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## Getting Rules into Policymakers' Hands: A Review of Rules-based Macro Policy

Mario Marcel

N.º 66 Febrero 2019

BANCO CENTRAL DE CHILE





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Documentos de Política Económica del Banco Central de Chile  
Economic Policy Papers of the Central Bank of Chile  
ISSN 0717-7151

Agustinas 1180, Santiago, Chile  
Teléfono: +56 2 26702475 – Fax: +56 2 26702331

# Getting Rules into Policymakers' Hands: A Review of Rules-based Macro Policy\*

**Mario Marcel**

*Governor*

*Central Bank of Chile*

February 2019

## **Abstract**

There is a long-running debate among economists as to whether macroeconomic policy decisions should follow pre-defined rules or be left to the discretion of benevolent and informed policymakers. This article explains the reasons and risks behind the growing popularity of the former, focusing on monetary and fiscal policy. The article then proposes a framework to decompose policy rules so as to understand the diversity of options in rule design. With the support of this framework, we compare the performance of monetary and fiscal policy rules, suggesting that the apparent weaknesses of the latter may be explained by specific design choices and the supporting institutional framework. These weaknesses can be addressed in designing and strengthening such rules over time.

## **Resumen**

Existe un debate de largo aliento entre los economistas sobre si las decisiones de política macroeconómica deben seguir reglas predefinidas o quedar a la discreción de autoridades benevolentes y bien informadas. Este artículo explica las razones y los riesgos detrás de la creciente popularidad de seguir reglas predefinidas, centrándose en la política monetaria y fiscal. El artículo luego propone un marco para descomponer las reglas de política con el fin de entender la diversidad de opciones en el diseño de las reglas. Apoyándose en este marco, se compara el desempeño de las reglas de política monetaria y fiscal, sugiriendo que la aparente debilidad de esta última se puede explicar por elecciones específicas de diseño y el marco institucional. Estas debilidades pueden abordarse en la formulación y fortalecimiento de dichas reglas a lo largo del tiempo.

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\* I thank the valuable assistance of Carlos Medel in preparing this article as well as comments and suggestions to Sofía Bauducco and Miguel Fuentes, and Consuelo Edwards for editing help. I also thank Charles Goodhart, Emily Jones, Ricardo Reis, Silvana Tenreyro and seminar participants at the *Blavatnik School of Government* at the University of Oxford and the London School of Economics and Political Science for comments. All errors and omissions remain as my own responsibility. Email: [mmarcel@bcentral.cl](mailto:mmarcel@bcentral.cl).

## **I. Introduction**

While there is a vast literature analyzing the causes, effects, design choices and institutional setting of monetary and fiscal policy rules and some have underscored the relationship between both in actual experience, it is not common to look at them in a comparative fashion. In our view, this is an exercise worth pursuing given the common conceptual origin and motivation of both types of rules.

Such motivation is the long-running debate among economists as to whether macroeconomic policy decisions should follow pre-defined rules or be left to the discretion of benevolent and informed policymakers. This article explains the reasons and risks behind the growing popularity of policy rules, especially with monetary and fiscal policy.

The article then proposes a framework to decompose policy rules so as to understand the diversity of options open in rule design. With the support of this framework, we compare the performance of monetary and fiscal policy rules, suggesting that the apparent weaknesses of the latter may be explained by specific design choices and the supporting institutional framework. Such weaknesses can be addressed in designing and strengthening such rules over time.

Being a policy paper, the article is not aimed at providing a full account of policy rules, a recipe book for optimal rule design. Rather, its aim is to help understand why rules are adopted and some perspective on how to improve them over time. In dealing with that, we touch upon some of the political dimensions of policy rules.

## **II. Rules vs discretion**

The 1970s was a rich decade for economic thinking. In a relatively short time span, economists reckoned that economic agents were intelligent, *rational*, and could not be fooled indefinitely. If economic policy shapes agents' expectations, of which economic outcomes depend crucially, the design of such policy needs to take into account how it affects expectations in order to understand its true effects.

Discretionary policy that reacts to current economic conditions, instituted by a well-informed benevolent policymaker, may seem a good idea at the time it is implemented, but may deliver undesired outcomes if agents respond in an undesired way. Such responses crucially depend on agents' expectations which may change over time, partly by internalizing policy response functions.

These limitations become more acute as discretionality in macro policymaking may open the door for distinct government failures addressed in the literature, notably the use of inflation as tax mechanism, a "deficit bias" in fiscal decisions, and time inconsistency in general.

Several highly influential papers formalized these concepts, of which probably Lucas (1972, 1976) and Kydland and Prescott (1977) are the most renowned examples. Although seemingly simple, their ideas deeply changed economic policymaking.

## **III. Monetary policy rules**

When the first papers on rational expectations appeared, the natural example to which they referred was monetary policy.

A strong postulate of Keynesian economics was that there existed a stable negative relation between inflation and unemployment (Clarida, Galí, and Gertler, 1999). The so-called “Phillips Curve” seemed to represent well the historical data for the UK, suggesting that the Central Bank could choose the level of unemployment it would feel comfortable tolerating by adjusting the rate of inflation by creating money. Friedman challenged this idea by stating that it could hold only in the short run (Friedman, 1968). Over the longer run, he said, inflation and unemployment would necessarily become independent from each other. The coexistence of high inflation and high unemployment in the 1970s seemed to confirm this view.

The idea that more money boosts aggregate demand, and this leads firms to increase production and employment, may work in a world of fixed prices; but, if prices are not fixed indefinitely, agents in the economy will eventually figure out that the Central Bank is printing more money and will adjust prices accordingly. Attempts at lowering unemployment by raising inflation may last only until agents internalize higher inflation into their price-setting decisions.

As *expectations* about inflation change, more money no longer buys more goods, and the relation between inflation and unemployment weakens substantially. Rational agents understand what the Central Bank is doing and cannot be fooled forever. Kydland and Prescott (1977) showed that merely announcing low inflation may not be effective if an opportunistic central bank aims at surprising agents. An alternative was to set a credible, strong rule, tying the hands of policymakers.

Eventually, a new vision arose that considered prices to be somewhat sticky in the short run, and fully flexible in the longer run. Monetary policy took a central role as a short-run stabilization tool. Agents were rational and discretionary policy was suboptimal. While optimal policy is often not credible, and is always very difficult to communicate, rules usually come as a proxy, with the advantage of being easier to communicate and implement, as long as they remain credible. In the final analysis, a simple, second-best, rule that consistently aligns the response of economic agents, may be more effective than a complex first-best that depends on too many assumptions about agents’ behavior.

In the last 30 years or so, many central banks around the globe have adopted what have been called *inflation targeting* regimes. This is one in which price stability is set as the main goal of monetary policy, so much so that there is an explicit numerical target for the inflation rate (which could be a range, a point target, or both). This is a *rule* of the aforementioned type.<sup>1</sup>

Under this regime the conduct of monetary policy is completely oriented to the achievement of the inflation target. This is generally done by adjusting a short-term policy interest rate so as to deliver the right pressures for inflation to reach its target. The Phillips curve fits this scheme by calibrating the size of the output gap that will drive inflation to the target. Inflation targeting provides a reliable nominal anchor to the economy relying on agents’ expectations.

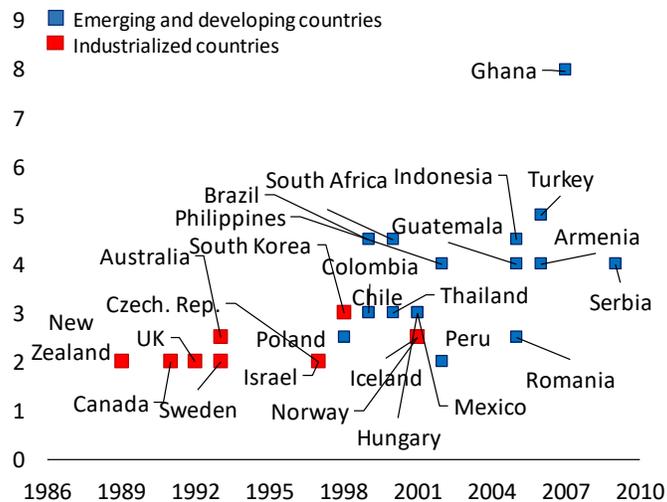
At the beginning of the current decade, some 27 countries had fully adopted an inflation targeting regime, of which nine were industrialized and 18 emerging and developing (Figures 1 and 2). If

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<sup>1</sup> See section V for a definition of a policy rule and its structure. See also Box 1 for a discussion on the *Taylor rule* for monetary policy, that adds a specific reaction function to guide policy makers.

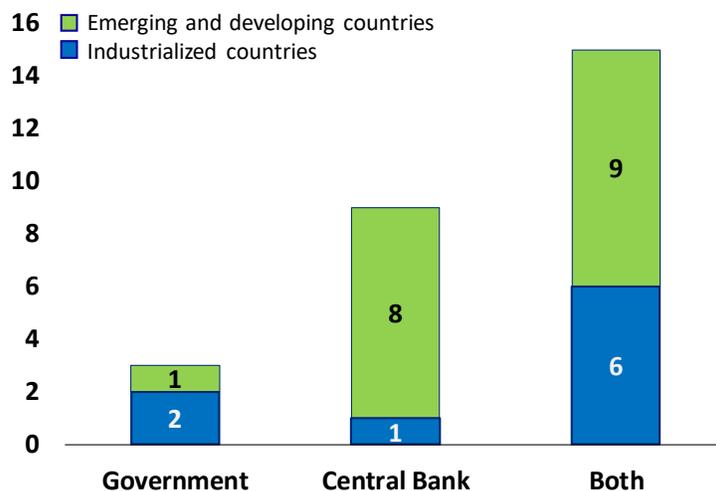
members of the Eurozone and latecomers are added to this list, the number of inflation-targeting countries would currently approach 50.

Figure 1: Countries operating a fully-fledged inflation-targeting regime (\*)  
(percentage)



(\*) Source: Hammond (2012).

Figure 2: Who sets the inflation target? (\*)  
(number of central banks)



(\*) Source: Hammond (2012).

The group of inflation targeting countries is very diverse, by economic development levels, political regimes, and institutional quality. Still, they all share the characteristic of having a Central Bank that worries first and foremost about price stability.

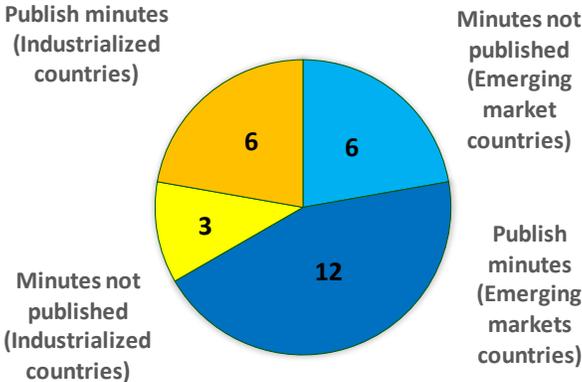
For an inflation targeting regime to work, it is not sufficient to announce the target and expect that everyone will believe in it, with expectations magically converging around such number. Indeed, the right institutional setup is as important as the target itself, if not more so. Central Bank independence has been adopted by many countries to decouple the conduct of monetary policy from the political cycle. The mandate of price stability is usually written in the Central Bank's law

and the quantitative target is openly communicated to the public. In addition, inflation-targeting central banks need to be very effective in communicating their policies, justifying them, providing means to monitor their effectiveness and explaining the reasons behind possible deviations from the target, with the sole objective of anchoring expectations.

Inflation-targeting central banks evaluate economic conditions and forecast variables of interest for their decision-making process using a suite of econometric and theory-based economic models. They usually collect data on a wide array of macroeconomic and financial variables. They continuously monitor agents' expectations through financial instruments such as surveys. They produce reports in which they describe the current economic situation, the outlook for the near future, and the main risks facing the economy (Adrian *et al.*, 2018)

Transparency in communication is crucial, but there exist different views and styles about how much and in what way information must be revealed to the public. The common denominator, though, is that a high degree of transparency is expected from an inflation targeting central bank (Figures 3 and 4).

Figure 3: Transparency (\*)  
(number of central banks)

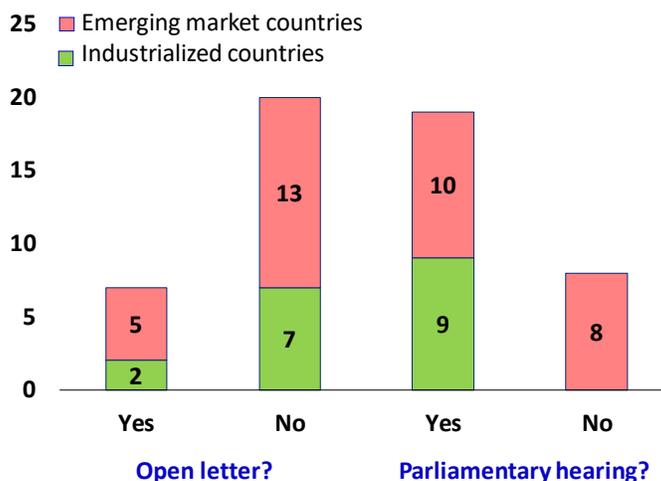


(\*) Source: Hammond (2012).

Inflation targeting does not mean that the Central Bank has to abide by the rule at all times and under any circumstances. In actual practice, there are moments when the Central Bank may choose to deviate from this path, as long as there are sufficiently good reasons to do so and only when this action does not jeopardize the anchoring of expectations.

This typically happens in two circumstances. First, since inflation measurements are likely to include a number of short-term disturbances, including measurement errors, high frequency noise, idiosyncratic shocks and short-term cross-cutting pressures, most inflation targeting regimes focus on medium-term forward-looking inflation. This is sometimes approached through “core inflation” indicators that exclude volatile items and, more generally, through medium-term forecasting models. This framework has been appropriately described as “forward inflation targeting” (Svensson, 1997).

Figure 4: Accountability mechanisms (\*)  
(number of central banks)



(\*) Source: Hammond (2012).

Second, some central banks have a dual mandate of price stability and “economic prosperity”. This latter element provides the good-enough reason for which central banks may choose to depart from pure inflation targeting, so long as the price stability objective is not compromised in the medium term. Even central banks that do not have such specific mandate may decide to minimize output volatility if the extent of the forward-looking exercise provides sufficient room for maneuver.

Deviations from straightforward inflation targeting may thus be built into the methodology, making it much easier to communicate, without threatening the attainment of the price stability goal, providing sufficient flexibility whenever needed. The so-called *Taylor rule* is a specific way of operationalizing it (Taylor, 1993; see Box 1).

**Box 1. The Taylor rule.**

An analytical form for the operationalization of the monetary policy rule, widely used by central banks, is the well-known *Taylor rule* (Taylor, 1993). This aims to represent the behavior of the monetary authorities when adjusting their policy instrument—the interest rate—which is explained by deviations from actual inflation with respect to the policy target, and by the output gap. The Taylor rule can be represented as:

$$i = (\bar{r} + \bar{\pi}) + a(\pi - \bar{\pi}) + b(y - \tilde{y}),$$

where  $i$  is the policy interest rate,  $\bar{r}$  is the real interest rate,  $\pi$  is actual inflation,  $\bar{\pi}$  is the inflation target, and  $(y - \tilde{y})$  is the output gap. In this way, when actual inflation is above the inflation target, the policy interest rate increases (with  $a > 0$ ), same as the case in which the output gap shows positive records (with  $b > 0$ )—thus, reducing the monetary stimulus to the demand. If parameter  $a$  is equal to zero, the authority only considers movements of the output gap in its policy decisions; on the contrary, if  $b$  equals zero, the authority does not consider the business cycle in its decisions and only considers inflation evolution. Thus, the *Taylor rule* can be seen as adding a specific reaction function to the inflation targeting framework.

An important result derived from the *Taylor rule*, is the *Taylor principle*. This corresponds to the case in which parameter  $a$  is greater than 1, indicating that, if inflation rises above the target, and the monetary authority wishes to attenuate that increase, the increase in the interest rate must be greater than the increase in inflation, which will result in a rise in the real interest rate and a consequent fall in aggregate demand.

Taylor (1993) shows that the coefficients  $a = 1.5$  and  $b = 0.5$  are a good representation of the behavior exhibited by the US Federal Reserve. Some recent econometric estimations for Chile with quarterly data suggest a coefficient  $a$  around 0.6, and a coefficient  $b$  around 0.1 when controlling for methodological factors and particular macroeconomic effects (Figueroa and García, 2017).

A major obstacle to implement an inflation targeting regime is mistrust of the promises of central banks. To raise credibility, the institutional setup may need to be strengthened to ensure that the Central Bank is focused on stabilizing inflation and decoupled from other concerns and needs of the government. This is why central banks in emerging economies tend to be more independent than their counterparts in developed economies.

In the case of Chile, which suffered from double-digit inflation for nearly 40 years, the Central Bank adopted an inflation targeting framework after becoming independent in 1989. Setting a credible inflation target played a key role in anchoring expectations in the 1990s, which allowed the Bank to move its current framework of a forward (2-year) inflation target with a floating exchange rate in 1999.

Almost 20 years later we can claim that this regime has succeeded in Chile and that inflation expectations in a time horizon of two years are consistently pinned down at the Bank's target of 3%. This is supported by the widespread perception that the Central Bank is a solid, serious, technically sound institution whose main concern is always price stability.<sup>2</sup> Figures 5 and 6 show how the policy rate has responded to major swings in inflation, followed by a firm anchoring of expectations to the policy target. According to a recent assessment of the International Monetary Fund, Chile's anchoring of expectations is the most solid among a number of Latin American countries and even exceeds the average of advanced economies (see Figure 7).

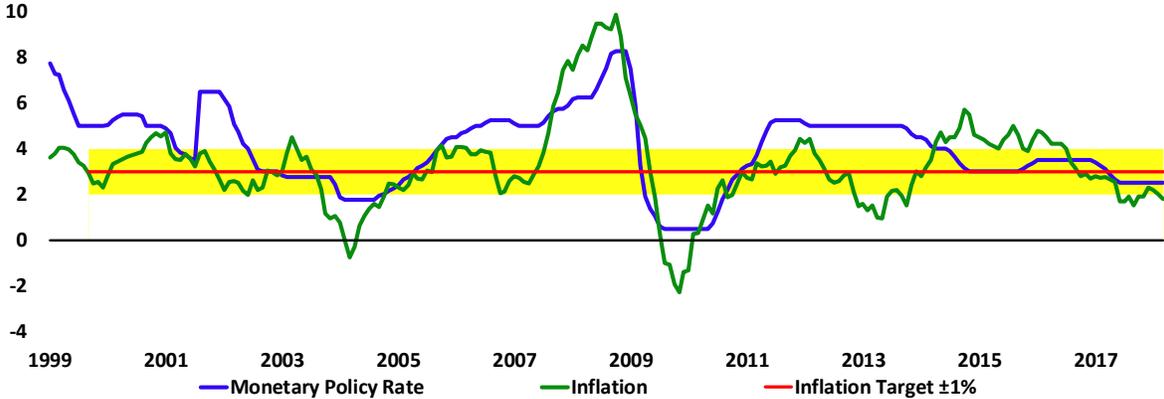
Monetary policy rules have faced new challenges after the Global Financial Crisis (GFC) of 2008. Economic recession and financial deleveraging exercised a major downward pressure on prices and inflation has remained persistently low for nearly a decade. So, after seeing inflation targeting as a commitment to prevent high inflation, monetary authorities found themselves worrying about deflation. To address this challenge, central banks in advanced countries engineered an unprecedented combination of conventional and non-conventional expansionary policies, including massive asset purchase programs to resolve zero-lower-bound problems for interest rates and enhance their expansionary stance. Notwithstanding these efforts, ten years after the crisis, inflation remains below target in most advanced economies. Still, it is remarkable that, despite setbacks, central banks have remained stubbornly committed to meeting their policy targets, and

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<sup>2</sup> In 2017, the confidence of the public for different institutions and actors indicates that 44% of the people declare to approve the work done by the Central Bank of Chile. This compares favorably with other public institutions and is located at very close levels to non-governmental institutions/actors that have traditionally inspired high levels of trust in Chile. See Marcel (2017) for more details.

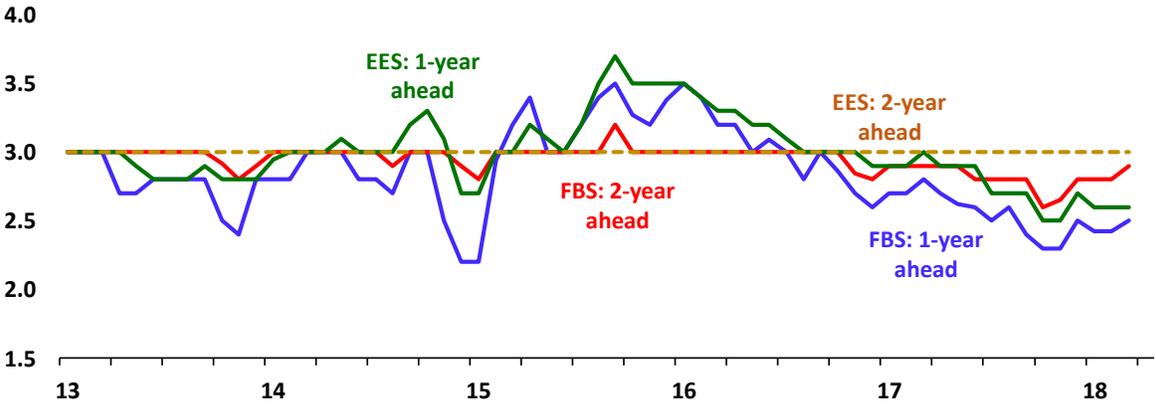
that delays in attaining them have prompted persistence and creativity in the articulation of monetary policy rather than questioning, softening or reformulating the policy rule.

Figure 5: Chile: Monetary policy rate, inflation target, and actual headline inflation, 1999-2018 (\*)  
(percentage)



(\*) Source: Central Bank of Chile and National Statistics Institute.

Figure 6: Chile: Headline inflation and expectations, 2013-2018 (\*)  
*Economic Expectations Survey (EES) and Financial Brokers Survey (FBS)*  
(percentage)



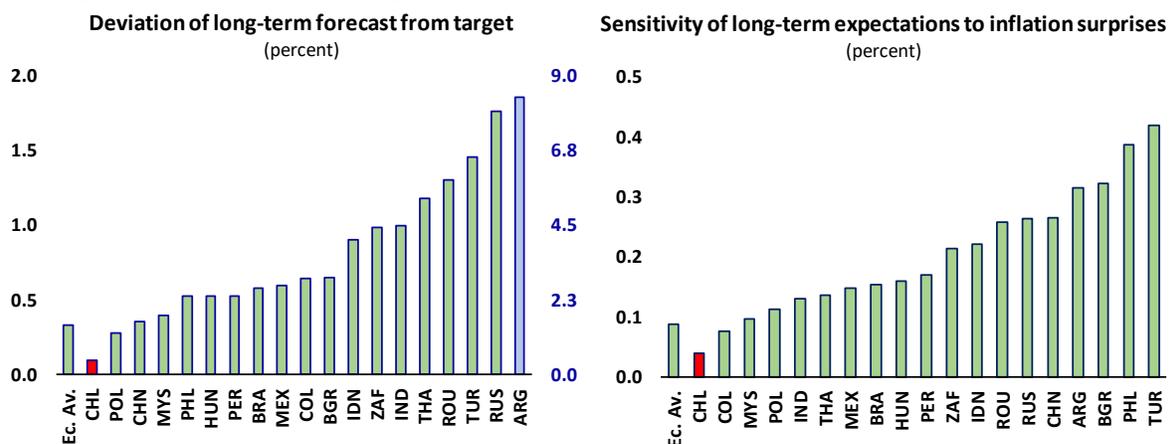
(\*) Source: Central Bank of Chile.

**IV. Fiscal policy rules**

Rules used for the conduct of monetary policy are well established and, although the countries that have adopted them are diverse, their inflation targeting regimes do not differ much in their substance. Fiscal rules, on the other hand, are much more recent and heterogeneous, both in their formal definition as well as in their implementation, and compliance is usually less strict.

What are fiscal rules and how widespread is their adoption? Are they desirable, or do they restrict the government excessively? Are governments complying with them and, if not, can something be done about it?

Figure 7: Cross-Country heterogeneity in degree of anchoring of inflation expectations, 2004–17 (\*)



(\*) Source: International Monetary Fund, *World Economic Outlook—October 2018*.

The IMF defines a fiscal rule as one that “imposes a long-lasting constraint on fiscal policy through numerical limits on budgetary aggregates”. Even though fiscal rules can be traced back as far as the 19<sup>th</sup> Century, their current meaning only makes sense after fiscal policy was given a macroeconomic meaning. As such, fiscal rules gained popularity only in the late-1990s and early 2000s, especially when Eurozone countries adopted deficit and debt ceilings in 1997 as part of the *Stability and Growth Pact*. As of 2012, seventy-six countries had adhered to one or more fiscal rules, at least nominally (Figure 8). An important landmark in the development of fiscal rules was the adoption of structural balance rules by Sweden, Switzerland and Chile in the early 2000s. These were later included in the Eurozone’s “Fiscal Compact” of 2012.

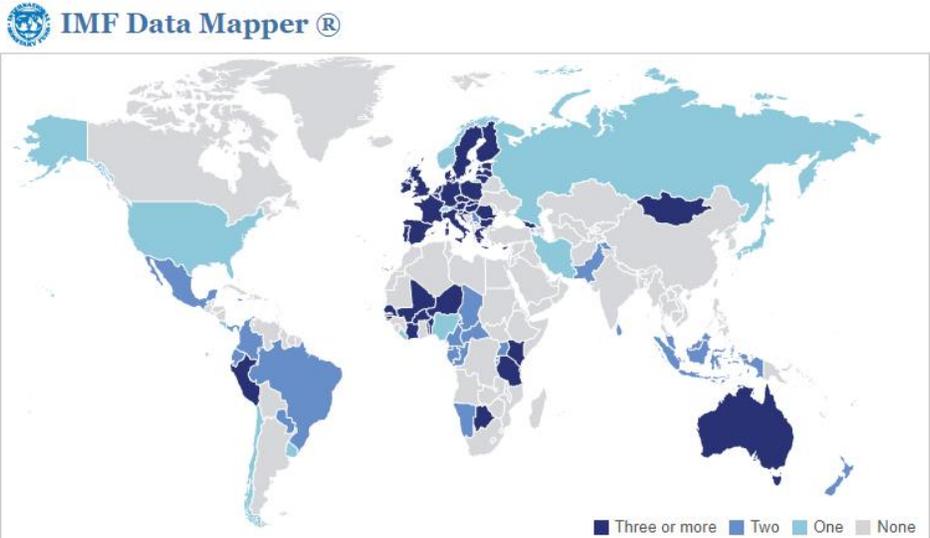
There are several types of fiscal rules, and each one of them has its pros and cons. According to the IMF (Schaechter *et al.* 2012), they can be grouped into four main categories, based on the budgetary aggregate they target: (1) Debt rules, which target or limit public debt as a percent of GDP, (2) Budget balance rules, which can constrain the overall balance or the structural balance, (3) Expenditure rules that set limits on total, primary, or current spending, and (4) Revenue rules, which may target the tax burden.

Contrary to what happens with monetary policy, there is less consensus on what the “right” fiscal rule is, and each country has adopted the rule that appears to fit better its institutional, political, and economic needs and constraints. In fact, several countries follow more than one rule (Figures 8, 9 and 10).

It appears that low-income economies favor debt rules, while advanced economies tend to lean towards budget-balance rules (Figure 11). This suggests that rules are used to discipline policy makers by targeting the budgetary aggregate that is more relevant for the economy and to signal a commitment to keep that aggregate within levels that markets find reasonable. If low-income countries suffer from *debt intolerance*, they may target debt/GDP ratio to indicate that they will be extremely cautious about the level of public debt they issue.

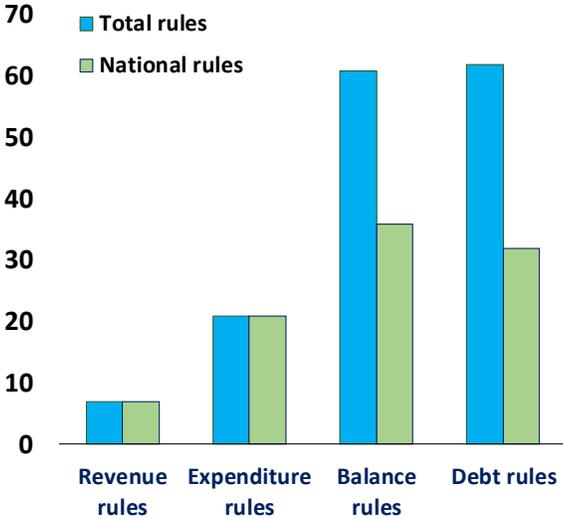
Fiscal rules can be good for the economy, provided they are well defined and stable, and that the institutional setup of the country is strong enough to ensure compliance. As political cycles are short, preference for current spending and the deficit bias as strong force to counter-balance.

Figure 8: Fiscal rules around the world (\*)  
(number of rules)



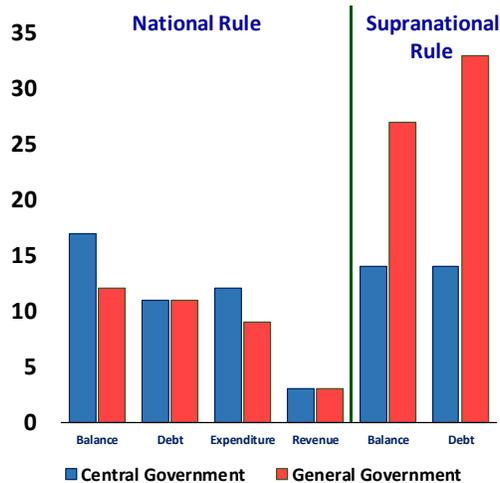
(\*) Source: International Monetary Fund.

Figure 9: Types of fiscal rules in use, 2012 (\*)  
(number of countries)



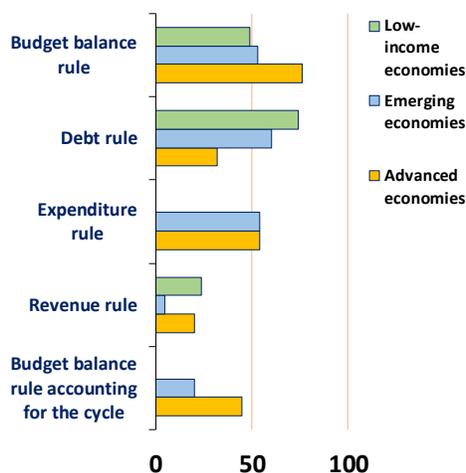
(\*) Source: Schaechter *et al.* (2012).

Figure 10: Coverage of fiscal rules, 2012 (\*)  
(number of countries)



(\*) Source: Schaechter *et al.* (2012).

Figure 11: Regional differences of the type of national fiscal rules (\*)  
(share of countries with specific rule)



(\*) Source: Schaechter *et al.* (2012).

In emerging economies this problem is exacerbated by weak systems of checks and balances and poor accountability. Emerging economies are also more vulnerable to external turbulences and may need access to international capital markets precisely when these are more reluctant to lend to them. A credible fiscal rule may thus improve confidence in the economy on top of disciplining the policymaker.

Few studies have been able to provide a thorough empirical assessment of the effectiveness of fiscal rules. The few that have looked into this matter have found that fiscal rules constrain expenditure and deficits and lead to more sustainable fiscal policies. There is also some evidence that rules limit procyclicality of fiscal policy (Bergman and Hutchison, 2015). Moreover, fiscal rules seem to exert an effective signaling role to financial markets, reducing sovereign risk premia, especially in the presence of other elements such as no-bailout clauses and stability culture.

However, the positive experience of a given country with regards to a fiscal rule may not be easy to replicate in a completely different one. As with monetary rules, the specific institutional setup is crucial, and a rule by itself will surely be ineffective unless it is accompanied by a strong commitment by the authorities.

As with monetary policy, there is always the concern that rules may limit the ability of policymakers to react to shocks that may hit the economy, especially when such shocks are large and unexpected. The problem is aggravated by the fact that it is usually when these shocks hit that countercyclical fiscal policy becomes a crucial stabilization tool (sometimes the only one available if monetary policy is at the zero-lower bound). To provide some flexibility, rules may consider exceptions for extreme circumstances. Obviously, if such exceptions are made too often, then the rule loses its appeal.

Compliance with fiscal rules is far from perfect: at the global level, only about 50% of balanced-budget rules are complied with. Most non-compliance occurs *ex post* rather than as an announced, justified and managed manner (Reuter, 2015; Eyraud *et al.*, 2018).

The so called “*Golden Rule*” in the UK is illustrative of some of these of compliance challenges. It was adopted by the Blair government in 1997 and lasted more than 10 years until its formal replacement in 2008. It stated that, over the business cycle, the government could only borrow to fund capital expenditures while current expenditures should be entirely funded by current revenues. This was intended to grant intergenerational fairness while allowing automatic stabilizers to operate over the business cycle without compromising long-term fiscal sustainability. The balancing of the government current account over the business cycle required estimating an output gap. Such estimates, however, were changed by the government at critical junctures, eroding the credibility of the rule. In particular, a re-dating of the business cycle in 2006 created additional spending space that pushed up public borrowing shortly before the GFC, which then caught the UK wrong footed.

Over the existence of the *Golden Rule*, the *Public Sector Borrowing Requirement* in the UK grew from 2 to more than 10 percent of GDP between 1997 and 2009, while gross financial liabilities of the general government mounted from 50 to nearly 80 percent of GDP. More telling, the cyclically-adjusted balance climbed from -1.9 to -8 percent of GDP in the same period. These fiscal imbalances largely outlasted the *Golden Rule* and have proven very difficult to rein in, despite three subsequent efforts at introducing and enforcing new fiscal rules.<sup>3</sup>

In the case of Continental Europe, fiscal issues have haunted the adoption of the euro since its very beginning, as fiscal decisions were kept under national authorities while monetary policy was transferred to the European Central Bank. Originally, the *Growth and Stability Pact* of 1997

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<sup>3</sup> The budget balance rule of 2009 requires a year-on-year reduction in public sector net borrowing to 2015/16, so that public sector net borrowing as a percentage of GDP is more than halved over the four years to 2013/14 (from 2009/10). Starting in May 2010, the budget balance rule was to achieve cyclically adjusted current balance by the end of the rolling, five-year forecast period. In October 2015, consistent with the medium-term fiscal plans, the authorities have adopted a new fiscal rule requiring a budget surplus starting in 2019/20 as long as Q4 on Q4 growth exceed 1 percent. If growth falls below 1 percent, the government is allowed to run deficit until conditions enable a return to budget surpluses. This rule is not strictly binding but operated on a “comply or explain” basis. It is also complemented by target to reduce the net debt to GDP ratio un every year to 2019/20 (Lledó *et al.*, 2017).

established limits to fiscal deficits and government debt at 3% and 60% of GDP, respectively, with convergence procedures to address breaches at the country level. Yet some of these limits were soon violated by the largest countries without sanction in the ensuing years.

With the European debt crisis of 2010-11, a fundamental review of the Eurozone's fiscal framework became urgent. This led to the *European Fiscal Compact* adoption in 2012, which includes three rules: (a) a limit to the general (overall) budget deficit at 3% of GDP; (b) a structural deficit not exceeding a country-specific *Medium-Term Budgetary Objective*, at 0.5% of GDP at the most, and (c) a debt-to-GDP ratio not exceeding 60%. This is accompanied by a thorough review and monitoring mechanisms to prevent the build-up of deviations that may be difficult to overturn.

Despite such provisions, the full implementation and enforcement of this framework has proven difficult. In the words of a 2017 report by the *Deutsche Bundesbank* "The rules have become more and more complex and considerable room for discretion has been opened up. Now, it is virtually impossible to understand their implementation. There is an impression that the interpretation of the rules is partly the outcome of a political negotiation process. This is eroding the necessary binding force."

According to a recent assessment of compliance with the rules, as of 2016-18, almost all signatories to the *Compact* were in compliance of the overall deficit rule—partly aided by GDP recovery—but only 8 out of 26 met the structural balance rule and another 8 (not necessarily the same) met the debt rule. This is illustrated in Figure 12 panels A and B, showing that most countries experienced some improvement in their structural—cyclically adjusted—balances in the five years up to 2017, but that this improvement was relatively small compared with the narrowing of output gaps. Moreover, in a few cases, structural balances actually worsened.

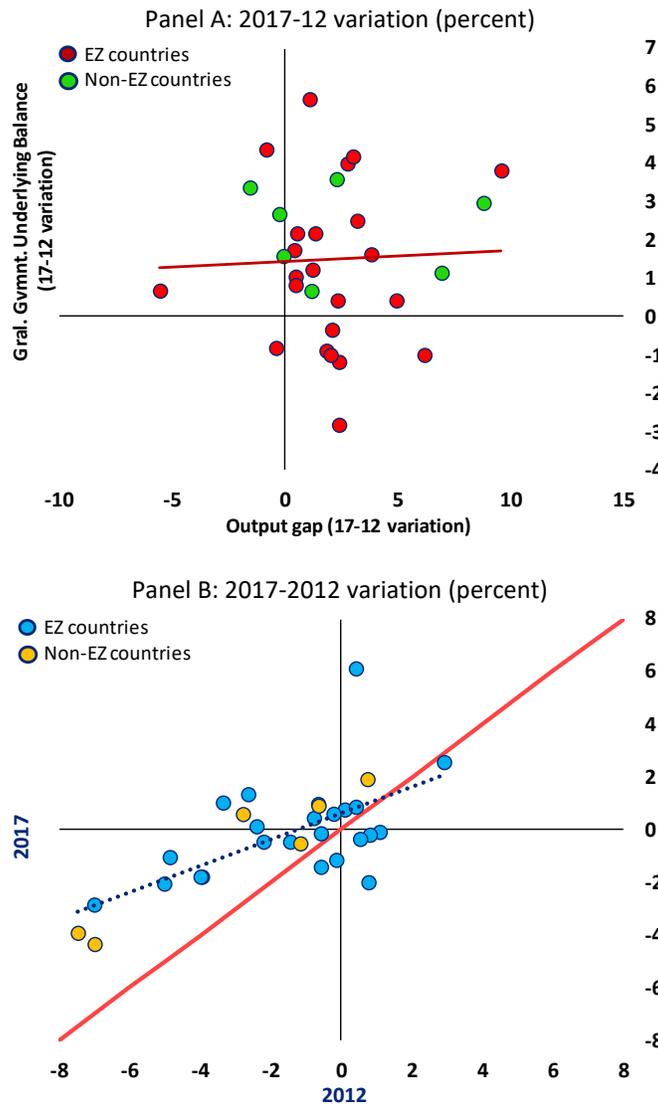
Even in a fiscally prudent country like Chile, compliance with fiscal rules has been challenging. A structural (cyclically-adjusted) balance rule was adopted in 2000, but after seven years of strict compliance of a 1% surplus target, a tacit escape clause was called at the time of the GFC, raising the structural deficit from 0.5% of GDP to 3.1%. Despite fast economic normalization afterwards, the actual structural balance never returned to pre-crisis levels and even softened targets were frequently not met in the ensuing 10 years (Figure 13).<sup>4</sup>

In sum, even though fiscal rules aim at targets that may be easier for the authorities to control, compliance is not expedite and authorities may be tempted to resolve compliance gaps with changes in methodology, targets or both.

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<sup>4</sup> In the UK, the so-called golden rule was abandoned at the outset of the GFC as it seemed to provide little fiscal discipline, but the return to a more sustainable path has been overly slow and hesitant. The golden rule includes full funding of current expenditure from current outcome, with debt only allowed to fund capital spending.

Figure 12: OECD countries: general government underlying balance and financial balance per unit of output gap (\*)

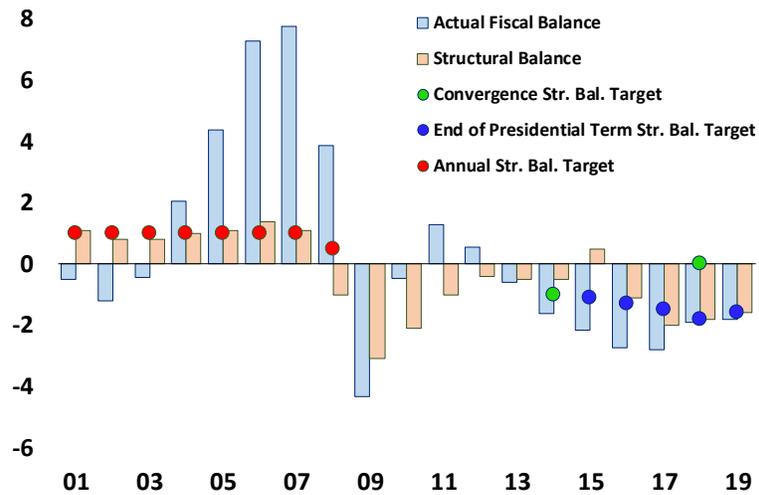


(\*) Each dot represents an OECD country. General government underlying balance measured as surplus/deficit as a percent of potential GDP. General government financial balance measured as surplus/deficit as a percent of GDP. Output gap measured as deviations of actual GDP from potential GDP as a percent of potential GDP. Source: Elaborations on IMF data and *OECD Economic Outlook 103* database.

There are few papers studying the consequences of fiscal rule non-compliance. The little evidence available suggests that fiscal rules may still influence the actions of fiscal policymakers, if they are half-met, by setting a benchmark level with which the public and the policymaker can evaluate fiscal performance (Reuter, 2015). Empirical analysis also shows that fiscal outcomes improve in countries with fiscal rules, including the operation of automatic stabilizers (Eyraud *et al.*, 2018).<sup>5</sup>

<sup>5</sup> This, of course, does not resolve the question of causality, since adoption of a fiscal rule may be easier in countries with a stronger fiscal record or respond to common factors (Elbadawi *et al.*, 2015).

Figure 13: Chile: Accrual, adjusted balance, and fiscal targets 2001-2019 (\*)  
(percent of GDP)



(\*) Source: Budget Office of the Finance Ministry.

But if a given country hardly ever complies with the fiscal rule, its positive effect on expectations may eventually fade away. Deviating from the rule too often can signal to the public that the commitment capacity of the policymaker is weak and that discretionary policies are the norm rather than the exception. This can have harmful consequences on agents' expectations regarding fiscal responsibility and, more generally, on future policies.

## V. Deconstructing macro policy rules

The previous analysis suggests that macro policy rules implementation is easier said than done. To better understand the challenges in designing, implementing and attaining them it is useful to examine further their internal architecture.

Elaborating on Marcel (2013), we can identify six components of any macro policy rule (Table 1):

1. *An underlying measure/indicator that provides the basis for the rule.* It usually reflects the main focus of policymakers. For instance,
  - For monetary policy: the use of indicators such as growth in money aggregates, current inflation, core inflation, or future/expected inflation measures,
  - For fiscal policy: rules based on a debt level, structural or cyclically-adjusted balance, or a spending rule.

It emerges from this recount that while monetary policy rules in many cases are based on outcomes, like inflation, fiscal rules tend to be stated in terms of fiscal aggregates, which at best, could serve as intermediate outputs. While the latter could be seen as more directly controllable, outcome measures grant more flexibility to articulate actions to attain them.

Table 1: Architecture of macro policy rules (\*)

Component	Monetary	Fiscal
<i>Underlying measure/indicator</i>	- Monetary aggregates growth - Inflation - Nominal GDP	- Total expenditure - Overall balance - Structural balance - Government debt - Tax revenues
<i>Numerical target</i>	- Annual M1 growth - Headline inflation - Core inflation - Price level - GDP at current prices	- Expenditure growth - Deficit/GDP - Debt/GDP - Tax burden
<i>Reporting mechanism</i>	- Official statistics - Inflation reports	- Government accounting - Financial statements - Fiscal statistics - Fiscal Council
<i>Accountability/rewards</i>	- Submission/letter to parliament - Reputational/markets - Financial/administrative penalties	- Submission/letter to parliament - Reputational/markets - Political responsibility
<i>Exception/escape clauses</i>	- Short-run price volatility - Conciliation of multiple targets	- Major external shocks - Constrained monetary policy response
<i>Convergence provisions</i>	- Symmetric treatment of deviations - Price level convergence	- Cumulative compensation/debt neutral - Convergence path - Accelerated convergence

(\*) Source: Author's elaboration.

Macro rules should be simple and not overly rigid, as too complex and inflexible rules are very hard to comply with and set unrealistic goals. Simplicity, however, may come at the price of more rigidity and lower effectiveness. A number of countries have thus turned to more complex measures, like forward inflation or structural budgets. However, since these are not obtained from direct measurement but have to be estimated, the room for interpretation, methodology-dependency or outright manipulation may grow substantially (see Box 2).

2. A *numerical target*, indicating the value of the measure to be attained, including its time horizon. It is not enough to have a measure/indicator, but a specific numerical target needs to be attached to it. For instance,
  - Monetary: a fixed inflation target of 2%, 3%, or a band,
  - Fiscal: a debt to GDP ratio, a 3% of GDP deficit; or a structural budget as a percentage of GDP or of potential GDP.

In principle, specific targets should respond to an explicit or implicit (“common sense”) rationale, which does not mean that they cannot change over time, but that there needs to be solid reasons for it (Eyraud *et al.*, 2018).

The combination of measure and target indicates how policy will respond to shocks and changes in the economic environment, defining its nature as procyclical, neutral, or countercyclical.<sup>6</sup>

3. *A regular reporting mechanism to compare the actual value of the indicator versus the target.* While countries may benefit from establishing a rule, they will only reap its full benefits upon actual and consistent compliance, which may in turn determine credibility of the rule. In some case, this comes directly from official statistics (inflation, debt); in others, they have to be estimated.

For rules based on estimates, the latter may need to be fully transparent or validated by a third party. In the case of inflation targeting, this could be achieved by disclosing the forecasting model, its key assumptions and results. As for structural balance fiscal rules, many countries rely on parliamentary or autonomous bodies, like Fiscal Councils, to validate results.

The establishment of Fiscal Councils is recent, so the evidence of their effectiveness is only preliminary, but suggests that compliance with the rule is greater and fiscal forecasts are more accurate (and, in particular, less overly-optimistic) when there is an independent fiscal council in the country (Beetsma *et al.*, 2018).

In any case, reporting should be regular and done in real time, so that divergence can be identified in time to correct course or call the authorities' responsibility for their failure. This may also help reduce the dilemma between *ex ante* or *ex post* compliance.

4. *Accountability mechanisms, establishing rewards/penalties to policymakers when complying with/departing from the target.* These may run from symbolic/reputational, to actual penalties on the authorities. Legal provisions in the fiscal responsibility regulations in the US, and fines to non-complying central bank governors in New Zealand are good examples of the latter, while complain-or-explain to lawmakers and the public typically represents the former. An indirect accountability mechanism stems from loss of confidence in the conduct of macro policy, through the response of risk premia and sovereign ratings, delving into financial conditions.

From the point of view of monetary policy, only three countries operating under an inflation targeting regime in 2012 had specific accountability procedures for non-compliance, like a parliamentary hearing or as formal letter to the authorities. Press conferences are a more common mechanism to deliver monetary policy transparency.

5. *Exception/escape clauses that allow to depart from the rule under exceptional circumstances.* Rules should not be overly rigid. The economy is exposed to shocks, structural changes, and random disturbances that may justify a different response from monetary or fiscal policy. When departing from target, though, the authorities should be able to provide a solid justification and/or invoke an escape clause.

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<sup>6</sup> The Taylor rule comes out as a particular case of a detailed reaction function.

Well-designed escape clauses are a good way to instill necessary flexibility into rules. In the case of monetary policy, inflation is exposed to short-term supply shocks, including pass-through from the exchange rate, or liquidity shocks that compromise transmission mechanisms, like during the Global Financial Crisis (GFC). Reacting to all such deviations could make monetary policy excessively volatile.

Fiscal policy, in turn, may need to abandon a neutral stance to respond to major demand shocks or constraints on monetary policy. According to the IMF, more than half of the existing fiscal rules were suspended, abolished, or considered unsustainable at the onset of the GFC (IMF, 2009)

6. *Convergence provisions*, to organize the transition towards the target when departing from a distant position or to return to it after missing the target or resorting to an escape clause.

The convergence path may need to be very specific. A key question for temporary deviations or escape clauses is whether authorities are required to make up for the past accumulated divergences or concede that bygones are bygones. In the case of inflation targets, the former amounts to targeting the price level rather than the inflation rate. For fiscal rules, the recovery path is the key determinant of debt accumulation.

**Box 2. Alternative structural fiscal measures.**

While the concept of “structural balance” has gained popularity in recent years, its actual implementations needs further clarity on what is meant by “structural”. Marcel (2013) identifies three alternatives depending on what is excluded (subtracted) from the actual balance.

As discussed in the paper, each alternative has a distinct conceptual appeal as well as some challenges for estimation and accountability. Following Blanchard (1990), it is argued that too many—or too ambitious—targets may make accountability more difficult, concluding that a cyclically-adjusted balance may, through less theoretically appealing, may more capable of avoiding manipulation by the authorities and consequently better subject to scrutiny.

	<i>Cyclically adjusted balance</i>	<i>Discretionary policy balance</i>	<i>Permanent Balance</i>
<b>Revenues</b>	- Effect of business cycle on fiscal revenues (taxes, social security contributions, surpluses of public enterprises).	- Effect of the business cycle on fiscal revenues (taxes, social security contributions, surpluses of public enterprises).  - Effect of other exogenous economic variables (exchange rate, interest rates, inflation) on fiscal revenues.  - Effect of exogenous factors on revenues (natural disasters, external conflicts, strikes).	- Effect of the business cycle on fiscal revenues (taxes, social security contributions, surpluses of public enterprises).  - Effect of other exogenous economic variables (exchange rate, interest rates, inflation) on fiscal revenues.  - Effect of exogenous factors on revenues (natural disasters, external conflicts, strikes).  - Effect of one-off events on fiscal revenues (licenses, tax

			amnesties, fines, tax from mergers).
			- Transitory measures affecting fiscal revenue (temporary tax measures).
<b>Expenditures</b>	- Effect of the business cycle on government expenditures (unemployment insurance, transfers to the poor).	- Effect of the business cycle on government expenditures (unemployment insurance, transfers to the poor).  - Effect of other exogenous economic variables (exchange rate, interest rates, inflation) on government expenditures.  - Effect of exogenous factors on government expenditures (natural disasters, external conflicts, strikes).	- Effect of the business cycle on government expenditures (unemployment insurance, transfers to the poor).  - Effect of other exogenous economic variables (exchange rate, interest rates, inflation) on government expenditures.  - Effect of exogenous factors on government expenditures (natural disasters, external conflicts, strikes).  - Effect of one-off events on government expenditures (fines, compensations from court rulings, international compensations).  - Transitory measures affecting government expenditures (temporary programs, subsidies, investments).
Source: Marcel (2013).			

## VI. Why are monetary policy rules more complied with than fiscal rules?

We note that fiscal rules do not only appear to perform more poorly than monetary policy rules, but also that the responsible authorities seem more committed to correct deviations from target in the latter. So, what may explain these differences?

Some factors may stem directly from design choices on the rule's components as listed above. For instance, we have already noted that while monetary policy rules tend to be stated on the basis of end-outcomes that are closer to the concerns of politicians and the public, fiscal rules are generally geared to intermediate output—in particular, fiscal aggregates—that do not relate directly to citizens' well-being. While it could be argued that the latter makes compliance easier, as fiscal results can be directly controlled by the authorities, popular support and political commitment may be just the opposite.

Also on the design side, fiscal rules may be based on misconceived indicators, given their short record, or may adopt unrealistic targets. A case in point is that of fiscal rules that may force public finances to operate in a procyclical fashion—like balanced budget of fixed debt/GDP rules.

Fiscal rules whose targets are stated in terms of fiscal aggregates, also makes compliance heavily dependent on government accounting, which is less standardized and more weakly audited than business accounting, creating room for data manipulation. Inadequate reporting and poor accountability may be then more pervasive with fiscal rules than with monetary rules.

But perhaps the greatest difficulties for fiscal rules originate in their complex political background. This is reflected in two dimensions. First, in goal congestion, as public finances are expected not only to meet macro fiscal objectives but also to mobilize resources to deliver on social areas of public policy. Second, on political time inconsistencies, as governments are likely to have a preference for immediate results—associated to government benefits, employment and investment, as compared to longer-run benefits from fiscal discipline.

Last, but not least, coherence between monetary and fiscal rules matters more for macroeconomic outcomes of growth and price stability than each of them in isolation. In this sense, a fiscal rule that creates coordination difficulties or outright inconsistencies with a long-established monetary policy rule is likely to succumb more easily, no matter how well pursued.

Blanchard (1990) noted that, for instance, a cyclically-adjusted balance estimated by the OECD was already being used for too many purposes, including estimating the balance at full employment, as a measure of discretionary policy, as a measure of fiscal sustainability, and as a measure of the effect of fiscal policy on aggregate demand and output. He argues that this measure could not serve all such purposes at the same time and that separate indicators should be used for different purposes instead (see Box 2). After almost 30 years, Blanchard's question remains relevant for structural balances as fiscal stance indicators, and hence, finding that the most suitable measure is a pending task.

The asymmetry in the experience of monetary and fiscal rules does not mean that the latter cannot be improved. Carefully designed fiscal rules can avoid some critical issues, like procyclical behavior.

The main reason for the growing popularity of structural fiscal rules, for instance, is that they seem to offer the best balance between medium-term sustainability and short-term flexibility, as they factor out short-term cyclical fluctuations in revenues and some expenditures, allowing automatic stabilizers to operate without affecting compliance with the policy structural target.

Similarly, risks of mismeasurement, manipulation or weak accountability can be resolved by adhering to accounting standards issued by the IMF/Eurostat and professional accountants' bodies and creating autonomous fiscal councils that certify results. Macro and micro goals in public finance can be reconciled by well-engineered budgeting procedures.

Factual evidence suggests that fiscal discipline provided by the adoption of rules creates the fiscal space needed to weather strong external pressures such as those of the GFC, support debt service obligations, and the increasing pressure of demographic change over pensions and health spending (Marcel, 2014).

Still, if making a fiscal policy rule requires a major institutional, technical and political effort, one may wonder if it is really worth trying. In my view, there are five powerful arguments in favor of fiscal rules, especially for emerging economies:

- A credible commitment to a fiscal rule is an effective device to accelerate the benefits of fiscal discipline. Fiscal discipline carries lower financing cost for the government and achieve higher levels of confidence in the economy,

- A fiscal rule makes it much easier to operate a monetary policy rule. As mentioned above, monetary policy acts on the economic cycle; if the fiscal rule acts countercyclical (or acyclical), the effectiveness of the monetary policy will be greater than in the absence of a clear and credible fiscal rule, facilitating coordination among the authorities,
- A fiscal rule helps to articulate top-down budgeting with bottom-up operational programming by acting as an anchor in budget preparation. One result of this is greater transparency and ease in the accountability of the exercise,
- Well-designed fiscal rules reduce funding uncertainty within government and extend the planning horizon of public policies. As a result, less uncertainty at longer horizons directly contributes to promoting long-term growth and a better intertemporal allocation of resources,
- There are positive externalities of the institutional architecture necessary for the operation of a rule. Fiscal Councils are a tangible proof of these externalities, forcing compliance with the rule and disciplining the authorities in their own compliance.

## **VII. Summing up**

A growing number of countries now conduct their macroeconomic policy on the basis of pre-determined rules. Monetary and fiscal policy rules constrain discretionary action of the authorities, signal a commitment to specific goals and targets and make the policy response to economic developments more predictable. Rules do this on the basis of rather simple relationships that may appear as second-best, compared to tailor-made responses that take into account the full ramifications of shocks and policy action. However, discretionary policies are exposed to government failures—time inconsistency, deficit bias, inflation tax—and changes in the behavior of economic agents that may substantially erode their apparent strengths. In contrast, explicit rules use rational expectations to align behavior to intended policy outcomes, making them easier to attain.

To be effective, policy rules need to be credible. This means more than a technical device backed by legal provisions. Policy rules require a strong and persistent political commitment and a sophisticated institutional framework to make them understandable, operative and measurable. To be fully accountable rule-pursuing policymakers may need to distance themselves from the political cycle, either by gaining autonomy or by relying on semi-autonomous bodies and political checks and balances. These dimensions of policy rules may be easier to understand in actual practice by identifying its architecture of underlying measures, numerical targets, reporting mechanisms, accountability, escape clauses and convergence provisions.

Acknowledging these different components of policy rules may help understand why fiscal rules appear to fare worse than monetary policy rules in actual practice. While some consensus has built around inflation targeting as a monetary policy rule and central banks persist in pursuing them even in the face of substantial deviations, fiscal policies appear to be more diverse and more exposed to non-compliance as well as to target and methodological instability. In our view, goal congestion in managing public finances may combine with difficult trade-offs between simplicity and flexibility to make fiscal rule design and compliance particularly challenging. Such shortcomings, however, may

be overcome by delving in the specific design and institutional framework of fiscal rules, with particular regard to the structure and development of public finances.

One major challenge in dealing with fiscal as opposed to monetary policy rules is how to make fiscal goals more meaningful to different stakeholders so as to align their commitment to pursue them. In particular, it may be insufficient to justify a fiscal policy rule only on the indirect effect of fiscal discipline on economic prosperity. In addition, a good fiscal policy rule should be seen as a facilitator to substantial government policy by extending the planning horizon of government programs and projects and helping to resolve common-pool problems. In this sense a fiscal policy rule may be seen as an important component—if not a catalyst—of good public governance.

This perspective may be helpful in understanding the role of macro rules in public policymaking. In my view, monetary and fiscal policy rules that reduce economic volatility broaden the scope for substantial structural and social policies that can improve the well-being of people. Fiscal rules can increase the sustainability of government commitments, allowing public policies to persist long enough to be truly effective. Monetary policy rules reduce price instability, ensuring the purchasing power of revenues, earnings and transfers, and the likelihood of unnecessary sudden stops in response to macroeconomic imbalances.

Rather than interfering with public policy, monetary and fiscal rules should be seen as enablers of sustainable and effective public policies in education, health-care and infrastructure. If only for this reason, macro policy rules are worth the effort invested in designing and pursuing them.

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## References

- Adrian, Tobias, Douglas Laxton, and Maurice Obstfeld, editors (2018), *Advancing the Frontiers of Monetary Policy*, International Monetary Fund, Washington DC, USA.
- Beetsma, Roel M.W.J., Xavier Debrun, Xiangming Fang, Young Kim, Victor Duarte Lledo, Samba Mbaye, and Xiaoxiao Zhang (2018), *“Independent Fiscal Councils: Recent Trends and Performance,”* IMF Working Paper 18/68.
- Bergman, Michael and Michael M. Hutchison (2015), “Economic Stabilization in the Post-Crisis World: Are Fiscal Rules the Answer?” *Journal of International Money and Finance* **52**: 82-101.
- Blanchard, Olivier J. (1990), *“Suggestions for a New Set of Fiscal Indicators,”* Working Paper 79, OECD Economics and Statistics Department.
- Clarida, Richard, Jordi Galí, and Mark Gertler (1999), “The Science of Monetary Policy: A New Keynesian Perspective,” *Journal of Economic Literature* **XXXVII**: 1661-1707.
- Elbadawi, Ibrahim, Klaus Schmidt-Hebbel, and Raimundo Soto (2015), *Why Do Countries Have Fiscal Rules?* in Ricardo J. Caballero and Klaus Schmidt-Hebbel (Eds.), *Economic Policies in Emerging-Market Economies—Festschrift in Honor of Vittorio Corbo*, Central Bank of Chile.
- Eyraud, Luc, Xavier Debrun, Andrew Hodge, Victor Duarte Lledo, and Catherine A. Pattillo (2018), *“Second-generation Fiscal Rules: Balancing Simplicity, Flexibility and Enforceability,”* IMF Staff Discussion Notes 18/04.
- Figueroa, Camila and Pablo García (2017), *“Desafíos de la Política Monetaria Sistemática,”* Economic Policy Paper 64, Central Bank of Chile.
- Friedman, Milton (1968), “The Role of Monetary Policy,” *American Economic Review* **58**(1): 1-67.
- Hammond, Gill (2012), *“State of the Art Inflation Targeting,”* Centre for Central Banking Studies, Bank of England.
- International Monetary Fund (2009), *“Fiscal Rules – Anchoring Expectations for Sustainable Public Finances,”* IMF Fiscal Affairs Department.
- Kydland, Finn and Edward C. Prescott (1977), “Rules Rather than Discretion: The Inconsistency of Optimal Plans,” *Journal of Political Economy* (June): 473-492.
- Lledó, Victor, Sungwook Yoon, Xiangming Fang, Samba Mbaye, and Young Kim (2017), *“Fiscal Rules at a Glance,”* International Monetary Fund.
- Lucas, Robert (1972), “Expectations and the Neutrality of Money,” *Journal of Economic Theory* **4**(2): 103-24.
- Lucas, Robert (1976), “Econometric Policy Evaluation: A Critique,” *Carnegie-Rochester Conference Series on Public Policy* **1**: 19-46.
- Marcel, Mario (2013), *“Structural Fiscal Balances: Methodological, Conceptual, and Practical Alternatives,”* Discussion Paper IDB-DP-288, Inter-American Development Bank.
- Marcel, Mario (2014), “Budgeting for Fiscal Space and Government Performance Beyond the Great Recession,” *OECD Journal on Budgeting* **13**(2): 9-47.
- Marcel, Mario (2017), *“Constitucionalismo Económico y la Autonomía Institucional del Banco Central de Chile,”* Economic Policy Paper 62, Central Bank of Chile.
- Reuter, Heinrich (2015), “National Numerical Fiscal Rules: Not Complied With, But Still Effective?” *European Journal of Political Economy* **39**: 67-81.
- Schaechter, Andrea, Tidiane Kinda, Nina Budina, and Anke Weber (2012), *“Fiscal Rules in Response to the Crisis – Toward the “Next Generation” Rules. A New Dataset,”* IMF Working Paper 12/187.

- Svensson, Lars E.O. (1997) "Inflation Forecast Targeting: Implementing and Monitoring Inflation Targets," *European Economic Review* **41**(6): 1111-1146.
- Taylor, John B. (1993), "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series in Public Policies* **39**: 195-214.



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