

STUDY

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Benefits and drawbacks of an “expenditure rule”, as well as of a "golden rule", in the EU fiscal framework

Euro Area Scrutiny



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Abstract

Given the current crisis, all fiscal rules have been suspended. When the economy recovers, both expenditure and structural balance rules will be more difficult to apply as the level and growth of potential output will become more uncertain. Focussing on reducing high debt levels might at that point be more appropriate.

The economic argument for a golden rule is that debt can be used to finance the creation of public capital. But this implies that any golden rule should only exempt net investment, which is much lower than the gross investment.

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LIST OF ABBREVIATIONS

GFCF	Gross fixed capital formation
NFCF	Net fixed capital formation
MTO	Medium-term objective
OECD	Organisation for Economic Co-operation and Development
SGP	Stability and Growth Pact

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EXECUTIVE SUMMARY

Uncertainty about (the level of) potential output constitutes the Achilles heel of structural deficit rules. Our investigation shows that uncertainty about (the growth rate of) potential output constitutes the Achilles heel of expenditure rules.

Most of the existing literature on expenditure rules assumes either explicitly or implicitly that demand shocks constitute the dominant source of uncertainty about output, implying that the medium-term growth rate of potential output should be rather stable. But this might not be the case in reality. The estimates for medium term potential GDP growth of the Commission are also subject to substantial revisions, much as estimates of the structural balance.

The advantages for expenditure rules over structural balance rules might thus have been limited even before the start of the current crisis.

Since the outbreak of COVID-19, all EU and national fiscal rules have been suspended for the time being. The debate about expenditure rules and cyclically adjusted balance rules will need to be reassessed once the full impact of the current crisis is known.

What can be anticipated with confidence is that the post-crisis environment will mean higher public debt and expenditure generally, not only in the health sector.

Existing expenditure rules start from a baseline under which expenditure is allowed to grow along with potential GDP (thus keeping the ratio of expenditure to GDP constant). This baseline is then adjusted downward for the need to reduce debt levels. In a post-COVID-19 environment, one might have to introduce another adjustment for an unusually high starting level of expenditure, thus complicating the application of an expenditure rule.

Rules based on cyclically adjusted deficits might also become more difficult to apply because the usual methods to measure the output gap will be affected by the current crisis as well. But expenditure rules might face a similar problem in estimating the post-COVID-19 potential growth rate.

Golden rules relating to investment usually stipulate that governments should only borrow to finance investment, not expenditure in general. The economic argument for such a rule is that the creation of public capital can be financed by debt since this capital should yield a return that can support debt service. The returns from public capital do not have to come in the form of direct revenues, such as user charges, but can also come from higher growth, which increases tax revenues.

The argument that capital creation can be financed by debt is often read as implying that all investment spending should be exempted from the computation of the deficit. But, from an economic point of view, this is a misunderstanding because public capital creation, i.e. the increase of the public capital stock, must take into account the wear and tear that reduces the value of capital. This depreciation of the public capital stock is included in the net capital formation, not in the gross fixed capital formation. For most Member States gross fixed capital formation (of general government) is typically in the range of 2.5% - 3% of GDP; net capital formation is usually in the range of +/- 0.5% of GDP.

Any golden rule should thus be based on net (not gross) investment spending. This would provide a strong incentive for a government to undertake at least the maintenance expenditure needed to keep the capital stock intact. In practice, this could be achieved by deducting negative net investment from the allowable deficit.

1. INTRODUCTION

The specifications of this briefing were prepared before the COVID-19 outbreak in Europe and thus do not account for the large fiscal policy response that governments in most Member States are putting in place. By 23 March 2020, the fiscal rules of the euro area had been de facto suspended. Formally this was achieved by activating the ‘general escape clause’ of the EU fiscal framework (a severe economic downturn in the euro area or the Union as a whole).

Over the ensuing months governments updated their budgets almost on a weekly basis as the need increased to sustain the health system and to support households and companies in difficulty. This is likely to result in very large budgetary deficits. How large they will be cannot be predicted at this time. But it seems unavoidable that most Member States will go into 2021 with fast-growing debt levels.

According to the European Commission May 2020 forecast,

“the aggregate government deficit of the euro area and the EU is expected to surge from just 0.6% of GDP in 2019 to around 8½% in 2020, before falling back to around 3½% in 2021.”

After having been on a declining trend since 2014, the average public debt-to-GDP ratio is also set to rise substantially. In the euro area, it is forecast to increase from 86% in 2019 to 102¾% in 2020 and to decrease to 98¾% in 2021. In the EU, it is forecast to rise from 79.4% in 2019 to around 95% this year before decreasing to 92% next year.”

These are initial estimates. Exceptionally high uncertainty will persist for some time, and actual spending and deficit figures may be even higher. It is likely that for some time, even after the immediate health emergency has been overcome, expenditure will be driven by the need to support the economy during the recovery phase. This means that the question of *whether an “expenditure rule” would be more reliable than a “structural budget balance rule” as the main operational tool for fiscal policy surveillance in the EU* will also have to be addressed in light of the likely post-crisis situation of exceptionally high initial expenditure levels, as well as high debt and deficits.

This study reviews the discussion on fiscal rules with particular stress on expenditure rules (section 2). It then turns to the concept of the ‘golden rule’, emphasising that one needs to concentrate on net investment rather than gross (section 3).

2. EXPENDITURE RULES VERSUS A STRUCTURAL BALANCE RULE

Different definitions of and variations on both the “expenditure rule” and the “structural balance rule” have been proposed and used in the EU and national fiscal frameworks. In general, most expenditure rules seek to limit current expenditure, following a time path that is compatible with expected trend nominal GDP growth, often with an adjustment to reduce debt levels to sustainable, or safe, levels.

This section starts with a short overview of the literature on fiscal rules. It then turns to the national ‘sub’-rules within the overall EU framework and their recent track record. We also take a closer look at the so-called expenditure ‘benchmark’ in the current EU framework and the simplification proposed by the European Fiscal Board in 2018. This is followed by a cursory examination of the importance of capital spending for expenditure rules and real-world difficulties in the application of these rules. Finally we examine the medium term growth rate estimates produced by the Commission for the expenditure benchmark and find that they are subject to important revisions (ex-ante versus ex-post).

2.1 A short literature review

A large stream of literature exists on the effectiveness of fiscal rules in general, and on expenditure rules more specifically. The IMF¹ (Lledó et al., 2015) and the European Commission² have established databases on national fiscal rules that have been used in some empirical work. Findings do not come to definite conclusions. In order to assess merits and limits of different rules, it is worthwhile to ask the fundamental question of why a fiscal rule is needed.

In a broad sense, fiscal sustainability is ensured as long as the current level of debt is expected to be matched by the present value of primary surpluses. Because deficit bias in fiscal policy has widely been acknowledged to lead countries to unsustainable levels of public debt, policy constraints in the form of fiscal rules have often been proffered as a solution. In theory, the adoption of fiscal rules solves the issue of the deficit bias by tying the government’s hands and by generating a commitment to rectitude, as non-compliance is politically costly. At the same time, a rule of this sort should lead to increased transparency of public finances, resulting in a signalling effect (Eyraud et al., 2018).

According to Kopits and Symansky (1998), a fiscal rule can be defined as a binding and permanent constraint on the components of a government’s fiscal performance, which is expressed in numerical terms. Such constraints are commonly expressed in relative terms, i.e., as percentage of GDP.

In addition to this widely accepted definition of a fiscal rule, Kopits and Symansky (1998) have put forward eight key characteristics of an optimal fiscal rule. They highlight that a fiscal rule should be well defined, transparent, adequate with regard to its fiscal target, consistent, simple, flexible, enforceable and accompanied by policy actions aiming for structural reforms. Combining all these characteristics into a single rule is a challenging task, and achieving all of them at one time may not always be feasible.

In practice the most prominent issue with regard to the assessment of the performance of fiscal rules is their effect on the cyclicalities of government spending. A fiscal rule should not encourage or require cuts in spending during bad times. Furthermore, Eyraud et al. (2018) address the issue of composition bias which might result when governments cut on investments to adhere to the rule although this has a long-term cost. Additionally, the rules should prevent circumvention through creative accounting and other governmental measures.

There are four main types of fiscal rules: budget balance rules, debt rules, expenditure rules and revenue rules.

Fiscal rules have proliferated over recent decades, according to Lledó et al. (2015). From a global perspective, rules constraining budget balances and public debt are the most common, and they often

¹ <https://www.imf.org/external/datamapper/fiscalrules/map/map.html>

² https://ec.europa.eu/info/publications/fiscal-rules-database_en.

occur in combination. Expenditure rules are applied less frequently but are represented equally in advanced and developing countries. In contrast, budget balance rules are more common in advanced economies, and debt rules are more common in developing countries. An overview of the performance of the different fiscal rules worldwide is provided by Guergil et al. (2017). Their analysis suggests that in particular flexibility is important in order for a fiscal rule to support counter-cyclicality. Generally, they find that budget balance rules deliver a better performance regarding countercyclical spending than expenditure rules. The success of the latter, however, depends on the degree of flexibility, and as a consequence investment-friendly rules are able to deliver overall countercyclical spending as well.

For all rules, the countercyclical effects on spending seem to be more prominent in bad times than in good times. Furthermore, it is emphasised that the expected returns of countercyclical spending depend on the quality of public investment management and that the overall debt level matters for the success of fiscal rules.

2.2 Fiscal rules in Europe: national variations inside the overall EU framework

In the EU, all Member States are subject to supranational fiscal rules contained in the Stability and Growth Pact (SGP) and the Fiscal Compact³. Even though the introduction of the latter aimed to incorporate appropriate balanced budget rules into national law and thus represented a first step toward harmonising fiscal rules within the EU, each Member State has a variety of its own fiscal rules in place.

These rules have been collated by the European Commission (2017). Its dataset on domestic fiscal rules, which collects information about all types of fiscal rules (budget balance, debt, expenditure and revenue rules) at all levels of government indicates that budget balance rules are the most prominent in the EU. For most recent years, this can be attributed to the adoption of the Fiscal Compact in 2012 and the subsequent mandatory implementation of budget balance rules on the national level. Furthermore, the dataset reveals that since 2012 expenditure rules have become more prevalent at the national level (Table 2.1) and, apart from individual expenditure rules in Spain, Austria, Italy, Bulgaria and Romania, are either similar or identical to the EU’s expenditure benchmark.⁴

Table 1: Expenditure Rules in the EU (General Government Level)

Country	Sector	Target/constraint	Time frame	Since	Coverage of GG ⁵ finances
Austria	General government	Nominal expenditure growth/ Rule is similar to SGP expenditure benchmark	4	2015	0.6
Bulgaria	General government	Nominal expenditure ceiling as % of GDP/expenditure under the consolidated fiscal programme may not exceed 40% of GDP	Multinannual	2017	1.0

³ All countries except the Czech Republic.

⁴ There has been a significant number of national expenditure rules within the EU. In 2010, there were 18 active expenditure rules; this slightly increased to 20 in 2017. These rules, the majority of which cover general government expenditure, are applied in 14 different member states, and interestingly most of them were established after 2010. The growing numbers of active rules and the fact that, in many cases, expired rules have been extended, even though subject to revisions, signals their popularity. Nevertheless, apart from Croatia, which follows the approach of having an expenditure rule only, the other rules are embedded into a framework combining them with budget balance and debt rules. Another important aspect is that even though some of the rules match the definitions of benchmarking expenditures, the respective method of tallying aggregate expenditures differs. A more detailed table in the Annex 1 provides further information.

⁵ General Government

Bulgaria	General government	Nominal expenditure growth/ Rule is similar to SGP expenditure benchmark	Annual	2017	1.0
Denmark	General government	Nominal expenditure ceiling in absolute terms/multiannual definition of ceiling	Multianual	2014	0.8
Spain	Local, regional and central government	Nominal expenditure growth/ similar to SGP expenditure benchmark	Multianual	2012	0.5
Finland	Central government	Real expenditure ceiling in absolute terms/multiannual definition of ceiling	4	2015	0.2
Italy	General government	Real expenditure growth/ Rule is similar to SGP expenditure benchmark	Multianual	2014	1.0
Lithuania	Central government, Social Security	Nominal expenditure growth/ expenditure <= one-half of the average multiannual growth rate in potential GDP.	Annual	2015	0.8
Latvia	General government	Nominal expenditure growth / Rule is similar to SGP expenditure benchmark	Multianual	2014	1.0
Croatia	General government	Nominal expenditure growth (excl. interest)/similar to SGP expenditure benchmark	Annual	2014	0.9
Netherlands	General government	Real expenditure ceiling in absolute terms/multiannual definition of ceiling	Multianual	2017	1
Romania	General government	Nominal expenditure growth/ Rule is similar to SGP expenditure benchmark	Multianual	2014	0.9

Source: Fiscal Rules Database, European Commission.

The overarching SGP framework consists of a debt ceiling of 60% of GDP and a 3% of GDP cap for the budget deficit. These two pillars have remained constant since the SGP was introduced in 1997. However, the design of the fiscal framework, which at the time could have been considered “quite simple,” as initially the only binding constraint was the deficit cap (Heinemann, 2018), has been subject to several reforms.⁶ Among others, the focus on medium-term objectives (MTOs) and - later - the addition of a debt reduction target are the most prominent, increasing the number of rules and thus the complexity of the SGP. These reforms, the second-generation rules, were a continual adaptation to global developments. Eyraud et al. (2018) cite the global financial crisis as the event responsible for the divide between the first and second generations. First-generation rules (including the focus on MTOs) aimed to be flexible but lacked enforcement mechanisms. In contrast, second-generation rules attempted to enhance flexibility while stepping up the cost of noncompliance, which necessarily increased complexity. Complexity is not the only challenge facing future reforms of the SGP. Its fundamentals, the debt level target of 60% and 3% ceiling on the public deficit, may not be appropriate

⁶ https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/stability-and-growth-pact/history-stability-and-growth-pact_en.

anymore.⁷ Lastly, spotty adherence to the rules in combination with a lack of enforcement generally poses an issue to be resolved in a future version of the SGP.⁸

Another crucial challenge is posed by the difficulties in estimating the output gap and consequently the structural balance. The latter figure is necessary to assess the targeted, structurally adjusted MTO of 0.5% of GDP. Particularly, uncertainty due to significant revisions of potential output, along with the widely held view that overestimation of potential output leads to pro-cyclical spending, represents an important shortcoming.⁹ Even though the calculation of the structural balance rules relies on a relatively uncertain indicator, Heinemann (2018) argues that the rule is superior to a rule based on a nominal balance regarding its counter-cyclical effects. However, the current debate and recent literature on fiscal frameworks heads in a different direction.

The growing body of literature assessing the performance of expenditure rule relative to other rules has often led to proposals supporting the introduction of an expenditure rule as a single operating rule.¹⁰ These proposals have in common that the majority of the existing rules with their complexity should be put aside.

For example, Bénassy-Quéré et al. (2018) propose a two-pillar strategy based on the debt criterion of 60% debt to GDP ratio in combination with an expenditure rule taking into account the debt criterion. They also propose a stringent enforcement mechanism which should create incentives to stick to the rule by requiring that any expenditure excess of the rule has to be financed by junior debt, so-called accountability bonds.

Similar applications of the proposed expenditure rules for European countries show that debt reduction within this framework works sufficiently in France (Darvas et al. 2018), whilst for Italy the adoption could additionally bring welfare enhancing effects (Parreto, 2019).

Even though it is largely agreed upon that an expenditure rule represents a feasible foundation for a future European fiscal framework, several issues regarding its implementation remain. Most prominent is the issues of what to include into the defined expenditure aggregate. As currently defined in the SGP and also proposed for an expenditure rule by the European Fiscal Board (2018), net primary expenditure is *“defined as overall government expenditure net of interest payments, cyclical unemployment benefits, EU-funded investments and discretionary revenue measures, with gross fixed capital formation smoothed over four years”*.

In similar fashion, Clayes et al. (2016) did not precisely propose to smooth fixed capital formation over 4 years but furthermore suggest spreading investments over several budgets as it is practiced in the corporate sector. An analysis by Christofzik et al. (2018) identifies positions that should be excluded from expenditure growth by estimating their elasticities regarding cyclicity. Their results support the view to exclude unemployment expenditures (they correlate between Member States as well) and additionally interest payments should be deducted as they cannot be influenced in the short run, but no further deductions should be undertaken. Deduction of investment would require a definition and will increase complexity of the rules as well.

⁷ These criteria have been established under the assumption of 5% nominal GDP growth and inflation at 2%, which have never been achieved within the past decade.

⁸ See, for instance, Eyraud et al. (2018); Clayes et al. (2018); Bénassy-Quéré et al. (2018); Manescu and Bova (2020).

⁹ See, for instance, Heimberger and Kapeller (2017); Christofzik et al. (2018); Tereanu et al. (2014); Clayes et al. (2018).

¹⁰ For instance European Fiscal Board (2018); Bénassy-Quéré et al. (2018), Clayes et al. 2016; Christofzik et al. (2018)

Box 1: National Expenditure Rules: Why, how and when

Expenditure rules come in many shapes and forms. For example, in the SGP, the growth rate of (real) expenditure should equal the medium term growth rate of potential GDP. But many other specifications are also possible. Ayuso i Casals (2012) provides an important survey of expenditure rules. Their assessment of the general concept of expenditure rules presents a variety of features which are summarized in the following. The main benefits of expenditure rules are:

- A higher degree of accountability due to less uncertainty regarding the attainment of the target as the expenditure falls directly under the control of the government.
- Increased transparency as the expenditure target is much easier to monitor which may result in an increase of the government's commitment to obey the expenditure rule.
- The expenditure rule efficiently addresses the government's issue of frequent overspending; thus, it supports reducing the deficit bias.
- The expenditure rule promotes unrestricted operation of the automatic stabilizers¹ while additionally reducing pro-cyclicality as spending is also in "bad-times", but more importantly also in "good-times".

These aforementioned benefits of expenditure rules all rely on an appropriate formulation of the expenditure target. The three different possibilities for a specification of a numerical targets are given in the form of the:

- Growth rate
- Absolute Expenditure
- Ratio to GDP

In comparison to the formulation of the target in growth rates or on absolute terms, the case of a formulation as percentage of GDP is less commonly observed in practice. The reason is that they will not serve well to avoid pro-cyclical spending as in this case expenditure always relies on the current output and its size will vary accordingly. In the end, the difference between setting the expenditure target in absolute terms or as a growth rate may also be rather insignificant as it is often the case that values are firstly defined in growth rates which then need to be transformed to absolute values in the course of the decision-making process.

In all cases a distinction between nominal and real expenditures is important. In comparison to targets in nominal terms, the expression in real terms can generally give more control to the government as inflation does not affect compliance. However, the latter conflicts with the desire to increase transparency and accountability as it is more prone to revisions. A decision may rather be based on the consideration of the time perspective. Nominal targets suit better in the short-term whereas such a limitation must not be made with regard to a real target.

Additionally, reflecting on the issue of time it is emphasized that application of a multiannual framework is superior to an annual framework. A multiannual framework will support a medium-term budgetary strategy and therefore leaves no incentives to circumvent the rules by delaying expenditures. This may much rather the case in the annual framework. The multiannual framework is mainly set up so that the expenditure target is fixed over a given period of time and is only adjusted in exceptional cases. Lastly, besides of the coverage of the government spending in the expenditure item¹ it is important to note that expenditure rules can deliver their desired properties only when embedded into a well-designed environment/framework in combination with other fiscal rules and the introduction of rules triggering effective correction mechanisms in the case of deviations from the targets.

2.3 The recent track record of expenditure rules in Europe

Expenditure rules are increasingly in focus. They seem to have proven not only to serve better in avoiding pro-cyclical spending but also promise to be less complex than other fiscal rules. A recent study by Manescu and Bova (2020) investigates the performance of national expenditure rules within the EU, drawing on the European Commission’s fiscal rules database. Via panel estimation of the forecast error in the expenditure ratio, they find that expenditure rules reduce pro-cyclicality. This finding has been tested in several specifications, and the results have been robust. Moreover, the effect has been shown to be larger in the case in which a rule’s legal foundation is strong. The authors’ second argument in favour of expenditure rules is based on the finding of relatively high rates of compliance with such rules in the past decade. Distinguishing between expenditure growth targets and expenditure ceilings, they find that the latter have generally performed better.

The analysis of compliance is complicated by the revisions in potential output which is discussed in more detail below. Manescu and Bova (2020) find that the so-called ex-ante targets (i.e. the targets based on information when budgets are formulated) have been met (except in 2017). However, when the expenditure targets were re-calculated using data after budget execution one finds that the ex-post data would have suggested a lower ceiling and in this optic expenditure growth targets have not been met in the period 2014. These results suggest that the implementation of a fixed numerical ceiling may present a more favourable option. Nevertheless, the authors emphasise that the possibility such ceilings might be easily amended represents an important practical concern to be considered.

Based on the experiences of the Nordic Member States, which have already implemented such rules on a national level, Calmfors and Heleniak (2020) suggest that, when combined with other measures, the expenditure rule proves simple and effective. Furthermore, Cordes et al. (2015) find that the expenditure rule is often associated with better fiscal performance and can lead to increased investment efficiency. Most important, from the perspective of effectiveness, according to Cordes et al. (2015), under an expenditure rule, the government has the ability to control expenditures directly. This explains higher rates of compliance compared with fiscal balance rules. Box 1 provides an overview of the main features of national expenditure rules.

While the incentives for Governments to mobilize revenues remains due to the expenditure rules being coupled to the 60% debt level, another remaining issue that need to be discussed is the treatment of discretionary revenue measures as well as a careful evaluation of the structural revenue situation (Heinemann, 2018).

2.4 A simple expenditure rule: an illustrative application

Fuest and Gros (2019) propose a very simple nominal expenditure rule, based only on nominal expenditure growth and a desirable path to a debt-to-GDP ratio of 60%. We present this rule to illustrate the essential idea behind fiscal rules. Below we show how many qualifications and changes might be needed for a real-world expenditure rule.

Formally, the rule proposed by Fuest and Gros (2019) can be written as:

$$g_t = yp_t - (D_{t-1} - 0.6) \times q$$

The limit on growth in nominal expenditure (g_t) is equal to the trend growth rate of nominal income (yp_t) reduced by the amount of the reduction in debt level (D_{t-1}) required. The latter is calculated as the excess of the debt-to-GDP ratio with respect to the threshold of 0.6 of GDP multiplied by an adjustment

factor, q , which is equal to the inverse of the number of years anticipated for the excess debt to be corrected.¹¹

Following Fuest and Gros (2019), the trend growth of nominal GDP is arbitrarily set to 3.5% for all countries except Italy (where it is 3%). This value, which is not adjusted over time, represents the sum of 2% inflation and 1.5% for real growth (Italy, 1%). Below we show that uncertainty about trend growth plays a central role in fiscal rules.

Inflation of 2% is widely regarded as an overestimate but represents the foundation for the forecasts of the European Fiscal Board (2018, p.84) as well. The chosen adjustment parameter is set to 0.05 (equivalent to a 20-year adjustment period), and the rule is then applied to the euro area as an aggregate, as well as France, Germany, Ireland, Italy, Portugal and Spain.

The results in Figure 3 show that expenditure growth over the period preceding the COVID-19 crisis exceeded the calculated target growth rate g_t in all cases considered. For example, for Germany, the target growth rate of expenditure was 3.5%, but actual growth was closer to 5% per annum. For Italy, the target growth rate was close to zero, given the nation's high debt level. But here again, actual growth of expenditure was about two percentage points above the target.

This observation that over the years just before the COVID-19 crisis expenditure growth has consistently overshoot reasonable targets suggests a tension between the empirical results discussed above, which suggest that expenditure rules did in fact lead to better fiscal performance, and the most recent evidence. It does not seem possible to determine whether pre-COVID-19 fiscal policy would have been more prudent without existing expenditure rules.

The figure also shows that the public health crisis has led to an unprecedented surge of expenditure, which is expected to jump by 10% in 2020 (relative to 2019) for the euro area average and by as much as 15% for Germany. In 2021 spending is expected to fall back somewhat, yet it will remain much higher than before (the ratio of primary expenditure to GDP is forecast to increase from about 45% of GDP in 2019 to more than 48% of GDP in 2021).

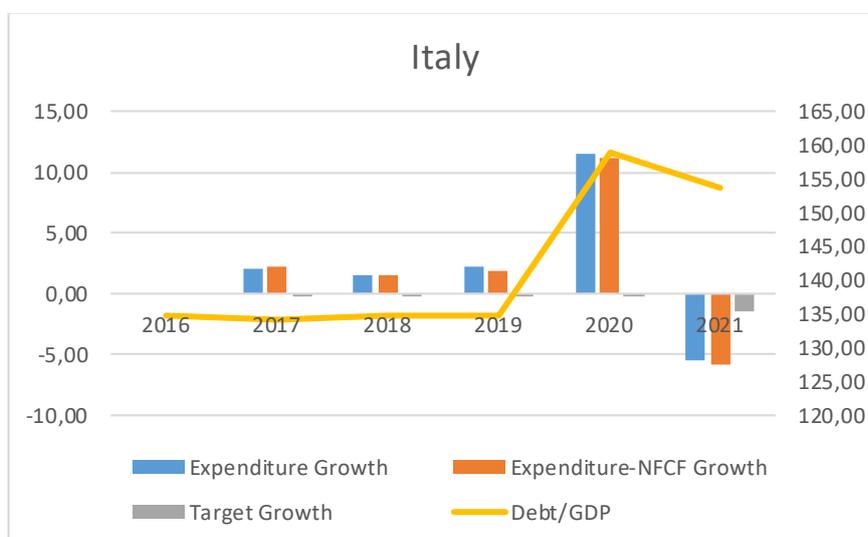
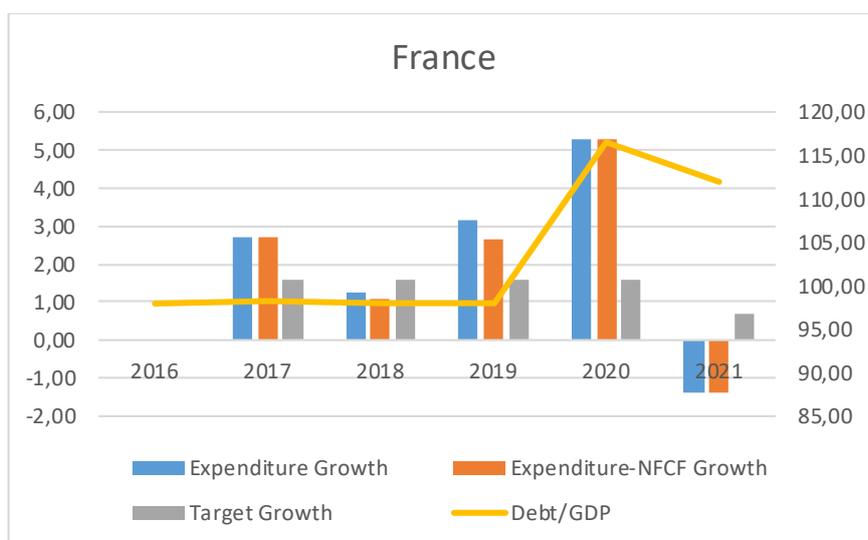
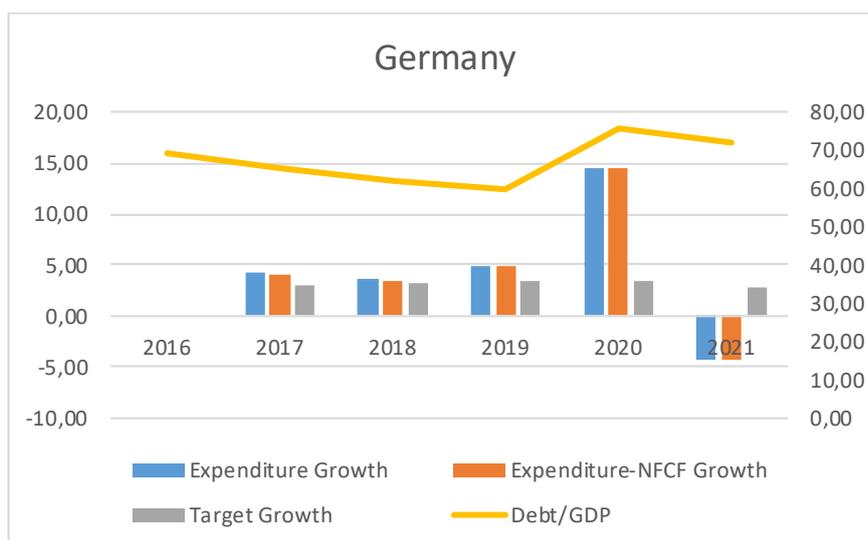
¹¹ This formula could be adjusted for a revenue term, which, for simplicity, has been neglected here.

Figure 1: Euro Area Target Growth vs. Euro Area Actual Growth
Pre-Crisis and Adjusted Data



Source: Based on AMECO Autumn 2019 and Spring 2020 (COVID-19-adjusted data) and authors' own calculations

Figure 2: Chosen Countries' Target Growth vs. Actual Growth Rate



Source: Based on AMECO Autumn 2019 and authors' own calculations

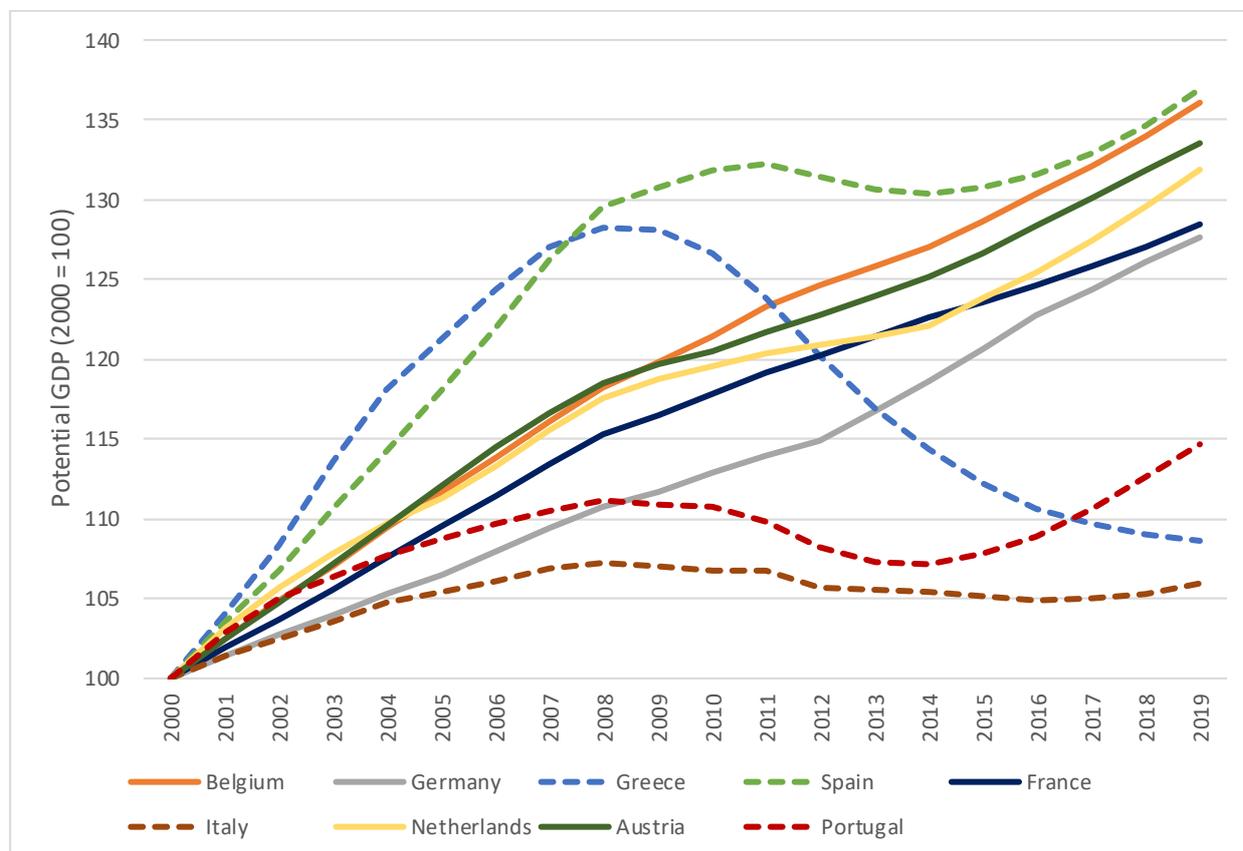
2.5 Expenditure rules in the EU fiscal framework

A key advantage of an expenditure rule should be that it can be anchored on a simple number, namely the medium- to long-term rate of growth of potential output. Guest and Gros (2019) just assume a value (1.5 % for real growth), Claves et al. (2016) argue explicitly that this parameter should be fairly stable since most shocks to euro area countries are demand shocks, which should not affect medium term potential growth.

However, even a cursory look at the data on potential growth shows that this key assumption underlying expenditure rules might be mistaken.

Figure 5 below illustrates the broad pattern of potential GDP as estimated today (Spring of 2020) for the largest of the original euro area countries plus Greece.¹² Of the 9 countries shown here, only 5 show a steady upwards trend which one would expect from potential GDP. The four countries affected by financial distress show a very different pattern. For all of them potential GDP falls after the onset of the Great Financial Crisis. Two (PT and SP) have recovered the peak pre-crisis level of potential GDP, but two others, GR and IT are still below the pre-crisis peak. This shows that potential GDP, at least as estimated by the Commission, is not the steady variable growing at a predictable rate which it is supposed to be in the framework of expenditure rules.

Figure 3: Standardized Potential GDP Growth in Chosen Countries (AMECO 2020)



Source: Ameco, Spring Forecast 2020

¹² The three smallest (LUX, MT and CY) are not shown and Ireland is not considered given that its GDP data are distorted by the accounts of large multinational corporations domiciled there.

These different patterns in the evolution of potential output suggest that the growth rate of an economy might vary substantially over time. Moreover, estimates of this medium-term growth rate might be subject to important revisions.

Claeys et al. (2016) suggest that the effects of revisions in medium-term potential output growth on an expenditure target, even though this measure is generally subject to criticism¹³, are smaller than those of the structural balance. Darvas et al. (2018) also find that an expenditure rule based on medium-term potential output growth performs better with regard to counter-cyclicalities than current structural balance rule of the SGP.

Differences between ex-ante and ex-post compliance represent a serious issue with regard to the pro-cyclical effects of an expenditure rule. As a possible solution to the uncertainty related to this measure, Claeys (2016) proposes to add the 2 percent inflation target of the ECB to the real medium-term potential growth rate while claiming that the role of precise forecasts when using an expenditure rule becomes less important than it would be in the case of a structural balance rule. Nevertheless, an assessment by Barnes and Casey (2019) reveals that changes in estimates of the growth of medium-term potential output can potentially lead to a pro-cyclical outcome. Their analysis considers the potential output growth for the current expenditure benchmark as calculated by the EU Commonly Agreed Methodology.

The importance of revisions to potential growth rates can best be illustrated with a concrete example.

The starting point is that under the SGP there exists an expenditure benchmark which is based on two elements: an estimate of medium-term potential growth and an adjustment factor. This medium-term growth rate for potential GDP provides thus one key input for the expenditure benchmark. Both these elements are rather complicated. The details are explained in Annex 2.

To make a concrete example, the essence is that the Commission calculated each year a medium-term growth rate for potential output which is based on a 10-year average. (5 year past and 4 years future 'data'). This means that the estimate for medium term growth used in the spring of a given year, say 2019, would be based on the actual growth rate of potential GDP 2014 to 2018, which is actual data. The other elements are estimates, namely the estimate of potential GDP growth for the current year (in this case 2019) and projections of GDP growth for the next four years (until 2024). This estimate, undertaken at the start of a year is called the 'ex-ante' estimate. In principle it should enter the benchmark for expenditure growth going forward, i.e. for 2020.

Two years later the medium-term growth rate can be calculated again taking into account developments within those two years which, may result in different estimates. This is why the second estimate of medium term potential output is called 'ex-post'. To continue with the concrete example: the 'ex post' estimate of the medium term growth rate from 2019 onwards would be undertaken in 2021. Which would mean that at that point the data for 2019 and 2020 would no longer be projections, but actual outcomes – which can be very different from the projections.

The use of a 10-year average should in principle mean that the revisions to potential output growth are limited. But this is not the case because the estimates of potential output change over time. (These revisions of potential output are behind the large revisions to the cyclically adjusted deficits which provide the basis for the criticism of structural balance rules.) This has one key implication: the numbers

¹³ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/574407/IPOL_BRI\(2016\)574407_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/574407/IPOL_BRI(2016)574407_EN.pdf) Chapter 3 provides a brief overview about the issues regarding the measure of potential output.

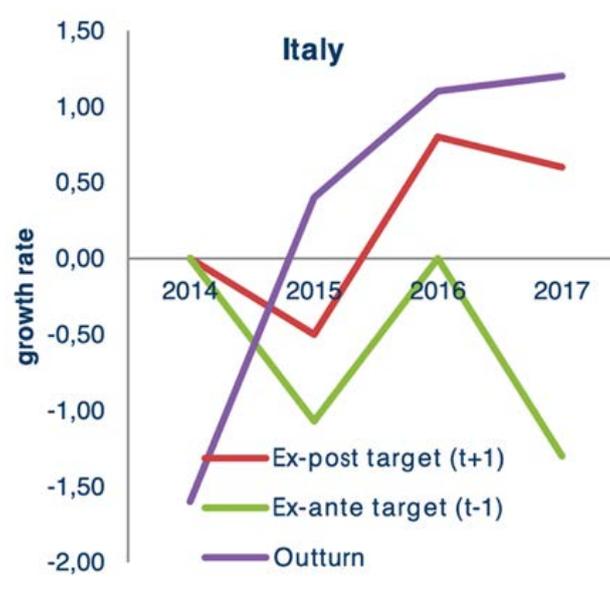
entering the 10-year average two years later are not the same. This is why the medium-term potential output growth rate calculated in any one year can appear to be very different two years later.

A similar argument applies the adjustment factor used by the Commission to decide whether the country in question should keep expenditure below the potential growth rate because of a high debt level. This adjustment factor depends on the cyclical position of the economy because it would make little sense to force a country to reduce expenditure below a medium term benchmark if the economy experiences a negative output gap. This adjustment factor introduces the output gap measurement problem into the expenditure target.

In other words, the ‘ex-ante’ and the ‘ex-post’ target calculated by the Commission can differ considerably.

Figure 4 (taken from a Commission publication) below shows the case of Italy as an example of the importance of revisions under the Commission’s framework. This figure shows that over the years 2014-17 there have been important revisions in the expenditure target for Italy, with the ex-post targets generally being higher than the ex-ante ones. These revisions have been substantial at time. For example, for the year 2017 the ex-ante target (using data up to the Spring Forecast of 2016) indicated a target of less than minus 1 % growth for real expenditure. By contrast, the target (for the same year) recalculated two years later (using the Spring Forecast of 2018) was at over 0.5 % positive. The difference between these two targets, based on different data, was thus larger than 1.5 %.

Figure 4. Ex post and Ex ante Growth Targets in Italy



Source: Manescu and Bova (2020)

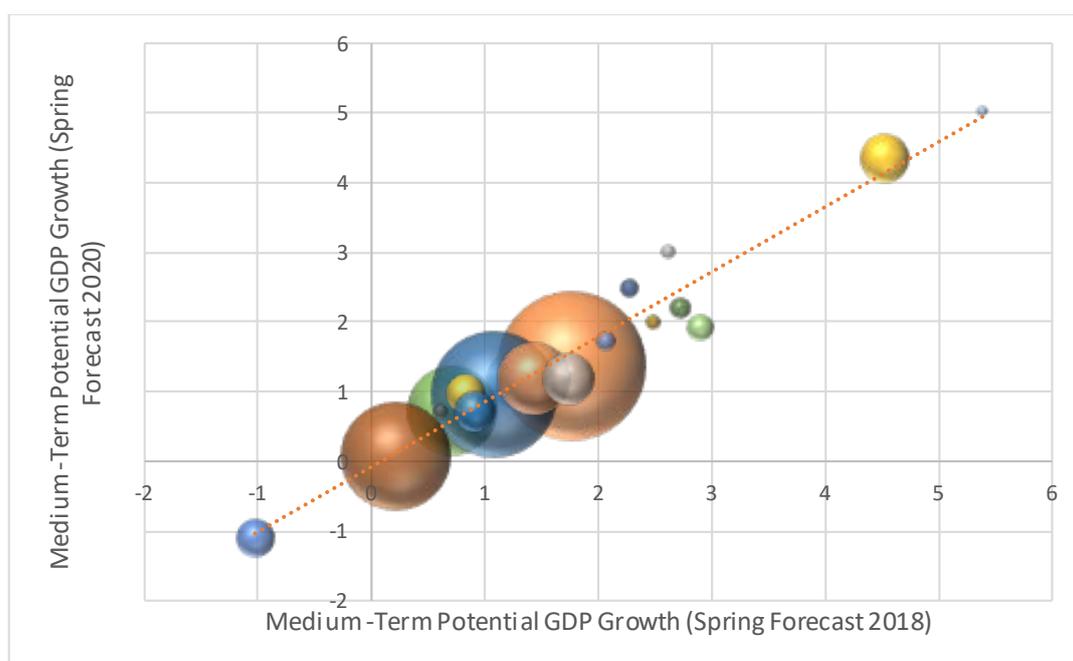
A crucial practical issue arises then when the expenditure benchmark is supposed to remain as a fixed ceiling over a period of three years. What to do when the estimated growth rate of potential output changes one or two years later? Should the benchmark be adjusted, and should the path of expenditure then be adjusted as well?

The European Fiscal Board (2018) also presented the analytical foundation of an expenditure rule which take into account the need for debt reduction¹⁴ and puts special emphasis on investment spending. (See the Box in the Appendix for a detailed comparison with the current rule).

The issue of forecast errors in potential GDP growth and its implications for the ceiling of expenditure growth has not been addressed directly by the European Fiscal Board.

The case of Italy mentioned above does not represent a total outlier. There have been important revisions to medium term potential growth along two dimensions: First, as mentioned above, the medium-term growth rate for any given year depends whether one uses ex-ante or ex-post data. Second, it seems that independently of whether one uses ex-ante or ex-post data, the medium-term growth rate change considerably over time (although one would expect a priori that it should be rather stable. This is illustrated in the following Figure 5, displaying the estimates for the year 2019 ex-ante and ex-post.

Figure 5: Medium-Term Potential GDP Growth for 2019



Source: European Commission (on request); the size of the bubble represents the countries' nominal GDP

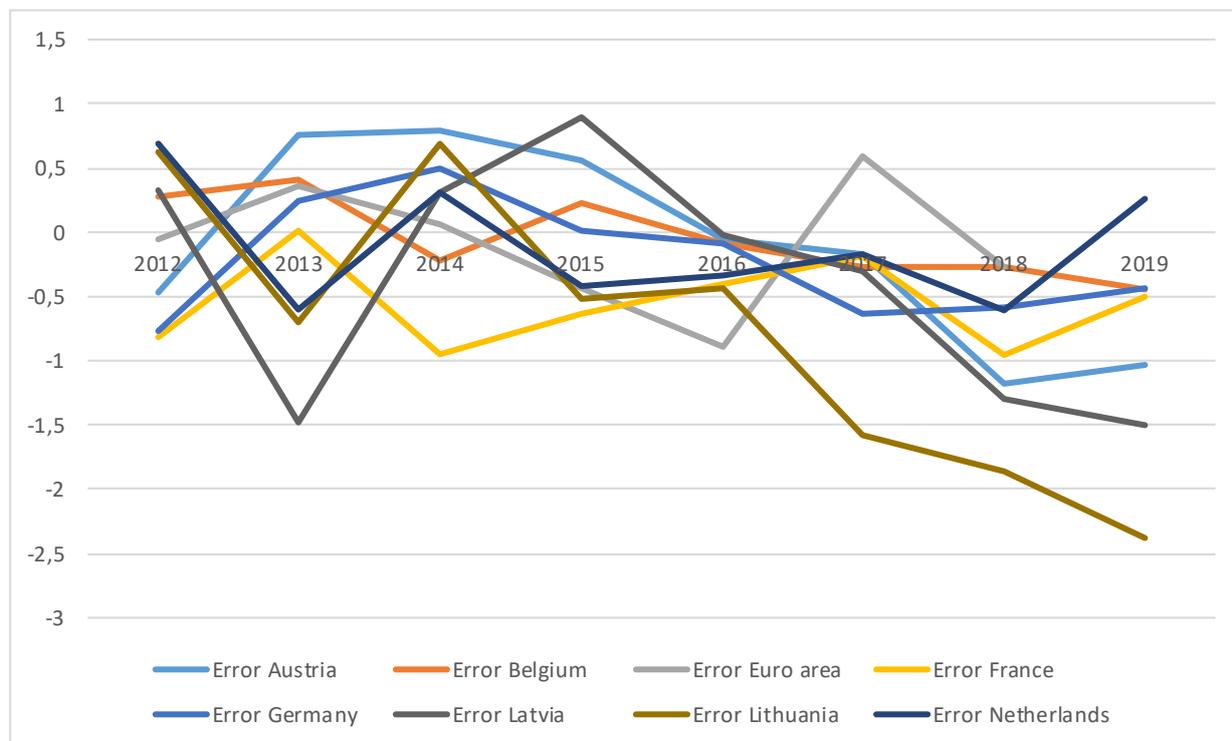
Thus far we have documented that expenditure rules have to face the problem of relying on estimates of (implicitly medium-term) potential growth rates and that de-facto potential growth can change sign over time, at least as measured ex-post. This problem is similar to that faced by structural balance rules, for which it is the output gap, or the level of potential output, which has to be estimated. A strong argument against structural balance rules has been that these estimates of the output gap change over time. This leads to the empirical question for which rule the revisions in the estimates are larger.

Below we show the changes or revisions in the output gap as estimated by the Commission in the year before (ex-ante) and in the following year (ex-post). The data point for 2018 thus shows for each

¹⁴ If the basic requirements which are the 60% debt criterion 3% public deficit are not met, MS are obliged to the expenditure ceiling which represents a single operating rule under both, the preventive and the corrective arm. The ceiling on expenditure growth will be set for three years assuming the economy is growing at its full potential and inflation is at 2%. Deviations under the preventive arm will be captured by in a compensation account until it exceeds a cumulative deviation of 1% of GDP. Under the corrective arm any deviation from the expenditure growth ceiling will be considered as non-compliance.

country the difference between the estimate of the output gap in 2019 and 2017. We do not include Greece in this sample because in this case the revision to the output gap estimates two year later were over 5% percentage points of GDP around the peak of the crisis. Figure 6 below illustrates that even for the relatively stable countries considered here, the revisions in the output gap were often significant and often close to 1 percent of GDP. The elasticity of tax revenues with respect to GDP is usually around 1. Given that tax revenues amount to about 40-45 % of GDP this implies a semi-elasticity of the cyclical component which has been found to be 0.5 on average (Mourre et al, 2014). It follows that revisions to the output gap of 1 percentage point would lead to revisions in the cyclically adjusted deficit of around 0.5 percentage points of GDP..

Figure 6: Output Gap Difference between Ex-Post and Ex-Ante



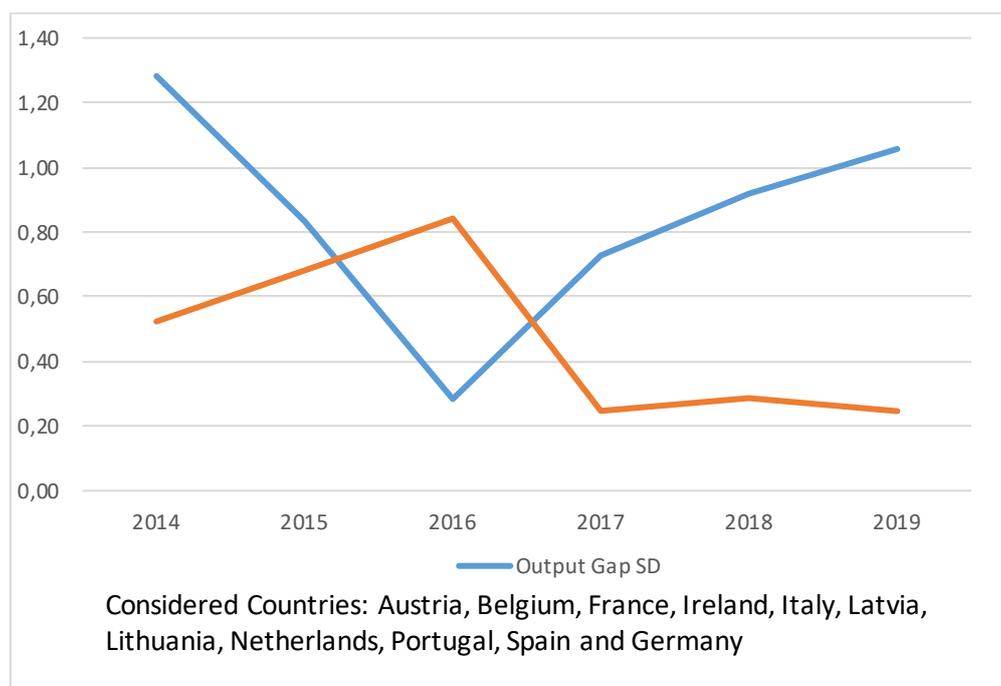
Source: Ameco, various vintages (Spring $t-1$ – Spring $t+1$).

One line in Figure 7 then shows the cross-country standard deviation of these revisions to the output gap. The second line in Figure 7 shows the cross-country standard deviation of the revisions to the forecast of medium-term potential growth rate (for the same sample of ‘stable’ countries). It is apparent that the size of the revisions changes considerably from year to year, often in different ways for the two variables considered here.

These two measures of the variability of revisions cannot be directly compared because one refers to a level (output gap), whereas the other refers to a growth rate (medium term potential growth). The underlying revisions refer in both cases to estimates which are two years apart ($t+1$ minus $t-1$). A revision of the estimate of the growth rate of 1 % leads over two years implicitly to a revision of 2 % in the level of the variable considered.

Over the limited sample period considered here (limited by the availability of data for the medium-term potential growth rate) the average for the standard deviation of the revisions in the output gap is about 0.8 percentage points of GDP. For the revisions in medium-term potential growth the average standard deviation is close to 0.4. Given the 2:1 rule for revisions which are two years apart mentioned above, this implies that the revisions in the output gap and the medium-term potential growth rates are of a similar order of importance.

Figure 7: Annual Standard deviation of the Output Gap



Source: Ameco, various vintages.

2.6 Further real-world complications for expenditure rules

Two further key real-world complications of an expenditure rule are 'base drift' and tax expenditures. Base drift is unavoidable because in any expenditure rule a starting point in time needs to be set to calculate the base for expenditure levels. That base should ideally represent a 'normal' level of annual expenditure. The post-crisis environment would not be a useful point at which to base an expenditure rule because spending will have increased due to the crisis for a number of reasons, and not just as a function of the fall in GDP. Some of that expenditure (e.g., on health care and measures to protect public health) should decrease naturally over time. Letting overall expenditure grow at the rate of nominal GDP would then keep spending at a possibly excessive level.

Tax expenditures represent another, more conceptual problem for an expenditure rule. Governments can favour certain groups or industries by offering them advantageous tax treatment in lieu of providing them direct funding. An expenditure rule, depending on the calculation of the respective growth of expenditures would not necessarily signal any problem with such a policy, whereas a deficit rule would catch this hidden way of indirectly propping up some sectors. A consideration of discretionary revenue would be crucial for an expenditure, but lastly represents a rather imprecise measure which can only be evaluated ex-ante.

An OECD report observes that "a number of countries putting in place an expenditure rule have simultaneously experienced a sharp increase in the number of tax expenditures" (OECD 2010b).

Tax expenditures are notoriously difficult to measure but seem to be relatively stable over time. The OECD (2010b) reports that the cost of tax expenditures amounted to only a few percentage points of GDP. This problem might thus be of limited importance during normal times. But the current crisis is leading many governments to relax tax rules for a variety of sectors and could thus make tax expenditure much more relevant, reducing the usefulness of an expenditure rule.

Additionally, the budgetary cost of such tax expenditures is often underestimated by national authorities, and their effectiveness measured against their stated objectives is not assessed on a regular basis using reliable criteria.

2.7 Expenditure rules, investment and capital depreciation

Expenditure rules usually do not focus on the composition of expenditure. However, as already mentioned above, some specifications attempt to provide an incentive to maintain investment expenditure. Here we check whether a different treatment of investment expenditure would make a material difference in reality.

Gross fixed capital formation (GFCF), which is the statistical aggregate used to measure gross investment, is fairly constant over time and accounts for only a small fraction of overall expenditure, typically less than 5% of total public expenditure in euro area countries. Moreover, in most countries, net capital formation is close to zero. This is why accounting for either net or gross capital formation leads to only small differences in the growth rates (but not of course the levels) of expenditure. This is illustrated in Figure 2 below for the euro area as a whole.

Figure 8. Euro Area Change in Expenditure (Primary, Primary less Gross Investment, Primary less Net Investment)



Source: AMECO and authors' own calculations.

2.8 Expenditure rules versus structural balance rules: a summary view

The overall results of this empirical investigation of the problems with both structural balance and expenditure rules can be summarized in the following table.¹⁵

Table 2: Comparison between expenditure rule and structural balance rule

	Structural Balance Rule	Expenditure Rule
Operational target	Structural Balance not directly under Government Control	(Adjusted) nominal expenditure is theoretically under direct government control but budget execution imprecise in reality
Role of forecasts	GDP and inflation forecasts should not matter (if cyclical adjustment (=elasticity) correct)	Forecasts central (for expenditure growth)
Estimation errors/ex-post revisions	Large (output gap and level of potential output often substantially revised)	Large (potential output growth prospects often substantially revised)
Quantification of one-offs	Needed	Needed
Counter cyclical	Should be cyclically neutral in theory, not in practice	Should be counter-cyclical in theory, in practice less evident
Debt sustainability	Good in theory, so far little success in SGP	Good in theory, too little experience to judge in reality
Treatment of investment	Possible (golden rule), but so far not done	Possible (golden rule), but likely to have little impact

Source: Authors' elaboration

¹⁵ Clayes et al. (2016) provide a similar table, but arrive at different conclusions.

3 WHAT GOLDEN RULE?

This section discusses the possible benefits and drawbacks of instituting a “golden rule” in the context of the EU’s fiscal framework.

The common argument for all golden rule proposals is that the government should be allowed to incur debt if it creates new capital. Our main objection is that this argument justifies financing only net investment with debt, not gross investment. Under a fiscal rule of this kind, net fixed capital formation is excluded from the computation of the deficit, but gross fixed capital formation (GFCF) is not.

Over time, many different variants of the golden rule have been put forth. A recent example is that of the European Fiscal Board (EFB), which refers to the expenditure aggregate defined by the European Commission (see the following paragraph). This modified golden rule posits that some investments deemed to be in the interest of Europe generally should be exempted from the computation of the deficit. Moreover, the EFB proposes that the GFCF should be averaged over four years to iron out shorter-term fluctuations. This is explicitly mentioned in the scenario analysis of the expenditure rule:

*"Under the expenditure rule proposed in this chapter, the ceiling on net expenditure growth is computed from a modified expenditure aggregate where EU funded expenditures and cyclical unemployment benefit expenditures are excluded, and the level of gross fixed capital formation is smoothed over four years. This is in line with the methodology underlying the expenditure benchmark in the Stability and Growth Pact, and allows to correctly derive discretionary expenditures, **while avoiding that Member States are penalised for undertaking new investments.**"* (Fiscal Council 2018, p. 88)

This proposal appears attractive at first sight, but it is likely to be of limited practical relevance, as typically investment projects of Europe-wide interest account only for a small fraction of overall public investments. However, this might change in the wake of the current COVID-19 crisis.

More importantly, this proposal, as do many others, neglects one key point, which is at the core of this section: the distinction between *net* and *gross* investment spending.

The variable most commonly used in a golden rule is GFCF, a national accounts aggregate of official statistics. This variable corresponds to general government expenditure on fixed capital formation, which comprises both, the addition of new structures and the maintenance of existing structures. Maintenance is essential to offset the ‘wear and tear’ through usage, which in statistical terms is called ‘consumption of fixed capital’. Since the introduction of European System of Accounts in 2010, GFCF also takes in some investment in intangibles such as R&D, Computer Software and other intellectual property rights¹⁶. The size of GFCF by the government is also affected by the nature of the entity which undertakes the investment. For example, if a government agency lays a fibre-optic cable, this is counted as public investment. But this is not the case if the same cable is laid by a private telecommunication company.

General government GFCF amounts to about 2.5% to 3% of GDP in most Member States. Those calling for the exemption of investment spending from the deficit limits thus implicitly assume that a golden rule would allow Member States to run higher deficits, by close to 3% of GDP. For example, the balanced budget over the cycle required by the SGP would thus be equivalent to a deficit of 2.5-3% of GDP over the cycle.

¹⁶ The list of components is available at ESA2010 P.74 (<https://ec.europa.eu/eurostat/documents/3859598/5925693/KS-02-13-269-EN.PDF/44cd9d01-bc64-40e5-bd40-d17df0c69334>)

Blanchard and Giavazzi (2004) already called attention to the need to distinguish between net and gross investment. They show that the debt-to-GDP ratio would converge with the capital/GDP ratio if a government were to run a balanced budget indefinitely with a golden rule based on net capital formation. This makes intuitive sense: if additional debt issuance were allowed only for net investment, the stock of public debt would be equivalent to the stock of public capital (plus pre-existing debt). The converse is also true: if one were to apply a 'golden rule' allowing deficits up to the amount of gross investment, public debt could become increasingly dissociated from the stock of public capital. Italy constitutes an extreme example: at the current rate of negative net investment, the public capital stock declines while debt continues to increase.

This distinction between gross and net investment is critical in mature economies, like most of the euro area Member States. Since their populations are stagnant or even declining, potential growth is slow. Mature economies with unfavourable demographics necessitate only a slowly growing capital stock. This usually implies a large difference in the required gross and net investment. The latter might not be substantial and often is indeed close to zero, or even negative (see Box 1 on how the stock of capital is measured).

Box 2: Measuring net investment

Measuring net additions to the public stock of capital is one major problem in applying a 'net golden rule'. Expenditure on infrastructure by the government is in principle easy to measure, although in reality there are big problems with comparability across countries and over time because some sectors (e.g., railways, water supply) have been privatised in different countries. Measuring capital consumption of the public sector capital stock is more difficult since one has to rely on arbitrary assumptions like a fixed depreciation period for different types of infrastructure (ports, bridges, tunnels, etc.). However, taking into account depreciation is essential.

In practice, capital stocks are measured using the 'perpetual inventory' method. For a recent application see Berlemann et al. (2012). Under this method, one starts with an arbitrary initial capital stock. Net additions are then calculated each period as the difference between the expenditure on gross investment and depreciation, which in turn is calculated as the rate of depreciation applied to the capital stock in the previous period. If this procedure is applied over a long enough time span (in practice 25 years would suffice), the resulting estimate of the capital stock will be independent of the assumed initial value.

While one can debate the exact rate of depreciation for each type of investment, it is clear that neglecting depreciation entirely cannot be the right approach. In other words, it is preferable to be imprecisely right rather than precisely wrong.

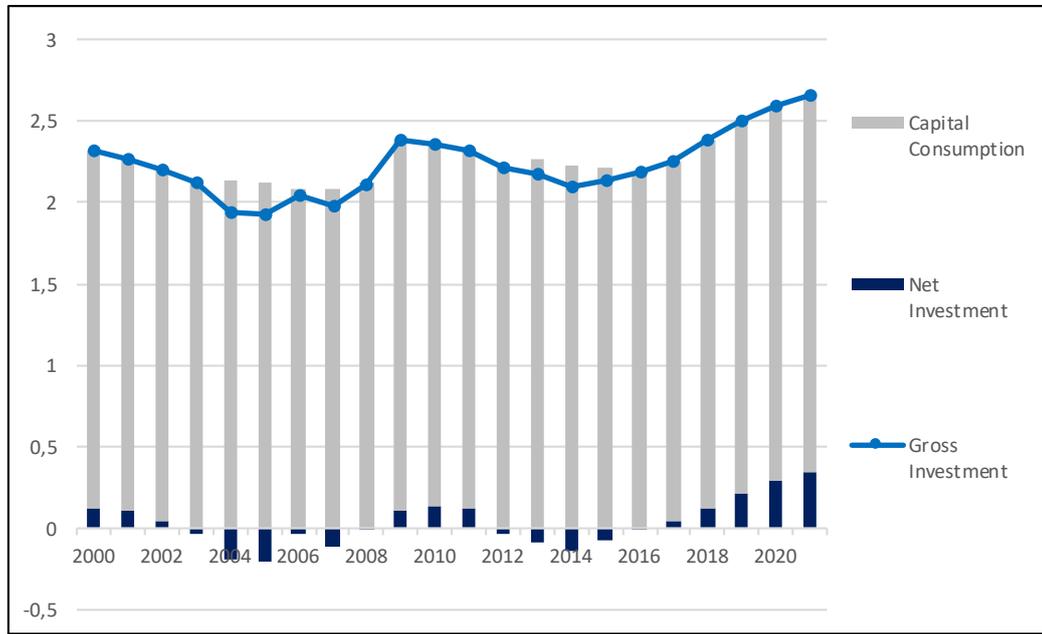
The practical importance of the difference between gross and net capital formation can be illustrated by looking at the evolution of net and gross fixed capital formation, over the past two decades, of Italy and Germany, two large euro area economies with very different records of economic performance.

In Germany, government GFCF (see Figure 4) has been largely stable since 2000, oscillating between 2% and 2.5% of GDP over most of the time, with net investment about of the period negative. It is only in the past few years that GFCF has exceeded 2.5% of GDP, with net investment still well below 0.5% of GDP. Under a fiscal rule whereby only net investment can be added to the deficit, Germany thus would not have been allowed to run larger deficits during 10 of the past 20 years. This applies in particular to the years 2003-04, when the country's headline deficit was running around 3% of GDP. If negative

capital formation had been added to the deficit then, the country would have been even more clearly in breach of the rules of the Stability and Growth Pact (such as were in force then).

The following figures illustrate the magnitude of the difference between gross and net capital formation.

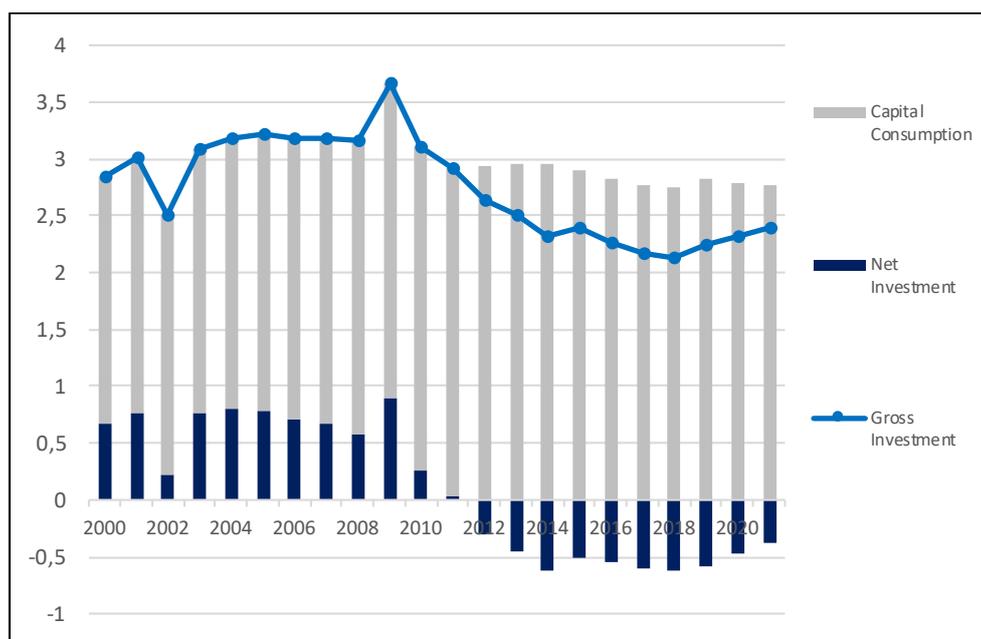
Figure 9. Germany: Gross and net investment (% of GDP)



Source: Authors' own elaboration based on AMECO.

For Italy, two quite different phases can be observed: during the early 2000s, net investment was relatively large (more than 0.5% of GDP; see Figure 5). It then turned negative in 2012 after the start of the euro crisis. GFCF amounts recovered after that crisis to about 2.5% of GDP. Exempting net instead of gross investment from the computation of the deficit, as stipulated by the net golden rule, would show that before 2011-12, Italy's fiscal situation was actually somewhat better than one would judge based on the deficit alone (whether cyclically adjusted or not). Over recent years (up to the COVID-19 crisis) the opposite was the case: net investment has been consistently negative since 2012, implying that the fiscal situation has been worse than headline deficits would suggest.

Figure 10. Italy: Gross and net investment (% of GDP)



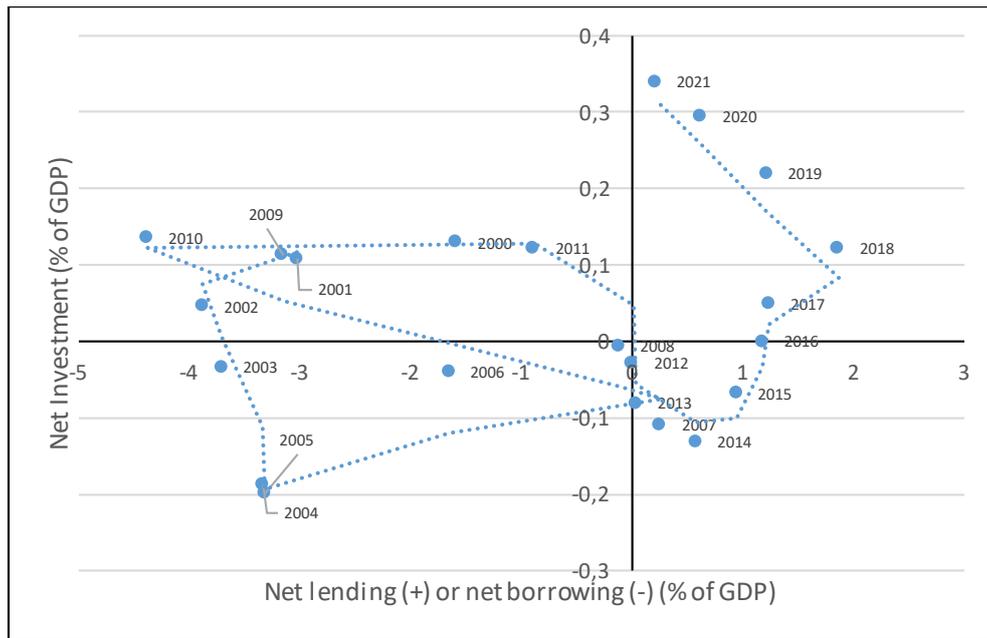
Source: Authors' own elaboration based on AMECO.

3.1 Deficits and net investment

Another important point is to show how the concept of net versus gross investment can be extended to the discussion on whether fiscal rules forcing lower deficits have an impact on net investment. A priori, the direction of causality is not clear. The popular argument is that EU fiscal rules force countries to reduce deficits and that investment spending is the first victim of budget cuts. However, it is not unavoidable that governments cut investment spending first. Governments with a longer-term view could and should take the opposite view, namely, that current spending should be cut first.

We performed a preliminary test concerning the correlation that can be observed between net investment spending and deficits. For most countries, there is not a close relationship between deficits and net investment by the government, at least using annual data. As an illustration, we show below (see Figures 6 and 7) the relevant data for Germany and Italy, which followed starkly different paths. We limit ourselves to the period after the start of European Monetary Union because Germany in the 1990s was preoccupied by the aftermath of reunification. During those years, net investment in the country might have been unusually high because of the need to build up and modernise capital stock in the new eastern Länder. For Germany, no correlation is evident between net investment and the government budget balance over the years since 2000.

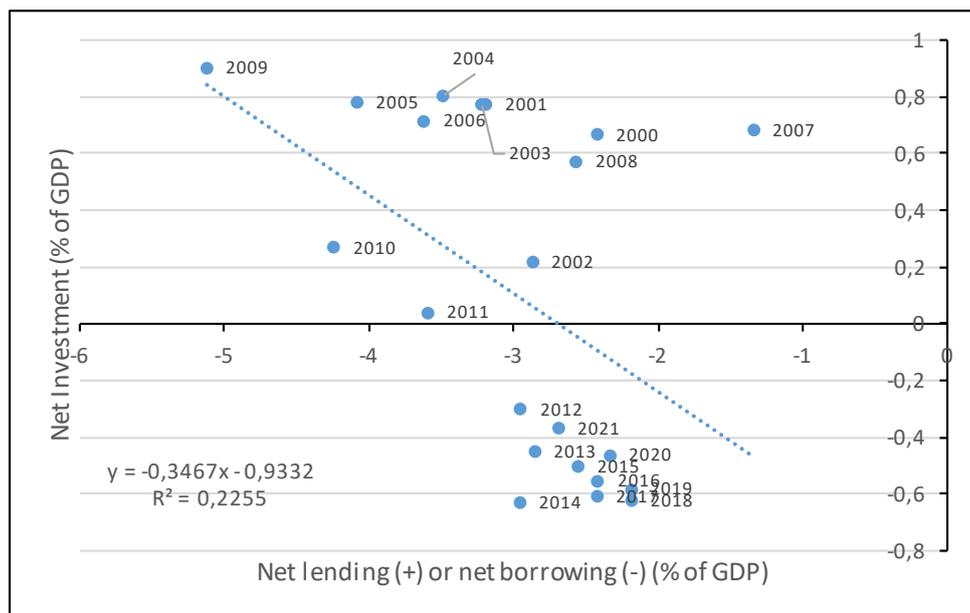
Figure 11. Germany: Correlation between net investment and government budget balance



Source: Authors' own calculations based on AMECO data.

For Italy, by contrast, the result is that a weak negative correlation emerges between deficits and net capital formation.

Figure 12. Italy: Correlation between net investment and government budget balance

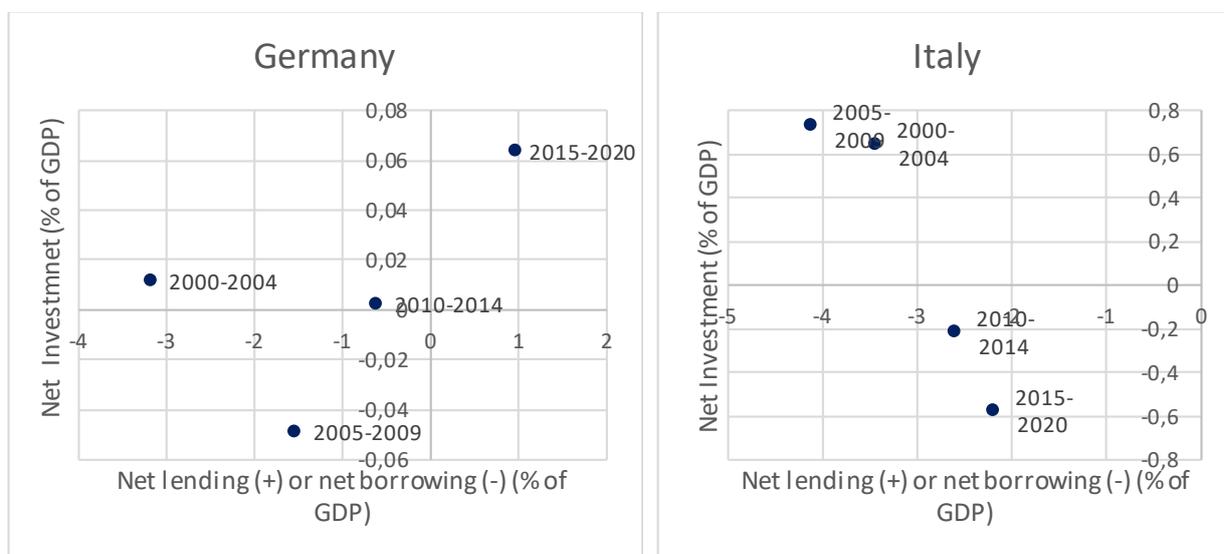


Source: Authors' own calculations based on AMECO data.

A somewhat clearer picture emerges if one concentrates on five-year averages. Germany and Italy are again used as examples below (see Figure 8). The impression that forms is that for Germany budget surpluses are associated with higher net capital formation, whereas the opposite seems to be the case for Italy. The correlations evident in these figures cannot of course prove causation. The figures show nevertheless that different countries have encountered very different experiences, although they are operating under the same fiscal rules. The advantage of looking at medium-term averages, as in the

figures below, is that this is also the time frame that should be used to evaluate infrastructure spending. However, this might be difficult to reconcile with the annual cycle for the scrutiny of national fiscal plans. In general, the charts confirm different patterns across countries.

Figure 13. Correlation between net investment and government budget - Five-year average: Germany and Italy



Source: Authors' own calculations based on AMECO data.

3.2 Efficiency of public investment

In most of the literature on the golden rule a key, unspoken assumption is that when the government spends one euro on GFCF, it creates one euro worth of capital. Another assumption is that additional public capital will strengthen the capacity of the government to repay debt. However, neither assumption can be taken for granted, as emphasised by Buiter (1998).

In national accounts statistics, the value of public capital is usually measured in terms of the actual expenditure the government has undertaken. However, this is an accounting convention, not reflective of reality. It is difficult to measure the economic value of fixed capital created by public investment. To give a concrete example: one kilometre of freeway might have a very different cost in various countries. Part of the cost difference might be due to topography (mountainous territory involves higher costs), but part might be due to the efficiency with which construction is undertaken. Corruption is well known to increase the cost of building infrastructure. But in the countries where a kilometre of freeway costs more to build, its 'value' will be treated as higher.

Another, often overlooked, aspect is that a freeway that is seldom used should not be assigned a high capital value even if has been constructed in the most efficient way. For instance, in Japan, public infrastructure spending doubled as percentage of GDP during the mid-1990s. But some of that spending resulted in 'bridges to nowhere', which did little to help growth.

Bonaglia et al. (2000) report, for example, that in Italy, the return on infrastructure investment was close to zero in some parts of the country (the Northeast) and that in other parts the return was lower than the cost of investment.

3. CONCLUSIONS

Expenditure rules (or rather, expenditure growth rules) have recently come to the fore in a number of academic studies and proposals. Two recent papers from the European Commission also extoll the putative advantages of expenditure rules. The two-key advantage of expenditure rules are supposed to be their simplicity and less of need to rely on unobservable variables, like the output gap.

However, closer inspection reveals that even without an extraordinary event like the current crisis the supposed advantage of expenditure rules are much smaller than claimed.

Simplicity: A key advantage of expenditure rule should be that they provide a simple rule: keep the growth rate of nominal expenditure below that of (nominal) GDP. But, in reality expenditure rules also need some important add-ons, especially for countries with high debt levels. These add-ons typically concern the imperative of reaching the 60% reference value for the debt-to-GDP ratio, mostly in terms of the time allowed to reach this target. Whether one assumes 15, 20 or 30 years makes a material difference. But the choice between these time horizons can be arbitrary and is difficult to evaluate objectively.

Avoiding the output gap concept. The real-life application of expenditure rules is much more complicated than one might suspect at first sight because a key input is the potential growth rate of the economy. The underlying assumption of most expenditure rules is that the potential growth rate of European economies is reasonably constant because most shocks are from demand and thus temporary (Darvas et al. 2018). This would imply that the medium-term growth rate of potential output should be more stable than short term (estimates of the) level of potential output. However, the estimates used by the Commission are in some cases rather unstable and as much subject to (rather similar) revisions as estimates of the output gap.

Finally, the sharp increase of expenditure (relative to GDP) occasioned by the COVID-19 crisis puts the spotlight on the issue of ‘base drift’. At a time of unusually elevated spending on public health and fiscal support for businesses and households, it is difficult to judge what constitutes a reasonable baseline for government expenditures.

A clear disadvantage of expenditure rules is that they usually focus only on the growth rate of expenditure, not its level or its composition. One could of course augment expenditure rules with another element, which would provide an exception for additional capital expenditure. But this would risk making expenditure rules as complicated as the existing structural balance rules have become.

All in all, it appears that expenditure rules, which started out with the aim of being simpler and less subject to revisions than deficit rules, are experiencing a similar fate: as time goes by, they become more and more complicated. The uncertainty about potential output generated by the current crisis will aggravate the impact on both types of rules, destabilising their basic assumptions.

All variants of the so-called golden rule have the purpose of pushing countries to favour investment over current expenditure. We argue that a golden rule would make sense only if formulated in terms of *net* investment. Since net public investment (as conventionally measured) is usually within the range of plus/minus one-half percent of GDP, a ‘net golden rule’ would not allow much higher headline deficits and might at first sight make little difference in reality. However, this impression is wrong because a net golden rule contains smarter incentives at the margin.

A ‘net golden rule’ allows the government to maintain investment expenditure even in a downturn or when the deficit (net of investment) is at the limit allowed by the deficit rules. But the golden rule (in whatever form) concerns only the treatment of investment expenditure, it does not require any other

expenditure to be cut. This implies that the existence of a golden rule has no impact on the incentives to undertake other expenditure which a high social value (like education or health). Investment in health and education structures would actually be protected by a golden rule.

If a ('gross') golden rule had been applied in the euro area, most countries might have run higher deficits, by up to 3% of GDP, without actually increasing their stock of capital. For countries like Italy today (or Germany in 2003–04) a net golden rule would put the spotlight on what happens to the stock of public capital and would have provided a strong incentive not to let infrastructure spending fall that much.

In the likely post–COVID-19 crisis environment, expenditure rules would start from an exceptionally high baseline level and debt burdens might become borderline unsustainable. Focusing on controls aimed at reducing debt levels over those for trimming deficits might then become attractive. An exemption for net investment could still be maintained.

One way to translate the results of this analysis in concrete terms would be to relate it to the existing 'investment clause'. A communication from the Commission¹⁷ in 2015 on the flexible interpretation of rules described the investment clause in vague terms: allowed are *"temporary deviations from the medium-term budgetary objective or from the fiscal adjustment path towards it for those member states whose investments can be considered to be equivalent to major structural reforms."* This phrase ought to be replaced with the following: *"temporary deviations from the medium-term budgetary objective or from the fiscal adjustment path toward it are allowed to the extent that they result from net investment."*

¹⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52015DC0012&from=EN>

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ANNEX 1 - INFORMATION ON EXPENDITURE RULES AT EU-LEVEL

Country	Description
Austria	The respective increase in expenditure by the federal government, the provinces and the municipalities must be in line with the provisions of Council Regulation (EC) No. 1466/97.
Bulgaria	Expenditure under the consolidated fiscal programme may not exceed 40% of GDP.
Bulgaria	The annual expenditure growth shall not exceed the reference growth of potential gross domestic product. The scope of expenditure and the methodology for calculating the reference growth of potential gross domestic product shall be determined according to the requirements set out in Council Regulation (EC) No. 1466/97 of 7 July 1997 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies.
Bulgaria	The average growth rate of expenditure for local activities under municipal budgets for the forecast medium-term period shall not exceed the average growth rate of the reported expenditure for local activities for the past four years.
Denmark	Nominal expenditure ceilings for three main areas (central government, regional government and local government) of the budget are set in concordance with rule No. 7013 and legally binding for four years (rolling four years—i.e., one year is deleted and one year is added each year).
Spain	The annual growth of eligible expenditures cannot exceed the average medium-term growth rate of GDP (over a period of 10 years) in nominal terms.
Finland	At the beginning of the parliamentary term, the government decides on the parliamentary term spending limits, i.e., a ceiling for budgetary expenditure, as well as the rules governing the spending limits procedure for the entire four-year parliamentary term. The spending limits’ allocation for each administrative branch is reviewed within the parliamentary term spending limits in March-April as part of the General Government Fiscal Plan. Decisions are made on the basis of the spending proposals of the ministries’ administrative branches. For the administrative branches, the General Government Fiscal Plan serves as a guide to the preparation of the following year’s draft budget. Around four-fifths of central government budget appropriations are allocated in accordance with the spending limits framework, which is binding for the whole parliamentary term. The annual General Government Fiscal Plan reviews the spending limits allocations for each administrative branch and updates the spending limits to correspond with changes in price and cost level as well as changes in the structure of spending limits expenditure. In the annual decisions, the spending policy defined in the government programme and in the parliamentary term’s first General Government Fiscal Plan, which is the basis for the parliamentary term spending limits, is not changed. The government is committed to adhering to the spending rule and to the central government spending limits decision, which is based on it and included in the first General Government Fiscal Plan of the parliamentary term.
Italy	Expenditure ceilings for pharmaceutical products (including patient co-payments, so-called tickets) are expressed as a percentage of the financing level for the national health service contributed by the state.

Italy	The annual target rate of growth in general government expenditure, net of items specified by EU law, may not exceed the reference rate as calculated in accordance with EU law.
Lithuania	Where the arithmetic average of the statistical balance indicators of the general government sector for the past five complete calendar years as known at the time of drafting of the state budget or drafting of amendments to the state budget is in deficit (there is net borrowing), the annual growth rate in percentage terms of the TOTALITY of expenditures of the state budget, Social Insurance Fund budget and Health Insurance Fund budget should not exceed one-half of the average multiannual growth rate in percentage terms of potential GDP.
Latvia	Expenditure, excluding GDP deflator (inflation), shall not increase faster than growth of potential GDP.
Netherlands	The multiannual expenditure ceilings are defined by coalition agreement and prevent income windfalls from being used for extra expenditures. Any setbacks against the expenditure ceilings must be compensated for within the sector; windfalls can only be used to compensate for setbacks within that sector. Windfalls cannot be used to finance new expenditures or are automatically used to lower the debt.
Romania	The annual increase of public administration expenditures complies with the provisions of Council Regulation (EC) No. 1466/97, as subsequently amended and supplemented.
Sweden	All expenditure in the central government budget is subject to the expenditure ceiling, apart from expenditure for interest on the central government debt. Moreover, off-budget expenditure in the old-age pensions system is also covered by the expenditure ceiling.

Source: EU Fiscal Rules Database (Filtered: General Government and Multiannual).

ANNEX 2 - EXPENDITURE RULE OR BENCHMARK WITHIN THE SGP AND THE EFB PROPOSAL

The current expenditure benchmark in the SGP goes back to the introduction of the “six-pack” reforms in 2011. It serves as a tool within the preventive arm of the existing fiscal framework.

By contrast, the latest expenditure rule proposal by the European Fiscal Board (EFB) in 2018 is meant to serve as a “stand-alone solution” replacing/simplifying the complex framework currently applied within the SGP by focusing on the difference between expenditure growth and the potential [presumably economic growth here, not expenditure growth] growth rate, taking into account the extent to which the public debt to GDP ratio exceeds 60%. In the following, both expenditure rules will be compared.

Similarities

Both rules hinge on certain variables, which are the net expenditure growth rate (g_t) for the ex post evaluation and the potential medium-term growth rate of GDP (\overline{yp}_t), in the course of determining the expenditure ceiling. The latter is the ten-year average growth rate of potential GDP, which consists of the five years of backward-looking data and 4 years of forward-looking data. This ten-year average is recalculated every year. Moreover, the potential growth rate for the next year is calculated twice: first on the basis of the Spring Economic Forecast of the European Commission (EC) in May (this number goes into the calculation of the ex-ante target growth rate) and, second, in the following year, again after the publication of the Spring Forecast (this number goes into the calculation of the ex post target growth rate).

In each case, for growth of net expenditure and the medium-term growth of GDP, reference values are produced by the EC according to latest standards by the Output Gaps Working Group (OGWG) of the Economic Policy Committee (EPC). The reference value for ex ante potential output in period t is based on the Commission’s forecast in spring $t-1$.

The modified expenditure aggregate (G_t) required for the calculation of the net expenditure growth rate is calculated as follows:

$$G_t = EX_t - I_t - EXeu_t - GFC_t + \overline{GFC}_t - Uadj_t$$

where EX_t is total government expenditure; I_t , total interest payments; $EXeu_t$, expenditure on EU programs (fully matched by EU funds); $Uadj_t$, cyclical unemployment benefits; GFC_t , gross fixed capital formation not matched by EU funds; and lastly \overline{GFC}_t , representing average gross fixed capital formation over four years (t through $t-3$).

Net expenditure growth (g_t) is then calculated based on the following formula, where discretionary revenue measures ΔR_t (which also includes a correction for one-offs) are subtracted:

$$g_t = \frac{G_t - \Delta R_t - G_{t-1}}{G_{t-1}}$$

The SGP Expenditure Benchmark

The ceiling on net expenditure growth based on the expenditure benchmark consists of two terms, the growth rate of potential GDP and a convergence margin (C) for countries that are currently not at their MTO.

The convergence margin consists of an adjustment parameter (adj), which should guide the structural balance towards the MTO at a rate determined by two considerations: the current debt

to GDP ratio and the economy's position within the cycle [which leads back to the problem of determining the output gap]. The convergence margin relates to primary expenditure growth as percentage of the respective GDP. The formula for the ex-ante reference value for net expenditure growth (g^{NE}) has to be based to a large extent on estimates (indicated by the expectations operator $E(\cdot)$). It is defined as:

$$g_t^{NE} = E_{t-1}(\bar{y}p_t) - \left(\frac{adj_t}{\frac{E_{t-1}(EX_t - I_t)}{E_{-1}(GDP_t)}} \right) * 100$$

The formula for the ex post reference value for net expenditure growth is the same, except that the expectation is formulated two periods later (t+1).

This expenditure benchmark contains two sources of potential uncertainty, namely, the potential growth rate, which is re-estimated every year, and the adjustment factor, which also varies from year to year and depends itself on the estimate of potential output.

Given the two-year time lag between the ex ante and the ex post targets, large differences can emerge as documented in Figure 1.

The Alternative Expenditure Rule Proposed by the EFB

The proposal of the Fiscal Board (2018) aims at simplifying the adjustment factor. According to this proposal, how much net expenditures should grow is determined by the usual debt accumulation equation, which stipulates that the debt to GDP ratio should be reduced to a level of 60% within a time frame of 15 years.

This reference value for net expenditure growth will be recalculated every 3 years. In its simplest form, the ceiling can be derived from the following equation of debt dynamics which depends on the initial debt level (d_t), interest rates (i_t), potential GDP growth ($\bar{y}p_t$), government revenue as percentage of GDP (\bar{r}_t) and the net expenditure growth (g_t^{NE}) of primary expenditure growth as percentage of GDP (e_t)

$$d_{t+1} = d_t \left(\frac{i_{t+1} - \bar{y}p_{t+1}}{1 + \bar{y}p_{t+1}} + 1 \right) - (\bar{r}_{t+1} - e_t \left(\frac{1 + g_{t+1}^{NE}}{1 + \bar{y}p_{t+1}} \right))$$

Assuming interest rates, potential GDP growth, government revenue as percentage of GDP and net expenditure growth to be constant over a time period of 15 years leads to:

$$d_{15} = d_0 \left(\frac{\bar{i} - \bar{y}p}{1 + \bar{y}p} + 1 \right)^{15} - \bar{r} \sum_{i=0}^{15-1} \left(\frac{\bar{i} - \bar{y}p}{1 + \bar{y}p} + 1 \right)^i + e_0 \sum_{j=1}^{15} \left(\frac{\bar{i} - \bar{y}p}{1 + \bar{y}p} + 1 \right)^{15-j} \left(\frac{1 + g^{NE}}{1 + \bar{y}p} \right)^j$$

Which after the insertion of $d_{15} = 0.6$ and respectively all other variables can be solved for the ceiling of net expenditure growth g^{NE} .

This last equation cannot be solved explicitly for the target growth rate of expenditure. It can only be simulated, assuming a constant value for potential growth, revenues and the interest rate. Subsequent estimates of this growth rate for expenditure risk being as variable as under the approach of the Commission.

Given the current crisis, all fiscal rules have been suspended. When the economy recovers, both expenditure and structural balance rules will be more difficult to apply as the level and growth of potential output will become more uncertain. Focussing on reducing high debt levels might at that point be more appropriate.

The economic argument for a golden rule is that debt can be used to finance the creation of public capital. But this implies that any golden rule should only exempt net investment, which is much lower than the gross investment.

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