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IMF STAFF DISCUSSION NOTE

Second-Generation Fiscal Rules:

Balancing Simplicity, Flexibility, and Enforceability

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Second-Generation Fiscal Rules: Balancing Simplicity, Flexibility, and Enforceability

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Authorized for distribution by Abdelhak Senhadji and Jonathan D. Ostry

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EXECUTIVE SUMMARY

Fiscal rules are widely used to constrain fiscal policy discretion and promote fiscal discipline. More than 90 countries are using fiscal rules today. Their main goals are to commit policymakers to fiscal sustainability, enhance transparency, and signal to financial markets the course of fiscal policy. Rules can also have a political function by catalyzing broad agreements on sound fiscal strategies. Despite their widespread use, rules have been criticized for being too rigid and complicated. A poor track record of compliance has also raised questions about their effectiveness.

This paper presents new evidence that well-designed rules are indeed effective in constraining excessive deficits. Country experiences show that successful rules generally have broad institutional coverage, are tightly linked to fiscal sustainability objectives, are easy to understand and monitor, and support countercyclical fiscal policy. Supporting institutions, like fiscal councils, are also important. In contrast, rules that are poorly designed and do not align well with country circumstances can be counterproductive. Novel empirical research finds that fiscal rules can reduce the deficit bias even when they are not complied with.

By improving fiscal performance, well-designed rules help build and preserve fiscal space while allowing its sensible use. Good rules encourage building buffers in good times and allow fiscal policy to support the economy in bad times. This implies letting automatic stabilizers operate symmetrically over the cycle and including escape clauses that allow discretionary fiscal support when needed. By supporting a credible commitment to fiscal sustainability, rules can also create space in the budget for financing growth-enhancing reforms and inclusive policies.

To be effective, fiscal rules should have three main properties—simplicity, flexibility, and enforceability. These three properties are very difficult to achieve simultaneously, and past reforms have struggled to find the right balance. In the past decade, "second-generation" reforms have expanded the flexibility provisions (for example, with new escape clauses) and improved enforceability (by introducing independent fiscal councils, broader sanctions, and correction mechanisms). However, these innovations as well as the incremental nature of the reforms have made the systems of rules more complicated to operate, while compliance has not improved.

This Staff Discussion Note proposes three guiding principles for systems of rules to strike a better balance between the three desirable properties. Navigating the trade-offs between these properties is tricky and needs to consider country characteristics. Nevertheless, some principles are emerging from the still-limited experience with second-generation rules. These principles can help address the shortcomings of existing rules and inform the design of new ones. First, the incremental and piecemeal approach to reform should be replaced with a comprehensive strategy that ensures internal consistency between rules. Fiscal frameworks should include a debt anchor establishing a medium-term objective, combined with a small number of operational rules, which guide annual fiscal policy. Second, flexibility can be allowed in simpler ways, for example, by using clear escape clauses and placing more emphasis on expenditure rules, which allow automatic stabilizers to operate. Third, compliance could be more effectively promoted by raising reputational costs for noncompliers and creating more tangible benefits for compliers rather than relying predominantly on financial penalties.

INTRODUCTION

1. Over the past 30 years, a growing number of countries have subjected the conduct of fiscal policy to numerical rules. Fiscal rules take the form of lasting constraints on aggregate indicators of fiscal performance, such as the budget balance (Kopits and Symansky 1998). Like in other policy areas, constraining policymakers' discretion is viewed as necessary to avoid deviations from good policies. In the fiscal realm, the main concern is the "deficit bias," which has been blamed for the buildup of public debt observed in advanced economies since the 1970s and more recently elsewhere. Although fiscal deficits are not the only driver of debt increases, sticking to explicit caps on deficits, expenditure, or other indicators can help avoid costly ways to restore fiscal sustainability, including sovereign default and inflation. In that sense, fiscal rules are meant to reassure investors and the public at large that public finances will remain sustainable (IMF 2009).

2. Although their adoption has often coincided with stronger fiscal performance, fiscal rules have been criticized. There is a growing sense, especially in advanced economies, that rules have become too complicated, impeding their ability to frame and guide fiscal policy. Rules have also been seen as too rigid, preventing more active fiscal policy to support economic recovery, particularly when monetary policy is constrained and there is significant and protracted slack in the economy. The poor track record of compliance has raised questions about the rules' capacity to ensure fiscal sustainability. Finally, efforts to achieve formal compliance with rules have also had undesirable side effects, encouraging creative accounting and the compression of public investment and social spending, particularly in emerging and developing economies.

3. This Note focuses primarily on the ability of fiscal rules to contain excessive deficits, based on new empirical analysis. The Note draws on new evidence—presented in six Background Papers—on the effectiveness of national and supranational fiscal rules[2] over a relatively long time horizon (three decades) and a broad cross-section of IMF members (advanced, emerging, and low-income economies). A key contribution of these papers is to systematically explore the causal nature of the relationship between the adoption of fiscal rules and the level of the deficit, while taking into account the significant heterogeneity across fiscal rules and across countries. The empirical work seeks to address perennial concerns about the genuine ability of institutions to shape policy outcomes, as both could be determined by common factors such as societal preferences.

4. To achieve their main objective of correcting the deficit bias, this Note argues that fiscal rules should have three main properties—simplicity, flexibility, and enforceability. It is very difficult to achieve these properties simultaneously. This tension has become apparent during the reforms of the past three decades:

[2] Subnational (state, regional, municipal) rules, which differ from national rules in terms of objectives, design, and utilization, are not the focus of this Note. In addition, the move toward a new generation of rules is less apparent at the subnational level. The paper selectively refers to subnational rules when experience is relevant for the national level.

- *First-generation rules*, defined in this Note as the rules introduced before the global financial crisis (GFC), tried to combine simplicity and flexibility, without putting in place adequate enforcement mechanisms. Since overly simple rules are too rigid, provisions were progressively added for various contingencies, such as adjusting the rules for the economic cycle. But this enhanced flexibility made rules more difficult to enforce.

- The past decade has seen the emergence of a *second generation of rules* that attempts to strengthen the rules' enforceability while continuing to enhance their flexibility. Since the GFC, enforcement and monitoring mechanisms have been upgraded almost everywhere. As a result, fiscal rule frameworks have become more complicated, often to the point of impeding their ability to frame and guide fiscal policy effectively.

5. The Staff Discussion Note highlights three general principles for future reforms to better balance simplicity, flexibility, and enforceability. The principles could help address the shortcomings of existing rules and guide the design of future ones.[3] First, overly complex systems of rules can be streamlined by taking a holistic view: frameworks should include a debt anchor establishing a medium-term objective, combined with a small number of operational rules, which guide annual fiscal policy and are calibrated in a consistent way. Second, there is scope to simplify and increase the transparency of provisions aimed at making the rules flexible and resilient to changing circumstances. Third, compliance should and could be encouraged by means other than sanctions, which often lack credibility.

6. The Note consists of three sections. The first section briefly discusses the theoretical foundations of fiscal rules and shows how a new generation of rules has emerged after the GFC. The second section summarizes new evidence on the effectiveness of fiscal rules in taming the deficit bias. Finally, the third section lays out broad directions for future reforms.

FROM FIRST- TO SECOND-GENERATION RULES

7. This section summarizes the main conceptual issues related to rules-based fiscal policy and discusses the process that led to the emergence of a second generation of rules.

A. Definition and Conceptual Issues

8. Numerical fiscal rules are lasting constraints on fiscal policy through predetermined limits on aggregate fiscal indicators. Rules are generally defined as fixed numerical limits (floors or ceilings) on fiscal variables set in legislation and binding for at least three years (Lledó and others 2017). Numerical rules differ from "procedural rules" that set standards on how the annual budget

[3] Because well-designed rules involve considerable tailoring to country circumstances, this Note does not provide detailed operational guidance. Other IMF publications have provided operational advice on the prerequisites for effective implementation of rules (IMF 2009), the calibration of the ceilings (IMF 2018b), and the selection of rules (IMF 2018c).

should be prepared and executed—for instance, by setting and enforcing expenditure ceilings at the ministry level.

9. Fiscal rules thus define a perimeter within which fiscal aggregates can freely evolve and policy discretion can be exerted.[4] Fiscal rules impose constraints on fiscal variables, but these constraints are not targets, and, therefore, are not expected to be binding in every year. As such, fiscal rules differ from Taylor rules used in monetary policy analysis, which are formulas describing a desirable policy response to certain macroeconomic conditions. While some attribute a normative value to Taylor rules, they usually reflect average policy behavior observed over a period when policy is deemed adequate, and, as such, most consider them only as useful benchmarks for future policy.

10. Fiscal rules can promote fiscal discipline and limit the "deficit bias." The main objective of fiscal rules is to contain the tendency of governments to run excessive deficits (Box 1).[5] Fiscal prudence can be supported in three main ways:

- *Commitment device*. Rules can act as a commitment device, tying the hands of the government and limiting the use of fiscal discretion (Alesina and Tabellini 1990). For instance, to support fiscal consolidation following a financial crisis in the early 1990s, Sweden adopted an expenditure rule in 1997, which was successful at enforcing expenditure restraint and bringing down public debt (Andersen 2013). Rules can correct policymakers' incentives by raising the costs of excessive deficits, as noncompliance triggers reputational and electoral costs and, in some cases, sanctions.

- *Signaling effect*. In a context of imperfect information, rules can also be a signaling device by enhancing transparency and revealing the preferences and fiscal plans of the government to the public and financial markets (Debrun and Kumar 2007). Fiscally responsible governments may also find it in their interest to reveal their creditworthiness to investors through the imposition of rules that less prudent authorities would not be able to implement—a factor that motivated the adoption of budget balance rules in US states in the 19th century (Inman 1996).

- *Political function*. By imposing numerical limits, rules may serve as a focal point for politicians, facilitating the formation and stability of political coalitions, and enhancing coordination. For instance, governing political parties in several European countries (for example, Finland, Luxembourg, the Netherlands, Sweden) have included multiyear expenditure ceilings in their coalition agreements (Cordes and others 2015).

[4] While the purpose of numerical fiscal rules is to contain discretion, it can be difficult, in practice, to isolate the discretionary component of fiscal policy.

[5] While fiscal sustainability most often takes precedence, rules can be used to achieve secondary goals, such as facilitating economic stabilization, containing the government size, or improving intergenerational equity (IMF 2009).

Box 1. The Role of Fiscal Rules in Correcting Excessive Deficits

Fiscal rules are used to prevent excessive deficits that would arise under unconstrained policy discretion. This begs the question as to why legitimate governments would ever embark on financially unsustainable policies in the first place. After all, the intertemporal budget constraint is always binding ex post, and ignoring it ex ante invariably leads to very costly measures to restore it (debt restructuring, default, high inflation). In practice, however, countries can easily get away with unsustainable policies for a long time before the budget constraint starts biting (Wyplosz 2013). Political incentives to delay difficult austerity measures lead to protracted episodes of excessive deficits and debt accumulation (Alesina and Drazen 1991). A large political economy literature shows how unconstrained fiscal discretion can produce deficits systematically larger than if policymakers could credibly commit to an optimal course of action (see Persson and Tabellini 2000).

The deficit bias inherent to discretionary fiscal policy has several possible causes. An obvious precondition is that there is a large appetite for public goods. This is, for instance, the case when individuals or interest groups compete for government programs that specifically benefit them without fully internalizing the social costs, notably in terms of higher taxes paid by everyone (a phenomenon known as the "common pool problem"). Von Hagen and Harden (1995) show that binding fiscal rules agreed among coalition partners ("contracts") can coordinate the competing demands on public monies and internalize the tax externality. Still, even if the budget is properly centralized and the intertemporal budget constraint is fully internalized, notably through sound public financial management systems and adequate fiscal transparency, fiscal rules can be beneficial since policymakers may have distorted short-term incentives to opt for a suboptimal fiscal trajectory of high deficits today followed by future austerity. The most common distortion arises from reelection concerns of partisan politicians (for example, Alesina and Tabellini 1990).

Fiscal rules are the instrument of choice to correct excessive deficits. First, the delegation of selected fiscal instruments to independent agencies mandated to preserve debt sustainability (see, for example, Wyplosz 2005 or Basso and Costain 2016 for a recent proposal) raises considerable legitimacy issues due to the inherently redistributive nature of fiscal policy (Alesina and Tabellini 2007). No such proposal has ever been seriously envisaged, at least at the central government level. Second, the recent emergence of independent fiscal institutions (or fiscal councils) playing an official watchdog function is not a substitute for fiscal rules, but a complement to them. Rules provide fiscal councils with a clear metric of sound policy that they can leverage in their analytical and advisory roles. Fiscal councils can magnify the reputational costs of breaching fiscal rules, making them more effective.

11. By containing excessive deficits, rules build and preserve fiscal space, which can be used to achieve the main objectives of the government. As discussed in IMF (2017), the ability of governments to conduct stabilizing, growth-friendly, and inclusive policies depends crucially on the existence of fiscal space. Well-designed rules help countries build such space and do not prevent its use when warranted by circumstances (IMF 2018a). For example, for the purpose of economic

stabilization, good rules should let automatic stabilizers operate in bad times to allow for a countercyclical fiscal response. And in special circumstances (such as a protracted lack of demand or when monetary policy is constrained) when fiscal policy should play a more active role, the activation of the rule's escape clauses should allow for discretionary fiscal support (Blanchard, Dell'Ariccia, and Mauro 2010; DeLong and Summers 2012).

12. However, poorly designed fiscal rules can also entail three broad types of costs. First, certain types of rules such as nominal deficit caps are potentially procyclical, encouraging fiscal retrenchment in bad times without preventing fiscal relaxation in good times. Second, because rules are generally silent on the composition of fiscal adjustment, they can allow the deficit bias to morph into a composition bias. As shown by Peletier, Dur, and Swank (1999), if excessive deficits reflect myopia, binding deficit limits can encourage myopic policymakers to reallocate spending away from high-quality items with only longer-term benefits (for example, investment, education, support for structural reforms) and toward immediately visible but unproductive spending (for example, cash transfers). Third, if adopted without sufficient political buy-in or a solid public financial management system, rules can also reduce transparency by encouraging creative accounting or off-budget operations (Milesi-Ferretti 2003). Some of these costs can be mitigated, as discussed in the third section of this Note.

B. Emergence and Challenges of Second-Generation Rules

13. While the first principles motivating the adoption of fiscal rules are straightforward, designing effective rules is challenging. Fiscal rules are generally assessed on the basis of desired properties, which ensure that rules can achieve their main objective of correcting the deficit bias efficiently (Kopits and Symansky 1998). Among these desired properties, three stand out—simplicity, flexibility, and enforceability. As discussed in Debrun and Jonung (2018), they are very difficult to attain simultaneously. Waves of reforms over past decades reflect various attempts by policymakers to achieve these properties, and highlight the tensions existing between them.

14. Prior to the GFC, the first generation of fiscal rules tried to combine simplicity and flexibility, with little emphasis on enforceability. Early fiscal rules tended to be simple, such as balanced budget rules introduced in the stabilization programs of industrialized countries after World War II (Kopits 2001). To ensure that these simple rules were not too rigid, provisions were progressively added to enhance their resilience in the face of shocks. This was achieved by designing escape clauses (to account for unexpected events) and rules adjusted for the business cycle. However, this flexibility complicated enforcement and limited the rule's ability to anchor expectations of debt sustainability. A case in point is the structural balance rule, which was introduced in Chile in 2001 and in the European supranational fiscal framework in 2005. The rule is meant to provide more policy room during cyclical downturns (by making the constraint less binding) but it is more difficult to operate and implement. In addition, prior to the GFC, enforcement and monitoring procedures were relatively underdeveloped.

15. A second generation of fiscal rules has emerged in the aftermath of the GFC. There is no established definition of "second-generation rules" in the literature (Schick 2010; Dabán 2011; Schaechter and others 2012). This Note defines them as the rules introduced since the GFC. Originating in Europe, second-generation fiscal rules have spread worldwide. The first Background Paper, by Hodge, Kim, and Lledó, characterizes second-generation rules as being more enforceable, flexible, and operational than their predecessors. The GFC was a major shock that put existing rules to the test and acted as a catalyst for further reform. Although the term "second generation" may suggest a paradigm shift related to the crisis, these rules are generally an evolution of existing rules, trying to address their shortcomings and strengthening some of their key features.

16. Second-generation rules reflect efforts to enhance both flexibility and enforceability—at the expense of simplicity. Post-GFC reforms have greatly expanded the *flexibility* provisions already embedded in first-generation rules. For instance, new escape clauses tend to be more detailed, cover a broader range of circumstances, and provide some guidance on the path back toward the numerical limits. Rules that allow automatic stabilizers to operate freely—through constraints applying to the cyclically adjusted deficit or through expenditure ceilings—are now widespread. Flexibility has also been introduced to accommodate policies that enhance long-term fiscal sustainability but have a short-term fiscal cost (for instance, public investment under the European Stability and Growth Pact). To ensure a sound implementation of more flexible rules, *enforcement* procedures have been enhanced. For instance, many independent fiscal councils were tasked with monitoring compliance with rules and with ensuring that rules were not circumvented by being based on overoptimistic macroeconomic and fiscal forecasts or manipulation of cyclically adjusted indicators. In the European Union, steps were taken to reduce political interference in the enforcement of the Stability and Growth Pact (SGP), and the reach of potential sanctions was expanded. Formal correction mechanisms were also introduced to specify a path back to compliance following a breach.[6]

17. Despite these reforms, challenges remain in three main areas. These areas correspond to the guiding principles for future reforms discussed in the last part of the Note.

- *Problems associated with the combination of rules*. Past reforms have usually focused on improving individual fiscal rules, taken in isolation and in circumstances where specific aspects of the framework were deemed counterproductive. Such a process of incremental and partial amendments creates overlaps, inconsistencies, and confusion (Appendix 1). It also undermines the credibility of the framework by fueling the perception that rules can be changed whenever they are inconvenient. The problems associated with the multiplication of rules have been widely documented in the context of the European fiscal framework (Eyraud and Wu 2015; Odor and

[6] Besides enforcement mechanisms, second-generation rules have also tried to facilitate implementation by providing better operational guidance to policymakers and targeting budget aggregates more directly under their control. The post-GFC period has, for instance, seen a surge in the number of expenditure rules and the number of countries adopting them. Budget balance rules have also been refined to target more precisely the "fiscal effort" that the government should make through discretionary policy action. See first Background Paper.

Kiss 2017) but the trend toward more rules per country is a global phenomenon, as discussed in the first Background Paper.

- *Complexity of more flexible rules*. Countries have progressively moved away from simple rules expressed in nominal terms, toward more complex rules that include multiple clauses to allow thresholds to be adjusted in special circumstances. The trend toward complexity is not new but it has gained momentum during the past decade. The need to make rules more flexible has been the main factor behind their growing sophistication (Schaechter and others 2012).

- *Low compliance*. Despite reforms aimed at enhancing resilience and enforcement, compliance with fiscal rules has been disappointing. While the purpose of fiscal rules is to keep fiscal aggregates within set boundaries and prevent excessive deficits, breaches of the rules have been quite frequent and have not diminished during the past decade despite numerous amendments.[7] *In Europe*, national rules have been complied with about half of the time between 1995 and 2015, excluding circumstances covered by escape clauses (Reuter 2017). At the supranational level, European Union countries have, on average, been under Excessive Deficit Procedures (triggered following the breach of the 3 percent deficit rule) about half of the time as well. *At the global level*, compliance is more difficult to assess, given the diversity of fiscal frameworks and flexibility provisions. Focusing on budget balance rules, compliance was close to 50 percent in the past three decades, although that number does not correct for escape clauses and other contingencies.

IMPERFECT, YET EFFECTIVE? FISCAL RULES AND THE DEFICIT BIAS

18. This section summarizes and interprets the results from a in-depth empirical analysis of fiscal rules' effectiveness. So far, this Note has argued that (i) fiscal rules can be desirable when unconstrained discretion leads to a deficit bias, (ii) rules are hard to get right and have been repeatedly adjusted to the point of becoming overly complex, and (iii) despite intense efforts to make rules more resilient, compliance has been frustratingly low. This section evaluates the performance of fiscal rules against a number of criteria and, in particular, their ability to contain the deficit bias. Compliance is important but it cannot be the main criterion to assess whether fiscal rules are effective, because the fiscal performance of noncompliers could be even worse without a rule. The related Background Papers take different approaches to shed new light on fiscal rules' effectiveness and the factors likely to affect it.

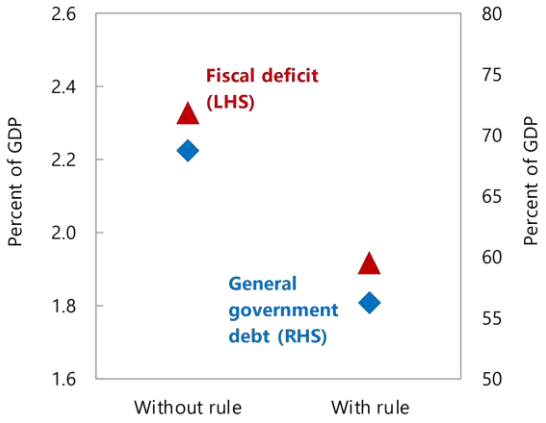
[7] There are several reasons why compliance has not improved in the past decade. The first is that the GFC and the subsequent collapse in commodity prices have had long-lasting effects on fiscal accounts, testing the limits of even the most flexible rules. The second reason is that reforms, as always, tend to address previously exposed shortcomings but fail to anticipate future fiscal challenges. Third, excessive complexity and, in particular, the multiplicity of sometimes inconsistent rules, made compliance with the entire framework harder to achieve.

A. Are Fiscal Rules Always and Everywhere Effective?

Average effects are elusive

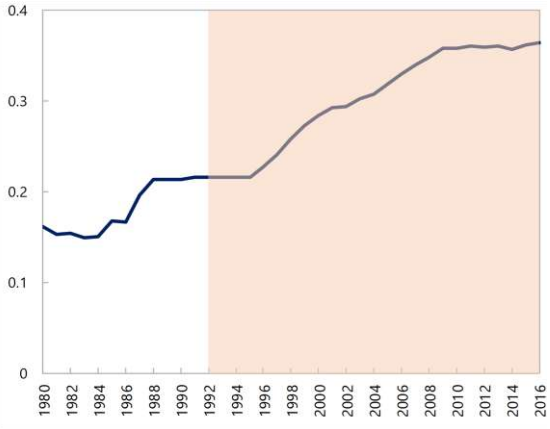
19. At first sight, the use of fiscal rules is, on average, correlated with stronger fiscal positions and more stabilizing policies. Countries with rules tend to have lower fiscal deficits and debt, compared with countries without rules (Figure 1). Although not the focus of this Note, it is also worth noting that adhering to fiscal rules seems to have enabled a more stabilizing fiscal stance. For instance, IMF (2015b) finds that, in advanced economies, the adoption of rules more than doubles the negative correlation between government size and output volatility (this correlation is a proxy for the stabilizing effect of automatic stabilizers). This is further illustrated by the increase in the average sensitivity of the fiscal balance to the business cycle in member states of the European Union subject to the Maastricht convergence criteria and, subsequently, the SGP (Figure 2). One reason is that sticking to sensible fiscal rules creates fiscal buffers, which can then be used to stabilize the economy during downturns. In addition, constraining policy discretion can discourage destabilizing discretionary measures.

Figure 1. Fiscal Outcomes in Countries with and without Rules, 2000–15



Source: IMF fiscal rule dataset.
Note: With rule = 1,192 observations. Without rule = 344 observations.

Figure 2. Average Stabilization Coefficients in European Union-15 Member States



Source: IMF staff estimates based on Afonso and Jalles 2017.
Note: For details on the calculation of the fiscal stabilization coefficient, see the April 2015 *Fiscal Monitor* (IMF 2015b). The Maastricht Treaty was signed in 1992.

20. Thorough causal analyses show that there is no universal effect of rules on fiscal deficits. Many empirical studies have documented associations between fiscal rule adoption and improvements in fiscal balances. However, a perennial difficulty is to establish causation between institutional variables and policy outcomes, as both could be shaped by common factors, such as, in this case, a societal preference for fiscal prudence (Poterba 1996).[8] The resulting "selection bias"

[8] The second Background Paper, by Caselli and Reynaud, describes the three main sources of endogeneity (and biased estimates) when assessing the effect of rules on fiscal performance, including (i) the reverse causality from the fiscal position to the adoption of rules, (ii) the bias arising from the omission of observed and unobserved variables, and (iii) measurement errors.

requires specific econometric techniques to ascertain causality. In a meta-analysis covering 30 recent empirical studies, Heinemann, Moessinger, and Yeter (2017) conclude that even though rules have a positive average effect on the fiscal balance, more rigorous estimations considering country characteristics often fail to identify systematic differences in the fiscal behavior of countries with and without fiscal rules. The second Background Paper, by Caselli and Reynaud, confirms this result based on a global panel of 142 countries over 1985–2015. The paper finds that the effect of rule adoption on the fiscal deficit cannot be precisely estimated (that is, it is statistically insignificant) once the potential endogeneity problem is adequately addressed. However, the fact that an "average" rule implemented in an "average" country appears ineffective says little about what a "best-practice" rule could do elsewhere. The rest of this section explores such heterogeneity across rules and countries.

Heterogenous Effects…

…across rules…

21. Not all fiscal rules are born equal, and one should not expect fiscal behavior to respond uniformly to any rule regardless of its design. Kopits and Symansky (1998) already observed the great variety of fiscal rules across countries, some good, some "ornamental," others squarely counterproductive. This variety of experiences helped them identify good practices. Subsequent empirical studies have accumulated overwhelming evidence that rule design matters.

22. Many empirical analyses show that better-designed rules are more likely to reduce fiscal deficits. These studies generally use summary "strength" indices that capture features of rules likely to increase enforceability and resilience.[9] For US states (which all, except Vermont, have a variant of a constitutional balanced-budget amendment), studies converged to show that more binding rules have a stronger disciplinary effect (von Hagen 1991; Poterba 1994; Bohn and Inman 1996; Clemens and Miran 2012; Lutz and Follette 2012).[10] Evidence for European countries also suggests that stronger rules are associated with lower deficits, even after correcting for the selection bias (Debrun and others 2008; Afonso and Hauptmeier 2009; Bergman, Hutchison, and Hougaard Jensen; 2016). The result holds for global samples using the IMF fiscal rule data set (Badinger and Reuter 2017). The second Background Paper estimates that, in a global country sample, a rise in the IMF rule's strength index from the first to the third quartile of the distribution leads to an average improvement of 0.6 percentage point of GDP in the overall fiscal balance.

…and across countries

23. Recent research examines the differentiated impact of fiscal rules across countries. Panel data techniques commonly used in the literature estimate an *average* effect of rules, implicitly

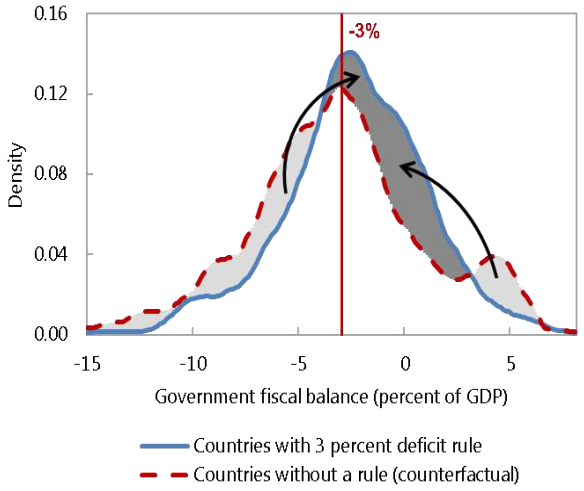
[9] The summary indices comprise various rule features, including a broad institutional coverage, independence of the monitoring and enforcement bodies, statutory base, flexibility, the presence of correction mechanisms, and sanctions.

[10] In the United States, the good performance of nominal balance rules at the state level is also explained by the use of state rainy day funds and the fact that stabilization policies are conducted by the federal government.

assuming a homogenous impact across countries. Although the use of interaction terms in panel regressions can capture specific dimensions of heterogeneity, the scope remains limited (see Tapsoba 2012; Cordes and others 2015). A more encompassing approach is to assess how rules affect the entire distribution of deficits across countries. Rule adoption may, for instance, have little effect on the average deficit, but impact the dispersion of deficits across countries. One reason is that introducing a given rule in a country with a long history of fiscal profligacy could signal a much more radical shift in behavior than if a prudent government were to adopt the same rule.

24. Rules seem to affect countries with low and high fiscal balances in opposite directions, suggesting that they extert a "magnet effect." Focusing on the adoption of the 3 percent deficit ceiling in the European Union, the third Background Paper, by Caselli and Wingender, tackles the issue of heterogeneity by departing from the estimation of an average effect and focusing instead on the effect along the whole distribution of deficits. More specifically, it compares the distribution of deficits among rule adopters with the corresponding distribution among a counterfactual group of countries without a rule (Figure 3).[11] The main finding is that the distribution of deficits is more concentrated in the sample of rule adopters: fewer countries record very high deficits and fewer countries have very high surpluses (compared with a counterfactual sample of countries with similar characteristics but no rule). In Figure 3, about one-fifth of the observations move toward the middle of the distribution (dark grey area), with 10 percent of them shifting from a deficit above 3 percent of GDP to below 3 percent. The Background Paper also shows that, in about three-quarters of the European countries, fiscal deficits would, on average, have been larger without the rule.

Figure 3. Distribution of Fiscal Deficits in European Countries with and without Deficit Rule



Source: Third Background Paper, by Caselli and Wingender.
Note: Arrows show the change in the distribution of deficits between nonadopters and rule adopters.

25. The magnet effect is visible not just across countries but also over time. Based on a sample of 49 advanced and developing countries over 1985–2015, the fourth Background Paper, by Lledó and Reuter, shows that the gap between the actual deficit and the rule's ceiling tends to diminish over time. They also observe symmetry: while noncompliers tend to improve their fiscal position over time, overperformers also gradually get closer to the ceiling. The fact that the rule provides a clear metric of fiscal performance for all to see (from voters to members of parliament) may explain this. For weak performers, the costs of noncompliance—reputational or other—

[11] This counterfactual group was built using techniques aimed at addressing endogeneity concerns.

encourage them to reduce deficits. But symmetrically, those that the rule clearly identifies as overperformers may find it harder to resist pressures to increase spending or cut taxes (see Alesina 2000).

26. The intensity of the rule's magnet effect depends on the size and recurrence of the breaches from rules. As discussed in the fourth Background Paper, the convergence toward the rule's threshold is faster under certain circumstances. For countries with *large* and *infrequent* deviations, the pulling force is relatively strong: budget balance rules tend to reduce the fiscal deficits of noncompliers over time. But the effect is less pronounced for *small* and *frequent* deviations, possibly because such deviations can be more easily accommodated within the rule's built-in flexibility without triggering a breach and forced corrective actions.

27. The magnet effect points to the importance of calibrating rules adequately and clearly communicating their intent to the public. The magnet effect seems at odds with the idea that fiscal rules define ceilings, not targets. For instance, the 3 percent deficit rule in Europe was conceived as a limit on the maximum deterioration of the deficit in bad times, implying that under fair skies, balanced budgets or surpluses should be the norm. However, member states of the European Union arguably remained too close to the ceiling, and it took only a mild downturn to cause the first crisis in the implementation of the SGP in 2003. This finding has two policy implications. The first one is that the calibration of the rule ceiling should probably err on the conservative side to account for the possibility that countries treat it as a target. That said, imposing a conservative bias in the definition of a deficit ceiling may not be politically palatable and it would require estimating with some accuracy the adequate margin of prudence. The second implication is that the rule's intent should be properly reflected in public communication, and most important, in identifying the elements of the rule framework that should be considered as truly binding.

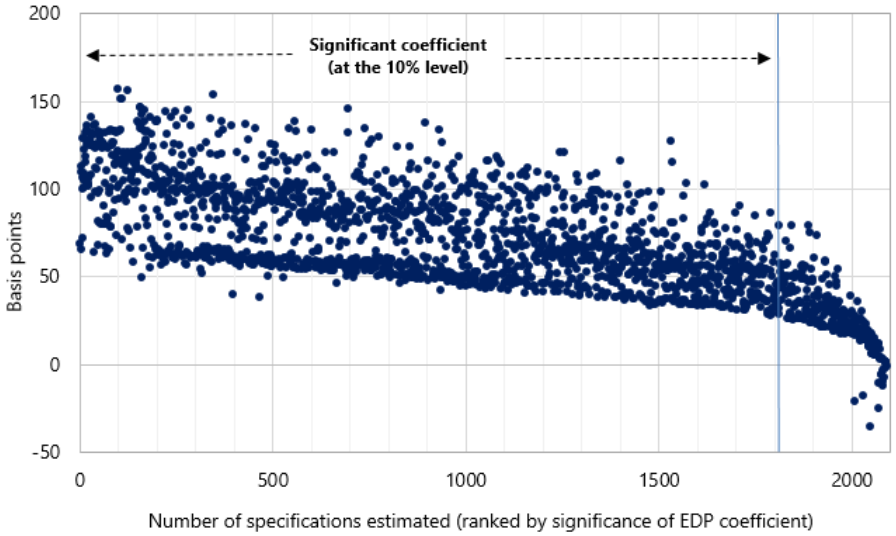
Financial market perceptions

28. Another test of fiscal rules' effectiveness is whether their adoption affects *perceptions* of fiscal sustainability; and the literature points to such an effect. The analysis of the behavior of sovereign yields or spreads shows that financial markets see rules as credibility-enhancing devices. Financial markets reward the ability of rules to change *current* fiscal behavior ("commitment effect") and to convey useful information about *future* fiscal policy ("signaling effect"), although these two effects are difficult to disentangle in practice. A significant empirical literature shows that the use of rules tends to lower sovereign spreads and decrease the response of spreads to fiscal variables—after taking into account the fiscal and macroeconomic characteristics of countries (Bayoumi, Goldstein, and Woglom 1995; Poterba and Rueben 1999; Johnson and Kriz 2005; IMF 2009; Iara and Wolff 2010; Feld and others 2017).

29. Financial markets seem also to respond to the compliance behavior of countries. Most of the literature on the market response to rules focuses on rule adoption rather than rule compliance. The latter issue is tackled by the fifth Background Paper, prepared by Diaz Kalan, Popescu, and Reynaud. Based on a sample of European Union countries, they show that poor compliance with the SGP has been costly. Sovereign spreads of countries under Excessive Deficit

Procedures (EDP) are on average higher by 50 to 150 basis points than in countries without EDP, correcting for other determinants of spreads (Figure 4). The difference is larger for countries with multiple EDP episodes. The results suggest that the EDP has not been fully credible as a correction mechanism, calling into question the ability of the European rules to tie the hands of policymakers (*commitment channel*).[12] However, the results may also show that the EDP reveals information to markets about future fiscal policy and national preferences beyond current fundamentals. Breaching the SGP sends a signal about the country's underlying commitment to fiscal sustainability, which entails financial and reputational costs for noncompliers. Under this interpretation, the SGP effectiveness operates primarily through the *signaling channel*.

Figure 4. Excessive Deficit Procedures: Range of Estimated Impacts on Sovereign Spreads



Source: Fifth Background Paper, by Diaz Kalan, Popescu, and Reynaud.
Note: The chart shows the estimated effect on spreads of being placed under Excessive Deficit Procedures (EDP) from a range of possible specifications.

30. The overarching message is that, even though fiscal rules are not a panacea, they can make a dent into the deficit bias depending on country circumstances and design features. The evidence that "well-designed" rules seem more impactful than inadequate ones invites a more granular exploration of rule characteristics and country circumstances that can either foster or undermine their effectiveness. The case studies summarized in the next section provide some useful lessons in that regard.

B. Getting Granular: What Makes Rules More Effective?

31. Case studies offer a useful complement to the aggregate evidence discussed above by illustrating aspects of best practice that contribute to the rule's effectiveness.[13] The sixth

[12] If the correction mechanism is fully credible, markets should not penalize countries under EDP but may even interpret the procedure positively by lowering spreads.

[13] This section focuses on the experience with national rules, including federal rules in federal systems. Andrle and others (2015) draw lessons from the experience with European supranational rules.

Background Paper by Mbaye and Ture examines the experience of a diverse group of countries comprising Botswana, Brazil, Chile, India, the Netherlands, Norway, Sweden, and Switzerland. These countries all have experienced some success with their rule system over certain periods of time or are in the process of overcoming existing challenges. In this analysis, "success" is characterized by effectiveness (meaning the ability of rules to achieve their policy objectives, including lower deficits) rather than by strict legal compliance. These case studies highlight five key lessons.

32. First, successful fiscal rules generally have a broad institutional and economic coverage. Limitations in coverage open loopholes that encourage circumvention and undermine the credibility of the rule (IMF 2009). Fiscal or quasi-fiscal activities (for example, off-budget operations such as the activities of certain public enterprises) taking place outside the rule have the potential to weaken the public sector's balance sheet and threaten fiscal sustainability. In practice, this implies, for instance, that budget-balance rules should be defined in terms of the overall balance rather than the current balance (or "golden rule"), that expenditure rules should comprise tax expenditures (i.e. revenue losses associated with tax exemptions), or that state-owned enterprises carrying significant risks to the budget should be covered by the rule. In Brazil, for example, the coverage of the primary balance targets goes beyond the central government and social security to include subnational governments and state-owned enterprises —two major sources of fiscal vulnerability.

33. A second factor contributing to the rule's success is a design that encourages building buffers during upturns and allows for adequate fiscal support during downturns. This is important not only to achieve economic stabilization but also to ensure fiscal sustainability, as one of the main factors explaining the "deficit bias" and the ratcheting up of debt is the inability of countries to save their revenue windfalls. The choice of the rule is critical in this context. The case studies illustrate how nominal budget balance rules can trigger procyclical policies (for example, Brazil and India), and how rules allowing for automatic stabilizers to operate freely (such as expenditure ceilings) can contribute to preserve countercyclical policies. Some countries, such as Sweden or Switzerland, have conducted successful stabilization policies with over-the-cycle or cyclically adjusted balance rules, including during the GFC. But their success cannot be easily generalized. Not only do these countries have an exceptional track record of fiscal prudence, but they have also found ways to mitigate the implementation problems created by rules adjusted for the economic cycle (for example, by relying on independent experts to measure some components of the rule or upgrading the communication around the rule to increase transparency).

34. Third, a good calibration of the threshold is essential to ensure that the rule defines a sensible perimeter for fiscal discretion. For instance, the ceiling of the structural deficit rule in Norway is calibrated to achieve both long-term fiscal sustainability and intergenerational equity in using resource revenues. IMF (2018b) discusses in detail issues pertaining to the proper calibration of fiscal rules. One important aspect is that fiscal ceilings should be set in a prudent way, preserving buffers to accommodate shocks. While calibration should be guided by a serious economic analysis, ad hoc tinkering seems to have been the norm in practice. And even when the ceilings are grounded in economic analysis, they are not updated on a regular basis. A case in point, although not covered in the case studies, is the Maastricht Treaty prescription of a 3 percent of GDP deficit ceiling

combined with a 60 percent public debt ceiling. These were European averages observed at the time the Treaty was signed in the early 1990s. A 3 percent deficit would cause public debt to converge to 60 percent in the long term if annual nominal GDP growth hovers around 5 percent, which is implausible in today's environment. With long-term nominal growth closer to 3 percent, the deficit consistent with a 60 percent of GDP long-term debt anchor should be below 2 percent of GDP.

35. Fourth, the lack of well-designed escape clauses makes it challenging to deal with tail events. Without well-designed escape clauses, rules are often put in abeyance following large shocks, or countries resort to ad hoc measures to accommodate them. But country experiences show that, to be credible and effective, escape clauses need to be precisely defined to cover events that are truly outside the government's control. India, for instance, is in the process of revising its escape clause, which currently allows for deviations from targets in exceptional circumstances "as the central government may specify."

36. Fifth, the case studies show the potential value of supporting institutions to foster compliance. In some cases, *fiscal councils* have helped enhance budget transparency by strengthening the credibility of the fiscal accounts and forecasts and providing long-term sustainability assessments and policy analyses (for example, in the Netherlands). Fiscal councils can also mitigate the complexity inherent in certain rules through direct inputs, such as estimates of structural balances (for example, in Chile), or public assessment of compliance with over-the-cycle rules (for example, in Sweden). *Error-correction* procedures, such as "debt brakes" charting the adjustment path after a breach have also contributed to enhance the rule's credibility. For instance, in Switzerland, spending overruns are recorded in a notional account that must be rebalanced through subsequent expenditure adjustments once cumulative slippages exceed a certain level.

37. Two enabling factors proved instrumental for successful rules-based fiscal policy: sound public financial management systems and sufficient political buy-in. As numerical rules constrain the annual budget, the latter must itself bind for day-to-day government decisions. The case studies illustrate how improved budget planning, execution, accounting, and reporting practices can facilitate implementation and compliance with rules. But in the end, the most effective aid to rules-based fiscal policy is the existence of sufficient public and political support for the ultimate objectives of the rule. Without it, creative accounting and other means of circumventing the rules are clear threats to their effectiveness. For instance, in Sweden, the respect for rules is cemented by a broad public and political consensus not to again experience large and persistent deficits as in the early 1990s.

38. Although these general lessons apply to all economies, countries need to focus on the features best suited to their needs and capacity constraints. The desirability of building buffers in good times should, for instance, be tailored to country groups. Cyclically adjusted balance rules are difficult to implement in developing countries where business cycle fluctuations are less regular and predictable; in these countries, ad hoc rules requiring the government to save revenue windfalls in good times may be easier to operate (IMF 2018c). A proper calibration of the rule's threshold is essential in all countries, but probably more complex in commodity exporters, where calibration needs to reflect the uncertainty about commodity prices both in the short and long terms (Appendix

2). Finally, the reform of supporting institutions should be sequenced. The priority for countries with weak public financial management systems is to upgrade them so that the budget—which is constrained by the rule—effectively guides the execution of expenditure plans and the collection of revenues.

GUIDING PRINCIPLES FOR FUTURE REFORMS

39. This section presents three general principles to better combine simplicity, flexibility, and enforceability. Past experience with rules shows that it is very difficult to achieve these desirable properties. In particular, second-generation rules are facing challenges in (i) combining rules in a consistent, comprehensive, and transparent manner; (ii) achieving flexibility without making rules excessively complicated; and (iii) enhancing compliance. The three guiding principles explore options to address these issues. As such, they offer broad directions to address weaknesses of existing rules and can be used to inform future reforms. In addition, although the principles are broadly relevant for all countries, their specific implementation needs to be tailored to country circumstances (see Box 2).

A. A Holistic Approach to Rules-Based Fiscal Frameworks

40. The failure of partial and incremental reforms implemented in the past highlights the need to design fiscal frameworks in a more holistic and predictable manner.[14] As discussed in the first part of this Note, an approach focused on individual rules and incremental steps creates multiple problems, including overlaps and inconsistencies (Appendix 1). Clearly, a comprehensive and predictable approach to fiscal rule reforms would be vastly superior to the current practice. It would keep the entire framework sufficiently close to best practice, while allowing adaptations motivated by sound analysis. Regularly scheduled reviews assessing whether the fiscal framework achieves its objectives should be an integral part of the system. These assessments would inform whether existing rules should be kept, revised, or abandoned. To avoid unwelcome politicization, such reviews could be conducted by independent experts (for example, the fiscal council, if it exists) or bipartisan committees.

41. While there are well-known criteria for the selection of *individual rules*, a similar set of principles for *multiple rules* within a holistic framework has still to be established. Kopits and Symansky (1998) proposed a list of desirable features for individual rules. Less attention has been given to the design of fiscal frameworks containing several rules.[15] This Note identifies three

[14] In the paper, fiscal frameworks are defined narrowly as a set of fiscal rules. A broader definition would also include adequate public financial management systems (IMF 2009).

[15] The holistic approach has been implicitly or explicitly recommended by several authors to reform the European rule system (see, for instance, Manasse 2014; Andrle and others 2015; Claeys, Darvas, and Leandro 2016; Odor and Kiss, 2017). The optimal design of fiscal rule frameworks for commodity exporters is also based on anchoring, parsimony, and consistency principles (see Appendix 2). For an application to small states, see IMF (2014).

essential and interdependent properties for effective fiscal frameworks: anchoring, parsimony, and consistency.

Anchoring: rules-based fiscal frameworks should cater for public debt sustainability

42. The system of rules should be anchored by a debt objective to preserve fiscal sustainability. The fiscal rule framework should define an explicit *fiscal anchor* in terms of a specific debt ceiling. The debt anchor is directly linked to fiscal sustainability, which is the final objective of the fiscal framework. It is used to inform medium-term expectations about fiscal policy. But the debt anchor is not meant to provide short-term guidance to policymakers. That is why fiscal frameworks also include *operational rules*. These rules, applying for instance to expenditure or the fiscal balance, concern variables under the direct control of governments and serve to communicate the fiscal stance to the public, while having a close and predictable link to debt dynamics. Well-designed fiscal frameworks should include both types of rules. But in practice, unbalanced frameworks are common. At the time of writing, about a quarter of countries with rules-based fiscal frameworks violate the anchoring principle: almost 10 percent of countries have a debt rule without an operational rule, while the share of countries with only operational rules (but no debt rule) is about 15 percent.

43. The framework should establish a hierarchy between the anchor and the operational rules, as not all the rules can be conceived as equally binding for the annual budget. First, the anchor should not be binding for the annual budget. Public debt is inherently persistent and affected by many developments other than changes in the overall budget balance. Besides, large and protracted deviations from the debt ceiling can be economically desirable (see Ostry, Ghosh, and Espinoza 2015; or Escolano and Gaspar 2016). A well-anchored fiscal framework thus aims at bringing predicted public debt at or below the ceiling over the medium term.[16] Second, operational rules should be binding for the annual budget. However, a useful distinction can be made between a rule that binds only ex ante (and influences budget preparation only) and one that also binds ex post (and guides both preparation and execution). In principle, rules that bind ex post should concern fiscal indicators well under the control of policymakers, such as an expenditure growth ceiling. Operational rules based on indicators that are harder to measure and control such as the cyclically adjusted balance—which is unobservable and subject to large forecast errors—could either only be binding ex ante or apply ex post but with a correction mechanism to prevent drifting away from the anchor.

44. Where possible and desirable, the fiscal framework should encompass both sides of the government balance sheet. "Net debt" can be used as a measure of fiscal sustainability when countries are able to sell liquid financial assets to meet financing needs if necessary. However, a net debt rule requires regular and accurate updating of balance sheet data, which has proved challenging in many countries. Currently, only the United Kingdom has a rule on net debt, although the fiscal strategies of Australia and New Zealand contain net debt objectives. Some commodity

[16] There is a clear analogy with monetary policy. Inflation targeting is understood as securing a convergence of inflation forecasts toward a predetermined level or range in the medium term.

exporters also impose targets on net wealth accumulated in funds. Appendix 3 provides further information on the conditions necessary to establish net debt rules.

Parsimony: fiscal frameworks should rely on a limited number of rules

45. Fiscal frameworks with multiple rules are difficult to manage. Second-generation rules-based frameworks often include too many rules, particularly in currency unions and federations where rules imposed by the center often come on top of the rules that are self-imposed by member states. A simpler model would be to rely on a debt rule serving as fiscal anchor combined with a small number of operational variables under policymakers' control. Parsimonious frameworks are more easily monitored and communicated to the public, building the government's credibility. One question is whether the number of operational rules should be limited to one.

46. A framework with only one operational rule is, in general, preferable. The choice of the single operational rule is country-specific and needs to be grounded in an economic analysis comparing the pros and cons of alternative options (see IMF 2018c for a review of the tools used at the IMF). There have been various proposals to define a single operational rule serving several objectives, such as economic stabilization and debt sustainability. For instance, Andrle and others (2015) proposed replacing the complex set of European operational rules with a single expenditure growth rule.

47. Implementation of a single operational rule may nonetheless be challenging in certain cases. First, some operational rules (such as an expenditure rule that does not bind revenue[17]) cannot achieve the debt objective without being accompanied by some form of adjustment or correction mechanism. For instance, in the context of Israel, Debrun, Epstein, and Symansky (2008) suggested the introduction of a rule capping expenditure growth anchored in a target path for public debt; anchoring the expenditure rule requires the use of a debt feedback mechanism to revise the expenditure ceiling when there are deviations from the desired debt path. Second, relying on a single operational rule risks potentially large side effects, such as changes in the composition of the budget (for example, cuts in public investment to comply with the rule). Should such side effects prove alarmingly large, two operational rules could be considered (for example, by adding a floor on capital expenditure or a ceiling on current expenditure, as discussed in IMF 2018c).

Consistency: individual rules should not conflict with each other

48. Consistent calibration is essential to ensure unambiguous guidance to policy and effectively anchor expectations. Relationships between the thresholds of the fiscal anchor and the operational rule(s) should be transparent and grounded in economic analysis. Although theory provides little practical guidance on welfare-maximizing levels of public debt, deficits, or expenditure, there are pragmatic approaches to calibrate them in a consistent way. For instance, IMF (2018b) proposes a methodology calibrating different rules sequentially. The debt ceiling should preferably be set first, taking into account sustainability considerations and the need to build

[17] Some types of expenditure rule take into account the revenue side, like the European expenditure benchmark.

sufficient buffers to absorb shocks to the public sector's balance sheet (Ostry and others 2010; IMF 2016a). Then the operational rules (on the fiscal balance and expenditure) can be calibrated from the debt ceiling to ensure consistency.

49. Correction mechanisms setting the adjustment path following a breach can be useful to avoid drifting away from the anchor. Without a correction mechanism, repeated breaches of budget balance or expenditure rules can cause debt to drift up and away from its long run objective. Correcting for such deviations strengthens the link between the debt anchor and the operational rules. Designing credible correction mechanisms requires a balancing act between keeping the anchor and avoiding abrupt corrections, especially when they could imperil an economic recovery. The German "debt brake," for example, requires corrective action only during periods of economic expansion (see the first Background Paper for a review of existing correction mechanisms).

B. Flexibility Made Simpler

50. To be resilient and credible, a rules-based fiscal framework must be sufficiently flexible, while remaining simple and transparent. A useful distinction can be made between predictable events that invariably occur after some time—such as business cycle fluctuations—and unpredictable realizations of fiscal risk. The latter must be addressed with well-defined escape clauses, whereas the former can be handled with an adequate definition of the fiscal indicators subject to a numerical limit. Rules allowing for automatic stabilizers to operate include ceilings on the cyclically adjusted deficit and caps on expenditure growth (because automatic stabilizers mostly operate on the revenue side of the budget). Of course, codified flexibility invites complexity, which thwarts implementation, monitoring, and communication. Attempts to address certain contingencies can also lead to policy errors, as discussed below.

51. Cyclically adjusted balance rules can be difficult to operate and create fiscal policy errors, although negative side effects can be mitigated. They should be considered with caution, especially in countries with less predictable economic fluctuations and weak monitoring capacity.

- *Implementation*. The cyclically adjusted balance is not observable and must be estimated. However, there is no consensus on adequate methodologies to capture precisely the budgetary impact of the business cycle, not to mention other relevant cycles (asset or commodity prices), which opens avenues to circumventing the rule. In decentralized settings, these methodological issues can complicate internal policy coordination, as cyclically adjusted balances often cannot be calculated for subnational entities. One option to mitigate these issues is to mandate the use of a simple and transparent cyclical adjustment technique (for example, the Hodrick-Prescott filter) or make the rule binding only ex ante.

- *Monitoring and communication*. Communication of cyclically adjusted balance rules (and, more generally, of any type of flexible rules) can be challenging. One way to overcome this is to establish independent fiscal councils staffed by experts. These councils can verify whether rules are being complied with and their decisions are more likely to be viewed as credible because of their independence from elected office holders.

- *Policy errors*. Defining a rule in terms of a non-observable indicator amounts to seeking guidance from an unreliable compass. Erroneous cyclically adjusted balances can cause policy errors. Specifically, real-time estimates of the output gap, which are required to compute the indicator, are subject to large and unpredictable measurement errors. In European countries, the output gap is often underestimated in real time and revised upward in subsequent years, giving an overoptimistic view of fiscal performance and encouraging complacent expenditure plans (Appendix 4). Here too, fiscal councils can prove useful to reduce the risk of mistakes. The fiscal forecasts they produce or monitor are, on average, less biased and more precise than in the absence of such an institution (IMF 2013). Nonetheless, countries should be cautious in adopting cyclically adjusted balance rules, and only do so if they have strong public financial management systems and are subject to moderate and predictable cycles.

52. Flexibility can be achieved, perhaps more effectively and easily, through expenditure rules and well-defined flexibility provisions.

- By placing a *ceiling on expenditure* but allowing revenue to fluctuate with the business cycle, expenditure ceilings allow most automatic stabilizers embedded in the budget to operate freely (IMF 2018c). As automatic stabilizers work both ways, expenditure ceilings avoid procyclicality in good times by preventing higher-than-expected revenues from being spent. An expenditure rule is generally simpler, easier to communicate to the public and less prone to calibration challenges (see Appendix 4 for a comparison with the cyclically adjusted balance rule). Its main downside is that, because it does not cover the revenue side, an expenditure ceiling alone cannot ensure fiscal sustainability. Some versions of the rule, like the European expenditure benchmark, can address this shortcoming by taking into account the effect of revenue measures in the definition of the ceiling or by adding a debt brake mechanism. But these refinements tend to create more complexity and reduce the appeal of the expenditure rule relative to the cyclically adjusted balance rule.

- Another way of creating additional flexibility in the framework without changing the type of the rule is by making good use of *flexibility provisions*. These provisions allow sensible use of fiscal space outside the numerical constraint of the rule to react to unforeseen circumstances (through escape clauses) and to absorb the costs of critical growth-enhancing reforms (see the first Background Paper). To avoid abuse, these provisions must be well-defined and be subject to independent scrutiny. For instance, an escape clause should have (i) a limited and clearly defined set of events triggering the operation of the clause, (ii) time limits on how long fiscal policy can deviate from the targets in the rule, and (iii) a requirement for fiscal policy to return to the targets after the operation of the escape clause is terminated and possibly offset the accumulated deviations.

53. Creating flexibility in the fiscal frameworks of developing countries can be challenging. Imperfect access to international credit markets and lack of financial depth often prevent developing countries from borrowing in economic downturns (Caballero and Krishnamurthy 2004; Konuki and Villafuerte 2016). Thus, it may be difficult or even impossible for them to smooth spending and fully accommodate temporary revenue shortfalls. In this context, self-insurance could

constitute a second-best option to create policy flexibility (IMF 2018c): countries should build financial buffers in good times (for example, by setting aside revenue windfalls in a stabilization fund using simple numerical or procedural rules) and draw on them in bad times to support public spending. In general, self-insurance allows a smaller degree of expenditure smoothing (compared with what would be achieved in countries with unconstrained access to financial markets).[18] Another aspect of flexibility to be considered in low-income economies is the financing of development needs, which should not be excessively constrained by the rule.

C. Promoting Compliance through Stronger Incentives

54. Compliance can be enhanced by raising the cost of breaches as well as the benefits associated with fiscal discipline. If political incentives are not there, the most sophisticated revisions to the fiscal rule framework cannot materially improve fiscal outcomes. Therefore, it is critical that future reforms take into account the political economy dimension by designing more adequate incentives (Eyraud, Gaspar, and Poghosyan 2017). To make fiscal rules work politically, the incentive structure could be further strengthened on both sides— by raising the costs associated with noncompliance and by creating more tangible benefits for compliers. These two aspects are explored in the next paragraphs.

55. Formal enforcement mechanisms, such as those triggering financial sanctions in case of noncompliance, have showed limited effectiveness. In the context of *national* rules, the notion of credible enforcement is largely illusory, except for strict constitutional clauses that do not naturally lend themselves to sufficient flexibility when they bind. Self-imposed sanctions are unlikely to be implemented by policymakers. Reuter (2017), for instance, finds no evidence that sanctions raise compliance with European national rules. At the *supranational* level, federations and currency unions have access to a broader toolkit of enforcement mechanisms, which includes sanctions and correction actions. But these mechanisms also lack credibility for two main reasons. First, financial sanctions exacerbate the financial difficulties of already distressed governments, limiting the appropriateness of such sanctions and their scope for use in bad times. More emphasis should be placed on preemptive actions (such as those required in Poland as debt approaches a critical threshold). Second, and more important, high-profile sanctions carry a stigma and a high political cost that make their application very unlikely. A better approach could be a more gradual sanctions regime. Initial and/or small deviations from rules should entail small financial costs to encourage compliance without provoking strong opposition, while repeated and/or larger deviations could be penalized more heavily (Ostrom, 1990). However, even with a more preemptive and measured approach, the enforcement of sanctions at the supranational level is likely to remain a highly contentious issue.

56. More recent efforts to raise reputation costs of noncompliance, notably through enhanced fiscal transparency and the role of fiscal councils, seem to be more promising. Fiscal transparency—defined as the comprehensiveness, clarity, reliability, and timeliness of public

[18] In addition to self-insurance, developing countries can borrow from official sources (both multilateral and bilateral) to respond to negative shocks, using external financing to undertake a more gradual adjustment.

reporting on public finances—is critical to provide legislatures, markets, and citizens with the information they need to hold governments accountable. In addition, the information and analysis provided by fiscal councils can alert the public when policymakers are on an undesirable fiscal trajectory. Available information about the budget is often too opaque and complex for the public to understand. Well-resourced and truly independent fiscal councils can enhance existing signals about the competence of policymakers, thereby raising the reputational costs of breaching the rule (Beetsma, Debrun, and Sloof 2017). If social preferences for fiscal prudence are well established, reputational effects extend to the ballot box, improving reelection prospects of fiscally responsible politicians. Recent empirical evidence suggests that fiscal councils increase the likelihood of compliance with fiscal rules (Reuter 2017), but experience remains too limited to draw definitive conclusions.

57. Benefits for compliers could also be made more tangible. For politicians, the benefits associated with complying with rules are not always clear-cut. A fundamental issue is that the benefits of rule compliance and sound fiscal policy are often only apparent in the medium term or in hindsight, while political costs of necessary fiscal restraint are borne by elected officials in the short term. A potential reward from complying with rules takes the form of lower sovereign financing costs, since the government's commitment to responsible fiscal policy is more credible. But in a world of low interest rates and sovereign spread compression, markets may not discriminate sufficiently across country risks. In this context, it is difficult to ensure that policymakers internalize the benefits of rules. Nonetheless, some immediate measures could be taken to strengthen positive incentives, in particular in currency unions. Since 2014 access to European structural and investment funds requires, in principle, that a country complies with the EDP recommendations under the corrective arm. This model could be better enforced and extended to other services provided at the European level. For instance, there has been some discussion about establishing a stabilization capacity in the euro area; in some variants, access to this central fiscal capacity would be conditional on past compliance with rules (IMF 2016b; Arnold and others, 2018).

Box 2. From Guiding Principles to Country-Specific Advice

Implementing the three principles requires tailoring to country circumstances.

In ***advanced economies,*** a *holistic approach* would often imply reducing the number of rules, particularly in Europe. For instance, IMF (2015a) recommends simplifying the European supranational fiscal framework by focusing on only two rules: a fiscal anchor (public debt-to-GDP) and an operational target (an expenditure growth rule linked to debt dynamics). Regarding *flexibility*, countries should carefully balance the benefits and risks of cyclically adjusted balance rules and consider expenditure rules as an alternative when implementation challenges prove acute. In many cases, independent fiscal councils could facilitate *enforcement* procedures, although the effectiveness of such councils depends on a careful design (including sufficient financial and human resources, functional independence, and access to information) and broad political support for fiscal sustainability (Horvath 2017).

In ***emerging markets***, applying the *holistic approach* would often promote greater consistency among rules. Too often existing rules are mutually incompatible and their arbitrary calibration is not based on economic principles. One frequent challenge is to calibrate properly the debt ceiling, which has to strike a sensible balance between containing the risk of debt distress and leaving sufficient space for financing development needs. In commodity exporters the calibration of the fiscal anchor should also take into account future commodity revenues (see Appendix 2). To promote *flexibility*, there is scope for greater reliance on expenditure rules, whose simplicity and good stabilization properties are well-suited to emerging markets. Cyclically adjusted balance rules are less warranted, because pinning down the output gap is elusive in economies more subject to large supply shocks (for example, weather, commodity prices, or disruptions in market access) than to regular and well-defined business cycles. To prevent countries from compressing public investment to comply with the overall expenditure rule, IMF (2018c) proposes to add a cap on current outlays. Finally, *enforcement* would benefit from greater fiscal transparency through a comprehensive, clear, and timely reporting of public finances—an essential precondition for the effective oversight by financial markets and the public.

In ***low-income countries and small states***, a *holistic approach* would help ensure that the fiscal framework is well anchored and includes both a debt rule and adequate operational rule(s). In many cases, fiscal frameworks lack an operational rule and/or rely on an ill-calibrated debt rule whose threshold is too high to guide medium-term fiscal strategies effectively. As macroeconomic stabilization is both harder to achieve (no well-defined business cycle) and less of a concern compared with other objectives of fiscal policy, the rule's *flexibility* would primarily come in the form of well-designed escape clauses, including clauses for natural disasters or other large shocks. In low-income countries, rules specifically aimed at encouraging fiscal stabilization—cyclically adjusted balance or expenditure rules—are often difficult to implement because of the need to access borrowing in bad times, and might even cause collateral damages in terms of weaker incentives for revenue mobilization and public investment. Self-insurance is more likely to be the desirable approach, by saving revenue windfalls (possibly in stabilization funds) and using them to support spending in bad times. This can be achieved through simple revenue split rules (IMF 2018c). Regarding *enforcement*, countries with low capacity would benefit from improving budget management procedures (including planning, execution, and auditing) and data quality to ensure that the annual budget—which the rule is designed to constrain—is an effective instrument to control public finances.

CONCLUSION

58. Theory and evidence suggest that fiscal discretion must be constrained to mitigate the deficit bias. In the fiscal realm, this is generally done with numerical fiscal rules and that is likely to remain the case, as delegation of fiscal instruments to unelected decision makers with a simple mandate is both unfeasible and undesirable.

59. Fiscal rules have often become more complex over the years, raising doubts about their ability to guide policy. Ideally, fiscal rules should be simple, flexible, and enforceable. However, these three properties are difficult to satisfy simultaneously. While earlier rules were simple, they quickly proved too rigid in the face of even mild shocks. The quest for more flexible yet still enforceable rules led to a second generation of rules that are far more sophisticated. However, implementing frameworks comprising multiple, complicated, and potentially conflicting rules has raised questions about the effectiveness of rules-based fiscal policy. These doubts have been compounded by low compliance.

60. Empirical evidence suggests that rules can be effective at tackling the deficit bias provided that they are well-designed. This Note sheds new light on the factors shaping rule effectiveness by carefully taking into account the significant heterogeneity across rules and countries. Rules do not have a universal effect on fiscal performance. While some rules effectively enhance fiscal discipline, others end up being counterproductive. Country experiences show that some key features can greatly enhance the rules' effectiveness, including broad institutional and economic coverage, a design that incentivizes savings in good times, a calibration of the threshold based on economic principles, precise escape clauses, and institutions that enhance fiscal transparency and accountability.

61. The Note proposes three guiding principles for future reforms. These three principles, which broadly apply to all countries, try to combine better simplicity, flexibility, and enforceability, while acknowledging that trade-offs will not and cannot be fully eliminated:

- *Effective fiscal frameworks should be designed and reformed in a holistic manner*. Reforms should ensure internal consistency among a small number of rules with a clear hierarchy between them. The framework should include a fiscal anchor, usually a debt rule, and a very small number of operational rules (one as a default option).

- *Reforms that enhance the flexibility of the framework should take into account potential implementation risks*. There is scope to streamline the design of the features making the rule flexible. This includes a greater reliance on expenditure ceilings and well-defined flexibility provisions.

- *As reputation costs tend to be more effective than financial sanctions, formal enforcement procedures should be reconsidered*. Leveraging reputational and electoral benefits of compliance, notably through enhanced fiscal transparency and independent monitoring has great potential value. More formal mechanisms, like sanctions, often lack credibility.

62. This Note is a first step toward a better understanding of the benefits and implementation challenges of second-generation reforms. The new rules are still very recent and evolving; it is therefore too early to provide a definitive assessment. The objective of this Note is to contribute to the debate and provide directions for future reforms.

APPENDIX 1. PROBLEMS CREATED BY THE COMBINATION OF RULES

Country experiences show that using multiple rules may create various problems:

- *Inconsistency between the rules' ceilings*. The calibration of the operational rule's ceiling may be too loose or too tight to achieve the debt anchor. For instance, a very low public debt ceiling may be inconsistent with a budget balance rule allowing very high deficits (particularly when GDP growth is expected to remain modest in the medium term). Paragraph 34 discusses the inconsistency between the 3 percent deficit rule and the 60 percent debt rule in the European supranational framework.

- *Overlap between rules*. There is overlap when two rules broadly apply to the same fiscal aggregate but constrain it to differing degrees. One rule may, for instance, allow the deficit to increase up to 3 percent of GDP, while another rule may require a balanced budget. When there is overlap, countries have to comply with the most binding rule each period, which may be tricky and suboptimal. It also creates political economy problems because the authorities may be tempted to neglect some rules on the grounds that they already comply with other (less binding) ones. Some forms of overlap are obvious, for instance, when nominal and structural balance rules coexist. Others are more subtle, for instance (i) when an expenditure ceiling is combined with a cyclically-adjusted balance rule (which also implicitly caps spending by limiting it to the amount of cyclically-adjusted revenues), (ii) when national rules transpose supranational rules but with small modifications in design, or (iii) when there are rules on both the overall balance and the change in public debt.

- *Overdetermined system*. Adding too many constraints impairs the ability of the government to achieve its policy objectives, undermines the credibility of the framework, and creates conflicts between the requirements of different rules. Fiscal frameworks constraining separately (part of) revenue, expenditure, and the fiscal balance are not uncommon, although this is clearly undesirable. Some forms of overdetermination may be less apparent—for instance, when rules constrain one part of the budget but the other part is composed of nondiscretionary items that cannot be easily modified. Over-constrained governments may adopt suboptimal policies. There is evidence that, given the difficulty to compress current expenditure, countries may favor capital spending cuts to comply with rules (Cordes and others 2015).

APPENDIX 2. TOWARD A SECOND GENERATION OF RULES FOR COMMODITY EXPORTERS

The appropriate fiscal anchor for commodity exporters is a comprehensive indicator of government wealth that encompasses resource wealth. Resource-rich countries often focus on "net wealth," measured as net financial wealth (financial assets minus gross debt) plus resource wealth—the present value of future resource revenues (Baunsgaard and others 2012). An important challenge is to decide how net wealth should be allocated across generations, given that natural resources are exhaustible and future commodity prices are uncertain.

The calibration of this fiscal anchor has traditionally been based on fiscal sustainability and intergenerational equity considerations. Various models exist to set the appropriate level of net wealth as well as the corresponding ceiling for the operational rule, which can be a rule on the nonresource primary balance (see a review in IMF 2012). The most standard model is the Permanent Income Hypothesis, where intergenerational equity is achieved by preserving government net wealth at its initial level, so that future generations will enjoy a similar amount of wealth as the current generation. Under this approach, governments should spend a constant share of net wealth every year. Because only a fraction of resource revenues is spent, financial savings will increase sufficiently to make up for the depletion of resource wealth. Total net wealth is therefore kept constant, although its composition changes over time: the share of resource wealth will decline, but this decline will be perfectly offset by an increase in net financial wealth.

More recently, there has been a growing interest in risk-based approaches that incorporate the fundamental uncertainty on long-term commodity prices. Uncertainty is a key consideration when calibrating net wealth targets in resource-rich countries. These countries need larger and more durable buffers because economic shocks can be sizable and highly persistent. Structural balance rules or rules based on reference prices can smooth the *short-term* volatility of commodity prices. But these rules are not meant to protect a country against the *long-term* uncertainty arising from large and persistent shocks, such as the 2014–15 collapse in commodity prices.

Precautionary financial buffers should be built to help commodity exporters withstand long-term price uncertainty. There are several ways to compute the level of net financial wealth that countries should maintain as a precautionary buffer—a buffer that could be tapped in bad times to support spending when resource revenues fall short. The size of the buffer depends on the degree of resource dependence, the level of risk the country is facing, and its risk tolerance. For instance, IMF (2012) uses a value-at-risk approach and a model-based approach to estimate the minimum buffer that can absorb tail risks in resource revenue volatility. Specifically, the buffer should be set large enough to ensure with high probability that it is not fully depleted over the forecast horizon and, therefore, expenditure cuts will not be needed. Another method calibrates the amount of financial savings to ensure that investment returns on financial assets cover possible revenue losses and are sufficient to avoid large fiscal adjustment in the event that commodity prices fall (IMF 2015c).

The risk-based approach is slowly gaining ground among policymakers. So far, no commodity exporter explicitly calibrates its net wealth target by using the probabilistic methods described above. Nonetheless, some countries set floors on their sovereign wealth fund balance or reduce withdrawal rates for precautionary reasons. For instance, Kazakhstan revised the framework of its oil reserve fund in 2016 to increase the minimum balance from 20 to 30 percent of GDP. Norway reduced the withdrawal rate from its oil fund in 2017 from 4 to 3 percent of the fund's value in order to reflect the lower expected return from fixed income assets in the fund's portfolio.

The large uncertainty faced by commodity exporters also indicates the importance of carefully and cautiously projecting long-term prices. In practice, two main approaches exist: the long-term commodity price could be set using an automatic formula (moving average of past and futures prices) or by an expert committee. Because they use backward-looking information, automatic formulas may deliver poor forecasts under sudden large shocks. Expert committees, such as the one set up in Chile since 2002, may be better positioned to forecast in a context of high uncertainty. Such committees adopt more flexible and diversified approaches (including model-based forecasts), which may predict changes in long-term resource prices in a more timely and accurate way. The tasks of the committee could be assigned to a fiscal council with legal and operational independence.

APPENDIX 3. CRITERIA FOR NET DEBT RULES IN FISCAL FRAMEWORKS

Net debt is a useful indicator of fiscal sustainability but is usually not well suited for use in debt rules. In most countries, debt rules apply to gross debt. In theory, there is a case for applying these rules to "net debt" because assets can be sold, if necessary, to enable the government to meet financing needs. But, in practice, the degree of asset liquidity is uncertain, and net debt should be used as a complementary fiscal indicator (to assess fiscal sustainability), rather than a substitute for the gross debt rule. Only countries with comprehensive and precise public finance statistics should consider moving their fiscal anchor from a gross to a net debt rule.

Not all assets should be included in the measures of "net debt" used to guide fiscal policy, because some assets cannot be valued and sold easily. Assets should only be included in a measure of "net debt" if they meet four criteria:

- *Control*: the government must be able to sell the assets if necessary (assets of subnational governments and public corporations may be beyond central government control).
- *Liquidity*: the government should be able to sell the assets quickly if needed, without having to offer them at a significant discount (for example, accounts receivable (unpaid bills) should not be included since they may not be easily sold).
- *Fair valuation*: it must be possible to value assets accurately on a regular basis, to ensure that the measure of net debt accurately reflects fiscal sustainability risks.
- *Timely valuation*: it must be possible to update asset valuations within several months at the end of each fiscal year, since measures of net debt will be used in debt rules that are monitored on an annual basis.

Not all countries currently have the statistical capacity to produce balance sheet data necessary to update a measure of net debt. More than three-quarters of advanced economies reported a balance sheet with financial assets to the IMF Government Finance Statistics Yearbook (GFSY) in 2016. However, fewer than one-third of emerging and developing economies were able to report their balance sheets to the GFSY. Of all countries reporting balance sheets, those within the European Union update balance sheets with financial assets on a quarterly basis, along with Canada, the United States, and Turkey, providing timely measures of net debt for fiscal analysis and potential use in fiscal rules. Most other countries compile an annual balance sheet within nine months from the end of each fiscal year, which may not be sufficiently timely for use in rules, although is still useful for fiscal analysis. Therefore, compiling balance sheets is likely to be more challenging for less developed economies due to data constraints (although "net wealth" is a relevant anchor for commodity exporters holding large financial buffers, as discussed in Appendix 2).

APPENDIX 4. COMPARING CYCLICALLY ADJUSTED BALANCE AND EXPENDITURE RULES

Measurement error with the cyclically adjusted balance rule

Cyclically adjusted balances are computed using estimates of the output gap that are subject to revisions. The estimated output gap is used to extract the cyclical component of the nominal fiscal balance. There are many reasons why the output gap may be revised over time, including (i) *technical factors*: statistical filters used to extract the cyclical component give excessive weight to recent observations, leading to revisions as more data become available; (ii) *statistical factors*: revisions to GDP estimates may imply a different output gap ex post; and (iii) *political economy factors*: policymakers may tend to overestimate potential output in real time (and underestimate the output gap) by viewing initially strong growth performance as permanent and weak growth performance as temporary, but may need to change their assessment as more data become available.

Analysis of the euro area over 2003–16 indicates that the output gap was *underestimated* in real time by 1.3 percentage points on average. This analysis is carried out by comparing ex post estimates of the output gap with real-time estimates contained in the stability programs prepared annually by euro area countries for the European Commission. Kempkes (2012); Tereanu, Tuladhar, and Simone (2014); and Eyraud and Wu (2015) find similar results.

This leads to an *overestimation* of the cyclically adjusted balance in real time, all else being equal. When the output gap is underestimated, the cyclical component of the nominal balance is underestimated and the cyclically adjusted balance (which is equal to the nominal balance minus its cyclical component) is, by construction, overestimated. Assuming an elasticity of revenue to output of 1, an elasticity of expenditure to output of 0, and an average expenditure ratio of 45 percent of GDP in European countries over the period, the underestimation of the output gap by 1.3 percentage points implies that the cyclically adjusted balance was overestimated by 0.5 percentage points of potential GDP on average, all else being equal (see Escolano 2010 for the formula relating the output gap and the cyclically adjusted balance). For policy purposes, a cyclically adjusted balance rule relying on real-time estimates would tend to allow excessively large deficits, namely deficits exceeding their targeted values ex post by about 0.5 percentage point per year. Without a correction mechanism, relying on this rule could result in a permanent drift of public debt.

Expenditure growth rules as substitutes for cyclically adjusted balance rules?

Certain expenditure rules are used as substitutes for cyclically adjusted balance rules. For instance, in Europe, the preventive arm of the Stability and Growth Pact relies on two alternative approaches to assess compliance with the structural balance objectives (called "medium-term objectives"): one based on an expenditure growth rule (the expenditure benchmark) and the other

one based on a cyclically adjusted balance rule (European Commission 2017). In recent years, the role of the expenditure benchmark has progressively gained prominence in the analysis of the European Commission, with less emphasis on the cyclically adjusted balance rule.

There is indeed a broad equivalence between a rule that sets a ceiling on expenditure growth equal to trend GDP and a cyclically adjusted balance rule. The intuition is that, if the government has achieved a fiscal position in structural terms that complies with the cyclically adjusted balance rule, it can maintain it by simply letting expenditure grow in line with trend GDP (provided that there is no new revenue measure). Therefore, compliance with a rule on expenditure growth can be sufficient to ensure compliance with a cyclically adjusted budget balance rule.[19] The fact that some expenditure rules take into account the revenue side, like the European expenditure benchmark (which caps the growth rate of expenditure net of new revenue measures) strengthens further the equivalence between the two rules.

The advantage of the expenditure rule is that it allows automatic stabilizers to operate while being more transparent and more resilient to measurement errors. Expenditure rules are easier to understand and communicate to the public. When they do not take into account the revenue side (like the expenditure benchmark does), they can still trigger a required fiscal consolidation consistent with fiscal sustainability provided that they are accompanied by a debt brake mechanism. In addition, the use of potential (or trend) growth—rather than the level of potential GDP or the output gap—makes expenditure rules more robust to measurement errors, as revisions to potential growth tend to be smaller (Balassone and Kumar 2007). Andrle and others (2015) illustrate this point by comparing expenditure growth rules and cyclically adjusted balance rules through counterfactual simulations starting in the early 2000s in France and Italy. Their simulations use both real-time and ex post data for the output gap and potential growth. They show that the difference in debt path between real-time and ex post outcomes under the expenditure rule would have been significantly smaller than for the cyclically adjusted balance rule.

One downside of the expenditure growth rule is that, like any rule in first difference, it is more sensitive to the initial conditions. If the initial level of expenditure is not consistent with fiscal sustainability, having expenditure growth equal trend GDP would put public finances on an unsustainable path. The European expenditure benchmark addresses this issue by calibrating and imposing a wedge between expenditure growth and trend GDP growth, but this complicates the rule formula (European Commission 2017). In general, a simple expenditure growth rule related to trend GDP should be applied only when the initial fiscal position is deemed appropriate.

[19] Assuming the elasticity of cyclically adjusted revenue to trend GDP is 1 (with a ratio of cyclically adjusted revenue to trend GDP equal to φ) and that of spending is 0, then the cyclically adjusted balance can be written as $CAB = (CAR - CAE)/Ys = \varphi - E/Ys$, where CAR, CAE, E, and Ys denote cyclically adjusted revenue, cyclically adjusted expenditure, actual expenditure, and trend GDP, respectively. The equivalence can be seen by differentiating CAB: $\Delta CAB = 0 \Leftrightarrow dE/E = dYs/Ys$ (where $\Delta CAB = CAB_t - CAB_{t-1}$; dE/E denotes expenditure growth; and dYs/Ys trend GDP growth).

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