54, F47.

Non-technical summary

Policymakers broadly agree that a reformed and simplified EU fiscal governance framework should combine a single debt anchor and a single operational rule. Given the central importance of a single indicator for setting a fiscal target and measuring its achievement in a reformed governance framework, this paper provides an in-depth assessment of two alternative measures of fiscal consolidation and expansion: the change in the structural balance (dSB) and the expenditure benchmark (EB). Both the dSB and the EB are currently used to assess compliance with the fiscal rules under the Stability and Growth Pact (SGP).

Since its inception in the mid-1990s, the EU fiscal governance framework has evolved into a highly complex surveillance mechanism. While it uses several fiscal indicators to set targets and assess compliance, the dSB and the EB have been the focus of an ongoing debate as potential candidates to provide the basis for formulating a single operational rule. Both are used to assess compliance with the fiscal rules under the preventive and corrective arms of the SGP. The EB was introduced as an indicator in 2011, and has gained in importance relative to the dSB since the European Commission began to put more emphasis on it in 2016.

Comparing these two indicators allows us to identify options for the design of a fiscal performance measure and assess their policy impact. The EB and a dSB rule can be shown to be theoretically equivalent. However, in the current EU fiscal governance framework the EB differs in practice from the dSB. First, the EB takes smoothed potential GDP growth as the reference for expenditure growth and freezes it to assess ex post compliance, while the SB is based on annual nominal potential GDP growth. Second, the EB is applied to an adjusted definition of the expenditure aggregate. More specifically, the adjusted expenditure aggregate only corrects unemployment benefits for the economic cycle. It excludes interest payments, smooths public investment and excludes investment spending if matched by EU funds. Third, the way cyclical unemployment expenditure is excluded from the calculation is slightly different in the dSB and EB. Fourth, the EB does not account for changes in revenues in relation to GDP other than from discretionary revenue measures, while the dSB includes windfalls and shortfalls.

The choice and the design of the fiscal performance indicator has important policy implications. A comparison of the fiscal performance of euro area countries reveals significant differences depending on whether the assessment is based on the dSB or the EB. The fiscal performance of countries may also be systematically better or worse, depending on which is used. This is particularly apparent when examining how benevolent the change in the structural balance appeared to be for Germany in the 2010s; it was much more restrictive for Spain and Italy.

First, this paper finds that the EB has advantages over the dSB as a fiscal performance indicator. Smoothing potential output in the EB does not fully resolve the issue of volatility in the indicator. However, as expenditure rules are less affected by potential growth estimate revisions, they provide more predictability in fiscal

requirements. This predictability of the EB is further increased by the smoothing of public investment, another variable that is subject to significant volatility and revisions. Even more importantly, the EB can be shown to be less procyclical as a fiscal rule than the dSB. In particular, the EB smooths potential output over the business cycle. It also does not take account of revenue windfalls and shortfalls, which are typically thought to be cyclical.

Second, the EB in its current form as specified in the SGP still has scope for improvement. For example, this paper shows that revenue windfalls and shortfalls may partially be under the control of the government. A more careful analysis of fiscal developments in a country may therefore be warranted, particularly where “windfalls” recur annually. Some elements of the EB also lack transparency. In particular, the rules governing the recording of discretionary revenue measures by governments should be clarified in view of measurement and recording issues surrounding the budgetary impact of fiscal policies.

Third, the paper discusses whether the fiscal performance indicator in the SGP should be more responsive to monetary policy effects, for example by taking account of interest payments. It has been argued that excluding interest payments from a fiscal performance indicator is warranted because interest payments fall outside the control of governments in the short term, and this reinforces the strict separation of fiscal and monetary policy. On the other hand, there are arguments in favour of including interest payments in the fiscal performance indicator. Taking account of them implies that fiscal space under the governance framework increases when the central bank undertakes expansionary monetary policy and decreases when the central bank aims to rein in inflationary pressures. In other words, fiscal policies can serve to reinforce monetary policy effects. For the period 2012 to 2019, accounting for interest rates in the fiscal targets would have created fiscal space of up to 0.4 percentage points in individual euro area countries, and up to 0.2 percentage points in the euro area as a whole.

1 Introduction

Policymakers broadly agree that a reformed and simplified fiscal governance framework should feature a single debt anchor and a single operational rule as a basis for calculating fiscal adjustments. First, an overall target for total government debt should be defined in such a way as to ensure debt sustainability.[1] Second, an operational target, typically set for a calendar year, should guide a government's budgetary policy in line with this overall public debt target. Andrle et al. (2015) propose the public debt-to-GDP ratio as a single fiscal anchor and an expenditure growth rule as a single operational target. More concretely, a widely discussed proposal by 14 French and German economists suggests a country-specific debt target and a nominal expenditure rule consistent with that target (Bénassy-Quéré et al., 2018). In its reform proposals, the European Fiscal Board (2020) suggests similar debt targets and a ceiling on the growth rate of primary expenditure net of discretionary revenue measures to achieve debt reduction (as do Alloza et al., 2021).

Given the central importance of a single fiscal indicator for setting a fiscal target and measuring its achievement in a reformed governance framework, this paper provides an in-depth assessment of alternative fiscal performance indicators. More specifically, it assesses two fiscal indicators that have played an important role in the current EU governance framework: the change in the structural balance and the expenditure benchmark. Under the framework, the change in the structural budget balance – the budget balance adjusted for cyclical influences – is interpreted as indicative of a government's underlying fiscal effort (see ECB, 2014).[2] The expenditure benchmark measures the net growth rate of primary government spending (adjusted for the estimated impact of discretionary revenue measures) and benchmarks this against the growth rate of potential economic output (ECB, 2011).

Comparing the change in the structural balance (dSB) and the expenditure benchmark (EB) allows us to identify options for designing a fiscal performance indicator. A fiscal rule based on a measure of the change in the structural balance and expenditure growth can be arithmetically equivalent, as this paper proves in the Annex (Section A.1). In practice, however, the dSB and EB used in the EU fiscal governance framework differ in several respects. First, the two indicators employ different measures of potential output growth. Second, they diverge in the way they define and/or include structural expenditure, interest payments, public investment and EU funds. Third, unlike the dSB, the EB ignores revenue windfalls or shortfalls (the change in revenues not explained by discretionary fiscal measures or a stylised economic cycle).

1 The debt rule has also been the subject of analytical work by the ECB (see Hauptmeier and Kamps, 2020).

2 More technically, the structural budget balance is the actual budget balance net of the cyclical component and one-off and other temporary measures.

Both the dSB and the EB are currently used to assess compliance with the fiscal rules under the Stability and Growth Pact (SGP). Under the preventive arm of the SGP, Member States are required to achieve their medium-term budgetary objective (MTO). The adjustment path towards the MTO is determined and assessed using the EB and the dSB. Under the corrective arm, Council recommendations set an annual fiscal effort in terms of change in the headline and structural balances and specify what these annual targets imply for the expenditure benchmark. If the required improvement in the headline and/or structural balance is not met, the Commission carries out an assessment of compliance using the EB as part of what is called "careful analysis". Since the end of 2016, this careful analysis has tended to give more prominence to the EB.[3]

Only a few studies have looked into the composition of fiscal indicators to identify sources of differences and their policy implications. Carnot and de Castro (2015) compare two measures of the fiscal stance: a bottom-up indicator that sums up fiscal measures adopted, similar to the EB, and a top-down indicator – the change in the structural balance. The European Fiscal Board (2020) breaks down the components of the dSB and the EB and shows that the change in the structural balance has a stronger cyclical pattern than the approach based on net expenditure growth.

The choice and design of one indicator or the other has important policy implications. A comparison of the fiscal performance of euro area countries reveals significant differences depending on whether the assessment is based on the dSB or the EB. Countries' fiscal performance may be systematically better or worse, depending on which is used. This is particularly apparent when examining how benevolent the change in the structural balance appeared for Germany throughout the 2010s compared with the EB, while the dSB was much more restrictive for Spain and Italy (particularly in the period from 2012 to 2016). Based on these insights, the paper draws the following policy conclusions.

- **First, the EB has advantages over the dSB as a performance indicator in the EU fiscal governance framework.** Compliance with a fiscal rule based on the EB can be shown to be more countercyclical than compliance with one based on the dSB. Furthermore, as the EB is less affected by revisions to potential growth, expenditure rules make government fiscal requirements more predictable.

- **Second, the EB in its current form in the SGP could be improved.** In particular, the expenditure benchmark lacks transparency, e.g. regarding the rules on how governments record discretionary revenue measures (see also Marinheiro, 2021).

- **Third, a fiscal performance indicator that accounts for interest payments would allow fiscal policies to support monetary policy.** A change in interest rates affects government interest payments only gradually, as debt is rolled over

[3] The Vade Mecum 2019 explicitly points out that the EB in the corrective arm is not identical to the one in the preventive arm (European Commission, 2019). The following comparison of EB and dSB will focus on the preventive arm, where the relative importance of the EB is greater.

and/or new bonds are issued. The paper shows that taking account of interest payments implies that fiscal space under the rules would gradually increase as the central bank pursues expansionary monetary policies. Likewise, allowing for interest payments reduces fiscal space when the central bank is aiming to rein in inflationary pressures.

This paper proceeds as follows. Section 2 discusses the use of fiscal performance indicators in the EU governance framework, explaining the differences between the dSB and the EB in detail. Section 3 analyses the implications of these differences for the transparency, predictability and procyclicality of the dSB and the EB. Section 4 concludes.

2 The expenditure benchmark and the change in the structural balance in the European governance framework

2.1 Fiscal performance indicators in the EU governance framework

Since its inception in the mid-1990s, the EU fiscal governance framework has evolved into a complex surveillance mechanism.[4] Articles 121 and 126 of the Treaty on the Functioning of the European Union and the Stability and Growth Pact (SGP) imposed limits on government debt (60% of GDP) and the deficit (3% of GDP). A preventive arm of the SGP provides for fiscal targets aimed at avoiding the build-up of imbalances, while a corrective arm sets targets to correct fiscal imbalances (Melyn et al., 2015). The "six-pack" reform of 2011 further included provisions for orderly debt reduction to reach the 60% of GDP target.

No less than four indicators serve to set annual fiscal targets for governments and assess their compliance with the fiscal governance framework. The first, and possibly most well-known, is the headline budget deficit. The second, the structural balance, features in the framework in two ways. The level of the structural balance is used to assess whether Member States adhere to the medium-term objective of budgetary positions of close to balance or in surplus; the change in the structural balance is used to measure a government's fiscal consolidation effort. The third, the EB, was introduced by the "six-pack" reform in 2011, and uses adapted expenditure growth and discretionary revenue measures to estimate fiscal efforts alongside the dSB. The fourth is the change in the debt level, and was also introduced as an operational indicator for the Treaty debt criterion.

The dSB and the EB have been the focus of an ongoing reform debate as potential candidates for a single operational indicator. Most proposals suggest moving to an expenditure growth indicator, but not necessarily the EB as currently employed.[5] In the following we compare the dSB and EB as implemented in the EU fiscal governance framework. This partial analysis speaks to broader issues identified as problematic in the framework: complexity, transparency, consistency and cyclicality.

In the preventive arm of the SGP, both the dSB and the EB are used to measure consolidation efforts. The key requirement is to achieve the medium-term objective (MTO), expressed in terms of a structural balance. The SGP sets out a path for adjustments that need to be made by countries which have not yet met

[4] See Kamps and Leiner-Killinger (2019) for a description of how the EU fiscal governance framework has evolved and its track record.

[5] For a comprehensive overview of 230 proposals for reforming the SGP see Debrun and Orseau (2022, forthcoming).

their MTO, with a view to converging towards the objective sufficiently quickly. The adjustment path is determined and assessed using two indicators. The first is the dSB, where an annual adjustment towards the MTO is required. This has been in use since the SGP reform of 2004/05. The second is the expenditure benchmark, an operational rule setting an upper limit for growth in net primary government expenditure.

The EB has gained in importance in comparison with the dSB since the European Commission began to put more emphasis on it at the end of 2016. Since 2017, the requirements in terms of the EB have been included in the Council's country-specific recommendations.[6] Until 2016, for Member States that had not yet attained their MTOs, the adjustment requirements were set out only in terms of dSB. It was argued that the EB as a rule is more predictable and measurable, and that compliance with the benchmark is less affected by factors outside government control. For similar reasons, it is therefore often seen as easier and more intuitive to use an expenditure-based measure when communicating with the public. Additionally, the Commission mentions that, unlike the dSB, the EB is not affected by large revenue windfalls which disguise unsustainable expenditure growth. The Commission therefore gives prominence to the EB when assessing compliance with the preventive arm of the SGP, unless there is a clear reason to depart from it (European Commission, 2018).

Both the dSB and the EB also feature under the corrective arm of the SGP. An excessive deficit procedure may be launched when a Member State exceeds the deficit reference value, or misses the minimum debt reduction requirement in cases where debt already exceeds its reference value. A Council recommendation then sets a deadline for correcting the excessive deficit and a path with intermediate annual targets for the general government balance. The recommendation also sets an annual fiscal effort in terms of the dSB of at least 0.5% of GDP as a benchmark, consistent with the nominal path towards correcting the excessive deficit. In addition, it specifies what those annual targets imply for the expenditure benchmark (European Commission, 2018).[7] When assessing whether effective action has been taken to comply with the EDP recommendations, first the changes in the headline and structural balances are considered. This assessment of the dSB has been in place in the corrective arm of the SGP since it was reformed in 2005, to decrease procyclicality (i.e. to avoid punishing Member States for missing their deadlines for correcting headline figures due to a worsening of macroeconomic conditions). If the headline deficit target or the underlying required improvement in the structural balance is not met, the Commission engages in a more detailed examination, known as "careful analysis". This step was introduced due to the criticisms of the dSB mentioned above. Since the end of 2016, the careful analysis has been centred on the EB, so the indicator is important for assessing delivery of effective action. The EB therefore plays a role at a later stage in the assessment process in the corrective arm than in the preventive arm of the SGP (European Commission, 2018). Note, however, that the EB in the corrective arm is not identical to the one in the preventive

6 See Ecofin (2016a) and Ecofin (2016b).

7 The transformation of the dSB target into an EB is also different in the corrective and preventive arms of the SGP.

arm.[8] Due to its larger importance, the following comparison of EB and dSB will focus on the preventive arm.

This short description of the dSB and the EB in the preventive and corrective arm of the SGP underlines the high degree of complexity of the fiscal framework. Andrle et al. (2015) find that "the current fiscal governance system involves intricate set of constraints, which complicates effective monitoring and public communication, and creates risks of inconsistency and overlap between the different parts of the system". Leiner-Killinger and Nerlich (2019) show that the number of fiscal rules in place has tripled in euro area countries over the past 20 years. At the same time, policymakers broadly agree that simplicity is critical to the success of a rule-based framework, particularly when enforcement depends on public scrutiny and political pressure. Assessing compliance with fiscal rules according to two competing criteria is difficult to understand even for experts in the field, and almost impossible to communicate to the public. This is aggravated by the fact that, as this paper will show, the two measures are not consistent and therefore do not necessarily lead to the same policy conclusions.

2.2 Differences in the design of the expenditure benchmark and the change in the structural balance

The EB and a dSB are defined in the European Commission's Vade Mecum on the SGP (European Commission, 2019). The dSB is the change in the actual budget balance "net of the cyclical component and one-off and other temporary measures". The EB stipulates that "spending increases which go beyond a country's medium-term potential economic growth rate must be matched by additional discretionary revenue measures".

EB and dSB rules in their pure forms can be shown to be arithmetically equivalent. The proof of the equivalence of the two fiscal indicators can be found in the Annex (Section A.1). However, there are important differences between the EB and a dSB in the way they are designed in the EU governance framework.

In practice, the dSB and EB used by the European Commission differ in several respects. First, the EB takes smoothed (i.e. ten-year average) nominal potential GDP growth as a reference for expenditure growth, and freezes this to assess ex post compliance; the SB is based on annual nominal potential GDP growth, and does not freeze it. Second, the EB is applied to a corrected expenditure aggregate. More specifically, the adjusted expenditure aggregate excludes interest payments, smooths public investment (taking the average of the past four years) and excludes investment spending if matched by EU funds. Third, the EB excludes cyclical unemployment expenditure slightly differently than in the structural balance. Furthermore, it ignores changes in revenues as a percentage of GDP other than

[8] In the corrective arm, the EB is specified such that it is ex ante identical to the dSB (the EB does not rely on a ten-year average of potential growth), while in the preventive arm EB and dSB differ ex ante (see Section 3). This is explicitly stated by the Commission in its Vade Mecum 2019.

those from discretionary revenue measures (i.e. revenue windfalls or shortfalls are left out).

The following two expressions show the factors that may cause a deviation from fiscal targets based on the dSB and EB. Section A.2 in the Annex formally derives the differences between the two rules. Expressions are in terms of the structural balance as a percentage of GDP. For the dSB in the EU fiscal governance framework, equation (1) shows changes in the structural balance, i.e. positive deviations from a rule that sets a zero change in the structural balance as a target. Positive changes can result from structural revenue growing faster than potential GDP (the first squared bracket) due to (i) discretionary revenue measures (DRM_t^{exp}); (ii) other revenue developments; (iii) structural expenditure growing slower than potential GDP (second squared bracket). For the EB in the EU fiscal governance framework, equation (2) shows a positive deviation from a target of a zero change in the structural balance. This can be explained by the following factors: (i) discretionary revenue measures (the first squared bracket); (ii) the corrected expenditure aggregate growing slower than smoothed expected potential GDP ($\bar{y}^{*,exp}$) (the second squared bracket).

$$\Delta \text{sb}_t = \left[\frac{DRM_t^{exp}}{Y_t} + \underbrace{\frac{\Delta R_t - DRM_t^{exp}}{Y_t} - \frac{R_{t-1}}{Y_t}\frac{\Delta Y_t}{Y_t} - \varepsilon_{OG}^{R}\Delta OG_t}_{[D]}\right] - \left[\underbrace{\frac{\Delta E_t}{Y_t}}_{[B]} - \underbrace{\frac{E_{t-1}}{Y_t}\frac{\Delta Y_t}{Y_t} - \varepsilon_{OG}^{E}\Delta OG_t}_{[C]}\right] \quad (1)$$

$$dev_{\text{eb}_t} = \left[\frac{DRM_t^{exp}}{Y_t}\right] - \left[\underbrace{\frac{\Delta E_t^{EC}}{Y_t}}_{[B]} - \underbrace{\frac{E_{t-1}}{Y_t}\frac{\Delta Y_t}{Y_t} - \varepsilon_{OG,t}^{E}\Delta OG_t}_{[C]} - \underbrace{(\bar{y}_t^{*,exp} - y_t^{*})\frac{E_{t-1}^{EC\,*}}{Y_t}}_{[A]}\right] \quad (2)$$

Equations (1) and (2) reveal that the factors explaining a deviation from the dSB and the EB with targets set at zero are not the same. The differences between the two rules show the possible inconsistencies between the European Commission's dSB and EB rules.

The factors explaining the differences between the European Commission's dSB and EB are the following:

- **Macroeconomic growth (expression $[A]$)**
  - The definition of potential GDP growth: the expenditure benchmark compares expenditure growth with smoothed nominal potential GDP growth, while the change in the structural balance rule uses nominal potential GDP growth as a benchmark. Moreover, the expenditure benchmark freezes this smoothed growth at the rate expected ex ante (i.e. at the time the target is set). The expenditure benchmark is thus more restrictive if smoothed expected nominal potential GDP growth is lower than nominal potential GDP growth. The difference can be further disentangled into a real component and a GDP deflator component.

- **Expenditure (expressions $[B]$)**
    - Interest payments ("Intr"): the adapted expenditure definition the Commission uses for the expenditure benchmark excludes interest payments. As a result, the movement in interest payments is not taken into account in expenditure growth under the expenditure rule, while it is included in the change in the structural balance.
    - Investment ("Inv"): the corrected expenditure aggregate used by the Commission for the expenditure benchmark smooths public investment by taking the average of the last four years, and excludes investment spending matched by EU funds. As a result, changes in spending matched by EU funds and public investment above the four-year average does not contribute to nominal structural expenditure growth under the expenditure rule, while it does to the change in the structural balance.
- **The cyclical component of unemployment expenditure ("Uc", expressions $[C]$)**
    - Expenditure is corrected for the cyclical component of unemployment expenditure. In the expenditure benchmark, this is done by multiplying the unemployment gap (the difference between the actual unemployment rate and estimated NAWRU, the non-accelerating wage rate of unemployment) by unemployment benefit expenditure. In the structural balance, this is done by multiplying the output gap by a fixed elasticity of total expenditure to the cycle.
- **Revenue windfalls or shortfalls ("Windfalls(+)/Shortfalls(-)", (expression $[D]$)**
    - Decreases and increases in the structural revenue ratio that cannot be explained by the estimated impact of discretionary revenue measures are called revenue shortfalls and revenue windfalls respectively. These can be caused by several factors: (i) under- or overestimates of discretionary revenue measures; (ii) structural increases or decreases in revenues due to the tax system (e.g. fiscal drag), tax compliance, structural changes in the economy, etc.; (iii) cyclical increases or decreases in revenues that are not captured by the EC's method for cyclically adjusting the budget balance. A decrease in the structural revenue ratio that is not caused by estimated discretionary revenue measures only impacts the change the structural balance; by definition it does not contribute to the deviation from the expenditure benchmark.

It is important to highlight that the dSB and the EB play a role both when targets are set (ex ante) and when they are assessed (ex post). Ex ante differences show whether one rule is more or less restrictive than the other, given the

economic outlook at the time the targets were set.[9] Ex post differences show whether a country complied better or worse with one or other of the rules, given the fiscal and economic outturn.

Adding further complexity, it should be noted that the differences described above apply to the preventive arm of the SGP. In the corrective arm, ex ante requirements for the expenditure benchmark and the change in the structural balance imply the same "true" fiscal effort. This means that the EB in the corrective arm relies on the recurrent potential GDP growth rates underlying the EDP recommendation, not on rolling ten-year averages. Hence, differences in the ex post assessment between dSB and EB come from unexpected revenue windfalls/shortfalls or changes in interest payments, not from total revenue windfalls/shortfalls or the total change in interest payments. In the remainder of this note we only consider the differences between dSB and EB in the preventive arm of the SGP.

2.3 Numerical implications of the difference between the expenditure benchmark and the change in the structural balance

In the following, we quantify the differences between the expenditure benchmark and the change in the structural balance rule. We do so by using historical data for the difference between the dSB and the EB. We also draw a distinction between ex ante and ex post differences.[10] Ex ante differences refer to when the targets are set and calculated using the expected values of relevant variables at that time.[11] Ex post differences refer to when compliance with the targets is assessed and are based on realised values of the relevant variables.[12,13] Table 1 provides an overview that helps to interpret the results.

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9 Note that there are only ex ante differences between EB and dSB in the preventive arm, as the formula for the convergence margin in the EB here does not include the projection of dSB. In the corrective arm, EB is calibrated such that its requirements are ex ante the same as in dSB.

10 Distinguishing between ex ante and ex post differences is important. While major decisions on EU governance are made based on ex post data, ex ante projections are used to assess stability and convergence programmes and draft budgetary plans. GDP deflator growth is ex ante the same in both EB and dSB; ex post it can be different, as the EB relies on the frozen ex ante projection.

11 The data used for the ex ante calculations are based on the AMECO spring vintage of the year before the year for which the target is set (for example, the spring 2017 forecast for 2018). This means the targets are compared to data available at the time the country-specific recommendations for the next year came out.

12 For the ex post calculations, we use the AMECO spring vintage of the year after the year for which the target is set (for example, the spring 2019 forecast for 2018). This means the assessment based on the two rules is compared to the data available at the time compliance with the rules was first evaluated.

13 Except for smoothed potential GDP growth, which is frozen in the expenditure benchmark.

Table 1

Difference between the dSB and the EB – Interpretation of results

	Positive sign ("ex ante")	Positive sign ("ex post")
	A fiscal target based on the EB is more restrictive than a fiscal target based on the dSB because…	Compliance with the EB is worse than compliance with the dSB because…
Real potential GDP growth ("Real potential")	… expected smoothed real potential GDP growth is lower than expected real GDP growth in real time.	… the frozen ex ante smoothed real GDP growth is lower than actual (ex post) real GDP growth.
GDP deflator growth ("Deflator")	[No difference, because the GDP deflator growth is the same under both rules.]	… the frozen ex ante GDP deflator growth is lower than the actual (ex post) GDP deflator growth.
Interest payments ("Intr")	… interest payments are expected to fall.	… actual interest payments fell.
Investment ("Inv")	… spending matched by EU funds is expected to fall and/or public investment is expected to fall below its four-year average.	… spending matched by EU funds falls and/or public investment falls below its four-year average.
The cyclical component of unemployment expenditure ("Uc")	… the output gap is expected to improve and the semi-elasticity is higher in absolute terms, or the output gap is expected to worsen and the semi-elasticity is lower than the fixed semi-elasticity in absolute terms.	… the output gap improved and the semi-elasticity is higher in absolute terms, or the output gap worsened and the semi-elasticity is lower than the fixed semi-elasticity in absolute terms.
Revenue windfalls or shortfalls ("Windfalls(+)/Shortfalls(-)")	… revenue windfalls are expected.	… there were revenue windfalls.

Source: authors.

The differences between the two rules are substantial in some years, both ex ante and ex post, in all countries. Chart 1 to Chart 3 show the difference between the dSB and the EB for Germany, Spain and Italy.[14] The left-hand side of the graphs shows the ex ante values, the right-hand side ex post. Germany, Spain and Italy are of particular interest not only because of their share in euro area GDP, but also due to the sizeable differences between EB and dSB in these countries. Calculations show that ex post (the blue dots, right-hand side of the graph), in Germany the dSB pointed to relatively better compliance with the rules than the EB (i.e., fiscal consolidation is larger when estimated using dSB than EB). The opposite was true in Italy and Spain in most years: here, ex post compliance is better with the EB (i.e., fiscal consolidation is larger when estimated using dSB than using EB).

The source of these large ex post differences lies in the way the European Commission calculates the dSB and the EB. There were revenue windfalls in Germany over almost the entire period observed, while Italy and Spain mostly had shortfalls. For the latter country they were also of particular importance in policy assessments, as the European Commission (2013) found sizeable revenue shortfalls in its evaluation of Spain's consolidation efforts using EDP in 2012. Interest payments consistently declined in Germany, and in Italy too on average, contributing to easier compliance with the dSB. While actual potential GDP growth turned out only slightly higher than smoothed frozen potential GDP growth in Germany, making it easier to comply with the dSB rule, it was much lower in Italy and Spain in 2012 and 2013, making it much easier to comply with the EB in these countries (as projections for the GDP deflator were revised downwards and estimated real

[14] The graphs are constructed such that positive values imply the change in the structural balance has a higher value than the expenditure benchmark (i.e. dSB is less restrictive than EB).

potential growth was particularly low). The downward nominal potential GDP revisions were of particular relevance in the assessments of Italy's consolidation efforts: the European Commission (2015) stressed the sizeable downward revisions of GDP deflators and real potential growth in its analysis of Italy's consolidation requirements under the SGP's debt benchmark in 2014/15.

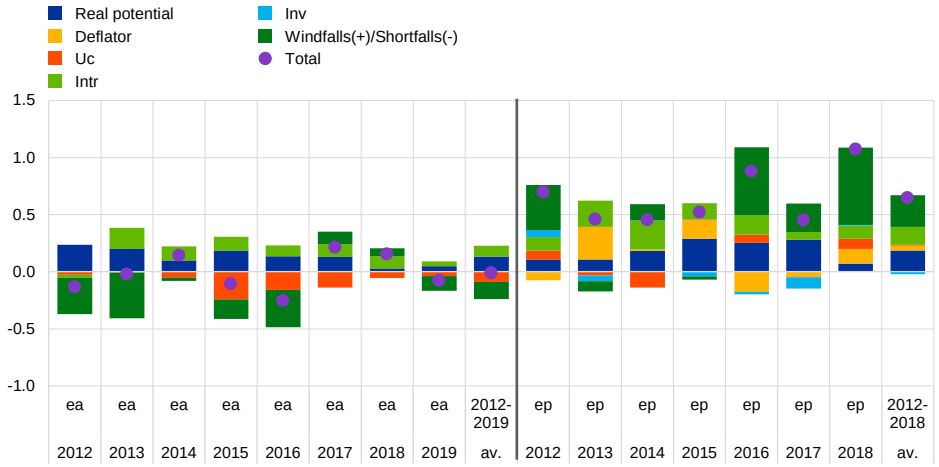
Ex ante differences between dSB and EB were generally lower than ex post differences, but still substantial in some cases. In Spain from 2012 to 2014, projected potential GDP growth was much lower than its smoothed version, making the dSB rule more restrictive ex ante. In Italy, relatively large revenue shortfalls were expected, again contributing to the relative strictness of the dSB rule (the left-hand side of the graphs).

Chart 1

Ex ante and ex post differences between the expenditure benchmark and the change in structural balance rule between 2012 and 2019

Germany

(in percentage points of GDP; a positive sign means the expenditure benchmark is more stringent)



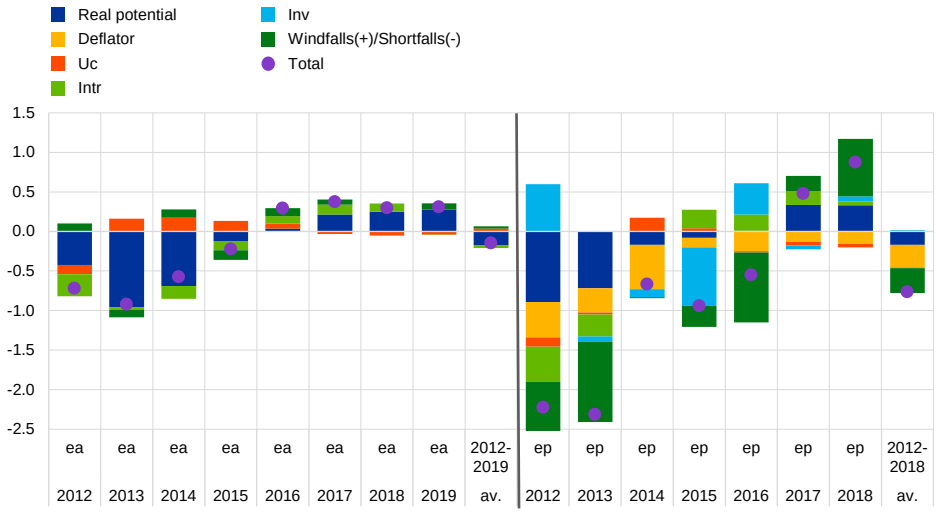
Source: Own calculations based on European Commission data.
Notes: ea = ex ante (i.e. difference in spring t-1), ep = ex post (i.e. difference in spring T+1).

Chart 2

Ex ante and ex post differences between the expenditure benchmark and the change in structural balance rule between 2012 and 2019

Spain

(in percentage points of GDP; a positive sign means the expenditure benchmark is more stringent)



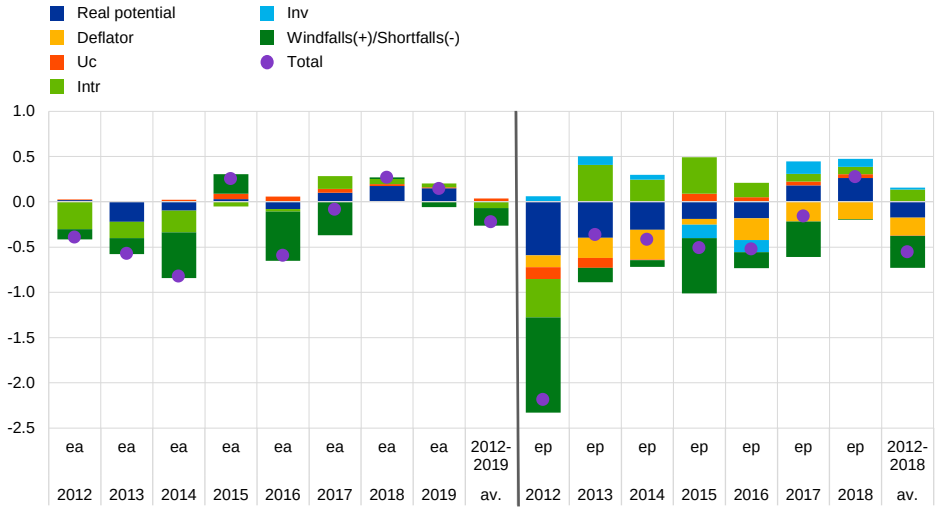
Source: Own calculations based on European Commission data.
Notes: ea = ex ante (i.e. difference in spring T-1), ep = ex post (i.e. difference in spring T+1).

Chart 3

Ex ante and ex post differences between the expenditure benchmark and the change in structural balance rule between 2012 and 2019

Italy

(in percentage points of GDP; a positive sign means the expenditure benchmark is more stringent)



Source: Own calculations based on European Commission data.
Notes: ea = ex ante (i.e. difference in spring T-1), ep = ex post (i.e. difference in spring T+1).

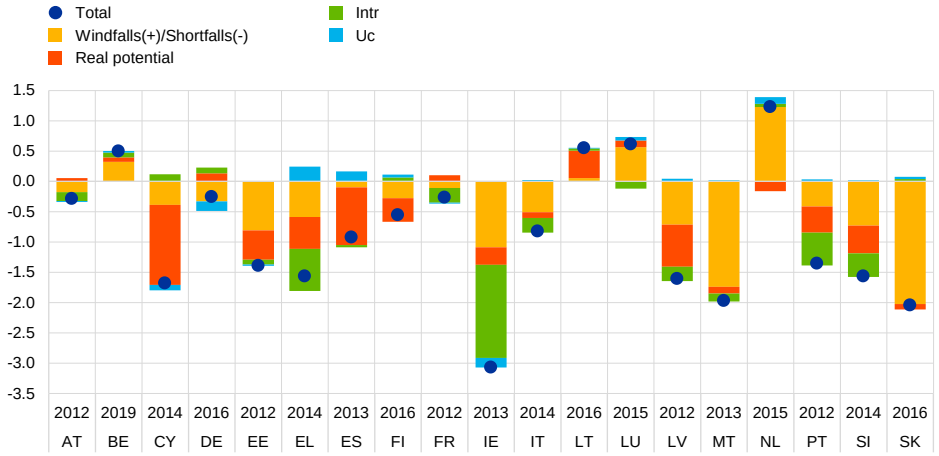
The difference between dSB and EB can be large in other euro area countries too. Chart 4 and Chart 5 show the maximum ex ante and ex post deviation for each country between 2012 and 2018/2019. Apart from (ex ante) expected revenue windfalls/shortfalls, which are shown here for completeness but are less relevant

because governments have ex ante control over revenues, the main driver of the largest differences in the ex ante stringency of both rules is the difference between expected smoothed and non-smoothed potential GDP growth. For example, in Cyprus in 2014 the expenditure rule was less stringent mainly because expected potential GDP growth was more than one percentage point lower than expected smoothed potential GDP growth. Expected changes in interest payments are also an important explanation for some of the largest differences. Differences in ex post thresholds for compliance with the two rules are even bigger, from more than 0.5 (in France) to more than four percentage points of GDP (in Cyprus).

Chart 4

Maximum ex ante differences between the expenditure benchmark and the change in structural balance rule between 2012 and 2019

(in percentage points of GDP; a positive sign means the expenditure benchmark is more stringent)

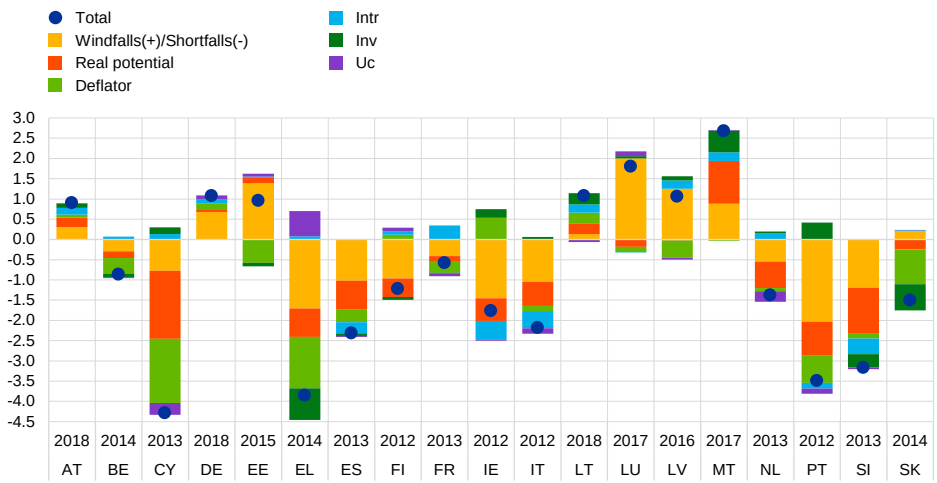


Source: Own calculations based on European Commission data.

Chart 5

Maximum ex post differences between deviation from the expenditure benchmark and the deviation from the (change in) structural balance rule between 2012 and 2018

(in percentage point of GDP; a positive sign means that the expenditure benchmark is more stringent)



Source: Own calculations based on European Commission data.

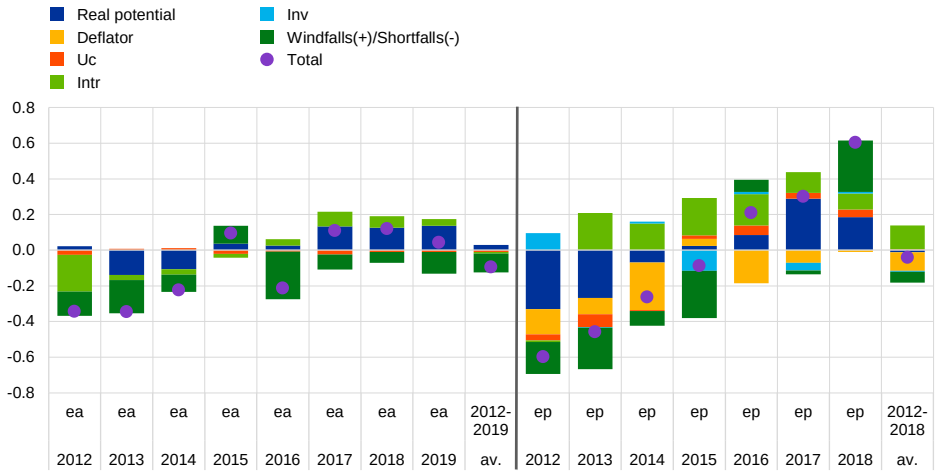
Differences between the way the rules are calculated also affect the euro area aggregate level. The GDP-weighted average euro area differences shown in Chart 6 reveal the following patterns: from 2012 to 2014 potential GDP estimates turned out to be lower on average than ex ante frozen smoothed potential GDP growth, making the expenditure benchmark less stringent. In 2017-2018, the opposite happened. Between 2012 and 2015, revenue shortfalls occurred on average, which made the structural balance rule more stringent. The opposite happened in 2018. Over the period 2013-2018, interest payments decreased on average. Unlike with the structural balance rule, declining interest payments were not allowed to contribute to hitting budget targets according to the expenditure benchmark.

Chart 6

Ex ante (ea) and ex post (ep) differences between the expenditure benchmark and the change in structural balance rule in the euro area

Euro area

(in percentage points of GDP; GDP-weighted average of euro area countries; a positive sign means the expenditure benchmark is more stringent)



Source: Own calculations based on European Commission data.
Notes: ea = ex ante (i.e. difference in spring T-1), ep = ex post (i.e. difference in spring T+1).

3 Implications for the design of a fiscal performance indicator

The difference identified between the dSB and the EB has important policy implications. It sheds light on the factors that influence the way the current EU governance framework is implemented. More importantly, it allows us to draw lessons for the design of a fiscal performance indicator. We focus on three aspects: predictability, complexity and cyclicality.

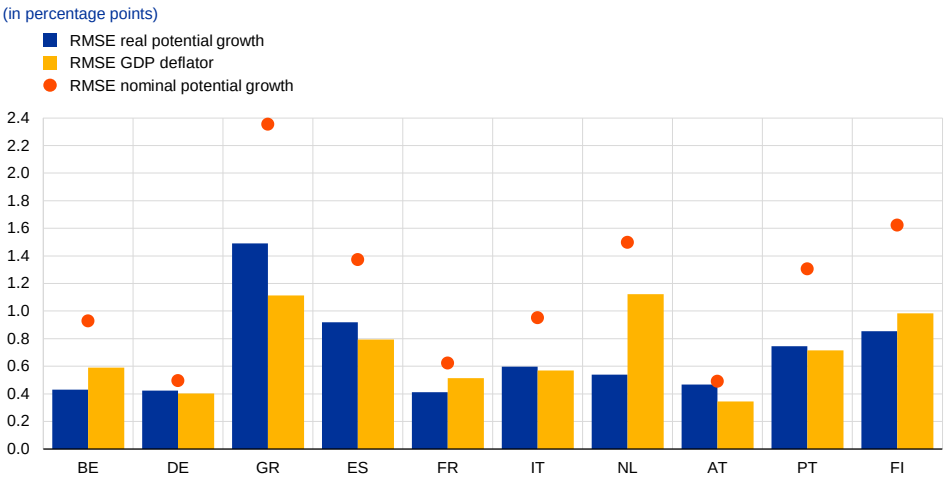
3.1 Smoothing and freezing potential GDP growth

Potential GDP is unobservable and estimates are subject to revision. Chart 7 shows that between 2003 and 2018, revisions to real potential growth rates as summarised by the root mean squared error (RMSE) were relatively sizeable. A RMSE of real potential growth rates of one-half of a percentage point (i.e. the approximate RMSE for the countries with the most stable estimates) translates mechanically into a one-quarter of a percentage point revision to the change in the structural budget balance (assuming a budgetary semi-elasticity of about 0.5).[15] There are also sizeable revisions to the projections of GDP deflators (the white bars), contributing to revisions to nominal potential growth (the grey dots) being much larger than revisions to real potential growth. This is highly relevant, as underlying potential growth rates rely on the actual deflator in the dSB, while projected deflators are used in the EB.

[15] Excluding the particularly large revisions to real and nominal potential growth rates in 2008 and 2009 would reduce RMSEs on average by about one-fifth.

Chart 7

Revisions to potential growth rates (2004-2018)



Source: Own calculations based on European Commission data.
Note: The bars and dots show the RMSE resulting from a comparison of the spring t-1 projections with the estimates/releases from spring t+1.

Revisions to potential GDP estimates can damage the predictability of a fiscal performance indicator. When assessing the change in the structural balance, the European Commission uses the most recent estimate of the change in the output gap (or potential growth). To avoid revisions and increase predictability, the nominal potential GDP growth rate (i.e., both real potential growth and the change in the GDP deflator) used to assess the appropriateness of expenditure growth is fixed ex ante for the EB. The results in Section 2.3 show that the relatively large revisions in potential growth sometimes translate into important differences in ex post compliance depending on whether the EB or the dSB (the latter using realised potential growth) is used for the assessment.[16]

Along with a lack of predictability, another main concern with the dSB is its susceptibility to reduced countercyclicality. Chart 8 indicates that the different definitions of underlying potential growth and revenue-based fiscal adjustments tend to make the dSB less countercyclical than the EB.[17] For this exercise, the cycle is measured using the change in the output gap based on the spring 2021 estimates of the European Commission.[18] A one percentage point larger change in output gap (i.e. GDP growth one percentage point higher for given potential growth) leads on average to an upward revision of 0.297 percentage points in potential growth

16 Note that before the EB was given a more prominent role in the corrective arm of the SGP, the dSB used to be corrected for unexpected changes in potential GDP growth (the so-called “alpha correction”). This illustrates that freezing potential GDP growth is not limited to the EB.

17 All slope coefficients are significant at the 1% level except the one for potential growth smoothing when measuring the cycle with the change in the output gap. Due to the very high volatility of their GDP growth rates (and therefore of their output gaps), we exclude the seven euro area countries that joined EMU after 2001, plus Ireland and Luxemburg. For the cyclicality of potential growth we look at data from 2004 to 2018; for revenue windfalls (due to data availability issues) from 2010 to 2018.

18 The annex shows that using the level of the output gap yields qualitatively similar results, but slope coefficients are much smaller, mainly due to the larger variance of the level of the output gap compared to its change. A larger level in the output gap of one percentage point (i.e. a GDP level 1% higher for a given potential GDP) translates into a larger estimated fiscal adjustment of 0.051 + 1/2 * 0.123 ~ 0.11 percentage points.

(Chart 8b). Chart 8c and Chart 8d indicate that the lower procyclicality of potential growth in the EB is mainly related to the freezing of potential output estimates. So the use of potential growth estimates from spring T-1 in the EB not only increases predictability, it also increases countercyclicality (Chart 8d). This is due to the tendency of macroeconomic projections to be smoother than reality (i.e. the tendency of T+1 and T+2 projections to overpredict GDP growth in recessions and underpredict it in booms).

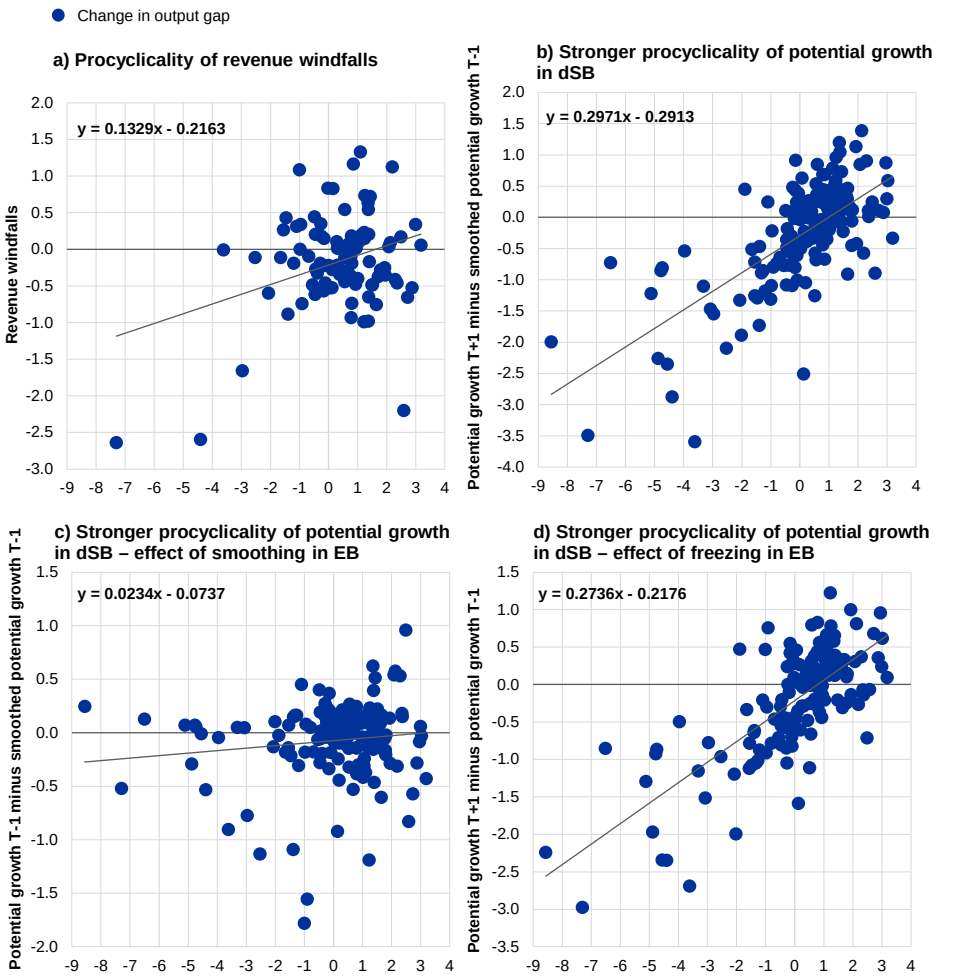
The smoothing of potential output has only a very limited effect on the cyclicality of the EB compared with the dSB. While the change in the structural balance implicitly relies on the year-on-year growth rate in nominal potential output, the EB in the preventive arm builds on a rolling ten-year average of real potential growth rates between years t-6 and t+3, combined with the projected increase in the GDP deflator in year t. Theoretically, this should ensure a smoother ex ante benchmark growth rate for expenditure compared to the change in the structural balance, but – as Chart 8c shows – the practical effect on the relative cyclicality of the EB is very limited. The difference is small because potential growth rates already represent smoothed actual GDP growth rates, so a second round of smoothing has only a limited impact.

Overall, freezing potential GDP growth gives the EB a significant advantage over the dSB. As revisions to potential growth can be sizeable, freezing makes the EB more predictable. Freezing real potential growth also increases countercyclicality, while smoothing (using ten-year averages of potential growth) has only a very limited impact on cyclicality.

Chart 8

Relative procyclicality of revenue windfalls and potential growth estimates in dSB

(in percentage points of GDP)



Source: Own calculations based on European Commission data.
Notes: Revenue windfalls in Chart 8a are computed as the difference between change in structural revenue and discretionary measures (we also account for EU transfers, which is only possible ex post). The y-axis in Chart 8b is the difference between the potential growth used for measuring fiscal adjustments in the dSB (i.e. potential growth in T as at spring T+1) and that of the EB (i.e. the ten-year average of potential growth as at spring T-1), which is then decomposed into a smoothing effect (Chart 8c shows the difference between spring T-1 projections of potential growth in T and the ten-year average of potential growth) and a freezing effect (Chart 8d shows the difference between potential growth estimates for T as at spring T+1 compared to spring T-1).

3.2 Revenue windfalls and shortfalls

Revenue windfalls and shortfalls are often thought to be outside the control of the government. They are defined as changes in revenue which can neither be explained by discretionary measures nor by the changes to cyclical conditions. In many cases they are interpreted as being caused by unexpected cyclical fluctuations in revenues. Chart 8a shows that on average they are indeed procyclical: a one percentage point larger change in output gap (i.e. GDP growth one percentage point higher for given potential growth) leads on average to higher revenue windfalls of

0.134 percentage points.[19] Hence, it has been argued that they should be excluded from the analysis of underlying fiscal policies because what matters for fiscal performance is the change in revenues attributable to government measures. This is the rationale behind the European Commission's approach to calculating EB: it excludes any change in the structural revenue ratio that cannot be explained by discretionary revenue measures (or the change in EU transfers). Disregarding all revenue windfalls and shortfalls is conceptually correct if one assumes that they are cyclical in nature and cancel each other out over time and that a country is not responsible for them.[20]

However, revenue windfalls and shortfalls can also result from factors other than unexpected cyclical fluctuations. In that case, they should not be excluded from the benchmark. Chart 9 indicates that revenue windfalls are indeed procyclical to some extent. However, the derivation in Section A.2 of the Annex shows that revenue windfalls and shortfalls can have other causes too. More precisely, they can be the result of under- or overestimation of discretionary revenue measures, or structural changes in revenues of any kind, or a change in the composition of GDP growth, possibly induced by fiscal policy for which governments should be held accountable. As a result, if revenue windfalls/shortfalls occur, a more thorough analysis is advisable; the more so if they arise systematically.

The cases of Germany and Italy indicate that revenue windfalls and shortfalls can be large and persistent, raising the question whether these are cyclical or structural, and thus under the control of the government. Both countries had regular revenue windfalls and shortfalls according to European Commission calculations over the period 2012 to 2018 (Chart 9). In this case, there is little reason to exclude them from an assessment of fiscal policy performance. It is also hard to argue that they are always unexpected, as there are numerous examples of non-zero revenue windfalls and shortfalls based on spring forecasts for the next year. Furthermore, even if regular, the origin of revenue windfalls or shortfalls could be cyclical, for example if changes in the output gap or revenue semi-elasticities are systematically under- or overestimated. This illustrates the need for a deeper analysis.

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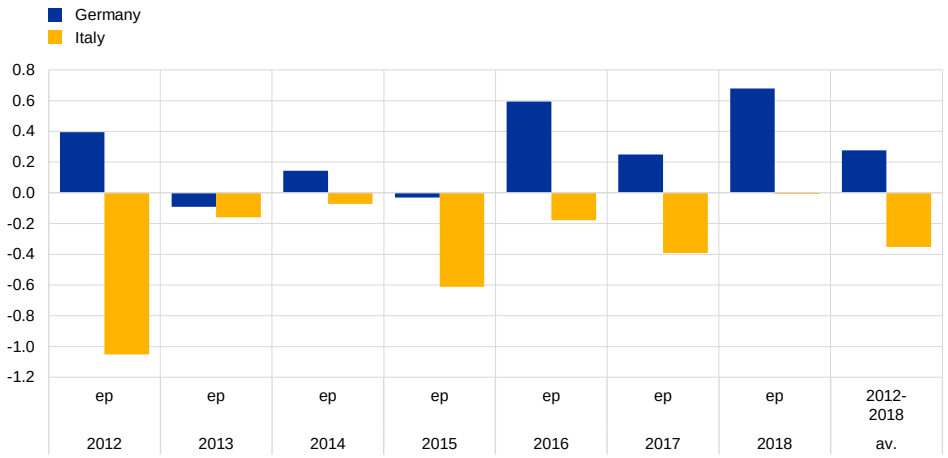
[19] Assuming a budgetary semi-elasticity of around one-half, this translates into an overall larger estimated fiscal adjustment of 0.134 + 1/2 * 0.297 ~ 0.28 percentage point in dSB as opposed to EB.

[20] Note that before the EB was given a more prominent role in the corrective arm of the SGP, the dSB was corrected for revenue windfalls and shortfalls (the so-called "beta correction").

Chart 9

Ex post revenue windfalls (+) and shortfalls (-) in Germany and Italy

(in percentage points of GDP)



Source: Own calculations based on European Commission data.

The uncertain interpretation of revenue windfalls and shortfalls is linked to the difficulty of estimating the budgetary impact of discretionary fiscal measures. The effect of some revenue measures, such as the abolition of a tax, should be known ex ante. The effect of the introduction of new taxes is difficult to project but can at least be observed ex post. However, while the direct effect of rate changes for proportional taxes can often be estimated relatively precisely, the indirect impact due to behavioural changes is often less clear.[21] Furthermore, the impact of measures changing the tax base (e.g. closing loopholes in corporate taxation) or against tax fraud are very difficult to quantify, even ex post. In addition, accounting for the revenue measures of smaller government entities (such as increases in ticket prices by extrabudgetary units, raising local taxes, etc.) is very labour-intensive. Because this is not always done, the list of fiscal measures are almost necessarily incomplete. Overall, it is safe to say that discretionary revenue measures are a partly unobservable concept.

There are also conceptual problems with discretionary fiscal measures. For example, the definition on the revenue side currently applied by the European Commission ignores increases from bracket creep in income tax and decreases from failing to adjust fixed excise duties and motor vehicle taxes. However, both these factors affect the change in structural revenue, even when there are no measurement problems.

Finally, discretionary revenue policy may be mismeasured due to the interaction between government expenditure and revenue measures. Government output is not consolidated in government finance statistics (European Union, 2013). While an increase in output sold between government entities has no impact on the budget balance, it increases government expenditure. Most importantly, this concerns revenue from output for own final use, which is also

[21] This only holds if there are no direct effects on revenue from other taxes (e.g. when introduction of a tax on wine decreases revenue from taxes on beer).

recorded as gross fixed capital formation on the expenditure side.[22] This stems mainly from imputed R&D investment by government, meaning that increases in spending on public research personnel increases expenditure twice; as employee compensation and as public investment.[23] These problems could easily be solved by deducting non-tax revenue (or at least revenue from "sales") from the expenditure aggregate. Furthermore, public wages and pensions are recorded in gross terms (European Union, 2013), as they include social contributions and income taxes. This implies that cuts to government wages and pensions do not improve the budget balance one-for-one, as such measures have a direct impact on government revenue from income taxes and social contributions (which would need to be accounted for in discretionary revenue measures).[24]

Overall, discretionary measures used to calculate the fiscal performance indicator should be defined clearly and transparently. Using discretionary measures as a way of quantifying revenue-based fiscal adjustments seems sensible. However, the way they are defined could be extended to include fiscal drag. More transparency regarding the scope of measures also seems warranted, e.g. a breakdown could be published in a database. Some of the measurement problems in the current EB might be attenuated by deducting elements of non-tax revenue (especially "sales") from the expenditure aggregate.

3.3 The role of interest payments

The structural balance includes interest payments, while the expenditure benchmark does not. The exclusion from the latter was a conscious decision when the EB was specified and is not an intrinsic feature of expenditure-based fiscal rules.

The main argument for excluding interest payments from the EB was that the size of such payments largely falls outside the control of governments in the short term. Changes in interest payments on government debt depend on the debt ratio and the interest rates on sovereign borrowing. Moves in interest rates can in turn be due to shifts in the euro area yield curve or country-specific risk premia. (European Commission, 2012).

It can further be argued that government fiscal policies should not react symmetrically to a change in interest expenditure. From a sustainability perspective, it is desirable that countries that have not reached the required debt stabilisation or reduction path use interest savings to improve their budget balance faster, rather than to restrict their effort to the primary balance, as they did before

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22 This concerns not just output for own final use. For example, if railway infrastructure and transport corporations are part of the government sector, an increase in fees for using the infrastructure would increase government expenditure, but is unlikely to be accounted for in revenue measures. It would even improve the budget balance, if there are private corporations using the railway infrastructure too.

23 For example, if the number of university professors is reduced, this decreases both compensation of employees and public investment. Therefore cutting funding for public universities is a particularly effective way of meeting the expenditure benchmark.

24 Moreover, the impact of changes to employers' social contributions (and payroll taxes) on government expenditure would need to be netted out of discretionary revenue measures to prevent misestimation of discretionary efforts.

2007. This particularly applies to countries with high debt sustainability risks. However, the logic only warrants excluding interest payments if they are falling; it does not justify symmetric exclusion of interest payments from the target (i.e., when they are rising, too).

Excluding interest payments from a performance indicator makes implementation of the fiscal rule more independent from monetary policy decisions. One important factor for government interest payments is, of course, central bank monetary policy. Where fiscal performance depends on this, policymakers can become subject to political pressures to make targets more attainable. It is doubtful, however, that excluding interest payments from the rules would lower this potential pressure. After all, financing conditions matter for fiscal policy whether they are included in the fiscal rule or not.

On the other hand, fiscal policy decisions need to take financing conditions into account, which is an argument for including interest payments in the fiscal performance indicator. An efficient economy requires fiscal authorities to react to the price signal from interest rates. These can be broken down into various elements. First, the structural component is an important determinant of debt sustainability. Structurally lower interest rates imply the debt-to-GDP ratio can be stabilised at a lower primary budget balance. This justifies including interest payments in budgetary targets. Second, a short-term component also depends on monetary policy decisions. Including interest payments can strengthen the positive interaction between fiscal and monetary policy. This can increase the effectiveness of monetary policy (Sims, 2016). One of the main transmission channels of monetary policy is that lower interest rates induce the non-financial sectors to increase spending. If lower interest payments loosen the restrictions in fiscal rules, this will also hold for the government sector. In other words, additional fiscal space on account of lower interest rates can be used to support an accommodative monetary policy. Third, interest rates incorporate sovereign risk premia. An increase in risk premia should induce governments to step up consolidation of public finances and bring down debt ratios. In other words, market discipline mechanisms can be reinforced by their inclusion in the fiscal performance indicator. To the extent that monetary policy decisions determine sovereign risk premia, taking them on board in fiscal policy decisions further enhances complementarity with monetary policy. A fiscal rule that excludes interest payments will therefore need regular monitoring of the debt path, and possibly also an explicit debt ceiling in the fiscal framework.

The experience of the 2010s shows the strong impact monetary policy has on governments' interest payments. Monetary policy reacted with determination to persistently low inflation, and this contributed to a strong decline in overall interest payments between 2013 and 2018 in the euro area (Chart 6), by about 0.2 percentage points per year from 2013 to 2016 and around 0.1 percentage points per year in 2017 and 2018. This shows that despite the long average maturity of public debt in most euro area Member States, the unconventional measures undertaken by

the Eurosystem starting in mid-2012 and reinforced in the middle of that decade impacted the change in interest payments both quickly and relatively strongly.[25]

The interaction between fiscal and monetary policy became a growing concern in the euro area in the 2010s. Despite the strong decline in interest payments, governments' fiscal policy response was strongly restrictive in the period 2011-13 in view of the sovereign debt crisis, and was still deemed too restrictive by some in the remaining years of the decade This was one of the conclusions of the ESCB Work stream on monetary-fiscal policy interactions (2021) and was also stated by the ECB President in 2019: "…fiscal policy playing a more supportive role alongside monetary policy would lead to a faster return to price stability and therefore fewer side effects."[26] Germany, in particular, was encouraged to take a more expansive fiscal policy stance in the 2010s, due to its large size and the fact that its structural balance was significantly above the MTO from 2012 onwards. Between 2013 and 2018, the country's structural balance improved by about 0.3 percentage points per year (i.e. dSB was on average 0.3), indicating further fiscal tightening. However, the EB indicated a significant fiscal loosening in Germany of about 0.3 percentage points per year (i.e. EB was on average -0.3). While this discrepancy is mainly due to the very sizeable revenue windfalls, including interest payments in the EB would have reduced the discrepancy between EB and dSB by about 0.2 percentage points per year.

Including interest payments in the fiscal performance indicator would make monetary policy more effective without endangering fiscal sustainability. The ESCB Work stream on monetary-fiscal policy interactions (2021) notes: "The main fiscal challenge is to ensure the countercyclicality of fiscal policies, both now and in good times, while preserving debt sustainability. Currently, public finances benefit from the global environment of structurally low interest rates favouring benign interest rate-growth differentials, reinforced by the accommodative stance of monetary policy. Looking ahead, it is crucial that fiscal policies also show countercyclicality in good times. If inflation developments call for a normalisation of monetary policy, requirements regarding the sound fiscal position of all Member States will become more stringent over time." Including interest payments in the requested budgetary position would therefore help to tie fiscal policy in with monetary policy.

[25] Note, however, that interest payments stayed roughly constant in the euro area in 2012, indicating that there are lags in the way expansive monetary policy affects this expenditure. In extreme cases of sudden swings in cyclical conditions and policy rates, the lag in interest expenditure could lead to procyclicality.

[26] Draghi (2019).

3.4 Smoothing investment

The treatment of government investment spending is different in the EB and the dSB. For the EB, public investment (excluding investment expenditure co-financed by the EU) is smoothed over four years, while in the dSB there is no such adjustment.

There are strong conceptual arguments in favour of smoothing investment over time. With government investment relatively volatile in some countries compared to other spending categories, smoothing out temporary fluctuations limits the extent to which governments could be penalised for peaks in their investment. This could be advantageous if productive projects are not discouraged as a result. Such an argument mainly applies to small countries, though. The positive incentive effects of smoothing apply to all countries, regardless of size. One of the reasons why public investment is often more affected by consolidation than other categories of expenditure is that resistance from the public is less. Reducing the short-run "cost" of investment increases and decreasing the short-run "gains" from investment cuts in fiscal rules could partly compensate for this unfortunate political reality.

Smoothing investment over its lifetime would be equivalent to excluding net public investment from the expenditure benchmark. To push the argument further, the ultimate smoothing of investment, i.e. over its lifetime, would be equivalent to using depreciation on investment in the fiscal rule, rather than investment itself. This is the same as excluding net investment from expenditure when evaluating the benchmark (see Blanchard and Giavazzi, 2004; Melyn et al., 2016). Such a change could induce governments to give more consideration to the net present value of investment projects. Given that return on investment often comes with a delay, there is a risk that investments are unduly punished in the current framework. This is an argument that has been made recently in relation to "green investment" projects in particular (see Box). However, it would raise new measurement issues over how to estimate depreciation. Government investment is also prone to fiscal projection errors and ex post revisions, so smoothing may hamper predictability.

Box 1

The treatment of green investments in the dSB and the EB

One proposal to aid the greening of economies in the EU is to treat green investments more favourably in the SGP than other expenditure. Whether fiscal rules should accommodate this is disputed, but it is interesting to investigate whether the dSB or the EB in the current form is the more supportive of such investments, and which of the two is easier to amend to accommodate green investments.

The current treatment of green investment in the EB and the dSB depends on the form it takes in the government accounts:

(a) Purchased government investment, like building new railways (which is recorded as government investment if the infrastructure corporation is part of the government sector), may be co-financed by the EU. If it is, the co-financed part is treated the same in the EB and the dSB. Otherwise, the treatment is more favourable in the EB due to the four-year smoothing of non-co-financed investment expenditure (see Section 3.1).

(b) Self-produced government investment, like research in public institutions, is treated more favourably in the dSB. Additional imputed investment has no impact on the dSB, as this is balanced by imputed revenue; in the EB the imputed revenue is not counted as discretionary (see Section 3.3).

However, typically green investments are made by entities classified as belonging to the private sector. They tend to involve households or private corporations buying electric vehicles or investing in reducing emissions from heating systems. There are also many publicly owned companies which are classified in the private sector rather than government, for example electric utilities (which play a large role in green investments). This does not mean that there is no role for governments in supporting such private investments, though. Governments can incentivise private sector entities to make green investments by means of regulations, tax changes and transfers (investment grants or subsidies). The former has no impact on government accounts; the latter two are treated equally in the EB and the dSB.

When it comes to extending incentives in fiscal rules, the EB and the dSB seem equally capable of favouring green investments. However, identifying them in real time could prove very challenging in practice. Investment expenditure ("gross fixed capital formation" in government accounts) can be subject to sizeable ex post revisions, and separating out the green portion of investment grants and subsidies could be difficult, too.

4 Conclusions

This paper has conducted an in-depth analysis of two alternative fiscal performance indicators: the change in the structural balance and the expenditure benchmark. It concludes that expenditure rules have advantages over the change in the structural balance as a fiscal performance indicator, on account of their predictability and increased countercyclicality. This provides support for SGP reform proposals that aim to measure consolidation efforts only in terms of the EB. However, the expenditure benchmark as currently used in the EU fiscal governance framework could be further improved as regards its transparency and cyclical properties. In the current SGP, the expenditure benchmark applied in the preventive arm differs from that in the corrective arm, which is an unnecessary complication. Transparency is currently lacking regarding discretionary revenue measures, and definition changes may be warranted. Further, while there are arguments both for and against, fiscal policy could be made more responsive to monetary policy if the expenditure benchmark were to take account of interest expenditure. The fiscal targets set for governments would be more supportive of the monetary policy stance as a result.

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Annex

A.1 Arithmetic equivalence of the change in the structural balance and the expenditure benchmark

This section shows the general equivalence between a fiscal rule that sets targets in terms of changes in the structural budget balance and a benchmark for expenditure growth.

The change in the structural budget balance (dSB) and the growth rate of structural expenditure (e_t^*) are linked through the definition of the structural balance, of which structural expenditure is part, in the following equation:

$$\begin{aligned} \Delta \text{sb}_t &= (r_t^* - y_t^*)\frac{R_{t-1}^*}{Y_t^*} - (e_t^* - y_t^*)\frac{E_{t-1}^*}{Y_t^*} \\ e_t^* &= (r_t^* - y_t^*)\frac{R_{t-1}^*}{E_{t-1}^*} + y_t^* - \Delta \text{sb}_t \frac{Y_t^*}{E_{t-1}^*} \end{aligned} \tag{1}$$

with Y^* nominal potential GDP, R total revenue, E total expenditure, y nominal GDP growth, r nominal revenue growth and e nominal expenditure growth. Superscript "*" stands for "structural", i.e. corrected for the impact of the business cycle and temporary factors, or "potential" in the case of GDP. Subscript "t" indicates the year.

For given values of the other variables (structural revenue growth, potential GDP growth, and structural revenue-to-GDP and expenditure-to-GDP ratios), the change in the structural balance and the growth rate of structural expenditure define each other: for given structural revenue and potential GDP growth, a bigger improvement in the structural balance requires lower structural expenditure growth.

To derive mutually consistent ex ante norms for year t in terms of the structural balance and structural expenditure growth, it is necessary to make assumptions on the expected changes in structural revenue and potential growth:

$$e_t^{*\,norm} = (r_t^{*\,exp} - y_t^{*\,exp})\frac{R_{t-1}^*}{E_{t-1}^*} + y_t^{*\,exp} - \Delta sb_t^{norm}\frac{Y_t^{*\,exp}}{E_{t-1}^*} \tag{2}$$

with superscript "$norm$" indicating that it concerns a target, and superscript "exp" pointing to expected values.

Expectations of the structural revenue-to-GDP ratio are usually based on a semi-elasticity of revenue with respect to potential GDP growth ($\varepsilon_{y^*}^R$)[27] and expected discretionary revenue measures (DRM_t^{exp}):

$$(r_t^{*\,exp} - y_t^{*\,exp})\frac{R_{t-1}^*}{E_{t-1}^*} = \frac{DRM_t^{exp}}{E_{t-1}^*} + \varepsilon_{y^*}^R y_t^{*\,exp} \tag{3}$$

The expenditure benchmark can then be consistently derived from the required change in the structural balance, as follows:

$$e_t^{*\,norm} - \frac{DRM_t^{exp}}{E_{t-1}^*} = \varepsilon_{y^*}^R y_t^{*\,exp} + y_t^{*\,exp} - \Delta sb_t^{norm}\frac{Y_t^{*\,exp}}{E_{t-1}^*} \tag{4}$$

Any deviation from equation (4) results in an inconsistency between the ex ante expenditure benchmark and the ex ante required change in the structural balance.

A.2 Derivation of differences between the structural balance and the expenditure benchmark in the European governance framework

A.2.1 Change in the structural balance

In the European Commission (2019), the change in the structural balance is defined as follows:[28]

$$\Delta \text{sb}_t = (r_t^* - y_t^*)\frac{R_{t-1}^*}{Y_t} - (e_t^* - y_t^*)\frac{E_{t-1}^*}{Y_t}$$

$$\Delta \text{sb}_t = \left[\frac{\Delta R_t}{Y_t} - \varepsilon_{OG}^R \Delta OG_t - \frac{R_{t-1}}{Y_t}\frac{\Delta Y_t}{Y_t}\right] - \left[\frac{\Delta E_t}{Y_t} - \varepsilon_{OG}^E \Delta OG_t - \frac{E_{t-1}}{Y_t}\frac{\Delta Y_t}{Y_t}\right] \tag{A.1}$$

$$\Delta \text{sb}_t = \left[\frac{DRM_t^{exp}}{Y_t} + \frac{\Delta R_t - DRM_t^{exp}}{Y_t} - \varepsilon_{OG}^R \Delta OG_t - \frac{R_{t-1}}{Y_t}\frac{\Delta Y_t}{Y_t}\right] - \left[\frac{\Delta E_t}{Y_t} - \varepsilon_{OG}^E \Delta OG_t - \frac{R_{t-1}}{Y_t}\frac{\Delta Y_t}{Y_t}\right]$$

where $\varepsilon_{OG}^R \Delta OG_t$ and $\varepsilon_{OG}^E \Delta OG_t$ are the cyclical components of the change in the revenue ratio and the change in the expenditure ratio respectively and ε_{OG}^R and ε_{OG}^E are the semi-elasticities of revenues and expenditures with respect to the output gap (OG) used in the EC's cyclically adjusted balance method. Note that the equations in

[27] This structural semi-elasticity should not be confused with the cyclical semi-elasticity, which is used for cyclical adjustment methods like that of the EC.

[28] Here and in the remainder of the note we ignore one-off factors, which are corrected for in the calculation of both the structural balance and the expenditure benchmark, making them irrelevant for explaining the difference between the two rules.

(4), which correspond to the EC methodology, are approximations of the change in the structural balance.[29]

In the EU governance framework, the European Commission sets a norm for the change in the structural balance ($\Delta \mathrm{sb}_t^{\mathrm{normEC}}$). Assuming that the required structural adjustment is zero, the change in the structural balance represents the deviation from the target of stabilisation of the structural balance.

A.2.2 Expenditure benchmark

In the European governance framework, the expenditure benchmark ($\mathrm{e}_t^{*\,\mathrm{normEC}}$) is anchored to the required change in the structural balance (Δsb_t^{normEC}). In the preventive arm of the SGP,[30] the expenditure benchmark is defined as follows:[31]

$$e_t^{*\,normEC} - \frac{DRM_t^{exp}}{E_{t-1}^{*}} = \bar{y}_t^{*\,exp} - \Delta sb_t^{normEC}\frac{Y_t^{exp}}{E_{t-1}^{*}} \qquad \text{(A.2)}$$

The European Commission definition of the expenditure benchmark deviates in several respects from equation (3), so in practice expenditure benchmark and structural benchmark are no longer fully consistent.

This definition ignores changes in the structural revenue-to-GDP ratio other than discretionary revenue measures ($\varepsilon_{y^*}^{R} = 0$).

It also uses smoothed nominal potential GDP growth ($\bar{y}_t^{*\,exp}$) instead of nominal potential GDP growth ($y_t^{*\,exp}$). Smoothed potential GDP growth is calculated based on ten-year average real potential GDP growth between year t-6 and year t+3 ($\bar{y}_{real,t}^{*\,exp}$) and expected GDP deflator growth (π_t^{exp}). Smoothed and expected nominal potential GDP growth differ only in their real component:

$$\begin{aligned} \bar{y}_t^{*,exp} &= \left(1 + \bar{y}_{real,t}^{*\,exp}\right)\left(1 + \pi_t^{exp}\right) - 1 \\ y_t^{*\,exp} &= \left(1 + y_{real,t}^{*\,exp}\right)\left(1 + \pi_t^{exp}\right) - 1 \end{aligned} \qquad \text{(A.3)}$$

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29 These approximations result in negligible differences with respect to the true change in the structural balance, and we ignore them.

30 The situation is different for the corrective arm, where ex ante the requirements for the expenditure benchmark and the change in the structural balance imply the same "true" fiscal effort.

31 Here, the expenditure benchmark is expressed in nominal terms directly. In the European Commission framework, the expenditure benchmark is first expressed in terms of real expenditure growth and then translated into nominal terms. This approach results in negligible differences, which we ignore. Also note that the European Commission uses the primary expenditure ratio in t-1 to translate the requirements for the structural balance into the expenditure benchmark.

In addition, the EC expenditure benchmark is applied to an adapted definition of expenditures, E^{EC}:

- Interest payments ($Intr_t$) are excluded
- Spending matched by EU funds (EU_t) is excluded
- Public investment (Inv_t) is smoothed by taking the average of the last four years

$$E_t^{EC} = E_t - Intr_t - EU_t - (Inv_t - \overline{Inv}_t) \tag{A.4}$$

Assuming that the required change in the structural balance is zero, the expenditure benchmark of equation (5) reduces to:

$$e_t^{*\,normEC} - \frac{DRM_t^{exp}}{E_{t-1}^{*}} = \bar{y}_t^{*,exp} \tag{A.5}$$

Deviation from the expenditure benchmark that is based on a stabilisation of the structural balance is then:

$$e_t^{EC\,*} - e_t^{*\,normEC} = \frac{DRM_t^{exp}}{E_{t-1}^{*}} - \ (e_t^{EC\,*} - \bar{y}_t^{*\,exp}) \tag{A.6}$$

where $e_t^{EC\,*}$ is the structural growth rate of EC-adapted expenditure.

Expressed in terms of structural balance, by multiplying both sides of the previous equation by $\frac{E_{t-1}^{EC\,*}}{Y_t}$, the deviation from the expenditure benchmark (Δeb_t) becomes:

$$dev\_\text{eb}_t = \frac{DRM_t^{exp}}{Y_t} - \ (e_t^{EC\,*} - \bar{y}_t^{*,exp}) \frac{E_{t-1}^{EC\,*}}{Y_t}$$

$$dev_{\text{eb}_t} = \left[\frac{DRM_t^{exp}}{Y_t}\right] - \left[\frac{\Delta E_t^{EC}}{Y_t} - \varepsilon_{OG,t}^{E} \Delta OG_t - \frac{E_{t-1}}{Y_t}\frac{\Delta Y_t}{Y_t} - (\bar{y}_t^{*,exp} - y_t^{*}) \frac{E_{t-1}^{EC\,*}}{Y_t}\right] \tag{A.7}$$

where $\varepsilon_{OG,t}^{E} \Delta OG_t$ is the cyclical component of the change in the expenditure ratio and $\varepsilon_{OG,t}^{R}$ represents the time-varying semi-elasticity of expenditures with respect to the output gap (OG) used in the EC's expenditure benchmark method.

Note that, unlike in the EC's method for the cyclically adjusted balance, the semi-elasticity used to strip out cyclical expenditure from the change in the expenditure ratio in the expenditure benchmark is time-varying, as denoted by subscript "t". More precisely, the cyclical component of expenditure in the EB is calculated as the share of unemployment benefits not explained by the structural NAWRU (see Marinheiro, 2021). Since movements in the share of cyclical unemployment may differ from the

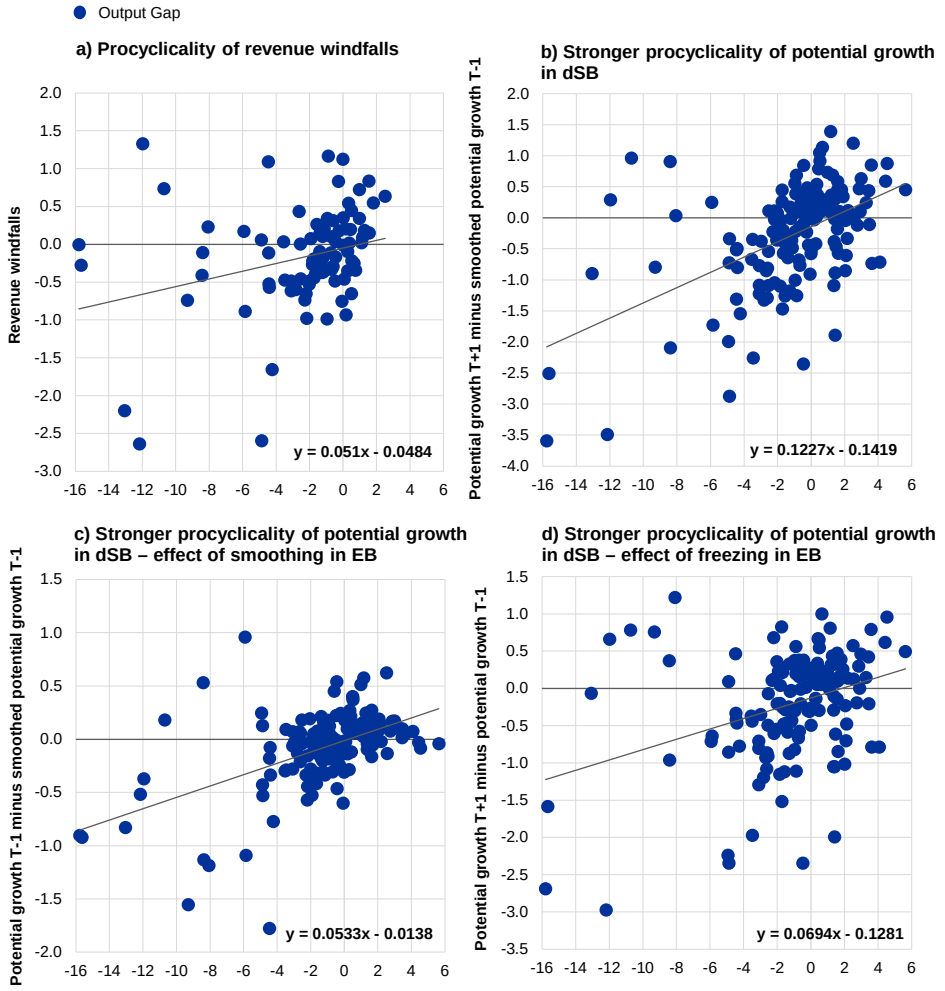
movements in the output gap, the implied semi-elasticity with respect to the output gap is time-varying.

A.3 Additional charts

Chart A.1

Relative procyclicality of revenue windfalls and potential growth estimates in dSB – measuring the cycle by the level of output gap

(in percentage points of GDP)



Source: Own calculations based on European Commission data.

Acknowledgements
This paper is based substantially on analytical work conducted by an expert team of the ESCB Working Group on Public Finance. We thank the members of the Monetary Policy Committee and the Working Group on Public Finance for their discussion of the material on which this paper is based. We thank our colleagues Cláudia Braz, Nadine Leiner-Killinger, Philipp Rother and Sebastian Hauptmeier in the ESCB for their comments. Finally, we also thank Eloïse Orseau for her useful comments.

Nicholai Benalal
European Central Bank, Frankfurt am Main, Germany; email: Nicholai_Alexander.Benalal@ecb.europa.eu

Maximilian Freier
European Central Bank, Frankfurt am Main, Germany; email: Maximilian.freier@ecb.europa.eu

Wim Melyn
National Bank of Belgium, Brussels, Belgium; email: wim.melyn@nbb.be

Stefan van Parys
National Bank of Belgium, Brussels, Belgium; email: stefan.vanparys@nbb.be

Lukas Reiss
Oesterreichische Nationalbank, Vienna, Austria; email: lukas.reiss@oenb.at

Postal address 60640 Frankfurt am Main, Germany
Telephone +49 69 1344 0
Website www.ecb.europa.eu

PDF ISBN 978-92-899-4842-5, ISSN 1725-6534, doi:10.2866/491290, QB-AQ-21-031-EN-N