IDB WORKING PAPER SERIES Nº IDB- WP-1497

Why Don't We Follow the Rules? Drivers of Compliance with Fiscal Policy Rules in Emerging Markets

Martín Ardanaz
Carolina Ulloa-Súarez
Oscar Valencia

Inter-American Development Bank
Institutions for Development Sector
Fiscal Management Division

September 2023

Why Don't We Follow the Rules? Drivers of Compliance with Fiscal Policy Rules in Emerging Markets

Martín Ardanaz
Carolina Ulloa-Súarez
Oscar Valencia

Inter-American Development Bank
Institutions for Development Sector
Fiscal Management Division

September 2023

Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library

Ardanaz, Martín.
Why don't we follow the rules?: drivers of compliance with fiscal policy rules in emerging markets / Martín Ardanaz, Carolina Ulloa-Suárez, Oscar Valencia.
p. cm. — (IDB Working Paper Series ; 1497)
Includes bibliographical references.
1. Fiscal policy-Latin America. 2. Fiscal policy-Caribbean Area. 3. Finance, Public-Latin America. 4. Finance, Public-Caribbean Area. 5. Macroeconomics. I. Ulloa-Suárez, Carolina. II. Valencia Arana, Oscar. III. Inter-American Development Bank. Fiscal Management Division. IV. Title. V. Series.
IDB-WP-1497

JEL Codes: E62, H61, H68
Keywords: fiscal rules, fiscal policy, compliance

http://www.iadb.org

Why Don't We Follow the Rules? Drivers of Compliance with Fiscal Policy Rules in Emerging Markets*

Martín Ardanaz Carolina Ulloa-Suárez Oscar Valencia

Abstract

Under what conditions do countries comply with their fiscal policy rules? We tackle this question in the context of emerging countries, with a specific focus on Latin America and the Caribbean, a region where fiscal rules have become increasingly common in recent decades. Based on an original dataset of compliance behavior across 14 countries observed between 2000 and 2020, we first document that complying with fiscal rules makes a difference: countries that comply with their fiscal rules show, on average, lower sovereign bond spreads, higher credit ratings, and lower probability of public debt acceleration episodes than countries that do not comply with their rules. We then show that compliance is affected by the broader macroeconomic and politico-institutional environment. First, we find an asymmetrical response of compliance to macroeconomic conditions: while compliance decreases during bad times, it does not improve during good times. Second, optimistic macroeconomic forecasts undermine compliance during the budget preparation phase: the probability of complying ex-post with the fiscal rule is lower when policymakers overestimate GDP growth ex-ante. Finally, a solid institutional environment supporting commitment to fiscal discipline is a strong predictor of fiscal rule compliance across emerging countries. Our findings contribute to the literature on fiscal rule effectiveness by showing the relevant pre-conditions that may foster or inhibit the successful implementation of rules-based fiscal frameworks.

*Ardanaz and Valencia: Inter-American Development Bank, martina@iadb.org and oscarva@iadb.org. Ulloa-Suárez: Sciences Po, Paris, carolina.ulloasuarez@sciencespo.fr. We are grateful to Maricruz Vargas for her assistance during the production of this document. The findings and interpretations in this paper are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank or the governments it represents.

1 Introduction

In recent decades, fiscal rules have become a common policy tool to promote fiscal discipline and support debt sustainability, with the number of countries with at least one fiscal rule increasing from less than 10 in 1991 to more than 100 in 2021. Fiscal rules impose a long-lasting constraint on fiscal policy by introducing numerical limits on budgetary aggregates (Kopits and Symansky, 1998).[1] A large body of research has studied whether such constraints are effective in fostering sustainable fiscal policies at the national, subnational, and supranational levels (see Heinemann et al. (2018) for a meta-analysis of the empirical literature). Most of this empirical work *assumes* fiscal rules are complied with and tends to focus on variations in design features or the quality of rules to study their effectiveness.

However, even well-designed fiscal rules will be ineffective in improving fiscal outcomes if they are consistently not complied with. While previous research on fiscal rule effectiveness has traditionally looked at the impact of de jure features of fiscal rules on policy outcomes, emerging evidence emphasizes the relevance of compliance behavior. The evidence shows that deviations of fiscal outturns from targets are common (Davoodi et al., 2022; Blanco et al., 2020). For example, during the years preceding the pandemic, more than half of emerging market and low-income countries with balance-budget rules saw their deficits exceed the rule limits, with the median deviation exceeding 2% of GDP (Davoodi et al., 2022). More specifically, in a sample of Latin American economies, average compliance with some rules was as low as 40%, meaning that countries were compliant less than half the time (Ulloa-Suárez and Valencia, 2022).

Under what conditions do countries comply with their fiscal rules? We tackle this question in the context of emerging countries, with a specific focus on Latin America and the

[1] For reviews of the vast theoretical and empirical literature on fiscal rules, see, for example, Yared (2019); Alesina and Passalacqua (2016); Wyplosz (2012).

Caribbean, a region that has been no exception to the global trend in fiscal rule adoption over time.[2] Based on an original dataset of compliance behavior across 14 countries observed between 2000 and 2020, we first document that complying with fiscal rules makes a difference: countries that comply with their fiscal rules show, on average, lower sovereign bond spreads, higher credit ratings, and lower probability of public debt accelerations than countries that do not comply with their rules. We then show that compliance is affected by the broader macroeconomic and politico-institutional environment. Our findings can be summarized as follows. First, we find an asymmetrical response of compliance to macroeconomic conditions: while compliance decreases during bad times, it does not improve during good times. Second, optimistic macroeconomic forecasts during the budget preparation phase undermine compliance: the probability of complying ex-post with the fiscal rule is lower when policymakers overestimate GDP growth ex-ante. Finally, a solid institutional environment supporting commitment to fiscal discipline is a strong predictor of fiscal rule compliance.

This paper is connected to three main strands of literature. First, it speaks to the literature on fiscal rule effectiveness (Caselli and Reynaud, 2020; Eyraud et al., 2018; Bergman and Hutchison, 2015). While previous work focuses on de jure features of fiscal rules, we focus on compliance behavior to assess whether complying de facto matters for shaping policy outcomes. Second, this paper is related to the emerging literature on the drivers of fiscal rule compliance. The extant literature has looked at these issues mostly from the perspective of advanced economies, looking at compliance behavior of national and EU-level supranational fiscal rules (Reuter, 2015, 2019) or variation in compliance across subnational government units within particular countries (Delgado-Téllez et al., 2017). Recent studies on developing countries focus on compliance with national rules but do so at a very aggregate level of analysis by showing cross-sectional variation or trends in compliance rates over time without looking at the deeper determinants of compliance behavior (Davoodi et al., 2022;

[2]See Ardanaz et al. (2023) for a recent overview on the challenges and reform opportunities to rules-based fiscal frameworks across emerging economies.

Blanco et al., 2020; Cordes et al., 2015). Instead, this paper focuses on capturing the main economic and political correlates of compliance with fiscal rules across a broad sample of Latin American and Caribbean countries.[3] Thus our paper provides one of the first empirical analyses of compliance drivers in emerging countries, allowing us to uncover previously unexplored relevant correlations and contrast our results with findings from other regions, particularly the EU, where the study of compliance with national and supranational fiscal rules is regularly monitored.[4]

Finally, our findings relate to the literature interested in understanding the political economy of fiscal policy, as we identify a number of institutional and political system-level variables associated with varying levels of compliance with fiscal rules. Previous research has looked at the role of partisanship (e.g., Persson and Svensson (1989)), elections (e.g., Brender and Drazen (2005)), and degree of government fragmentation (e.g., Perotti and Kontopoulos (2002)) in shaping deficits, spending, or debt levels.[5] We draw on insights from this literature to check whether these same factors can help explain variation in compliance with fiscal policy rules. In addition, several scholars have examined the policy consequences of over-optimism in macroeconomic and fiscal forecasts (Avellan and Vuletin, 2015; Frankel and Schreger, 2013). This paper analyzes the implications of output forecast errors regarding compliance with fiscal rules. Finally, previous research looks at the relevance of institutional quality in fiscal policy-making (Frankel and Schreger, 2013; Woo, 2003). In turn, we discuss the role of strong versus weak institutions in supporting or inhibiting compliance with fiscal rules.

[3] Ulloa-Suárez (2023) provides a first approximation to compliance correlates across LAC. However, the analysis is based on a more limited set of explanatory variables that we extend throughout this paper.

[4] For example, the compliance tracker of the secretariat of the European Fiscal Board documents the fiscal performance of EU Member States vis-à-vis the rules of the Stability and Growth Pact (SGP). See https://commission.europa.eu/business-economy-euro/economic-and-fiscal-policy-coordination/european-fiscal-board-efb/compliance-tracker_en and Larch et al. (2023).

[5] See Persson et al. (2000); Drazen (2000) for reviews of this literature.

The remainder of the paper is organized as follows. Section 2 discusses the factors that may affect fiscal rule non-compliance through an overview of theories and empirical evidence available in the relevant literature. Section 3 presents the compliance data, describes the different measures used to approximate compliance drivers, and compares fiscal performance between rule compliers and non-compliers. Section 4 introduces the econometric framework employed in Section 5 to identify the correlates of fiscal rule compliance. Section 6 concludes.

2 Drivers of Compliance with Fiscal Rules

Do fiscal rules matter? A large literature seeks to answer this question, yet there is no consensus about whether rules effectively improve fiscal outcomes (Grembi et al., 2016). Even though commitment and enforcement problems have been regarded as relevant reasons why fiscal rules might be ineffective in theory (see Alesina and Perotti (1996); Wyplosz (2012)), most empirical work focusing on the effects of rules on fiscal policy assumes that the adoption of fiscal rules is equivalent to complying with them—in other words, that fiscal rules are fully binding. Yet, there is nothing automatic about complying with fiscal rules. Thus, uncovering the factors that either support or undermine compliance can help explain why fiscal rules are more effective in some contexts than others.

There are several reasons countries may adopt fiscal rules but still not follow them. One set of factors has to do with the design features of fiscal rules or characteristics of rules-based fiscal frameworks. For example, to raise the costs of breaking fiscal rules, some countries have introduced formal sanctions in cases of non-compliance, such as financial sanctions, dismissal, or penal prosecution (IMF, 2009). However, the evidence on the effectiveness of such formal enforcement mechanisms is limited (Reuter, 2019; Eyraud et al., 2018). Instead, more recent efforts to raise the reputational costs of non-compliance provide a relevant role to independent fiscal institutions, such as fiscal councils (IMF, 2013). Fiscal councils are

non-partisan, technical bodies entrusted with a public finance watchdog role to strengthen the credibility of fiscal policies and perform various tasks. Most oversee compliance with fiscal rules and are involved in preparing or validating macroeconomic and fiscal forecasts. Using a panel of 27 EU member countries, Beetsma et al. (2019) show the presence of a fiscal council is positively correlated with compliance with fiscal policy rules, and similar results are found in Reuter (2019). Fiscal councils are relatively recent innovations outside the EU and heterogeneous regarding their tasks and resources across countries. Thus, our specifications include variables to capture the presence of sanctions in fiscal rules and whether a fiscal council in charge of monitoring compliance with fiscal rules is in place.

Other key features of fiscal rules that could affect compliance and that we incorporate in our empirical analysis include: (i) the scope of fiscal operations covered by the rule: fiscal rules that target narrow fiscal indicators run the risk of being made ineffective by shifting operations to parts of the public sector not covered by the fiscal rule (Corbacho and Ter-Minassian, 2013; Milesi-Ferretti, 2004) and (ii) the statutory basis of fiscal rules: the costs of non-compliance may differ depending on whether national fiscal rules are stated as government commitments or fiscal rules are written into fiscal responsibility laws or even enshrined in constitutions (Asatryan et al., 2018). As argued by Alesina and Perotti (1996), if fiscal rules could be changed as easily and frequently as budgets themselves, they would be totally ineffective.

Beyond the features of the rules-based fiscal framework, the broader macroeconomic environment can influence compliance behavior with fiscal rules in ways similar to how it affects fiscal outcomes directly. Complying with fiscal rules could be easier under favorable economic conditions. In contrast, the deterioration of the macroeconomic environment may increase the probability of non-compliance. Consequently, our specifications include measures capturing the state of the economy. In addition, the quality of macroeconomic and

fiscal forecasts during the budget preparation phase is a relevant determinant of fiscal outcomes. Previous studies have shown that over-optimistic output and fiscal forecasts tend to go along with poorer fiscal performance, such as larger fiscal slippages (Davoodi et al., 2022) or fiscal procyclicality (Frankel and Schreger, 2013). In turn, forecast errors could also give rise to difficulties in complying with fiscal rule targets. To test this idea, we draw on data from official budget documents to capture differences between GDP growth rate projections and outturns over time and across countries and check whether larger forecast errors are associated with a higher probability of non-compliance.

A large literature focuses on politico-economic drivers of fiscal policy decisions. For example, various studies conclude that the ideological orientation of the government (in the left-right policy space) is a significant determinant of the evolution of deficits, debt, and tax or spending policy mixes at different government levels (Pettersson-Lidbom, 2008; Besley and Case, 2003; Alesina et al., 1997).[6] In addition to ideology, the extent of government fragmentation has been associated with higher fiscal deficits, in line with common pool theories of the budget process (Perotti and Kontopoulos, 2002; Velasco, 2000; De Haan et al., 1999). Moreover, previous research has examined how the electoral calendar shapes fiscal outcomes. In particular, the literature on the political budget cycle (PBC) studies the behavior of fiscal policy in the vicinity of elections and the returns of fiscal policy expansions (Drazen, 2000; Rogoff, 1990). For example, elections across Latin America are associated with a lower probability of initiating a fiscal adjustment, particularly tax reforms (Ardanaz et al., 2021; Hallerberg and Scartascini, 2017). Finally, weak institutions or lack of political commitment to fiscal discipline have been common reasons to explain the persistence of fiscal deficits, debt accumulation, and procyclical biases in fiscal policy (Frankel et al., 2013; Alesina et al., 2008). Thus, our empirical analysis incorporates measures to capture each of these relevant politico-institutional dimensions and test whether they affect compliance with

[6]Across Latin America, Stein and Caro (2017) analyze the impact of ideology on tax revenues and find that a shift to the left is associated with an increase in the tax to GDP ratio of about two percentage points.

fiscal policy rules.[7]

3 Data

3.1 Compliance outcomes

This study draws on the numerical compliance dataset gathered by Ulloa-Suárez and Valencia (2022) covering 14 Latin American and Caribbean countries from 2000 to 2020.[8] Numerical compliance is determined by contrasting the fiscal rules' targets or objectives against their executed or observed values. The contrast is made on a country-by-country basis through careful reading of legislation containing the parameters of fiscal rules and ex-post official budget execution and compliance reports across different years.[9] Compliance is defined as a dummy variable that equals 1 if the rule's objective was met and 0 otherwise. The compliance rate for a given type of rule is calculated as the proportion of complied years to total implementation years for a given rule.

Countries may implement multiple rules at different times or simultaneously; thus, compliance rates can be calculated at the rule, country, and regional levels. We calculate individual compliance rates considering the three types of rules operational in the region: budget balance (targeting headline or structural deficits), debt, and expenditure rules. When two or more rules are implemented, compliance rates at the country level are adjusted by the years each rule was in place and calculated as a weighted average by the length of implementation.

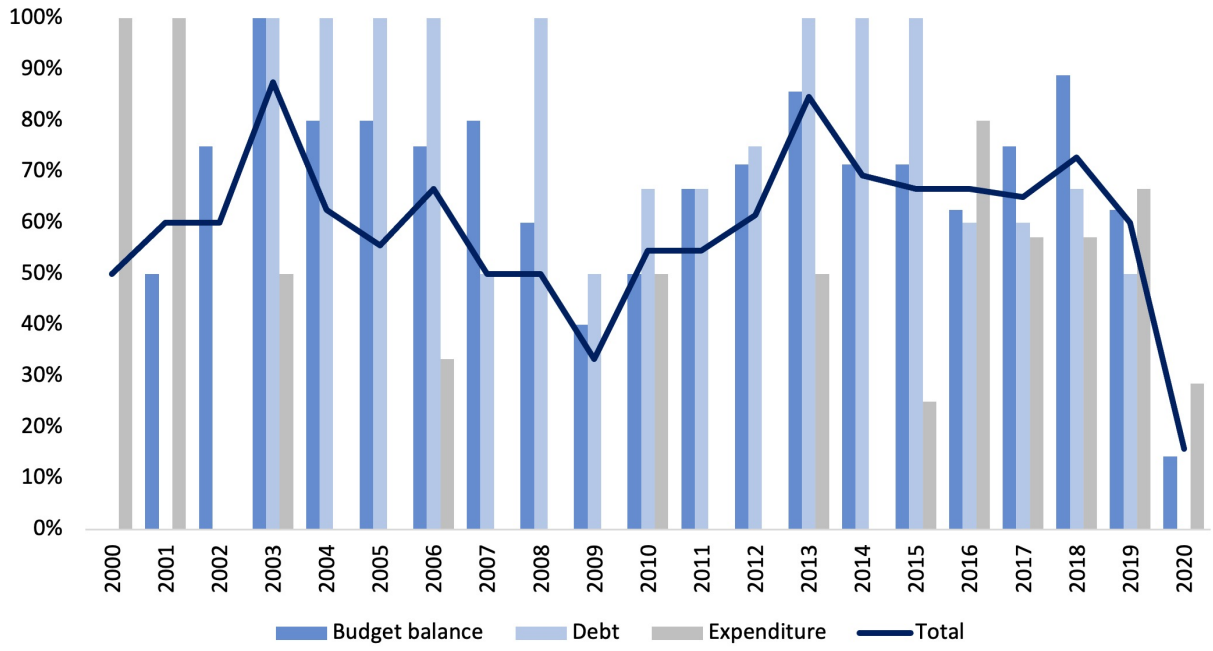
[7] An influential literature looks at the role of procedural rules regulating the preparation, approval, and execution of the budget on fiscal discipline, and distinguishes between hierarchical and collegial budget processes (See for example Von Hagen and Harden (1995); Alesina and Perotti (1999); Hallerberg et al. (2009). Due to data constraints, we do not incorporate this dimension in the analysis: there are no available time-varying measures of budget procedures.

[8] The countries in the dataset include Argentina, Bahamas, Brazil, Chile, Colombia, Costa Rica, Ecuador, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, and Uruguay.

[9] Compliance is assessed on the basis of either first-released data or revised data, depending on country-specific circumstances. For cases when both first-released data and revised data are available, we have checked that conclusions regarding compliance do not change depending on the temporal dimension of the information.

Finally, compliance rates at the regional level are country rates weighted by the number of years each rule was in force in each country. Figure 1 shows variation in the region's compliance rates across rules and over time. While the average compliance rate was 60% between 2000 and 2020, compliance has varied greatly over time, as compliance rates range from over 80% to periods below 20% on average.

Figure 1: Compliance Rate with Fiscal rules across Latin America and the Caribbean



3.2 Does complying with fiscal rules make a difference?

Before looking at the drivers of compliance with fiscal rules, we ask whether complying with fiscal rules matters at all—that is, if compliance behavior tends to be accompanied by an improved fiscal performance. To measure fiscal performance, we rely on three measures capturing debt dynamics and financial market conditions sensitive to fiscal policy decisions: the frequency of debt acceleration episodes, EMBI spreads, and credit ratings. Table 1 compares mean differences in debt spike frequency and financial market conditions between countries with and without rules (Panel A) and between compliers and non-compliers (Panel

B).[10]

Table 1: Fiscal rule Adoption, Compliance, and Performance: Difference in Means Tests

Panel A

	Rule	**No Rule**	**Difference**
Debt spikes	0.123	0.121	0.002
EMBI spreads	4.621	4.925	-0.304
Credit rating	9.680	9.695	-0.015

Panel B

	Compliers	**Non-Compliers**	**Difference**
Debt spikes	0.064	0.242	-0.178***
EMBI spreads	3.578	6.474	-2.896**
Credit rating	10.094	8.879	1.215*

Note: This table presents mean differences in debt spikes, EMBI, and credit rating between "rule vs. no-rule" and "compliers vs. non-compliers," taking country-rule-year as the unit of observation. Credit ratings are constructed by assigning numerical values to Moody's ratings, where a higher rating corresponds to a higher indicator value. The EMBI spread is the difference between the interest rates paid by dollar-denominated bonds issued by emerging economies and US Treasury Bonds, which are considered "risk-free." *p $<$ 0.10, **p $<$ 0.5, ***p $<$ 0.01.

Panel A shows no significant differences in fiscal performance between rule adopters and countries with no fiscal rules. However, Panel B demonstrates that compliant countries tend to experience fewer debt spikes, less country risk, and higher credit rankings on average. Overall, the results in Table 1 provide evidence of the relevance of compliance for fiscal performance, as complying with rules tends to signal a commitment to fiscal discipline in financial markets. In contrast, the mere adoption of a fiscal rule does not seem sufficient to sway market reactions, as suggested by the non-significant differences in Panel A. Thus, rules matter to finances.

[10]A debt spike episode is defined as (i) beginning with an increase in debt in 5 years above the 80th percentile (equivalent to changes greater than 17 pp) and (ii) ending with a decrease in debt in the following year. For example, if the 5-year change in debt is above the 80th percentile in 2005 but then falls in 2006, it accounts for a debt spike only in 2005 (Powell and Valencia, 2023).

3.3 Compliance drivers

As discussed in Section 2, previous research has identified several drivers influencing fiscal policy decisions and, thus, compliance with fiscal rules: design features of rules-based fiscal frameworks, macroeconomic conditions, and politico-institutional variables. To proxy each of these dimensions, this study focuses on the following measures:

Rule-specific or design characteristics: We consider: (i) whether the rule has any formal enforcement procedure (*Enforcement*), such as sanction procedures and preemptive triggers; (ii) whether the rule covers the fiscal operations of the general government or higher levels of government (*Coverage*); and (iii) whether a fiscal council in charge of monitoring fiscal rule compliance is in place (*Fiscal council*).[11]

Macroeconomic conditions: To capture relevant aspects of the macroeconomic environment, we consider: (i) real GDP growth (*GDP growth*), (ii) periods of positive (*positive GDP*) and negative (*negative GDP*) growth, (iii) forecast errors arising from the difference between fiscal authorities' GDP growth projections in budget documents and realized GDP growth (*GDP forecast error*), and (iv) whether a country has an IMF program in place (*IMF program*).

Politico-institutional variables: We consider (i) the electoral cycle, or whether a presidential or legislative election takes place in a particular year (*Election year*); (ii) the incumbent government ideological orientation (*Ideology*) coded as 1 if the government is right-oriented; (iii) the percentage of seats held by the incumbent government in the legislature (*Margin of majority*) to capture fragmentation of the policy-making process; and (iv) a broad measure of institutional quality encompassing perceptions of the quality of policy formulation,

[11] While the IMF's Fiscal Rules Dataset includes a variable to capture the statutory basis of fiscal rules, the variable is not included in the empirical analysis given the limited number of observations of rules lacking statutory basis and the fact that compliance outcomes do not vary within these categories.

implementation, and the credibility of the government's commitment to policies (*Government effectiveness*). Appendix 6 provides definitions and sources for each variable. Table 2 presents bivariate correlations among the variables of interest. By construction, the variables capturing macroeconomic conditions are highly correlated. Thus, in the empirical specifications, we treat each of them separately.

Table 2: Bivariate Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Enforcement	1.00											
(2) Coverage[1]	0.20***	1.00										
(3) Fiscal council	-0.12*	-0.15**	1.00									
(4) GDP growth	-0.09	-0.05	-0.29***	1.00								
(5) Positive GDP	-0.12*	-0.01	-0.25***	0.82***	1.00							
(6) Negative GDP	-0.03	-0.07	-0.24***	0.85***	0.40***	1.00						
(7) GDP forecast error	-0.09	0.13*	-0.29***	-0.84***	-0.63***	-0.75***	1.00					
(8) IMF program	0.31***	0.05	-0.28***	-0.02	-0.01	-0.02	-0.23***	1.00				
(9) Election year	0.05	-0.02	0.02	-0.02	-0.01	-0.01	-0.18**	0.00	1.00			
(10) Ideology (right)	0.05	-0.18***	-0.06	-0.25***	-0.25***	-0.17***	-0.07	0.21***	0.01	1.00		
(11) Margin of majority	-0.27***	0.19***	0.00	-0.05	-0.05	-0.04	0.12*	-0.06	-0.06	-0.10	1.00	
(12) Gov. effectiveness	-0.21***	-0.01	0.12*	-0.10	-0.12*	-0.05	0.10	-0.08	0.06	0.04	0.39***	1.00

[1] Coverage = 1 if fiscal rule's coverage is for the general government or higher.

Note: *p < 0.10, **p < 0.5, ***p < 0.01

4 Empirical Strategy

To analyze the correlates of fiscal rule compliance, our empirical specification follows the equation below, where $c_{(i,j,t)}$ takes the value of 1 if country i complied with rule j in year t and 0 otherwise:

$$c_{(i,j,t)} = \alpha + \beta R_{(i,j,t)} + \gamma M_{(i,t)} + \delta P_{(i,t)} + \epsilon_{(i,j,t)} \tag{1}$$

where vector $R_{(i,j,t)}$ includes dummy variables which describe characteristics of fiscal rule j in country i and year t; $M_{(i,t)}$ describes macroeconomic conditions of country i in year t; vector $P_{(i,t)}$ corresponds to political variables in country i and year t; and $\epsilon_{(i,j,t)}$ is the

clustered error term that allows correlation within countries. Following Reuter (2019), we estimate Equation 1 by pooled logistic regression in our baseline specification and the robustness section introduces country fixed effects and time trends.

The sample includes 12 countries observed between 2000 and 2020.[12] The sample varies from 145 to 196 observations depending on the group of predictors considered. While the data has a panel format, a country can have two or more rules in a given year. Therefore, the unit of analysis in this study is the country-rule pair.

5 Results

5.1 Baseline results

Tables 3–5 report average marginal effects from estimating pooled logistic regressions with rule-specific, macroeconomic, and politico-institutional variables, respectively. While each set of explanatory variables is analyzed separately, all tables report the full set of covariates in the last column. Coefficients represent the average increase or decrease in the probability of complying with fiscal rules according to changes in the relevant variables.

Table 3 reports results from regressing compliance behavior against fiscal rules characteristics. None of the variables are statistically different from zero, separately (Columns 1 to 3) nor with the rest of the variables (Column 4), suggesting that these specific design features do not play a significant role in fiscal rule compliance in Latin America and the Caribbean. Interestingly, the presence of a fiscal council in charge of monitoring fiscal rules and/or targets does not seem to increase the probability of compliance. This result contrasts

[12]From the original Valencia and Ulloa-Suárez dataset, we exclude from the analysis rules that are not permanent constraints on budget aggregates. Based on this criterion, we exclude Brazil's Budget Balance Rule (BBR) and Uruguay's Debt Rule (DR). Additionally, we exclude years in which the escape clause was activated, which leaves Costa Rica out from the sample given that the country implemented its expenditure rule for the first time in 2020.

with findings from other regions, especially OECD countries, where it has been shown that fiscal councils effectively reduce compliance gaps (Beetsma et al., 2019; Reuter, 2019).

Table 3: Rule-Specific Correlates of Compliance (marginal effects)

	(1)	(2)	(3)	(4)
Enforcement procedure	-0.034			0.057
	(0.125)			(0.134)
Coverage[1]		0.013		0.056
		(0.127)		(0.093)
Fiscal council			0.015	0.032
			(0.135)	(0.116)
Controls	No	No	No	Yes
Observations	171	194	196	164

[1] Coverage = 1 if fiscal rule's coverage is for the general government (GG) or higher.

Notes: Each column presents a separate panel logistic regression with a country i's compliance c_{ijt} with its fiscal rule j at year t as the dependent variable. Robust standard errors are in parentheses. *p < 0.10, **p < 0.5, ***p < 0.01. Column (4) includes political and economic variables, using GDP growth in the specification.

Table 4 turns to the role of macroeconomic conditions in explaining variation in compliance behavior. Columns 2 and 6 uncover a relevant asymmetry: while compliance does not seem to improve during periods of positive economic growth, the probability of compliance decreases during downturns: a one standard deviation shift in Negative GDP decreases the probability of compliance by 8 percentage points.

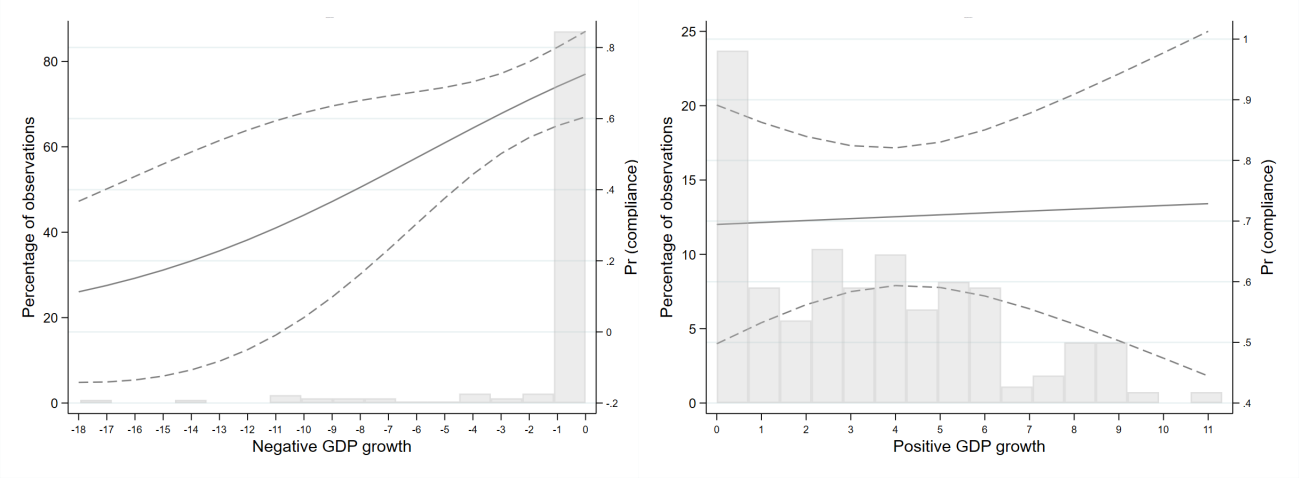
Table 4: Macroeconomic Correlates of Compliance (marginal effects)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GDP growth	0.012				0.017		
	(0.014)				(0.012)		
Positive GDP		-0.002				0.003	
		(0.022)				(0.018)	
Negative GDP		0.029**				0.031**	
		(0.012)				(0.013)	
GDP forecast error			-0.018*				-0.028**
			(0.009)				(0.013)
IMF program				0.078	0.081	0.095	0.073
				(0.148)	(0.088)	(0.084)	(0.083)
Controls	No	No	No	No	Yes	Yes	Yes
Observations	196	196	172	196	164	164	145

Notes: Each column presents a separate panel logistic regression with a country i's compliance c_{ijt} with its fiscal rule j at year t as the dependent variable. Robust standard errors are in parentheses. *p < 0.10, **p < 0.5, ***p < 0.01.

Based on coefficients from Column 6, Figure 2 plots the probability of complying with fiscal rules across the distribution of GDP growth rates, both positive and negative. For countries experiencing drops in GDP of 1% or less, the probability of compliance ranges between 69% and 72%. In contrast, this probability drops to 30% or less for countries suffering larger GDP shocks, such as negative growth rates of 10% or more.

Figure 2: Probability of Compliance and GDP Growth Rates

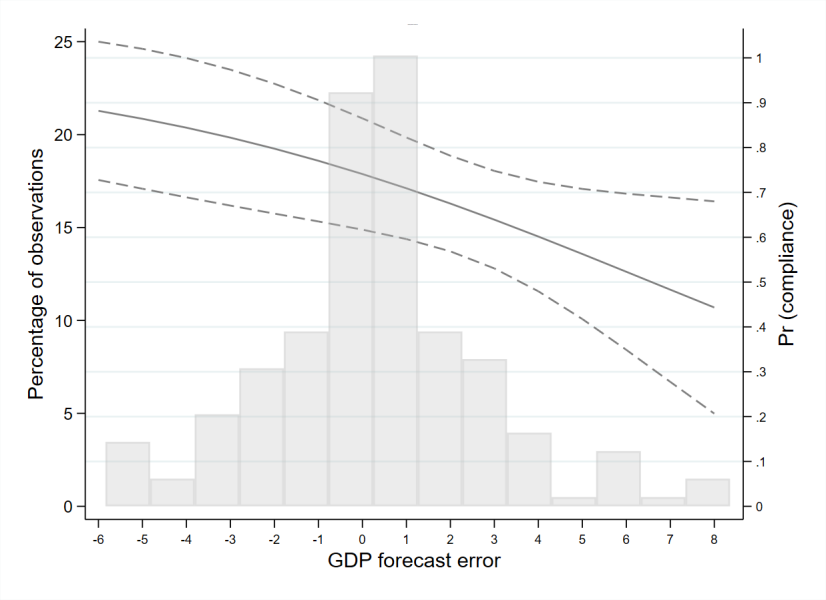


In addition, results show that GDP forecast errors increase non-compliance probability (Columns 3 and 7). When policymakers' forecasts are too optimistic, the probability of compliance decreases.[13] A standard deviation shift in the GDP forecast error decreases the probability of complying with the fiscal rule by 10 percentage points. Based on coefficients from Column 7, Figure 3 shows the distribution of GDP forecast errors in the sample. Compliance is the highest for countries that underestimate economic growth (negative forecast errors). When fiscal authorities overestimate future economic performance (positive forecast errors), compliance with fiscal rules is compromised, given that positive forecast errors are associated with overestimated fiscal balance and revenue-to-GDP ratios and underestimated expenditures (Hadzi-Vaskov et al., 2021).[14]

[13]There is important cross-country heterogeneity in the quality of official forecasts as compared to forecasts in the private sector. While in some countries such as Argentina and Brazil growth forecast errors can exceed private forecast errors by a percentage point or more, in others such as Uruguay or Paraguay the reverse is true: private forecasts are somewhat more optimistic than official ones.

[14]We leave for further research whether the quality of fiscal forecasts matter to explain compliance outcomes.

Figure 3: Probability of Compliance and Output Forecast Errors



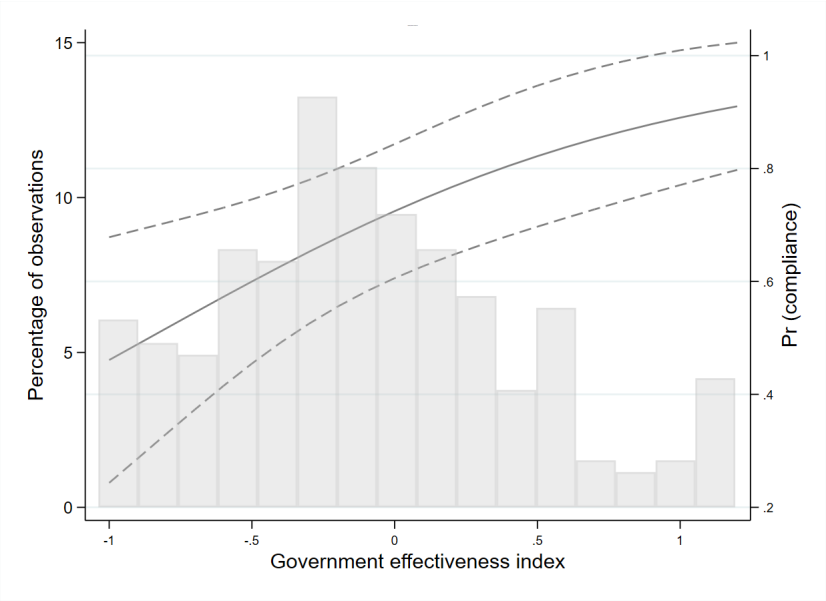
Finally, Table 5 explores the relationship between compliance and the politico-institutional context. The ideological orientation of the government matters: the probability of complying with a fiscal rule is 27 percentage points higher under right-wing governments relative to their center or left-wing counterparts (see Columns 2 and 5). In addition, the quality of the supporting institutional environment is a relevant predictor of compliance (See Columns 4 and 5). A standard deviation shift in the government effectiveness index increases the probability of compliance by 12 percentage points. Based on coefficients from Column 5, Figure 4 plots the predicted probability of compliance as a function of the government effectiveness index distribution. In countries with high institutional quality, the probability of compliance is more than twice as high as in settings with weak institutions. Election year turns out not to be relevant in determining compliance in Latin American and Caribbean countries. Similarly, the majority margin is only significant by itself and loses significance when the rest of the variables are introduced, in line with Ricciuti (2004) and Volkerink and De Haan (2001).

Table 5: Political and Institutional Correlates of Compliance (marginal effects)

	(1)	(2)	(3)	(4)	(5)
Election year	0.013				-0.052
	(0.052)				(0.057)
Ideology (right)		0.221*			0.266**
		(0.125)			(0.127)
Margin of majority			0.489**		0.291
			(0.220)		(0.412)
Government effectiveness				0.212***	0.209***
				(0.071)	(0.080)
Controls	No	No	No	No	Yes
Observations	196	196	193	192	164

Notes: Each column presents a separate panel logistic regression with a country i's compliance c_{ijt} with its fiscal rule j at year t as the dependent variable. Robust standard errors are in parentheses. *p < 0.10, **p < 0.5, ***p < 0.01.

Figure 4: Probability of Compliance and Institutional Quality



5.2 Robustness

The baseline estimations above are illustrative of the cross-sectional variation in compliance with different types of rules in Latin America. This section includes country fixed effects to capture how compliance evolves with changes in the variables of interest over time. Introducing fixed effects reduces the total number of observations because conditional effects are representative of rules that show variation in compliance over time (that is, they were complied with and not complied with at least once over the sample period). For example, the rules in Jamaica, Honduras, or Colombia cannot be included in an estimation with fixed effects. In addition, there are also rule-specific features (coverage, enforcement procedures) that do not change over time and are, therefore, not included in the fixed effects models.

Table 6 presents results from estimating the models in Tables 3–5 with the full set of time-varying covariates, including country fixed effects (Columns 1–3) and a linear trend (Columns 4–6) to control for the passage of time. With some exceptions, the qualitative results do not change significantly when introducing country fixed effects. First, results show that fiscal councils' contribution to raising non-compliance costs is limited, with similar non-significant results across the specifications. In addition, compliance is affected by changes in the macroeconomic environment: while positive GDP growth does not stimulate compliance, when GDP growth turns negative, the probability of compliance decreases. A standard deviation change in Negative GDP reduces the probability of complying with the fiscal rule by 10 percentage points. In addition, the negative effect on compliance of over-optimistic growth forecasts during the budget-making process is robust to the inclusion of country fixed effects and a linear time trend. Finally, turning to the politico-institutional drivers of compliance, the results on ideology and government effectiveness are no longer significant when considering within-country variation across time.

Table 6: Correlates of Compliance Fiscal Rules (marginal effects)

	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal council	0.023	0.015	-0.029	0.101	0.092	0.066
	(0.149)	(0.156)	(0.177)	(0.123)	(0.129)	(0.114)
GDP growth	0.030***			0.022***		
	(0.007)			(0.008)		
Positive GDP		0.018			0.010	
		-0.012			(0.013)	
Negative GDP		0.040***			0.032**	
		(0.016)			(0.014)	
GDP forecast error			-0.033**			-0.028*
			-0.015			(0.016)
IMF program	-0.035	-0.034	-0.078	-0.098	-0.093	-0.117
	(0.141)	(0.121)	(0.149)	(0.183)	(0.156)	(0.189)
Election year	0.000	-0.006	-0.016	-0.005	-0.013	-0.008
	(0.064)	(0.068)	(0.069)	(0.0676)	(0.072)	(0.081)
Ideology (right)	0.036	0.026	-0.072	-0.052	-0.065	-0.089
	(0.096)	(0.093)	(0.160)	(0.107)	(0.106)	(0.149)
Margin of majority	-0.095	-0.089	-0.280	0.025	0.032	-0.045
	(0.225)	(0.231)	(0.301)	(0.196)	(0.199)	(0.254)
Government effectiveness	-0.174	-0.208	-0.131	0.003	-0.026	0.091
	(0.234)	(0.252)	(0.225)	(0.290)	(0.280)	(0.279)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Linear time trend	No	No	No	Yes	Yes	Yes
Observations	146	146	124	146	146	124

Notes: Each column presents a separate panel logistic regression with a country i's compliance c_{ijt} with its fiscal rule j at year t as the dependent variable. Robust standard errors are in parentheses. *p < 0.10, **p < 0.5, ***p < 0.01.

6 Conclusions and Policy Implications

Fiscal rules have become a widespread policy tool around the globe to ensure the sustainability of public finances. They started to be implemented mostly in advanced economies

in the 1990s and have gained traction since, extending to emerging and developing markets. The surge in debt after the global financial crisis of 2008 has accelerated fiscal rule adoption and prompted changes in their design. The global recession associated with policy responses to the COVID-19 pandemic triggered the suspension of rules. However, as countries recover from the pandemic, governments are taking the opportunity to revise and reform their rules-based fiscal frameworks.

Latin America has been no exception to these global trends. In this paper, we have shown that complying with fiscal rules makes a difference: countries that comply with their fiscal rules show, on average, lower sovereign bond spreads, higher credit ratings, and lower probability of public debt accelerations than countries that do not comply with their rules. However, the main message is that fiscal rules do not operate in a vacuum despite compliance benefits. Instead, the broader macroeconomic and politico-institutional environment affects compliance with fiscal rules.

Our findings have relevant policy implications. First, they suggest countries should take measures to increase commitment to fiscal rules by strengthening the role of fiscal councils during the budget-making process. In contrast to the experience in OECD countries, our findings provide limited support for the positive role of fiscal councils in raising the reputational costs of non-compliance with fiscal rules across Latin America and the Caribbean. This finding could be partly attributed to the relative novelty of fiscal councils in the region as well as the fact that resources and technical capacity are often not proportional to the formal tasks assigned to fiscal councils, limiting their effectiveness. Strengthening the set of tools, resources, and staff available to councils for better enforcement would increase their role in the fiscal policy-making process. Secondly, our results suggest improving how budget forecasts are prepared to avoid over-optimism biases. Doing so would make compliance with fiscal rules easier early in the budget process and could go a long way in strengthening the

credibility of the government's medium-term fiscal frameworks and fiscal plans. Finally, the evidence suggests that in the absence of strong political commitment to fiscal rules, as captured by the quality of the overall institutional framework surrounding fiscal policy-making, efforts to increase monitoring and enforcement may prove insufficient to ensure adequate compliance with fiscal rules.

References

Alesina, A., Campante, F. R., and Tabellini, G. (2008). Why is fiscal policy often procyclical? *Journal of the European Economic Association*, 6(5):1006–1036.

Alesina, A. and Passalacqua, A. (2016). The political economy of government debt. *Handbook of Macroeconomics*, 2:2599–2651.

Alesina, A. and Perotti, R. (1996). Fiscal discipline and the budget process. *The American Economic Review*, 86(2):401–407.

Alesina, A., Roubini, N., and Cohen, G. D. (1997). *Political cycles and the macroeconomy*. MIT press.

Alesina, A. F. and Perotti, R. (1999). Budget deficits and budget institutions. In *Fiscal institutions and fiscal performance*, pages 13–36. University of Chicago Press.

Ardanaz, M., Cavallo, E., Izquierdo, A., and Puig, J. (2021). Growth-friendly fiscal rules? Safeguarding public investment from budget cuts through fiscal rule design. *Journal of International Money and Finance*, 111:102319.

Ardanaz, M., Cavallo, E., and Izquierdo, A. (2023). Fiscal rules: Challenges and reform opportunities for emerging markets. *IDB Working Paper*.

Asatryan, Z., Castellón, C., and Stratmann, T. (2018). Balanced budget rules and fiscal outcomes: Evidence from historical constitutions. *Journal of Public Economics*, 167:105–119.

Avellan, L. and Vuletin, G. (2015). Fiscal procyclicality and output forecast errors. *Journal of International Money and Finance*, 55:193–204.

Beetsma, R., Debrun, X., Fang, X., Kim, Y., Lledó, V., Mbaye, S., and Zhang, X. (2019). Independent fiscal councils: Recent trends and performance. *European Journal of Political Economy*, 57:53–69.

Bergman, U. M. and Hutchison, M. (2015). Economic stabilization in the post-crisis world: Are fiscal rules the answer? *Journal of International Money and Finance*, 52:82–101.

Besley, T. and Case, A. (2003). Political institutions and policy choices: Evidence from the United States. *Journal of Economic Literature*, 41(1):7–73.

Blanco, F., Saavedra, P., Koehler-Geib, F., and Skrok, E. (2020). *Fiscal rules and economic size in Latin America and the Caribbean*. World Bank Publications.

Brender, A. and Drazen, A. (2005). Political budget cycles in new versus established democracies. *Journal of Monetary Economics*, 52(7):1271–1295.

Caselli, F. and Reynaud, J. (2020). Do fiscal rules cause better fiscal balances? A new instrumental variable strategy. *European Journal of Political Economy*, 63:101873.

Corbacho, A. and Ter-Minassian, T. (2013). Public financial management requirements for effective implementation of fiscal rules. In *The international handbook of public financial management*, pages 38–62. Springer.

Cordes, T., Kinda, T., Muthoora, P. S., and Weber, A. (2015). *Expenditure rules: Effective tools for sound fiscal policy?* International Monetary Fund.

Davoodi, H., Elger, P., Fotiou, A., Garcia-Macia, D., Han, X., Lagerborg, A., Lam, W. R., and Medas, P. (2022). Fiscal Rules and Fiscal Councils: Recent Trends and Performance during the COVID-19 Pandemic. *IMF Working Papers*, 2022(011):1.

De Haan, J., Moessen, W., and Volkerink, B. (1999). Budgetary procedures-aspects and changes: New evidence for some european countries. In *Fiscal institutions and fiscal performance*, pages 265–300. University of Chicago Press.

Delgado-Téllez, M., Lledo, V. D., and Pérez, J. J. (2017). *On the determinants of fiscal non-compliance: An empirical analysis of Spain's regions*. International Monetary Fund.

Drazen, A. (2000). The political business cycle after 25 years. *NBER macroeconomics annual*, 15:75–117.

Eyraud, L., Debrun, X., Hodge, A., Lledo, V. D., and Pattillo, C. A. (2018). *Second-generation fiscal rules: Balancing simplicity, flexibility, and enforceability*. International Monetary Fund.

Frankel, J. and Schreger, J. (2013). Over-optimistic official forecasts and fiscal rules in the eurozone. *Review of World Economics*, 149(2):247–272.

Frankel, J. A., Vegh, C. A., and Vuletin, G. (2013). On graduation from fiscal procyclicality. *Journal of Development Economics*, 100(1):32–47.

Grembi, V., Nannicini, T., and Troiano, U. (2016). Do fiscal rules matter? *American Economic Journal: Applied Economics*, 8(3):1–30.

Hadzi-Vaskov, M., Ricci, L. A., Werner, A. M., and Zamarripa, R. (2021). *Authorities' Fiscal Forecasts in Latin America: Are They Optimistic?* Number 16276. International Monetary Fund.

Hallerberg, M. and Scartascini, C. (2017). Explaining changes in tax burdens in Latin America: Do politics trump economics? *European Journal of Political Economy*, 48:162–179.

Hallerberg, M., Scartascini, C. G., and Stein, E. (2009). *Who decides the budget?: A political economy analysis of the budget process in Latin America*. Harvard University Press.

Heinemann, F., Moessinger, M.-D., and Yeter, M. (2018). Do fiscal rules constrain fiscal policy? A meta-regression-analysis. *European Journal of Political Economy*, 51:69–92.

IMF (2009). Fiscal rules: Anchoring Expectations for Sustainable Public Finances. IMF Policy Paper, International Monetary Fund.

IMF (2013). The functions and impact of fiscal councils. IMF Policy Paper, International Monetary Fund.

Kopits, G. and Symansky, S. A. (1998). *Fiscal Policy Rules*. International Monetary Fund.

Larch, M., Malzubris, J., and Santacroce, S. (2023). Numerical compliance with EU fiscal rules: Facts and figures from a new database. *Intereconomics*, 58(1):32–42.

Milesi-Ferretti, G. M. (2004). Good, bad or ugly? On the Effects of Fiscal Rules with Creative Accounting. *Journal of Public Economics*, 88(1–2):377–394.

Perotti, R. and Kontopoulos, Y. (2002). Fragmented fiscal policy. *Journal of Public Economics*, 86(2):191–222.

Persson, T., Roland, G., and Tabellini, G. (2000). Comparative politics and public finance. *Journal of Political Economy*, 108(6):1121–1161.

Persson, T. and Svensson, L. E. (1989). Why a stubborn conservative would run a deficit: Policy with time-inconsistent preferences. *The Quarterly Journal of Economics*, 104(2):325–345.

Pettersson-Lidbom, P. (2008). Do parties matter for economic outcomes? A regression-discontinuity approach. *Journal of the European Economic Association*, 6(5):1037–1056.

Powell, A. and Valencia, O. M. (2023). Dealing With Debt: Less Risk for More Growth in Latin America and the Caribbean. Technical report, Inter-American Development Bank.

Reuter, W. H. (2015). National numerical fiscal rules: Not complied with, but still effective? *European Journal of Political Economy*, 39:67–81.

Reuter, W. H. (2019). When and why do countries break their national fiscal rules? *European Journal of Political Economy*, 57:125–141.

Ricciuti, R. (2004). Political Fragmentation and Fiscal Outcomes. *Public Choice*, pages 365–388.

Rogoff, K. (1990). Equilibrium Political Budget Cycles. *The American Economic Review*, 80(1):21–36.

Stein, E. and Caro, L. (2017). Ideology and taxation in Latin America. *Journal of the Latin American and Caribbean Economic Association*, 17(2):1–27.

Ulloa-Suárez, C. (2023). Determinants of compliance with fiscal rules: Misplaced efforts or hidden motivations? *European Journal of Political Economy*, 78:102399.

Ulloa-Suárez, C. and Valencia, O. (2022). Do governments stick to their announced fiscal rules? A study of Latin American and the Caribbean countries. *Journal of Government and Economics*, 8:100058.

Velasco, A. (2000). Debts and deficits with fragmented fiscal policymaking. *Journal of Public Economics*, 76(1):105–125.

Volkerink, B. and De Haan, J. (2001). Fragmented government effects on fiscal policy: New evidence. *Public Choice*, 109(3-4):221–242.

Von Hagen, J. and Harden, I. J. (1995). Budget processes and commitment to fiscal discipline. *European Economic Review*, 39(3-4):771–779.

Woo, J. (2003). Economic, political, and institutional determinants of public deficits. *Journal of Public Economics*, 87(3-4):387–426.

Wyplosz, C. (2012). Fiscal rules: Theoretical issues and historical experiences. In *Fiscal policy after the financial crisis*, pages 495–525. University of Chicago Press.

Yared, P. (2019). Rising government debt: Causes and solutions for a decades-old trend. *Journal of Economic Perspectives*, 33(2):115–140.

Appendix A — Fiscal Rules Included in Sample

Country	Rule	Period	Country	Rule	Period
Argentina	BBR	2001-2005	Mexico	BBR	2006-2009
	ER	2001-2008		BBR	2013
	ER	2017-2020		ER	2015-2020
Bahamas	BBR	2018	Panama	BBR	2009-2020
	DR	2018		DR	2009-2020
Brazil	ER	2016-2020	Paraguay	BBR	2013-2018
Chile	BBR	2001-2020		ER	2013-2018
Colombia	BBR	2012-2019	Peru	BBR	2000-2009
Ecuador	BBR	2003-2009		BBR	2012-2016
	DR	2003-2020		BBR	2018-2019
	ER	2003-2020		DR	2016-2019
Honduras	BBR	2016-2019		ER	2000-2009
	ER	2016-2019		ER	2012-2016
Jamaica	BBR	2010-2020		ER	2018-2019
	DR	2010-2019			

Note: BBR = Budget Balance Rule, ER = Expenditure Rule, DR = Debt Rule.

Appendix B — Variable Definitions and Sources

Variable	Definition	Source
Enforcement procedure	Dummy equal to 1 if a formal enforcement procedure exists	Variable of "national formal enforcement procedure" in IMF Fiscal Rule Dataset
Institutional coverage (GG or higher)	Dummy equal to 1 if coverage includes general government (GG) or higher	Transformation of "national coverage" in IMF Fiscal Rule Dataset
Fiscal council monitors targets	Dummy equal to 1 if fiscal council monitors fiscal rules and/or conducts ex-post analysis	Combination of "monitoring of fiscal rules" and "ex-post analysis " from IMF Fiscal Council Dataset
GDP growth	Real GDP growth	Transformation of "Gross domestic product, constant prices" from WEO
Positive GDP growth	Takes the value of GDP growth when GDP growth>0 and 0 otherwise	Transformation of GDP growth
Negative GDP growth	Takes the value of GDP growth when GDP growth<0 and 0 otherwise	Transformation of GDP growth
GDP forecast error	Difference between authorities' forecasts for real GDP growth and actual GDP growth	Variable of "Authorities' Forecasts for Real GDP Growth" from "Authorities' Fiscal Forecasts in Latin America: Are They Optimistic?" Metodij, H-V., Werner, A., and Zamarripa, R. (2021) Authorities' Fiscal Forecasts in Latin America: Are They Optimistic? *International Monetary Fund* No. 16276, and collected data from national sources compared to ex-post growth rates from WEO
IMF program	Dummy equal to 1 if the country has an IMF standby arrangement (SBA), an extended fund facility (EFF), or a structural adjustment facility arrangement (SAF) in effect for at least five months in that year	Boockmann, Bernhard, and Axel Dreher, The Contribution of the IMF and the World Bank to Economic Freedom, *European Journal of Political Economy* 19(3): 633 – 649 (2003) and IMF country profiles for 2020
Election year	Dummy equal to 1 if a legislative or executive election took place that year	Combination of "legelec" and "exelec" from the Database of Political Institutions 2020
Ideology (right)	Dummy equal to 1 if party orientation is classified as right	Variable of "execrlc" from the Database of Political Institutions 2020
Margin of majority	Fraction of seats held by the government (including aligned parties) in the legislature	Variable of "maj" from the Database of Political Institutions 2020
Government effectiveness	Index which captures perceptions of the quality of public services, the quality of the civil service, and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies	Variable of "gee" from the Worldwide Governance Indicators

Appendix C — Descriptive Statistics

Variable Name	Obs.	Mean	Std. Dev.	Min.	Max.
Enforcement procedure	184	0.44	0.50	0.00	1.00
Institutional coverage[1]	207	0.49	0.50	0.00	1.00
Fiscal council monitors targets	209	0.18	0.39	0.00	1.00
GDP growth	209	2.91	4.33	-17.94	11.31
Positive GDP growth	209	3.59	2.74	0.00	11.31
Negative GDP growth	209	-0.68	2.52	-17.94	0.00
GDP forecast error	180	0.53	3.44	-5.84	23.24
IMF program	209	0.27	0.44	0.00	1.00
Election year	209	0.29	0.46	0.00	1.00
Ideology (right)	209	0.23	0.42	0.00	1.00
Margin of majority	206	0.49	0.19	0.09	0.97
Government effectiveness	204	-0.13	0.56	-1.04	1.19

[1] Coverage = 1 if fiscal rule's coverage is for the general government or higher.