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Anchor Me
The Benefits and Challenges of Fiscal Responsibility

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Anchor Me: The Benefits and Challenges of Fiscal Responsibility

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Abstract

This paper discusses the benefits and challenges of implementing a rule-based fiscal responsibility framework, using the Philippines as a case study. It estimates structural measures of the fiscal stance over the period 1980–2016 and applies a stochastic simulation model to determine the optimal set of fiscal rules. The empirical analysis indicates that discretionary fiscal policy has been procyclical, and the degree of procyclicality has increased in recent years. While the national government's non-binding ceiling on the overall budget deficit is helpful, it does not constitute an appropriate operational target to guide fiscal policy over the economic cycle and necessarily ensure that the fiscal stance meets the government's intertemporal budget constraint. To this end, using stochastic simulations, this paper makes the case for a well-designed fiscal responsibility law that enshrines explicit fiscal rules designed for countercyclical policy and long-term debt sustainability, and an independent fiscal council to improve accountability and transparency.

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I. INTRODUCTION

A rule-based fiscal framework can improve policy credibility by building adequate fiscal against tail risks and make the conduct of fiscal policy transparent. Following a long period of fiscal consolidation in the aftermath of the Asian financial crisis, the Philippines has pursued a series of budgetary reforms and guided its fiscal policy with a non-binding ceiling on the national government budget deficit since 2010. Although this approach has served the country well in terms of macroeconomic stabilization, the fiscal policy framework can be further strengthened by adopting a rule-based regime designed to avoid procyclical behavior, ensure sufficient fiscal buffers against tail risks, make the conduct of fiscal policy accountable, transparent and predictable, keep the cost of borrowing low, and thereby promote long-term growth and debt sustainability. There is ample empirical evidence indicating that countries with well-designed and binding fiscal rules tend to have stronger fiscal performance and better access to sources of funding than those without fiscal rules (Debrun and others, 2008; IMF, 2009; Schaechter and others, 2012; IMF, 2013).

Discretionary fiscal policy in the Philippines is found to be procyclical over the period from 1980 to 2016.[2] Fiscal stance is a measure of discretionary changes in budgetary policy, but there is no universal agreement on its measurement. The overall budget balance is a commonly used indicator, but it may give a misleading impression of the underlying fiscal position, as it moves in response to both discretionary policy actions as well as the economic cycle. A better approach is to decompose the overall fiscal balance into cyclical and structural components and capture the discretionary part of fiscal policy and the true extent of fiscal impulse. This paper estimates structural fiscal balances by directly correcting the actual budget balance and scaling by potential GDP, instead of actual GDP, to better isolate the impact of economic cycles. This approach helps trace the evolution of discretionary fiscal policy as the variation not explained by the impact of the business cycle over a long span of time, and thereby identify whether fiscal policy amplifies or counteracts business cycle fluctuations. When fiscal policy is procyclical, the cyclically-adjusted primary budget balance (CAPB) deteriorates during economic expansions and improves during downturns. In the case of the Philippines, discretionary fiscal policy is found to be procyclical during the period 1980–2016, and the degree of procyclicality has increased in recent years.[3]

The Philippines would benefit from a fiscal responsibility law (FRL) enshrining explicit fiscal rules designed for countercyclical policy and debt sustainability. There are common threads in assessing the appropriateness of fiscal policy and how it should be optimized for debt sustainability and aggregate demand management. The national government has undertaken a series of fiscal reforms and imposed a non-binding ceiling on the overall budget deficit, but

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[2] The dataset used in this paper is consisted of annual observations covering the general government and obtained from various sources including the Department of Finance, the Bangko Sentral ng Pilipinas, the World Bank's *World Development Indicators* database, and the IMF's *World Economic Outlook* database.

[3] This is in line with the extensive literature showing that developing countries tend to exhibit procyclicality in fiscal policy contrary to countercyclical or neutral fiscal policy in advanced economies (Gavin and Perotti, 1997; Talvi and Vegh, 2005; Alesina, Campante, and Tabellini, 2008; Iletzki and Vegh; 2008).
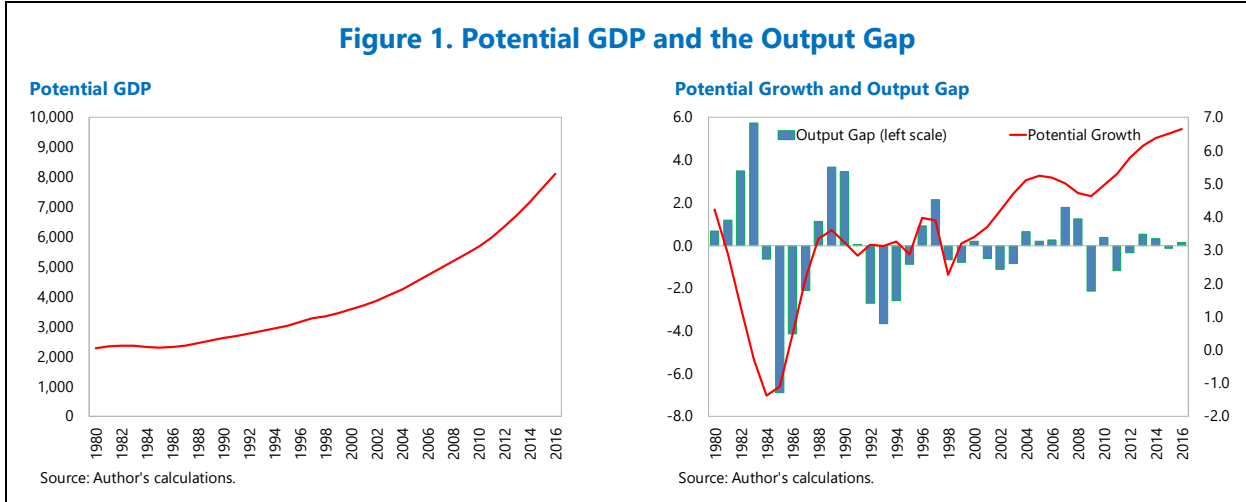
these steps do not constitute an appropriate operational target to guide fiscal policy over the economic cycle, reduce spending volatility in the absence of a binding constraint, and necessarily ensure that the fiscal stance meets the government's intertemporal budget constraint. Accordingly, in this paper, I calibrate a combination of fiscal rules for the national government to anchor debt sustainability and formulate countercyclical fiscal policy. The stochastic simulation results indicate that the optimal debt anchor is 45 percent of GDP and that a structural primary deficit target of 2 percent of potential GDP for the national government would provide appropriate operational guidance under the debt target. Also, adopting an expenditure rule—allowing total spending (excluding targeted social assistance) to grow with nominal potential GDP growth—would bring additional stabilization properties and help address the procyclicality of fiscal policy. Finally, an independent fiscal council with a mandate to produce unbiased projections and evaluate compliance with fiscal rules would enhance transparency and accountability of fiscal operations and buttress credibility of the rule-based fiscal policy framework.

The remainder of this paper is structured as follows. Section II describes the methodology used in this paper to adjust fiscal variables for cyclical fluctuations, and presents the evolution of the fiscal policy stance in the Philippines. Section III provides an overview of international experience with fiscal rules, while Section IV documents the advantages of independent fiscal councils. Section V explain the methodology for calibrating fiscal rules and presents the findings of a stochastic simulation exercise for the Philippines. Section VI concludes with a summary of specific recommendations for a reformed fiscal policy framework.

II. Cyclical Adjustment of Fiscal Balances

Obtaining reliable measures of potential output is the first step in extracting cyclically-adjusted indicators of the fiscal stance. Emergence of a positive output gap (i.e., growing faster than the economy's potential) tends to result in a cyclical improvement in the budget balance, while output growth below potential worsens it. Therefore, estimating the impact of cyclical economic fluctuations is necessary to separate the contribution of discretionary fiscal policy actions, which in turn requires potential output defined as the level of output consistent with stable inflation. Since potential output is an unobservable latent variable, its estimation is subject to uncertainty. There are several methodologies, such as the production function approach, univariate methods and multivariate filters, to estimate potential output and the output gap. This paper follows Guajardo and Mano (2015) who applied various techniques to estimate potential GDP and the output gap in the Philippines and found that alternative measures of potential output—based on univariate filters such as those proposed by Hodrick and Prescott (1997), Baxter and King (1999) and Christiano and Fitzgerald (2003), the multivariate filter of Blagrave and others (2015), and the production function approach—yield similar results. Accordingly, potential output growth, measured by the Hodrick-Prescott (HP) filter, averaged at 3.6 percent over the period 1980–2016, accelerating from 3.6 percent during 1980–1999 to 5.2

percent between 2000 and 2016 (Figure 1).[4] Potential growth rate is currently estimated to be 6.5 percent, which implies that the economy is already operating close to its potential with no significant output gap.

Figure 1. Potential GDP and the Output Gap

Potential GDP

Potential Growth and Output Gap

Source: Author's calculations.

Source: Author's calculations.

With the estimated measures of potential output and the output gap, I construct a corresponding measure of cyclically-adjusted fiscal balances. There is no one-size-fits-all approach in the literature for cyclical decomposition of fiscal balances, as the appropriate adjustment needs to take several country-specific factors into account, including data availability, the fiscal regime, and the economic structure of the country. In this paper, I follow the methodology outlined by Hagemann (1999) and Fedelino, Ivanova, and Horton (2009) and defines the cyclically-adjusted budget balance (CAB) as a share of potential GDP as:

$$CAB = \left[\sum_{i=1}^{k} T_i^{CA} - E^{CA} + X\right]/Y^*$$

where Y^* is the level of potential output, X is non-tax revenues, E^{CA} is the cyclically-adjusted government expenditures, and T_i^{CA} represents the cyclically-adjusted tax revenues from the i-th category (i.e., corporate and personal income taxes, sales tax, excises and customs duties). To implement the adjustment, I use the elasticities of revenue and expenditure with respect to the output gap, which are denoted ε_T and ε_E. Accordingly, T_i^{CA} and E^{CA} are defined as:

$$T_i^{CA} = T_i(Y^*/Y)^{\varepsilon_T}$$

$$E^{CA} = E(Y^*/Y)^{\varepsilon_E}$$

The measurement of the underlying fiscal stance can be refined further by excluding interest payments. Since interest payments and one-off (temporary) fiscal operations (such as an exceptional dividend from a public enterprise on the revenue side and bank recapitalization

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[4] The HP filter separates the GDP series into trend and cyclical components, using a smoothing parameter of 6.25 on annual data.

on the expenditure side) are not directly under the control of policymakers and may not be necessarily correlated with cyclical output fluctuations in the Philippines, these variables are removed to calculate the CAPB as a share of potential GDP in the following form:

$$CAPB = \left[\sum_{i=1}^{4} T_i^{CA} - (E - I_p)^{CA} + (X - I_r - G)\right]/Y^*$$

where I_p and I_r denote interest payments and interest receipts, respectively, and G represents foreign grants. In this analysis, I perform cyclical adjustment on total tax revenue and expenditure by using the aggregate elasticities with respect to the output gap of revenue (assumed to be 1) and expenditure (assumed to be 0).[5]

Fiscal impulse, measured as the change in the CAPB, helps identify the extent of cyclicality in fiscal policy. The cyclical component of the primary budget balance represents automatic stabilizers; the structural component is a measure of discretionary fiscal policy. Accordingly, fiscal impulse is measured as the change in the CAPB scaled by potential GDP, with a negative (positive) number indicating a fiscal stimulus (withdrawal of fiscal stimulus). This allows to identify whether fiscal policy amplifies or counteracts business cycle fluctuations. In other words, fiscal policy cyclicality refers to the direction in which the government's revenues and expenditures move in relation to output. The fiscal stance is considered to be procyclical if it moves in tandem with the business cycle, i.e., expansionary during economic booms and contractionary during economic recessions. Conversely, a countercyclical policy implies a fiscal stance moving against the business cycle i.e., contractionary during booms and expansionary during recessions. The extent to which fiscal policy is procyclical or countercyclical can be estimated using a standard fiscal reaction function that links the CAPB to the output gap and the lagged debt stock:

$$CAPB_t = \alpha + \beta CAPB_{t-1} + \delta OG_t + \theta D_{t-1} + \varepsilon_t$$

in which OG and D denote the output gap and the (lagged) ratio of national government debt to GDP, respectively. In the case of the Philippines, the estimation results, presented in Table 1, show that the coefficient β on the lagged dependent variable is positive, indicating a high degree of persistence in fiscal policy. The coefficient δ on the output gap is found to be negative, suggesting that discretionary fiscal policy was mildly procyclical over the period 1980–2016. This effect, however, does not appear to be statistically significant. On the other hand, the coefficient θ on the (lagged) debt variable is estimated to have a positive sign, which means that the necessary condition of fiscal sustainability is satisfied during the sample period.[6]

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[5] These assumptions may appear to be strict, but a disaggregated approach is likely to yield less accurate estimates due to data limitations and structural changes. The Philippines' tax system has changed significantly in recent years; and expenditure automatic stabilizers are negligible as in many other developing countries.

[6] According to the model-based fiscal sustainability approach proposed by Bohn (1998), a positive coefficient on the debt variable is sufficient to establish that the fiscal policy stance takes into account the government's intertemporal budget constraint and, therefore, long-run fiscal solvency concerns.

Table 1. Fiscal Reaction Function Estimates

| Parameter	Coefficient	Standard Error	t-Statistic	P-value
CAPB (t-1)	0.59	0.11	5.27	0.00
Output gap	-0.03	0.08	-0.32	0.75
Debt	0.03	0.01	1.78	0.09
Constant	-0.30	0.65	-0.46	0.65
R-Squared	0.67			
Adjusted R-Squared	0.64			
Source: Author's calculations.				

A countercyclical fiscal policy can be useful in building buffers during periods of economic expansion and stimulating the economy during a prolonged recession. The Philippines implemented a countercyclical fiscal policy during 2009–2010 to mitigate the impact of the global financial crisis by reducing the corporate tax rate and increasing infrastructure spending. More recently, however, the fiscal stance, as measured by the change in the CAPB, moved by 1.2 percentage points of potential GDP on a cumulative basis during 2015–2016, implying a significant fiscal impulse during a period of strong economic growth (Figure 2). Procyclicality of fiscal policy has important implications for macroeconomic stability, as it exacerbates business cycle fluctuations. Furthermore, procyclical bias in fiscal policy during upswings in economic activity may undermine public finances over time, since budget deficits and debt accumulation during economic downturns are generally not offset during periods of economic expansion.

Figure 2. Fiscal Stance and the State of the Economy

Source: Author's calculations.

Source: Author's calculations.
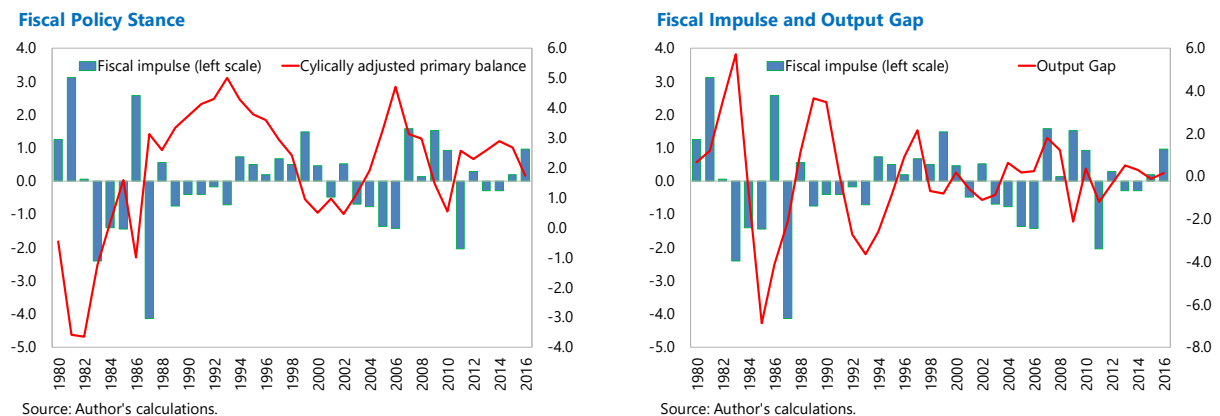
III. INTERNATIONAL EXPERIENCE WITH FISCAL RULES

More than 90 countries across the world are now operating under fiscal rules, compared with only five in 1990. Many countries have put in place permanent constraints on key fiscal aggregates through numerical limits on budget deficits, debt, expenditures, or revenue (Figure 3). These numerical fiscal rules, supported by procedural rules guiding the budgetary process, are designed to anchor policymaking, contain pressures to overspend, and ensure public

debt sustainability (Koptis and Symansky, 1998). The optimal design of a rule-based fiscal framework varies from one country to another, depending on fiscal policy objectives and institutional capabilities. In this context, FRLs have become popular as permanent institutional arrangements to enhance credibility, predictability, and transparency of fiscal policy. FRLs combine numerical rules, such as ceilings on fiscal deficits and public debt, to impose fiscal discipline with procedural rules to strengthen fiscal transparency and budget management. Thereby, in contrast to stand-alone fiscal rules, FRLs aim to provide a comprehensive framework to govern fiscal policy in a single piece of legislation.

Figure 3. Fiscal Rules Around the World
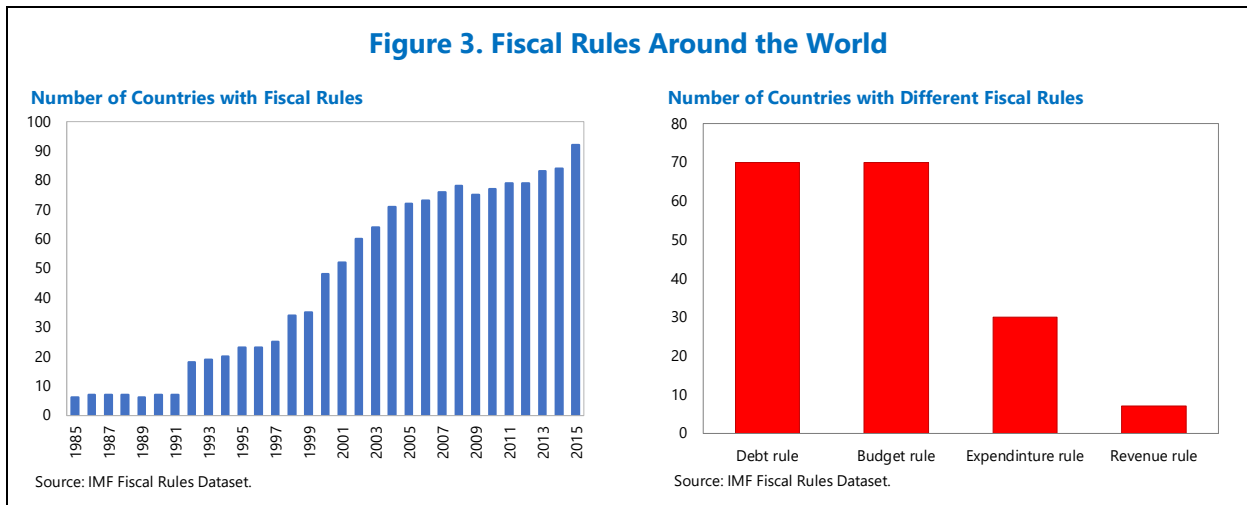
Different fiscal rules trade off the extent of debt stabilization with the degree of countercyclical properties. Operational fiscal rules differ according to the type of budgetary aggregate that they seek to constrain, and have different advantages and drawbacks (Table 2). Accordingly, the design of a rule-based fiscal policy framework should address the need for short-term economic stabilization and ensure fiscal sustainability over the long term.

- **Debt rules**, such as a ceiling on the debt-to-GDP ratio or a debt brake mechanism, safeguard fiscal solvency by linking the fiscal stance to debt sustainability over the medium term. However, debt rules are not typically effective as operational fiscal rules, as policy changes impact debt dynamics with a lag beyond the annual budget horizon, and do not have desirable countercyclical properties to stabilize macroeconomic fluctuations.

- **Budget balance rules**, such as a ceiling on the overall budget deficit, are relatively easy to monitor and implement and can support debt sustainability. However, if specified in nominal terms, budget balance rules do not have macroeconomic stabilization properties and tend to lead to procyclical fiscal policy. Structural budget balance rules (such as the CAPB), on the other hand, account for economic shocks and allow automatic stabilizers to operate. While these features augment the economic stabilization role of fiscal policy, inherent uncertainties in estimating the output gap make structural balance rules difficult to monitor and communicate.

- **Expenditure rules**, such as a ceiling on nominal expenditure growth or as a percent of GDP, are operationally simple and provide clear guidance on how to adjust the fiscal stance over time.[7] While expenditure rules provide macroeconomic stabilization properties, they require a reliable medium-term budget framework to avoid the built-up of large deficits and deterioration in the net asset position due to persistently lower revenue generation.

- **Revenue rules**, such as a floor or ceiling on revenues, seeks to increase revenue collection or avert an excessive tax burden. Revenue rules have no direct link to debt sustainability and would result in a procyclical fiscal policy, if there is no accompanying rule on expenditure growth or a ceiling on the general government budget deficit.

Table 2. Properties of Different Types of Fiscal Rules 1/

| | Objectives | | |
Type of fiscal rule	Debt sustainability	Economic stabilization	Government size
Overall balance	++	-	0
Primary balance	+	-	0
Cyclically adjusted balance	++	++	0
Balanced budget over the cycle	++	+++	0
Public debt-to-GDP ratio	+++	-	-
Expenditure	+	++	++
Revenue			
Revenue ceilings	-	-	++
Revenue floors	+	+	-
Limits on revenue windfalls	+	++	++

Source: IMF, 2009, "Fiscal Rules: Achnoring Expectations for Sustainable Public Finances."

1/ Positive signs (+) indicate stronger property, negative signs (-) indicate weaker property, zeros (0) indicate neutral property with regard to objective.

While a single rule offers simplicity, many countries use a combination of different fiscal rules to address specific aspects for fiscal policy. As every specific fiscal rule has advantages as well as weaknesses, it is a common practice across the world to bring together the key elements of various fiscal rules in a fiscal responsibility framework. About 80 percent of the countries implementing rule-based fiscal policy use a combination of two or more fiscal rules—aiming to provide a medium-term anchor for fiscal policy and one (or multiple) operational target(s) on key fiscal aggregates. For example, a budget balance rule combined with a debt rule would provide a link to debt sustainability, while guiding policymakers in short-term operational decisions. However, an expenditure rule, accompanied by a combination of a budget balance

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[7] Although some countries adopt "golden rules" excluding investment spending, this tends to complicate the implementation of fiscal rules and weaken fiscal sustainability, as it creates an incentive for inefficient investments and opportunistic reclassification of current into capital expenditure, and leads to higher current spending associated with maintenance of a higher level of public capital stock (IMF, 2014).

rule and a debt rule, would provide effective operational guidance for fiscal policymaking and anchor debt sustainability to an appropriate long-term target.

Comprehensive institutional coverage makes fiscal rules more transparent and accountable. In countries with a federal government (or large subnational governments), it is necessary to look beyond the central government to the fiscal positions of subnational entities. Furthermore, autonomous and semi-autonomous institutions, extra-budgetary funds, and state-owned enterprises (SOEs) may have extensive quasi-fiscal operations with a significant amount of contingent liabilities.[8] Therefore, as the national government is often forced to cover the losses and obligations of subnational governments and other public-sector institutions, the coverage of fiscal rules needs be comprehensive to avoid the possibility of undermining the FRL through off-budget transactions. Similarly, it is not advisable to exclude public sector investment from the coverage of fiscal rules, as it would create an incentive for inefficient investments and opportunistic reclassification of current into capital expenditure.

Escape clauses provide flexibility in exceptional circumstances, without undermining the integrity of fiscal rules. Rule-based fiscal responsibility frameworks need to balance credibility and flexibility in responding to developments outside the direct control of policymakers. To this end, robust FRLs have well-defined escape clauses allowing for temporary deviations from the fiscal rules according to: (i) a limited number of exceptional circumstances such as natural disasters and severe economic downturns; (ii) clear guidelines on the interpretation and determination of events; and (iii) an unambiguous transition path to the fiscal rules and the regime that applies in the interim period.[9]
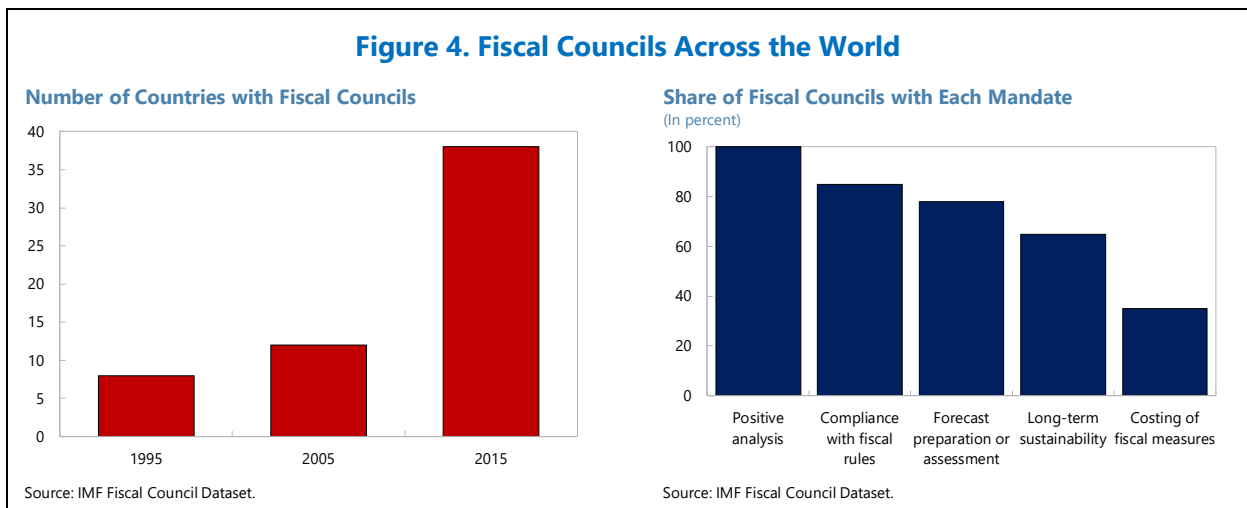
Enforcement and automatic correction mechanisms are critical to the success of rule-based fiscal governance. The success of fiscal rules in guiding policymakers as well as shaping expectations in general depends on predetermined provisions for dealing with devaluations from the fiscal rules. Empirical evidence indicates that fiscal rules with no effective enforcement mechanism result in worse fiscal outcomes than fiscal rules with well-defined enforcement directives (Debrun and others, 2008). These enforcement sanctions in case of deviations from the fiscal rules generally involve reputational costs (i.e., public report to parliament) and commitment to take corrective action. Accordingly, FRLs should clearly specify automatic correction mechanisms to offset deviations from the fiscal rules over a certain period of time in order to maintain credibility of the fiscal rules and avoid a systematic debt accumulation.

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[8] A contingent liability is an obligation that does not arise unless a particular event occurs. Some contingent liabilities are explicitly recorded as legal claims and guarantee agreements, while others are implicit, such as the government's implicit support to SOEs and public-private partnerships (PPPs). Some contingent liabilities are quantifiable (i.e., litigation claims), while others are not quantifiable until they turn into actual liabilities.

[9] Budina, Kinda, Schaechter, and Weber (2012) provide a detailed account of escape clauses across all countries with a rule-based fiscal policy framework.

IV.   ADVANTAGES OF FISCAL COUNCILS

Independent fiscal councils have become an important institution to promote a "culture of stability" and support the implementation of fiscal rules. The number of countries with fiscal councils increased to 38 as of end-2015 from 12 a decade earlier (Figure 4). Although most of established fiscal councils are in advanced economies, there is growing interest in developing countries—ranging from Chile to South Africa. While governments as elected representatives maintain discretion in setting fiscal priorities and selecting appropriate instruments, fiscal councils are established as a nonpartisan agency to promote sustainable public finances through greater accountability and transparency and a more-informed public debate. With a mandate to furnish unbiased macroeconomic and budgetary projections and evaluate ex ante and ex post compliance with the fiscal rules, an independent fiscal council provides objective assessments of the appropriateness of fiscal policies and enhances the effectiveness of fiscal rules (Debrun, Hauner, and Kumar, 2009). Empirical evidence based on cross-country analyses and country-specific case studies suggests that independent fiscal councils are effective in improving fiscal outcomes in advanced as well as emerging market economies (Hageman, 2011; IMF, 2013).

Figure 4. Fiscal Councils Across the World

Number of Countries with Fiscal Councils

Source: IMF Fiscal Council Dataset.

Share of Fiscal Councils with Each Mandate
(In percent)

Source: IMF Fiscal Council Dataset.

The establishment of an independent fiscal council, however, does not by itself contribute to stronger fiscal performance. Using a sample of 58 advanced and developing countries over the period 1990-2011, Debrun and Kinda (2014) find that successful fiscal councils have unambiguous legal independence and adequate human resources to analyze fiscal measures and monitor adherence to numerical and procedural fiscal rules. Fiscal councils also have a mandate to analyze the efficiency of public expenditure in some counties (such as Korea and Slovenia) and to foster coordination among different spheres of the general government in other countries (such as Austria and Portugal).10 Hence, while the mandate and structures of independent fiscal policy councils depend on country-specific circumstances, there are key features shared by successful fiscal councils: (i) professionalism and political independence; (ii) exclusive focus on

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[10] IMF (2013) provides a detailed assessment of examples of fiscal council mandates.

fiscal policy and debt sustainability; (iii) objectivity and transparency in fiscal policy analysis with unfettered access to information; and (iv) clearly defined institutional mandate.

V. CALIBRATING FISCAL RULES FOR THE PHILIPPINES

Since the objective is to anchor the government's core fiscal operations, this exercise focuses on the national government using unconsolidated data. In most countries, debt rules are set in gross rather than net terms. First, it is challenging to determine which government assets are truly liquid, especially in times of financial stress. Second, net debt may conceal the build-up of fiscal risks by masking important financing operations (such as bank recapitalization and loans to SOEs) that would be accounted for in gross debt. Third, the concept of net government debt is not as transparent as the definition of gross debt and more difficult to communicate to the public. Although a broader coverage of fiscal activities—such as the nonfinancial public sector—would be more appropriate in assessing and adopting fiscal rules, limitations on the availability of detailed fiscal accounts across all layers of government do not allow calibration of fiscal rules at a broader level in the case of the Philippines. Besides the national government is responsible for the great majority of fiscal activities, with the rest of the public sector (particularly social security institutions and local governments) generating substantial primary surpluses. Therefore, since the objective is to anchor the government's core fiscal operations, this exercise focuses on the national government using unconsolidated data.

Figure 5. Layers of Government Debt
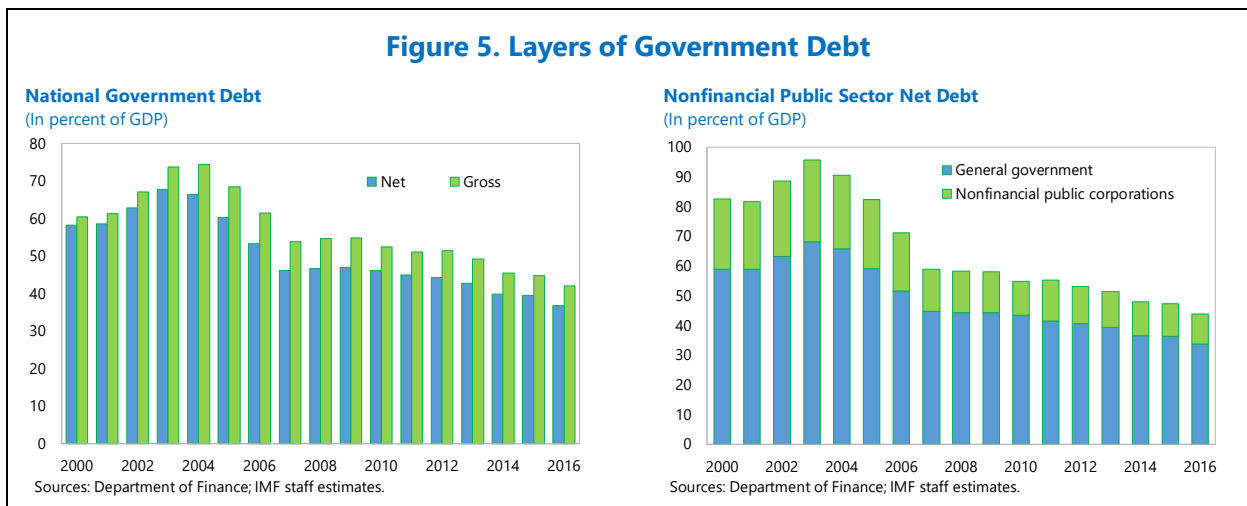
The Philippines' gross national government debt declined to 42.1 percent of GDP in 2016 from the peak of 74.4 percent in 2004.** Gross debt consists of all government liabilities that are debt instruments, while net debt is calculated as gross debt *minus* financial assets corresponding to debt instruments, which are defined as a financial claim requiring payments of interest and/or principal at a date, or dates, in the future. In the Philippines, the Bond Sinking Fund (BSF) holds government debt amounting to 5.2 percent of GDP in 2016, hence lowering the national government's debt stock from 42 percent of GDP on a gross basis to 36.8 percent of GDP in net terms (Figure 5). Furthermore, local governments and social security institutions run large surpluses and hold substantial amounts of national government debt. As a result, for the general

government, including debt holdings of local governments and social security institutions, the consolidated net debt-to-GDP ratio amounted to 33.8 percent of GDP as of end-2016. On the other hand, including nonfinancial public enterprises, the consolidated nonfinancial public-sector debt stock stood at 44.1 percent of GDP in 2016.

There is a large and growing literature on the "safe" level of government debt, but thresholds vary from one country to another and over time.[11] Even if a debt threshold is estimated with reasonable accuracy, it should not be treated as a long-term debt anchor, as it could result in unsustainable debt dynamics during adverse shocks. This calls for imposing a sufficient "safety margin" between the debt target and the "maximum limit" for government debt, beyond which sustainability would be questionable and the government may not be able to lower or stabilize the debt ratio through the regular conduct of fiscal policy (Ostry and others, 2010). In line with the commonly-used debt threshold range of 50 to 70 percent of GDP for emerging markets and developing countries, I assume that the appropriate "maximum debt limit" for the Philippines is 60 percent of GDP and estimate a debt anchor that would keep government debt below this "maximum limit" with high probability even when adverse shocks occur. This is also consistent with recent empirical studies identifying the level of government debt beyond which it has a negative effect on economic growth, even taking into account the positive impact of public investment on growth (Checherita-Westphal, Hallett, and Rother, 2014; Fournier, 2016).

Projections of future government debt are subject to a plethora of policy uncertainties and exogenous shocks. First, there is policy uncertainty regarding the future development of taxation and government spending. Second, even if one assumes no changes in tax and expenditure policies, there is economic uncertainty, which must be taken into account. The growth rate of the economy, demographic changes as well as the interest rate at which the government can borrow determine the macro-financial environment that directly or indirectly affects the state of public finances. Since this economic environment is subject to exogenous shocks, assessing the safe level of government debt requires an estimation of the joint probability distribution of economic fundamentals and the level of government debt.

Using the joint distribution of macroeconomic variables, I perform multiple simulations to estimate the "safety margin" in debt dynamics. The "safe" level of gross debt-to-GDP ratio for the national government is estimated using the stochastic simulation methodology proposed by Baum and others (2018). Annual data covering the period 1980-2016 are used to estimate the distribution of variables affecting the evolution of government debt. Each simulation generates a path for macroeconomic variables over the projection horizon, during which the variables are

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[11] Eberthardt and Presbitero (2015) and IMF (2016) provide comprehensive surveys of empirical and theoretical research in this area.

subject to shocks in each period.[12] The multivariate normal distribution of a k-dimensional vector of macroeconomic variables can be written as:

$x \sim N_k(\mu, \Sigma)$

with the k-dimensional mean vector

$\mu = (E[X_1], E[X_2], \dots, E[X_k])$

and *k x k* covariance matrix

$\Sigma = \left(cov\left(X_i, X_j \right) \right)$, for all *i=1,2, ..., k; j=1,2, ...,k*

Subsequently, medium-term debt trajectories consistent with each simulated path of macroeconomic variables are attained from the system of simultaneous equations formed by the debt accumulation equation (i.e., government budget constraint) and a fiscal reaction function (FRF) estimated over the past in which the level of the primary balance responds to the level of debt and realizations of macroeconomic variables.[13] A debt anchor for the Philippines needs to be sufficiently low to protect the country against shocks, including natural disasters and contingent liabilities.[14] Furthermore, given the low level of tax revenue mobilization (relative to peers and its own potential), the Philippines could also experience a greater sensitivity of macro-financial conditions to public debt sustainability at higher levels of indebtedness.

Stochastic simulations indicate that the optimal debt anchor for the national government in the Philippines is 45 percent of GDP. After setting the "maximum limit" on national government gross debt at 60 percent of GDP and given the country's macroeconomic and fiscal performance over the period 1980–2016, the simulation analysis of future debt trajectories shows that gross national government debt must remain below 45 percent of GDP in the long term, which is equivalent to a general government net debt of about 35 percent of GDP. This "safety margin" of 15 percent of GDP—difference between the maximum debt limit of 60 percent of and the debt target of 45 percent—would ensure that the "maximum limit" is not breached with a probability of 5 percent over the medium-term horizon (Figure 6).[15] In other words, I consider

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[12] Macroeconomic shocks are drawn from symmetric normal distributions, although the empirical evidence suggest that shocks can be skewed to the downside (Escolano and Gaspar, 2016). The impact of shocks on debt paths, however, depends on the initial level of debt. For example, an adverse shock to growth and/or interest rates will increase debt by more when the initial debt level is higher.

[13] The results remain broadly in line with the fiscal response estimated by the FRF for a panel of 26 large emerging market economies including the Philippines.

[14] According to a recent study, a country is likely to experience the realization of large contingent liabilities every twenty years and the average fiscal cost of contingent liabilities is around 10 percent of GDP. Accordingly, this exercise assumes a realization of contingent liabilities amounting to 7 percent of GDP over the medium term.

[15] Fan charts show capture uncertainty surrounding the baseline projection from the 5th to 95th percentile of the distribution, with each shade of color representing a 5 percent level of likelihood.

45 percent of GDP as the "safe" level of gross debt that the national government can maintain without experiencing fiscal distress over the medium term.[16] Therefore, since the current level of gross national government debt (42 percent of GDP) is just below the estimated debt anchor (45 percent of GDP), the Philippines has some fiscal space to increase public investment, without endangering debt sustainability, as long as its pace is consistent with tax revenue efforts and the economy's absorption capacity to avoid the risk of overheating.

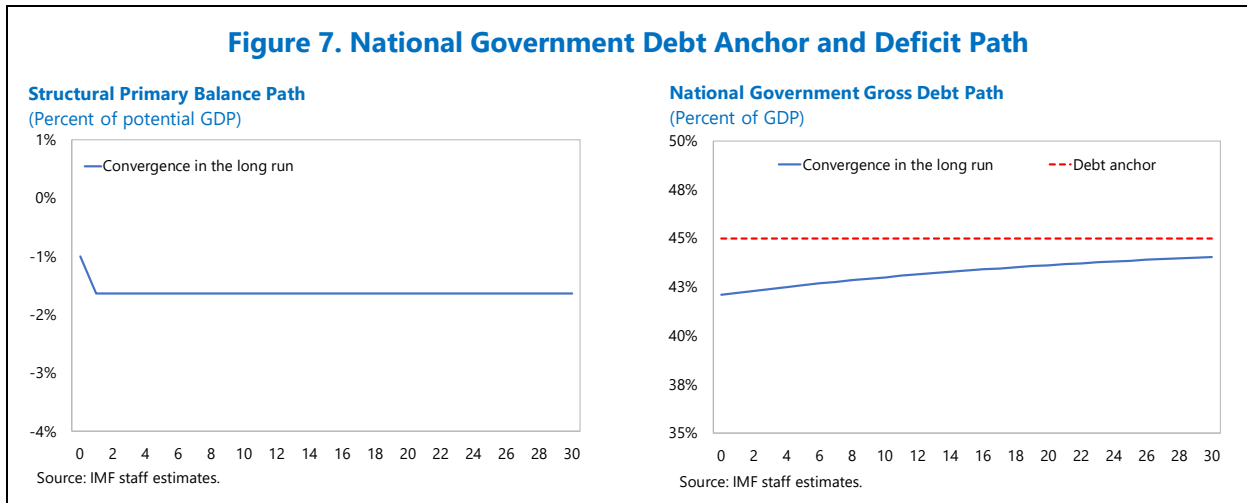**Figure 6. National Government Gross Debt Anchor Simulations**
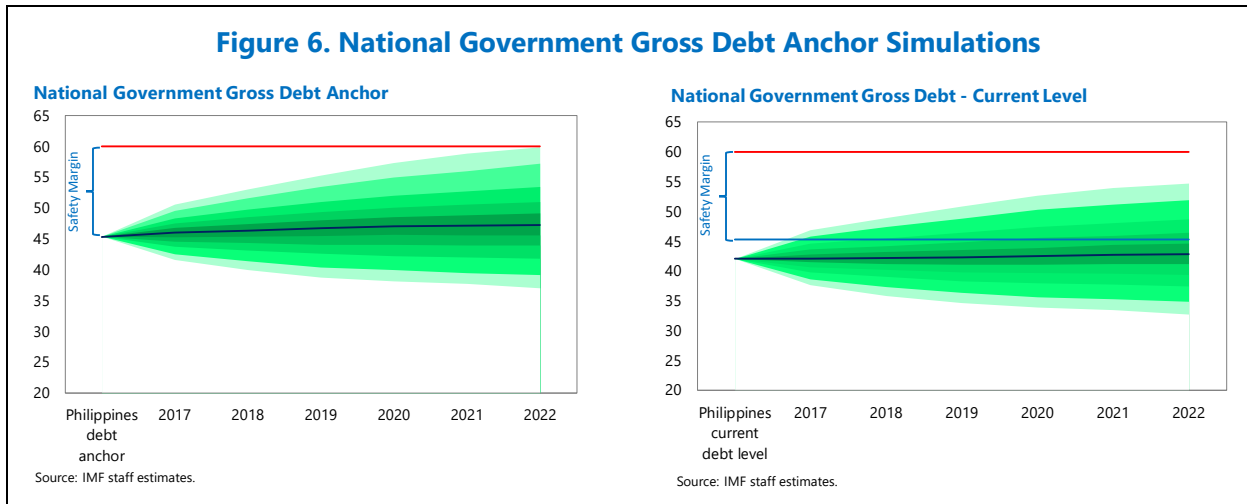
To provide operational guidance under the debt target, a structural budget balance rule is calibrated to maintain a countercyclical fiscal policy stance. While the overall budget balance is a commonly used indicator to assess the fiscal policy stance, it is a deficient measure as it includes factors beyond the control of policymakers. Even the primary balance excluding interest income and payments is still contaminated by macroeconomic developments. A structural indicator would provide a better assessment of the underlying (or permanent) fiscal position by removing cyclical factors, one-off revenues and expenditures, and potentially other temporary effects from the headline budget balance. The CAPB target (b^*) is derived from the debt anchor (d^*), according to the following equation:

$$b^* = \frac{\gamma}{(1+\gamma)^N - 1} [d_0 (1 + \gamma)^N - d^*]$$

in which γ=-γ(1+γ) is a function of the expected long-run nominal GDP growth, d_0 stands for the initial debt stock, and N denotes the convergence horizon, in number of years, after which debt is expected to reach its medium-term target. In the case of the Philippines, with the gross debt anchor for the national government set at 45 percent of GDP, I estimate the CAPB target to be 2 percent of potential GDP (Figure 7).

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[16] This would also provide a reasonable cushion against natural disasters. The fiscal cost of natural disasters in the Philippines amounted to 0.6 percent of GDP on average and as much as 4.6 percent of GDP over the period 1960-2015.

Figure 7. National Government Debt Anchor and Deficit Path

Structural Primary Balance Path
(Percent of potential GDP)

National Government Gross Debt Path
(Percent of GDP)

Source: IMF staff estimates.

Source: IMF staff estimates.

To bring stronger operational guidance and better manage aggregate demand, the structural budget balance rule should be linked to an expenditure rule. While a debt anchor and a structural balance rule are generally considered to be adequate for rule-based policymaking, adopting an expenditure rule would provide additional macroeconomic stabilization properties in an emerging market economy with significant development needs. For a given CAPB target (b^*) and average tax pressure (r^*), the implied expenditure ratio is determined as $e^* = r^* - b^*$, which implies that $\Delta e^* = \Delta r^* - \Delta b^*$. Assuming a stable revenue ratio ($\Delta r^* = 0$), and that the country complies with the deficit rule ($b = b^*$ and $\Delta b^* = 0$), the two equations show that the CAPB rule requires spending growing at the same speed as nominal GDP growth, or alternatively that spending remains constant as a share of GDP. In the case of the Philippines, since there is no significant cyclical component to expenditure and automatic stabilizers operate only on the revenue side, there is no difference between nominal expenditure and structural expenditure.[17] Also, I assume that the Philippines' structural tax ratio (computed as the ratio of cyclically-adjusted revenues to potential GDP) remains constant unless there is a meaningful change in tax policies. Under these assumptions, the optimal expenditure rule links the annual growth rate of total expenditures (excluding targeted social assistance) to nominal potential GDP growth.

VI. CONCLUSION

A well-designed FRL enshrining explicit fiscal rules and an independent fiscal council would ensure countercyclical policy and anchor debt sustainability. Discretionary fiscal policy in the Philippines is found to be procyclical during the period 1980–2016, and procyclical bias could intensify with the planned surge in public investments and social spending over the next five years. While the national government has undertaken a series of fiscal reforms and imposed a non-binding ceiling on the overall budget deficit, these steps do not constitute an appropriate operational target to guide fiscal policy over the economic cycle, reduce spending

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[17] This is consistent with empirical evidence showing that revenues are far more sensitive than expenditure to the economic cycle (Price, Dang, and Guillemette, 2014).

volatility in the absence of a binding constraint on primary expenditures, and explicitly link the fiscal stance to the government's intertemporal budget constraint. To this end, given the country's adequate analytical capacity and policy track-record, the following combination of fiscal rules—based on the stochastic simulation exercise—is recommended to formulate policymaking with countercyclical properties and an explicit reference to debt sustainability:

- A gross debt target of 45 percent of GDP for the national government (which is equivalent to a general government net debt of about 35 percent of GDP);

- A structural budget balance target defined as the cyclically-adjusted national government primary deficit of 2 percent of potential GDP;

- An expenditure rule that limits the annual growth rate of total expenditures excluding targeted social assistance to nominal potential GDP growth; and

- A limit on the stock of contingent liabilities, including PPPs, set at 10 percent of GDP for the general government.

Fiscal rules should have sufficient flexibility to respond to exogenous shocks, while being supported by explicit enforcement procedures and corrective mechanisms. The FRL needs to balance credibility and flexibility in responding to developments outside the direct control of policymakers. To this end, the Philippines should have well-defined escape clauses that allow for temporary deviations from the fiscal rules according to: (i) a limited number of exceptional and unforeseeable exogenous events such as natural disasters and severe financial crises and economic recessions; (ii) clear guidelines on the interpretation and determination of such events; and (iii) an unambiguous transition path to compliance with the fiscal rules and the regime that applies during the convergence period.[18]

The FRL's success in guiding policy and shaping public expectations depends on effective enforcement and correction mechanisms. The success of fiscal rules in guiding policymakers as well as shaping expectations in general depends on predetermined provisions for dealing with deviations from the fiscal rules. Empirical evidence indicates that fiscal rules with no effective enforcement mechanism result in worse fiscal outcomes than fiscal rules with well-defined enforcement directives (Debrun and others, 2008). To this end, the Philippines should introduce enforcement sanctions with reputational costs (i.e., public report to Congress) in case of deviations from the fiscal rules and a specific timetable to offset such deviations over a certain period of time. In this context, the establishment of an independent fiscal council is particularly important to provide unbiased macro-fiscal projections and evaluate compliance with fiscal rules. This would enhance transparency and accountability of fiscal operations and buttress credibility of the rule-based fiscal policy framework.

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[18] Budina, Kinda, Schaechter, and Weber (2012) provide a detailed account of escape clauses across all countries with a rule-based fiscal policy framework.

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