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successful introduction of
structural fiscal balance-
based rules in Latin
America and the
Caribbean: a framework
paper**

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I. Introduction

The global financial crisis of 2008-09 rekindled interest worldwide in the stabilization function of fiscal policy. In the face of frozen credit markets and near-zero interest rates that hampered the effectiveness of monetary policy, many countries used available fiscal space to support domestic demand, output and employment, by accommodating the operation of automatic fiscal stabilizers and through active countercyclical measures, such as selective tax cuts and public expenditure increases. These actions, and in some countries steps to support the financial sectors, led to sharp increases in public deficits and debt. Therefore, policy makers are now increasingly focusing on consolidation efforts to ensure a return to more sustainable fiscal positions over the medium term. Although the deterioration in the public finances has been most pronounced in advanced economies, many emerging markets and low income countries, including in Latin America and the Caribbean (LAC), are also facing significant consolidation challenges. In particular, there is a need to ensure that the fiscal dividends of the incipient recovery in these countries are used to strengthen budget positions, thereby creating room for adequate fiscal policy responses to future shocks.

Against this background, the role of medium-term fiscal frameworks and in particular of numerical fiscal rules¹ in both short-run stabilization and the promotion of longer-term sustainability has gained increased emphasis in policy and academic debates. Well-designed and effectively implemented fiscal rules can help reduce time-inconsistency in budgetary policies; strengthen the credibility of a government's commitment to fiscal sustainability; and facilitate countercyclical fiscal management.

However, as the sections below discuss in detail, a sound design of fiscal rules and their effective implementation and enforcement are far from easy, since they:

- Limit the flexibility of policymakers to respond to different economic and political challenges, and change the balance of power between political actors
- Involve significant trade-offs among different policy objectives
- Have to be tailored to specific economic and institutional characteristics of each country; and

¹ Numerical fiscal rules are defined here as standing commitments to specified numerical targets for some key budget aggregates. Medium-term fiscal frameworks, including Fiscal Responsibility Laws (FRLs), typically include both numerical and procedural rules, the latter aimed at ensuring adequate transparency and accountability in the budget process. Some countries with well established traditions of fiscal discipline, such as Australia and New Zealand, eschew numerical rules in their fiscal frameworks, concentrating only on procedural ones.

- Often require significant adjustments in existing budgetary institutions, and in some cases, improvements in the statistical base of the country.

This paper explores some of these issues in the light of the existing literature and of available empirical evidence. It focuses in particular on the potential advantages and requirements for the effective operation of fiscal rules based on structural budget balances (i.e. balances adjusted for the output cycle and other relevant exogenous influences, such as commodity price developments). It also discusses the potential use of structural budget balances (SBBs) as indicators of the fiscal policy stance, rather than as numerical policy targets.

Although the analysis in the paper is kept mainly at the conceptual level, its focus is on issues of special relevance to LAC countries. In particular, it includes a number of references to Chile's experience with a SBB rule, given the challenges that were overcome in its design and implementation, and its widely recognized effectiveness in fiscal and macroeconomic management².

The paper is organized as follows. It begins with a brief discussion in Sect. II of the advantages and disadvantages of fiscal rules; the different, and potentially conflicting, objectives of such rules; and how fiscal rules interact with other elements of a country's macro-economic policy framework, and with its socio-political context. Sect. III focuses on the choice and design of SBB rules. It highlights the pro's and con's of this type of rules in different country circumstances; and discusses issues such as the choice of base and level of the target, and escape and revision clauses. Sect. IV discusses the main issues in the implementation of SBB rules: timing; institutional requirements; monitoring and enforcement arrangements; and the role of independent watchdogs. Sect. V discusses fiscal rules for sub-national governments. Sect. VI reviews available empirical evidence on the effectiveness of fiscal rules. Sect. VII presents the main conclusions of the study.

II. Why fiscal rules?

According to a database assembled by the IMF staff (IMF, 2009), about 80 countries around the world currently use one or more rules based on numerical targets in their conduct of budgetary policies. The number of countries utilizing such rules has increased more than 10-fold over the last 20 years. The majority of them favor rules targeting the budget balance, the public debt, or a combination thereof. An increasing number of countries also utilize expenditure-based rules, while only a few include revenue-based rules in their fiscal frameworks. Table 1 presents an overview of main features of fiscal rules in selected advanced and emerging market countries.

² Appendix III below provides a detailed discussion of Chile's experience.

Table 1 - Selected examples of fiscal rules (2008)

Country	Type of rule ³ and starting date	Statutory base ⁴	Coverage ⁵	Time frame ⁶
Advanced countries				
Australia	RR, BBR; DR (1998)	L	CG	M
Canada	ER; BBR; DR (1998)	GC	CG	A
France ⁷	ER (1998); RR(2006); BBR; DR (1992)	GC; L; IT	CG; GG	A; M for ER
Germany	BBR (CA); DR (1992); ER (1982)	IT; C	GG; CG	A; M for ER
Hungary	BBR(CA)(2007); DR (2004)	IT; L	GG	A
Italy	BBR; DR (1992)	IT	GG	A
Japan	ER (1947): golden rule	L	CG	M
Netherlands	ER; RR (1994); BBR; DR (1992)	L; IT	GG	A; M for ER
New Zealand	BBR; DR (1994)	L	GG	M
Norway	BBR (2001)			
Spain	BBR (2003); DR (1992)	L; IT	GG	A; M
Sweden	ER (1995); BBR; DR (1995)	GC; IT	GG; CG	CA; M for ER
Switzerland	BBR(CA)	C	CG	CA
UK	BBR(CA); DR (1997)	GC; IT	GG	CA or M
Emerging markets				
Argentina	ER; BBR; DR (2000)	L	CG	A
Brazil	ER; BBR; DR (2000)	L	PS	A
Chile	BBR(CA) (2000; 2006)	L	CG	A
India	BBR (2004)	L	CG	A
Indonesia	BBR (1967); DR (2004)	GC	GG	A
Mexico	BBR; RR (2006)	L	PS	M
Peru	ER; BBR (2000)	L	PS	A

Source: IMF (2009)

1. Pro's and con's of fiscal rules

A number of considerations argue for constraining governments' discretion in the conduct of fiscal policy:

³ Type of rule: BBR: budget balance rule; BBR (CA): cyclically adjusted or over-the-cycle balance rule; DR: debt rule; ER: expenditure rule; RR: revenue rule

⁴ Statutory Base: GC: government's commitment; L: law; C: constitution; IT: international treaty

⁵ Coverage: CG: central government; GG: general government; PS: non-financial public sector

⁶ Time frame: A: annual; M: multi-annual; CA: over the cycle

⁷ For EU members, the preventive arm of the Stability and Growth Pact (SGP) envisages medium-term objectives formulated in structural terms (i.e. cyclically adjusted and corrected for one-off factors), but the corrective arm still focuses on the 3 percent of GDP unadjusted deficit as a trigger for the excessive deficit procedure (EDP)

- Economic policy makers are often prone to time-inconsistency in their budgetary policy decisions, especially in the run-up to elections, or when under acute social or political pressures. Constraining their discretion through permanent rules for key budget aggregates can help avoid stop-go policies, and strengthen longer-term fiscal sustainability
- At the same time, the adoption of sound fiscal rules can help policy makers who are committed to fiscal responsibility strengthen the institutional basis of their commitment, and signal it to economic agents both domestically and internationally, thus reaping benefits from increased policy credibility
- Rules can also help avoid coordination failures. For instance, in a monetary union (among sovereign nations, or among sub-national entities) fiscal rules can mitigate the “common pool” problem, and minimize the risk of adverse externalities created by a loose fiscal behavior of one member of the union for the other members
- Rules are especially useful in circumstances where markets cannot exert adequate discipline on national or sub-national governments. The pre-conditions for effective market discipline are indeed demanding, ranging from the credibility of no bailouts, to the absence of privileged financing channels, and the availability of reliable and timely information on government finances. They rarely are fully satisfied, even in advanced countries.

There are, however, also significant arguments for maintaining flexibility in the stance of fiscal policy:

- To different extents depending on a range of economic and institutional factors, countries are exposed to unpredictable real or financial external shocks requiring an appropriate fiscal policy response which, especially in countries with small automatic stabilizers, may need to include a discretionary component. The recent global crisis illustrates vividly this point. Moreover, it is often difficult to predict accurately the timing and extent of cyclical developments and their effects on the main fiscal aggregates
- There are frequently short-run trade-offs between the quality and quantity of fiscal adjustment. Given political and institutional constraints, especially expenditure rigidities, adherence to a pre-specified numerical budget target requiring a large and front-loaded fiscal adjustment may in some instances necessitate resort to sub-optimal measures (such as the introduction of especially distortive taxes, cutbacks in needed maintenance expenditures, or the delay or cancellation of sound investment projects).

The appropriate balance between the considerations in favor and against the use of numerical fiscal rules varies across countries and over time, reflecting a number of economic and

institutional factors. More specifically, as detailed below, these factors influence the appropriate design, timing of introduction, and modalities of implementation of fiscal rules in individual countries.

2. Possible objectives of fiscal rules

Depending on their design, numerical fiscal rules can be used to pursue different objectives:

- Strengthening governments' commitment to macro-economically sound and fiscally sustainable policies, by raising the costs of policies inconsistent with the rules. These costs may result from legal sanctions for deviations from the rules (e.g. the Excessive Deficit Procedures (EDP) under the EU's Stability and Growth Pact (SGP)); or from a loss of reputation of economic policy-makers vis-à-vis financial markets or a fiscally-conscious electorate
- Signaling such commitment in a transparent and credible manner to relevant audiences (financial markets and/or civil society)
- Promoting sustained budgetary savings to face predictable long-term needs (stemming for example from aging populations, the exhaustion of natural resource endowments, or infrastructure investment requirements)
- Extending the planning horizon for public policies by providing increased certainty about their medium-term financing
- Avoiding pro-cyclicality in budgetary policies
- Limiting the size of government, or capping the tax burden;
- Safeguarding certain types of expenditures.

There are however significant trade-offs between such objectives. In particular:

- The objective of transparency argues for the choice of fiscal rules that are simple and easily monitored (such as those based on numerical targets for the overall budget balance, or the gross public debt), but such rules do not provide adequate flexibility to accommodate large unexpected shocks, nor do they help avoid pro-cyclicality of budgetary policies; and
- The objectives of limiting the size of government or capping the tax burden may conflict, in some circumstances, with those of short-term fiscal stabilization and/or longer-term fiscal sustainability. Specifically, revenue-based rules can result in a pro-cyclical fiscal stance during boom periods, since they may require tax cuts that would boost domestic demand. Expenditure-based rules fare better in avoiding pro-cyclicality during both cyclical upswings (when they prevent the spending of revenue windfalls), and downturns, when they do not force the accommodation of spending to declining

revenues, but possibly at the cost of an unsustainable debt accumulation. To ensure debt sustainability, expenditure rules should be complemented by balance- or debt-based rules. In light of the growing popularity of expenditure rules, especially in advanced countries, Appendix I provides a more detailed discussion of such rules.

3. Articulating fiscal rules with other macro-economic policies

Especially in countries with open capital accounts, a flexible exchange rate policy and an inflation-targeting monetary policy are in principle more consistent with the adoption of a rules-based fiscal policy than a fixed exchange rate regime. This is the case because, under the latter, fiscal policy represents the main macro-economic instrument of adjustment to exogenous shocks, a fact that increases the need for flexibility in its conduct. At the same time, however, monetary and exchange rate rigidities also increase the need for prudence in fiscal management, to avoid endangering market perceptions of fiscal sustainability. In this respect, a credible pre-commitment to a sustainable fiscal target through the adoption of a fiscal rule might facilitate markets' perception of the sustainability of the exchange rate regime itself. The transparent inclusion in the rule of appropriate features (such as adjustment for specific temporary shocks, e.g. in the terms of trade, and escape clauses for other exceptional unpredictable shocks) may help increase the credibility of the rule.

Even under a flexible exchange rate regime, the design of fiscal rules needs to be carefully coordinated with the monetary stance, to avoid volatility or undesirable sustained pressures on interest rates or exchange rates. A fiscal rule targeting a deficit too high in relation to the monetary policy target would put upward pressure on interest rates and, at least in the short run, may lead to capital inflows and exchange rate appreciation, with adverse effects on the current external account. Conversely, a too tight target could dampen domestic demand growth, reduce inflation below the target, and put downward pressure on interest rates and exchange rates. The balance of these effects on growth would vary across countries and time, reflecting elasticities of demand and external flows, and their relative shares in GDP.

The state of a country's financial system also matters for the decision to adopt a fiscal rule, and for its design. If the system is in a precarious state, likely requiring significant government bailouts in the foreseeable future, a debt rule or an augmented budget balance rule may become quickly untenable, especially in the absence of an appropriate escape clause. In such circumstances, it would be preferable to postpone the introduction of a fiscal rule until the costs of such bailouts have become clear and are reflected in the public debt.

4. Rules and the socio-political context

The interaction of fiscal rules with the political and institutional context is a complex issue, on which both theoretical analyses and empirical studies present a range of conclusions. While most emphasize that rules that are not supported by a broad-based consensus in society over their main objectives are unlikely to be effectively implemented on a sustained basis, views differ on the dynamics of the formation of such consensus, in particular the roles that different actors (the various branches of government; supra-national institutions; opinion makers) play in such process.

While earlier contributions to the literature on fiscal rules, and more generally on fiscal institutions, emphasized the role of the executive and in particular the ministry of finance (see e.g. Alesina and Perotti, 1996; and Von Hagen and Harden, 1995), more recent ones (e.g. Stein, Talvi and Grisanti, 1998; Tommasi, 1998; and Filc and Scartascini, 2007) have focused on how evolving power balances among in particular the executive and the congress shape the budget process, and affect the effectiveness of both procedural and numerical fiscal rules in practice in different countries. Also, while the earlier literature focused mainly on the effectiveness of fiscal institutions, including fiscal rules, from the standpoint of fiscal sustainability, more recent contributions also analyze how political processes and institutions affect other dimensions of the effectiveness of fiscal institutions, including efficiency, adaptability, and representativeness of the budget (Hallerberg and others, 2009).

Even in countries characterized by a strong role of the executive in the budget process, there are likely to be significant payoffs, in terms of the sustainability of a proposed fiscal rule over time, from the government's efforts to form a broad-based consensus on the rule by clearly explaining its rationale and design choices to relevant stakeholders, transparently and regularly reporting on its implementation, and documenting its benefits for the economy and the public finances. The extensive consultation and consensus-building process carried out by the Brazilian authorities in 1999-2000 prior to the introduction of their successful Fiscal Responsibility Law provides a good example in this respect. The political and social acceptability of a fiscal rule is also likely to be enhanced if an impartial body (an independent fiscal watchdog) is charged with overseeing its implementation, as such a move would be seen as significantly reducing risks of politically-motivated manipulations of the rule. This is especially the case with rules like SBB ones, which involve complex and technically demanding calculations.

An issue on which views differ is the importance of political stability at the time of a rule's adoption. On the one hand, the credibility of a rule, *ceteris paribus*, is likely to be enhanced if the government introducing it has a prospective extended "lease on life", or if the rule is supported by a broad-based political consensus. However, it can also be argued that enshrining a desirable fiscal stance in a legislated rule, especially one that could be modified only by a

qualified parliamentary majority, can help strengthen the durability of the stance and its credibility to markets, provided of course that the rule is supported by adequate enforcement mechanisms. That said, some relevant experiences (e.g. Argentina during the 2001 crisis) suggest that, in conditions of major political volatility, existing fiscal rules end up being largely ignored.

III. Choosing and designing a SBB rule

5. Why (or why not) choose a SBB rule

In adopting a SBB rule, countries typically aim to combine the objective of constraining discretion in fiscal policy and signaling commitment to fiscal sustainability with that of avoiding fiscal pro-cyclicality, by accommodating the endogenous response of budgetary aggregates to cyclical developments (the so-called automatic stabilizers (AS)). Pro-cyclical fiscal policies not only have undesirable macro-economic consequences (amplifying and possibly extending the length of the cycle), but frequently also entail significant social costs (e.g. cutbacks in social programs at times of rising unemployment and increasing poverty), as well as efficiency costs (such as postponement or cancellation of planned investments, or cuts in needed maintenance programs during recessions; or wasteful spending on so called white elephants or a bloated civil service during booms). There is also empirical evidence (Balassone and Kumar, 2007) that pro-cyclicality tends to be stronger during booms than during recessions, exerting a ratchet effect on fiscal deficits and the public debt, with attendant risks for longer-term sustainability.

Fiscal pro-cyclicality is sometimes associated with the application of rigid numerical rules targeting the overall budget balance or the public debt but, especially during downturns, it is more frequently the result of financing constraints. Especially in emerging markets that have tended to be more financing-constrained, such as in Latin America during the 1980s and '90s, pro-cyclical fiscal policies have been the typical response to exogenous shocks, in particular "sudden stops" in capital inflows (Perry, 2008; and Cavallo and Izquierdo, 2009). Thus, avoidance of pro-cyclicality requires first and foremost the creation of adequate "fiscal space" to prevent the emergence of such financing constraints. SBB rules can help avoid pro-cyclicality during downturns, if adequate financing is available to accommodate the impact of the operation of the AS on the fiscal balance. They are clearly superior to unadjusted balance-based rules in avoiding pro-cyclicality during boom periods.

It is worth emphasizing that SBB rules, while helping avoid fiscal pro-cyclicality, do not facilitate an active counter-cyclical fiscal management. Accommodation of the operation of the AS may

be inadequate to stabilize demand and output if the shares of revenues and expenditures in GDP and/or their elasticities to the cycle are relatively small, or in the event of shocks not adequately captured by the cyclical adjustment methodology. These considerations highlight the need for introducing adequate flexibility into SBB rules, as well as in other types of fiscal rules, through transparent escape and revision clauses (see sect. III. 8 below for details). Moreover, countries with relatively small AS should give consideration to steps that can be taken to increase their size without increasing the size of government or the tax burden, such as: relying more on progressive taxes; improving unemployment compensation schemes; including cyclical considerations in the design of intergovernmental transfers (see Sect. V below); and introducing automatic triggers for changes in selected taxes or expenditure programs linked to changes in pre-specified macro-economic indicators (see Baunsgaard and Symansky, 2009, for a discussion of options in this respect).

The adoption of a rule based on the structural (as opposed to the actual) budget balance can also facilitate coordination of fiscal and monetary policies, and help reduce pressures on exchange rates induced by capital flows. Specifically, during cyclical or commodity price booms, a SBB rule can help avoid a loose fiscal stance, thereby reducing upward pressures on interest rates and the exchange rate. During recessions too --provided the actual deficit is financeable and consistent with debt sustainability-- the use of a SBB rule would better complement monetary easing than a rule based on the actual budget balance.

That said, it must be recognized that the economic, institutional, and statistical pre-conditions for adoption of a SBB rule are even more demanding than those for the adoption of rules based on the actual budget balance. These pre-conditions undoubtedly are important in explaining why SBB rules are still relatively rare in practice, especially among non-industrial countries. If not all pre-conditions for the effective introduction of a SBB rule are in place, but the statistical base and technical capacity to prepare reasonably reliable calculations of the structural balance exist, countries should consider using such estimates as indicators of the fiscal stance, to inform budgetary decisions to avoid pro-cyclicality.

The rest of this section discusses how various economic and institutional considerations affect the design of SBB rules, while the next section focuses on how they condition its implementation.

6. Choosing the base for a SBB rule

As both the characteristics of economic cycles and the sensitivity of fiscal variables to them vary across countries and over time, different concepts of structural balance (SB) have been developed and are being utilized in practice.

A cyclically adjusted balance (CAB) aims to approximate the budget balance that would prevail if the economy was operating at its full potential, i.e. if the output gap was zero. Therefore, typically it is calculated by excluding from revenues and expenditures those components which are due to a positive or negative output gap. A variant of the CAB is a growth-based balance (GBB), which excludes from budgetary revenues and expenditures those components that reflect the difference between the actual and the trend growth rate of the economy. While a GBB is easier to estimate than a CAB (since estimates of output gaps are more complex and uncertain than those of output trend growth), it can give misleading signals, e.g. during the early phase of a recovery, when actual GDP may be growing well above trend but still remain below potential.

A further variant of a CAB-based rule is one that targets a given balance (generally expressed as a percentage of GDP) over the cycle. Rules of this type were adopted by Sweden and by the UK during the last decade. Such a rule, while in principle equivalent to a CAB-based one, in practice can give different results if the length and intensity of the cycle is not correctly anticipated at the outset. It is also more prone to political manipulation, by e.g. overestimating the length of the downturn phase of the cycle, thereby pushing forward in time the required fiscal tightening.

Particularly in emerging and developing countries that depend significantly on revenues from natural resources, cyclical revenue fluctuations are often more related to changes in international prices, or in demand for those commodities, than to changes in the output gap. In these countries, a more appropriate concept of the structural balance would be one that also corrected for deviations of the relevant commodity prices from their medium term trend (along the lines of the Chilean rule) **provided that reliable estimates of such a trend could be obtained. The difficulties of doing so, especially for the very volatile prices of energy products,** and the alternative approach of targeting a balance excluding resource-related revenues and expenditures, are discussed in more detail in sect. III.7b below.

Appendix II provides details on the main methodological issues in the calculation of SBs.

A country considering the introduction of a SBB rule would face a number of other choices regarding the basis of the rule:

- Primary or overall balance?

Rules targeting the primary balance have the advantages of focusing on an indicator that is relatively more controllable by the fiscal authorities and better reflects current, rather than past decisions, and of avoiding possible incentives for the authorities to meet an overall balance target through a loose monetary policy. However, their observance may not be sufficient to ensure consistency with short-term financing constraints and/or longer term public debt sustainability, in the absence of a requirement for the authorities to adjust the primary target in response to significant and sustained deviations of the interest bill from its anticipated path, or in response to shocks affecting the debt stock.

- Current or overall balance?

Rules targeting the current balance (the so-called golden rules), while responding to the objective of avoiding the all-too-common concentration of fiscal adjustment on public investment (with related potential longer-term adverse effects on growth and competitiveness), are not necessarily consistent with short-term stabilization objectives and financing availability, and with longer-term public debt sustainability. Also, they privilege the accumulation of physical over human capital (which may be inappropriate in many countries), and are susceptible to accounting manipulations (e.g. the classification of support to loss-making public enterprises as capital spending).

- Complementing a SBB rule with a debt rule?

Countries that, especially in view of an initially high level of their public debt, are particularly concerned with ensuring medium-term sustainability, should consider complementing a SBB rule with one targeting a declining path of the debt. Debt rules are more directly linked to fiscal sustainability than balance-based rules, since they capture the impact of below-the line operations that do not affect the budget balance but increase the public debt (such as a securitization of previously unrecognized debts). Such operations are quite common in many countries. Debt-based rules also have the advantage of requiring the fiscal stance to be adjusted in the event of a lasting shock, such as a devaluation impacting the foreign exchange-denominated component of the debt. However, they need to be formulated carefully, including through escape clauses that allow such adjustments to be distributed over an adequate period of time, to avoid either low quality measures or an outright violation of the rule in the event that the shock is unexpected and large.

In general it is preferable to formulate debt based-rules in terms of the gross, rather than the net, public debt, on grounds of transparency, and because frequently financial assets acquired by governments have lower risk-adjusted rates of return than the debt incurred to finance their acquisition. However, binding limits on gross public debt might preclude needed emergency bailout operations in a financial crisis, and (if defined to include debt issued by the central bank) could complicate monetary and exchange rate management, to the extent that they did not provide adequate room for sterilized foreign exchange intervention, or open market operations.

Since debt ceilings can be often avoided by granting guarantees in lieu of loans, many countries appropriately include provisions for a ceiling on public guarantees in their fiscal frameworks or rules.

7. Choosing the SBB target

The choice of the target level(s) under a SBB rule should be guided by a range of considerations:

- The country's initial fiscal conditions
- Its long-term growth potential
- The expected dynamics of the public debt
- Long-term savings needs
- Revenue volatility, in particular as a result of dependence on natural resource revenues; and
- The country's vulnerability to exogenous shocks

The rule may specify that the chosen target should prevail for the foreseeable future, or that it should move along a pre-specified path, or that it should be set by the government for a multiyear rolling period, with a requirement that the rationale for its periodic revisions be transparently explained in the annual budget process.

a. Macro-fiscal considerations

In principle, a fixed target for the SB should be set at a level that is expected to be consistent with a desired (declining or stationary) path of the public debt, under a prudent set of baseline assumptions for the relevant macro-economic variables (the growth of trend or potential real GDP, inflation, interest rates, exchange rates, and the realization of known contingent liabilities). The choice of the baseline assumptions should be based on a comprehensive sensitivity analysis, and be more cautious the worse the fiscal conditions of the country (higher deficit and debt levels) at the time of introduction of the rule. Particular focus should be placed on analyzing whether actual (as opposed to structural) deficits may occur during the application of the rule that could not be financed (or could be only at very high interest rates). This analysis requires a careful assessment of the likely amplitude of the cycle in the country in question. It also requires reliable information on the country's public and external debt structure, and its vulnerability to changes in market sentiment (in particular the likelihood of sudden stops in capital flows).

Countries facing clearly identified and quantifiable longer-term savings needs (related for instance to aging of their populations, or major infrastructure gaps) would need to factor these

requirements in their choice of the SBB rule target, by appropriately adjusting the baseline debt dynamics.

Countries may prefer to specify a time-variant path for their SBB target for various reasons:

- If they need to establish market credibility with a stronger up-front adjustment, or
- If they can credibly project “structural breaks” (related e.g. to the coming on stream of substantial natural resource revenues) in their public debt dynamics.

In general, however, a rising time path for the SBB target would not be advisable, as it is likely to be seen by markets as a political expedient to postpone adjustment.

Finally, countries facing relatively high uncertainty about the relevant macro-economic factors may choose to limit the time horizon for the specification of the target (to say 3 to 5 years), or to give it a rolling character (as is the case e.g. in Brazil⁸). Of course, the disciplining and signaling effect of a rule based on rolling targets would depend very much on the demonstrated commitment of the government to avoid large year to year changes in the targets, and to transparently and convincingly motivate them, when unavoidable.

b. Dependence on natural resource revenues

Countries heavily dependent on revenues from natural resources (minerals and fuels) face particular challenges in their fiscal management, due to the exhaustibility of such resources and the high degree of volatility that typically characterizes them. Moreover, changes in revenues from natural resources, which in most cases are largely generated by exports abroad, have different effects on domestic demand than changes in other (largely domestically generated) revenues, further complicating the design and assessment of fiscal policy. Finally, arrangements for the ownership and exploitation of natural resources, and in particular their sharing between the public and the private sector differ significantly across countries, and influence the appropriateness of policy prescriptions accordingly.

There is broad consensus in the relevant literature that the choice of medium-term fiscal targets in resource revenues-dependent countries should be guided by the goal of accumulating sufficient wealth to smooth income and consumption across generations before and after the exhaustion of the resources. However, the translation of this broad principle into operational guidelines is far from simple, and different authors have argued for different rules (see Maliszewski, 2009), such as: (i) the permanent income model (PIM), that calls for equalization of per capita consumption across generations, taking into account both resource

⁸ The FRL in Brazil stipulates fixed ceilings for the public debt and for government payroll in relation to net revenues, but mandates the government to set in the annual Law on Budget Directives (LDO) three year rolling targets (compulsory for the first year and indicative for the subsequent two) for the (unadjusted) primary balance.

and non-resource revenues; (ii) the permanent resource income model (PRIM) that argues for redistribution of only the resource wealth across generations; (iii) the so called bird-in-hand rule that requires government to limit its non-resource deficit to the annual stream of revenues from accumulated financial assets; etc. A variant of the PRIM advocates a rule to stabilize the non-resource primary balance (as percent of non resource GDP) at a level that ensures sufficient assets accumulation by the time the resource wealth is exhausted to allow the same balance to be financed subsequently through the return on the assets (Ossowski and Barnett, 2003). The translation of this principle into an operational rule requires a number of judgments on such variables as the size and speed of depletion of the natural resources, the long term outlook for their prices, and the rate of return on the financial wealth being accumulated.

A focus on the non-resource component of the fiscal balance is often called for also on short-term stabilization grounds. The high degree of volatility of commodity (especially energy products) prices makes the overall fiscal balance of resource revenue-dependent countries also very volatile. A rule that would call for stabilization of the overall balance at a given level over time would result in large (and often disruptive) swings in public expenditures; moreover, it would be pro-cyclical, as expenditures would rise during boom periods and have to be cut back during commodity price slumps, or during periods of declining external demand that also have adverse repercussions on domestic activity. In contrast, a rule targeting the non-resource component of the fiscal balance (possibly adjusted for the domestic cycle as well) would smooth spending and avoid pro-cyclicality. The appropriate level of the non-resource balance target would need to be chosen not only in the light of the longer term considerations mentioned above, but also, especially for countries vulnerable to short-term financing shocks, taking into account prudently estimated financing possibilities.

An alternative approach is to target the overall balance adjusted not only for the output cycle, but also for deviations of the prices of main resource revenues from their long-term trend, as in the case of Chile. In contrast to the one targeting the non resource-balance, this approach does not correct for cyclical changes in external demand for the relevant commodities (except to the extent that they are reflected in the commodity price swings). It also requires a transparent and analytically sound methodology for assessing long-term trends in such prices, an especially difficult undertaking in the case of fuel prices, which many experts view as akin to a random walk (see Barnett and Vivanco, 2003, for a discussion of statistical properties of oil prices).

8. Coping with unpredictable exogenous shocks

Ceteris paribus, a country's need for flexibility in the conduct of fiscal policy is greater the higher its exposure to unpredictable exogenous shocks. Such shocks may be of a real or financial nature, and originate from external or domestic sources. Examples are natural

catastrophes; major political strife or wars; large shifts in the terms of trade, well in excess of historical trends; and sudden stops in capital inflows. Various factors influence a country's vulnerability to such shocks: among others, its geographic and political circumstances; its degree of trade openness, and natural resource revenue dependence; and its financial integration with the rest of the world.

A high degree of vulnerability of a country to unpredictable shocks does not preclude its using fiscal rules, but it requires special care in their design and implementation. To begin with, such a country needs to build larger fiscal "cushions" to deal with the effects of the shocks. This means choosing medium term targets for the fiscal balance and the public debt that are more conservative than for comparable but less vulnerable countries; accumulating adequate liquid government balances and international reserves to cover unexpected short term financing gaps; building higher degrees of flexibility in government spending to adjust to sudden unforeseen revenue or financing shortfalls; **and having ready appropriate (timely, effective, well targeted, and cost-efficient) tax and/or expenditure policy responses to such shocks.** These steps are necessary for sound fiscal management, regardless of the existence or not of numerical fiscal rules.

For countries utilizing, or considering the use of such rules, it is important to build sufficient flexibility in their design to allow an appropriate response to large unforeseeable shocks, without jeopardizing the discipline imposed by the rules and their benefits in terms of credibility of government commitment. In principle, this can be achieved through the transparent inclusion in the rules of escape clauses in the event of such shocks. These clauses should specify as clearly as possible the nature and magnitude of the shocks to be accommodated; the length of period during which the rule would be relaxed or put into abeyance; a path of return to full observance of the rule; and the responsibility for activating the clause and monitoring its implementation. This specification requires careful consideration of country-specific circumstances such as the type of shocks the country is most exposed to, and the sensitivity of major fiscal aggregates to such shocks; and the foreseeable fiscal space to accommodate them, or to at least spread the adjustment to them over time. In all cases, credibility can be enhanced by the use of independent "fiscal watchdogs" responsible for assessing the correct use of the clause (see sect.IV.10 below for details), or at least by a stipulation that the activation of the clause must be approved by a qualified majority of Parliament.

Table 2 provides some examples of escape clauses in existing fiscal rules, which vary significantly in terms of the degree of discretion afforded to government in invoking and implementing the clause.

Table 2 - Examples of countries utilizing escape clauses

Country	Type of clause
Argentina	Higher expenditures allowed under social and economic emergencies as determined by law.
Brazil	Escape clauses exist for a real GDP contraction of 1 percent and natural disaster, but can only be invoked with Congressional approval.
Germany	The budget rule allows for exceptions, if adopted by a majority of Parliament, in case of a natural disaster or exceptional emergencies. Adoption of exceptionally higher budget deficits, however, needs to be accompanied by an amortization plan.
India	The escape clause in the fiscal rule law (FRBMA) allows the government not to comply with the targets in exceptional circumstances "as the central government may specify".
Norway	Temporary deviations are allowed in the event of extraordinary changes in the value of the Government Pension Fund - Global.
Pakistan	Escape clause exists for reasons of national security and natural calamity.
Panama	Nonfinancial public sector deficit ceiling of 1 percent of GDP (excluding Panama Canal Authority), but waiver in case of real GDP growth of less than 1 percent. In that case, adjustment of the deficit's ceiling to 3 percent of GDP in the first year and then gradual transition to the original ceiling within a 3 year period.
Spain	Exceptional circumstance clause exists.
Sri Lanka	Exceptional circumstance clause exists.
Switzerland	An escape clause exists: Parliament can approve by supermajority a budget deviating from the rule in "exceptional circumstances."

Source: IMF Database on fiscal rules

While escape clauses are intended to deal with the consequences of large but temporary shocks, more permanent ones (for instance a sustained reduction in the growth potential of a country, due to labor market hysteresis or to demographic trends; or a permanent change in the resource endowment of a country) would require a lasting revision of the rule's target (or in some circumstances even of the rule's basis). There would be, in principle, benefits from incorporating ex-ante provisions for such revisions in the legislation introducing a fiscal rule, not least to avoid reopening political debates on the whole framework of the rule when the need for such revisions materializes. In practice, however, it may be difficult to anticipate from the outset the range of factors that may require a revision of the rule.

The recent global financial crisis has exposed vividly the shortcomings of fiscal rules frameworks that do not include adequate escape clauses. According to a survey conducted in 2009 by IMF staff, only about half of countries operating under a fiscal rule were able to accommodate a countercyclical policy response within the rule's framework. The others had to either explicitly modify the rule or put it into temporary abeyance.

IV. Main issues in the implementation of a SBB rule

9. Timing and legal basis for introduction of the rule

Several issues arise in connection with the desirable timing of the adoption of SBB rule:

- First, can the rule be successfully introduced at the outset of a fiscal consolidation effort, or should its adoption be preceded by a period of sustained progress in the consolidation?
- Second, can the rule be successfully introduced in a context of unusually high economic uncertainty?
- Third, can the rule be credibly introduced during a recession period?

On the first issue, there are arguments in principle for both viewpoints. On the one hand, it can be argued that the adoption of a rule, by signaling a government's commitment to fiscal consolidation, can strengthen the credibility of the adjustment effort in the eyes of markets and other relevant economic agents, and also help sustain the effort over time in the face of political "adjustment fatigue". Of course the credibility of the commitment will depend crucially on the soundness of design of the rule, the existence of basic institutional pre-conditions for its successful implementation (see below for details), and the early adoption of adequate policy measures to achieve the rule's targets.

On the other hand, it can also be argued that a rule is best suited to lock-in the results of a consolidation process already well underway, and that the extent of adjustment required at the outset of such a process may well be larger than what is needed in a "steady state". This would require the rule to be formulated with targets declining over time at a pace that may be difficult to determine ex-ante. Empirical evidence assembled by the IMF staff on this issue (see IMF, 2009) suggests that fiscal rules are more likely to be introduced by countries that have already made some initial progress in fiscal consolidation than by countries just beginning the effort.

On the second issue, there is broad consensus that the successful introduction of a fiscal rule requires a relatively stable macro-economic environment. The evidence assembled by the IMF suggests that the probability of introduction of a fiscal rule is lower in countries that are facing output declines, large deterioration in the terms of trade, or sharp currency depreciations.

Regarding the third issue, clearly the credibility of a SBB rule would be greater if it is adopted at the outset of a cyclical expansion. Financial markets and other economic agents may view its adoption during a downturn as dictated by political expediency (as a SBB rule would allow a higher level of spending than an overall deficit target), and question its sustainability under favorable cyclical circumstances. But, as Chile's experience suggests, a country with adequate

fiscal space (low debt and low probability of emergence of financing constraints) could more easily gain market acceptance of its accommodation of the automatic stabilizers during a downturn if at the same time it is committing to allow them to operate during future expansions.

A strong legislative basis is not necessarily a pre-condition for the introduction of a fiscal rule. A government can in principle announce its commitment to the achievement of certain values for the targeted fiscal variables for an extended period ahead, without seeking to enshrine it into a law. The credibility of such an announcement would be of course greater the longer the expected life of the government, the stronger the role of the executive in the budget process, and (at least in a democratic regime) the broader the perceived political and social consensus on the rule⁹.

That said, a robust legal foundation for a fiscal rule can significantly enhance the prospects for its effective and sustained observance, because it raises the cost of its non-enforcement or abandonment, thereby enhancing its credibility. The question is: how robust should that foundation be? The higher the level of the law establishing the rule, the more difficult it is to change it. There is thus a trade-off between the objectives of strengthening the commitment to the rule, on the one hand, and of preserving an adequate degree of flexibility, on the other hand. While the appropriate balance of these objectives should reflect the specific political, institutional, and economic circumstances of each country, in practice in most countries fiscal rules are established through legal instruments stronger than ordinary laws that could be modified by a subsequent budget law. In many cases such legislation requires a qualified majority for its approval or modification. In some cases (e.g. the recently adopted rule in Germany, or fiscal rules for some sub-national governments), the rules are included in the respective constitutional laws, or, more often, are based on an international treaty (e.g. the balance and debt rules for the EU members under the Stability and Growth Pact). The higher the level of the legislation establishing a fiscal rule, the more important is that it transparently include adequate elements of flexibility, in particular well designed escape and revision clauses, as discussed in section II above.

⁹ In Chile, the government successfully pursued a SBB rule for about 6 years, before enshrining it into a legislated fiscal framework (the Fiscal Responsibility Law of 2006). Chile is, however, the foremost example in Latin America of a strong presidential regime, with budget rules that significantly constrain Congress' powers to amend the budget proposed by the government. It is also a country with a well established and broadly supported culture of fiscal prudence and discipline.

10. Public financial management (PFM) requirements

As is well known, sound PFM institutions are important for a successful conduct of fiscal policy, whether rules-based or not. They include, among others: a strong role of the ministry of finance in the preparation and implementation of the budget; adequate capacity in the ministry to forecast revenues and endogenous components of expenditures; a transparent and comprehensive documentation of proposed budgets; a parliamentary budget approval process that limits the scope for amendments inconsistent with the overall budget stance proposed by the government; effective expenditure control mechanisms during the budget execution; comprehensive and firmly enforced accounting and reporting requirements, capable of generating timely and reliable fiscal statistics; and sound internal and external auditing procedures.

These requirements are made more stringent by a country's adoption of numerical fiscal rules, because of the reputational and possible other costs entailed by a violation of the rule. Moreover, the adoption of a structural balance rule poses special statistical and computational requirements (detailed in Appendix II). At the same time, however, the adoption of a rule often provides impetus for implementing needed reforms in the PFM system, as the experience of Chile demonstrates (see Appendix III). Thus, the decision of whether to introduce a fiscal rule requires a careful assessment (necessarily country-specific) of whether the existing PFM system conforms to the minimum requirements for an effective implementation of that rule.

This section discusses in some detail how the implementation of a SBB rule influences the various phases of the budget process, and the associated PFM requirements.

(i) Elaborating annual budgets and medium-term fiscal frameworks (MTFFs) consistent with a SBB rule

The effective preparation of a budget consistent with a SBB rule involves a number of steps, with associated PFM requirements:

- The estimation of structural revenues for the part of the public sector covered by the rule, with a reasonable degree of accuracy. As noted in Box 1 above, this is no trivial task, as it requires a capacity to estimate the cyclically-adjusted tax bases, and the corresponding revenue elasticities.
- The determination of the overall (or primary, depending on the specification of the rule's target) spending envelope consistent with the projected structural revenues envelope and the SBB target. Many countries, particularly those in which the congress has significant powers to amend the budget proposed by the government, seek to

strengthen the effectiveness of the overall spending ceiling by submitting it to congress' approval, before preparing the detailed spending budget.

- The preparation of the expenditure budget, including appropriately cautious projections for the endogenous components of certain types of spending (e.g. interest payments, entitlement programs, earmarking provisions, and formula-based inter-governmental transfers), and the allocation of the projected remaining “discretionary” spending envelope among competing sectoral priorities.
- The forecast of actual revenues, which also requires the capacity to predict with reasonable accuracy developments in actual tax bases. The accuracy of such forecasts is often hampered not only by their technical complexity, but also by institutional constraints, such as a not well coordinated involvement of multiple government agencies in their preparation; gaps or delays in relevant flows of information; and political biases (which sometimes play in opposite directions, other times reinforce each other)¹⁰. As illustrated in Kyobe and Danninger (2005), the quality of revenue forecasting in many developing countries is still relatively poor, and the transparency of underlying methodologies and assumptions leaves much to be desired. Even in advanced countries with strong technical capacity in the Ministry of Finance, revenue outturns are often significantly different from the budget projections, a fact that argues for improved transparency and outside scrutiny of their preparation.¹¹
- The calculation of :
 - the projected budget balance consistent with the forecasted revenues and the overall spending envelope, and
 - the gross financing requirements entailed by such a balance; any below-the line operations requiring financing, including as a result of the calling of guarantees and the realization of other contingent liabilities; and the public debt amortizations coming due during the year
- The preparation of a realistic financing plan to meet such requirements; and finally
- An assessment of the consistency of the projected budget balance with medium-term debt sustainability, taking into account the various factors (real GDP growth rate, interest rates and exchange rate, as well as any debt-creating flows) that affect the public debt dynamics. These projections should also make allowance for the expected realization of contingent liabilities over the medium term.

¹⁰ Revenue forecasts may be upward biased if a government is trying to expand its ex-ante spending room through the use of optimistic revenue projections, or if it is trying to set ambitious “performance targets” for its tax administration agency. In many countries, however, revenue projections are deliberately skewed towards caution, as budget authorities try to minimize risks to the achievement of their fiscal target.

¹¹ Among the countries that use independent forecasts of the underlying macro-economic assumptions are Canada, the UK and the Netherlands

If the calculations above reveal an inconsistency of the structural balance target with either financing availability, or medium-term debt sustainability, it would be advisable for the authorities to choose a target deficit (and a spending ceiling) lower than that allowed by the rule, transparently explaining in the budget document the reasons for deviating from the rule.

Although the adoption of a SBB, or any other fiscal rule, does not per se require the elaboration of a full-fledged medium-term fiscal framework (MTFF), lengthening the time horizon of the budget formulation process can be very helpful in promoting effective observance of the rule, particularly by highlighting trends that, in the absence of corrective action, would threaten the achievement of the fiscal targets. At the same time, the existence of a rule can facilitate the formulation of a MTFF by providing more certainty about the medium-term budget balance target. A comprehensive and realistic MTFF can also facilitate a more strategic approach to priority setting among competing demands for budgetary resources, and allow line ministries to plan sectoral policies (and especially investment projects) over a longer horizon, with potentially significant gains in efficiency.

The steps required in formulating a MTFF consistent with the fiscal rule largely mirror those involved in the annual budget preparation, but with added uncertainties related to the longer time horizon involved. The degree of disaggregation of such frameworks, which are gaining increasing popularity in a wide range of countries, differs significantly across countries, reflecting different capacity levels in the administrations involved in their preparation, and also the state of the budget classification¹². Also, while the executive branch of government typically takes the lead in the formulation of the MTFF, the degree of involvement of the legislative branch in it varies across countries, ranging from a very limited one, to a full discussion and approval of the framework proposed by the government¹³.

Transparency in the methodology and assumptions utilized in the preparation of MTFFs (as well as of annual budgets) is crucial to promote adequate outside scrutiny (including by the parliament) of the framework, and to facilitate (without loss of credibility) any revisions in subsequent years that would be required by significant changes in the exogenous variables (such as the external environment or natural disasters), or by changing government spending priorities. In particular, it is important to prepare (and transparently report on) a range of scenarios exploring the implications of different “states of the world” for the fiscal accounts, and the degree of risk that they would pose for the observance of the rule; and to articulate possible corrective strategies in the event that such risks were to materialize.

¹² For example, while Finland and Sweden only target total spending in their medium-term expenditure framework (MTEF), the latter encompasses 25 separate spending departments in the UK, 35 “missions” in France, over 260 programs in Australia, and 306 programs in Brazil.

¹³ Hallerberg and others, 2009 provide a comprehensive discussion of the budget process in major LA countries, as well an analysis of the political economy factors shaping this process in the various countries

Whether in translating a MTFF into an annual budget, or in formulating the latter ex-novo, minimizing risks to the observance of the fiscal rule requires making room for an adequate contingency reserve under the expenditure ceiling. Such reserve should be larger the greater the risks surrounding the revenue projections and the vulnerability of the country to exogenous shocks, such as natural disasters. While country practices differ significantly in this respect, a contingency reserve equivalent to at least 1.5-2 percent of total spending would seem appropriate in most instances.

The formulation of a budget or MTFF consistent with a fiscal rule for the general government (as opposed to the central government alone) poses special challenges, as it requires: timely and reliable flows of information on the key fiscal aggregates for all the levels of government; and, especially in federations, or in unitary but very decentralized countries, effective mechanism of coordination in budgetary decision-making among the different units of government (see sect V below for a more detailed discussion).

(ii) Ensuring appropriate execution of the budget, accounting and reporting

Effective controls of the budget execution process are key to the successful implementation of fiscal rules. So are well-developed, transparent and firmly enforced budgetary accounting and reporting rules.

The main challenge for the control of the budget execution in a fiscal rules context is to ensure that: (a) information on revenue and expenditure developments that would threaten the achievement of the budget target is brought to the attention of the relevant decision-maker in a sufficiently timely and reliable manner to facilitate early corrective action; and (b) the budget managers have adequate incentives and responsibility to take such action.

Under a SBB rule, during budget execution, budget managers need timely and reliable information on all phases of the expenditure process, and on developments affecting the estimates of structural revenues, to identify and appropriately react to risks to the observance of the SB target. They also need, however, to monitor developments in actual revenues, to avoid the emergence of financing constraints.

The specific mechanisms of control vary significantly across countries, reflecting, among other things, historical traditions, legal frameworks, capacity constraints, etc. They have also tended to evolve over time, albeit at significantly different speeds in different countries. The increasingly widespread use of modern integrated government financial management information systems (IFMIS), that allow real-time recording of all phases of the expenditure process, has been accompanied by reduced reliance on ex-ante controls on the budget execution in many countries. At the same time, increased emphasis on results-oriented budget management has led to a shift towards greater flexibility for budget managers in the allocation

of resources across line items under their responsibility. It is crucial, however, that moves in these (in principle desirable) directions do not outpace improvements in capacity of the relevant authorities to effectively manage the budget resources at their disposal, and to provide timely and reliable information on their operations.

The importance of sound accounting systems cannot be over-emphasized. In particular, it is crucial that such systems be uniform for all units of government.¹⁴ (a requirement that is frequently not observed across different levels of government); that there be consistency between the budget classification (preferably conforming to international standards) and the chart of accounts; and that the accounting information generated be fide-digna, and allow timely monitoring of the fiscal targets included in the country's fiscal rules, and of the main factors that affect their evolution. Thus, for instance a golden rule would require separate current and capital budgets; an expenditure rule, the accounting of all expenditures on a gross basis; a structural surplus rule, reliable statistics on all the variables utilized in the methodologies for the cyclical adjustment and the determination of trend commodity prices (see sect. Iv below); a debt rule, a comprehensive survey of liabilities of the units of government covered by the rule; and a net worth rule, adequate progress in accrual accounting, and the preparation and maintenance of an up-to-date government balance sheet.

A number of accounting risks can threaten the effective operation of fiscal rules. Some are common to all types of rules, and basically relate to the boundaries between the parts of the public sector covered and not covered by the rule, and between the public and the private sector. They include incentives for governments to resort to extra-budgetary operations; quasi-fiscal operations; provision of guarantees in lieu of explicit subsidies or capital transfers to public or private enterprises; unfunded mandates for sub-national governments, if the coverage of the fiscal rule is limited to the central government; and engagement in public-private partnerships (PPPs) not justified by efficiency considerations. **Some of these risks can be mitigated if a country's fiscal responsibility law, or organic budget law, require that various types of contingent liabilities be disclosed, quantified to the extent possible, and adequately provisioned for in the budget.** Other accounting risks are more specific to certain types of rules, e.g. the overestimation of potential GDP growth under a SBB rule; the misclassification of current expenditures as capital ones under a golden rule; resort to tax expenditures, in lieu of subsidies and transfers, under an expenditure rule; and the accumulation of liabilities (e.g. to suppliers) not recorded in the debt statistics, under a debt rule. Effectively containing many of these risks is a difficult task, requiring not only the enactment and internal enforcement of comprehensive and detailed accounting regulations, with appropriate penalties for non compliance for the responsible officials, but also adequate external scrutiny (see below).

¹⁴ Special challenges arise when a fiscal rule targets the whole public sector (including public enterprises that are subject to private sector-type accounting rules), as is the case in some Latin American countries

Finally, a transparent and timely reporting of the accounting information is also important for the effective implementation of fiscal rules. This is needed to facilitate both corrective action by the government, when needed, and the external scrutiny mentioned above. The reporting should be sufficiently detailed to allow interested outside observers to assess not only past compliance with the rule, but also the risks of future non-compliance. At the same time, the regular dissemination of summary layman-friendly information can help sensitize public opinion to the progress in implementation of the rule and its benefits.

(iii) Ensuring adequate external scrutiny

Adequate mechanisms of external control are an integral part of any sound PFM system. External audit institutions (outside the control of the executive, but in most cases reporting to the parliament) exist in virtually every country, but their effectiveness varies significantly, reflecting historical circumstances and various institutional constraints.¹⁵

By the nature of their mandate, external audit institutions can vet a government's compliance with legally binding fiscal rules, including through the analysis of the reliability of the relevant accounting information, and of the possible materialization of the accounting risks mentioned above. However, this analysis is traditionally only an ex-post one; moreover, external audits tend to protracted in time, with the corresponding reports typically becoming available one year or more after the end of the budget execution period. This limits their usefulness for the purpose of warning about impending risks to budget targets, and calling for timely corrective actions.

There is therefore a case for supporting the adoption of a fiscal rule with the creation of "watchdogs" responsible for: assessing the likelihood of compliance of a proposed budget with the rule; closely monitoring its execution; alerting to, and preferably quantifying, emerging risks to the budget outcome; and possibly recommending adequate remedial steps. While such institutions already exist, or are being considered also in countries that do not follow a fiscal rule --where they generally assess the budgetary prospects on present policies, as well as the cost of new proposed spending or tax cut measures (as the Congressional Budget Office in the US)--, they are especially useful in vetting the implementation of a fiscal rule. In particular, as mentioned in sect.II.4 above, they can play an important role in providing inputs into the implementation of a SBB rule, which requires technically demanding methodologies for the calculation of potential GDP and of trend commodity prices (as in the case of Chile). Table 3 presents some examples of fiscal watchdogs.

¹⁵ Traditionally, auditing practices have focused mainly on formal compliance of budgetary operations with the relevant laws and regulations, but increasingly external audit institutions are also focusing on the cost-effectiveness of government spending programs, especially in the more advanced countries where the relevant information is more available, and the capacity of the auditing bodies is greater.

Table 3 - Examples of fiscal watchdogs

Country	Institution and function
Chile	2 expert panels to estimate potential output and trend copper prices
Germany	Stability Council to be constituted to monitor public finances, and issue early warning as needed
Hungary	Fiscal Council created by FRL of 2008, to provide independent macro-economic and fiscal forecasts
Netherlands	Central Planning Bureau (CPB) provides economic assumptions for the budget, and conducts fiscal policy analyses
Sweden	Fiscal Policy Council monitors compliance with fiscal rule targeting 1 percent of GDP surplus over the cycle
US	Congressional Budget Office (CBO) analyzes Administration's budget, budgetary impact of proposed new laws. Reports to Congress on a non-partisan basis

Source: IMF, 2009

11. Enforcement and correction mechanisms

To be effective, rules need also to be supported by appropriate enforcement mechanisms, including provisions for correction of past deviations that do not call for a permanent revision of the rule.

Enforcement mechanisms vary widely across countries, witnessing to the difficulty of designing and implementing them effectively. At one extreme of the spectrum, some countries rely solely on the reputational (domestic and/or external) cost of non-observance of the rule (this is the case for instance in Argentina, Australia, India, New Zealand, and the UK). This approach may be adequate in countries where there is a well-developed political and social consensus for fiscal responsibility, and where conditions for the effective operation of market discipline are largely met, but few countries appear to meet such conditions. The effectiveness of this approach could be enhanced by the creation of the above-mentioned watchdogs, responsible for analyzing and publicizing instances of non-observance of the rules, and identifying the factors explaining them.

At the other extreme, the legislation introducing a fiscal rule may include criminal sanctions for budget officials responsible for the application of the rule (this is for example the case for the Fiscal Responsibility Law in Brazil). Such an approach however may create undue risks for budget authorities, especially if the deviations in budget outcomes are largely the result of exogenous shocks, and in practice may end up not being applied systematically. In between these extremes, some fiscal rules envisage financial penalties for the non observance of the rule, to be levied e.g. on the members of a monetary union (as in the EU SGP), or on sub-national governments (as in the case of Brazil). The record of actual utilization of such penalties

is, however, very limited so far, as they envisage in most cases complicated and lengthy procedures for the enforcement of the penalty.

A more promising approach would seem to be the inclusion in fiscal rule of pre-specified correction mechanisms for deviations from the rule. An interesting example in this respect is provided by the Swiss “debt brake” rule. Under this rule, any ex-post deviation of the federal structural budget balance outcome from the target is recorded in a notional account. When the cumulative deviation exceeds 6 percent of annual budgetary expenditures (equivalent to about 0.6 percent of GDP), the government is required to announce measures to eliminate this excess within three years. A similar mechanism is envisaged in the recently enacted constitutional revision introducing a structural balance rule in Germany.¹⁶

In a recent paper (IMF, 2009), IMF staff compared the stabilizing and sustainability properties of a structural fiscal balance rules with and without a correction mechanism, under different growth scenarios. The simulations suggest that the introduction in the rule of a correction mechanism significantly enhances medium-term fiscal sustainability (convergence of the debt towards an initially targeted path) at a limited cost in terms of the counter-cyclical policy of budgetary policy.

V. Fiscal rules for sub-national governments (SNGs)

The growing decentralization of spending responsibilities in Latin America, as well as in other parts of the world, has increased the importance of sound and sustainable fiscal policies at all levels of government. As demonstrated by the experiences of many countries around the world, CGs’ efforts to achieve sustainable fiscal positions may be hindered by fiscal laxity at the sub-national level, especially in the absence of conditions for an effective operation of market discipline at that level. It is also increasingly clear that CGs’ macro-economic stabilization efforts can be frustrated by pro-cyclical policies of SNGs, or by a lack of capacity of such governments to implement countercyclical fiscal stimulus packages in their areas of responsibility (social or infrastructure); and that regionally asymmetric shocks may require appropriately differentiated sub-national fiscal responses. Against this background, this section of the paper discusses: the

¹⁶ This new rule requires the federal government to run a structural surplus equivalent to 0.35 % of GDP, and the states a structural balance, starting in 2016. Deviations from these targets will be accumulated in a notional account, and a correction required when the cumulative deficit exceeds 1 percent of GDP. The rule contemplates a temporary escape clause to be invoked by a majority of Parliament, and a reentry path, if the clause is activated. There are no explicit sanctions for non-observance, but the law envisages the creation of an independent watchdog (a Stability Council) to monitor the implementation of the rule and issue early warnings when appropriate.

potential for fiscal rules to promote sustainability and avoid pro-cyclicality at the sub-national government level; desirable design features of such rules, and prerequisites for their successful implementation; and briefly, other reforms of inter-governmental fiscal arrangements, including in particular revenue assignments and the design of inter-governmental transfers, that may be needed to support the introduction or reform of sub-national fiscal rules.

The adoption of numerical fiscal rules is one of the possible approaches to promoting observance by SNGs of their inter-temporal budget constraints. The other (not mutually exclusive) alternatives include: reliance on market discipline; the use of intergovernmental fora to agree on sustainable and mutually consistent fiscal targets for all levels of government; and administrative controls by the CG on sub-national borrowing.

As discussed in Ter-Minassian and Craig (1997), the pre-conditions for an effective operation of market discipline are quite demanding, including: a history of no bailouts of SNGs by the CG; well developed financial markets; no privileged access of SNGs to financing; and the availability of timely, reliable and adequately transparent information on sub-national finances. Since they are rarely fully met in practice, virtually no country relies on market discipline alone to impose a “hard budget constraint” on SNGs.

At the other end of the spectrum, reliance on administrative borrowing controls by the CG is also becoming infrequent, as SNGs, especially at the intermediate (regional) level, have acquired (or are acquiring) increasing, and in some countries constitutionally sanctioned, autonomy; and their officials are elected by popular vote, and sometimes belong to a different party than the one ruling at the CG level. In many countries, administrative controls are currently applied only to external borrowing.

Finally, cooperative inter-governmental arrangements are becoming more frequent around the world, as decentralization and democratization progress, but their effectiveness in securing well-functioning decision-making processes, and adherence by all participants to agreed fiscal targets, also varies significantly across countries. In general, such arrangements have proven most successful in countries where there is an established culture of fiscal responsibility, regional disparities are not too acute, and the CG has a recognized leadership role.

Reflecting the limitations of the alternative approaches, the use of numerical fiscal rules to promote fiscal discipline at the sub-national level has been growing around the world. These rules typically stipulate limits on sub-national deficits (e.g. in US states; and in a number of EU members, under the Domestic Stability Pacts), or targets for the primary balance (e.g. in Brazil), in relation to each jurisdiction’s output, or more frequently to its revenues. Some rules envisage limits on debt or the debt service of SNGs (e.g. in Brazil, Colombia, Hungary). In some cases (e.g. in some US states), sub-national fiscal rules also mandate expenditure or revenue limits.

As with fiscal rules at the CG level, a number of factors affect the effectiveness of sub-national rules in promoting fiscal sustainability:

- The robustness of the legal foundation of the rule. Specifically, in some countries the CG is constitutionally empowered to enact legislation stipulating binding fiscal rules for its sub-national governments. In others, however, such rules can only be enacted by each sub-national jurisdiction. This is especially the case in federal countries, such as the US, Switzerland, India, and Argentina, to name just a few. In a number of these countries, SNGs have adopted fiscal rules (mostly balanced-budget ones), often by including them in state constitutions. In such countries, the CG, although unable to unilaterally legislate binding fiscal rules for its SNGs, can in many instances act as a role-model for them, by adopting for itself a sound fiscal rule, exerting moral suasion, and, if appropriate, providing incentives to the SNGs to introduce similar ones. At a minimum, it can endeavor to ensure that the rules adopted by its SNGs are mutually consistent, minimizing the risk of free-riding behaviors. This approach is likely to be most effective where there exist institutional arrangements for a fluid dialogue between the different levels of government, or where SNGs depend significantly on financial support by the CG (e.g. in connection with a debt bailout).
- The soundness of the rule's design, specifically:
 - The comprehensiveness of its coverage. Deficit or spending limits can prove ineffective if SNGs are allowed to maintain extra-budgetary accounts, or to inappropriately classify transfers to their enterprises as "below the line" operations. Debt limits might be circumvented through resort to PPPs not justifiable on grounds of economic efficiency
 - Its clarity and transparency, which would facilitate the monitoring of its implementation; and
 - The appropriateness of the target to the initial conditions of the relevant sub-national jurisdiction. The larger the initial imbalances of the latter, and the lower its access to sustainable financing, the tighter need to be the deficit or debt limits stipulated by the rule. Also important are the level and variability of an SNG's own and shared revenues, as they provide an indication of its ability to service additional debt, and its vulnerability to exogenous shocks. Accordingly, deficit or debt limits are best specified in relation to revenues; and the target ratio should be lower the higher the historical variance of such revenues, or the more discretionary are the transfers received from the CG.
- The capacity of the SNGs to implement the rule, which in turn largely depends on the state of their public financial management systems. In this respect, sub-national

governments typically (albeit not always) lag behind their respective CGs. The CG has an important role to play in many countries in promoting and supporting the strengthening and modernization of budgeting, budget execution, accounting and reporting systems at the sub-national level. Whenever feasible in the light of possible constitutional constraints, the CG should ensure that common accounting and reporting standards are enacted for all levels of government (possibly with simplified regimes for small local governments), to facilitate adequate transparency of SNGs' operations, as well as a timely monitoring of the observance of any existing fiscal rule for these governments. Brazil provides an excellent example in this respect, as its Fiscal Responsibility Law (FRL) requires all state and local governments to maintain and report standardized accounts of their operations, with a four-monthly frequency. The FRL, enacted in 2000, envisaged a relatively short transition period for its implementation, during which the federal government provided significant technical and financial assistance to state and local governments that needed it, to enable them to meet the requirements of the law by the time it came into full effect

- The existence of adequate enforcement mechanisms. It is crucial that such mechanisms have a solid legal basis; their application be non-discretionary; and the penalties envisaged be severe enough to act as deterrent to non-compliance, but not be unrealistic, which could ultimately lead to their non-application. Penalties are typically of a financial nature, e.g. in the form of withholding of CG transfers to non-complying jurisdictions, but occasionally also entail the personal responsibility of the relevant officials (e.g. in Brazil). The effectiveness of enforcement mechanisms is likely to be greatly enhanced if they are supported by explicit requirements to correct deviations from the rule within a reasonable, pre-specified time period. Table 4 presents some examples of enforcement mechanisms for selected countries.

Table 4 - Types of sanctions and enforcement mechanisms for sub-national rules in selected countries

Country	Type of sanctions	Enforcement mechanism
Austria	Financial: Noncompliant local governments have to pay a fine proportional to the shortfall, up to a ceiling. If compliance is obtained within one year, the fine is returned; otherwise, the funds are allocated across compliant governments.	Cooperative: Application of sanctions depends on the unanimous decision of a commission involving the federal and local governments.
Canada	Administrative: In four provinces, ministries and members of the executive council are subject to significant cuts in wages for failure to achieve fiscal targets.	No formal coordination. A non-binding budget coordination exists via a dialogue among ministers

Country	Type of sanctions	Enforcement mechanism
Germany	No formal sanctions.	Cooperative: The Financial Planning Council (formed by the federal government, the states and representatives of the communities) is charged with monitoring fiscal developments at all government levels and making recommendations in cases of noncompliance.
Ireland	Administrative: Defaulting authorities can be removed from office and replaced by a commissioner appointed by the central government.	Centralized: Sub-national governments are monitored and controlled by the Department of the Environment and Local Government.
Italy	Administrative: Limits on the purchase of goods and services; prohibition to hire new staff and to contract debt to finance investment	Cooperative: The State-Local Government Conferences are involved in the monitoring process.
Spain	Administrative: Noncompliant authorities have to submit a plan for correcting any fiscal deficit.	Centralized.

Source: Joumard and Kongsrud (2003)

Existing sub-national fiscal rules typically privilege the objective of promoting fiscal discipline and sustainability. This reflects the traditional view that the stabilization function of fiscal policy is best reserved for the CG, a view that has some sound rationales, but is also increasingly at odds with the growing role of SNGs in the provision of socially sensitive public goods and services that account for a large share of public spending. Recognition of this changing reality suggests that an increased focus on the stabilizing properties of sub-national fiscal rules would be desirable. This has been highlighted by the widespread evidence of significant pro-cyclicality in the fiscal response of SNGs to the recent global financial crisis (see Ter-Minassian and Fedelino, 2010). The question is how to design rules that avoid pro-cyclical fiscal behaviors by SNGs, while safeguarding sustainability, and that can be effectively implemented at the sub-national level; and how to support such rules with appropriate institutional mechanisms (such as counter-cyclical funds) and other reforms in inter-governmental fiscal arrangements.

Specifying sub-national fiscal rules in terms of cyclically adjusted variables would in principle help avoid pro-cyclicality in sub-national fiscal policies. There are, however, a number of theoretical and practical considerations that can impact on the effectiveness of such an approach, and in a number of circumstances advise against its use.

First, the difficulties of estimating cyclically adjusted fiscal aggregates are even more significant at the sub-national than at the national level. Most countries do not have reliable and timely estimates of regional or local output, even less of output gaps. Using national indicators of the

cycle as a proxy can be adequate when the cyclical shocks are reasonably evenly distributed across the national territory, but, as evidenced by the recent global financial crisis, this is rarely the case.

An alternative approach might be to use labor market indicators (such as changes in unemployment), for which timely sub-national level measures are frequently available, as triggers for allowing deviations from the fiscal rule's target up to a pre-specified limit. However, this approach is clearly more suitable for advanced countries, characterized by high degrees of labor market formality, than for emerging or developing ones (as in Latin America), where labor market adjustments to cyclical shocks mostly occur in the informal sector, and are therefore inadequately captured by changes in the official unemployment statistics.

Moreover, such an approach would be more effective in avoiding a pro-cyclical fiscal tightening during a large negative output shock, than in avoiding a pro-cyclical fiscal expansion by resource-rich regions during a commodity price boom. For the latter, an alternative approach would be to require adjustments of the target balance for deviations in commodity prices from their medium-term trend (a' la Chile). Given, however, the above-mentioned difficulties of obtaining reliable estimates of the medium term trend of commodity prices, it may be preferable to utilize sub-national rules that target the budget balance excluding resource revenues.

Second, financing constraints tend to be tighter at the sub-national than at the national level, as market access is typically lower and more expensive for SNGs than for their corresponding CG. This suggests that the use of a sub-national fiscal rule allowing cycle-related deviations from a balanced-budget (or other sustainable balance) target should be accompanied by a requirement that SNGs use their budget surpluses during booms to accumulate liquid assets to be drawn down during downturns. This is for example the case in the US where a number of state constitutions require the accumulation of so-called rainy day funds (see Balassone et al., 2006, for details). It is crucial that arrangements for the governance of such funds be very transparent, and that the use of such funds be guided by clear criteria, specified in advance of the crisis, leaving little room for discretion, for example in the decision to start drawing on the fund, and the speed of its rundown.

Third, consideration should be given to increased use of expenditure rules at the sub-national level. Such rules, while not necessarily avoiding pro-cyclicality during downturns (since they set ceilings, not floors, for public expenditures) help moderate it during upswings and, by promoting sub-national savings and asset accumulation during such periods, can help cushion the impact of subsequent recessions on spending.

Finally, to reduce the risk of pro-cyclicality at the sub-national level, broader reforms may be needed in the system of inter-governmental fiscal arrangements. In particular, one criterion for the choice of revenues to be assigned to SNGs should be a low elasticity to cyclical developments. This (as well as equity considerations) argues against the assignment of revenues from natural resources and from company taxes to the sub-national level, as well as against a derivation-based revenue sharing mechanism for such revenues. As regards other shared revenues, it may be desirable to use a sharing formula based on moving averages, rather than current values, of CG revenues, to help smooth cyclical fluctuations of SNGs' resources. Consideration could also be given to the use of automatic triggers for pre-specified changes in sharing formulas (symmetric over the cycle) when cyclical indicators reach certain threshold values. Finally, it would be preferable not to devolve to the sub-national level certain expenditures (such as unemployment benefits) that are both cyclically and socially sensitive (or at least their funding).

More generally, CGs that want to ensure that their own (passive or active) counter-cyclical fiscal policies are not frustrated by pro-cyclical policies of their SNGs should endeavor to: strengthen the institutional arrangements for policy coordination with the latter; provide incentives (sticks and carrots) to them to build up adequate financial cushions during boom periods to withstand subsequent downturns; and help them improve their capacity to implement CG-funded stimulus measures (whether in the social or the infrastructure area) when needed.

VI. Empirical evidence on the effectiveness of fiscal rules

The increasing reliance on numerical fiscal rules over the last couple of decades has prompted growing interest in empirical analyses of the effectiveness of such rules, in terms of both promoting sustained fiscal discipline and reducing policy pro-cyclicality. This section provides a summary overview of the results of a number of these studies. It is clear that the evidence is mixed, especially as regards the impact of rules on the stabilization function of fiscal policy. The analyses are being, however, increasingly refined, and greater light is being shed on the stabilizing properties of different design features of the rules.

Some of the earlier studies (e.g. Alt and Lowry (1994) and Bohn and Inman (1996)) focused on the impact of statutory borrowing constraints on fiscal deficits in the US states, and found that those states in which such constraints were tighter (e.g. in terms of possibility of carry-overs of the deficits to subsequent years) displayed greater fiscal discipline than the others. This result was supported by a subsequent study by Sutherland et al (2005) that found a negative correlation for a cross-section of countries between the strength of sub-national fiscal rules and

the increase in sub-national debt. A study by Fatas and Mihov (2006), also using data from the US states, focused on the possible impact of rules on fiscal policy counter-cyclicality. Their analysis found that the rules constrain fiscal policy volatility, but also reduce its responsiveness to output fluctuations; and that the first effect dominates the second. Therefore, they concluded that on balance such rules contribute to output stabilization. This analysis confirmed the findings of a previous study by the same authors (2002) for a large sample of countries that argued that constraints on fiscal policy reduce the volatility of the business cycle. In contrast, other studies (e.g. Poterba (1994); Sorensen et al. (2001)) found evidence that the adoption of balanced budget rules by US states was associated with increased pro-cyclicality.

Empirical analyses of the effectiveness of national (as opposed to sub-national) fiscal rules have concentrated mainly on advanced countries (see, however, Alesina, Hausmann, Hommes, and Stein (1999) for an analysis of the link between budget institutions and fiscal performance in Latin America). Most of these studies focused mainly on the impact of procedural rules and institutions on fiscal discipline. More recent studies have attempted to assess more specifically the effectiveness of numerical fiscal rules, by constructing indexes that summarize the main characteristics of the rules, and relating them to budget outcomes (see Ayuso et al., 2006 for an overview of such indexes).

Some of these studies (e.g. Von Hagen (2005)) found evidence of a positive correlation between the strength of the rules and various indicators of fiscal discipline. Deroose et al., focusing on national expenditure rules, found evidence that such rules are effective in reducing the growth of spending and improving the ability of governments to adhere to their expenditure targets. Some studies (e.g. Gali and Perotti (2003) and Manasse (2006)) focused on the countercyclical properties of rules for the EU members, and concluded that the adoption of national and supra-national rules had helped reduce fiscal policy pro-cyclicality in those countries.

The most detailed study to date of EU national fiscal rules (Ayuso et al., 2006), based on a comprehensive dataset of characteristics of such rules, developed a series of time-varying indexes highlighting different properties (coverage, strength, cyclicality features) of the rules, and utilized them to explore, through a number of econometric analyses, the links between the characteristics of the rules and various indicators of fiscal performance. The main conclusion of this study can be briefly summarized as follows.

- Robust evidence was found of a positive correlation between the strength and breadth of coverage of the rules, and fiscal discipline, as measured by the overall fiscal balance. The correlation was significantly weaker with changes in the public debt. This may reflect the influence of exogenous factors (such as exchange rate changes and the realization of contingent liabilities) affecting debt stocks more than overall balances. It may also suggest, however, that in some instances balance-based rules may have been

adhered to through inappropriate accounting practices (e.g. accommodating some expenditure pressures through extra-budgetary or below-the line operations).

- Expenditure-based rules were found to perform better than overall balance or debt-based ones in avoiding pro-cyclicality of fiscal policy, but less well in ensuring fiscal discipline.
- Utilizing especially constructed Fiscal Rule Cyclical Indexes (FRCI) that score various features of rules in terms of their a-priori “cyclical friendliness” (e.g. use of cyclically adjusted, or over-the-cycle, balance or debt targets), and relating them to both indicators of fiscal discipline and fiscal pro-cyclicality, the study found that countries with higher values of the index were indeed less pro-cyclical in their fiscal policies, but also tended to improve less their overall fiscal performance, suggesting that there may be in practice some trade-off between the two objectives.

A recent IMF study (2009) using a much broader dataset, that encompasses all the IMF member countries currently utilizing numerical fiscal rules, explored the effectiveness of such rules during episodes of large fiscal adjustment. The study found initial evidence that the adjustment tended to be larger, longer-lasting, and more sustained in countries using fiscal rules, and that the fiscal performance of these countries was positively correlated with such features of the rules as breadth of coverage and strength of monitoring mechanisms. It also suggested that combining budget balance with expenditure rules enhanced the disciplining effect of both rules.

Finally, a few studies have analyzed the impact of the structural balance rule on both fiscal discipline and output volatility in Chile (see Marcel (2009) for details). Rodriguez et al (2006) compared the volatility of public spending in the country before and after the adoption of the rule, and found that it was more than halved between 1970-99 and 2000-06. In a more recent study (2008), Larrain argued that the rule contributed to a significant (about one third) reduction in the volatility of GDP growth between 1988-99 and 2000-05. Analyses by Lefort (2006) and DIPRES (2005) of the impact of the adoption of the fiscal rule on sovereign debt spreads for Chile found evidence of a reduction in country risk that exceeds that explained by other relevant factors such as the decline in the public debt during the sample period.

While the results of the above- mentioned studies cannot be considered fully conclusive, since they do not avoid the possible bias resulting from the omission of other variables (such as the strength of political commitment and the quality of budgetary processes and institutions) that could affect both the adoption of the rules and the fiscal performance, nevertheless they appear to provide some empirical support to the theoretical considerations developed in the sections above. The construction and utilization of cross-country comparable indexes of various features of fiscal rules is likely to continue to prove a useful tool in future, more comprehensive analyses of the effectiveness of such rules.

VII. Conclusions

There has been significant debate in the literature on the value-added of numerical fiscal rules (see e.g. Kopits, 2001), with some arguing that they do little to strengthen and enforce a pre-existing political commitment to a responsible fiscal policy, and that in the absence of such commitment, rules are likely to be ineffective. Others, on the other hand, point out that the adoption of rules can help prevent time inconsistency in fiscal policies, by raising the political and often financial cost of fiscal irresponsibility. As the preceding section has highlighted, the empirical evidence on the effectiveness of rules is not conclusive so far. What is clear, however, is that both the design and the implementation of fiscal rules matter for their effectiveness

The analysis in the preceding sections of this paper suggests that both the decision to adopt a numerical fiscal rule and its design need to be tailored to each country's specific economic, institutional and political circumstances. There is no "one-size-fits-all" approach. Nevertheless, based on both theoretical considerations and the growing wealth of country experiences, some broad principles can be identified to guide such country-specific analyses.

First, fiscal rules can have different objectives, and there are often trade-offs among them. Therefore, policy makers considering the introduction of a fiscal rule should be clear about their objectives for such a move, potential trade-offs among them, and the weight to be attached to each of them.

Second, such weights need to reflect initial conditions, such as the level of the country's fiscal balance and public debt, and their prospective evolution on current policies; the degree of a country's vulnerability to real and financial exogenous shocks, and consequently the degree of flexibility needed in fiscal policy to respond to such shocks; the strength of political and social support for commitment to a fiscal rule; and a number of institutional factors likely to affect the capacity to implement effectively the rule.

Specifically, countries that face serious initial fiscal imbalances and potentially unsustainable debt dynamics need to privilege in the choice of the type and level of the fiscal rule's target the objectives of avoiding short-term financing difficulties and improving medium-term sustainability prospects. This argues for choosing rules targeting the unadjusted budget balance (or the primary balance with a feedback loop from developments in the public debt).

In contrast, countries that are unlikely to face significant short-term financing constraints and have a sustainable fiscal position, but are vulnerable to large cyclical fluctuations and have sizable automatic stabilizers, should consider the adoption of a cyclically adjusted balance rule, provided they have adequate technical capacity to implement such a rule. Countries that are especially vulnerable to fluctuations in commodity prices should consider adopting a variant of

the structural balance rule that adjusts for deviations of such prices for their medium-term trend. Especially in view of the difficulty of identifying the longer-term trend for oil prices, oil producers should consider focusing their fiscal rule (or fiscal policy more generally) on the non-oil balance.

Balance or debt based rules may be usefully supplemented by expenditure-based ones, especially in countries that have relatively high tax burdens, and wish to cap the size of their public sector, or to provide a strong institutional foundation to spending rationalization efforts. Expenditure based rules may be difficult to sustain in countries characterized by extensive spending rigidities, including earmarking requirements. On the other hand, they can also help make more evident the efficiency costs of such rigidities, thereby facilitating reforms to reduce them.

An important challenge in the design of fiscal rules is reconciling credibility of commitment with the need for flexibility to respond to unpredictable shocks. If such shocks are temporary, this can be best achieved through the inclusion in the rule of transparent, and as detailed as possible, escape clauses. In the design of such clauses, it is important to minimize discretion and the risk of political opportunism in their application (e.g. by requiring vetting by an independent watchdog, or at least approval by a qualified parliamentary majority). It is also important to stipulate a reentry path under the rule. In contrast, in the event of a clearly permanent shock, the credibility of a rules-based approach to fiscal policy might be buttressed by a transparent and well motivated revision of the rule.

The key prerequisites for the effective adoption and implementation of SBB rules would appear to be:

- Adequate political commitment, which, depending on a country's institutions, may or may not need to be translated rapidly into a solid legislative basis
- A reasonably stable macro-economic environment, especially at the outset of the rule
- A minimum set of PFM requirements, in terms of capacity to: formulate reliable budgetary projections; monitor the execution of the approved budget and respond on a timely bases to developments threatening the achievement of the rule's target; and appropriately account, and transparently report on the budget execution
- Reliable and timely fiscal statistics, and the technical capacity to estimate the relevant variables (potential output; trend commodity prices and budgetary elasticities)
- Adequate external scrutiny, not only ex-post (through the traditional audit institutions), but preferably also throughout the budgetary process, through independent fiscal watchdogs

- Appropriate enforcement mechanisms, including requirements of timely correction of deviations of budget outcomes from the target.

The growing trend towards fiscal decentralization poses particular challenges for the design and implementation of fiscal rules. In a very decentralized system, and especially when the prerequisites for an effective market discipline on SNGs are not fulfilled, appropriate sub-national fiscal rules can be an important instrument to promote overall fiscal sustainability and minimize pro-cyclicality. Sub-national fiscal rules should:

- Have a robust legal foundation, consistent with the constitutional status of SNGs in each country
- Be as comprehensive as possible in coverage; clearly formulated; and reflect the debt servicing capacity of each jurisdiction
- Be consistent with the (frequently more limited than at the CG level) implementation capacity of SNGs; and
- Be supported by adequate enforcement mechanisms.

To minimize pro-cyclicality, it would be desirable in principle to allow some play for automatic stabilizers in sub-national fiscal rules. In practice, however, it may be quite difficult to design and implement structural-type rules at the sub-national level, given the difficulties of measuring the cycle at that level. Moreover, even if technically feasible, the use of such rules should be accompanied by steps (such as the building up by SNGs of adequate “rainy day” funds during boom periods) to avoid the emergence of financing constraints during cyclical downturns.

Other reforms in the intergovernmental arrangements (revenue and expenditure assignments, and the transfers systems) may be more feasible and effective than the adoption of structural fiscal rules in reducing pro-cyclicality at the sub-national government level.

Appendix I

Expenditure rules

Expenditure rules have become increasingly popular over the last decade or so. Currently, variants of such rules are used in about 25 countries, nearly one third of all countries utilizing fiscal rules. Expenditure rules are especially prevalent in advanced countries that wish to constrain their (often relatively large) size of government. They are less prevalent in emerging and developing countries, which often face large social and infrastructure expenditure needs, as well as revenue mobilization needs.

A number of issues arise in the design of such rules, and country experiences vary in how they are addressed (see Ljungman, 2008, for a detailed discussion).

- Comprehensiveness

Potential candidates for exclusion from the rule's coverage are:

- Expenditures financed with earmarked revenues that are largely outside government discretion, such as foreign grants (this is the case e.g. in Finland for transfers from the EU). The case for such exclusion mainly resides in the difficulty

of forecasting these expenditures ex ante. An overestimation of such expenditures, if included under the ceiling, would make room for higher growth of other spending, with adverse effect on the fiscal balance

- Interest payments on the public debt. The pros and cons of this exclusion have been discussed in the text above. Most countries exclude them from expenditure-based, if not from balance-based, rules
 - Spending on entitlement programs, such as pensions. The case for such exclusion rests on their rigidity in the short run. However, their exclusion would likely mask the need for corrective action to contain or reduce their growth over the medium-term. Thus, it is preferable to include them, while building in the target a contingency margin for possible short-run excesses over their forecast, coupled with a correction requirement over the medium term
 - Investment spending. The pro's and con's of golden-type rules have also been discussed in the text above
- Treatment of inflation

If expenditure rules are specified in nominal terms (i.e. a ceiling is set on the nominal rate of growth of expenditures), deviations of the actual inflation rate from that projected when the ceiling was set require a corresponding compression of real spending (in the event of an excess) or allow a faster real growth of spending (in the event of a shortfall). This may be desirable from a stabilization standpoint (especially if the inflation reflects unanticipated demand pressures), but may create allocative distortions (e.g. with cuts concentrated on investment) and difficulties in expenditure management. In general, since the deflator for government expenditures differs from the CPI or GDP deflators, it is preferable to use projections of the former as a basis for setting nominal spending ceilings.

- Exclusion of cyclically sensitive expenditure from the target, or use of cyclically adjusted expenditures as a basis for the rule

The exclusion of clearly cyclical spending, such as unemployment benefits, from the coverage of an expenditure rule would seem desirable on the grounds discussed in sect. IV below, provided it does not jeopardize fiscal sustainability. It may be, however, of limited value in preventing fiscal pro-cyclicality in emerging and developing countries where the coverage of such benefits is limited, and the cycle mainly reflects external factors, such as movements in commodity prices. The alternative approach of targeting cyclically adjusted spending is theoretically more correct, but also more demanding in

terms of computation, and subject to all the caveats discussed in more detail in Sect. IV above. Country practices vary in the exclusion or inclusion of cyclically sensitive items in expenditure rules (for instance, the Netherlands and Sweden include such expenditures in the ceiling; Finland does not).

- Flexibility mechanisms, to manage unforeseeable spending pressures (e.g. resulting from natural disasters or the realization of contingent liabilities).

In most cases, these are dealt with by keeping a part of the budgetary envelope as a contingency reserve, the size of which should reflect country-specific factors, such as the degree of vulnerability to unforeseeable shocks. In addition, some countries utilize escape clauses (as discussed in Sect. II 4c)

Expenditure rules should in principle also encompass tax expenditures, to avoid temptations to proliferate tax exemptions and preferential treatments in order to meet an expenditure target. In practice, however, no country has yet done so, in part reflecting the difficulty of estimating tax expenditures accurately.

Available evidence on the effectiveness of expenditure-based rules is discussed in Sect. VI above.

Appendix II

Main methodological issues in calculating SBs

The estimation of SBs is a complex exercise, which requires a well developed statistical base and significant technical capacity. The techniques commonly used all have limitations, and considerable effort has been, and continues to be, spent by some national authorities, international organizations and academics in refining them.

Depending on the concept of SB used, its calculation involves the estimation of:

- The output gap, for a CAB
- The trend rate of growth of output, for the GBB;
- The medium term trend prices of relevant commodities, for structural balances that aim to correct for deviations of actual prices from trend prices; and
- Elasticities of revenues and of certain types of expenditures (notably social safety net programs) to the cycle.

There are different methodologies commonly used for the calculation of potential output and output gaps.

One utilizes a simple statistical procedure (the Hodrick-Prescott (HP) filter) which extracts a time trend from GDP series, and produces output gap estimates that are symmetric over the cycle. This procedure (which is used by, among others, Switzerland in its debt brake rule) has the advantage of being quite objective, since it requires only one assumption (on a sensitivity parameter that weights the trend component of output), and is easily replicable by outside observers (IMF, 2009). However, it also suffers from a number of significant shortcomings (Kuttner, 1994). First, potential output measures generated with this technique lack a substantive economic theory foundation. Second, it is not well suited to deal with structural breaks in the GDP series. Therefore, it should be supplemented by tests to identify such breaks, and adjustments for them. Finally, the technique allows identifying turning points in the potential output trajectory only with considerable lags, since it suffers from end-point bias, i.e. it gives a disproportionate weight to the latest observations in the series. Thus, it can lead to large ex-post revisions of the potential output series, thereby exacerbating the uncertainty associated with real-time potential output estimates.

An alternative, more technically demanding, procedure (currently utilized by EU countries and by Chile, among others) is the econometric estimation of potential output through a production function (most frequently of the Cobb-Douglas type). This approach relates potential output to estimates of the capital stock, hours worked, the Non-Accelerating Inflation Rate of Unemployment (NAIRU) and the permanent component of total factor productivity (TFP). The

last two variables (which are unobservable) are typically estimated through a Phillips curve equation, and a HP filter, respectively. In view of the above-mentioned shortcomings of HP filter-type techniques, the Output Gap Working Group (OGWG) of the EU's Economic Policy Committee has recently proposed utilizing the information contained in capacity utilization data to disentangle the cyclical from the permanent component of TFP (see, EC, 2010 for details).

The European Commission (EC) has recently proposed the utilization of an alternative indicator of the fiscal stance, namely a cyclically and absorption adjusted balance (CAAB) which calculates the balance that would prevail if domestic absorption in a country were at its level consistent with a sustainable current external account position (see EC, 2010 for details). Such an indicator would be especially useful for countries experiencing large (negative or positive) current account imbalances. The EC's calculations show that differences between the CAB and the CAAB can be significant for such countries.

The estimation of elasticities of revenues and expenditures to the output gap is also relatively complex, since they are affected by changes in the relevant legislation, as well as, for revenues, by changes in asset prices and in the effectiveness of the tax administration. The degree of disaggregation of the estimates is important because frequently cyclical movements result in changes in the composition of the tax base and consequently of the elasticity of total revenues to the cycle.

The OECD has developed and refined over the years a methodology to estimate the elasticities of major revenue categories and of overall current expenditures to the output gap. It has found the average tax elasticities in its member countries to range between 1.5 for corporate income tax, 1.25 for personal income taxes, 1 for indirect taxes and under 0.7 for social security contributions (with fairly wide variances around these means). In contrast, it has estimated very low cyclical elasticities of expenditures, reflecting a simplifying assumption that only unemployment benefits are sensitive to the output gap (see Girouard and Andre', 2005).

The EC uses a similar methodology in its fiscal surveillance of EU members (see Larch and Turrini, 2009). The Commission's 2010 Public Finance Report (EC, 2010) details some recent methodological refinements to net out the impact of discretionary tax changes on revenue elasticities, which it finds significant in most countries of the area. It also finds that net elasticities vary significantly over the economic cycle, a fact that highlights the limitations of the CAB estimates. Finally, in its calculations of CABs, the IMF currently makes the simplifying assumptions of a unitary elasticity of revenues, and a zero elasticity of expenditures (Fedelino et al. 2009).

The OECD methodology can provide a useful input into country-specific estimation of revenue elasticities, but it is expected that such elasticities will in general be lower for developing than for OECD countries, reflecting narrower coverage of the respective tax bases, and a significantly higher share of indirect taxes in total revenues in those countries.

Whatever methodology is selected for the calculation of structural-type balances, it is important that it be transparently disclosed (along with the relevant assumption for forward-looking projections), and preferably subjected to independent technical vetting (e.g. by a panel

of experts as in Chile). It is also crucial that the calculations be regularly updated during the budget execution, to ensure that any risks of deviations from the rule's target are promptly identified, and appropriate corrective actions are taken.

Appendix III *(I agree that this could be dropped from the paper when included in the book. In this case the editor should replace the references to appendix III in the text with cross-references to Mario's paper)*

Chile's experience with a structural budget balance rule¹⁷

Chile's 10 year experience with a structural budget balance-based rule provides a useful illustration of both the advantages of such a rule, and the relatively demanding pre-conditions for its successful design and implementation.

The adoption of the rule was announced in May, 2000 by President Lagos, following intense technical preparations in the early months of his mandate. The rule called for the achievement of an annual surplus equivalent to 1 percent of GDP in the budget, adjusted for the effects of both the cycle and deviations of the price of copper from its long term trend on revenues. The effect of the cycle was measured as the product of the gap between actual and potential GDP and the elasticity of total revenues to GDP. All the variables and parameters used in the calculation of the structural balance were initially estimated by the Ministry of Finance, but within a year or so, with a view to strengthening the credibility of the estimates, the government appointed panels of independent experts to vet them.

The methodology of calculation of the structural balance was revised on several occasions in the subsequent years. Some of the changes represented useful refinements (e.g. the exclusion of deviations of actual from trend prices of molybdenum, a significant and volatile source of revenue for the state-owned mining company, CODELCO; a disaggregation of total revenues into main categories, and the estimation of the related elasticities; a separate treatment of tax revenues from private copper mining enterprises; and the exclusion of expenditures of a newly created unemployment fund). However, other changes (such as the inclusion in revenues "above the line" of valuation changes in the financial assets of the Pension and Economic and Social Stabilization Funds; and the classification "below the line" of some expenditures to support certain public enterprises) had a less clear rationale.

The choice of the initial 1 percent of GDP structural surplus target, despite a low level of the public debt, was justified by a number of considerations, related in particular to: the existence of a significant quasi-fiscal deficit of the Central Bank; the desire to accumulate financial assets, as counterpart to the ongoing gradual depletion of copper resources; and concern about various known or contingent future liabilities. In 2008, the government decided to revise downward the target (to 0.5 percent of GDP), in line with the recommendations of a panel of experts which had

¹⁷ This appendix draws extensively on Marcel (2009)

highlighted the significant improvement in the fiscal position since the introduction of the rule, following the recapitalization of the Central Bank and a decline in contingent liabilities. This revision was effected in a transparent and well explained manner, with no apparent adverse repercussions on the credibility of the fiscal management of the country. In contrast, neither the rationale for, nor the planned duration of, a subsequent reduction of the structural surplus target to 0 in early 2009 --in conjunction with the announcement of a substantial (around 4 percent of GDP) fiscal stimulus package-- were spelled out by the government, raising some concern about the future of the rule.

The adoption of the structural rule in Chile gave impulse to a number of institutional reforms, which have improved the statistical base to monitor government operations (with the adoption in 2004 of the GFS 2001 Manual, and of accrual accounting), as well as the quality of the budget process. In particular, the commitment to a multi-year budget target facilitated a more top-down approach to the definition of overall and ministry-by-ministry spending ceilings, in combination with increased freedom and responsibility of budget managers in the allocation of the resources allotted to them. These changes are in line with modern best practices in budgeting and an essential pre-condition for a more performance-oriented public financial management.

The structural character of the Chilean fiscal rule has important implications for the execution of the budget. Only threatened deviations of the structural balance indicator (periodically updated during the year) from the target require corrective action. Deviations of actual budget aggregates from the forecast do not require correction if they do not affect the structural balance, because they are due to cyclical factors. This provides greater certainty to budget managers about their resources, and reduces the inefficiencies and social disruptions associated with intra-year volatility of investment and socially sensitive spending programs. At the same time, the close monitoring of the structural balance indicator, and a record of prompt corrective measures when needed, have resulted in remarkably close ex-post observance of the rule in most of the last decade, with clear benefits in terms of the credibility of fiscal management.

Various analyses have found evidence that the rule has contributed significantly to reducing spending volatility in Chile, and has also had beneficial macroeconomic effects, in terms of reduced output volatility and sovereign risk (see sec. VI below for details).

In the face of the success of the Chilean experience to date, an obvious question is what were the main factors responsible for the success, and to what extent they can be replicated in other countries considering a Chilean-type rule. Clearly, Chile had a number of conditions in place at the outset of the rule that boded well for its success:

A fairly diversified productive base, and substantial trade openness

Relatively flexible monetary and exchange rate policies, and a financial sector that had already undergone substantial restructuring and consolidation

An extended record of sound macro-fiscal management, as evidenced by a very low level of public debt

A modern and broad-based tax system and a strong tax administration. Revenues from natural

resources accounted for less than 10 percent of total

A long tradition of top-down, disciplined budget management, and a relatively centralized system of intergovernmental fiscal relations

A well-developed statistical base that facilitated the preparation of credible estimates of the structural budget balance, the timely monitoring of their realization, and a transparent dissemination of the relevant information.

Nevertheless, as outlined above, the authorities took a number of steps to strengthen the institutional base of the rule, while selecting an initial structural target that was probably more ambitious than would have been required to ensure both short-term macro stability and medium term debt sustainability. This prudent course of action certainly contributed significantly to the success of an approach which, while already common in a number of advanced countries, had few precedents among emerging markets, and none at all in Latin America.

Going forward, substantial challenges for the implementation of the rule and for fiscal management in Chile more generally, will be posed by the looming massive reconstruction costs, following the devastating earthquake of February 2010. According to the Fiscal Responsibility Law enacted in 2006, which gave a stronger legal foundation to the structural balance rule, the recently installed government of President Pinera will have to define a structural balance target consistent with the new economic prospects and its fiscal policy priorities, and report annually on the implementation of the rule.

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