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Do governments stick to their announced fiscal rules? A study of Latin American and the Caribbean countries

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ABSTRACT

This paper introduces a dataset that gathers information on whether and how Latin America and the Caribbean (LAC) have complied with or deviated from implemented fiscal rules. It provides annual data on fiscal rules for 14 LAC countries from 2000 to 2020, and it considers the design features of the rules and information about numerical compliance. It provides descriptive statistics reflecting the panorama of the fiscal rules implemented in LAC countries. Additionally, it calculates compliance rates across countries, years, and rules. On average, this study finds that compliance with rules aiming to constrain debt ratios and structural balances is the highest, while compliance with fiscal balance and expenditure rules is the lowest. Furthermore, the data collection process revealed that LAC countries still have room for discretion even when they subject their fiscal policy to rules. To address this problem, the paper proposes an adjusted compliance index that considers different elements that add degrees of discretion to the rule. The study finds that the numerical compliance rates of each country are likely to be over-estimated once discretionary actions are accounted for.

JEL classification :E62, H11, H60

1. Introduction

The surge of Covid-19 challenged fiscal institutions at the global level and the response from governments to mitigate the socioeconomic consequences of the pandemic. One of the fiscal institutions tested were fiscal rules and their ability to generate countercyclical responses and react to unexpected shocks. In particular, in 2020, several governments activated escape clauses of the fiscal rules to gain fiscal space and respond to the health crisis. Similarly, countries whose rules did not include escape clauses decided to suspend or introduce exceptional changes in the objectives of their rules for one or more years. A new challenge that countries face during the post-pandemic is the return and subsequent compliance with the objectives of the rules under new and remarkably different macroeconomic conditions.

One of the main reasons to return to fiscal rules, and generally to a rule-based framework, is to have a mechanism that allows building credibility in implementing fiscal policy whose returns can be translated into lower financing costs. Further, they are instruments that contribute to macroeconomic sustainability. Besides, since they are integrated into fiscal and spending frameworks, they are essential for allocating current resources. For these reasons, fiscal rules are commonly implemented to guide fiscal policy on the elaboration of national budgets and also to mitigate principal-agent problems so voters can readily internalize the budget restrictions that governments face every period.

How certain fiscal institutions are created and maintained is heterogeneous across economies. On the one hand, advanced economies are characterized by solid fiscal institutions that have allowed them to maintain sustainable fiscal positions in the face of high debt levels. Fiscal rules were often introduced to achieve debt sustainability. However, several rules designed their targets in a macroeconomic environment significantly different from the one we have been experiencing some years before the COVID-19 crisis (Blanchard et al., 2021). The health emergency and the government's urgent answer brought back to the debate the need to rethink fiscal frameworks, particularly fiscal rules. On the other hand, this debate is even more complex in emerging countries considering the greater volatility that often translates into less predictability of fiscal aggregates and the long road that fiscal institutions have to consolidate. For example, in LAC, only 48% of the countries have a fiscal rule, 36% have a recently implemented fiscal framework, and only 20% have an independent fiscal council.

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In order to achieve the best outcome in returning to fiscal rules, countries must consider the extent to which the initially established has worked its purpose and what has not. This paper focuses on emerging economies proposing a novel dataset that gathers information on whether and how Latin American and the Caribbean (LAC) countries have complied with or deviated from implemented fiscal rules. This dataset provides annual data on fiscal rules for 14 LAC countries from 2000 to 2020 and considers the design features of the rules and information about numerical compliance. We calculate compliance rates across countries, years, and rules by contrasting the objectives set by the rules and their executed or observed values. The results show that the region's numerical compliance with fiscal rules stands at 66%, indicating that, on average, countries breached their rules only one-quarter of the years of implementation.

Furthermore, the credibility of implementing a fiscal rule depends on the ability of governments to improve their fiscal management to achieve higher levels of compliance over time. More precisely, higher compliance rates reflect that governments have achieved the objectives set in their fiscal rules over time. Indeed, more than implementing a rule, compliance is needed to guarantee fiscal sustainability. However, LAC countries have often implemented fiscal rules in a framework that allows governments to play with the bounds of the rules and deviate from the objectives frequently. In addition to the calculated compliance rates, this paper proposes an adjusted compliance index that considers different elements that add degrees of discretion to the rules. Our findings suggest that the sum of small actions can quickly turn flexibility into discretionary space. In particular, when comparing the average rates for the period, we find that the average rate of adjusted compliance drops almost 10pp and stands at 57%.

The findings and trends documented in this paper provide a better understanding of the effectiveness of the implemented rules and are a key input for future reforms. Information on compliance rates at the regional level can be used as a baseline and encourages countries to improve fiscal management in terms of design and consistency with the objective of their rules. Besides, we highlight the need for governments to gain perspective on the fiscal rule's framework to ensure the return and subsequent compliance with their fiscal rules. The recent shocks made clear that it is necessary to consider some degree of flexibility in a rule-based framework to adjust to economic shocks without compromising the medium-term objectives (Linnemann and Schabert, 2012). With increased transparency, the line between flexibility and discretion becomes more explicit, and the message of implementing and complying with the rule becomes more piercing. For this reason, the institutional aspect of the rules is fundamental to overall compliance since they enhance government effectiveness and accountability (Blume and Voigt, 2013).

The remainder of the paper is organized as follows. Section 2 presents an overview of existing datasets on compliance with fiscal rules. Section 3 explains how the dataset was constructed in the LAC context and presents some descriptive statistics. Section 4 introduces the methodology for calculating numerical compliance with fiscal rules. Section 5 presents the adjusted index of compliance. Section 6 concludes.

2. Existing datasets

A *fiscal rule* is commonly defined as a long-lasting constraint on fiscal policy through numerical limits on budgetary aggregates (Eyraud et al., 2018). Numerical targets are usually set on budget balance, debt, expenditure, or revenue. They differ significantly from country to country because of their numerical objective, design, and implementation characteristics. As more and more countries opt to implement fiscal rules, various efforts have been devoted to collecting information, mainly on the design of the rules. The IMF FAD Fiscal Rules Dataset (Davoodi et al., 2022) has been particularly influential given its effort to compile cross-national information on fiscal rules from 1985 to 2021. It covers 105 countries and details the rules' characteristics, such as type of rule, legal basis, coverage, escape clauses, and enforcement procedures. Researchers use this dataset widely as the best data available for comparisons across countries and over time.

Although the IMF FAD Fiscal Rules Dataset groups similar information for a large sample of countries, it does not delve into specific features of rules and their workings at the country level. Because of this, several studies analyze the experience of particular countries with their rules. For example, several articles study Latin American countries' fiscal framework and fiscal rules. Some examples include Argentina (Artana et al., 2021), Brazil (Bonomo et al., 2021), Chile (Fuentes et al., 2021), Colombia (Arbeláez et al., 2021), Peru (Mendoza Bellido et al., 2021), or more broadly, the book *Reglas Fiscales Resilientes en América Latina* (IDB, 2020).

In addition, the secretariat of the European Fiscal Board presents updated and detailed information on the fiscal rules implemented by the members of the European Union (EU) derived from the Stability and Growth Pact (SGP). This information is compiled and summarized in a compliance tracker for four fiscal rules included in the SGP from 1998 to 2020 for 28 countries. This is the first public dataset that is updated annually, which provides information on compliance with each country's rules. In its technical note, Larch and Santacroce (2020) present key facts and trends of average numerical compliance that assess the performance of implemented rules relative to the objectives set. The compliance tracker and its assessment show that this is a key indicator when studying the performance of fiscal rules. However, the coverage of this indicator is limited to EU member countries. Although the methodology proposed by the European Commission is an advance in the analysis of numerical compliance with fiscal rules, it cannot be extended precisely to LAC countries.

There are significant institutional differences in the fiscal frameworks between both groups of economies, especially when analyzing their fiscal rules. These differences are reflected in how countries constrain their macroeconomic aggregates. For instance, there is persistent high macroeconomic volatility in LAC countries stemming from the pro-cyclical nature of fiscal policy, frequent climate shocks, and commodity price cycles. On the other hand, EU countries share a supranational fiscal rule allowing more straightforward monitoring of the implemented rules and a homogeneous reporting of numerical compliance. Contrarily, each country in LAC is in charge of designing, implementing, and monitoring its rules. Consequently, there is more heterogeneity in the type of numerical aggregates constrained as well as in the reports of compliance.

The main contribution of this paper is the construction of indicators of numerical compliance for LAC countries considering the fiscal and institutional specificities of the region. In turn, the approach presented in this paper can be generalized to other countries worldwide, introducing a common framework to compare numerical compliance across countries, with the caveat that outcomes will depend on the possibility of using an archival data collection method and the availability of official reports.

Other research has focused on studying the fiscal framework of the rules without much emphasis on their actual compliance. Some exceptions, such as the study by Cordes et al. (2015), focus on limited regions or groups of countries presenting average compliance scores. Other studies have used forecasts to study compliance, as in Frankel and Schreger (2013) and Reuter (2015). So far, none of these studies has analyzed the performance of fiscal rules from the standpoint of compliance in LAC countries.[1]

[1] An exception is Blanco et al. (2020), who present compliance scores for a broad sample of countries, including ten Latin American countries.

3. Fiscal rules in LAC countries

The adoption of fiscal rules in LAC has been gradual and heterogeneous across countries. The use of fiscal rules as a tool of fiscal policy began in the late 1990s and early 2000s in response to the high economic volatility facing most countries in the region. The main purpose of fiscal rules is to contain pressures to overspend that derive from either common-pool or principal-agent problems between voters and elected officials. In doing so, fiscal rules help strengthen fiscal solvency and sustainability. Beyond ensuring debt sustainability and depending on each country's structural economic features and fiscal needs, fiscal rules have also been designed to address procyclical biases in fiscal policy-making. For example, in countries that are exporters of commodities and therefore are more sensitive to the economic cycle, the design and implementation of the rules are aimed at stabilizing the economic cycle.

Regardless of the macroeconomic aggregate that countries seek to restrict with their rules, more and more countries see an opportunity to restructure their fiscal frameworks and base part of their policy on rules. Fig. 1 shows the evolution of the fiscal rules adopted in LAC countries between 2000 and 2020. The orange bars indicate the number of countries that have at least one fiscal rule each year, while the blue bars show the total number of rules in force in that year.

Fig. 1 shows us that the implementation of rules has been gradual over the years and that countries tend to implement more than one rule at a time. In general, the implementation of fiscal rules does not appear to be associated with significant changes in the economic landscape, such as the boom in commodity prices, the international financial crisis, or the end of high commodity prices. However, the commodity cycle greatly influenced the fiscal policy of the region's countries since, between 2005 and 2017, the number of fiscal rules implemented doubled. On the other hand, the sudden drop in the number of rules in force in 2020 shows that many countries decided to suspend their fiscal rule to deal with the COVID-19 health crisis.

3.1. Constructing a dataset to monitor compliance

This dataset aims to provide updated information about LAC countries' design features and compliance with fiscal rules. By contrasting the objectives or targets set by the rules with their executed or observed values, we can characterize the compliance behavior of LAC and assess the extent to which they have deviated from their targets. The approach is to compute compliance rates using as much information as possible from official sources in each country. We focus on numerical compliance with national-level rules and exclude subnational fiscal rules from the analysis. The process of building the dataset is detailed below.

Most rules were introduced on a statutory basis with fiscal responsibility laws. The design of the rule described in each law provides information about the macroeconomic aggregate it seeks to constrain, the numerical target or the procedure to set it, as well as escape clauses (if any) and the level of government it covers. In addition to the aggregates of public finances on which fiscal rules impose numerical targets, such as fiscal balance, debt, revenue, and expenditure, we also find objectives for the structural balance and the golden rule in the LAC countries. Unlike a supranational rule, LAC countries can reform the law that introduces the rule. We also delve into the changes introduced in the laws over the years to identify modifications in the targets or a definitive rule suspension.

In some cases, the law requires governments to prepare a medium-term fiscal framework specifying targets for subsequent fiscal years. It also obliges governments to submit reports on the execution and achievement of objectives. Information about executed values and subsequent compliance is obtained from these reports and the historical series published by official sources (Ministry of the Economy, Central Banks, etc.). Thus, the starting point is the information provided by the laws introduced and these publications (when available).

The information gleaned from these sources comes from the responses to a questionnaire about fiscal rules in each country. We follow the questionnaire on compliance with fiscal rules filled out by World Bank country economists as in Skrok et al. (2017). Then, we focus on escape clauses and group the questions into two parts. The first part is informative about the design of each rule (type of rule, objective/limit, escape clauses), while the second part focuses on compliance (executed values, deviations). For each country and corresponding year, the following questions were asked:

1. Does the country have a fiscal rule in place?
2. What is the macroeconomic aggregate it imposes a numerical target?
3. Does the design of the rule include escape clauses?
4. Was the escape clause invoked?
5. To which level of government does the target apply?
6. What is the legal numerical target of the rule?
7. What was the executed value for the corresponding macroeconomic aggregate?
8. Did the executed result meet the target?
9. What was the deviation between the executed value and the target?
10. What were the reasons why the target was not met?

The answers to these questions provide a dataset of country-year observations about the implemented fiscal rules for LAC countries. This information makes it possible to understand how each rule has worked over the years. Additionally, by comparing the definitions of each rule with the values executed for the respective macroeconomic objectives, we can calculate compliance rates.

3.2. Descriptive statistics

The first set of questions used to construct the database gathers information on the design and implementation of fiscal rules. Our sample includes 14[2] LAC countries that have implemented at least one fiscal rule between 2000 and 2020. Furthermore, Barbados and El Salvador[3] recently implemented fiscal rules. The fact that 16 LAC are implementing at least one fiscal rule by 2022 reflects the increasing number of countries using fiscal rules in the region.

Fig. 2 shows that from those 14 countries that have implemented one rule for at least one period, four have implemented a single rule, seven have implemented a combination of two rules, and three have implemented a combination of three rules. The literature focuses on four types of fiscal rules restricting four macroeconomic aggregates: the fiscal deficit, the debt ratio, fiscal expenditure, or fiscal revenues. The rules that restrict the deficit may focus on the fiscal balance of the governments or, in some cases, may consider specifically the structural balance to account for the economic cycle. For LAC countries, we consider both rules separately: a fiscal balance rule, also known as the budget-balance rule (BBR), and a structural balance rule (SBR). In addition to these rules, we find that in LAC, countries have often implemented debt rules (DR) and fiscal expenditure ceilings (ER). As of 2020, no country had implemented a rule for revenue (RR).

Although the level of government to which the rule applies varies across countries, how they limit macroeconomic aggregates is very similar. Conditional to the type of rule, we observe the following

[2] The 14 countries are Argentina, Bahamas, Brazil, Chile, Colombia, Costa Rica, Ecuador, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, and Uruguay.

[3] El Salvador implemented a revenue rule in 2016 as the final part of a fiscal consolidation process. The rule initially establishes a period of transition, and the rule's numerical targets come into effect in 2022. For this reason, information on its numerical compliance is not yet available and is not included in our sample.

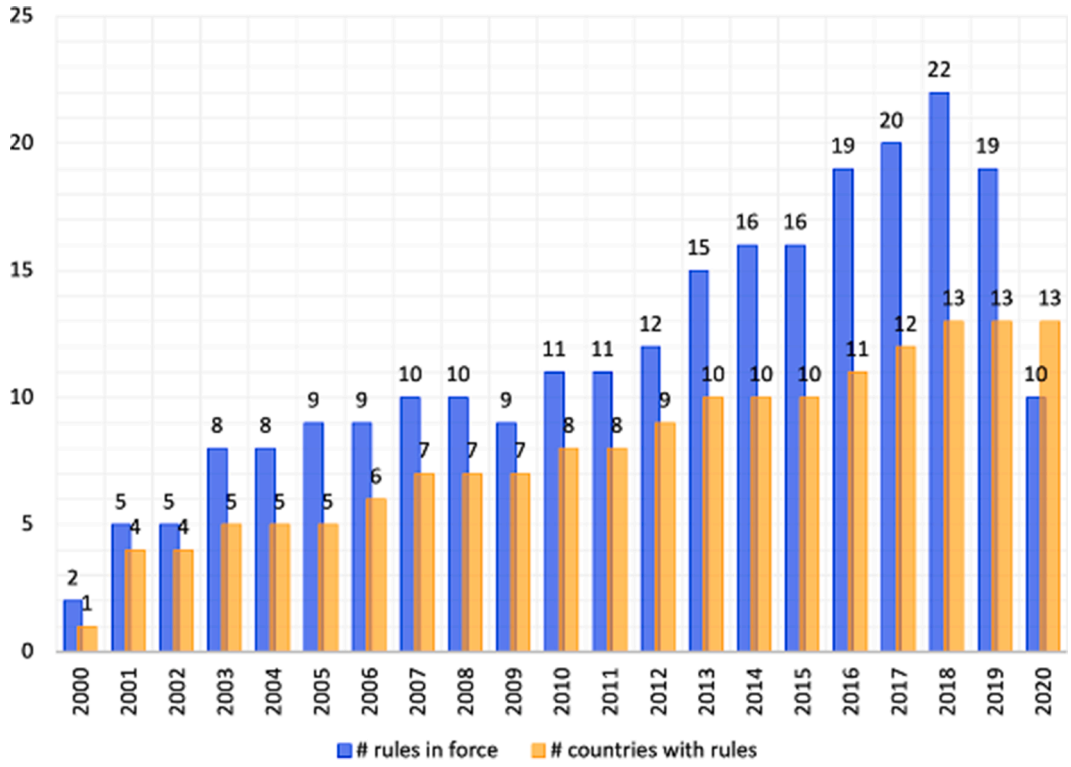

Fig. 1. Evolution of fiscal rules in Latin American and Caribbean countries (2000–2020).

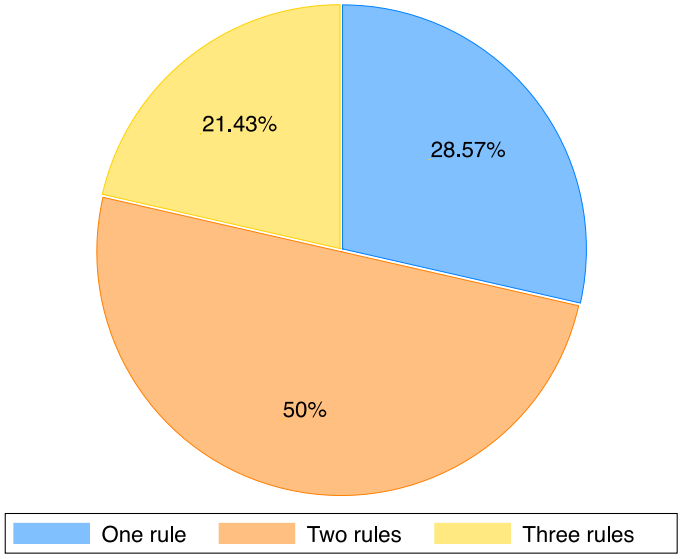

Fig. 2. Number of fiscal rules implemented across countries.

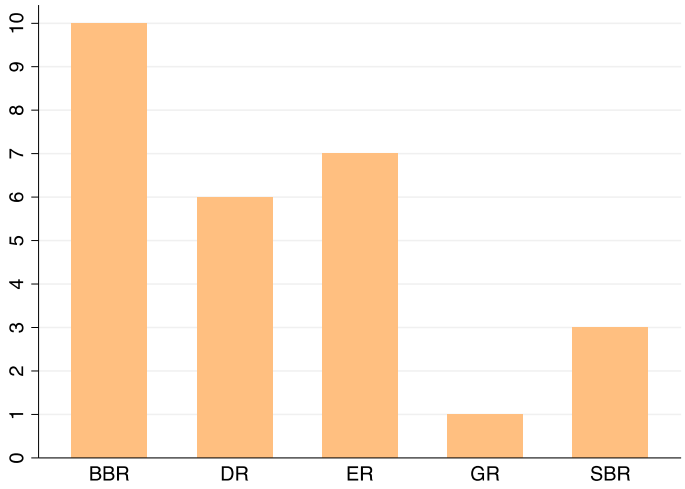

Fig. 3. Fiscal rules, frequency.
Note: ER stands for expenditure rule, BBR for fiscal balance rule, and DR for debt rule.

similarities. First, for BBR and SBR rules, in most cases, limits are established for each fiscal year, either by the FRL or at the beginning of a new administration. Few countries also opt for an objective that establishes a deficit reduction for a certain period rather than for a specific objective each fiscal year. Second, for ER, several countries also limit public spending growth, adjusting it for inflation or GDP growth. Finally, for DR, the procedures to target the level of debt are similar to those for the balance rule. These numerical targets are modified less frequently and are usually maintained for several periods. We also observe across countries that they set the objective to reduce the level of debt to a certain amount and then direct efforts to stay below that limit.

Fig. 3 shows the frequency of the different types of fiscal rules implemented. As of 2020, no country in LAC had implemented a revenue rule, so we excluded this category from our analysis. On the other hand, most countries have decided to implement a budget balance rule. However, countries frequently implement more than two fiscal rules to address procyclical biases in fiscal policy outcomes. Fig. 4 shows the combination that LAC countries choose most frequently among those implementing at least two rules. We observe that four countries combine an expenditure rule with a fiscal balance rule, and three countries combine a fiscal balance rule with a debt rule.

Another important aspect of the design of fiscal rules is the flexibility they allow to respond to unexpected shocks. To this end, many countries have chosen to include escape clauses as well as clear procedures for invoking them. In LAC, 86 percent of countries have escape clauses in

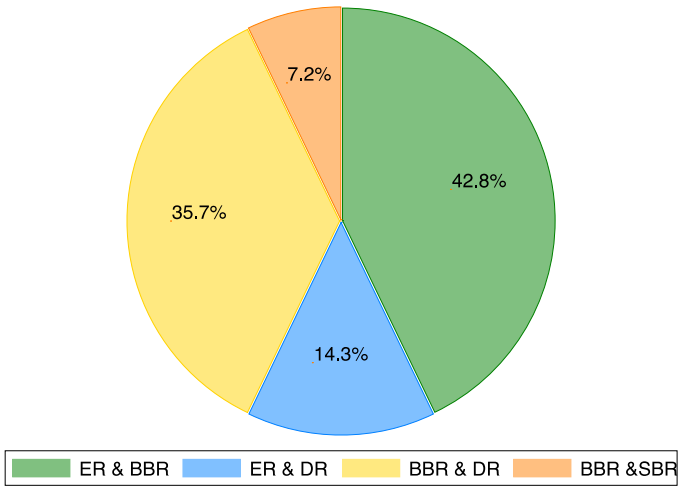

Fig. 4. Types of combinations of rules across countries.
Note: ER stands for expenditure rule, BBR for fiscal balance rule, and DR for debt rule.

the design of their rule, and only Chile and Argentina have none. Although the region has faced several periods of fiscal stress since the 2000s, very few countries have invoked their escape clause or have decided to follow the procedures to activate it. However, the health crisis derived from COVID-19 required an unprecedented response from governments. For instance, 70% of the countries decided to modify their fiscal rule to deal with the shock. Among those countries that changed the rule, six chose to modify the numerical targets set for the fiscal year, and four decided to suspend the rule for at least one fiscal year.

The remaining questions on the design of fiscal rules deal with coverage, that is, the level of government to which the rule applies and the fiscal aggregate that it constrains. Regarding this, it is important to offer some clarifications. As mentioned above, this database does not consider the fiscal rules applied at the subnational level. This is because the purpose is to calculate overall compliance rates. For this, the numerical objective and the executed value of the macroeconomic aggregates are obtained from the official reports of each country.

However, ease of access to this type of information and transparency in reporting both fiscal rule objectives and compliance is quite heterogeneous. For this reason, we refer to the historical series of fiscal aggregates to obtain compliance information in many countries. It is also possible that the information provided in some reports does not coincide with that published in the series. This may be because many rules consider additional accounts in the calculation that may vary from period to period but are not detailed, nor does the report specify how the calculation has been made. Finally, in some countries, the initial goal is established based on projections, such as, for example, GDP. These projections are adjusted throughout the fiscal year and the goal. These practices leads to the situation where government compliance can only be reported at the end of the period.

In this database, we seek to monitor numerical compliance with the rules. Although we consider the modifications that governments may have made throughout the period, we always adhere to the established objective to determine compliance. Finally, when comparing the objectives with the executed values of each aggregate, we can characterize the behavior of compliance with fiscal rules.

4. Defining compliance

Compliance directly answers one of the abovementioned questions and is included in the database as a dummy variable for each country and year. It takes the value of one when there is compliance and zero otherwise. However, compliance in many cases is not absolute and is subject to the type of rule. For instance, the expenditure rule is simple in the sense that it is directly observed whether the executed expenditure exceeded the limit or not. But we observe reduction targets for specific periods for both the debt and the balance rule.

On the one hand, if the target is set to reduce the level of debt over a certain period, it is possible that within that period, the debt level increased in some years and decreased in others but without exceeding the target set. In this case, we assume compliance. On the other hand, we observe similar behavior for the fiscal or structural balance. If the target is set to a deficit reduction and in one given year, the deficit level was higher than the previous one but remained below the target to which the deficit is to be reduced, compliance is also assumed. In this way, the compliance rate by rule (r) and by country (i) is defined as follows:

$$\boldsymbol{Compliance}_{r,i} = \frac{\boldsymbol{compliant}_{r,i}}{\boldsymbol{n}_{r,i}} * 100 \tag{1}$$

where $compliant_{r,i}$ is the total number of years that country (i) complied with rule (r) and $n_{r,i}$ is the total number of years that rule (r) was in place[4] in country (i).

To calculate the compliance rate for a country, it is important to consider the different types of rules that it has implemented and the duration of each one. For this, the compliance rate of a country is a weighted average of the compliance rate of each rule for the time it was in place. Here we assume that the implementation periods of each rule are independent. Thus, the average compliance rate for each country (i) is defined as follows:

$$\boldsymbol{C}_{i,r} = \sum_{r=1}^{R} \frac{\boldsymbol{compliant}_{r}}{\boldsymbol{n}_{r}} * 100 \tag{2}$$

with $r = \{1, 2, \ldots, R\}$, and $i = \{1, 2, \ldots, J\}$, where R is the total number of fiscal rule country (i) implemented (see Appendix A for details).

Nevertheless, due to the heterogeneity in the design and in the number of rules implemented across countries, it is difficult to compare the average compliance of a country that has implemented only two rules in four years with the compliance of a country that has implemented several rules for more than ten years. That is why the average compliance with the fiscal rules of LAC countries is a weighted average by the number of years in force of each rule in each country. Between 2000 and 2020, the average compliance by countries implementing at least one fiscal rule stands at 66 percent. This result means that considering the number of rules implemented and the number of years in force, on average, countries breached their rules only one-quarter of the years of implementation.

Fig. 5 portrays the evolution of the implementation of fiscal rules, the number of compliant rules in each period, and the number of rules whose target was modified during the year. In 2000, only two countries had implemented fiscal rules; however, this number increased significantly after the global financial crisis. In this way, the region's countries have been adopting fiscal rules as part of their fiscal policy tools. In 2020, we observed a drop in the number of rules in force as several countries decided to suspend their fiscal rules or invoke escape clauses. These procedures allowed to modify the numerical objective set. Despite this, in 2020, we observed a severe drop in the number of rules complied with.

Additionally, we highlight in red some years following episodes of economic and financial stress such as the global financial crisis and the commodity price cycle in Fig. 5. It is noteworthy that the drop in the number of rules complied with is not as surprising as in 2020. On the contrary, we observe that the number increases. In both cases, the high

[4] For rules that include escape clauses in their design, $n_{r,i}$ excludes those years where it has been invoked. In this way, the activation of the escape clause is not considered as non-compliance with the rule and does not affect the compliance rate negatively.

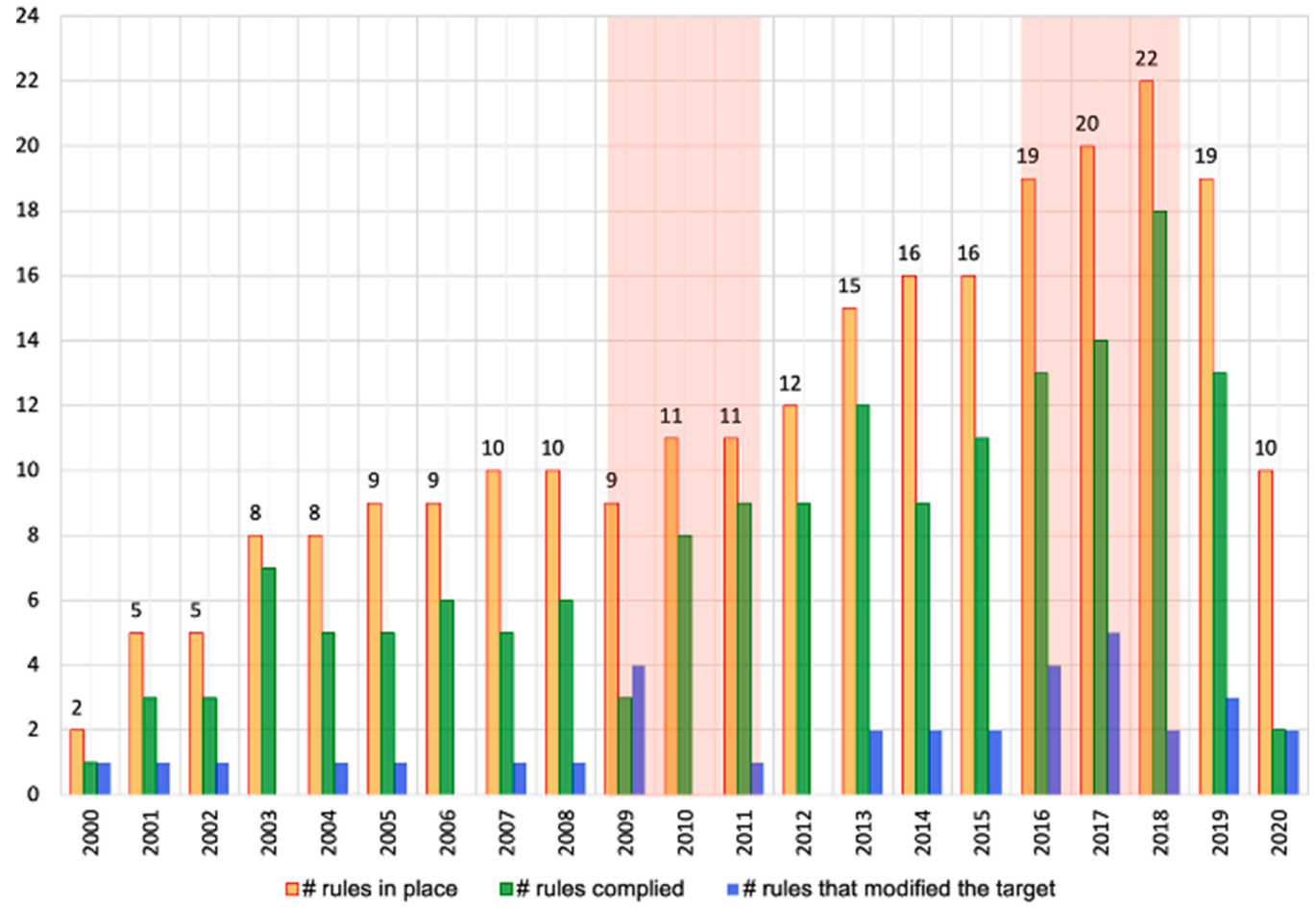

Fig. 5. Evolution of compliance rate for Latin American and Caribbean countries.

number of rules complied with is explained by modifications in their targets in preceding periods. This pattern suggests that fiscal rules remain vulnerable to periods of economic stress and that although this instrument constrains fiscal policy, governments still have discretionary power that directly impacts the outcomes of numerical compliance.

Examining the average compliance of LAC countries with each type of rule separately, Fig. 6 shows that compliance with the structural balance rule is the highest and stands at 79%. In contrast, the expenditure rule has the lowest compliance rate, at 41%. Due to its ease of implementation and monitoring, the expenditure rule is expected to have the highest compliance rate. However, this result may reflect some problems in its design, such as the inflexibility of spending in various countries of the region or the variables with which the ceilings are defined (such as inflation or GDP). The fiscal balance and debt rules also present high compliance rates—69% and 75%, respectively. Yet, the budget-balance rule is preferred among LAC countries.

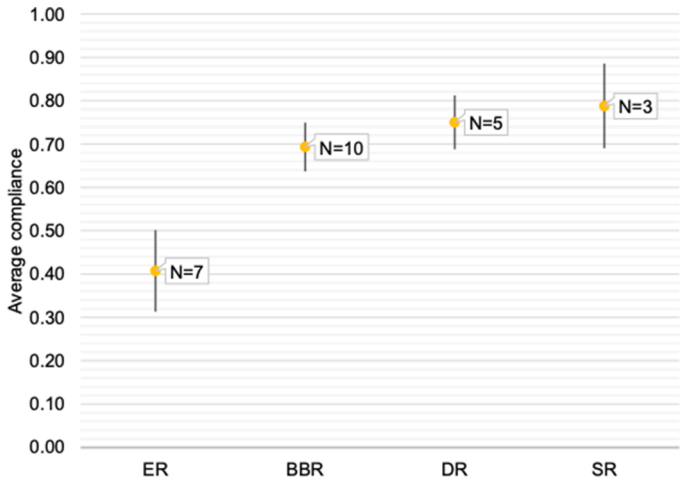

Fig. 6. Compliance rate by type of rule (average 2000–2020).
Note: the lines indicate a 95 percent confidence interval for sample average, and black dots are sample average. ER stands for expenditure rule, BBR for fiscal balance rule, DR for debt rule, and SR for structural balance rule.

As seen in Fig. 4, the most frequent combination is to implement an expenditure rule with a fiscal balance rule. This combination results in better overall compliance with an average rate of 72%. On the other hand, countries have also tended to combine a balance rule with a debt rule with average compliance of 88%. In this way, combining rules has led to better compliance results, as shown in Fig. 7. It is common practice for countries to implement more than one fiscal rule from the start or over time. This is because each rule presents a tradeoff between its operation and the extent to which it contributes to economic sustainability and stabilization (Schaechter et al., 2012). In LAC, half of the countries have combined at least two fiscal rules to complement their scope and ensure that the desired results are obtained in terms of sustainability. The high compliance rates reflect not only this purpose but also that the objectives of each rule are aligned in its design.

4.1. *Deviations from the target*

By comparing the numerical objective set by each country with the executed value of the corresponding macroeconomic aggregate, we

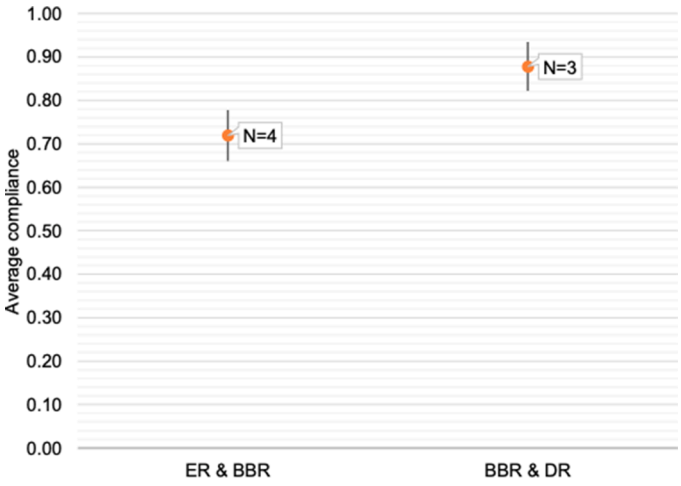

Fig. 7. Compliance rate by the combination of rules (average 2000–2020).
Note: the lines indicate a 95% confidence interval for sample average, and black dots are sample average. ER stands for expenditure rule, BBR for fiscal balance rule, DR for debt rule, and SR for structural balance rule.

calculated how much it has deviated from the objective. However, as the design and implementation of the rule vary across countries, each deviation must be read in context. In general, the deviation is calculated for each corresponding year as follows:

$$(\boldsymbol{deviation})_{i,t} = (\boldsymbol{executed\ value})_{i,t} - (\boldsymbol{target})_{i,t} \quad (3)$$

Thus, the deviation can be positive or negative depending on the type of rule. Further, it is worth noting that the objectives or the target set in the rules are not absolute, which means that the executed value can achieve a different value than the exact value of the target. On the contrary, the restricted aggregate is expected to remain below it. Considering each rule separately, we can characterize the deviations as follows:

a) Expenditure rule: a negative deviation implies compliance since the executed value remains lower than the ceiling. In this case, the targets are defined as ceilings where expenditure growth is limited in real terms or is subject to alternative ceilings considering GDP growth or inflation.
b) Budget Balance rule or Structural Balance rule: for this rule, the restriction is more of an objective rather than a ceiling. In this case, a positive deviation means that the executed value remained under the target, so compliance is observed. In some cases, when the objective is defined as a deficit reduction, it can be the case that the executed value remains over the target but is lower than the value of the immediate previous period. We consider that the country complied with the target for these specific cases.
c) Debt rule: the objective of this rule is often designed as a ceiling but also as a debt reduction. Consequently, it is impossible to generalize whether a positive or negative deviation implies compliance. For those countries where the debt target operates as a ceiling, a negative deviation implies compliance since the executed value remained under the target. On the other hand, for those countries whose debt target is set as a debt reduction, a positive deviation implies compliance since it reflects a reduction relative to the executed value of the immediately previous period

Calculating the deviation from the target is indicative in two respects. The first is the degree of realism of the objectives that countries have set for their rules by comparing how the macroeconomic aggregate and the limit have moved over time. Ideally, either convergence to the limit or compliance should be observed after some periods following the rule's implementation. The second is the adjustment that is needed to comply in each period. Given that most countries can adjust the targets frequently or even annually, understanding the deviations is helpful for the adjustment.

Due to the high heterogeneity between the countries and their rules, it is difficult to compare the deviations across countries. This stems from the design and implementation of the rule in each country. As mentioned, each country sets its limit or target for different levels of government. The objectives set for each fiscal year compared to the convergence objectives for a certain period also differ. Additionally, in some countries, the objectives can be easily modified.[5] Lastly, the variations are not expressed similarly because some rules are defined as a percentage of GDP and others are defined as nominal values. Despite the differences, the countries seek to restrict specific macroeconomic aggregates similarly. For instance, there are similarities in the objectives designed and executed as a percentage of GDP. In light of this, we calculated an average deviation for each country and each rule. Beyond the magnitude, this result is indicative of whether, throughout the period of implementation of each rule, there was an over-compliance or whether the objectives were not systematically met.

Fig. 8 illustrates the numerical deviation by type of rule. It considers the budget balance rule, the structural balance rule, and the debt rule since its objectives, in most cases, are presented as a percentage of GDP, which offers a greater degree of comparability. A positive deviation implies compliance with these rules, while a negative deviation implies noncompliance.

In many cases, the balance rule seeks to contain the size of the deficit and therefore establishes limits in this area. However, equilibrium objectives (balance equal to zero) or even surplus objectives can also be drawn. In any of these cases, a positive deviation implies compliance since, in this scenario, the country has reached the exact target, a deficit lower than the target, or even a surplus. Fig. 8 illustrates that those countries that have implemented a fiscal balance rule have overcomplied with the rule on average, given that the deviation is positive. In contrast, those implementing a structural balance rule have systematically breached it.

However, most debt-related objectives are aimed at reducing it to a

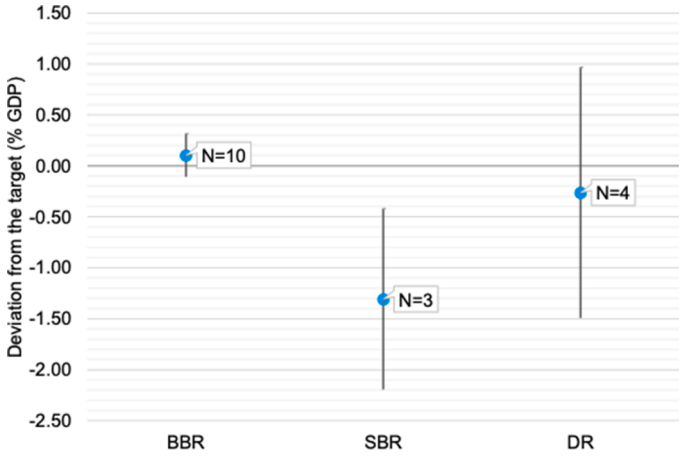

Fig. 8. Deviation from the numerical target by type of rule (average 2000–2020).
Note: the lines indicate a 95% confidence interval for sample average, and black dots are sample average. BBR stands for fiscal balance rule, DR for debt rule, and SR for structural balance rule.

[5] The legal basis of most of the rules in LAC countries is statutory and often introduced as part of a fiscal responsibility law. In turn, legislative bodies can revise or replace these laws; therefore, the objectives can be easily modified.

certain level, which in turn becomes the ceiling that must be respected in subsequent periods. Thus, a positive deviation may or may not imply compliance; it depends on whether the objective is a ceiling or a reduction of the debt level. Finally, regardless of the objective implemented, Fig. 8 shows that countries have struggled the most to comply with the structural balance rule.

5. An adjusted index of compliance

The data collection process revealed that LAC countries still have room for discretion even when they subject their fiscal policy to rules. On the one hand, the rules are defined so that they allow exclusions in the target. These exclusions are only sometimes clearly specified or reported, giving place to misleading results. Nevertheless, these actions should be considered differently from flexibility because each modification can change the medium-term objectives, making it challenging to make fiscal plans consistent over time. On the other hand, while some countries issue official reports on their objectives and compliance, others do not, which leads to some omissions when comparing the objective and executed values.

Second, we observed that many rules are not binding in practice. While most of the rules are binding to the extent that they must be included in the national budget or in the medium-term fiscal frameworks that are presented to Congress or the corresponding legislative body in each country, frequently what is approved can be modified as projections are updated or data becomes available. In some cases, countries admit changes or adjustments in the objective established each year, adding to the discretionary power that the rules seek to constrain.

Although many countries invoked escape clauses during the pandemic, it is important to bear in mind that this action allows flexibility to adjust to unexpected events. In turn, escape clauses should include return mechanisms to the rules so that the medium-term commitment is not affected (Eyraud et al., 2018). In contrast, discretionary actions are observed when governments react to shocks without making medium-term commitments, which affects macroeconomic stability and generates short-term opportunistic incentives (Sacchi and Salotti, 2015).

Third, we do not observe specific sanctions for non-compliance (i.e., deviation from the target). In cases where a possible situation of non-compliance or deviation from the target is considered, governments must present a report with the reasons that justify this result. We rarely observe that presenting a detailed plan on returning to the target is mandatory. Often, scenarios of non-compliance are mentioned in the law when the rule design includes an escape clause.

These issues are possibly reflected in an over- or under-estimation of the numerical compliance with the rules. Undoubtedly, the institutional aspect is fundamental to overall compliance with the rules. To address this problem, we build a compliance index that considers different elements that add degrees of discretion to implementing the rule. In this way, we can adjust the numerical compliance rates of each country with respect to its fiscal rule. The index ensures that the result of numerical compliance determined by Eq. (1) is not an outcome of discretionary actions carried out by governments.

When the result of numerical compliance indicates that the country (i) did not comply with rule (r), in a given year (t) (i.e., $Compliance_{r,i} = 0$), the index takes the value of zero. However, when numerical compliance is observed (i.e., $Compliance_{r,i} = 1$), we will consider an average of a group of dummy variables. This average will be zero (one) when the observed numerical compliance is (not) determined by discretionary actions; therefore, the index will take the value of zero (one).

To calculate the index, we use six dummy variables that are divided into four categories:

1. Outcomes of past compliance.
2. Changes in the targets of the rule.
3. Suspension of the rule in a given period.
4. The degree of divergence from the way the objective is defined.

The first category includes the observed numerical compliance in the year (t) and a dummy variable that captures the persistence of compliance outcomes and takes the value of one when compliance is observed in $(t-1)$ **and** $(t-2)$ and zero otherwise.

The second category seeks to capture changes in the target of the same rule over time. As depicted in Fig. 5, the number of rules complied with was often preceded by changes in the targets. We include a dummy that takes the value of one when the rule was not modified and zero when the country (i) changed the target of rule (r), in year (t). To account for the persistence of these changes, the next dummy takes the value of one when the target was modified in $(t-1)$ **and/or** $(t-2)$ and zero otherwise.

The third category accounts for a suspension of rule (r) in year (t) by country (i), where the dummy variable takes the value of one if the rule was maintained in force and zero if it was suspended. The last category refers to the level of discretion derived from how the objective is defined. The variable takes the value of one if the target of the fiscal rule is well-defined (i.e., a numerical target or a statement that allows directly computing the target) and zero otherwise (e.g., a target vaguely defined or defined by the incumbent government).

Once the information of the dummy variables is incorporated, we use the same weighted averages as in Eqs. (1) and (2) to calculate the adjusted index of compliance for each country and the LAC region (see Appendix B for details). Fig. 9 portrays the evolution of the numerical compliance rate and the adjusted compliance index between 2000 and 2020. When comparing the average rates for the period, we find that the average rate of adjusted compliance drops almost 10pp and stands at 57%. We observe that the compliance rate is lower each year when we account for discretionary actions in implementing the fiscal rules.

Regarding the average adjusted compliance of LAC countries with each type of rule separately, we find the same outcome: in each case, the adjusted compliance rate is below the one observed before. Notably, we observe a severe drop in the expenditure rule, which stands at 31% against 41% in the non-adjusted numerical compliance rate. This result reflects that although expenditure rules are easy to communicate and monitor, they are also the rules where there is a high level of discretion. Similarly, in the face of an unexpected shock, such as the one generated by the COVID-19 pandemic, increases in public spending are easy to communicate and justify. Consequently, it is the rule that modifies the objectives and that is suspended most frequently.

Another reason why we observe a numerical over-estimation of the numerical compliance rate is that the design, implementation, and monitoring processes are centralized in the government, usually in the ministry of economy and finance. Additionally, the accountability process is often very lax, and there are no solid sanctions for non-compliance. As the number of countries that have implemented fiscal rules has increased, many countries have also chosen to strengthen the framework of fiscal rules by incorporating independent fiscal councils in their design or monitoring. In turn, several LAC countries have decided to create these independent bodies either together when implementing the rule for the first time or after a few years of operation.

Introducing a fiscal council or a non-partisan technical body is an ideal step to strengthen the enforcement and accountability of fiscal rules. Specifically, it can help decentralize the different stages of implementing the fiscal rules. It could lead to closing the gap between the observed and adjusted compliance rate either by participating in the definition of the numerical objectives of the rules with the provision of macroeconomic and budget estimates or as a watchdog to avoid frequent changes in objectives. The early effect of the implementation of fiscal councils in the region has been multidimensional, especially in improving the accountability of these frameworks. Additionally, a positive correlation is observed with compliance with the rules. Nevertheless, any robust analysis is limited due to the recent implementation of

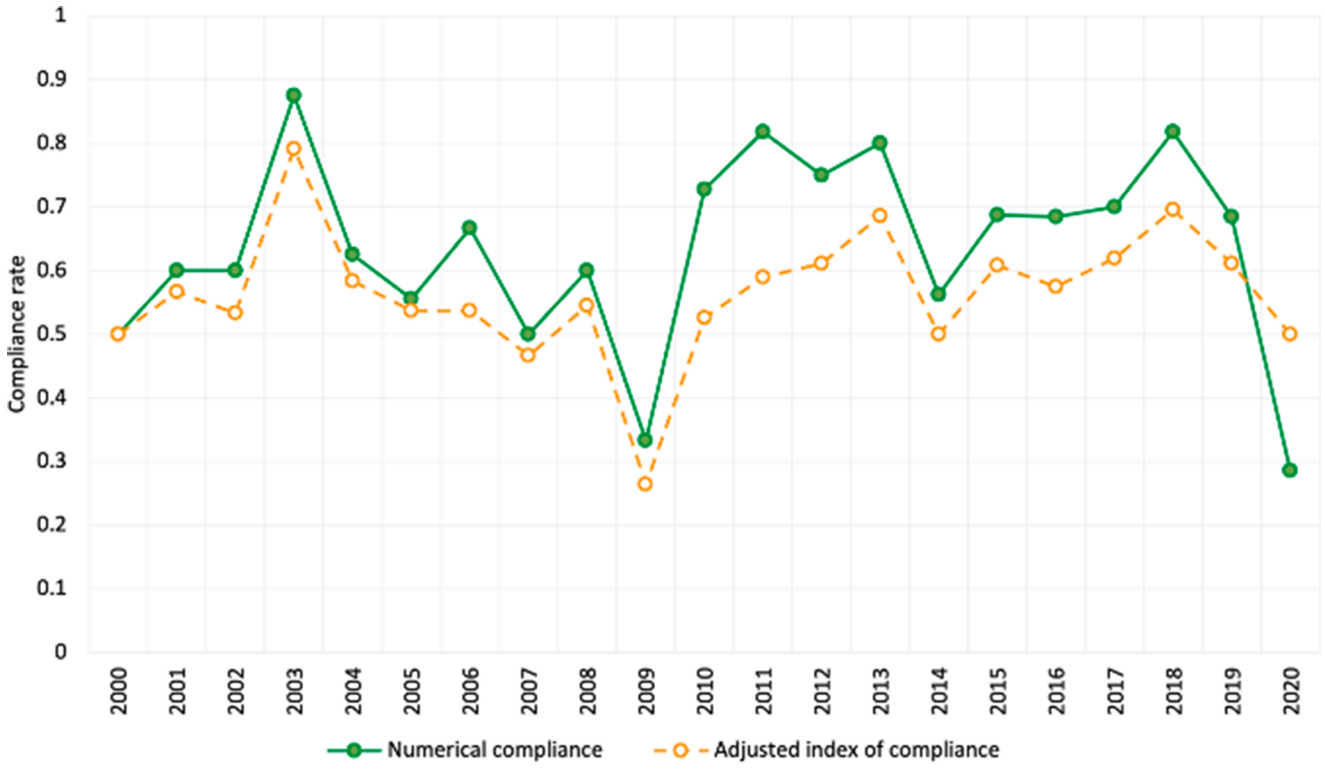

Fig. 9. Compliance with fiscal rules in LAC countries (2000–2020).

these design features. These characteristics could be explored as determinants of compliance to the extent that more data is available.

6. Conclusion

In 2020 and 2021, several countries suspended or modified the fiscal commitments outlined in their fiscal rules using the rules' flexibility and invoking escape clauses. Yet, we find the lowest compliance rate of the entire period in 2020. Thus, countries face the challenge not only of resuming compliance with their rules but also of designing solid fiscal rules that can withstand episodes of fiscal stress. Understanding the performance of the fiscal rules using compliance rates is helpful in improving their calibration and design if needed. In this paper, we aim to contribute to understanding the performance of the fiscal rules implemented, focusing on their compliance. The results reflect the panorama of the fiscal rules implemented in LAC countries. By contrasting the objectives set by the countries and their executed values, we characterize the compliance behavior of LAC and assess the extent to which they have deviated from their targets. This dataset is a starting point in monitoring LAC countries' fiscal rules.

Average numerical compliance rates show that LAC countries have largely complied with the objectives set in their fiscal rules. We find that compliance with rules aiming to constrain debt ratios and structural balances is highest, while compliance with fiscal balance and expenditure rules is the lowest. However, combining rules improves average compliance, especially when combining a balance rule with a spending rule or with a debt rule. We also calculated the deviations of the executed values from the target. Although each deviation must be read in context, our results indicate how realistic the objectives that countries have set for their rules are, as well as the adjustments needed to comply with the targets.

An essential finding of this paper is that compliance with fiscal rules is not absolute, nor does its implementation imply immediate fulfillment. Compliance with fiscal rules is multidimensional since it considers various elements, such as how the target is designed, the implications for sustainability, how the rule is enforced, and the existence of sanctions for non-compliance, among others. Another important aspect is the flexibility built into the fiscal rule framework to deal with unexpected shocks. Although these situations are usually contemplated in the escape clauses, this possibility should not be confused with the discretion that arises from other operational practices.

In this regard, we detect that in many cases, fiscal rules allow considerable discretion in the conduct of fiscal policy. However, due to the high heterogeneity across countries and the problems encountered in the data collection process, we find that the numerical compliance rates of each country are likely to be overestimated once we account for these discretionary actions. We build a compliance index that considers different elements that add degrees of discretion in implementing the rule to address this problem. We find that the initial numerical compliance results are biased toward an over-estimation when adjusting the initially observed numerical compliance result.

This paper presents the first set of results that seek to characterize the behavior of numerical compliance with fiscal rules in LAC countries. These results contribute important elements to the discussion about how governments should carry out reforms to fiscal rules. Current macroeconomic conditions warrant a review of the definition of the objectives of the rules that are coupled with current needs (i.e., high levels of debt and inflation). Governments must make progress on the institutional arrangement of the rules to reduce discretion, improve monitoring and accountability, and define better sanctions for deviation from the rules' objectives.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. – Average compliance rate

To consider the heterogeneity in the design and in the number of rules implemented within countries, we calculate the average compliance rate as a weighted average by the number of years in force of each rule in each country. To illustrate this point, suppose that country A has implemented three different rules. The table below provides information about the years country A has complied or deviated for each rule. The last column indicates the compliance rate calculated using Eq. (1).

Type of rule	# Years in place	Compliant	Non-compliant	Compliance rate
Expenditure rule (r1)	4	4	0	100%
Budget Balance rule (r2)	19	12	7	63%
Golden rule (r3)	12	11	1	92%
Total	35			

The simple average rate of compliance for country A can be calculated as follows:

$$\text{Average Compliance rate} = \frac{1 + 0.63 + 0.92}{3} \approx 0.85 = 85\%$$

However, this calculation is biased towards an over-estimation of the compliance rate. In this case, the shorter rules have the highest compliance rate overcompensating the shortfalls in compliance of the longest rule. To correct this bias, we calculate a weighted average of the compliance rate of each rule for the time it was in place assuming that the implementation periods of each rule are independent. The weighted average compliance rate is re-calculated as follows:

$$\text{Average compliance rate} = \frac{\begin{array}{c}\#\text{ years r1 in place} \times \text{Compliance rate r1} + \\ \#\text{ years r2 in place} \times \text{Compliance rate r2} + \\ \#\text{ years r3 in place} \times \text{Compliance rate r3}\end{array}}{\begin{array}{c}\text{total years r1 in place} + \\ \text{total years r2 in place} + \\ \text{total years r3 in place}\end{array}}$$

$$\text{Average Compliance rate} = \frac{(4)1 + (19)\ 0.63 + (12)0.92}{35} \approx 0.77 = 77\%$$

The compliance rate calculated using the weighted average by the length of the rule leads to a lower result correcting the bias abovementioned. Similarly, to avoid the same bias in the average compliance rate for all the region, we use a weighted average by the number of years in force of each rule in each country.

The generalized average compliance rate for each country (i) is defined as follows:

$$\boldsymbol{C_{i,r}} = \sum_{r=1}^{R} \frac{\boldsymbol{compliant_r}}{\boldsymbol{n_r}} * 100$$

with $r = \{1,\ 2,\ \ldots, R\}$, and $i = \{1,\ 2,\ \ldots, J\}$, where R is the total number of fiscal rule country (i) implemented.

Proof:

The average compliance rate is constructed as follows,

$$\text{Average compliance rate} = \frac{\begin{array}{c}\#\text{ years r1 in place} \times \text{Compliance rate r1} + \\ \#\text{ years r2 in place} \times \text{Compliance rate r2} + \\ \ldots\end{array}}{\begin{array}{c}\text{total years r1 in place} + \\ \text{total years r2 in place} + \\ \ldots\end{array}}$$

By rewriting we obtain,

$$\text{Average compliance rate} = \sum_{r=1}^{R} \frac{n_{r,i}\ \left(\text{Compliance}_{r,i}\right)}{n_{r,i}}$$

where $n_{r,i}$ is the total number of years that rule (r) was in place in country (i), and $compliant_{r,i}$ is the total number of years that country (i) complied with rule (r). In turn, the compliance rate is defined as follows:

$$\text{Compliance}_{r,i} = \frac{\text{compliant}_{r,i}}{n_{r,i}} * 100$$

Which leads to,

$$\text{Average compliance rate} = \sum_{r=1}^{R} \frac{n_{r,i}\left(\frac{\text{compliant}_{r,i}}{n_{r,i}}\right)}{n_{r,i}}$$

After simplification we obtain Eq. (2):

$$C_{i,r} = \sum_{r=1}^{R} \frac{compliant_r}{n_{r,i}} * 10$$

Appendix B. – Adjusted index of Compliance

Compliance with rule (r), in country (i) is defined as follows:

$$compliance_{r,i} = \begin{cases} 1 \ if \ country \ i \ complied \ with \ rule \ r \ at \ time \ t \\ 0 \ otherwise \end{cases}$$

However, this dummy variable does not consider any discretionary action that could have biased a result of 1 when contrasting the executed value and the objective set for a given macroeconomic aggregate.

To address this problem, we construct an adjusted index for compliance where the value of 1 obtained before is adjusted accounting for several actions that foster discretionary space in the rule-based framework. In this way, the adjusted index is constructed as follows:

$$adjusted\_compliance_{r,i} \begin{cases} \sum_{j=1}^{6} \frac{Q_j}{6} \ if \ compliance_{r,i} = 1 \\ \\ 0 \ otherwise \end{cases}$$

Where Q_j represents each one of the six dummies reflecting discretionary actions carried out by governments. We use six dummy variables that are divided into four categories:

1. Outcomes of past (non-)compliance

1.%2 Observed numerical (non-)compliance: this dummy considers whether country (i) maintained the fiscal aggregate within target. It is defined as:

$$Q_1 = \begin{cases} 1 \ if \ compliance_{r,i} = 1 \\ 0 \ otherwise \end{cases}$$

1.%2 Persistence of compliance: this dummy captures whether country (i) kept the fiscal aggregate within the target in the last two years or not. It is defined as:

$$Q_2 = \begin{cases} 1 \ if \ compliance \ is \ observed \ in \ (t-1) \ and/or \ (t-2) \\ 0 \ otherwise \end{cases}$$

2. Changes in the targets of the rule

2.%2 Changes in period (t): this dummy considers whether country (i) introduced changes to the objectives of the rule in year (t), it is defined as:

$$Q_3 = \begin{cases} 1 \ if \ the \ target \ of \ the \ rule \ was \ not \ modified \ in \ t \\ 0 \ otherwise \end{cases}$$

3.%2 Persistence of modifications to the target: this dummy considers the persistence of a given change in the objectives of the rule in the last two years, it is defined as:

$$Q_4 = \begin{cases} 1 \ if \ the \ target \ of \ the \ rule \ was \ not \ modified \ in \ (t-1) \ and/or \ (t-2) \\ 0 \ otherwise \end{cases}$$

3. Suspension of the rule in a given period: this dummy considers whether country (i) suspended the objectives of the rule in year (t), it is defined as:

$$Q_5 = \begin{cases} 1 \ if \ the \ rule \ is \ in \ force \ in \ t \\ 0 \ if \ suspended \end{cases}$$

4. The design of the numerical target: this dummy variable captures whether the numerical targets of the rule are well defined or not. A well-defined objective is considered as a numerical target or a statement that allows directly computing the target. The dummy is described as follows:

$$Q_5 = \begin{cases} 1 \ if \ well-defined \ target \\ 0 \ if \ suspended \end{cases}$$

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