



zoe institute for
future-fit
economies

Updating the EU's fiscal rules

Steering EU fiscal policy with an
expenditure rule beyond GDP

Imprint

Authors

Lukas Bertram, Jakob Hafele, Feridun Temory, Jan Siebert

Editors

Sophia Tomany, Coline Lavorel

Please cite as

Bertram, L., Hafele, J., Temory, F. & Siebert, J. (2022). Updating the EU's fiscal rules: Steering EU fiscal policy with an expenditure rule beyond GDP. ZOE Institute for Future-fit Economies: Cologne.

Transparency

This report was commissioned by the Greens/EFA in the European Parliament.

Cover photo

Eelco Böhtlingk, retrieved from unsplash.com

Copyright

© ZOE Institute for Future-fit Economies, 2022

The views expressed in this document are those of the authors and do not represent the official position of ZOE Institute for Future-fit Economies. This publication and its contents may be reproduced as long as the reference source is cited.

Updating the EU's fiscal rules

Steering EU fiscal policy with an expenditure rule beyond GDP

Executive Summary

To achieve the objectives of the European Green Deal, the current decade will require the EU to undergo a green and just transition which will trigger huge private and public investment needs. Although governments need large fiscal leeway to meet these investment needs, the EU fiscal framework currently grants many Member States little fiscal space and prevents countercyclical fiscal policy. This in turn deprives Member States of the required fiscal flexibility, especially in crises and recessions, the times when they need it most. As a result, the urgent public investment needs for the green and just transition cannot be met.

To overcome these issues, a well-designed expenditure that limits the annual net government expenditure growth could replace the structural budget balance rule in the Stability and Growth Pact. However, while most proposals for an expenditure rule use GDP-based estimates as a benchmark for assessing the allowed growth of net government expenditure, it can be argued that, considering the European Green Deal, the fiscal rules should not just provide sufficient fiscal space but should also incentivise Member States to use this fiscal space for advancing the green and just transition. Thus, the benchmark of the expenditure rule should also take these dimensions into account. The study therefore explores alternatives to GDP which provide information about a country's performance in terms of the green and just transition and evaluates their applicability as a benchmark for an expenditure rule.

This study assesses 12 scenarios for the replacement of GDP as a benchmark in the expenditure rule. The 12 scenarios result from combining three categories of alternative indices (GDP-replacing indices, GDP-adjusting indices, and scoreboards) with four options for deploying them as an expenditure rule benchmark (simple benchmark, performance gap, potential growth, and independent body). The evaluation of the scenarios reveals weaknesses for all scenarios, demonstrating that the analysed indices generally do not constitute real alternatives for GDP with respect to an expenditure rule benchmark. Although the weaknesses of the scenario of applying a GDP-adjusting index as a performance gap benchmark can partially be mitigated, the strong reliance on GDP prevents a decoupling of fiscal rules from GDP. The study therefore reveals a gap by demonstrating that there is not yet an alternative to GDP that is feasible to implement as a benchmark for fiscal rules and that enables a green and just transition and aligns EU fiscal policy with the objectives of the European Green Deal.

Introduction

To achieve the objectives of the European Green Deal, the EU will undergo a green and just transition, which requires additional annual investments of €520 billion in the current decade (European Commission, 2022). While a certain share of this will have to come from the private sector, a large share will also have to come from the public sector, as shown in a McKinsey study which found that 60% of the required investments do not have a business case (McKinsey & Company, 2020).

To provide these investments, the public sector needs sufficient fiscal flexibility. However, the fiscal flexibility of governments is currently restrained by the Stability and Growth Pact (SGP), a central part of the EU fiscal framework. It sets debt targets which, if exceeded by Member States, need to be approached at a pace that requires budget surpluses which put huge pressures on public budgets. Additionally, the structural budget balance rule that restricts structural budget deficits entails a variety of problems that prevent countercyclical fiscal policy and decrease the Member States' fiscal space in general (Bertram et al., 2022). This in turn deprives Member States of the required fiscal flexibility, especially in crises and recessions, the times when they need it most. As a result, the urgent public investment needs for the green and just transition cannot be met.

The current debate about a reform of the EU fiscal framework has therefore brought up a reform proposal that addresses these problems, an expenditure rule which limits the growth rate of net government expenditure and thereby creates more fiscal flexibility than the fiscal rules that are currently in place. Because the extent to which an expenditure rule could solve these issues is highly dependent on its actual design, the debate about what an expenditure rule could look like is of high importance.

In most of the currently discussed expenditure rule proposals, the benchmark for assessing the allowed annual net government expenditure growth of Member States relies on GDP-based estimates. However, as GDP is a poor measure of Member States' performance in terms of the green and just transition, it is worth investigating whether the benchmark used in an expenditure rule could be based on alternative indices that provide a better picture of the green and just transition.

To do so, the paper starts with presenting the expenditure rule and its benefits and drawbacks. The following part presents different categories of indices that offer an alternative to GDP. The applicability of these categories as a benchmark for the expenditure rule is then assessed. The most feasible option is evaluated in more detail.

Benefits and drawbacks of an expenditure rule

In recognition of the need for sufficient fiscal flexibility for EU Member States to provide the necessary public investment for the green and just transition, there is a debate about a reform of the EU fiscal framework. In this reform debate, many reform proposals call for replacing the structural budget balance rule of the SGP with an expenditure rule to increase fiscal flexibility and simplify the existing rules (Bénassy-Quéré et al., 2018; Christofzik et al., 2018; Claeys et al., 2016; Darvas et al., 2018; European Fiscal Board, 2018). An expenditure rule limits the growth rate of net government expenditure to a Member State's potential output growth rate whereas the structural budget balance rule limits a Member State's budget deficit based on its output gapⁱ. For any given year T, the potential output growth rate is estimated as the average of the potential output growth rates for a certain timeframe, e.g., from T-5 to T+4. However, the potential output growth is not necessarily the only benchmark that can be used for an expenditure rule but can also be complemented by inflation targets or debt correction targets (Claeys et al., 2016).

The rationale for replacing the structural budget balance rule of the SGP with the expenditure rule is that expenditure is directly controllable by the government whereas the structural budget balance is not. Because the structural balance depends on automatic stabilisers which fluctuate over the course of the business cycle, a government cannot directly control the structural budget balance but only the discretionary government expenditure. Compared to the structural budget balance rule, an expenditure rule is also simpler to calculate as it does not require the estimation of a budgetary semi-elasticityⁱⁱ. Moreover, in comparison to the structural budget balance rule which the expenditure rule would replace, the latter is subject to smaller revisions and is less procyclical (Bertram et al., 2022). Depending on the exact design of the expenditure rule, it could also grant Member States more fiscal space than the structural budget balance currently does. For the green and just transition, these benefits are of very high importance. To meet the huge public investment needs, the EU's fiscal rules should give Member States sufficient fiscal flexibility. They should also allow for countercyclical fiscal policy to enable Member States to invest in times when it is most needed, namely in recessions, and not only in booms when these investments could contribute to overheating the economy, e.g., by overshooting inflation.

At the same time, the expenditure rule is seen as an instrument to safeguard debt sustainability, which is the ability of governments to meet all their current and future payment obligations without exceptional financial assistance or going into default (Hakura, 2020). Assuming that in the long-term, a country's actual output follows the path of its potential output, the growth of potential output results in increased future government revenues. An increase in government expenditure is therefore accompanied by an increase in government revenues and debt sustainability is provided. To control debt sustainability even better, an expenditure rule could be based on a debt reduction pathway that steers government expenditure in a way that the compliance with a certain debt level target in the future is secured (European Fiscal Board, 2018).

On the other hand, with potential output growth as the benchmark for determining fiscal space, the expenditure rule is heavily dependent on a GDP-based estimate. While these GDP-based estimates are useful for assessing fiscal space based on the business cycle, it can be argued that, in light of the European Green Deal, a country's fiscal space should be used for advancing the green and just transition and that the benchmark of the expenditure should therefore also take these dimensions into account.

ⁱ A thorough explanation and comparison of these two concepts can be found in (Bertram et al., 2022).

ⁱⁱ The budgetary semi-elasticity is the elasticity of the budget balance to the output gap. It measures how much a change in the output gap changes the budget balance due to changes in government expenditure and revenues.

The following chapters will therefore investigate whether indices that report not just on economic activity but on more dimensions can be used as a benchmark for an expenditure rule.

Alternatives to GDP

There are several alternative indices that can provide a better measure of a country's progress in terms of the green and just transition than GDP does. This section will present them in three categories: GDP-replacing indices, GDP-adjusting indices, and scoreboards. This chapter provides the basis for the assessment of how alternative measures of progress could be used as a benchmark for an expenditure rule by explaining each category with examples of existing indices.

GDP-replacing indices

There are a variety of indices that aim to replace GDP as a measure of a country's progress. Well-known indices include the Human Development Index (United Nations Development Programme, 2020), the Happy Planet Index (New Economics Foundations, 2021), the Better Life Index (OECD, n.d.), and the Social Progress Index (Social Progress Imperative, 2020). In the following, two of these well-known indices for replacing GDP are presented.

Human Development Index (HDI)

One of the best-known indices is the Human Development Index (HDI) that was developed by the UN and has been used in the annual Human Development Report since 1990. The HDI measures a country's average achievement across three dimensions of human development. It uses the life expectancy at birth for valuing health as the first dimension. Second, it considers the years of schooling for adults aged 25 and above and the expected years of schooling for children entering schooling age. The mean of these two values represents the knowledge dimension of the HDI. The standard of living as the third dimension is measured by the logarithm of Gross National Product (GNP) per capita at purchasing power parity (PPP) dollars. The logarithm reflects the declining marginal utility of income. The values for the three dimensions are then standardised to an interval from zero to one using the minima and maxima of each dimension. Finally, the HDI is calculated as the geometric mean of the three dimensions. The geometric mean is used because, in contrast to the arithmetic mean, it does not allow for linearly compensating a poor performance in one dimension with a better performance in another dimension. Hence, using the geometric mean requires a solid performance in all dimensions to obtain a high HDI score.

The UN has calculated the HDI for 189 countries, making it a well-known and widely accessible index. The HDI ranking is currently led by Norway, Ireland, and Switzerland, while Chad, the Central African Republic, and Niger find themselves at the bottom of the ranking (United Nations Development Programme, 2022).

Building on the framework of the HDI, the UN has constructed other indices that incorporate additional important criteria. The Inequality-adjusted Human Development Index (IHDI) adjusts the HDI for inequality in each of its dimensions. The Gender Development Index (GDI) measures the HDI for both women and men and divides the female HDI by the male HDI in order to uncover disparities across gender groups (United Nations Development Programme, 2020).

Its multidimensional nature and the fact that it accounts for declining marginal utility of income makes it a superior welfare index compared to GDP (Bagolin, n.d.). The HDI's broad availability makes it possible to find HDI values for all EU Member States. However, the HDI scores are published in the

Human Development Reports by the UN, which are not published on a regular basisⁱⁱⁱ. To estimate annual expenditure rule benchmarks, regular HDI updates would be needed. Criticism of the HDI has highlighted that its components are selected arbitrarily and important dimensions, such as political freedom and environmental aspects, are left out (Van den Bergh, 2007), and that for various reasons,^{iv} the resulting hierarchy among countries strongly resembles the hierarchy in terms of GDP (Szigeti et al., 2013).

Happy Planet Index (HPI)

To strengthen the role of environmental aspects, the Happy Planet Index (HPI) was developed by the New Economics Foundation in 2006. It aims to measure the ecological efficiency of delivering well-being by incorporating three indicators: self-reported life satisfaction, life expectancy, and ecological footprint. The latter measures the productive land area required to produce consumed goods and the assimilation of waste by a human population or an economy.

$$HPI = \frac{\text{Life Satisfaction} \times \text{Life Expectancy}}{\text{Ecological Footprint}}$$

The HPI additionally adjusts for inequality of outcomes. To do so, it multiplies the original value with an inequality factor that represents the inequality of life expectancy and life satisfaction (New Economics Foundations, 2021).

The HPI is currently available for 140 countries. Its ranking is led by Costa Rica, Colombia, and Vanuatu, while the Central African Republic, Mongolia, and Qatar occupy the bottom of the ranking. In general, the ranking is dominated by Latin American and Asia Pacific countries which achieve relatively high and equally distributed life expectancy and life satisfaction with smaller ecological footprints than Western nations (Wellbeing Economy Alliance, 2022).

The HPI manages to measure welfare more comprehensively than the HDI does by including life satisfaction instead of national income. Moreover, the inclusion of the ecological footprint allows for a sustainability perspective, which is missing in the HDI. In terms of availability, it provides scores for all EU Member States. While the official scores are published on a very irregular basis^v, the adequate availability of the three underlying variables (life satisfaction, life expectancy and ecological footprint) allows for annual HPI estimations. However, the HPI suffers from the subjectivity caused by including self-reported life satisfaction and might factor in the ecological footprint too heavily relative to the other two inputs. Thus, it does not necessarily reflect the wellbeing of a country's citizens and even distracts attention from human rights issues as in the case of Myanmar which ranks higher than many Western European countries (Michaelson Charles Seaford Saamah A & Marks, 2014).

GDP-adjusting indices

In addition to indices that aim to replace GDP, there are also indices that adjust GDP. They do this by adding monetised environmental and social benefits to GDP and by subtracting monetised environmental and social costs from GDP. There are several different indices in this category such as the *Measure of Economic Welfare* (Nordhaus & Tobin, 1973), the *Genuine Progress* indicator (Cobb et

ⁱⁱⁱ E.g., there is no Human Development Report for 2021 but only a common one for 2021/2022 and HDI scores will therefore not be available for both years.

^{iv} The HDI includes GNP and even the other dimensions are correlated with GDP.

^v Only four times since HPI's launch in 2006.

al., 1995), and the *Genuine Savings* (Hamilton, 1994). The latter is presented below to give an example of how these GDP-adjusting indices work.

Genuine Savings

Also known as *Adjusted Net Savings*, this indicator is used by the World Bank as a measure of sustainability. Although the Genuine Savings do not adjust GDP but savings, the methodological similarity to GDP-adjusting indices allows for a classification in this category. The Genuine Savings do not just measure produced capital, but also natural and human capital. This is done by correcting net national savings by adding education expenditure (which is treated as an investment in human capital rather than consumption) and deducting costs of energy depletion, mineral depletion, net forest depletion, and carbon dioxide and particulate emissions damage (Hamilton, 2000).

The development of the Genuine Savings of the EU over time is presented in Figure 1. The immediate and severe drop during the 2007/8 financial crisis reflects the strong dependence of the Genuine Savings on GDP.



Figure 1: Adjusted Net Savings of the European Union as percent of GNI (Data:(World Bank, n.d.))

The Genuine Savings indicator has the benefit of yielding a single monetary value that can be compared to GDP. This allows one to assess whether the effects of the economic activity on natural and human capital have overall been positive or negative. It also provides better information on what countries need to do to improve their performance than the HDI and HPI do^{vi}. As Figure 1 demonstrates, the Genuine Savings scores are available on an annual basis for all EU Member States. However, a serious weakness of the Genuine Savings indicator is that it does not reflect the concept of sustainability well. By simultaneously measuring economic, human, and natural capital, it enables offsetting the loss in one of these dimensions with a gain in another dimension, in contrast to the HDI for example (Everett & Wilks, 1999). Furthermore, with respect to human capital, it is only focussed on inputs but not on outcomes. For instance, the quantity of education expenditure is not necessarily a good measure of the quality of education.

^{vi} Improving a country's performance in terms of life satisfaction or life expectancy is less straightforward than simply increasing education expenditure or stopping forest depletion.

Scoreboards

Another alternative to GDP is using scoreboards. In contrast to the previous two categories, which measure a country's progress with a single number, scoreboards consist of a variety of different indicators that are not aggregated to a single number. The benefit of using a scoreboard is that multiple indicators can provide a more nuanced picture of a country's performance in terms of the green and just transition than a single number can. However, this comes at the expense of reduced comparability, as it is easier to compare the performance of countries by comparing numbers than by comparing scoreboards of multiple indicators. Nonetheless, the benefit of giving a multifaceted view makes scoreboards important parts of the landscape of GDP alternatives.

Among the well-known scoreboards, there are overarching scoreboards that claim to include all relevant dimensions such as the Sustainable Development Goals (United Nations, n.d.) or the 'Doughnut' developed by Raworth (2017), but there are also scoreboards that focus on specific dimensions or sectors such as the European Pillar of Social Rights (European Commission, n.d.) or the EU Resource Efficiency Scoreboard (European Commission, 2015). As an example of an overarching scoreboard, the application of the Doughnut to the EU context is presented below.

A Compass towards 2030

A very prominent example of a scoreboard is the 'Doughnut' developed by Kate Raworth. Raworth combines environmental and social indicators and uses a doughnut shape to visualise the safe operating space that humanity can achieve through preventing both an underperformance in terms of basic social indicators and an overshoot of the planetary boundaries defined by Rockström et al. (2009). While the Doughnut was not solely developed as a country-level index, it can certainly be used as such. Barth et al. (2021) have applied the Doughnut Economics framework to the EU Member States. As Figure 2 demonstrates, they have complemented the original framework which includes environmental indicators (outer ring) and social indicators (inner ring) with additional indicators, e.g., from already existing scoreboards of EU initiatives like the European Green Deal and the 8th Environmental Action Program, to capture both potential areas for investments and the characteristics of a resilient economy. The interior "dough" of the Doughnut represents the policy levers and economic enablers in question while also indicating progress towards achieving them. Furthermore, Barth et al. (2021) stress that, as priorities develop throughout time, there is a need to consistently develop new indicators from existing data and integrate them into existing monitoring scoreboards such as the 'Doughnut'.

Compared to the previously presented indices, this one has the tremendous advantage of capturing many more determinants of a country's progress in terms of the green and just transition. The outer ring aligns very closely with the green dimension of the green and just transition and the inner ring aligns very closely with its just dimension. By including this many different indicators, it also allows any country to improve its performance in a very targeted way since it can directly address the worst-performing indicators. Since this index was designed for the EU context and the indicators are mostly based on already existing data, the data availability is very high.

However, the comprehensiveness of this index comes at the expense of reduced simplicity. Especially in terms of the application as a benchmark for an expenditure rule, it is challenging to translate the variety of scores from all the different indicators into one single benchmark for the expenditure rule.

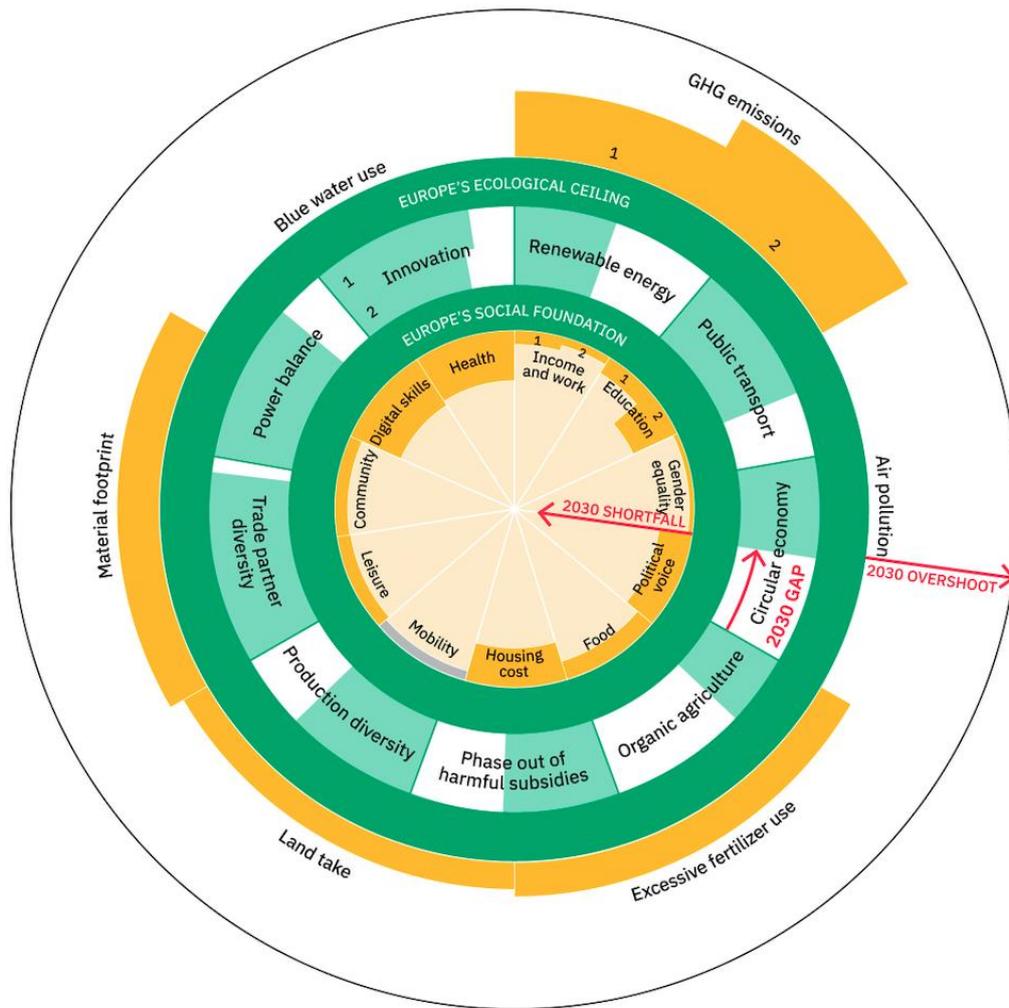


Figure 2: Compass towards 2030 (Source: Barth et al. (2021))

An alternative benchmark for the expenditure rule

There are different options for using the indices described above as a benchmark for an expenditure rule, i.e., for determining the allowed growth of public expenditure for any given Member State. This section will present these options and then discuss how each of them could be implemented with respect to the different categories of alternatives to GDP.

The different benchmark options

Simple benchmark

The chosen index could act as a simple benchmark for the growth of public expenditure. Public expenditure would be allowed to grow in line with the index. As a basic example, the growth of the index by x percent would allow for a growth of public expenditure by x percent in the following year. However, to smooth out potential fluctuations in the growth rate of the index, this basic mechanism could be adapted by using the index's average growth rate over the past years as a benchmark. For example, the average growth rate of the index over the past 5 years could determine the allowed growth rate of public expenditure for any given year. Similarly, the linearity between the index growth and the expenditure growth could be adjusted. A growth of the index by x percent could allow for a growth of public expenditure by e.g., $0.5x$ or $2x$ percent.

Performance Gap

Just as the structural budget balance rule uses the GDP output gap to determine fiscal space, an expenditure rule could use a performance gap in terms of the chosen index to determine fiscal space. Assuming that a potential score in terms of the index can be estimated for each Member State, the performance gap as the difference between the actual and the potential index score could determine the growth of public expenditure. The higher the performance gap, the larger the allowed public expenditure. With the rationale being that closing the gap requires, among other measures, public expenditure, the fiscal space would be higher for Member States with a large gap than for countries with a small gap. The estimation of the potential score could either be done by similar calculations as for the GDP output gap or by simply setting a target score. While the former option would entail a dynamic potential score (the potential score can change over time as the estimation yields different results), the latter would entail a fixed score (e.g., potential HDI is set as a target value of 0.95 and remains constant over time).

Potential Growth

Assuming that a dynamic potential score of the chosen index can be calculated, public expenditure growth could be coupled to the growth of the potential index score. This would resemble the functioning of the classical expenditure rule that couples the growth of public expenditure to the growth of potential GDP output. As in the classical expenditure rule, this alternative expenditure rule could use a multi-year average of potential index score growth to smooth out fluctuations of the potential scores over time.

Independent Body

Instead of using numerical rules, an independent body could monitor each Member State's performance in terms of the chosen index and assess fiscal space based on this. In contrast to the previous options, the allowed public expenditure growth in the expenditure rule would not be determined automatically by the value of the chosen index but would be subject to the assessment of the body. The independent body would use the chosen index to assess each Member State's performance and grant each Member State the fiscal space it needs to address shortcomings.

Comparative Assessment

The different scenarios

With three different categories of GDP alternatives and four options for deploying them as a benchmark for an expenditure rule, twelve possible scenarios arise. However, it is straightforward that the only option for applying scoreboards is the option of using an independent body. Since scoreboards like the SDGs or the 'Doughnut' do not yield a single number as a result, the other three options can't be applied, as they are based on numerical rules and therefore require a single number as a benchmark. On the other hand, GDP-replacing and GDP-adjusting categories like the HDI or the Genuine Savings are inferior compared to the scoreboards in terms of their utility for the independent body. This is because their aggregated results provide less information about a country's performance in terms of the green and just transition than the comprehensive results from the scoreboards. Besides using comprehensive information instead of an aggregated score, another benefit of this scenario is that the decisions of the independent body can be context-specific and can pay attention to country-specific circumstances. The independent body could monitor the Member States' performance with respect to the indicators in the scoreboard closely and base their decision about each Member State's fiscal space on what that Member State needs for a performance improvement. This would be much more difficult for the other

two categories of alternative indices, especially for indices which are based on few variables, such as the HDI and the HPI^{vii}.

Using an independent body for assessing fiscal space based on scoreboards as one scenario for an alternative expenditure rule, Table 1 presents and assesses the remaining six scenarios that result from combining the two remaining categories of GDP alternatives with the three remaining options to apply them as a benchmark. The scenarios are assessed using the following criteria:

- **Observability:** Does the expenditure rule in this scenario build on observable variables or does it require an estimation of unobservable variables? If the benchmark of the expenditure rule is unobservable, it needs to be estimated. Estimations carry the risks of not corresponding to reality. As a result, the fiscal space granted to Member States might not be optimal with respect to improving their performance. Estimations are also likely to become subject to ex-post revisions. This increases the uncertainty for Member States in their budget planning. Both issues could hamper the green and just transition.

(observable = green, unobservable = red)

- **Incentives:** Would a performance improvement with respect to the chosen index lead to less or more fiscal space? Adverse incentives that ‘punish’ a performance improvement with less fiscal space and ‘reward’ a performance deterioration with more fiscal space need to be avoided. If a performance improvement (deterioration) leads to less (more) fiscal space, Member States might have less incentive to improve their performance. This holds especially for indices which strongly incorporate dimensions for which policy makers might not have strong intrinsic incentives to improve their country’s performance (e.g., policymakers may be discouraged to reduce CO2 emissions if this decreases fiscal space). This is likely to be less of a problem for indices for which policymakers have an intrinsic motivation for a performance improvement (e.g., if an increase in GDP leads to less fiscal space, policymakers that perceive the benefits of a GDP increase to be higher than the costs of decreased fiscal space still have an incentive to increase GDP).

(good incentives = green, no incentives = blue, adverse incentives = red)

- **Cyclicality:** Would the expenditure rule in this scenario be countercyclical to stabilise the economy over the course of the business cycle and allow for sufficient investments in the green and just transition in every stage of the business cycle?

(countercyclical = green, a-cyclical = blue, procyclical = red)

^{vii} Since both consist of only three components, it would be difficult to assess what fiscal space is required to improve a country’s overall performance.

	GDP-replacing indices	GDP-adjusting indices
Simple Benchmark		
Observability	builds on actual level of index → does not rely on unobservable variables	builds on actual level of index → does not rely on unobservable variables
Incentives	good incentives (performance improvement increases fiscal space)	good incentives (performance improvement increases fiscal space)
Cyclicity	procyclical if index includes GDP or is strongly correlated with GDP, a-cyclical if index is not correlated with GDP ^{viii}	procyclical ^{ix}
Performance Gap		
Observability	potential performance not observable, needs to be estimated	potential performance not observable, needs to be estimated, but estimation methodology for the GDP part of the index already available
Incentives	wrong incentives (performance improvement decreases gap which decreases fiscal space)	adverse incentives (performance improvement decreases gap which decreases fiscal space) but mitigated by inclusion of GDP
Cyclicity	countercyclical	countercyclical
Potential Growth		
Observability	potential performance not observable, needs to be estimated	potential performance not observable, needs to be estimated, but estimation methodology for the GDP part of the index already available
Incentives	no incentives (fiscal space is not affected by actual performance improvement, only by potential performance improvement)	no incentives (fiscal space is not affected by actual performance improvement, only by potential performance improvement)
Cyclicity	a-cyclical	a-cyclical

Table 1: Evaluation of the different scenarios for an alternative expenditure rule benchmark

Table 1 demonstrates that the differences between the two categories of GDP alternatives are lower than the differences between the three options to apply an index as a benchmark for an expenditure rule. However, one important aspect in which the GDP alternatives differ is debt sustainability. As argued above, an expenditure rule is often supported in the debate about a reform of the EU fiscal framework because it can be useful for safeguarding the debt sustainability of EU Member States. There is a debate about the concept of debt sustainability that questions the usefulness of debt-to-GDP ratios and calls for incorporating other factors^x. However, financial market actors mainly look at debt

^{viii} If the GDP-replacing index includes GDP (e.g., HDI) or is strongly correlated with GDP, a higher GDP will be accompanied by a higher index score. With the simple benchmark, a higher index score leads to more fiscal space. Thus, a higher GDP leads to more fiscal space. If the index is not correlated with GDP, this relation does not occur.

^{ix} Higher (lower) GDP leads to a higher (lower) adjusted GDP which leads to higher (lower) fiscal space

^x Such as climate related fiscal risks, i.e., the risks that the effects of the climate crisis pose on public budgets

sustainability in the classical sense. Despite the growing market for green bonds which do not only look at financial performance criteria, the risk premium of government bonds is still highly dependent on the assessment by financial market actors of a government's ability to meet its payment obligations. That ability is seen to be dependent on the level of economic activity in a country because it indicates how much revenue the country's government can mobilise to repay its debt. This is crucial because if the EU was to replace GDP by an alternative index that provides no information about debt sustainability in the classical sense, and GDP were to decrease, that would lead to an increase in government bond spreads and thus to increased debt refinancing costs for governments. As the eurozone crisis has demonstrated, this would have severe consequences for public budgets and would therefore counteract the intention to increase investments in the green and just transition. This does not imply that fiscal policy should continue to use GDP for assessing fiscal space but rather that an alternative index needs to be sensitive to the functioning of financial markets. The same holds for any other dependency of the economic system on GDP (Richters & Siemoneit, 2019). While it is desirable to overcome all these dependencies and replace GDP in expenditure rules, such dependencies need to be addressed.

Thus, out of the previously presented indices, only the GDP-adjusting indices are feasible replacements in the current situation, because the other indices don't address GDP dependencies and the GDP-adjusting indices still includes GDP as a central component. Therefore, the following section digs deeper into a scenario where the debt sustainability aspect is accounted for by using a GDP-adjusting index. It combines this GDP-adjusting index with a performance gap benchmark because this scenario has the highest potential to mitigate drawbacks.

A GDP-adjusting index as a performance gap benchmark

A GDP-adjusting index that could replace GDP in fiscal space calculations could be constructed similarly to the Genuine Savings index by adding human capital investments to GDP and subtracting environmental costs. For that, potential GDP could either be estimated the way it is currently estimated or by including technical improvements to potential GDP estimations (Bertram et al., 2022; Sigl-Glöckner et al., 2021). The potential level of human capital investment could be determined as a politically agreed target for annual investment in, for example, education. For the example of CO₂ emissions, the potential level of environmental costs could be estimated by using the required CO₂ emissions abatement pathway for achieving the goals of the European Green Deal. Figure 3 presents this example. Actual emissions could be compared to potential emissions, as defined by a net-zero 2050 abatement pathway. When actual emissions are above (below) the potential emissions, the Member State is below (above) the emissions abatement potential.

To translate this into monetary costs, the potential level of costs from CO₂ emissions would be estimated as the product of a CO₂ price and the emissions level in line with the European Green Deal. The CO₂ price could be politically determined as well and should be based on scientific evidence.

Similar estimation methodologies can be used for other environmental costs (e.g., biodiversity loss, soil depletion, etc) so that an estimation of the potential level of the GDP-adjusting index becomes viable. This approach can create incentives for Member States to close their social-ecological performance gaps, e.g., by allowing a country that is below its emissions abatement potential higher fiscal space for green investments that close the emissions abatement gap. It is important to tie these investments to green spending; otherwise, an incentive to never reach climate targets would be created, because it would lead to indefinite fiscal space. Similarly, if a country underperforms in terms of its potential human capital investments, it can be obliged to use its fiscal space to increase investment in human capital. On the other hand, a Member State that achieves its potential performance, while having lower fiscal space, could use the remaining fiscal space freely without obligations.

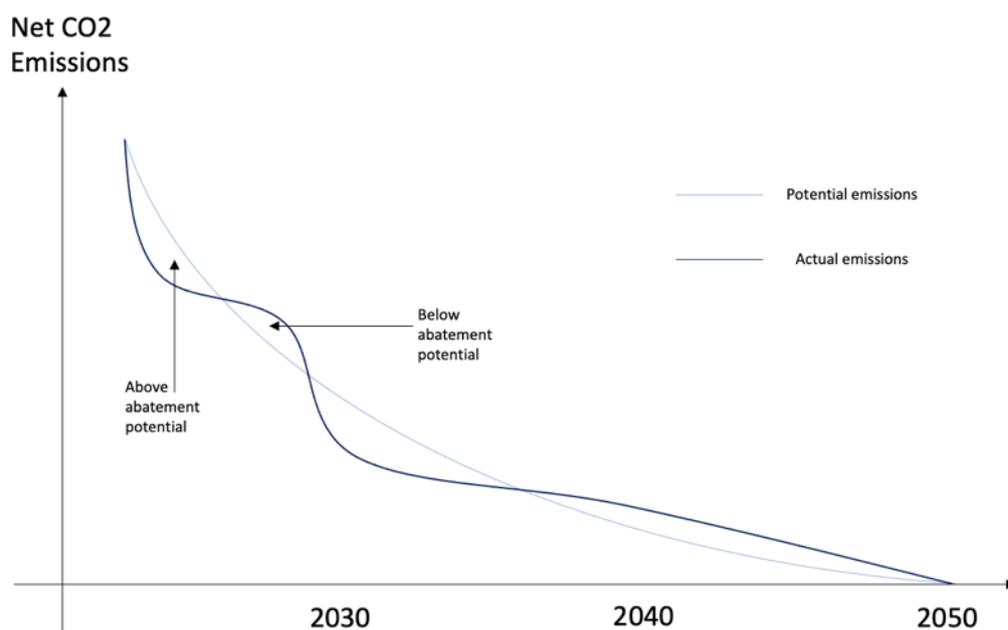


Figure 3: Example of an estimation model of emissions reduction potential; potential emissions based on IPCC mitigation pathways compatible with 1.5°C global warming (Rogelj et al., 2018)

However, despite offering some valuable benefits, this approach is subject to certain limitations. While the inclusion of GDP addresses the needs of financial market actors generally, there are still circumstances under which the same problem can occur, for example, a shrinking economy in which strong climate mitigation nonetheless produces an increasing overall GDP-adjusting index. Furthermore, the application of any GDP-adjusting index poses the threat of substituting environmental health with GDP growth^{xi}. It is unlikely that a GDP-adjusting index can include all planetary boundaries and measure them properly. Some trade-offs between GDP growth and planetary boundaries would therefore be neglected by the index. For instance, by including CO₂ emissions, a GDP-adjusting index discourages GDP growth that increases CO₂ emissions but encourages GDP growth that comes along with other greenhouse gas emissions or harms other environmental dimensions not included in the index. Furthermore, while estimating Member States' potential performance in CO₂ emissions abatement might be feasible (as shown above), estimating Member States' potential performance with respect to other dimensions of the green and just transition may be more challenging. Also, it is key to tie the increased fiscal space to green and/or social spending to avoid an incentive to increase fiscal space indefinitely by never reaching those targets. This approach hinges on a clear framework to decide which investments are green and social. This could either be determined by a democratically legitimised board or through a clear definition. This clear framework is very difficult to create, as the debate about the EU taxonomy shows.

In general, applying a GDP-adjusting index as a performance gap benchmark can offer important benefits such as countercyclicality and incentives for a fiscal policy that is in line with the green and just transition. At the same time, a useful methodology for estimating Member States' potential performances with respect to the index needs to be developed, a substitution of environmental health with GDP growth needs to be prevented, and a reliable framework for defining green spending would have to be created.

^{xi} Because both environmental aspects and GDP are included in the GDP-adjusting indices, a deterioration of environmental health can be compensated by an increase in GDP.

Conclusion

Meeting the EU's high public investment needs for the green and just transition requires sound economic policy and a fiscal framework that enables Member States to increase investment without risking government default. Considering the weaknesses of the current EU fiscal framework in terms of low fiscal flexibility and procyclicality, an expenditure rule is currently discussed as a potential remedy. Designed in the right way, an expenditure rule can enable countercyclical fiscal policy with increased fiscal space. To decouple the expenditure rule from GDP-based estimates, this paper has presented alternative indices that measure Member States' performance in terms of the green and just transition better than GDP does and has assessed how they can be applied as a benchmark for the expenditure rule.

All presented scenarios show some limitations with respect to observability, incentives, and cyclicity. Also, all indices, apart from indices that still incorporate GDP, don't address core GDP dependencies. A shrinking GDP will lead to increased government bond risk premiums because financial market actors use GDP for their assessments – no matter which index a government uses to assess their fiscal space. Therefore, it's not feasible for governments to ignore GDP in their fiscal space calculations under these circumstances. The same holds true for other GDP dependencies.

Although the option of applying a GDP-adjusting index as a performance gap benchmark can partially mitigate these issues, the strong reliance on GDP prevents addressing the drawbacks of using GDP as a performance index altogether. The study therefore reveals a gap by demonstrating that there is not yet an alternative to GDP that is feasible to implement as an alternative benchmark for assessing fiscal space and that steers the EU towards achieving the objectives of the European Green Deal and enabling a green and just transition.

References

Bagolin, I. (n.d.). *Human Development Index (HDI)—A poor representation to Human Development Approach*.

Barth, J., Lavorel, C., Miller, C., & Hafele, Jakob. (2021). *A Compass towards 2030: Navigating the EU's economy beyond GDP by applying the Doughnut Economics framework*. Zoe Institute for Future-fit Economies: Cologne.

Bénassy-Quéré, A., Brunnermeier, M., Enderlein, H., Farhi, E., Fuest, C., Gourinchas, P.-O., Martin, P., Pisani-Ferry, J., Rey, H., & Schnabel, I. (2018). *Reconciling risk sharing with market discipline: A constructive approach to euro area reform*.

Bertram, L., Temory, F., & Hafele, J. (2022). *Updating the EU's fiscal rules: How improving the EU's potential output methodology can mitigate the risk of deepening recessions*. ZOE Institute for Future-fit Economies: Cologne.

Christofzik, D., Feld, L. P., Reuter, W. H., & Yeter, M. (2018). *Uniting European fiscal rules: How to strengthen the fiscal framework*. Working Paper.

Claeys, G., Darvas, Z. M., & Leandro, A. (2016). *A proposal to revive the European fiscal framework*. Bruegel Policy Contribution.

Cobb, C., Halstead, T., & Rowe, J. (1995). *The genuine progress indicator: Summary of data and methodology* (Vol. 15). Redefining Progress San Francisco.

Darvas, Z., Martin, P., & Ragot, X. (2018). European fiscal rules require a major overhaul. *Notes Du Conseil Danalyse Economique*, 2, 1–12.

European Commission. (2015). *EU Resource Efficiency Scoreboard 2014*.

https://ec.europa.eu/environment/resource_efficiency/documents/re_scoreboard_2014.pdf

European Commission. (2022). *Towards a Green, Digital and Resilient Economy: Our European Growth Model* [Communication by the European Commission].

https://ec.europa.eu/info/sites/default/files/economy-finance/com_2022_83_1_en_act_part1_v5_0.pdf

European Commission. (n.d.). *European Pillar of Social Rights: Building a fairer and more inclusive European Union*. https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social-rights_en

European Fiscal Board. (2018). *Annual Report 2018*.

https://ec.europa.eu/info/sites/default/files/2018-efb-annual-report_en.pdf

Everett, G., & Wilks, A. (1999). The World Bank's Genuine Savings Indicator: A useful measure of sustainability. *Bretton Woods Project*, 1–10.

Hakura, D. (2020). What is debt sustainability? *IMF Finance & Development*.

<https://www.imf.org/external/pubs/ft/fandd/2020/09/what-is-debt-sustainability-basics.htm>

Hamilton, K. (1994). Green adjustments to GDP. *Resources Policy*, 20(3), 155–168.

Hamilton, K. (2000). Genuine saving as a sustainability indicator. *OECD Proceedings: Frameworks to Measure Sustainable Development*, 65–78.

McKinsey & Company. (2020). *Net-zero Europe: Decarbonisation Pathways and Socioeconomic Implication*.

Michaelson Charles Seaford Saamah A, J., & Marks, N. (2014). Measuring what Matters. In C. L. Cooper (Ed.), *Wellbeing* (pp. 1–38). John Wiley & Sons, Ltd.

<https://doi.org/10.1002/9781118539415.wbwell052>

New Economics Foundations. (2021). *Happy Planet Index 2021 Methodology Paper*.

<https://happyplanetindex.org/wp-content/themes/hpi/public/downloads/happy-planet-index-methodology-paper.pdf>

Nordhaus, W. D., & Tobin, J. (1973). Is growth obsolete? In *The measurement of economic and social performance* (pp. 509–564). Nber.

OECD. (n.d.). *OECD Better Life Index*. <https://www.oecdbetterlifeindex.org/#/111111111111>

Raworth, K. (2017). *Doughnut economics: Seven ways to think like a 21st century economist*. Chelsea Green Publishing.

- Richters, O., & Siemoneit, A. (2019). Growth imperatives: Substantiating a contested concept. *Structural Change and Economic Dynamics*, *51*, 126–137.
<https://doi.org/10.1016/j.strueco.2019.07.012>
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F. S., Lambin, E. F., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H. J., Nykvist, B., de Wit, C. A., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P. K., Costanza, R., Svedin, U., ... Foley, J. A. (2009). Planetary Boundaries: Exploring the safe operating space for humanity. *Ecology and Society*, *14*(2).
- Rogelj, J., Shindell, D., Jiang, K., Fifita, S., Forster, P., Ginzburg, V., Handa, C., Kheshgi, H., Kobayashi, S., & Kriegler, E. (2018). Mitigation pathways compatible with 1.5 C in the context of sustainable development. In *Global warming of 1.5 C* (pp. 93–174). Intergovernmental Panel on Climate Change.
- Sigl-Glöckner, P., Krahé, M., Schneemelcher, P., Schuster, F., Hilbert, V., & Meyer, H. (2021). A new fiscal policy for Germany. *Forum New Economy Working Papers*, *2a*.
- Social Progress Imperative. (2020). *2020 Social Progress Index: Methodology Summary*.
<https://www.socialprogress.org/2020-Social-Progress-Index-Methodology.pdf>
- Szigeti, C., Tóth, G., Borzán, A., & Farkas, S. (2013). GDP Alternatives and their Correlations. *Journal of Environmental Sustainability*, *3*(3), 3.
- United Nations. (n.d.). *The 17 Goals*. <https://sdgs.un.org/goals>
- United Nations Development Programme. (2020). *Human Development Index Technical Notes*.
https://hdr.undp.org/sites/default/files/hdr2020_technical_notes.pdf
- United Nations Development Programme. (2022). *Latest Human Development Index Ranking*.
<http://hdr.dev.undp.org/en/content/latest-human-development-index-ranking>
- Van den Bergh, J. C. (2007). *Abolishing GDP*.
- Wellbeing Economy Alliance. (2022). *Happy Planet Index—Explore the data*.
<https://happyplanetindex.org/countries/>

World Bank. (n.d.). *Adjusted net savings, including particulate emission damage (% of GNI)*—

European Union. <https://data.worldbank.org/indicator/NY.ADJ.SVNG.GN.ZS?locations=EU>