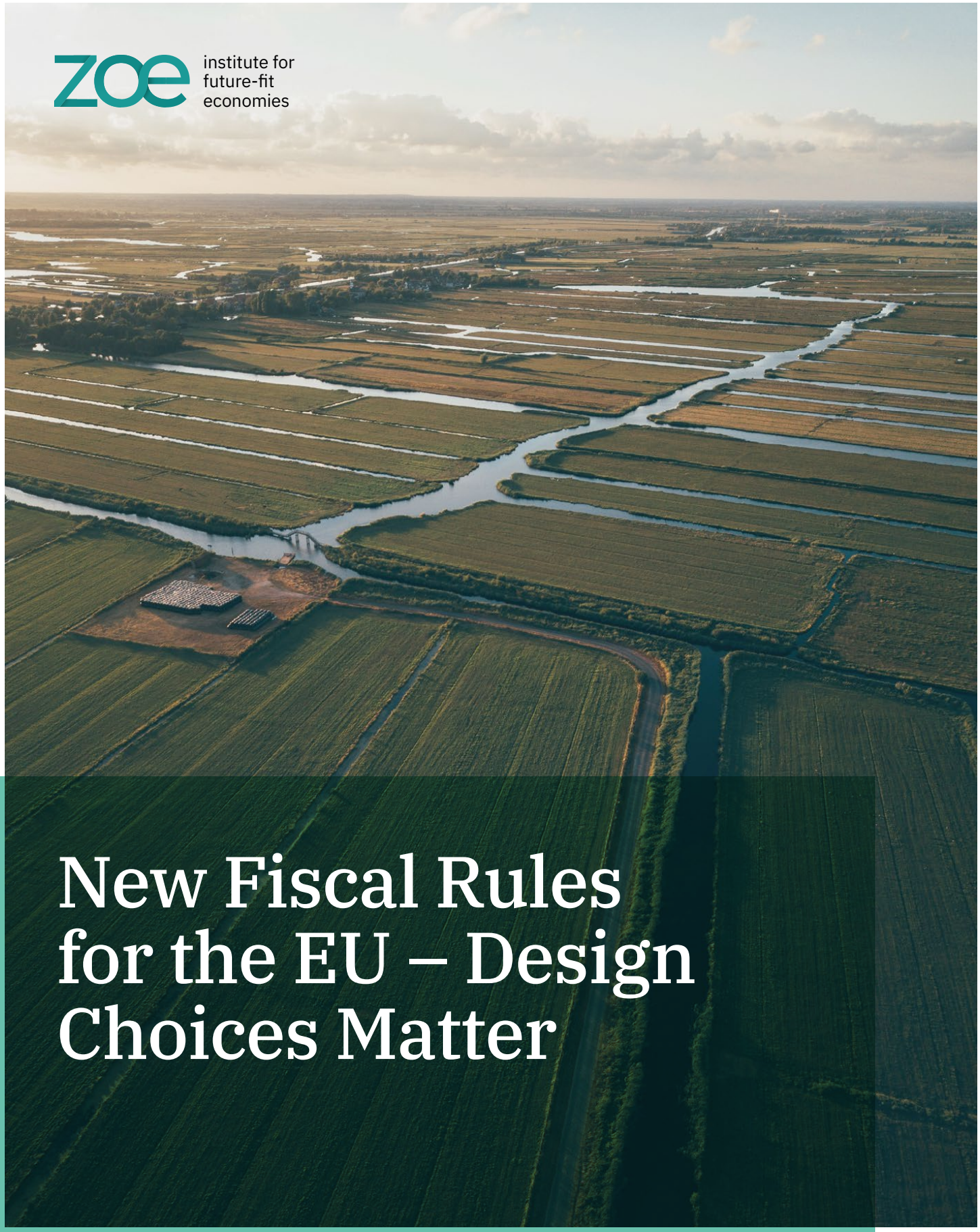

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New Fiscal Rules for the EU – Design Choices Matter

ZOE Institute for Future-fit Economies

Imprint

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New Fiscal Rules for the EU – Design Choices Matter

Executive summary

Public funding plays an important role to meet the massive investment needs required to realise a green and just transition. However, EU Member States are constrained by both national and European fiscal rules. Thus, there is a current and active debate about the reform of the EU fiscal rules and a proposal by the European Commission on the subject to be released in autumn of 2022.

In this context two proposals are being intensely debated, namely an expenditure rule and a so called (green) golden rule. Zooming into specific designs of those rules, significant differences come to the fore. The aim of this analysis is to draw attention to the most important variables as well as helping to build consensus for the reform of the EU fiscal rules.

This case analysis compares different designs for both an expenditure rule and a golden rule. For both rules, dissimilarities between designs are highlighted and benefits as well as drawbacks are outlined. Using macroeconomic data for Germany, the Netherlands, and Italy, the effects of specific rule designs are simulated with respect to EU Member States with contrasting public budget circumstances.

Concerning the expenditure rule, the results suggest that how the debt correction factor is designed is crucial with respect to the fiscal leeway granted to Member States. Both the speed of adjustment as well as the envisaged debt target strongly determine the allowed fiscal stance. This analysis also shows the striking effects that a higher interest rate would have on public budgets.

While all golden rule proposals provide additional fiscal leeway, the pressing point is a potential cap for deductible investments. It is reasonable to include such a cap to avoid a misuse of the generated fiscal leeway, but the cap should not prevent the provision of the full amount of required public green investments.

The analysis shows that the mere implementation of an expenditure rule and a golden rule is insufficient to ensure the scale or quality of investments and spending for a successful green and just transition. Therefore, the analysis concludes with a presentation of proposals to rethink the EU economic governance framework for getting EU fiscal policy on track for a green and just transition, namely integrating climate risks in debt sustainability analysis, binding requirements and targets for the quality of public finances at national level, and a centralised fiscal capacity at EU level.

1. Introduction

By 2050, Europe is aiming to be the first climate-neutral continent, realising the vision of a fully decarbonised economy. Europe will have shown that a deep socio-cultural and economic transformation can go hand in hand with prosperity and equity. This will only have been possible because EU politicians realised in a time of severe crises, geopolitical turmoil, price shocks, and great uncertainty about the future, that realising this vision is solely achievable with a courageous and collective effort to transform the European economy. They will have used this period of crisis to activate the full potential of the state and massively invest into the socio-ecological transformation. This includes setting rules, incentives, and regulations to create a clear direction for the economy. A part of this successful transition is hinged upon the ability to make additional annual investments of unprecedented amounts[1].

Presently, European policymakers are confronted with this very challenge: maintaining the long-term perspective to meet European Green Deal objectives amid energy price hikes, potential gas shortages, recovering from the pandemic, extreme weather phenomena, and political upheaval in some Member States. Public funding has an essential role to play in achieving both, supporting the most vulnerable in our societies in the here and now while working towards meeting long-term social, environmental, and economic goals for a climate-neutral Europe in 2050. By creating sufficient fiscal leeway policymakers are equipped with the necessary means to tackle this challenge.

To deliver on the European Green Deal (EGD) objectives, annual investments will have to increase by around EUR 520 billion until 2030[2]. However, according to a McKinsey report[3], about 60% of these required investments are estimated to not have a business case. In other words, the state plays a pivotal role in bridging investment gaps for the green transition. In the light of rising interest rates and uncertainty about the future, the appetite for private investments is lowered even more, adding to the importance of state actors to de-risk important investments.

However, the current EU fiscal rules oblige EU governments to limit their debt levels and maintain balanced budgets. According to those rules, EU governments would need to reduce their debt-to-GDP ratio down to 60 %. To cushion the socio-economic impacts of the pandemic, the general escape clause was activated to put these rules on hold and allow Member States to incur debt. Consequently, debt levels have increased to an EU average of 100 % debt-to-GDP. When the general escape clause will be deactivated again by the end of 2023, fiscal consolidation and austerity policy looms. After the 2008 financial crisis, austerity policies in the EU led to a double-dip recession, the EU economy recovered much slower than others, unemployment rose massively in many parts of Europe and triggered the euro crisis.[4] Austerity measures have contributed to Euroscepticism[5] and enabled populist sentiments and movements to rise[6]. Moreover, the austerity policies after the euro crisis led to a lost decade for vital future investments: Despite years of zero interest rate policy, important investments for the green transition were missed in both Northern and Southern European countries[7].

For the transformation to a decarbonised economy to succeed in prosperity and equity, it is important not to repeat the mistakes of the past. Thus, a reform of the fiscal rules that will allow Member States to invest and spend enough for sustainable economies and societal cohesion is urgently due. In addition, an updated fiscal framework needs to be able to properly react to economic crises by allowing for sufficiently countercyclical fiscal policy as well as by having the flexibility to react to changing interest rates whilst ensuring debt sustainability. Along with adapted incentives and regulations, this will be a necessary means to fully achieve the goals of the EGD. In response to this need, the European Commission relaunched the review of the EU economic governance framework in autumn 2021. In this context, the European Commission will come forward in October 2022 with new ideas for economic governance.

In the ongoing debates around the reform of the fiscal rules, two proposals have gained particular attention: A (green) golden rule that exempts certain

expenditure from the fiscal rules and an expenditure rule that limits nominal expenditure to the extent of growth of medium-term nominal potential output. These two proposals are considered most feasible to implement whilst potentially creating significant impact[8]. This is also demonstrated by the joint declaration by Spain and the Netherlands as well as the Franco-Italian paper[9].

It is, however, often neglected in the debate that different proposals exist for both rules, which vary significantly in their impact on the Member State's fiscal stance. Based on a quantitative analysis, this paper compares the impact of different designs of both an expenditure and a golden rule. This analysis is exemplified for three Member States: Germany, Italy, and the Netherlands. The paper's methodology draws on various proposals for different expenditure and golden rules that have been put forward by European agencies, think tanks and research institutes and shows how they differ in their impacts.

Moreover, the analysis shows that even the most effective design of both rules will not be sufficient to close the investment gap for the European Green Deal. Other levers, such as the creation of dedicated EU funds, can serve as a complement to the reform of EU fiscal rules and are described in this paper.

This paper proceeds as follows. After outlining the reasons for the need to reform the existing EU fiscal framework, the main features of an expenditure rule and a golden rule are described, as well as the main respective proposals and their differences. This is followed by a quantitative analysis of the impact of the two rules, differentiating between several possible designs. Finally, some more ambitious reforms are proposed that could ensure a truly enhanced EU economic governance framework.

2. Overview of reform proposals

It is widely acknowledged that the existing EU fiscal framework is no longer fit for purpose, as recently stated, for instance, by the IMF[10]. There are two major limitations: the inability to deal with economic crises properly and the inadequacy to specifically address the climate and ecological crisis[8].

Broad consensus has emerged around the need for reform of the EU fiscal rules. Against this backdrop, the European Commission has relaunched the review of the EU economic governance framework in autumn of 2021, with the aim that a reform should lead to simpler and more effective rules to reduce the high level of debt in a gradual and growth-friendly manner[11]. In her State of the Union Address 2022, the European Commission President Ursula von der Leyen announced the presentation of reform ideas for the EU economic governance framework in October 2022[12].

In addition to creating simpler and more effective rules that are more responsive to crises, it is crucial for fiscal rules to maintain a certain degree of flexibility for important expenditure such as high-quality public investment to improve the quality and composition of public finances. To this end, several proposals for reform have been put forward. However, the various proposals have different legal and political feasibility and differ in terms of the fiscal leeway they can release[13]. Indeed, a trade-off often exists between the two dimensions, whereby high-impact proposals such as a fiscal union come at the expense of low feasibility. From this analysis, two proposals emerge as potentially rather impactful and, at the same time, feasible solutions, gaining increasing attention in the contextual debate on a renewed fiscal framework: an expenditure rule and a more controversial golden rule.

There is political appetite for the two rules: Both the joint declaration by Spain and the Netherlands and the Franco-Italian intervention (which expresses the positions of Mario Draghi and Emmanuel Macron) reiterate the reform of the existing fiscal framework

as a priority in the protection and green and just transition of the EU economies. They stress the importance of strengthening growth-friendly fiscal sustainability, complementary to and compatible with structural reforms and high-quality public investments. Debt reduction should not, in fact, exclusively depend on budgetary consolidation. To this end, these papers support debt issuance to finance quality public investments, namely a golden rule able to address today's low level of investment in the European Union. Likewise, they recognise the advantages in terms of the countercyclicality, simplicity and enforcement of an expenditure rule, which would significantly contribute to reducing the complexity of the regulatory framework and thus enhance its enforcement and compliance. Similarly, the position of the German government hints in the direction of a stronger expenditure benchmark, namely an adjustment of the investment clause by exempting certain investment expenditure from the rules[14].

However, there are differences in the forms of the proposed expenditure and golden rules. Ultimately, the exact design of both rules determines the amount of fiscal leeway that Member States have in order to succeed in the transition towards a green and just economy and society. The following subchapters present these differences in the design of the rules. Specifically, their rationale and functioning are presented, and their benefits and drawbacks are listed. Finally, several proposals for each are considered to understand how differences in their design affect their impact.

2.1 Expenditure rule

"Nominal net expenditures do not grow faster than medium-term nominal potential output"[4]

Within the broad debate on the necessary and increasingly urgent reform of the current EU fiscal framework, a growing body of literature is emerging with respect to the introduction of an expenditure rule as main operational fiscal rule[4,15,16]. These proposals push for a shift from debt and deficit variables to controlling expenditure growth as a key factor in ensuring the sustainability of the EU fiscal stance. An expenditure rule limits the growth of nominal public expenditure to country-specific targets defined under the potential output growth methodology, i.e., a multi-year average of the Member States' relative potential output estimates. Under this rule, nominal expenditures do not grow faster than the medium-term nominal potential output, which is the sum of the medium-term growth in real potential output and the inflation target.

The Stability and Growth Pact (SGP) already has some form of an expenditure rule in place. The expenditure benchmark was introduced in the preventive arm of the SGP as a part of the Six Pack reform in 2011. This benchmark complements the Medium-Term Objectives (MTOs) by capping the net growth rate of government spending at or below the medium-term potential economic growth rate. Thus, this benchmark rather serves to ensure consistency between expenditure developments and economic prospects in EU countries. In turn, it does not serve as an expenditure rule that limits the growth of nominal net expenditure to the level of medium-term nominal potential output[17].

In addition to the increasing occurrence in literature, the expenditure benchmark has also gained increasing relative importance in the European Commission. Starting in 2016, the latter began to privilege it over a change of the structural balance in assessing compliance with both the preventive and the corrective arm of the SGP[18].

In the design of a reformed EU economic governance framework, an expenditure rule emerges as a rather promising policy proposal towards a simplified and more effective fiscal framework, easier to understand, enforce and comply with. Such a reform should in fact redirect fiscal policy towards the overriding objective of public finances: fiscal rules must be able to guarantee stability for the sustainable prosperity of our economies[8]. In addition, an expenditure rule is expected to increase the countercyclicality of the EU fiscal framework compared to the currently used structural budget balance rule with its procyclical bias[4]. In the following chapter,

after considering the major strengths and weaknesses of an expenditure rule, the main proposals in this respect are presented and compared.

2.1.1 Strengths and weaknesses of an expenditure rule in general

Insights into the potential of an expenditure rule are manifold. Expenditure has been identified as exclusive driver of the euro area deficit bias; therefore, an expenditure rule is a tool to curve it[15]. Abstracting from the slight differences among the various proposals, the advantages of a framework centred on an expenditure rule can be summarised as follows.

Despite its many advantages, the proposal to introduce an expenditure rule as main operational rule towards a debt-level target is not without potential issues.

Simplicity & accountability	The ever-growing number of fiscal rules, exceptions and escape clauses of the current EU fiscal framework would be replaced by a single operational rule, the basic principle of which is simple and unequivocal[4]: nominal net expenditure does not grow faster than the medium-term nominal potential output. This would result in a more transparent fiscal framework, easier to enforce, monitor[17], and communicate to the public and elected bodies[19].
Country-specific debt reduction	By replacing the debt reduction benchmark (SGP corrective arm), an expenditure rule would encourage a debt reduction path based on country-specific determinants – e. g., the differential between the interest rate and the country's ability to maintain a sufficient primary surplus. This would lead to an equally effective but more realistic and credible debt reduction, with a burden that is more evenly distributed over time to allow for short-term stabilisation without compromising long-term debt sustainability[20,21].
Robustness to measurement errors & revisions	Nominal expenditures are less dependent from the business cycle and directly controlled by governments, which makes them easier to monitor[16] and less prone to revisions and forecast errors[22,23,I]. Despite being based on the same inaccurate potential output estimates that the output gap methodology underlying the structural balance rule also refers to, the use of a multi-year average of these estimates as a benchmark for the expenditure rule *(potential output growth methodology)* mitigates the magnitude of revisions[20,21] and the procyclicality they are subject to[24].
Countercyclicality and macroeconomic stabilisation	By capping the growth of government spending to the growth of potential output, an expenditure rule ensures the build-up of budget deficits during recessions and budget surpluses during booms, allowing the automatic stabilisers to operate almost freely[17,19] and, ultimately, supporting macroeconomic stability[4,25,26]. This leads to more countercyclical fiscal stances and sufficient flexibility for important spending, so that when the economy is below its potential governments do not have to offset revenue shortfalls with expenditure cuts[16].

Table 1: Strengths of an expenditure rule

I With the only exception of cyclical expenditures such as unemployment spending, which are therefore often deducted from the expenditure aggregate to allow for more countercyclicality.

2.1.2 Different designs of expenditure rules

Several proposals for an expenditure rule have been put forward. They differ in terms of the composition of the expenditure aggregate targeted by the rule, the growth benchmark the former is subjected to, and the resulting debt reduction path underpinning the rule. Table 3 summarises and compares the analysed expenditure rule proposals[II] based on these main elements:

1. The **expenditure aggregate** refers to the expenditure titles which are subject to the benchmark and those which, for a number of reasons explained below, are excluded from it.
2. As for the **expenditure growth benchmark,** the presence or absence of a debt-correction factor and of an adjustment account is taken into account together with the inflation rate.
3. Finally, the **debt correction** resulting from the expenditure rule is presented, consisting of a long-term debt target and an adjustment towards it.

Complexity and uncertainty of measurement	The measurement of certain components of both the expenditure aggregate and its growth benchmark is vulnerable to complexity and uncertainty[27]. These include the magnitude of discretionary revenue measures, the cyclical adjustment with respect of expenditures such as unemployment, and the estimates of potential output.
Heterogeneity, subsidiarity, and externalities	Limiting expenditure in all EU Member States risks undermining the heterogeneity of their distinguishing social preferences and is reflected in their different expenditure-to-GDP ratios. Moreover, an expenditure rule risks conflicting with the principle of subsidiarity, according to which the definition of public expenditure's level and composition is up to the national level[17].
Sensitivity to initial conditions of public finances	An expenditure rule would be sensitive to initial conditions of a government's public finances. Thus, if capped to the potential output growth, the possible high initial level of expenditure risks putting public finances on an unsustainable path, and adjustments in this direction would only add complexity to the rule formula[19].
Simplification instead of complexity	A good fiscal rule should not be simpler but rather increasingly complex. Thus, along with the traditional debt and deficit levels and national output gaps, it should consider other factors such as EU-level output gaps, constraints on monetary policy or current and expected interest costs[28].

Table 2: Weaknesses of an expenditure rule

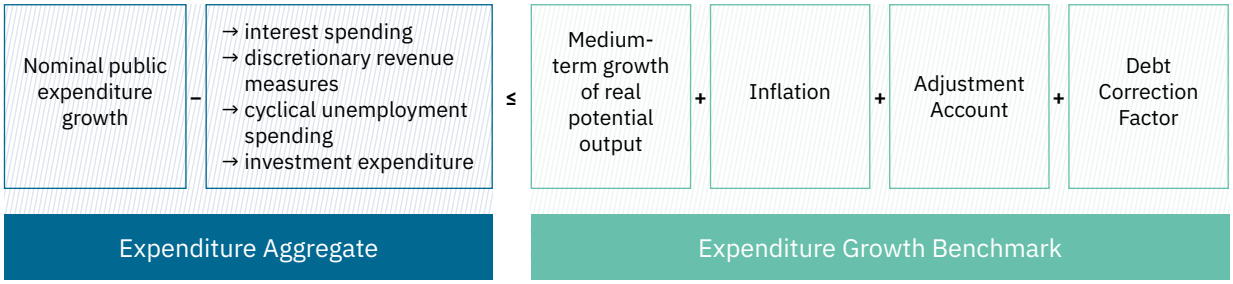

Figure 1: Structure of an expenditure rule

II Table 3 presents proposals that are sufficiently specific to be analysed in detail. Proposals for an expenditure that lack concrete specifications of how exactly they would work are not presented.

		EFB (2018[29], 2020)	Dullien et al. (2020) (IMK)	Claeys et al. (2016)	Darvas et al. (2018) – Bénassy-Quère et al. (2018)	Christofzik et al. (2018) (GCEE) – Feld et al. (2018)[30]	Giavazzi et al. (2021)	Francová et al. (2021)[31]
Expenditure Aggregate Nominal public expenditure growth rate net of:	Interest expenditure	✓	*	✓	✓	✓	✓	*
	Discretionary revenue measures	✓	✕	✕	✓	✓	✓	✓
	Unemployment spending	✓	✓	✓	✓	✓	✕/*	*
	Investment expenditure	✕ (But smoothed over several years)	✓ (Golden Rule)	✕ (But smoothed over several years)	✕ (But smoothed over several years)	✕	✓ (Golden rule for „spending for future“)	✕
	Others	EU-funded investments	Cyclical expenditures	One-offs; labour-market-related expenditure			Automatic stabilizers	EU funds co-financing, the cyclical impact of automatic stabilisers, and one-offs
Expenditure growth benchmark Medium-term growth of real potential output	Inflation	✓ (ECB's 2 % inflation target)	✓ (ECB's 2 % inflation target)	✓ (ECB's 2 % inflation target)	✓ (Expected inflation rate)	✓ (ECB's 2 % inflation target)	*	*
	Adjustment account	Expenditure-overruns		Discretionary revenue measures; previous expenditure-overruns	Limited expenditure-overruns	Deviations from structural balance rule; Estimation errors of discretionary revenue measures; Small deviations in budgetary process	*	Deviations from expenditure ceiling
Debt correction factor	Debt adjustment	Country-specific adjustment rate (*ex ante* formula or case-by-case evaluation)	Country-specific, proportioned adjustment rate; safe-guard-clause	0.02 times the difference between the debt level in the previous year and the debt target	Rolling (new target every year, not based on formula) country-specific debt reduction target	Gradual debt adjustment path towards long-term debt limit	10-years medium-term debt target, based on a multi-speed debt reduction system sensitive to the composition of past spending	Country-specific adjustment pace (max 20 years), decided by European Commission
	Debt adjustment speed	15 years (can be longer for some countries)	20 years (can be longer for some countries)	50 years	Not applicable because of the rolling target	*	20 years for the "fast-speed portion" of the debt, 50 years for the "slow-speed portion"	20 years
	Long-run debt-to-GDP target	60 %	90 %	60 %	60 %	60 %	60 %	100 %
	Additional features	Only applies to countries with public debt over 60 % of GDP; general escape clause	Only applies to countries with public debt over 90 % of GDP/insufficient structural primary surplus to GDP; escape clauses	Transition rule (limits expenditure growth of countries with high deficits)	Strengthening of IFIs; escape clause	Benchmark adjusted by a calibrated constant as the allowed limit of the structural balance; two escape clauses		Expenditure growth benchmark based on real instead of potential output; escape clause

Table 3: Overview of expenditure rule proposals (* not specified)

Discussion of the comparison of different designs of an expenditure rule

The comparison of the different designs of expenditure rules has shown that the design of the **expenditure aggregate** is crucial for the level of fiscal leeway EU governments will retain:

- **Differences in the kind and number of expenditure titles deducted from the aggregates generate more or less fiscal leeway.** Each expenditure rule targets a reference aggregate representing the type of expenditure, the growth of which is restricted by the rule. This aggregate consists of the growth rate of the nominal government expenditure net of a number of spending items that vary according to each proposal. Some expenditure titles are generally excluded to allow for greater counter-cyclicality and thus flexibility in spending: depending on the number and category of expenditure deducted from the aggregate, the different proposals would create more or less fiscal leeway for governments. These primarily include *interest expenditure* and *cyclical unemployment spending,* as well as *one-off expenditure, cyclical expenditures and labour market expenditures* which, in some cases, are also excluded.
- **The inclusion of discretionary revenue measures (changes in tax rates and tax bases) allows for expenditure increases.** Deducting the estimated impact of *discretionary revenue measures* from the expenditure aggregate allows for expenditure increases which are financed by discretionary tax increases[32]. Similarly, it ensures that taxes can not be cut without offsetting this by a decrease in government expenditure. On the one hand, this would preclude manipulations of tax rules that are not compensated for by offsetting expenditure measures (Bénassy-Quère et al., 2018); on the other hand, elected governments' flexibility to make policy choices compatible with the preferred policy preferences and size of the public sector (expenditure-to-GDP ratio) in each Member State would be preserved (Bénassy-Quère et al., 2018; Christofzik et al., 2018).
- **Excluding investment expenditure can protect required investments for the green and just transition.** In many analysed proposals investment growth is not subject to the expenditure benchmark or, at least, is spread over several years so as to more evenly smooth their impact over time. The exclusion of investment spending from the application of an expenditure rule is not to be confused with the notion of the golden rule, which rather refers to the broader concept of debt-financed investment, to which the following section is devoted. In order to ensure more extensive investments protection, some proposals combine an expenditure rule for non-investment spending with a golden rule for investment spending.

Whatever expenditure titles are excluded, the expenditure aggregate is capped at an **expenditure growth benchmark,** which sets the limit beyond which the former cannot grow. This benchmark is always defined by the **medium-term growth of potential output,** assessed through the potential output methodology. The medium-term growth of potential output as the expenditure benchmark is defined in real terms. Hence, the nominal potential output growth is corrected for *inflation*. For example, a nominal potential output growth of 3 % and an inflation rate of 1 % yield a real potential output growth of 2 %.

- **Whether the ECB's inflation target or an expected inflation rate are used can affect the fiscal spending.** To ensure that the allowed expenditure growth considers an adjustment for inflation, all proposals suggest adding inflation rates to the real medium-term growth of potential output. In doing so, most proposals opt for using the ECB's inflation target of 2 %. In this case, the expenditure benchmark would be the sum of real potential output growth (2 % in the previous example) and the 2 % inflation target (hence 4 % in this example). This is to allow for further cyclical stabilisation, i. e. for more real fiscal spending when inflation is below the target (because 2 % of inflation are added to the expenditure benchmark even though actual inflation is lower) and less fiscal spending when it is above the target (because only 2 % of inflation are added to the expenditure benchmark even though actual inflation is higher) (Claeys et al. 2016). Howev-

er, Darvas et al. (2018) argue for the more flexible expected inflation rate because, if the long-run average inflation rate doesn't match the 2 % target, it risks biasing real government spending.

- **An adjustment account as part of the benchmark can record and absorb deviations between the actual and budgeted level of expenditure.** If negative, this difference would be credited, compensating for past expenditure overruns; if positive, it would be debited, encouraging for more fiscal discipline (Darvas et al. 2018; EFB 2020). Christofzik et al. (2018) propose a multi-purpose adjustment account that, in addition to small expenditure overruns, captures forecasting and measurement errors and, more importantly, deviations from the structural balance on the basis of its real-time estimates, which remains central to their proposed expenditure rule.

The adjustment path resulting from the compliance with such an expenditure rule thus consists of two elements: a single fiscal anchor, i.e., a medium-to-long term *debt-to-GDP target,* and the **debt-adjustment path towards this anchor.**

- **The presence of the debt-correction factor in the benchmark calculation defines the adjustment pace of the debt level** (Darvas et al., 2018), speeding up its reduction towards the anchor (Christofzik et al., 2018). The Treaty on the Functioning of the European Union (TFEU) set the reference value for the debt-to-GDP target at 60 %. This is considered for all of the proposals except in the case of Dullien et al. (2020), where it is raised to 90 % of GDP and Francová et al. (2021), where it is raised to 100 % of GDP to adapt to the new macroeconomic circumstances.
- **The speed of adjustment of the observed debt ratio towards the debt-to-GDP anchor is an important determinant of the fiscal stance.** Setting the pace at which the country reduces its debt level towards the debt targetdirectly impacts the magnitude of the fiscal balance. The longer the timeframe that the adjustment speed is based on, the slower the adjustment speed. For example, with a 50-year debt-adjustment speed, Member States would have to reduce their debt ratio to the long-run debt target over a timeframe of 50 years. Hence, the required annual debt reduction is lower than for a 20-year debt-adjustment speed.
- Giavazzi et al. (2021) propose a **10-year medium-term debt target to be achieved through a multi-speed debt correction mechanism responding to the debt composition** in addition to a long-run debt target of 60 % of GDP. Specifically, debt is divided into a *slow-speed* component, which includes debt accumulated to cope with crises and to finance "spending for the future", and a *fast-speed* component, which includes the remaining part. This differentiation would allow Member States to avoid any premature and unjustified overly demanding fiscal consolidation.

Depending on the design of the expenditure rule, there are different legal hurdles in the implementation. In general terms, the introduction of an expenditure rule is in line with the requirements of the Treaties and thus with EU primary legislation. An exception in this respect is the proposal of Dullien et al. (2020) who, according to the new macroeconomic circumstances, identify a new debt-to-GDP reference value set at 90 %. This would imply the need for a revision of Protocol No 12 annexed to the Treaties, where the reference values for debt and deficit are set at 60 % and 3 % of GDP respectively, requiring a special legislative procedure following a unanimous vote in the Council and consultation of the European Parliament and the ECB[III]. To change the benchmarks of the expenditure rule, both the preventive (Regulation EC No 1466/97) and corrective (Regulation EC No 1467/97) arm of the SGP require amendments. Such amendments would inevitably require an amendment of the Treaty on Stability, Coordination and Growth (Fiscal Compact), an international agreement part of the national law of the Member States and which must comply with the secondary legislation.[33]

III See Article 126(14)(2) TFEU

2.2 Golden rule

Eligible investment expenditure is excluded from fiscal constraints, so that it can be debt-financed.

The analysis of the design of an expenditure rule shows that most of the proposals give preferential treatment to investments, either excluding this spending from the expenditure aggregate or redistributing its burden more evenly over time. This is because investments are drivers of growth and, above all, of the desirable green and just transition. Consequently, they must be able to grow by escaping any fiscal consolidation requirement stemming from the SGP. Nevertheless, a dismal record on public investment has characterised EU Member States for years which risks undermining the green and just transition[21]. Both private and public investments have plummeted as a result of the financial crisis and the euro crisis without recovering for years[34]. Despite the huge investment needs for the green and just transition[2], public investment is still below its pre-financial-crisis levels[35].

Reasons for the absence of investment

The reasons for this overall low level of public investment are to be found in a series of policy trade-offs that, by and large, make investment and capital formation spending relatively easier to cut than current spending to comply with EU fiscal rules[27,36]. Unlike other expenditure categories, in fact, investment spending is not compulsory[36], but rather regarded as an extra to which any "surplus" resources can be devoted. Moreover, the fact that these growth-enhancing expenditures predominantly benefit future generations makes them unappealing to governments and policy makers[27], who are often more interested in short-term benefits, especially in the context of ageing societies where future perspectives lack electoral support[37]. In addition, the current fiscal rules tend not to encourage investments, which are then merged into current expenditure, despite their benefits in the long run[7]. For instance, the complexity and stringency of some SGP dedicated flexibility elements such as the *investment clause*[IV], which have never been used, constitute an obstacle to sufficient public investment. Finally, key investments such as those in green and social infrastructure also have a high level of risk, which, together with low profitability, discourages the private sector from financing them[8]. Overall, this hinders the achievement of the ambitious green and just transition objectives set at European level, for which the public sector remains thus crucial.

How a reform of the EU fiscal framework can spark investment expenditure

The high public investment needs required for a successful green, just, and digital transition gave rise to a debate on whether and how fiscal rules play a role in addressing this lack of investment. The EU fiscal framework should, in fact, incentivise governments to undertake the investments necessary to address and react to major global economic, social and climate challenges while, at the same time, ensuring debt sustainability[8]. The idea is that fiscal rules should be designed to safeguard certain particularly beneficial expenditure headings. In this respect, the exemption of investment spending from the rules should be envisaged. This exemption may be of temporary and exceptional character, allowing for only limited deviations, or, instead, it could take on a permanent basis under the introduction of a so-called golden rule. The rule refers to a principle of public finance that legitimates debt-financed investment if it is valuable[38], i. e., if it involves public investment aimed at creating new capital for present and future generations. This would be implemented precisely by excluding such investments from the calculation of SGP-relevant variables such as deficit or structural budget balance. A *golden rule* could be coupled with different types of fiscal rules, from the structural balance rule to a new expenditure rule[27].

In the next section, Table 4 and 5 provide an overview of the main advantages and shortcomings concerning the application of a golden rule. This is followed by a presentation of the most relevant proposals of different designs of such a rule.

IV Member States are allowed to temporarily deviate from their respective MTOs by excluding expenditures on EU co-funded projects from the deficit calculation, but provided a few rather stringent conditions are met (see here)

2.2.1 Strengths and weaknesses of green golden rule in general

Derived from a literature review, the following table illustrates an overview of the most relevant strengths of a golden rule.

Despite its potential a golden rule has certain weaknesses. Table 5 below gives an overview of the most relevant ones.

Targeted fiscal leeway at national level	A golden rule allows for a greater fiscal leeway that is, however, targeted and restricted to the support of public investment[35]. Moreover, unlike other investment-targeting measures such as the Investment for Europe plan[V], supporting investments through dedicated EU-level funds, the introduction of a golden rule would stimulate investments directly at the national level, without relying on the often insecure and conditional transfer of EU funds[39].
Prevention of underinvestment	A golden rule therefore helps to avert the strategic underinvestment that would otherwise result from limits on the deficit level imposed by fiscal rules[35], thus, addressing the current dismal record of investment and government capital stock and preventing detrimental investment cuts. To this end, the use of net investment (deducting the cost of depreciation) creates a more accurate measure of the real spending in net public capital stock. This incentivises governments with a decreasing public stock to expand it, under penalty of stricter fiscal constraints[36].
Long-term financial sustainability	Since investments are productive expenditures that create public assets, their financing by borrowing would create additional assets that would offset increases in the debt level[27]. Capital stock formation through public investment is in fact a driver of macroeconomic growth[36]. Thus, sustainability of public finances is not compromised but rather enhanced in the medium to long term[35,40].
Intergenerational fairness	Debt financing of investments allows the resulting burden to be redistributed over a period corresponding to the useful life of the asset[37]. This implies a more equitable redistribution between present and future generations, who will benefit most from these investments. Otherwise, this burden would only fall on today's taxpayers, inducing politicians and policy makers to opt for under-investment to the detriment of present but especially future generations[36].

Table 4: Strengths of a golden rule

Not all investments should be financed through debt	According to many, public investment does not necessarily justify debt finance[28]. In fact, some investments such as replacement investment or investment in already good infrastructure do not create any, if not limited, increase in capital stock. Whether or not a public investment encourages economic growth depends on the individual investment project, as well as on the overall efficiency of public spending, which widely differs among Member States[41]. Accordingly, governments should only be allowed to borrow for investments that can increase the capital stock and, thus, to create growth[37].

V also known as the Juncker plan

Overinvestment	Incentivised by an eased access to credit financing, governments would be incentivised to privilege investment over other sometimes more appropriate forms of capital or current spending[7,35]. This distortion would trigger excessive and not necessarily growth-enhancing investments and, on the other hand, a crowding-out of private investment, which could in some cases be more appropriate than the public one[37].
Creative accounting	Risk of governments reclassifying unproductive current expenditure into productive capital spending *(creative accounting)* so that it can be financed through debt[42].
Sustainability concerns	Excessive investment that does not generate growth effects sufficient to offset its cost would lead to higher budget deficits, thus endangering debt sustainability. In this way, addressing the excessively low investment bias would not remove the excessively high deficits bias[21]. As a solution, a cap on the amount of investment that can be financed through debt could be set[37], so that any excessive expenditure must be budget-neutral, i. e., financed either through a reduction in non-deductible expenditure or by increasing revenues[27].
Intergenerational fairness	Costs and benefits of investments may not necessarily be equally distributed through debt financing. For instance, the preferences and needs of future generations may change, and they will therefore have to bear the burden of an unwanted investment. Moreover, the real intergenerational-redistributive impact of a golden rule should be estimated in the light of the demographic change underway, thus in the context of a decreasing and ageing population[37].
Challenges for defining and measuring eligible investments	For the following reasons it is difficult to identify and narrowly define the investment categories that deserve to be debt-financed[28,VI] : → complex identification of their costs and benefits in time and space; → the same category may contain productive but also unproductive expenses; → impossibility of distinguishing between productive and unproductive expenses, which are sometimes complementary and equally necessary. There are potential measurement problems concerning investments on several levels[27]: → data on the stock of public capital are often absent or otherwise difficult to find and/or reconstruct, especially in the case of investments such as those in human capital and climate change; → the estimation of net investment requires the estimation of depreciation, which is even more difficult to measure; → international comparisons of public net investment data are rather complicated to make due to the different underlying assumptions.

Table 5: Weaknesses of a golden rule

VI Several classification attempts have been recently made at the EU level (e. g., EU Green Taxonomy, Rio Markers, RRF Methodology, EU Social Taxonomy), but without achieving a satisfactory green or social taxonomy. On the green side, for instance, the vagueness of the categories in the current RRF Methodology often ends up favouring greenwashing and thus financing activities with a dubious environmental contribution. On the social side, on the other hand, an EU social taxonomy is still being defined, hampered by the lack of evidence on the returns of social spending and the fact that much of social spending is current, consisting mainly of money transfers (Corti et al., 2022). To address these shortcomings, in a previous policy brief we advanced some content and procedural recommendations to improve the application of the do not significant harm (DNSH) principle underlying the EU Taxonomy, whose compliance determines the environmental sustainability of an economic activity.

2.2.2 Different designs of golden rules

Numerous proposals for a golden rule have emerged over the past two decades. Despite their common goal of ensuring preferential treatment for investments, they differ in three main variables:

1. The definition of the **deductible investments,** namely of the investment categories eligible to be financed through borrowing.
2. The process of **identification of deductible investments.**
3. The **operationalisation** of the proposed golden rules, i.e. the fiscal framework in which they would apply.

Table 6 presents some of the emerging golden rule proposals, comparing them on the basis of these elements.

Discussion of the comparison of different designs of a golden rule

Depending on the composition and size of **deductible investments,** different golden rule proposals may create fiscal leeway in EU economies.

- **The exclusion of net public investment as generally defined generates more fiscal leeway for EU governments, but at the expense of an increased risk of incurring excessive debt.** In defining which growth-enhancing expenditures should be financed through debt, some proposals first refer to the more general category of net public investment (EFB 2020; Feigl and Truger 2015; Truger 2015; Dullien et al. 2020; Deutsche Bundesbank, 2019). This implies that all expenditure that falls into this category can be financed by borrowing. On the one hand, this allows Member States more flexibility in spending; on the other, it increases the risk of overinvestment which, if of low quality, leads to over-indebtedness.
- **The selection of more specific investment categories as eligible investments creates a smaller but more targeted fiscal leeway, preserving the sustainability of public finances to a greater extent.** Further proposals refer to a more specific target for deductible investments. On the one hand, Giavazzi et al. (2021) propose a golden rule for so-called "spending for the future", which includes public investment enhancing a country's long-term growth and expenditures that contribute to EU public goods for the benefit of future generations, defined at the European level and subject to scrutiny by the Commission and possible forms of conditionality. On the other hand, the green golden rule by Darvas and Wolff (2021) refers exclusively to net green public investment. In these proposals, the fiscal leeway created is more targeted, aimed at protecting only specific key investments which can therefore be financed by issuing debt. As a result, the risk of overindebtedness is lower.

The composition of deductible investments reflects the way they are identified. This **identification** may either rely on the classification operated by the *national account system* or follow *other* procedures designed to supplement the former and/or replace it with other expenditure categories that are excluded from it. A *cap* may also be in place that limits the amount of investment that can be financed through debt.

- **Net public investments are usually largely defined on the basis of the National account system** (ESA), which refers to fixed capital formation by the government. This classification focuses on tangible assets (equipment, infrastructure, etc.).
- **However, some scholars consider the National account system to be non-exhaustive. These scholars propose extending or replacing it with alternative procedures.** Some proposals opt for a broader version of the National account system. For instance, they include expenditures on human capital (Dullien et al. 2020), social investment and grants to firms or non-profit organisations (Truger 2015), while exclud-

ing investments that, despite their classification, are not growth-enhancing, e. g. military expenditure on weapons (Truger 2015).

- **Finally, a cap may also be in place that limits the amount of investment that can be financed through debt.** In the case of Truger (2015), Deutsche Bundesbank (2019) and Dullien et al. (2020), the golden rule is capped, i.e. the amount of deductible investments is subject to a maximum limit, which in the first two cases is set at 1 or 1.5 % of GDP. This is to avoid episodes of over-investment and thus not to jeopardise the pace of debt level reduction within the debt-anchor.

		EFB (2019[43], 2020)	Giavazzi et al. (2021)	Truger (2015); Feigl & Truger (2015)	Dullien et al. (2020)	Darvas and Wolff (2021)	Deutsche Bundesbank (2019)
Deductible investments		Growth-enhancing spending	*Spending for the future:* • public investment • expenditures contributing to European public goods	Net public investment, excluding military spending	Net public investment	Net green public investment	Net public investment
Identification of deductible investments	**Cap**	✕	✕	✓ (1 or 1.5 % of GDP)	✓ (1.5 % of GDP)	✕	✓ (not specified)
	National account system (ESA)	✓	✕	✓ (Corrected)	✓ (Corrected)	Not specified	✓
	Others	Co-financing commitments of Member States for projects linked to the EU budget	Definition of specific areas of intervention at EU level, followed by a scrutiny by the Commission and possible forms of conditionality		Broader definition, e.g., including investment in education and human capital		
Operationalisation		New expenditure rule	New expenditure rule; new medium-run debt target (slow-speed portion of the current debt-to-GDP level)	Exemption from SGP-relevant variables	New expenditure rule	Exemption from SGP-relevant variables	Exemption from SGP-relevant variables
	Additional features			Need for an improved statistical measurement of public investment	Macroeconomic Dialogue (compliance and consistency of national strategies)	Incentives for private investment though appropriate taxation and regulation; careful application of the rule to countries with greater debt-sustainability concerns	Symmetrical approach in case of negative net investment (more ambitious budgetary objectives)

Table 6: Overview of *Golden rule proposals*

Differences between the various proposals can finally be made based on the operationalisation of the proposed golden rule, i.e., the properties of the fiscal framework in which they would be implemented. In this respect, two scenarios arise.

- **The first scenario envisages the respective golden rule being flanked by a new expenditure rule.** In some proposals, the golden rule is conceived as complementary to a new expenditure rule for non-investment expenditure. As well as being coupled with a new expenditure rule, excluding "spending for future" from the expenditure benchmark, the golden rule proposed by Giavazzi et al. (2021) would fall under the "slow-speed" portion of debt, thus shaping the new medium-run target for debt reduction.
- **In the second scenario, by contrast, the rule is applied in the existing EU fiscal framework, where such investments are excluded, exempted from the counting of the SGP-relevant variables,** i.e. from government deficit under the corrective arm and the structural deficit under the preventive arm (Truger 2015; Darvas and Wolff 2021; Deutsche Bundesbank 2019).

A final aspect to be considered is the legal feasibility of introducing a golden rule. On this level, design variations do not play a major role, therefore a common discussion can be made for all proposals. In the EU primary law, the only reference to the legal feasibility of a golden rule is Article 126(1) TFEU setting the obligation to avoid excessive government deficits. Thus, as far as a golden rule can ensure compliance with the 3 % reference value for the deficit-to-GDP ratio, it is compatible with primary law[49]. By contrast, Truger (2015) points out how a persistent consideration of public investment in net terms may be inconsistent with Article 2(3) of the Protocol No.12 on the Excessive Deficit Procedure annexed to the Treaties. The article, in fact, expressly refers to gross public investment in the Commission's assessment of whether the government's deficit exceeds its investment expenditure (Corti et al. 2022). As for the secondary law, Regulation 1466/97 should first be amended to bring investments into the category of *major structural reforms* to which it refers. Although mentioned in the regulation, the definition of this category is specified in the Commission's *communication on flexibility*[44], the revision of which would therefore suffice for this purpose. A second obstacle arises in secondary legislation from the presence, in some proposals, of a cap on deductible investment set at 1 % or 1.5 %of GDP (Dullien et al. 2020; Truger, 2015). This cap is in contrast with the cap for major structural reforms, set by the *Flexibility Communication* at 0.5 % of GDP. Moreover, the proposed cap is potentially at odds with the more general conditions set out in Regulation 1466/97, which refers to an "appropriate margin with respect to the deficit reference value" and the "return to the medium-term budgetary objective within the programme period". This would overstretch the Commission's discretion, which is why an explicit introduction of this new upper limit in secondary legislation through an amendment of Regulation 1466/97 via ordinary legislative procedure based on Article 121(6) TFEU would be neccesary[49].

This chapter provided an overview of the most relevant proposals for both an expenditure rule and a golden rule as well as their key elements. Comparing different potential designs for both of these rules has made their multi-layered nuances clear. However, these differing designs often go unacknowledged in the public debate. It is crucial to unpack these differences, as variations in design significantly impact the rules' effects. The next chapter demonstrates the impacts of design differences in each rule by calculating the budgetary effects on the basis of different designs of both rules.

3. Impacts of expenditure rules and golden rules on public budgets

Building on the presented different designs of expenditure rules and golden rules, this chapter estimates the impacts of these design choices within the rules on the public budgets of three selected Member States. In the first part, the analysis estimates the impacts of different expenditure rules on the Member States' debt ratio, deficit ratio, and net expenditure ratio. In the second part, it presents the fiscal leeway for investments created by different golden rules.

The analysis is conducted for three selected EU Member States: Germany, Italy, and the Netherlands. The sample is chosen to capture influential Member States with different budgetary situations as well as different positions regarding the reform of the EU fiscal rules[VII]. Table 7 presents the different budgetary situations of the selected Member States. It shows that Italy has a relatively high level of debt and deficit while Germany and the Netherlands achieved budgetary surpluses and have lower debt levels that are in line with the 60 % Maastricht criterion. Thus, the selected country sample show the debt-adjustment of the expenditure rule affects countries with high debt ratios compared to countries with lower debt ratios[VIII].

3.1 Expenditure rule

3.1.1 Methodology

The purpose of the first part of the analysis is to forecast the effect that an introduction of different expenditure rules would have on the public budgets of the three selected Member States by creating multiple potential scenarios. In each scenario, it is assumed that this specific expenditure rule design comes into effect in 2020. Thus, the analysis uses data from 2019 as a baseline and then forecasts the development of budget variables of the three selected Member States for the years 2020 to 2023.[IX] To

	2017			2018			2019		
	Germany	Nether-lands	Italy	Germany	Nether-lands	Italy	Germany	Nether-lands	Italy
Budget Balance (% GDP)	1.34	1.26	-2.42	1.95	1.39	-2.19	1.53	1.61	-1.54
Debt (% GDP)	64.62	56.94	134.16	61.25	52.42	134.44	58.90	43.00	134.14
Net Expenditure (% GDP)	40.24	36.91	41.73	40.37	37.02	41.56	41.20	37.12	41.72
Public Investment (% GDP)	2.23	3.44	2.20	2.37	3.41	2.13	2.41	3.40	2.31

Table 7: Budgetary situations of analysed Member States (Source: See Annex 1)

VII During the last years, e. g., the Netherlands have argued in favour of stricter EU fiscal rules that put a stronger focus on debt consolidation while Italy have argued for more flexible rules.

VIII Even though the fiscal leeway available to the Member States critically depends on national fiscal rules (e.g., in Germany the debt brake will come back into force in 2023 and might restrict Germany's fiscal leeway more than the following analysed proposals), the aim of the following analysis is to solely investigate the impacts of the EU fiscal rules.

IX Given that 2019 is the most recent year without an economic crisis, choosing it as the baseline year for the analysis seemed more reasonable than choosing 2020 or 2021 in which the European economy suffered from a crisis that heavily affected public budgets.

provide an impression of how the budget variables developed before 2020, the figures presenting the results plot the actual, non-forecast data for 2017–2019.

For different designs of the expenditure rules, the analysis forecasts the development of three variables: the budget-balance-to-GDP ratio, the debt-to-GDP ratio, and the net-expenditure-to GDP ratio. While the former two are most relevant for the Maastricht criteria, the latter is the main variable targeted by the expenditure rule.

The analysed designs were selected based on the various possible executions of the expenditure rule presented in Table 3. This table has shown that the different designs of expenditure rules differ in various aspects. On the one hand, they differ in terms of what they exclude from the expenditure aggregate, e. g., interest expenditures, investment expenditure and unemployment spending. On the other hand, they differ in terms of the adjustment of the expenditure benchmark, e. g., based on debt reduction targets and adjustment accounts. Some of these aspects cannot be forecasted in the analysis. For instance, one-off expenditures, expenditure overruns by governments, and country-specific debt pathways are subject to a complex political decision process. Others suffer from limited data availability[X]. However, the highly impactful debt-correction factor (DCF) with its different configurations can be simulated.

For different reasons, the DCF and its exact design are the most relevant aspects for the following quantitative analysis. First, for any Member States with a debt-to-GDP ratio above the long-run debt target the fiscal stance commanded by the DCF dominates the fiscal stance commanded by the medium-term real potential output growth[XI, XII]. Thus, any aspects of an expenditure rule that are linked to the expenditure aggregate (e.g., the exclusion of interest expenditures and unemployment spending) are irrelevant for those Member States because their fiscal stance is not determined by the expenditure aggregate but by the budget balance imposed by the DCF.

Second, for Member States with a debt-to-GDP ratio below the long-run debt target, many of the omitted aspects in the following quantitative analysis have small quantitative impact on the budgetary variables analysed. Table 8 presents the share of government interest expenditures and unemployment spending in GDP. From a quantitative perspective, the debate around including or excluding these aspects in the expenditure aggregate of the expenditure rule is therefore less relevant than the debate around the DCF's design which, as the following analysis shows, has a significantly higher impact on the budgetary variables of the Member States.

	2017		2018		2019	
	Germany	Nether-lands	Germany	Nether-lands	Germany	Nether-lands
Interest expenditure (% of GDP)	1.03	1.00	0.92	0.89	0.79	0.76
Unem-ployment spending (% of GDP)	0.68	1.11	0.63	0.96	0.60	0.84

Table 8: Interest expenditure and unemployment spending for Germany and the Netherlands in % of GDP (Source: see Annex 1)

X For instance, inflation-adjustment using forecasted inflation rates is not possible since no reliable inflation forecasts from 2019 for 2022 and 2023 can be found. Using more recent forecasts would bias the analysis as all other baseline data comes from 2019.

XI To illustrate this, it is assumed that the medium-term real potential output growth of a Member State with a debt-to-GDP ratio above the long-run debt target is forecasted to be at 3%. An expenditure rule without a DCF would suggest that the Member State's net expenditure is allowed to grow in line with its medium-term real potential output, in this case 3%. However, the DCF will require the Member State to generate budgetary surpluses (or at least a deficit that grows at a slower rate than its GDP) which is most likely incompatible with a 3% growth in net expenditure.

XII By the end of the first quarter in 2022 14 EU countries showed a debt-to-GDP ratio above 60% (see Eurostat, 2022).

In order to demonstrate the strong impact of the DCF, the following analysis compares an expenditure rule without a DCF to an expenditure rule with a DCF. Most importantly, it also analyses the impacts of the DCF's different specifications, namely the long-run debt targets as well as the debt-adjustment speeds. For the long-run debt target the analysis compares the impacts of a 100 % target (as proposed by Francová et al. (2021)) and a 90 % target (as proposed by Dullien et al. (2020)) with the impacts of a 60 % target (as proposed by all other proposals). For the debt-adjustment speed, it analyses the impacts of a 15-year (as proposed by EFB (2018,2020))[XIII], a 20-year (as proposed by Dullien et al. (2020))[XIV], and Francová et al. (2021)), and a 50-year debt-adjustment speed (as proposed by Claeys et al. (2016)).

All these estimations use interest rates corresponding to the 10-year long-term interest rates as estimated by the ECB in the fourth quarter of 2019[XV]. They amount to –0.47 % for Germany[45], –0.31 % for the Netherlands[46], and 1 % for Italy[47]. However, in reaction to the currently high inflation rates, the ECB has raised interest rates and sovereign bond yields have increased significantly. Inside the eurozone, this is especially detrimental for some vulnerable Member States like Italy or Greece, whose spreads of sovereign bond yields compared to German bond yields are consequently increasing. For instance, the spread of Italian 10-year government bond yields over the equivalent German yields have increased from 100 basis points (1 %) in October 2021 to more than 230 basis points (2.3 %) in September 2022[48].

Given the potential impacts this can have on the refinancing costs of government debt and thereby on other budgetary variables, the analysis also investigates another interest rate scenario that builds on the same 10-year long-term interest rates as estimated by the ECB, but with data from the third quarter of 2022 instead of the fourth quarter from 2019. They amount to 1.03 % for Germany[41], 1.41% for the Netherlands[42], and 3.3 % for Italy[43].

Table 9 summarises the analysed variables, the designs of expenditure rules, and the interest rate scenarios.

Countries	Forecasted Years	Budgetary variables	Expenditure rule designs	Interest rates
• Germany • Italy • Netherlands	• 2020–2023	• Budget-balance-to-GDP ratio • Debt-to-GDP ratio • Net-expenditure-to-GDP ratio	• DCF/no DCF • DCF with 60 % debt target/DCF with 90 % debt target/DCF with 100% debt target • DCF with 15-year debt-adjustment speed/DCF with 20-year debt-adjustment speed/ DCF with 50-year debt-adjustment speed	• Low (from 2019) • Higher (from 2022)

Table 9: Overview of analysed variables

XIII The EFB has proposed country-specific deb targets under which some countries may be granted a slower debt-adjustment speed. However, since the proposal mentions the 15-year adjustment speed as the baseline target, it will be part of the analysis.

XIV Dullien et al. (2020) also include slower debt-adjustment speeds for some countries. However, since the proposal mentions the 20-year adjustment speed as the baseline target, it will be part of the analysis.

XV The choice of end 2019 is to ensure consistency with the other data that is also from 2019 as the last pre-crisis year.

The calculations in this chapter are based on administrative data. Information on the Member States' GDP, potential GDP, total revenues, interest expenditure, and gross debt stems from the AEMCO database. Total expenditure, gross capital formation and unemployment spending is taken from the respective statistical federal offices.

The formulas used for estimating the development of the variables are based on the methodology established by the EFB in their 2018 and 2020 annual reports. More details on the methodology can be found in the Annex.

3.1.2 Results

Scenario #1:
Expenditure rule without a DCF

In the first step of the analysis, the effects of an expenditure rule without a DCF on the budgetary variables of the three selected Member States are presented. A 60 % to GDP debt-reduction target is anchored in the TFEU. Hence, an expenditure rule without a DCF is not a realistic scenario for the current reform of the EU fiscal framework. Nevertheless, it is useful to consider this expenditure rule design as a baseline scenario because it allows the analysis to capture exactly how an expenditure rule that limits the growth of net public expenditure to the growth in real potential output works.

Figure 2 presents the effects that an introduction of such an expenditure rule without a DCF would have on the budget balance ratio, debt ratio and net expenditure ratio of the three selected Member States. As indicated by the vertical treatment line, the period from 2017–2019 is plotted with existing data, whereas the data for the period from 2020-2023 is forecasted. Interest rates in this figure and the following ones correspond to the 2019 rates.

Figure 2 shows a slow and steady increase in the net expenditure ratio of about three percentage points for all three countries from 2019 to 2023. This is due to the GDP growing slower than the net expenditure which, under this design of expenditure rule, is allowed to grow in line with the sum of real poten-

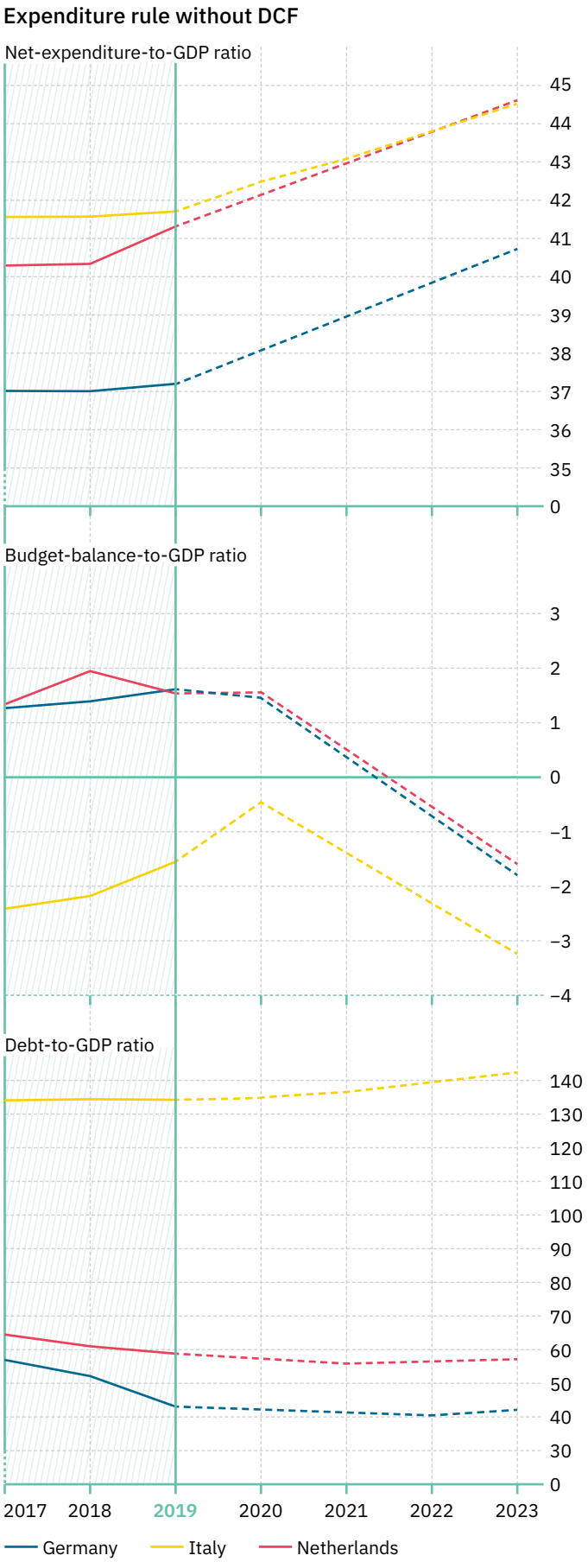

Figure 2: Forecast for expenditure rule without a DCF

tial output and the 2 % inflation target. As a result, the budget balances of all three Member States decrease by about 2–3 percentage points, i. e., their surpluses decrease, or their deficits increase. Consequently, the debt ratio of all three countries shows a slow but steady upward trend.

This scenario therefore shows that an expenditure rule without a DCF would not exert high pressure on public budgets as net expenditure would be allowed to grow. Deficit and, to a lower extent, debt levels would, under the given assumptions, therefore increase. This example highlights that in the extreme scenario of lifting the DCF altogether, the allowed growth in net expenditure might translate into increasing budget deficits and debt levels. In the context of the current debate about the reform of the fiscal rules, an expenditure rule without a DCF can therefore be considered as a reform proposal that, disregarding its incompatibility with EU Treaties, would be unlikely to be approved by frugal EU Member States.

Result #1:
Expenditure rule without a DCF would not exert high pressure on public budgets

Scenario #2:
Expenditure rule with a DCF and different debt targets

After using the simplified example of an expenditure rule without a DCF to demonstrate the basic functioning of an expenditure rule, the expenditure rule without a DCF will now be compared to an expenditure rule with a DCF which has a long-run debt target and a 20-year debt-adjustment speed. According to the proposals presented above, the long-run debt-target could be set at 60 %, 90 %, or 100 %. While most proposals argue for a 60 % long-run debt target, Dullien et al. (2020) have proposed a 90 % long-run debt target. Francová et al. (2021) have proposed a 100 % target. Figure 3 therefore compares an expenditure rule without a DCF to an expenditure rule with a DCF and considering a 60 %, a 90 % and a 100 % long-run debt target. The figure includes the expenditure rule without a DCF as a

Expenditure rule with DCF and different debt targets for Italy

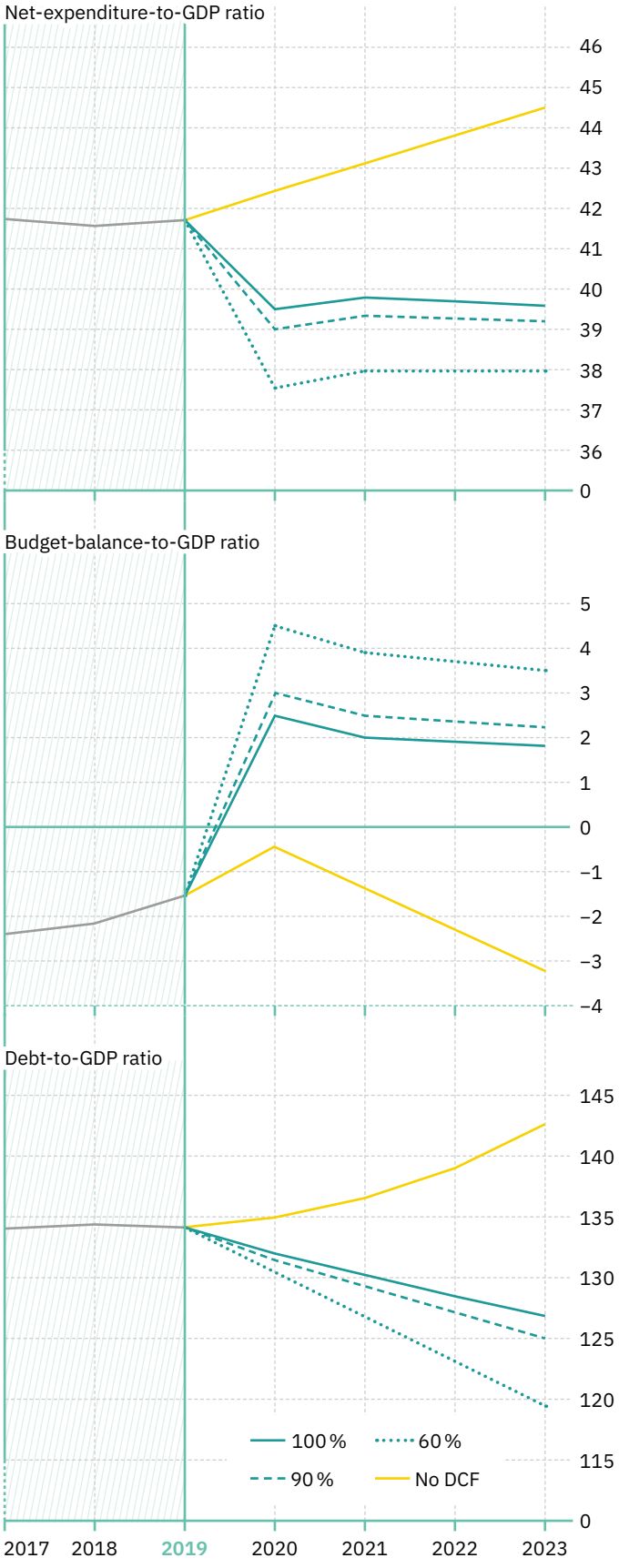

Figure 3: Forecast for expenditure rule with a DCF, different debt targets for Italy

benchmark to compare these results to the proposals with a DCF. As a DCF would only apply to Member States with a debt-to-GDP ratio is above the long-run debt target, this scenario only applies to Italy. Since the debt-to-GDP ratio of both Germany and the Netherlands was below 60 % in 2019. However, as the results for Italy sufficiently demonstrate the impact of the analysed two long-run debt targets, the direction of these results can be transferred to other Member States that respectively have a debt-to-GDP ratio above 60 %, 90 %, and 100 %.

Figure 3 shows that, compared to an expenditure rule without a DCF, an expenditure rule with a DCF would cause a dramatic drop in Italy's net expenditures, the net expenditure ratio being five to seven percentage points lower in 2023 than in 2019. This would then lead to a steep increase in budget surpluses, the budget balance being five to seven percentage points higher in 2023 and therefore to a swiftly decreasing debt level, debt levels being 16 to 23 percentage points lower in 2023. The lower the long-run debt target is, the stronger these effects are. Thus, introducing a DCF renders an expenditure rule much more radical. Due to its relatively high debt level, Italy would have to generate huge budget surpluses to bring its debt level down to the envisaged long-run debt target. The level of the long-run debt target is a significant determinant of the magnitude of the required fiscal consolidation under a DCF, with higher debt targets reducing the pressure on public budgets.

Result #2:
Introduction of a DCF strongly increases pressure on public budgets but higher debt targets can reduce required fiscal consolidation

Scenario #3:
Expenditure rule with a DCF and different debt-adjustment speeds

To further decrease the high pressure that a DCF would exert on Italy's public finances, the 20-year speed of adjustment could be adapted to a 50-year speed as suggested by Claeys et al. (2016). To

Expenditure rule with DCF and different adjustment speeds for Italy

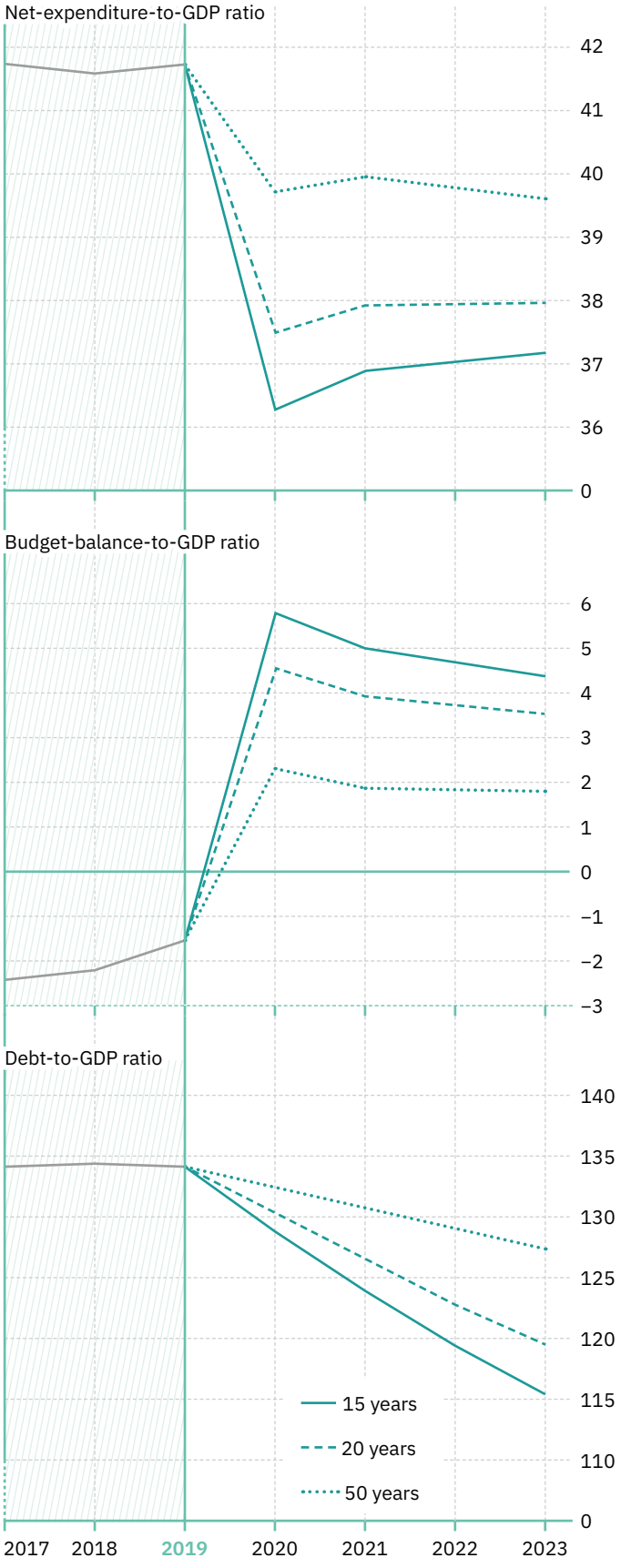

Figure 4: Forecast for expenditure rule with a DCF, different adjustment speeds for Italy

demonstrate this, Figure 4 compares the effects of the three different debt-adjustment speeds proposed in Table 3: a debt-adjustment speed of 15 years (as proposed by EFB (2018,2020)), 20 years (as proposed by Dullien et al. (2020) and Francová et al. (2021)), and 50 years (as proposed by Claeys et al. (2016)) The long-run debt target is set to 60 % because most proposals build on a 60 % long-run debt target. Using a 90 % long-run debt target would result in similar differences between the impact of the three adjustment speeds.

The results presented by Figure 4 resemble the ones from Figure 3 presenting the results from comparing the different long-run debt targets. A 50-year adjustment speed would mitigate the drop in net expenditure, with the net expenditure ratio from 2020 to 2023 being around 3 percentage points higher than for the 15-year adjustment speed. It would similarly decrease the required annual budget surpluses which from 2020 to 2023 would be 2.5 to 3.5 percentage points lower than for the 15-year adjustment speed. Obviously, the debt ratio would decrease slower in this scenario than with a faster debt-adjustment speed. All these effects are stronger the slower the debt-adjustment speed is.

The results show that both the long-run debt target and the debt-adjustment speed are significant determinants for the magnitude of the required fiscal consolidation under a DCF, with slower adjustment speeds reducing the pressure on public budgets.

Result #3:
Debt-adjustment speeds strongly determine the required fiscal consolidation under a DCF with slower adjustment speeds demanding less fiscal consolidation

Scenario #4:
Expenditure rule with a DCF and different combinations of debt targets and debt-adjustment speeds

The previous scenarios have shown that both increasing the long-run debt target and decreasing the debt-adjustment speed can generate additional fiscal leeway for Member States. It is therefore worthwhile to investigate which of these 2 options generate more fiscal leeway.

Figure 5 therefore includes all feasible combinations of the analysed long-run debt targets and adjustment speeds that increase fiscal leeway. Thus, the 15-year adjustment speed is not considered. This speed would decrease fiscal leeway compared to the 20-year speed that is used in the current framework's debt-reduction benchmark that the expenditure rule is supposed to replace. Moreover, since there is no proposal that suggests reducing the debt-adjustment speed to a 50-year speed and simultaneously increasing the long-run debt target, here the 50-year speed is only combined with the 60 % debt target. As a result, the following four combinations emerge, each referring to a proposal presented in Table 3, or the current EU fiscal framework respectively:

- 50-year debt-adjustment speed, 60 % long-run debt target, according to Claeys et al. (2016)
- 20-year debt-adjustment speed, 100 % long-run debt target, according to Francová et al. (2021)
- 20-year debt-adjustment speed, 90 % long-run debt target, according to Dullien et al. (2020)
- 20-year debt-adjustment speed, 60 % long-run debt target, according to the debt-reduction benchmark of the current EU fiscal framework

Figure 5 confirms the findings from the previous figures. The higher the long-run debt target, the larger the generated fiscal leeway[XVI]. However, considering the results for the 50-year debt-adjustment speed, the slower adjustment speed generates more fiscal leeway in a ceteris paribus comparison to the 60 %,

XVI For all forecasted years, the allowed net expenditure ratio is higher, and the required budget balance is lower with a higher long-run debt target than with a lower long-run debt target.

Expenditure rule with DCF and different debt targets and adjustment speeds for Italy

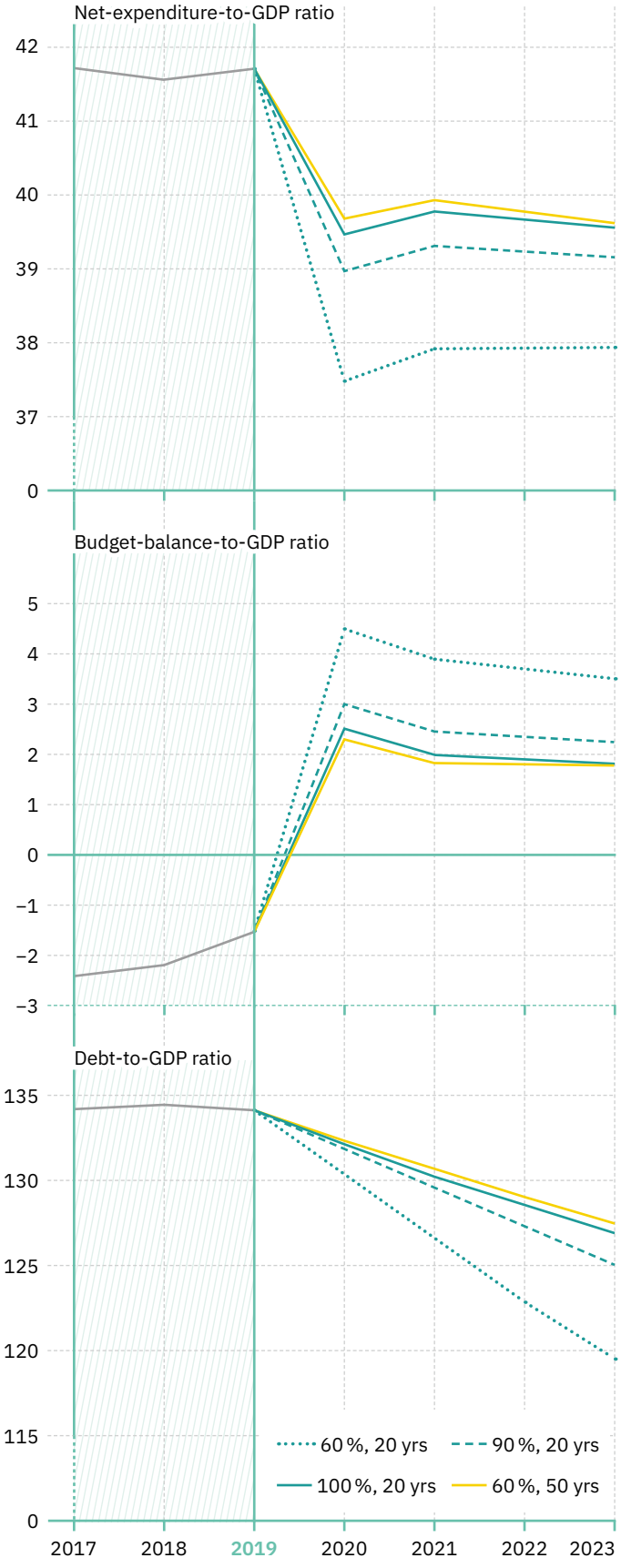

Figure 5: Forecast for expenditure rule with a DCF, different debt targets and adjustment speeds for Italy

20 years case. Crucially, more fiscal leeway is also generated in comparison to a DCF with a 20-year speed and a 90 % target. In other words, compared to an expenditure rule with a 60 % long-run debt target and a 20-year debt-adjustment speed, increasing the debt-adjustment speed to 50 years would decrease Italy's required fiscal consolidation to a larger extent than increasing the long-run debt target to 90 %[XVII]. Comparing the 60 %, 50 years case to the 100 %, 20 years case, the analysis indicates that for the forecasted years fiscal leeway is larger in the 60 %, 50 years case. However, the intersection of the two lines for the net expenditure and the budget balance forecasts suggests that fiscal leeway would ceteris paribus be larger for Italy in the following years in the 100 %, 20 years case[XVIII]. This is because in the short-term, the slower debt-adjustment speed heavily decreases the budget surpluses that Italy needs to generate to achieve its long-run debt target. However, in the long-run this effect is dominated by the effect of the higher long-run debt target. This is also driven by the fact that, for the debt-to-GDP ratio, the two lines will necessarily have to intersect after 2023 to bring Italy's debt ratio down to 60 % and 100 % in the respective cases.

Thus, arguing for a slower debt-adjustment speed would not only be legally more feasible for Italy compared to arguing for lifting the 60 % long-run debt target[XIX]. A slower debt-adjustment speed would also increase Italy's fiscal leeway in the short-term more than lifting the long-run debt target to 90 % or 100 %. However, in the long-term, more fiscal leeway would be generated by increasing the long-run debt target. To which extent these considerations for Italy can be applied to other Member States depends

XVII While the expenditure rule with a 60 % long-run debt target and a 20-year debt-adjustment speed would require the highest budget surpluses and lowest net expenditure, decreasing the debt-adjustment speed would require lower surpluses and would allow for higher net expenditure than lifting the long-run debt target to 90 %

XVIII Due to the unavailability of potential output estimations beyond 2023, the analysis cannot forecast the development of variables beyond 2023.

XIX This is backed by Protocol No 12 annexed to the Treaties, where the reference values for debt is set at 60% of GDP.

on their respective debt-to-GDP ratios. For Member States with lower debt ratios, the impact of increasing the long-run debt target tends to be relatively stronger than for countries with higher debt ratios[XX]. This is especially true for countries with debt ratios between 60 % and 90 % or 100 %, as increasing the long-run debt target to 90 % or 100 % would mean that they are no longer subject to the DCF.

Result #4:
Compared to increasing the debt target, lowering the debt-adjustment speed is not only legally more feasible but can also take pressure off public budgets to a similar or even larger extent

Scenario #5:
Expenditure rule without a DCF with higher interest rates

The previous estimates have shown how strict rules can lead to excessively demanding fiscal stances, with dramatic consequences for some already distressed Member States. These estimates have assumed low interest rates and hence interest expenditures. To address the current increase in interest rates and sovereign bond yields, a scenario with higher financing costs is considered. The interest rates from 2019 in the calculations are replaced with higher interest rates estimated by the ECB in 2022. The interest rates therefore increase from −0.47% to 1.03 % for Germany, from −0.31 % to 1.41 % for the Netherlands, and from 1 % to 3.3 % for Italy.

To illustrate the effects of higher interest rates not just on Italy but on all three selected Member States,

XX Because for countries with a lower required long-run debt reduction (the gap between the current debt ratio and the long-run debt target) a decrease of this required long-run debt reduction by 30 or 40 percentage points is relatively more impactful than for countries with a higher required long-run debt reduction (holds only under the ceteris paribus assumption). For instance, a country with a debt ratio of 110 % would see its required debt reduction fall by 80 % ((100-60) / (110-60)) if the long-run debt target were to increase from 60 % to 100 %. A country with a debt ratio of 260 % would see its required debt reduction fall by only 20 % ((100-60) / (260-60).

Expenditure rule without DCF for different interest rates

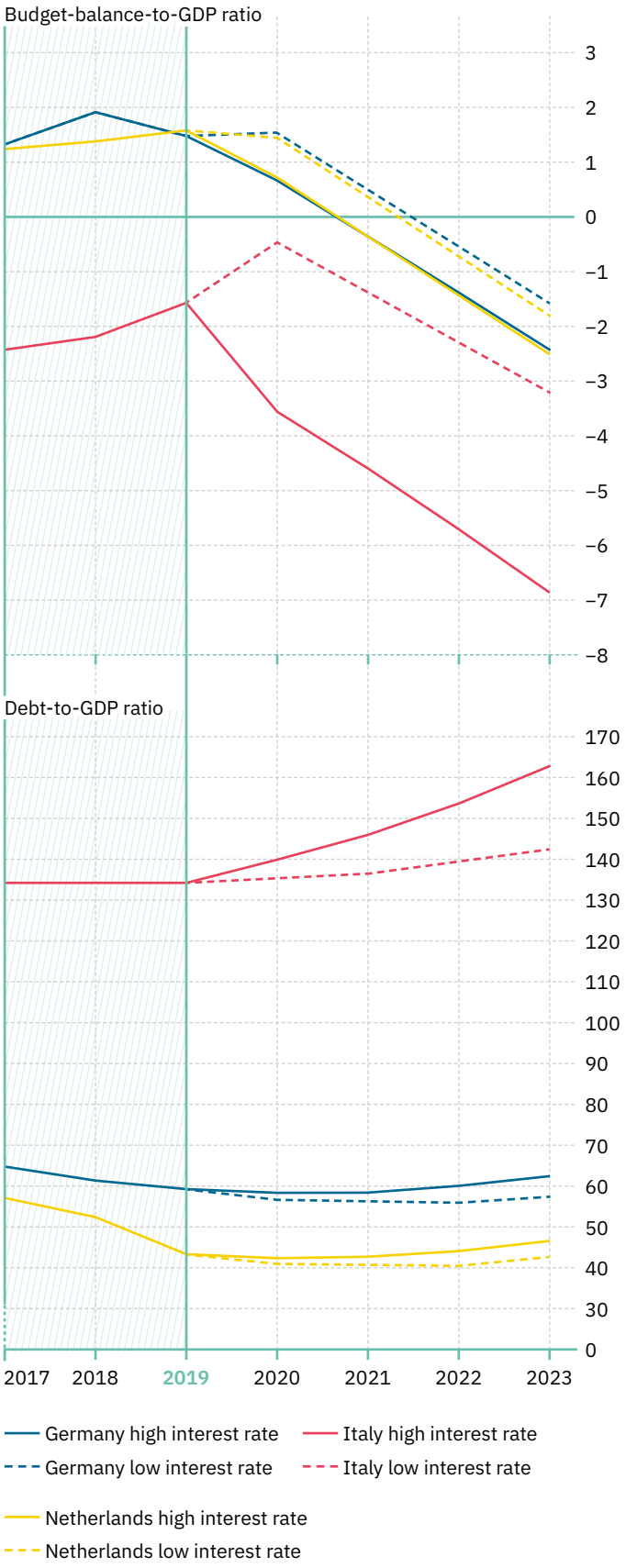

Figure 6: Forecast for expenditure rule without a DCF, different interest rates

the following figure compares the effects of the two different interest rates in the scenario without a DCF. The graphic on the net-expenditure-ration is omitted as the interest rates do not directly influence the level of net expenditure allowed by the expenditure rule. Hence, their development remains the same as in Figure 2.

Figure 6 shows that both the deficit and the debt levels of all three countries would increase with higher market interest rates compared to the lower, previously used interest rates. This effect is particularly strong for Italy which, because of its higher sovereign bond spreads, faces higher interest rates than Germany and the Netherlands. In 2023, Italy's deficit would be almost 4 percentage points higher and its debt ratio 20 percentage points higher than with low interest rates.

Result #5:
Higher interest rates put more pressure on public budgets under an expenditure rule, especially for countries with higher sovereign bond spreads

Scenario #6:
Expenditure rule with DFC and higher interest rates

Capturing the effects that higher interest rates would have on public budgets subject to an expenditure rule with a DCF, the following figure presents the effects that a higher interest rate would have on Italy's public finances under an expenditure rule with a DCF. To not overly complexify the figure, the long-run debt target and the debt-adjustment speed are set to 60% and 20 years, respectively. The direction of the forecasted effects of the higher interest rate remains consistent with other long-run debt targets and debt-adjustment speeds. In contrast to the previous analysis for the expenditure rule without a DCF, the interest rates influence the net expenditure ratio as the level of net expenditure is no longer determined by the medium-term potential growth but depends on the budget deficit that is needed to meet the requirements of the DCF.

Expenditure rule (with DCF, 60% debt target, 20 years adjustment speed) with different interest rates for Italy

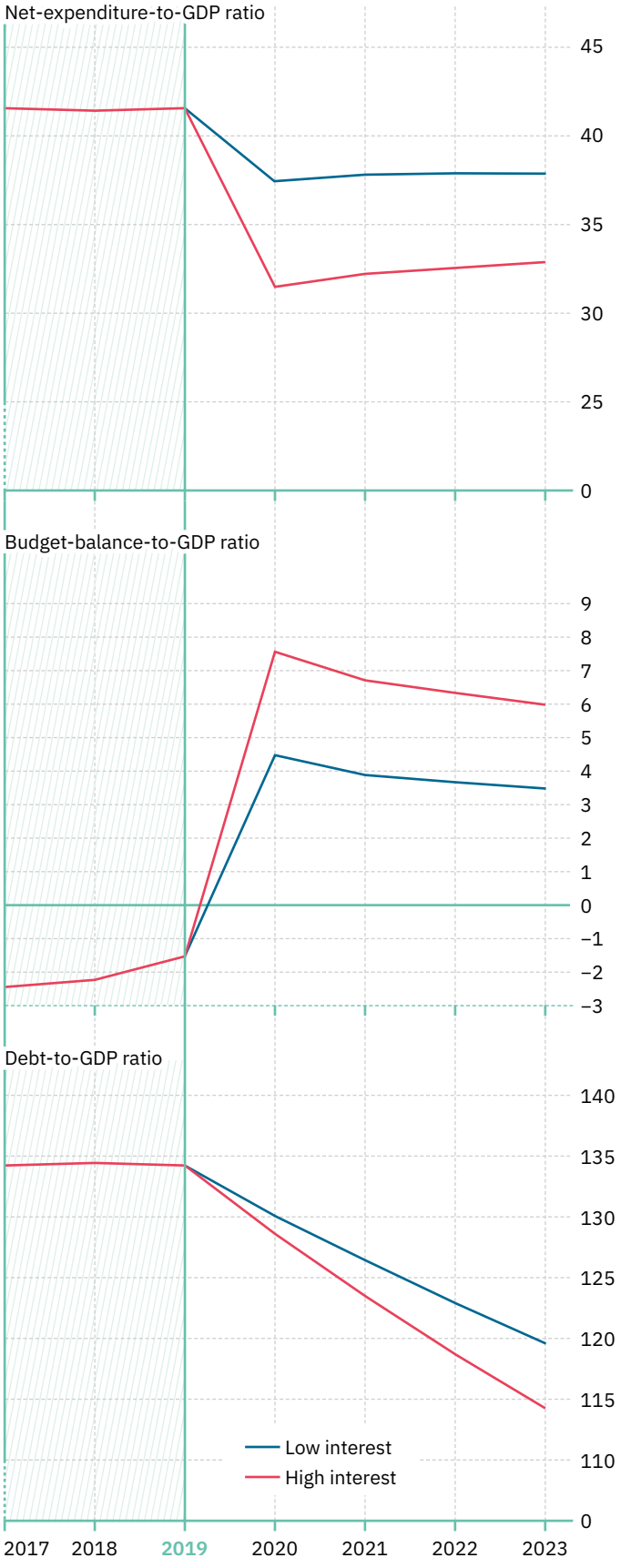

Figure 7: Forecast for expenditure rule with a DCF, different interest rates for Italy

Figure 7 demonstrates that higher interest rates lead to a more dramatic drop in net expenditure with a gap of five to six percentage points between the high interest rate and the low interest rate scenario. Additionally, the higher interest rates increase the fiscal consolidation efforts needed to achieve the long-run debt target and therefore require higher budget surpluses (around 3 percentage points more) than lower interest rates. Consequently, the debt level would decrease faster than with lower interest rates.

In general, the forecasts for the high interest rate scenarios show that higher market interest rates pose a serious threat to public finances, especially to countries with high spreads. Under an expenditure rule with a DCF and a higher interest rate, a more severe fiscal consolidation is needed to achieve the long-run debt target. The consequent drop in net expenditure would exert huge pressure on public budgets which might lead to cuts in crucial investment and consumption expenditure.

Result #6:
Under an expenditure rule with a DCF, higher interest rates would further increase the already high pressure on public budgets

3.1.3 Limitations & Conclusion

The presented results are outcomes of a basic calculation methodology established by the EFB in their 2018 and 2020 annual reports. No model has been used to capture the endogeneities that might arise between the variables under analysis. Hence, the forecasted variables might be subject to biases. Most obviously, changes in government expenditures have impacts on the country's GDP e. g., via multiplier effects. These have not been captured in the present analysis. Therefore, it is likely that in scenarios with more fiscal leeway (e. g., expenditure rule without a DCF) the budget balance ratios have been underestimated and the debt ratios have been overestimated. This is because higher government expenditure might translate into higher economic growth, thereby also increasing public revenues (e. g., tax revenues) and decreasing public expenditure (e. g., unemployment spending). Thus, the budget deficit would be lower than forecasted. Together with the higher GDP that increases the denominator of the deficit-to-GDP ratio, this would most likely lead to lower deficit ratios than forecasted (and thereby to lower debt ratios). The opposite is to be expected for scenarios with less fiscal leeway where cuts in public expenditure might have negative growth effects which, through the same channels, might increase deficits and debt ratios compared to the forecasts.

Additionally, the results have been estimated assuming a non-crisis baseline year. The striking effects that the COVID crisis and the Ukraine crisis as well as the resulting inflation have on public finances are therefore not been taken into consideration. However, while the analysis cannot be interpreted as a reliable prediction of the actual budgetary variables of the selected Member States, it demonstrates the functioning of the expenditure rule as well as the direction of the effects that different designs of rules would have.

In general, the results highlight the strong impact that a DCF would have on the budgetary variables on Member States with debt ratio above the long-run debt targets. At the same time, they have shown that both the long-run debt target and the debt-adjustment speed are significant determinants of the imposed fiscal stance. Moreover, their adjustments have the potential to decrease the pressure on public budgets and increase fiscal leeway. Considering the hike in interest rates in the current macroeconomic environment, substantially restricted fiscal leeway has been forecasted. This calls for a more ambitious reform of the fiscal framework, including policy reforms that go beyond the reform of the rules. Potential solutions that would, among other benefits, decrease the sensitivity of Member States' public budgets to market interest rate hikes are presented in Chapter 4.

3.2 Golden rule

3.2.1 Methodology

In addition to analysing the impacts of different expenditure rules, the impacts of different golden rules are also estimated to evaluate their suitability for initiating sufficient public investments for the green and just transition. Investment needs at EU level to meet the EGD targets have been extensively calculated and most recently updated in the context of the "Fit-for-55" package aiming to reduce GHG emissions by 55 % until 2030 compared to 1990[49]. According to the European Commission the additional annual investment needs will increase from € 360 billion to € 1040 billion (in 2015 prices) during the period of 2021–2030[7]. These estimates are in line with those of the International Renewable Energy Agency indicating additional annual green investment needs of 2 % the EU GDP[50,51]. While these numbers are useful to coordinate EU funding, an individualised analysis at the Member State level is important to identify country specific consequences of the golden rule proposals presented in Table 6.

Thus, the following analysis assesses the fiscal leeway these different rules can create in Germany. Based on that, conclusions are drawn on the sufficiency of this additional fiscal capacity. Due to limited data availability, reliable estimates of investment needs and gaps could only be found for Germany but not for Italy and the Netherlands[XXI].

As Table 6 has shown, the six golden rules mainly differ with respect to the investment that can be deducted as well as the cap that this might be subject to. The golden rule creates fiscal leeway through deducting certain types of investments from the budgetary variables subject to fiscal rules, e. g., the budget deficit. In some proposals the investments that are allowed under the golden rule are capped at a certain level, as a percentage of GDP. The deductible investments range from "growth enhancing spending" as in EFB (2019,2020) and "green public investment" as in Darvas and Wolff (2021) to "net public investment" as in the four other proposals. The proposed caps by Truger (2015), Feigl and Truger (2015), and Dullien et al. (2020) limit the amount of deductible investment to 1 % or 1.5 % of GDP.

To analyse the impact of these different golden rule proposals, the fiscal leeway they would create in Germany is estimated and compared to the estimated investments needs for the green transition. On the one hand, this helps to understand which investments a golden rule should allow to deduct to generate sufficient fiscal leeway for public investments in the green and just transition. On the other hand, it shows to which extent the proposed caps on the deductible investment would hinder a provision of these required investments.

The following analysis makes use of these values for Germany to infer the fiscal leeway that different golden rules would create:

- Public green investment need
- Public green investment gap
- Upper bound cap (1.5 % of GDP)
- Lower bound cap (1 % of GDP)

All values are specified as annual values, with investment need referring to the required investments per year and the investment gap referring to the difference between the needs and the current amount of annual investments. By presenting the public green investment gap and need, the analysis assesses the impact that the Darvas and Wolff (2021) proposal, which excludes "green public investment", would generate. "Growth enhancing spending" is unclearly defined and accordingly difficult to measure therefore, the impact of excluding it cannot be assessed. The impact of the other proposals that exclude all public investment cannot be assessed since no reliable data for the overall public investment need and gap is available. The estimated values for the caps simply refer to the respective share of GDP, e.g., the value for the lower bound cap for Germany equals 1 % of the German GDP.

XXI Green and other public investment needs and gaps are not uniformly published for EU Member States. While estimations for Germany could be found in a German publication (see annex 2), estimations for Italy and Netherlands were not available.

Besides assessing the fiscal leeway generated by different golden rule designs, the analysis additionally describes the fiscal leeway generated by an exclusion of investment spending from an expenditure rule. Because of the similar exclusion mechanism (investment expenditure would be excluded from the expenditure aggregate of the expenditure rule), the fiscal leeway generated would be similar. This, however, does not apply to Member States with debt ratios above the long-run debt target as they would be subject to a DCF which would set a limit to the annual budget deficit without excluding investment expenditure.

3.2.2 Results

Figure 8 compares the public green investment needs and gaps with golden rule caps for Germany[XXII]. The annual public green investment needs amount to € 46 billion (1.32 % of GDP). Of this sum, € 30 billion (0.86 % of GDP) make up the annual gap between the needs and current level of public green investment. Thus, both a golden rule with a 1.5 % cap and a golden rule with a 1 % cap would generate sufficient leeway for Germany to close its public green investment gap. However, under a 1 % cap, 0.32 % of GDP (1.32–1) of public green investment would not be deductible. Hence, some budgetary items would face a trade-off with the green investments. This would not be the case under a 1.5 % cap which would deduct all green public investment.

Accordingly, all proposals that suggest deducting green public investment without using a 1 % cap would generate sufficient fiscal leeway for the required investments in the German green transition. The exclusion of other public investments beyond green purposes would most likely not be feasible with either of the caps as the overall investment needs beyond green purposes can be expected

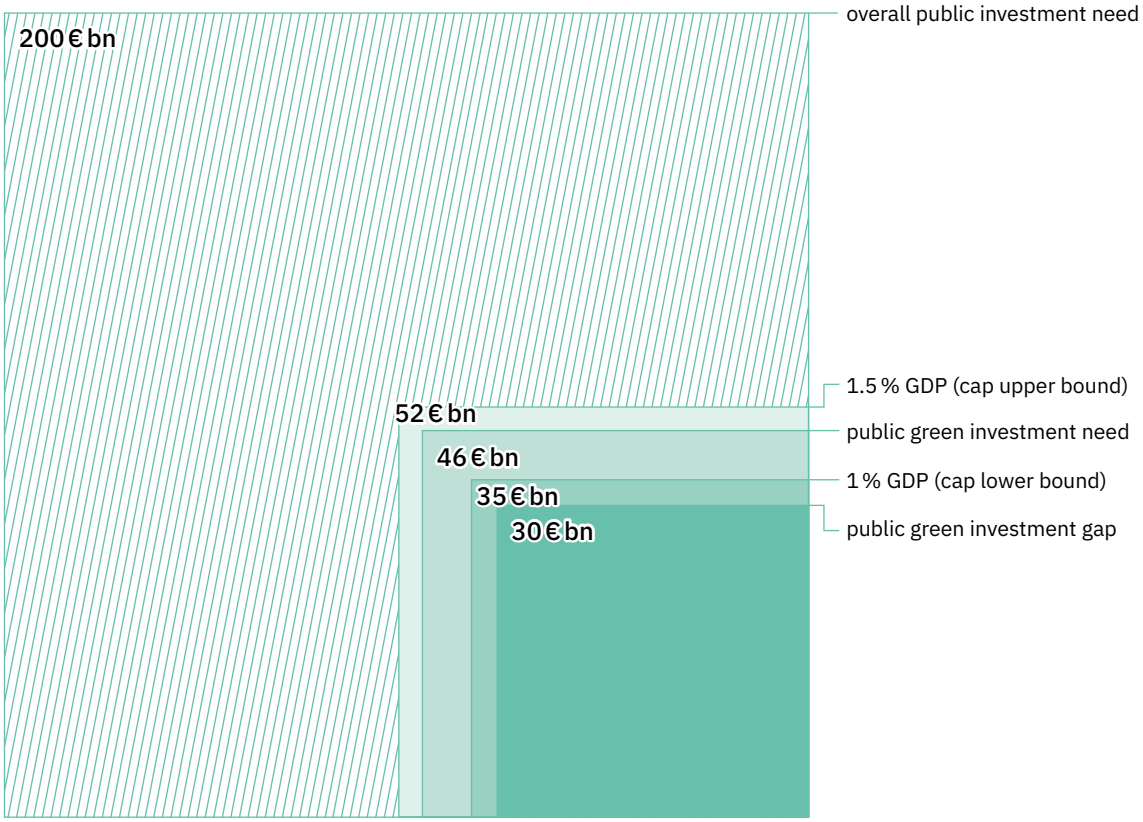

Figure 8: Golden rule estimations for Germany

XXII All values for Germany are retrieved from Krebs and Steitz (2021), for more information see annex 2.

to exceed both caps by far[XXIII]. Hence, a golden rule that aims to generate sufficient leeway for all public investments would not only have to define deductible investments beyond green investment but would also have to abstain from using either of the presented caps.

3.2.3 Limitations & Conclusion

Currently, quantifying green investment needs is an uncertain undertaking which the limited data availability in this analysis demonstrates. On the one hand, there are many open questions about the next steps in public green investment, for instance, which investments will be needed, how much financial and real resources they require, and whether they will be provided by the public or the private sector. On the other hand, there is no commonly accepted and clear-cut definition of green investment. As a result, any estimation of future green investment needs and gaps must be interpreted cautiously.

Nonetheless, the analysis of the German case creates an impression of the magnitude of the required public green investments and, most importantly, the extent to which a golden rule could close the public green investment gaps. For Germany, a golden rule that excludes green public investment from the budgetary variables has the potential to increase fiscal leeway by € 46 billion per year and thereby close the public green investment gap. However, this only holds true if there is no cap below 1.32 % of GDP. This demonstrates that if a cap is chosen to ensure the golden rule cannot be misused, the level of the cap should be based on investment needs. In other words, the cap should not be a barrier to closing the investment gap.

In general, the analysis reveals how significant the necessary share of GDP for green public investment is. This underlines the importance and urgency of addressing the investment needs for the green and just transition, 60 % of which lack a business case[3] and therefore, need public support. However, while the golden rule only refers to the quantity of investments set free, the quality of investments is of equal importance. No golden rule will make sufficient impact on the green and just transition without safeguarding for investment quality. In response to that, the following chapter presents, among others, a reform that would ensure the quality of public finances.

XXIII Apart from green investments, there is also a need for investments in the digital transition and other purposes. For instance, a study by Prognos (2021) has shown that public investment needs for climate protection only account for 23 % of total public investment needs.

4. Rethinking EU Economic Governance

This analysis has demonstrated that neither an expenditure rule or a golden rule individually, nor a combination of both, will create the required fiscal leeway to successfully address the challenges the European Union and its Member States are facing. To allow for sufficient spending to realise a green, socially cohesive, and digitalised EU economy and society, more fundamental changes to the EU fiscal rules would be necessary. This does not seem feasible in the current political climate. A major obstacle facing these changes is the perception of an irreconcilable trade-off between fiscal leeway and debt sustainability. Increasing fiscal leeway and hence government expenditure is often equated with an increase in debt. However, government expenditures can have various positive effects that reduce public debt in the mid-to-long-term, e. g., increased government revenues, positive effects on economic growth or prevented future costs. Additionally, a stronger focus on the quality of public finances can help to channel beneficial government expenditure into the green and just transition without jeopardising debt sustainability. Rethinking how European economic governance can establish a new concept of debt sustainability whilst ensuring high quality public finances would be a promising next step towards realising the green and just transition. The boxes below provide an overview of approaches that have the potential to achieve exactly that by improving EU fiscal governance at national and EU level.

Box 1: **Integrate climate risks in debt sustainability analysis**

"The short-term costs of the transition pale in comparison to the costs of unfettered climate change in the medium to long term"[18]

There is evidence that the costs of both acute climate-related events, such es extreme weather phenomena, and long-term transition risks can significantly impact the stability of public finances[52]. **The European Central Bank (ECB) recognises climate change as a source of systemic risk for financial stability**[53]**.** Extreme weather events can feed through the financial system directly or indirectly and endanger financial stability via unexpected losses in asset values[54]. Thus, climate change can generate short-term stresses for firms, households, and governments. This, in turn, can cause losses at individual financial institutions, which may be amplified through contagion and interconnectedness. **Hence, there is a need to systematically assess the costs of climate change in form of physical and transition risks for EU Member States.** The ECB has therefore identified a need for a macroprudential approach to climate risks to address the build-up of risks arising from collective lending decisions by financial institutions, helping to strengthen the financial system's resilience.

The EU could implement climate risks assessments by[55]:

A **Better understanding and monitoring of the fiscal impact of climate change.** Currently, the EU economic governance framework overlooks country-specific drivers of unsustainable debt and misses factoring in climate-related risks into current ways of analysing and monitoring debt sustainability. Therefor, a climate risk assessment procedure shall be conducted by Independent Fiscal Institutions (IFIs).

B **Climate-related risks are to be taken into account in the medium to long-term country-specific debt sustainability analyses.**

Failure to invest in climate change mitigation and adaptation today will affect future debt sustainability. A reformed EU fiscal framework shall oblige Member States to factor in their national climate-related risks countercyclically to public finances. As such, data collection, harmonising definitions and reporting requirements as well as methodologies to assess climate-related fiscal risks are fundamental.

In general, creating fiscal leeway for investment and spending for the mitigation and adaptation to the climate crisis would contribute to debt sustainability by reducing future climate risks and their related costs. Hence, integrating climate risks in debt sustainability analyses can increase fiscal leeway in the short-run while increasing debt sustainability in the long-run.

Box 2: **Binding requirements and targets for the quality of public finances at national level**

"Globally, fossil fuel subsidies were $5.9 trillion or 6.8 percent of GDP in 2020 and are expected to increase to 7.4 percent of GDP in 2025 as the share of fuel consumption in emerging markets (where price gaps are generally larger) continues to climb"[56]

As part of the removal of fossil fuel subsidies, the revenue gain could be repurposed to facilitate well-promote the green transition. By cancelling these expenditures from the government budget, Member States would have more fiscal space to support the green and just transition. To monitor the Member State's quality of public finances, a suggested policy pathway is the collection of data on fossil fuel subsidies per Member State and setting targets for ending them.

Thus, following the recommendation of a joint report by CAN Europe and Finance Watch[51], **conditional country-specific debt analyses could form the basis for country-specific debt targets.**

The sustainability of public funding depends on the quality of public finances. In other words, misusing public funding for environmentally harmful purposes as well as missing investments to mitigate future crises pose a major threat to the sustainability of public finances. Thus, country-specific debt paths could be linked to certain criteria, such as the implementation of the European Commission's Anti-Corruption Recommendations Commission (Country-Specific Recommendations and Rule of Law Report), the Group of States against Corruption (GRECO), the OECD and the United Nations. Likewise, these goals should include binding commitments to reduce environmentally harmful subsidies in a socially balanced manner.

Box 3: **Centralised fiscal capacity at EU level**

"Creating an EU fund to help countries better manage economic downturns and provide essential public goods. [...] A dedicated climate investment fund is an important part of the proposal."[57]

The establishment of a permanent central fiscal capacity complementing the current framework enables the EU to solve issues that are not addressed by fiscal policies yet[8]. Firstly, many of today's challenges, such as biodiversity loss or climate change, are cross-border problems that cannot be solved at a national level, or with a short-term solution. **Therefore, joint action and thus also a centralisation of fiscal capacities with permanent funds is one of the most efficient solutions to address those challenges that affect Member States equally.** Secondly, a permanent central fiscal capacity supports cohesion by aligning national fiscal policies with the needs of the entire euro zone. Member States that lack the risk-absorbing capacities needed in crises are supported by other Member States to enable targeted support for Member States with the highest and most urgent investment needs.

Permanent EU level fiscal capacities can provide investment funds for different purposes to Member States. Targeted EU funds can be used for various redistributive purposes and to achieve common policy goals, such as a common European unemployment reinsurance fund, a refugee integration fund and migration adjustment funds to cover the additional costs of social benefits and retraining needs. Depending on their specific needs, Member States should have access to the funds established.[58]

This idea is currently also popular among EU leaders: **The German Chancellor Olaf Scholz has stressed that Germany is open to a new aid programme along the lines of SURE** to cushion the consequences of the energy crisis[59].

A more general **EU fund is part of an IMF proposal[10] suggesting an ambitious EU fiscal framework reform,** serving the goals of macro-economic stability, and providing public goods supporting the green transition as well as handling security threats.

The EU's Recovery and Resilience Facility provided a blueprint of a centralised fiscal capacity, focused on investing in the green and digital transition and social cohesion. Through the obligation of submitting National Recovery and Resilience Plans (NRRPs), the European Commission ensured that funds are targeted to Member States' needs and address national challenges. Combining the NRRPs target achievement reporting with the European Semester is a successful tool for giving Member States more ownership of achieving the Semester's country-specific recommendations. A stronger role for the European Semester process which could be facilitated by merging the progress reports on the Green Deal objectives and the EU industrial policy strategy could also be effective in triggering the necessary industrial change and insuring its financing.

5. Conclusion

The EU is committed to a transition towards an increasingly green, digitised and socially just economy. This transition requires an unprecedented level of additional annual investment. Since most of these investments lack a business case, discouraging the private sector from supporting them, the public sector plays a key role in bridging the investment gap. As delineated in the outset of this paper, a reform of the EU fiscal rules is thus urgently due, not only to allow for investments in a green transition, but also to equip EU governments with the necessary spending flexibility to address social inequalities.

Many proposals have been brought up in this regard. Among them, the introduction of an expenditure rule and/or a golden rule seem most equipped to balance the feasibility-impact trade-off that most reform proposals face. In debating their merit, however, their specific design is a crucial aspect that often goes unacknowledged. This paper, after highlighting the strengths and shortcomings of each rule, conducted a quantitative analysis of the impact of different designs of expenditure rules (and golden rules) on the fiscal leeway of Member States.

In general, the analysis uncovered substantial differences in the impacts of different designs of expenditure rules on the public budgets of the analysed Member States. Focussing on the case of Italy and the impacts of a potential introduction of an expenditure rule with a DCF, the analysis has shown that an expenditure rule with a DCF would strongly increase the pressure on public budgets compared to an expenditure rule without a DCF. However, there are two levers to dampen this pressure and increasing fiscal leeway: increasing the long-run debt target and reducing the pace of debt-adjustment. However, it depends on the country-specific circumstances which of these levers is more impactful. While these findings were made when examining low interest rate scenarios, the inclusion of a higher interest rate scenario has shown the devastating effects that such a sustained increase in interest rates would have on government budgets. This would put extra pressure on budgets in countries with high sovereign bond yield spreads, highlighting the need for larger-scale reforms of the EU economic governance.

Similar to the expenditure rule analysis, analysing the impact of different golden rule designs indicates that the specific design of the rule creates heterogenous impacts. Here, the choice to allow for deductible investments strongly determines the provided fiscal leeway. In close relation to this, analysing the impacts of different caps for the golden rule has highlighted the need to adjust the level of the cap to the country-specific investment needs and gaps to not counteract the investment deduction by an imposed cap. The rationale of introducing a cap on deductible investments to avoid misuse of the generated fiscal leeway speaks to the prevalent issue that the green and just transition requires not only sufficient quantity but also quality of public spending and investment.

Thus, it can be concluded that, even in their most impactful design, neither rule nor their combination is able to create a sufficient fiscal leeway to address the current investment gap and thus to achieve such a green and equitable transition. To this end, it is therefore necessary to think about a reform of the EU economic governance framework that goes beyond the revision of existing fiscal rules. There are several ambitious reform proposals that would have enough impact to address many of the limitations of the existing framework. In this respect, alongside a common fiscal capacity at EU level, this paper suggests some innovative solutions to enhance the fiscal governance system both at national and EU level. These include the integration of climate risks (physical and transitional) into fiscal sustainability assessments and the setting of binding requirements and targets to protect the quality of public finances at the national level. Further research is therefore necessary with respect to the identification of alternative solutions and their potential, both in terms of impact and feasibility.

Annex

Annex 1: Variables and data used for expenditure rule calculations

Variable	Variable description	Source	Forecasting Methodology
GDP	GDP at current prices	AMECO online	Previous year's value times nominal GDP growth forecast
Total Revenue	Total Revenue, General Government	AMECO online	Previous year's value times nominal GDP growth forecast
Total Expenditure	Total Expenditure, General Government	Centraal Bureau voor de Statistiek (CBS) Instituto Nazionale di Statistica (I.Stat) Statistisches Bundesamt (Destatis)	**Without DCF:** Interest expenditure + public investment + unemployment spending + net expenditure **With DCF:** Total Revenue – Budget Balance
Interest Expenditure	General government interest expenditure	AMECO online	Gross debt times interest rate (depending on interest rate scenario)
Public Investment	Public Sector Gross Fixed Capital Formation	Centraal Bureau voor de Statistiek (CBS) Instituto Nazionale di Statistica (I.Stat) Statistisches Bundesamt (Destatis)	Previous year's value plus + 0.25 % of 2019 GDP[XXIV]
Unemployment Spending	General government unemployment benefits and social protection	Centraal Bureau voor de Statistiek (CBS) Instituto Nazionale di Statistica (I.Stat) Statistisches Bundesamt (Destatis)	Assumed to develop in line with unemployment which is derived from GDP according to Okun's Law (a 1 % increase in GDP leads to a 0.34% decrease in unemployment)
Net Expenditure	Total expenditure net of interest expenditure, public investment, and unemployment spending	*Calculated based on other variables*	Total expenditure net of interest expenditure, public investment, and unemployment spending
Net Expenditure Ratio	Net-expenditure-to-GDP ratio	*Calculated based on other variables*	Net expenditure divided by GDP
Gross Debt	General government consolidated gross debt	AMECO online	Debt/GDP times GDP
Debt/GDP	Debt-to-GDP ratio	*Calculated based on other variables*	Estimated with EFB formula[29]
Potential GDP	Potential GDP based on production function approach	AMECO online	AMECO estimations
Potential GDP Growth	Growth rate of potential GDP	*Calculated based on other variables*	Growth rate of potential GDP

XXIV Darvas and Wolff (2021) estimate an annual green investment gap of 1 % of GDP. Since it is unrealistic that Member State immediately increase investments to this level, we assume an annual increase in investments of 0.25 % of GDP.

Medium-term Growth	5-year average of potential GDP growth	*Calculated based on other variables*	5-year average of potential GDP growth
Budget Balance	Total revenue minus total expenditure	*Calculated based on other variables*	**Without DCF:** Total revenue minus total expenditure **With DCF:** Budget Balance/GDP times GDP
Budget Balance/ GDP	Budget-balance-to-GDP ratio	*Calculated based on other variables*	**Without DCF:** Budget Balance divided by GDP **With DCF:** Estimated with EFB formula[29]
Nominal GDP Growth	Nominal GDP Growth	European Commission's Autumn Forecast	European Commission's Autumn Forecast Estimations (forecast for 2021 is used for 2022 and 2023 as well)

Annex 2: Data used for golden rule calculations for Germany

Data

To estimate the impact of a golden rule concerning German investment needs, data on green investment needs is retrieved from Krebs and Steitz (2021)[61]. Their estimations rely on Germany's climate strategy aiming for a reduction target of –65 % of GHG emissions by 2030 and becoming climate neutral until 2045[62]. For the period of 2021–2030 the authors estimate an accumulated need of € 460 billion and, using a linear investment path, annual investment needs of € 46 billion. The accumulated value of € 460 billion includes € 260 billion direct investment (€ 190 billion for the Bund and 70 € billion for the Länder) and another € 200 billion to activate private capital. Considering planned EU funding as well, the authors estimate an investment gap of around € 30 billion per year for the period of 2021–2025. They arrive at this number by the following calculations. In line with their linear investment assumption, the investment need for this period would be € 230 billion. By subtracting planned EU investments of € 80 billion during this period, they calculate a green investment gap of € 150 billion over the 5-year period or € 30 billion per year.

Estimations

To norm the values Krebs and Steitz (2021) arrive at, they are computed as a ratio of GDP. Since the base line year in this paper is 2019, the proportional investment needs are calculated using Germany's 2019 GDP from AMECO database, resulting in annual public green investment needs of 1.32 % of GDP and an annual green investment gap of 0.86 % of GDP. Therefore, total values of upper (1.5 %) and lower (1 %) bounds of the golden rule caps are also calculated using the 2019 GDP resulting in rounded values of € 52 and € 35 billion.

Other available data

Another analysis of the German green investment needs is presented by Prognos et al. (2021)[63]. They estimate green investment needs of € 19 billion per annum, of which € 8 billion are declared as additional investment needs, and hence as the investment gap. The comparability of the two studies is very limited due to different methodologies. Krebs and Steitz (2021) analyse the period from 2021 t wo 2030 and Prognos et al. (2021) from 2021 to 2045. The former also consider indirect climate effects, such as the digitization of railway transport. Prognos et al. (2021) on the other hand exclude subsidy programmes and calculate with zero public green investment needs for the industrial sector[62]. Thus, the study of Krebs and Steitz (2021) seems more meaningful. However, it should be noted that estimations of green investment needs rely, among others, on the mentioned assumptions and rather give a rough guideline of the necessary magnitude of investments than exact values.

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