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Fiscal Rules and the Behavior of Public Investment in Latin America and the Caribbean:

Towards Growth-Friendly Fiscal Policy? The Case of Argentina

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Abstract¹

This paper analyzes the implementation of Fiscal Rules (FR) in Argentina. Several clear attempts to establish a FR at the national level are identified. The analysis suggests that the environment matters. The only FR that was binding in the period was approved in 2004 during an economic boom, with the country under a program with the IMF and with high political support. During the world financial crisis the expenditure ceilings were relaxed, however, and current primary expenditures soared. Simulations show that a countercyclical fund could have been implemented even after reducing highly distorting taxes at the federal and provincial levels, and at the same time securing a high level of capital expenditure as a share of GDP, had Argentina complied with the 2004 FR. Moreover, an econometric exploration of the link between flexible FRs and public investment finds that a flexible FR helps to mitigate the negative effects of fiscal consolidations on provincial public investment. Based on the previous analysis, guidelines for a proposal for a FR in Argentina are provided.

JEL classifications: E32, E60, H12, H50, H54

Keywords: Fiscal rules, Public investment, Argentina

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1. Introduction

Fiscal rules (FRs) have become increasingly relevant in defining long-term budget sustainability during recent decades. While by 1995 there were less than 25 countries that had adopted a FR, by 2015 the figure increased to 92 countries (IMF, 2017). In this context, Argentina was not an exception and experimented with several attempts to establish a FR.

The Argentine case is interesting for a study on FRs for several reasons. First, the country has a long history of lack of fiscal discipline that ended in traumatic episodes of sovereign defaults or high inflation. There were also several episodes of fiscal indiscipline at the subnational level that ended in national bailouts. In the recent past the fiscal outlook improved during the years of the commodity boom, only to come back to “normal” when commodity prices declined after 2011. For example, in 2015 the Federal government had a deficit of about 6 percent of GDP that did not decline in the first two years of the administration that took office at the end of that year. In fact, in 2018 the fiscal deficit could no longer be financed in voluntary markets, and the government signed an agreement with the IMF that pursued a high-speed fiscal consolidation. The program was suspended in 2019. In 2020 the new government reached a debt restructuring agreement with private creditors, at the beginning of 2021 it is in the middle of a negotiation process with the IMF.

Second, since 1999 the country made several clear attempts to establish a FR at the federal level. In that year Argentina introduced a Fiscal Responsibility Law, precisely at the time when the economy entered the most severe recession in its history. Without enough time to build on fiscal cushions the 1999 FR rapidly lost relevance. In 2001 the Federal government passed another FR that had a target of global fiscal balance, but this lost any credibility during the 2002 crisis. Five years later another FR was passed that created a Fiscal Responsibility Council (FFRC) and that covered not only the Federal government but also imposed restrictions on the provinces that adhered to the national framework: 21 out of the 24 provinces accepted the national government invitation, including some that already had their own provincial FR. The 2004 FR introduced expenditure ceilings and a balanced-budget target, but a growing number of expenditure items were excluded from the targets, first in 2005 and later in 2009. Between then and 2016 the Argentina’s FR was de facto suspended (IMF, 2017). At the end of 2017 the Federal government and almost all provinces signed a new fiscal agreement that introduced several fiscal constraints (e.g., on the increase of public employment, on the evolution of primary

expenditures, etc.). Finally, in 2018 Law 27.428 incorporated those changes into the FR. Those changes cannot be reasonably evaluated in 2020/21, in the midst of a global pandemic and negotiations to reschedule debt payments, both for the nation with the IMF and for most of provincial governments.

Third, at the end of the 1990s 12 out of 24 provinces passed their own FR. The design of these rules was analyzed in a previous study (see FIEL, 2003a). It is also interesting to mention that the rules were adopted by half of the provinces of Argentina, regardless of their respective levels of development.

Fourth, provinces and local governments account for about 45 percent of primary expenditures (a share that reaches 66 percent for public investment). However, Federal transfers finance a growing percentage of the capital expenditures of subnational governments due to the concentration of tax revenues at the national level and, at least until 2016, also due to the importance of discretionary transfers that the Federal government used to gain the support from governors, especially those of smaller provinces.

In this paper we study the Argentinean experience regarding the implementation of FRs and their impact on public investment. For that purpose, we provide a historical review of the country's attempts to establish a FR. Each attempt at implementation is described in the context of the domestic and international environments. We present a detailed description of each FR design and the political economy issues that arose in each attempt.

We complement the analysis with quantitative approaches in two ways. On the one hand, given that 2004 Argentina's FR was not complied with by all provinces since the very beginning and was suspended after 2009, we simulate what the evolution of fiscal accounts would have been if Argentina had complied with the original quantitative targets. Our simulations suggest that a countercyclical fund could have been implemented even after reducing highly distorting taxes at the federal and provincial levels and securing a high level of capital expenditure as a share of GDP. On the other hand, given that the effectiveness of FRs implementation and how they are designed in order to protect public investment during fiscal adjustments has become a relevant concern in the literature (Ardanaz et al., 2021), we first explore the link between flexible FRs and public investment behavior during fiscal consolidations in Argentina and then we study the impact on investment, incorporating all the different provincial FRs.

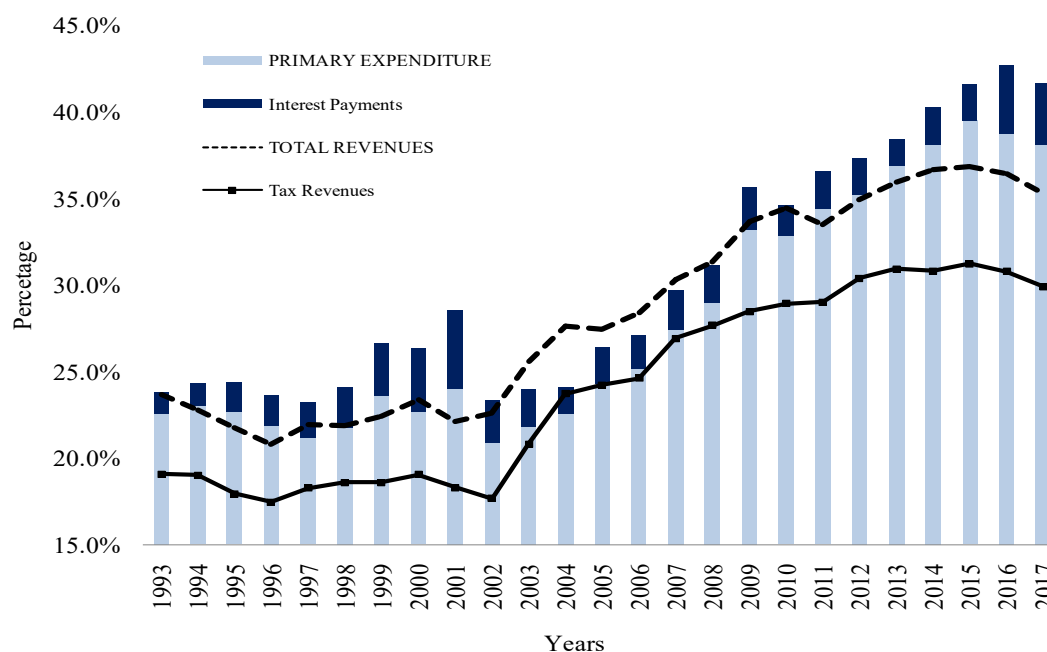
The analysis provides several lessons that could be useful guidelines for the future implementation of FRs in Argentina. First, the environment (e.g., international context, domestic fiscal position, political support, etc.) for the FR's implementation matters. Second, Argentina moved towards more investment-friendly FRs (e.g., expenditures ceilings that exclude capital expenditures). We find that a flexible FR helps to mitigate the negative effects of fiscal consolidations on public investment.

The paper proceeds as follows. Section 2 briefly describes Argentina's public finances during the last 25 years. Section 3 analyzes the different attempts of introducing FRs during this period. Section 4 studies some counterfactual scenarios. Section 5 explores the relation between fiscal rules and public investment during fiscal consolidations. Final thoughts and policy recommendations are presented in Section 6.

2. The Evolution of Public Finances in Argentina

Argentina has a long history of fiscal imbalances (Figure 1). In the years of the commodity boom both revenues and expenses increased substantially but the deficit was only temporarily reduced.

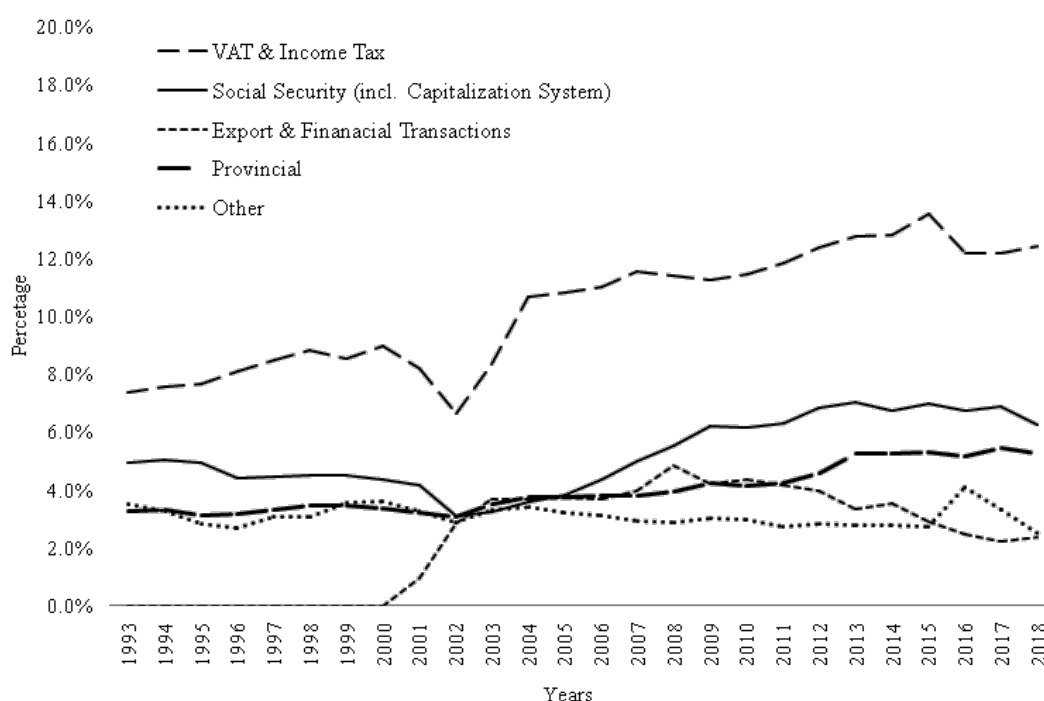
Figure 1. General Government Revenues and Expenditures as a Share of GDP, 1993-2017



Source: Authors' calculations based on Ministry of Economy (MECON) data.

The tax burden increased from about 20 percent to 30 percent of GDP despite a relatively large shadow economy. Value added and income taxes make up almost 50 percent of total national and provincial tax revenues, and social security contributions have represented between 20 percent and a quarter of these revenues. Provincial taxes, mainly based on a cascading, distortive tax, account for about 16 percent, while export duties along with a financial transactions tax introduced in 2002 after the Convertibility crisis account for another 8.5 percent of national and provincial tax collection (Figure 2). These extraordinary taxes were maintained even after the economy recovered from the 2001-2002 crisis.

Figure 2. Federal and Provincial Taxes as a Share of GDP, 1993-2018



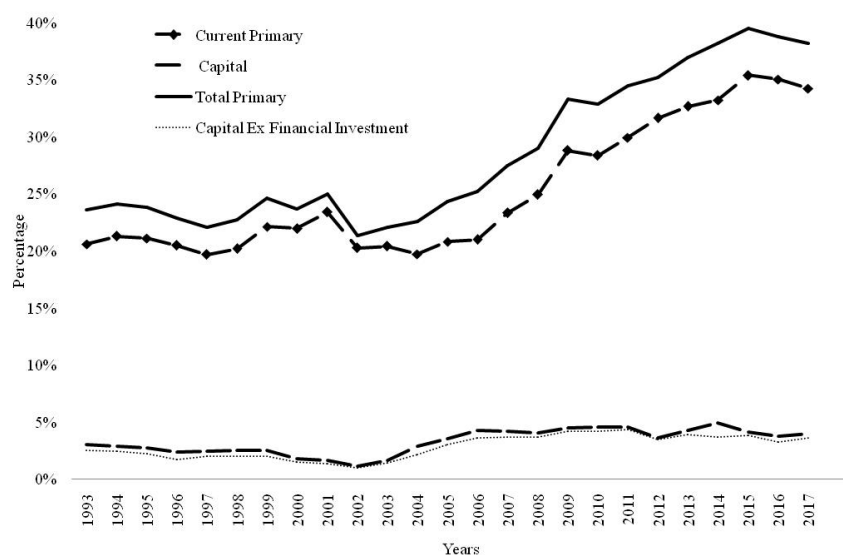
Source: Authors' calculations based on MECON.

Argentina's public finances were drastically changed during the commodity price boom. Figure 3. shows the evolution of primary expenditures of the General Government (i.e., encompassing the Federal government along with Provinces and Municipalities) from 1993 to 2017. Before the 2001-2002 deep economic crisis Argentina had primary expenditures of about 24 percent of GDP; they reached almost 40 percent of GDP in 2015 and declined afterwards to

38 percent by 2017. Both primary and capital expenditures increased substantially, and this trend does not change when financial investments are excluded from capital outlays.²

Given the sizeable expansion in current expenditures, Figure 4 presents the evolution of its principal components. It can be appreciated that the expansion is mainly explained by pensions, public wages, and current transfers. Between 2005 and 2018 pension expenditures had increased from 4 percent of GDP to about 9 percent. In the case of public wages, this increase was from 7 percent to 10 percent. Current transfers other than pensions (e.g., economic subsidies) had increased by about 1 percentage point over this period. This evolution in the composition of current primary public spending has strong implications in terms of fiscal sustainability since these categories of spending present a remarkable characteristic: rigidity. Specifically, they increase the probability of countries getting into fiscal distress and reduce the likelihood of governments performing fiscal adjustments (Munoz and Olaberria, 2019). Naturally, this feature also affects the performance of any FR and needs to be considered at the time of designing a new FR in Argentina.

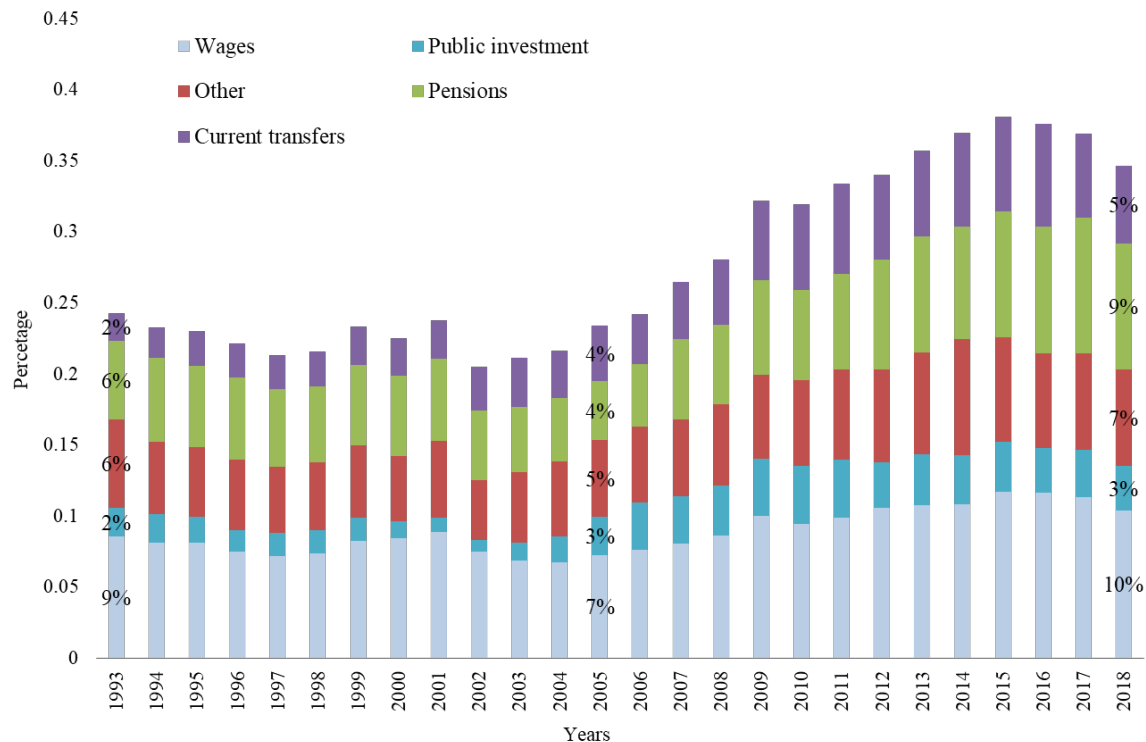
Figure 3. General Government Primary Expenditure as a Share of GDP, 1993-2017



Source: Authors' calculations based on MECON.

² During 2005-2015 there were some capital expenditures that were registered "below the line" (e.g., the so-called Priority Investment Projects). In 2018 and 2019 these expenses were correctly accounted as capital outlays "above the line" (about 0.2 percent of GDP). It is not possible to make a correction to the data for earlier years.

Figure 4. General Government Current Primary Expenditure as a Share of GDP: Main Components, 1993-2018

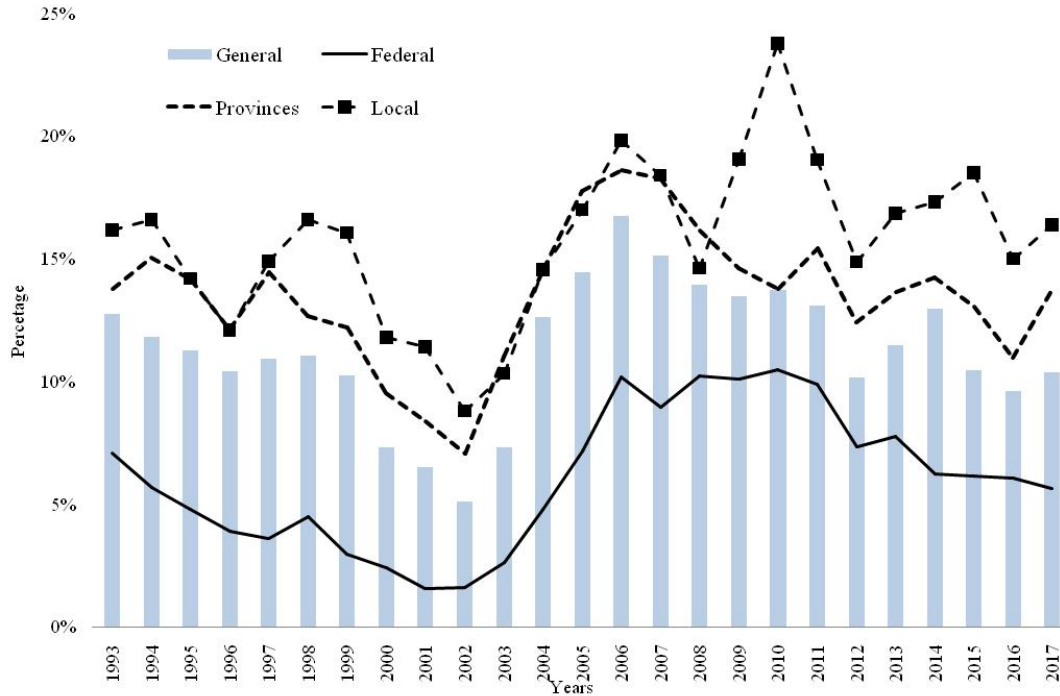


Source: Authors' calculations based on MECON.

Figure 5 shows that the share of capital expenditures in total primary outlays of the General Government (excluding financial investments) increased from about 10 percent before the 2001-2002 crisis to about 15 percent in 2005-2007, falling back to around 10 percent when the fiscal position deteriorated. It is also evident that during the crisis the share was reduced to a minimum. This pattern is similar for the Federal Government and for the 24 provinces, but it is somewhat different for the 2200 municipalities, as the peak was observed in 2010.

These stylized facts clearly indicate that the Argentine fiscal regime structurally changed in 2006 when a sizeable expansion of the public sector began. Interestingly, attempts to establish a FR occurred both before and after this regime change.

Figure 5. Capital Expenditure as a Share of Total Primary Expenditure by Level of Government, 1993-2017



Source: Authors' calculations based on MECON.

3. Overview of Fiscal Rules in Argentina

3.1. Objectives and Methodological Issues

In this section we identify the different FRs that were in place in Argentina at the Federal level and introduce the characteristics that could impact public investment.

The objective is to try to identify the rationale behind the approval, amendments to and/or expiration of the FRs with the aim of understanding those instrument's strengths and weaknesses and their potential impact on public investment. Those reasons could be especially driven by fiscal needs or, alternatively, respond to prior commitments. Ultimately, however, these commitments could also derive from previous fiscal and macroeconomic behaviors. A third alternative could just be the political decision of being fiscally and macroeconomic sustainable.

In doing so we reviewed records of sessions of Congress, newspaper articles and secondary sources; and interviewed key practitioners and politicians as well as former and current officials, including the Coordinator of the FFRC (the full list of interviewees is included in Appendix 2).

Finally, in trying to assess the effects that the FRs could have had on public investment we analyze compliance with the law (i.e., the performance of expenditure, budget balance and debt service).

3.2. Characteristics of Argentina's FRs

There have been several failed attempts at the Federal level to establish FRs. The first Federal Fiscal Responsibility Law was introduced in 1999, precisely at the time when the economy entered the most severe recession in its history. Law 25.152 (known as the Fiscal Convertibility Law) introduced expenditure and balanced-budget rules and created a countercyclical fund. In 2001, Law 25.435 (Zero Deficit) attempted to force a “cold-turkey” balanced budget, an effort that would lose its credibility during the 2002 crisis. The Supreme Court ruled that this law was unconstitutional, and it was repealed in 2003. It still remains valuable to analyze the context and political economy that were behind the adoption of these norms along with their possible implications for national and subnational fiscal policies.

In 2004 the Federal Congress approved a FR that was expected to apply to the Federal Government and, by invitation, to all provinces (see Appendix 1). Twenty-one of the 24 provinces accepted the national government invitation, including some that already had their own provincial FR. The Law established a balanced-budget target (net of projects financed by International Financial Institutions—IFIs—and capital expenditure allocated to basic social and economic infrastructure) and a cap on the rate of growth of expenditures: primary expenditures (excluding the same items as for the budget calculation) could not grow more than nominal GDP. In case the provincial debt service (net of transfers to municipalities) was below 15 percent of current revenues net of transfers to municipalities (the debt clause) or the growth rate of revenues was higher than nominal GDP growth, the ceiling was imposed on current primary expenditure (with the same exclusions).³

In case of non-compliance with any of the ceilings the provincial government had to take measures to obtain a primary surplus and could not access new debt unless it was a refinancing of existing debt under better terms, a loan from IFIs or a loan from the Federal government under a national program (in any of these cases the province had to show a financial program

³ In addition, sales of fixed assets and debt could not finance current expenditure or generate automatic increases (although exceptions applied).

guaranteeing the debt service). The law also called for the creation of a countercyclical fund (which never took place) and ruled that subnational government debt and guarantees had to be authorized by the National Finance Ministry.

It is worth noting that the national 2004 FR was an investment-friendly rule, as the expenditure ceiling was set on current primary expenses. If we define flexible FRs as those that contain mechanisms (e.g., cyclically adjusted fiscal targets, well-defined escape clauses, and differential treatment of investment expenditures) that can be put in place to accommodate exogenous shocks, we can consider the 2004 FR to be a flexible one.

However, one year after being approved, the law was amended so as to exclude expenses in education⁴ that had to be increased to 6 percent of GDP nationwide. As a consequence of the exclusion of investment outlays in the 2004 Law and the reform to ease an increase in public expenditure in education approved in 2005, the fiscal targets were less demanding. Finally, Law 26.530 was passed in 2009, which meant a further relaxation to accommodate the impact of the World Financial Crisis. The 2009 reform allowed the exclusion from the ceilings of those expenditures targeted to promote economic activity, to sustain the level of employment and for social assistance. The broad scope of this definition meant that virtually any expense could be excluded from the limit, rendering the numerical targets of the original law, *de facto*, meaningless. Initially, these changes would be only applicable for the 2009-2010 period, but they were renewed every year until 2016 in the annual Budget Law. Moreover, Law 26.530 eliminated the debt clause that became irrelevant after the Federal government had agreed upon different debt reduction programs with the provinces.

Eight years after the sanction of Law 26.530, the 2017 Budget Law set transitory clauses to progressively achieve a balanced budget, and in 2018 a new FR (Law 27.428, see Appendix 1) was approved. Thus, after almost two decades, Federal FRs that restrict provincial decisions were only *de facto* in force for five years: 2005-2008 and 2018. From 2009 to 2016, the 2004 ceilings were not binding. According to the IMF (2017), the rule was *de facto* suspended after 2009.

⁴ In Argentina, the provinces are responsible for the provision of primary and secondary education, and the universities are financed from the Federal Budget. Public education charges no tuition or fees to students.

At the subnational level, 12 out of 24 provinces passed their own FRs in the late 1990s/early 2000s.⁵ We analyzed the design of these rules in a previous study (see FIEL, 2003a). Table 1 summarizes the most important characteristics of the 12 FRs approved by the provincial legislatures. Eleven out 12 FRs pursue a balanced budget and only one has a Golden Rule that excludes investment from the FR. However, four provinces have escape clauses, usually through fiscal savings in stabilization funds. Some of the provinces have also introduced debt ceilings and transparency rules (see Appendix 1 for further details).

**Table 1. Main Characteristics of Fiscal Responsibility Rules
Approved at the Provincial Level**

	Medium-term target Budget Balance	Medium-term Current Balance (Golden Rule)	With Escape Clauses through Stabilization Funds	With Expenditure Ceilings	With Debt and Expenditure Ceilings	With “rare” objectives (e.g. increasing tax burden)	Also include transparency rules
Number of provinces	11	1	4	1	6	1	5

Source: Authors’ compilation based on FIEL (2003a).

It is interesting to mention that the rules were adopted by half of the provinces of Argentina regardless of their levels of development.⁶ Table 2 shows the type of FR⁷ that was in effect in each province from 2000 to 2018. Thus, provinces can be included in four groups: No FR (2 provinces: Buenos Aires City and La Pampa), only Provincial FR (1 province, San Luis),⁸ provinces that adhered to the Federal FR rules (11 provinces) and a fourth group with provinces that had their own FR and/or adhered to the Federal FR (10 provinces). Before 2000 no province had a FR.

⁵ One of them (Formosa) adopted the national legislation in 2000, immediately replacing its 1999 provincial law.

⁶ Argentina’s 24 provinces differ in their development and in their capacity to finance their expenditures with own-source revenues. The most developed provinces have a vertical imbalance of about 50 percent, but the poorest finance 90 percent of their expenditures with transfers from the Federal government.

⁷ Typifying the norm in terms of the level of government that enacted it.

⁸ In fact, San Luis adhered to Law 25.152 (1999) but not to Law 25.917 (2004).

Though national and provincial FRs coexisted in several cases (see Table 2), there is a consensus among the experts interviewed on the preeminence of the National rule over provincial ones. Only San Luis, which never adhered to the national rule, and Salta proposed these laws at their own initiative. In all other provinces, FRs resulted from agreements with the Federal government. Besides, the analysis made by Cetrangolo et al. (2002) shows that the fiscal discipline pursued by these laws is unclear because in some cases the definition of the deficit rule is not very precise, fiscal institutions are weak (especially to control public records) and there are no penalties for non-compliance with the rules. Therefore, in the end the effectiveness of these norms depend mostly on the constitutional and political controls existing in each of the jurisdictions.

Summing up. From 1999 to 2018 Argentina had four different fiscal rules which involved both the Federal and subnational governments. Three out of the 24 provinces never adhered to the 2004 national rule. The 1999 Law was never enforced, while the Zero Deficit (2001) law never went into effect.

Table 2. Evolution of National and Provincial FRs, 1992-2018

Province	1992 to 1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CABA	Data Available but No Fiscal Rule in place																			
LA PAMPA																				
BUENOS AIRES							N	N	N	N	N	N	N	N	N	N	N	N	N	N
CHUBUT							N	N	N	N	N	N	N	N	N	N	N	N	N	N
CORDOBA		NP	NP	NP	P	P	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CORRIENTES							N	N	N	N	N	N	N	N	N	N	N	N	N	N
ENTRE RIOS							N	N	N	N	N	N	N	N	N	N	N	N	N	N
FORMOSA		N	N	N			N	N	N	N	N	N	N	N	N	N	N	N	N	N
JUJUY							N	N	N	N	N	N	N	N	N	N	N	N	N	N
LA RIOJA							N	N	N	N	N	N	N	N	N	N	N	N	N	N
MENDOZA		P	P	P	P		N	N	N	N	N	N	N	N	N	N	N	N	N	N
NEUQUEN		N	N	N			N	N	N	N	N	N	N	N	N	N	N	N	N	N
SANTA CRUZ							N	N	N	N	N	N	N	N	N	N	N	N	N	N
SANTA FE							N	N	N	N	N	N	N	N	N	N	N	N	N	N
S. DEL ESTERO							N	N	N	N	N	N	N	N	N	N	N	N	N	N
CATAMARCA			NP	NP	P	P	NP	N	N	N	N	N	N	N	N	N	N	N	N	N
CHACO		NP	NP	NP	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MISIONES		P	P	P	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
RIO NEGRO		NP	NP	NP	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
SALTA		NP	NP	NP	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
SAN JUAN		NP	NP	NP	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
T. DEL FUEGO			NP	NP	P	P	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
TUCUMAN		NP	NP	NP	P	P	NP	NP	NP	NP	NP	N	N	N	N	N	N	N	N	N
SAN LUIS		NP	NP	NP	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Source: Authors' compilation based on FIEL (2003a), Fiscal Responsibility Council (FFRC) and national and provincial laws.

Notes: N means that the provincial FR was adopted after the Federal invitation; P means that the FR is passed by a provincial Law; NP means that both norms coexisted.

3.3. The Rationale behind the FRs: Background of the 2004 FR

3.3.1. The 1999 Fiscal Solvency Law

The Fiscal Solvency Law (FSL) was passed toward the end of the second Menem term during a period of macroeconomic distress (i.e., economic recession, deflationary pressures, difficulties in access to financing, and growing doubts about the continued viability of the Convertibility of the peso) and shrinking political support. Its approval required more than a year full of discussions and a drastic change in the macroeconomic conditions that significantly influenced its content (Braun and Gadano, 2007), but was finally supported by both the ruling party and the opposition. There was a precedent: the government of the City of Buenos Aires had created a countercyclical fund that had helped to reduce its deficit substantially.

In any case, the targets were modified from the very beginning. The law was not binding, especially during the severe 2001-2002 economic and political crises. The Congress played almost no role in monitoring compliance, or in terms of the subsequent modifications of the Law (Uña and Bertello, 2004).

As Senator Genaud of the National Congress noted in 1999, “The project arose, as everyone says, as a necessity to reassure the markets and warn the creditors and the IMF that nothing happens here, that everything is fine and that we are facing a controllable crisis.” According to Makon (2004), however, good intentions were not enough: “The law has tried to be implemented within a framework of strong budgetary restriction, a situation that reduced its effectiveness.”

In 2000 the provinces were incorporated into the law by signing the Federal Commitment to Growth and Fiscal Discipline (*Compromiso Federal por el crecimiento y la disciplina fiscal*), which also provided for a path to reduce provincial deficits. In December 1999, 11 provinces adhered to the Program of Financial Assistance, agreeing to implement a program of progressive deficit reduction and to complete the approval of laws, compatible with those of the Nation, of Financial Administration, Fiscal Responsibility and Budget Administration. In return, the Nation would provide financial assistance through the Provincial Trust Fund for Development and public banks so that the provinces could meet their 2000 financing needs.

The fiscal pacts and agreements sanctioned from the FSL until the crisis at the end of 2001 were encouraged mainly to offer favorable signals abroad, complying with the fiscal commitments agreed with the IMF. Although, the incoming government of Fernando de la Rúa

signed with the provinces the federal commitments of 1999 and 2000 to promote the enactment of fiscal solvency laws and to fix a ceiling on spending, they were not enough to reverse the crisis (Melamud, 2010).

3.3.2. The 2001 Deficit Zero Law

This law, a modification of the Financial Administration Law (Law 24.156), was enacted as a signal to the IMF and other creditors that Argentina wanted to comply with the stand-by agreement formally approved in March 2000 (several interviews, e.g., Caballero, 2019).

At that time Argentina was again at a razor's edge trying not to abandon the Convertibility regime. The Nation could not comply with the guaranteed co-participation payments to the provinces. Most of the provinces had serious difficulties in paying the salaries of public employees and decided to print quasi-monies; meanwhile the Nation paid part of the co-participation with Lecops, a bond issued by the national government.

This law turned out to be a hard-restrictive rule, as it stated that expenditures (both at the national and provincial levels) would be reduced at the same pace if there were not enough revenues to finance them. Thus, although simple in its conception, the law was impractical.

According to Braun and Gadano (2007), "The fleeting and sterile life of the extremist zero deficit law dramatically demonstrated the unfeasibility of downloading the whole weight of the fiscal adjustment in a simple written norm." The law was only partially complied with, and it was declared unconstitutional by the Supreme Court with the fall of Convertibility in 2002.

3.3.3. The 2004 Fiscal Responsibility Law

In contrast to the context prevailing when the previous laws were sanctioned, the 2004 FR was passed at the beginning of the Kirchner's administration when the Federal government enjoyed fiscal equilibrium and the economy was growing at high rates given the highly favorable international conditions. The approval of the law was a conditionality of another stand-by agreement with the IMF.

The approval of the FR came after a frustrated attempt to reform the Federal Tax Co-Participation Regime and to introduce limits on provincial levels of spending and debt. The new instrument was accepted by the IMF. "The two things that the IMF wanted of the law of co-participation and that it could not obtain were to put a cap on provincial spending and a limit on

the provincial debt” (Representative Lozano), and this law goes in exactly that direction. In a similar line, the radical bloc stated: “This bill does not seem serious or viable to us and, in fact, responds to an urgency to show something to the IMF, even at the risk of altering the logic that should govern the discussion of the financial relationship between the National government and the provinces.” As Representative Lozano additionally noted, “It was absolutely necessary that we first discuss tax and pension reforms. And then co-participation, the transparency law and the FR.”

According to Melamud (2010), provincial deficits were financed by issuing debt. Therefore, the stock of provincial debt increased, on average, at an annual rate of 26 percent between 1998 and 2001. However, the highest debt growth, 130 percent, was between 2001 and 2002 because of the devaluation of the peso on loans mostly denominated in dollars. The increases between 2003 and 2006 were due, in large part, to the impact of inflation as a large share of the debt was changed to be adjusted by inflation. The increase in provincial debt took place in a context where the reform of the Organic Charter of the Central Bank prohibited the granting of loans from financial institutions to the public sector without authorization from the Ministry of Economy.

Moreover, to obtain a loan in foreign currency, provincial governments needed an ad hoc approval from the Federal government (Resolution 1075/93, Ministry of Economy). The same resolution introduced an automatic repayment of debt services through direct access to co-participated resources that the national government transferred to the provinces on a daily basis. This mechanism allowed the provinces to obtain financing because it provided a reliable guarantee, but at the risk of encouraging excessive indebtedness in some cases. Only with the implementation of the Financial and Fiscal Assistance Program could this mechanism be used in a group of provinces as an effective means of limiting indebtedness to the level consistent with the fiscal consolidation targets agreed upon by each province (Cetrangolo et al., 2002).⁹

The FR was presented not as a federal agreement, complementary to the new co-participation regime, but as one designed without considering the opinion of the provinces. The bill was approved by Congress, bypassing the formal agreement with the governors. Thus, the

⁹ Fiscal rules may be overcome by lax financial administration rules. We reviewed PFMA assessments for 4 provinces (Buenos Aires, Cordoba, Santa Fe and San Juan). The reports had a favorable assessment of the budget process and auditing.

mechanism of accession provided by the law was formally voluntary for the provinces so as not to violate the federalism ruled by the Constitution. However, it was an example of coercive federalism through the refinancing of the provincial debt by the national government. In the same line, Representative Alchouron declared and added that “[there is an] advance of the National government on provincial autonomy; therefore, there is a low probability that the rule can be fulfilled considering control issues and the effective application of sanctions.”

Moreover, Representative Natale complementarily emphasized that the norm is merely declarative and gives the National Executive considerable discretion in increasing certain expenses over GDP growth (art. 10). It is in charge of sanctions and has veto power over their execution (art. 28) by granting access to provincial debt operations, among others (Representative Natale). In this sense, “the rules for the Nation are loose, while [those] for the provinces imply strict limits.”

Consequently, since its inception, the rule raised doubts about its effective application. In the words of Representative Zottos, “We have enacted laws then not complied with them. This is the problem. This project is a statement of theoretical ideas, like the law on fiscal discipline approved in 1999, and the fiscal pacts concluded between the Nation and the provinces that were not fulfilled.”

From the last quarter of 2008 until the approval of the 2009 reform, Argentina suffered a variety of negative exogenous shocks. These included the international financial crisis, which generated capital outflows from emerging countries, outbreaks of dengue and type A influenza, and a drought that affected agricultural production for a second consecutive year.

A crucial factor in the approval of the law was the difficult financial situation of the provinces—emphasized by some senators—as a result of a skewed distribution of fiscal resources towards the Nation. Though the Revenue-Sharing Regime (Law 23.548) established that the provinces have the right to at least 34 percent of national tax revenues, in February 2002, a fiscal pact with the provinces suspended this guaranteed floor and, in return, established that the national government had to enact a new co-participation law by December.¹⁰ By 2009, when the bill was discussed in Congress, the provinces’ share had dropped to 24 percent.

¹⁰ In fact, the reform of the National Constitution in 1994 had given a term of 2 years for the approval of a new Law of tax co-participation.

As Senators Vera and Morales stated, “We are discussing a secondary issue: as provinces are short of money, the solution seems to be to lift the restriction to borrow. Nevertheless, if we want to solve the provinces and municipalities’ economic problems, we must apply the Federal Tax Co-participation Law whose article 7 states that not less than 34 percent of the resources must be transferred to the provinces. Still, the suspension of the FR was accepted as a short-term measure. As Senator Bongiorno noted, “ I have a double responsibility. I must respond to my province and, at the same time, grant a temporary solution to improve public accounts. [...] If our governors do not claim for their own co-participation resources, this will simply result in greater indebtedness for our province.” Thus, the amendment was approved by the Senate with 35 votes for and 17 against.

From 2012 till 2016, there were no discussions to extend exceptions to the Law other than the position of a Senator from Salta in 2012: “Article 49 [of the budget law] extends exceptions to the Fiscal Responsibility Law, which means that we continue to allow the provinces to borrow, sell fixed assets or issue debt to pay current expenses. We know that this will end in [a] very critical situations for the provinces. Then, while there is a policy of debt reduction for the national government, there is a policy of debt increase for the provinces.”

3.4. The Relevance of the Context

Table 3 summarizes the conditions which could influence the potential effectiveness of the successive FRs, which could in turn affect decisions on public investment. The only FR that was enforced at least for a few years was approved in a time when the economy was growing, the Federal Executive was very popular, and Argentina had a program with the IMF. With the World Financial Crisis, the restrictions were relaxed and never returned to be a binding constraint on the fiscal behavior of either the President or governors.

Table 3. The Environment Conditioning the Approval of the FRs

	1999 FSL	2001 Zero Deficit	2004 FRL	2009 Amendment of the 2004 FRL
External conditioning	IMF	IMF	IMF	IMF
International Environment	Crises	Recession	Tailwind	Crises
Macro-fiscal domestic situation	Distress	Crises	Strong growth	Recession (+drought/health issues)
Political support to the National Executive	Low	Low	High	High
Public sector situation at the provincial level	High debt levels and imbalances	Crises/Federal bailout	High debt levels and imbalances	Crises/Federal bailout
Potential effectiveness	Improbable	Improbable	Probable	Exit from the Law

Source: Authors' compilation.

3.5. How Provinces Complied with the 2004 Fiscal Rule

It is worth noting that in spite of the modifications of the 2004 FR that relaxed the original constraints, some provinces complied with some of its clauses without resorting to any softening. However, from 2010 to 2017 a national bailout made the provincial debt clause de facto not binding. Thus, there is a large variability of de facto compliance with original clauses, both across time and across provinces.

Table 4 summarizes this variability by showing the percentage of the 21 provinces that adhered to the national law according with the number of clauses they complied with, while Table 5 identifies each of these provinces (number of provinces complying with the clauses is shown in brackets). These tables make clear that only four provinces complied with all three clauses, and this was just for the first year of the rule being in force, but there are many provinces that comply with one or two clauses.

Table 4. Percentage of Provinces Complying with the National FR by Year/Number of Clauses

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
3 RULES	19%	10%	14%	10%	5%	0%	0%	0%	0%	0%	0%	0%
2 RULES	48%	57%	52%	67%	43%	24%	5%	0%	0%	0%	0%	33%
1 RULE	19%	24%	24%	14%	52%	43%	90%	43%	38%	52%	33%	48%
0 RULE (or no data)	14%	10%	10%	10%	0%	33%	5%	57%	62%	48%	67%	19%

Source: Authors' compilation based on Federal Fiscal Responsibility Council (FFRC).

Table 5. Compliance with the National FR by Province/Year

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
3 RULES	BA, CORR, LR, MIS (4)	CHU, NQ (2)	BA, NQ, SGO (3)	CAT, LR (2)	SGO (1)	-	-	-	-	-	-	-
2 RULES	CAT, CHU, CBA, ER, FOR, MZA, SC, SF, SGO, TUC (10)	BA, CAT, CBA, CORR, ER, FOR, LR, MIS, SJ, SC, SF, SGO (12)	CAT, CHU, CBA, CORR, ER, LR, MZA, MIS, RN, SAL, SJ, SI, SC, SF (11)	CHU, CBA, CORR, ER, FOR, MZA, MIS, NQ, RN, SAL, SJ, SGO, TF, TUC (14)	CHA, CHU, CORR, FOR, LR, MIS, NQ, SAL, SJ (9)	CAT, CHA, LR, SAL, SJ (5)	NQ (1)	-	-	-	-	CAT, CBA, CORR, FOR, LR, SF, SGO (7)
1 RULE	CHA, JY, RN, SJ (4)	CHA, JY, MZA, RN, TUC (5)	CHA, FOR, JY, RN, TUC (5)	BA, SC, SF (3)	BA, CAT, CBA, ER, JY, MZA, RN, SC, SF, TF, TUC (11)	BA, CHU, CORR, FOR, JY, NQ, RN, SGO, TF (9)	CAT, CHA, CHU, CBA, CORR, ER, FOR, JY, LR, MZA, MIS, RN, SAL, SJ, SC, SF, SGO, TE, TUC (19)	CAT, CHU, CBA, FOR, SAL, SJ, SC, SGO, TUC (9)	CHU, CBA, FOR, LR, SAL, SJ, SGO, TUC (8)	CAT, CHA, CBA, FOR, LR, NQ, RN, SAL, SJ, SGO, TUC (11)	CAT, CORR, FOR, LR, SJ, SGO, TUC (7)	CHU, JY, MZA, MIS, NQ, RN, SJ, SC, TF, TUC (10)

Source: Authors' compilation based on Federal Fiscal Responsibility Council (FFRC).

4. A Counterfactual Exploration of FR 2004

4.1. Methodology and Data

In this section we present simulation exercises to evaluate debt, public investment and other fiscal variable trajectories as if the flexible 2004 FR had been complied with. The results show the existence of a huge space for the increase of public investment even in a context of reduction of highly distortive taxation and the implementation of a contingency fund.

We simulate what would have been the evolution of the fiscal accounts and the performance of the economy if Argentina had complied with the quantitative targets included in Law 25917/04, both for the Federal Government and the 24 provinces. As discussed, compliance with those goals was relaxed to allow for an incredible expansion in current primary expenditures. For the purposes of the exercise, we consider the National Government and the Provinces as a single entity (General Government).

Our starting point is 2005, when the General Government's primary expenses represented about 23.4 percent of GDP, while public investment (excluding financial investment of 0.5 percent of GDP) accounted for 2.7 percent of GDP, and there was a modest fiscal surplus. This year was chosen because it was the first in which Law 25.917 was applied and because the

economy had fully recovered from the deep 2002 economic crisis. Moreover, primary expenditures had also recovered from the fiscal adjustment that a jump in inflation produced during 2002 and 2003. Thus, the simulation period extends from 2005 through 2018.

We follow the approach of David and Novta (2016), imposing the following constraints: i) that current primary expenditures cannot grow more than the nominal GDP, and ii) that the global fiscal balance should be at least in equilibrium, as the 2004 FR states. Fiscal data correspond to the whole national and provincial public sector as reported by the Ministry of Economy; effective figures on real and nominal GDP, the share of revenues to GDP and exogenous variables such as international interest rates were considered.¹¹ In this formulation, compliance with the FR clauses generates a sizable excess of funds due to savings in current primary expenses compared with what was observed in practice. We simulate different allocations for this excess of funds: S1) to save in a countercyclical fund any fiscal surplus; S2) to partially reduce (when possible) highly distortive taxation at both federal¹² and provincial¹³ levels; S3) to increase public investment; and S4) a combination of S2 and a ceiling of 6 percent of GDP for public investment. If the extra money had been allocated to public investment (S3 and S4 exercises), the GDP growth rate would have been higher. We follow Cavallo and Powell (2019) in estimating the impact on growth of the additional allocation to public investment in S3 and S4, thus considering a multiplier of 1.6 percent for each new percentage point of investment. Table 6 shows the equations used in both counterfactual exercises to project the different variables.

¹¹ Data sources include the Ministry of Economy, INDEC, IMF (Libor rate), JPMorgan and own estimates for the interest rate applied on the debt.

¹² Up to 2/3 of export taxes and 1/3 of the tax on financial transactions through bank accounts.

¹³ Up to 1/3 of the cascade gross sales taxes.

Table 6. Equations Used in the Counterfactual Exercises (S1, S2, S3 & S4)

	S1	S2	S3	S4
Current Primary Expenditures (a)	$CPEXP_{t-1} * \frac{GDP_t^{NOMINAL}}{GDP_{t-1}^{NOMINAL}}$			
Debt to GDP (b)	$\left[\frac{(SHARE^{foreign} * \frac{ER_t}{ER_{t-1}} * \frac{D_{t-1}}{GDP_{t-1}}) + (SHARE^{local} * \frac{D_{t-1}}{GDP_{t-1}})}{1 + \Delta GDP_t^{NOMINAL}} \right] - OB_t$			
Real GDP growth with KEXP feedback (c)	$\frac{GDP_t^{REAL}}{GDP_{t-1}^{REAL}} * EXP \left(0,0161 * LN \left(\frac{REAL KEXP ASSUMPTION_t}{REAL KEXP_t} \right) \right) - 1$			
Nominal GDP growth with KEXP feedback (d)	$(1 + \Delta GDP_{withfeedback_t}^{REAL}) * \frac{DEFLATOR_t}{DEFLATOR_{t-1}} - 1$			
Interest payments (e)	$\frac{i * \frac{D_{t-1}}{GDP_{t-1}}}{1 + \Delta GDP_{withfeedback_t}^{NOMINAL}}$			
Distortive Taxation at National and Provincial levels (f)	-	$2/3 ET_t + 1/3 BT_t$	-	$2/3 ET_t + 1/3 BT_t$
	-	$1/3 GT_t$	-	$1/3 GT_t$
Capital Expenditure (g)	$KEXP_{05-18}^{AVERAGE}$	$KEXP_{05-18}^{AVERAGE}$	$REV_t - CPEXP_t - IntPay_t - FinInvest_t$	$REV_t - CPEXP_t - IntPay_t - FinInvest_t$
Anti-Cyclical Fund (h)	$OB_t - KEXP_{05-18}^{AVERAGE}$	$OB_t - f_2^N - g_2$	-	$OB_t - f_4^N - g_4$
		$OB_t - f_2^N - f_2^P - g_2$		$OB_t - f_4^N - f_4^P - g_4$

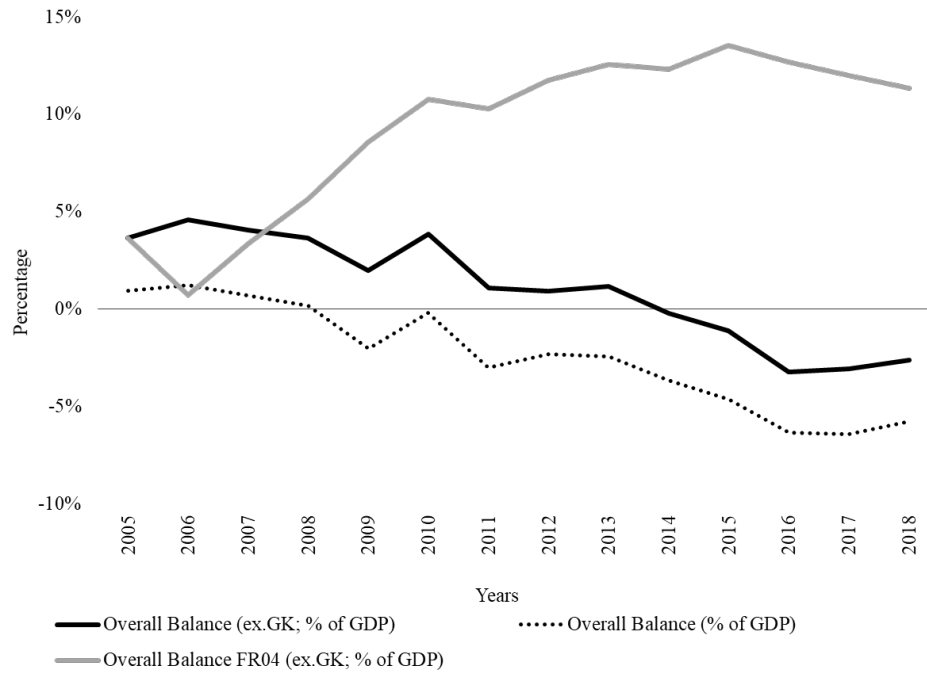
Source: Authors' compilation based on David and Novta (2016) methodology and 2004 FR.

Notes: CPEXP: Current Primary Expenditure; KEXP = Capital Expenditure; foreign: Debt denominated in foreign currency; ET: Revenues from export taxes/GDP; BT: Revenues from Debit and Credit Bank taxes/GDP; GT: Revenues from Gross Sales provincial taxes/GDP; IntPay: Interest Payments; FinInvest: Financial Investment; g_4 max 6% of GDP.

4.2. Results

Our results show that if Argentina had complied with the fiscal objectives of the 2004 FR it would have achieved a fiscal surplus. Figure 6 reveals a strongly divergent path in the global fiscal balance between the observed effective situation and the hypothetical one. It is important to note that the counterfactual surplus is sizeable not only because of high savings from the expenditure side, but also because the observed tax burden is not reduced, averaging 32.4 percent of GDP for the period.

Figure 6. Global Fiscal Balance Evolution as a Share of Observed GDP and Counterfactual Scenario under 2004 FR



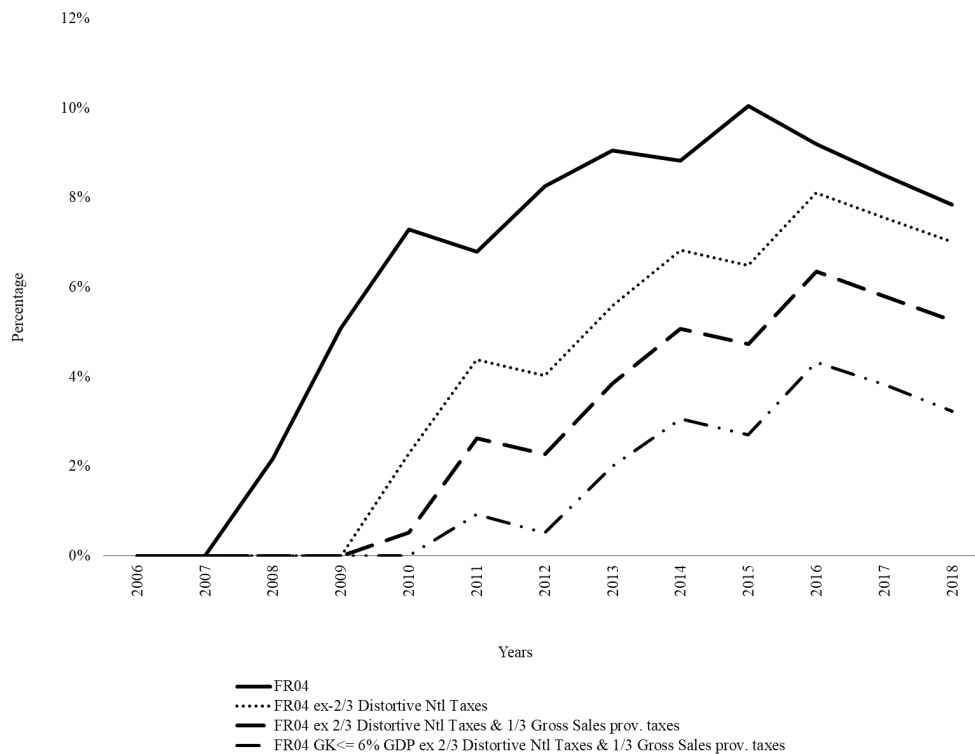
Source: Authors' calculations based on David and Novta (2016) methodology; MECON, INDEC, IMF, and JPMorgan data; and authors' estimates.

Figure 7 presents the evolution of the hypothetical countercyclical fund had the fiscal balance been in equilibrium.¹⁴ Four alternatives were given to the allocation of the excess of resources: i) all excess goes to the counter-cyclical fund (S1); ii) a 2/3 reduction in distortive national taxes, the rest to the fund (S2a); (iii) a 2/3 reduction in distortive national taxes and 1/3 reduction in distortive subnational taxes, the rest to the fund (S2b); and iv) a ceiling of 6 percent of GDP to capital expenses is applied along with the reduction of distortive national and provincial taxes, the rest to the fund (S4).

Even after reducing highly distortive taxation both at the national and provincial levels and pursuing higher levels of public capital expenditures (up to 6 percent of GDP) than those of the historical average, the fund accumulates significant resources (Figure 7).

¹⁴ We do not force the fiscal balance to be in equilibrium just to save all extra resources in the countercyclical fund. Only the Federal government can save in the Fund, while the provinces only had space to increase investment and reduce the cascading tax.

**Figure 7. Counterfactual Countercyclical Fiscal Fund As a Share of GDP:
Alternative Allocation**



Source: Authors' calculations based on David and Novta (2016) methodology; MECON, INDEC, IMF, and JPMorgan data; and authors' estimates.

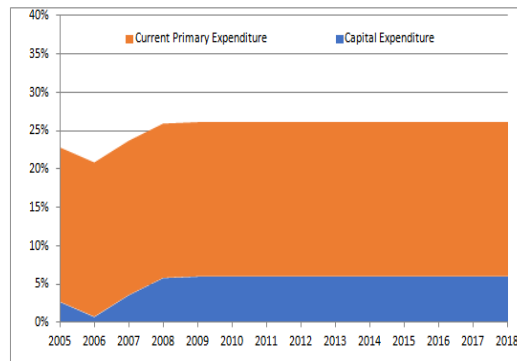
Notes: S1: all excess of funds to counter-cyclical fund; S2a: 2/3 reduction in distortive national taxes and the rest to the fund; S3: S2a and 1/3 reduction distortive subnational taxes, the rest to the fund; S4: capital expenses does not exceed 6 percent of GDP and reduction of distortive national and provincial taxes, the rest to the fund.

In this scenario, current primary expenditure remains at the 2005 level in terms of GDP (20.2 percent as municipalities are excluded), while capital expenditure grows from 2.7 percent of GDP to the abovementioned 6 percent in 2009 (after a drop in 2006). By construction, capital is capped at that same—historically very high—level for the remainder of the period (Figure 8a). As Figure 8a shows, the simulated figures are significantly different from those observed (Figure 8b).

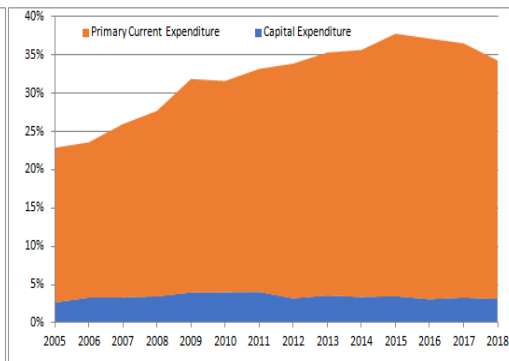
The existence of the countercyclical fund—and the fact that savings have been accumulating from the very beginning—prevents the rule from being pro-cyclical. In bad times the government may tap the funds saved in previous years to moderate the consequences of bad news (either external or domestic) for the economy.

Figure 8. Primary National and Provincial Expenditure As a Share of GDP]

8a. Counterfactual Scenario (S4)



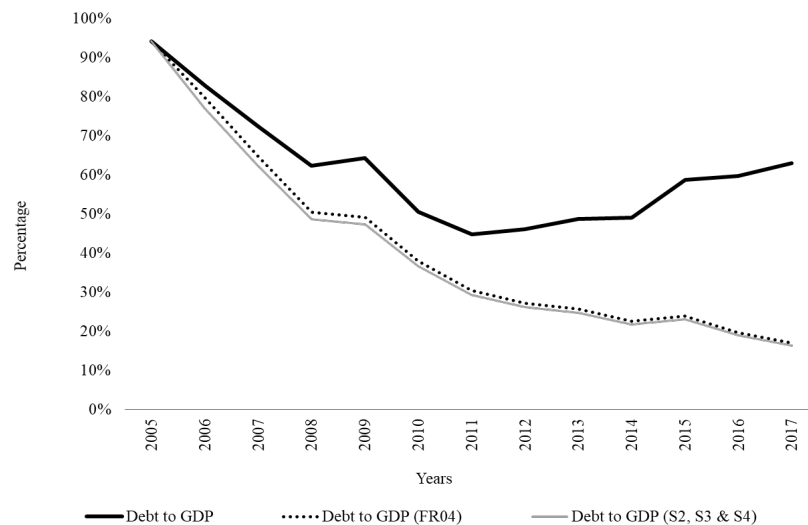
8b. Actual Figures



Source: Authors' calculations based on David and Novta (2016) methodology and MECON data.

Finally, the public debt would have been much lower basically because a more prudent rule would have eliminated the fiscal deficits observed after 2008 (Figure 9). The Public Debt-GDP ratio would have sharply diminished with the expansion of GDP and the non-existence of fiscal deficits.

Figure 9. National and Provincial Debt to GDP: Observed and Counterfactual Scenarios



Source: Authors' calculations based on David and Novta (2016) methodology; MECON, INDEC, IMF, and JPMorgan data; and authors' estimates.

Notes: S1: all excess of funds to counter-cyclical fund; S2a: 2/3 reduction in distortive national taxes and the rest to the fund; S3: S2a and 1/3 reduction distortive subnational taxes, the rest to the fund; S4: capital expenses do not exceed 6 percent of GDP and reduction of distortive national and provincial taxes, the rest to the fund.

5. Fiscal Rules and Public Investment during Fiscal Consolidations

5.1 Introduction

As discussed above, the 24 Argentine provinces have important differences in their FR frameworks. They also display important differences in the evolution of per capita public investment in the period 1992-2018. The literature has shown that when countries undertake fiscal adjustments, public investment cuts usually take a disproportionate share of the adjustment. This has been shown to be a common behavior across countries, particularly strong among emerging economies (Servén, 2007). Ardanaz and Izquierdo (2017) argue that current and capital spending react differently to the business cycle. Current spending increases in good times and does not decrease in bad times. Capital spending, however, is reduced in bad times and does not recover in good times. Thus, on average, the fall in capital spending ranges from 1 to more than 2 percent for each percentage point of deterioration in the output gap. This produces a bias against capital spending during bad times that is more marked in Latin America and the Caribbean than in other regions of the world.

In this context, the effectiveness of fiscal rules implementation and how they are designed in order to protect public investment during fiscal adjustments has become a relevant concern. Ardanaz et al. (2021) study patterns of public investment behavior during fiscal consolidations in a sample of 75 advanced and emerging economies during 1990-2018 and find that results differ significantly depending on the design of the fiscal rule. They find that, in countries with either no fiscal rule or with a rigid fiscal rule, a fiscal consolidation of at least 2 percent of GDP is associated with an average 10 percent reduction in public investment. In countries with flexible fiscal rules,¹⁵ though, the negative effect of fiscal adjustments on public investment vanishes.

In this section we explore the link between fiscal rules and public investment behavior during fiscal consolidations in Argentine provinces considering the stylized facts described above and given the fact that the last national FR of Argentina included flexibility features.

¹⁵ Defined as those that include mechanisms to accommodate exogenous shocks (e.g., cyclically adjusted fiscal targets, well-defined escape clauses, anti-cyclical funds, or differential treatment of investment expenditures).

5.2 Empirical Strategy and Data

Our empirical strategy begins by using the following specification based on Ardanaz et al. (2021):

$$\Delta G_{i,t}^{PI} = \alpha_i + \theta_t + \beta_1 FC_{i,t} + \beta_2 FR_{i,t} + \beta_3 FC_{i,t} * FR_{i,t} + \Gamma X_{i,t} + \mu_{i,t} \quad (1)$$

where $G_{i,t}^{PI}$ is real public investment in province i at year t ,¹⁶ $FR_{i,t}$ is a dummy equaling 1 if a fiscal rule is in place at time t and 0 otherwise (a *de jure* definition of a FR). With the aim of having a sample with a pure flexible fiscal rule in place, we focus on those provinces that adhered to the flexible national fiscal rule during the period 2004-2018 and those that did not.¹⁷ $FC_{i,t}$ is a dummy variable that equals one when province i undergoes a fiscal consolidation in year t . $X_{i,t}$ is a vector of control variables including growth rates of population and total revenues (lagged one period to reduce endogeneity concerns). Finally, α_i are province fixed effects¹⁸ and θ_t are time fixed effects. Note that the eventual effect of fiscal rules on public investment behavior during fiscal consolidations will be given by $\beta_1 + \beta_3 * FR_{i,t}$. This expression is computed using the standard Delta Method and, given the large size of the sample, we include robust standard errors in all our estimations.

We define a period of fiscal consolidation using the trend of the primary balance to total income ratio.¹⁹ Specifically we assume that a province is under a fiscal consolidation process if the growth rate of this trend is positive. The idea here is to capture processes reflecting that the

¹⁶ Provincial public investment includes direct real investment, capital transfers and financial investment. Our estimates are performed with direct real investment.

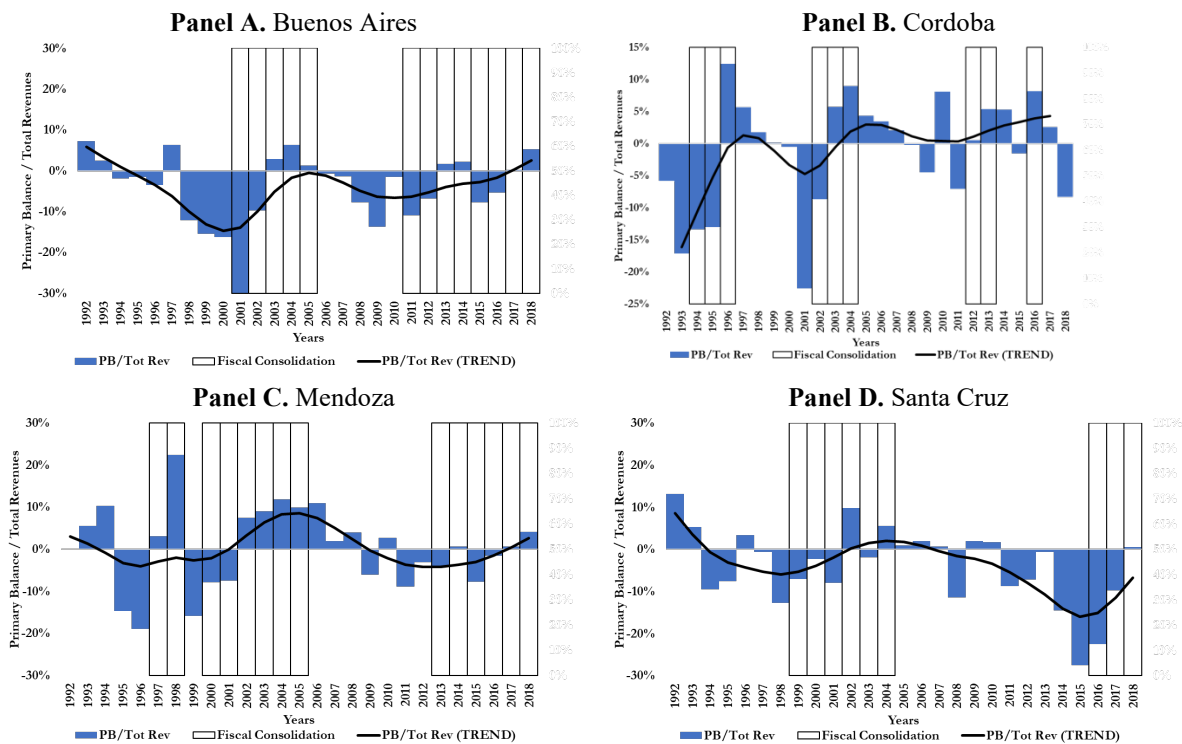
¹⁷ Our sample includes Buenos Aires, Autonomous City of Buenos Aires, Chubut, Cordoba, Corrientes, Entre Rios, Formosa, Jujuy, La Pampa, La Rioja, Santa Cruz, Santa Fe, Santiago del Estero, Neuquen and Mendoza. In this first exercise we do not consider those provinces where a national and a provincial fiscal rule coexist to avoid confounding factors due to provincial specific FRs.

¹⁸ Fixed effects are considered in this first specification, but its inclusion will be checked later through a Hausman test.

¹⁹ We calculate this trend using the standard Hodrick-Prescott Filter, with a smoothing parameter of 6.25. We do not directly follow the strategy used by Ardanaz et al. (2021)—as a two-year period in which the cyclically adjusted primary balance/GDP ratio improves each year and the cumulative improvement is at least 2 percentage points of GDP—because reliable subnational GDPs are available only for some provinces. One problem with our measure of fiscal consolidation is that it may overstate the number of fiscal consolidations because the tax base in Argentina is pro-cyclical. Therefore, we provide a robustness check based on the Ardanaz et al. (2021) fiscal consolidation variable with the available data of reliable provincial GDPs. This check confirms our findings for the fiscal consolidation metric that we could use for all provinces.

fiscal result is being improved systematically but leaving aside short-term processes (e.g., one-year improvement) that may reflect temporary improvements and not a “true” fiscal consolidation. As an example, Figure 10 shows our definition for four different provinces. With our definition, 121 episodes of fiscal consolidation are detected between 1992 and 2018 in our sample (Figure 11). During those episodes, the average reduction in public investment is 18 percent when there is no fiscal rule in place and 1.7 percent when there is a fiscal rule.

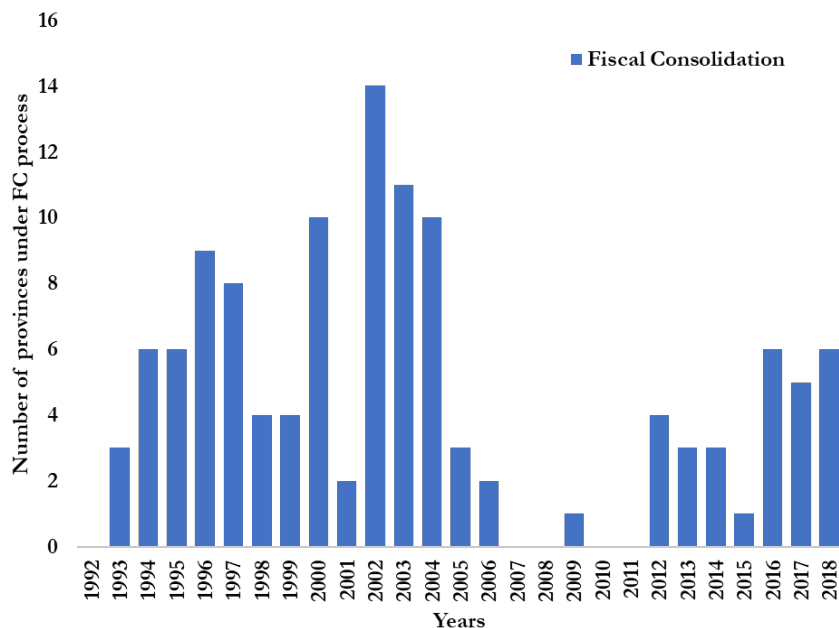
Figure 10. Fiscal Consolidation Episodes in Argentinian Provinces, 1992-2018



Source: Authors' compilation based on MECON data.

The data cover 15 out of 24 Argentine provinces in the period 1992-2018. Public Investment, primary balance, transfers, and debt were obtained from the Ministry of the Economy (MECON). Data on provincial fiscal rules were obtained from FIEL (2003a), the Federal Fiscal Responsibility Council (FFRC) and National and provincial FRs. Population data are taken from the national statistics agency (INDEC). Table A1 in the Appendix presents the descriptive statistics.

Figure 11. Number of Fiscal Consolidation Episodes in Argentinian Provinces by Year, 1992-2018



Source: Authors' compilation elaboration based on MECON data.

5.3 Baseline Results

In Table 7 we provide our baseline estimations. Column 1 presents the fixed effects estimation and shows that public investment falls close to 19 percent during fiscal consolidations. The coefficient of the fiscal rule is negative but not statistically significant, thus suggesting that a fiscal rule per se does not have any effect on public investment. The size and sign of the interaction term are not statistically significant. However, according to the marginal effects from Column 1 of Table 7, public investment does not fall during fiscal consolidations in provinces that adhered to a flexible fiscal rule. Given the low interclass correlation ($Rho=0.013$), we replicate the estimation under random effects (Column 2). Hausman test p-value indicates that the initial hypothesis that the individual-level effects are adequately modeled by a random-effects model is not rejected.²⁰ The results remain unchanged and the interaction term becomes now statistically significant. Column 3 introduces control variables and results still hold.

²⁰ A non-rejection in a Hausman test implies that non-observable heterogeneity is not related to the adoption of a FR. This makes sense, since the FR was adopted for every province at the same time, and during the same period. At

Finally, Column 4 explores whether flexible fiscal rules are useful at protecting current expenditures. This type of expenditure is typically less prone to cuts during consolidation, as there are political economy pressures that naturally protect it (Ardanaz and Izquierdo, 2017). This natural protection argument is validated by the fact that current spending cuts are much lower during consolidation periods (5.4 percent, on average), and that they do not vary as dramatically as cuts in capital expenditures in the presence of a flexible fiscal rule. These findings are in line with Ardanaz et al. (2021). We conclude that fiscal rules that include flexibility features are useful in protecting public investment from budget cuts during fiscal consolidations.

Table 7. Baseline Results: Effect of Flexible Fiscal Rules on Public Investment Growth Rate during Fiscal Consolidations in Argentina

	Growth rate of public investment			Growth rate of current spending
	[1]	[2]	[3]	[4]
Fiscal Consolidation	-0.191** (0.0751)	-0.190*** (0.0701)	-0.177** (0.0755)	-0.0544*** (0.0144)
FR	-0.0608 (0.0854)	-0.0289 (0.0495)	-0.0176 (0.0526)	-0.00418 (0.00744)
Fiscal Consolidation * FR	0.172 (0.107)	0.197** (0.0916)	0.181* (0.0948)	0.0213 (0.0147)
Growth rate of population			-1.812 (1.831)	0.176 (0.206)
Growth rate of revenues (t-1)			-0.102 (0.392)	-0.00626 (0.0551)
Marginal Effects				
FR = 1	-0.0185 (0.0713)	0.00712 (0.0660)	0.00413 (0.0674)	-0.0331*** (0.00846)
FR = 0	-0.191** (0.0751)	-0.190*** (0.0701)	-0.177** (0.0755)	-0.0544*** (0.0144)
Observations	390	390	375	375
R-squared	0.369			
Number of prov	15	15	15	15
Fixed Effects	Yes	No	No	No
Random Effects	No	Yes	Yes	Yes
Controls	No	No	Yes	Yes
Rho	0.013			
Hausman (Chi)		1.732		
Hausman (p-val)		0.630		

Source: Own elaboration based on MECON. **Note:** robust cluster standard errors in parenthesis. Significance level * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, respectively. Intercepts and year dummies are included but not reported.

the variable level, it captures the fact that the unobservable heterogeneity, which is fixed by definition, is not related to an also fixed dummy variable.

5.4 Robustness

Several robustness checks to our baseline results are presented in Table 8. On the one hand, we estimate equation (1) with an alternative definition of our dependent variable. We use the change in: i) the ratio between Real Direct Investment (RDI) and total revenues (Column 1); and ii) the ratio between RDI and total spending (Column 2). With the first alternative, a fiscal consolidation reduces the public investment to total revenues ratio by 2.7 percentage points when there is no fiscal rule in place. When there is a fiscal rule in place (see marginal effects), this reduction is neutralized. With the second alternative definition conclusions are reinforced.

On the other hand, we change the definition of fiscal consolidation in two ways: i) we redefine our baseline definition using the global balance, instead of the primary balance (Column 3); and ii) we use available data on provincial GDPs in order to replicate the same strategy used by Alesina and Ardagna (2013) and Ardanaz et al. (2021)—Column 4.²¹ Our main result is essentially not modified. Flexible fiscal rules seem to mitigate the reduction of public investment during fiscal consolidations.

In addition, we control for other factors that can affect the growth rate of public investment. Column 5 includes the growth rate of debt to total revenues²² and again, flexible fiscal rules seem to mitigate the reduction of public investment during fiscal consolidations. Given Argentina's federal structure, we control for another important issue. As provinces finance their public investment with resources from the national government (e.g., with automatic transfers from revenue-sharing and complementary systems or discretionary transfers) we also control for the role of fiscal transfers from the national government.

Specifically, we consider discretionary transfers, distinguishing between capital and current transfers (Columns 6 and 7), and automatic transfers (Columns 8-10). It can be seen that only discretionary capital transfers are statistically significant and with a positive coefficient.²³ This suggests a positive relation between this kind of transfers and provincial public investment,

²¹ We define a fiscal consolidation year when the primary balance/GDP ratio improves at least during two consecutive years and the cumulative improvement is at least 1 percentage point of GDP.

²² We do not include this variable as a control in baseline estimates given that it is available since 1996. Also, endogeneity concerns should be considered since one of the fiscal rule ceilings includes a debt to revenues target.

²³ Argentine provinces receive automatic transfers from the Federal Government that are guaranteed by the Constitution and the Revenue-Sharing Law. On top of that the Federal government distributes discretionary transfers with no formal restriction on the share that each province receives. In some years discretionary transfers reached 2 percent of GDP.

as previously shown by Artana et al. (2012). Marginal effects for all specifications indicate the decline in public investment during fiscal consolidations. However, the adoption of fiscal rules seems to (partially or even totally) mitigate the negative effects of fiscal consolidation on public investment behavior.

Finally, it should be mentioned that our estimates could be subject to potential endogeneity concerns. That is, fiscal rules can be endogenous in empirical applications given politicians' incentives to change fiscal institutions in response to changes in fiscal outcomes (Ardanaz et al., 2021). As noted in Subsection 3.3 the 2004 FR was passed at the beginning of the Kirchner's administration when the Federal government enjoyed fiscal equilibrium and the economy was growing at high rates given the highly favorable international conditions. The approval of the Law was a conditionality of another stand-by agreement with the IMF. For this reason, we consider that the 2004 FR can be considered exogenous to the Argentinean business cycle. However, additional robustness checks could be performed to control for this potential endogeneity problems. For example, through an estimation via instrumental variables. Naturally, this strategy faces the challenge of finding an exogenous and relevant instrument.

Table 8. Robustness of Baseline Results: Effect of Flexible Fiscal Rules on Public Investment Growth Rate during Fiscal Consolidations in Argentina

	Growth rate of public investment to total revenues ratio	Growth rate of public investment to total spending ratio	Growth rate of public investment							
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Fiscal Consolidation	-0.0269*** (0.00811)	-0.0132* (0.00744)			-0.304*** (0.0910)	-0.204** (0.0956)	-0.177** (0.0800)	-0.172** (0.0783)	-0.171** (0.0782)	-0.173** (0.0791)
FR	-0.00312 (0.00625)	-0.00226 (0.00570)	0.00208 (0.0401)	-0.0498 (0.0330)	-0.0185 (0.0527)	0.0194 (0.0396)	-0.0149 (0.0540)	-0.0143 (0.0532)	-0.0143 (0.0533)	-0.0140 (0.0530)
Fiscal Consolidation * FR	0.0157 (0.0110)	0.0112 (0.00905)			0.267** (0.106)	0.242** (0.109)	0.180* (0.0963)	0.176* (0.0990)	0.175* (0.0993)	0.176* (0.0989)
Fiscal Consolidation (alt 1)			-0.146* (0.0757)							
Fiscal Consolidation (alt 1) * FR			0.116** (0.0541)							
Fiscal Consolidation (alt 2)				-0.193*** (0.0533)						
Fiscal Consolidation (alt 2) * FR				0.0933** (0.0475)						
Growth rate of gdp (t-1)				-1.035 (0.670)						
Growth rate of population	-0.239* (0.131)	-0.242** (0.107)	-2.180 (1.695)	-0.851 (1.252)	-1.547 (2.361)	-6.416*** (2.203)	-2.272 (2.332)	-1.972 (2.165)	-1.979 (2.149)	-2.076 (2.187)
Growth rate of revenues (t-1)	0.00829 (0.0391)	-0.00689 (0.0353)	-0.0658 (0.387)		-0.0730 (0.503)	-0.438* (0.250)	-0.115 (0.387)	-0.112 (0.389)	-0.112 (0.389)	-0.114 (0.391)
Growth rate of debt to total revenues					-0.517*** (0.126)					
Growth rate of Capital Discretionary Transf						0.118*** (0.0292)				
Growth rate of Current Discretionary Transf							-0.00572 (0.0462)			
Growth rate of Automatic Transf								0.0578 (0.152)		
Growth rate of Revenue Sharing Syst. Transf									0.0615 (0.129)	
Growth rate of other Transf										0.0462 (0.119)
Marginal Effects										
FR = 1	-0.0112 (0.00796)	-0.00201 (0.00549)	-0.0304 (0.0525)	-0.1000** (0.0478)	-0.0371 (0.0664)	0.0379 (0.0664)	0.00348 (0.0669)	0.00431 (0.0668)	0.00429 (0.0671)	0.00312 (0.0684)
FR = 0	-0.0269*** (0.00811)	-0.0132* (0.00744)	-0.146* (0.0757)	-0.193*** (0.0533)	-0.304*** (0.0910)	-0.204** (0.0956)	-0.177** (0.0800)	-0.172** (0.0783)	-0.171** (0.0782)	-0.173** (0.0791)
Observations	375	375	375	322	330	309	367	370	370	370
Number of prov	15	15	15	14	15	15	15	15	15	15
Random Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Own elaboration based on MECON. **Note:** robust cluster standard errors in parenthesis. Significance level * p < 0.10, ** p < 0.05, *** p < 0.01, respectively. Intercepts and year dummies are included but not reported.

5.5 De Jure and de Facto Fiscal Rules

Equation (1) was estimated by using a de jure definition of fiscal rules. That is, $FR_{i,t}$ equaled one if a fiscal rule is legally in place at year t , zero otherwise. However, this definition does not truly reflect effective compliance with the fiscal rule.²⁴ In this section we define a de facto metric for the national fiscal rule launched in 2004, and we perform some exploratory exercises.

Effective compliance with the FR requires three conditions: i) current primary expenditure growth rate being limited to nominal GDP growth, ii) a zero-deficit target, and iii) public debt restrictions as explained above. We use official data published by the FFRC related to compliance with the 2004 law to compare effective figures versus nominal ceilings on each year, obtaining our binary metrics of “de facto” fiscal rule.²⁵ In sum, the values one of the de facto metric remain only for the 2004-2008 period in those provinces that met the compliance conditions. As discussed in Section 3 above, after 2008 the ceilings were relaxed through different exclusions of expenditure items. Initially, these changes would apply for the 2009-2010 period, but they were renewed every year until 2016 in the annual Budget Law. This has strong implications in practice. Even though the fiscal rule was legally in place and was evaluated every year by the Council, the relaxation of the ceilings made the fiscal rule de facto not binding. To control for this problem, we redefine our de facto metrics. Specifically, we define the 2009-2016 period as if no fiscal rule were in place.²⁶ We estimate equation (1) using both metrics, with and without control for the non-binding years.

²⁴ It should be noted that the “de jure” metric equals one when the national FR was in place (regardless of compliance or non-compliance). The metric thus takes the value 1 for 13 of the analyzed provinces during 2004-2018, and it takes the value zero for CABA and La Pampa. For the 1992-2003 period it takes the zero value for all provinces because, either there was no rule in place, or there was a rigid one.

²⁵ For the period 2005 to 2008, the FFRC published the year-on year-variation of current primary expenditure (net of IFIs financed projects and capital expenditure allocated to basic social and economic infrastructure) and the nominal GDP variation for the comparison. When the data were not available, we compute them as missing.

²⁶ Specifically, the “de facto” metric is evaluated for the 2004-2016 period, when the National FR was “de jure” in place. Thus, equals one if the compliance conditions were achieved, and zero otherwise. In addition, and given that from 2009 onwards the FR was not binding, all values one of the de facto metric are replaced by zero. This is because, beyond the compliance conditions were achieved, the de facto rule was also not binding (IMF, 2009). The spirit of this correction is like that employed by Riera-Crichton, Végh and Vuletin (2016). There, the authors estimate the effects of tax changes on output. Tax changes are measured as the change in VAT tax rates. However, while it may be true that change in rates are more likely to be exogenous than changes in cyclically adjusted revenues (since rates are a policy tool and revenues a policy outcome), if the policymaker is changing tax rates as a response to the cycle, those changes are endogenous. In order to correct for endogeneity, the authors use a narrative approach to distinguish between exogenous and endogenous changes. Then, they “clean” their metric replacing with 0 all endogenous changes and re-estimate the model with the truly exogenous ones. In our case, we replace with 0

Results are presented in Table 9. In Column 1, we define the *de facto* fiscal rule considering all ceilings. Column 2 considers only the current primary expenditure ceiling²⁷ and the debt restriction. Columns 3 and 4 add the 2009-2016 period correction. The metric seems not to modify our main result: when there is no flexible fiscal rule or when there is such a rule without compliance, public investment is reduced during a period of fiscal consolidation. However, it does not decline when a flexible fiscal rule is in place and complied with.

Finally, we explore if the degree in the FR compliance is relevant for public investment protection. For this purpose, we re-estimate Column 4 in Table 7 but replacing our dummy variable of FR with a continuous one. This continuous variable is defined by the difference between the growth rate of nominal current primary spending and the growth rate of nominal GDP; that is, the ceiling of one of the FRs. Only zero or negative values are considered, since a positive one indicates that the rule was broken.²⁸ Figure 12 presents the results for the overall distribution of the degree of compliance,²⁹ by percentiles. The degree of compliance seems to be relevant for the extremes of the distribution. During fiscal consolidation, those provinces in which current primary spending growth was 13.3 percentage points less than GDP growth (percentile 5) expand their public investment by about 26 percent. This protection of public investment, although not statistically significant, decreases as the degree of compliance declines.

Summing up, although the period when FRs were enforced is brief (5 years), we had 15 episodes of fiscal consolidations. During this period, we found that provinces that adhered to the flexible National FR reduced investment less than those provinces that had no FR, when faced with the need to undertake a fiscal consolidation.

the values equaling one of our dummies during the period in which there is a complete consensus that the FR was not binding.

²⁷ Specifically, we look at the difference between the nominal GDP growth rate of the economy and the growth rate of current primary expenditures and the debt clause. A positive difference implies that the fiscal rule was complied with. However, if the ratio of debt to income clause was not complied with, capital expenditures were not protected; then we assumed that the province did not comply with the rule.

²⁸ Our continuous variable (the difference between the growth rate of nominal current primary spending and the growth rate of nominal GDP) is interacted with the previously used “*de facto*” dummy (FR *de facto* in Table 7, Column 4). So, positive values that indicate no compliance with the rule are removed.

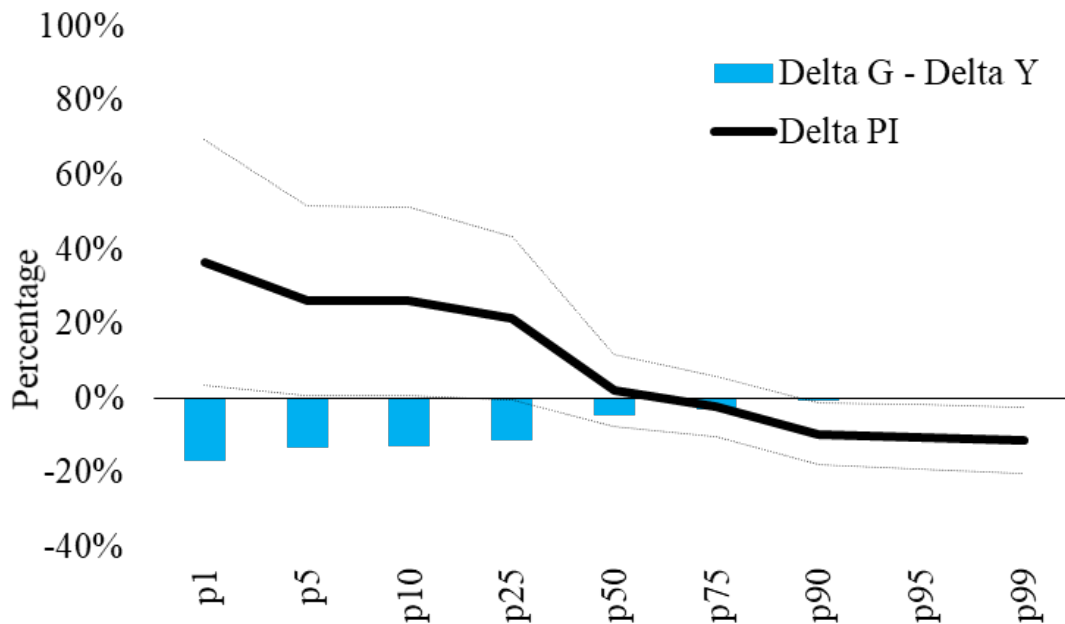
²⁹ Note that here we are estimating marginal effects in each percentile of the degree of compliance distribution. See Column 1 in Table A.2.

Table 9. De jure versus de Facto: Effects of Flexible Fiscal Rules on Public Investment Growth Rate during Fiscal Consolidations in Argentina

	Growth rate of public investment			
	[1]	[2]	[3]	[4]
Fiscal Consolidation	-0.152** (0.0605)	-0.169** (0.0674)	-0.133** (0.0591)	-0.133** (0.0583)
FR de facto (all ceilings)	0.0217 (0.0354)		-0.0934 (0.0767)	
Fiscal Consolidation*FR de facto (all ceilings)	0.0733 (0.0802)		0.133 (0.141)	
FR de facto (CE ceiling)		-0.0356 (0.0604)		-0.0878 (0.0762)
Fiscal Consolidation*FR de facto (CE ceilings)		0.164* (0.0947)		0.159 (0.104)
Growth rate of population	-1.259 (1.687)	-0.0848 (2.458)	-0.867 (1.518)	-0.174 (2.131)
Growth rate of revenues (t-1)	-0.195 (0.416)	-0.184 (0.383)	-0.189 (0.405)	-0.157 (0.378)
Marginal Effects				
FR == 1	-0.0788 (0.0879)	-0.00512 (0.0730)	-0.00003 (0.153)	0.0265 (0.100)
FR == 0	-0.152** (0.0605)	-0.169** (0.0674)	-0.133** (0.0591)	-0.133** (0.0583)
Observations	335	361	337	363
Number of prov	15	15	15	14
Random Effects	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

Source: Own elaboration based on MECON. **Note:** robust cluster standard errors in parenthesis. Significance level * $p < 0:10$, ** $p < 0:05$, *** $p < 0:01$, respectively. Intercepts and year dummies are included but not reported.

Figure 12. Effects of Degree of Compliance with Flexible Fiscal Rules on Public Investment Growth Rate during Fiscal Consolidations in Argentina



Source: Authors' compilation based on MECON data.

Note: Marginal effects with 90 percent confidence interval (dashed line).

5.6 The Relation between National and Subnational FRs

In this subsection we explore the effects of each type of FR that was active in each period. Thus, we expand our sample to all provinces, and we include the provincial FRs. For this purpose, the previously used dummy variable—which characterizes the presence/absence of a FR—is now redefined by splitting it into different categories. Specifically, we identify FRs as National, Provincial and Mixed (when National and Provincial rules coexisted in some jurisdictions). Regarding National FRs, we define two different rules: i) the previously analyzed 2004 FR, and ii) the 2000 FR, since it was not flexible. The definitions of Provincial and Mixed FRs present a major concern. Since each Provincial FR has specific features (intrinsic to each provincial FR's design), and they are different from one another, it becomes impossible to group them into a single category. Naturally, the same applies to Mixed FR since the unique national FR coexists

with a specific provincial one. So, we define a province-specific dummy variable to identify each provincial FR.³⁰

Therefore, a new FR variable is generated, which basically replicates the framework presented in Table 2. We estimate equation (1) including the original controls (population and revenues) and capital discretionary transfers, since they are an important feature of the Argentine fiscal system, and it is important to isolate the main coefficient estimates from this.

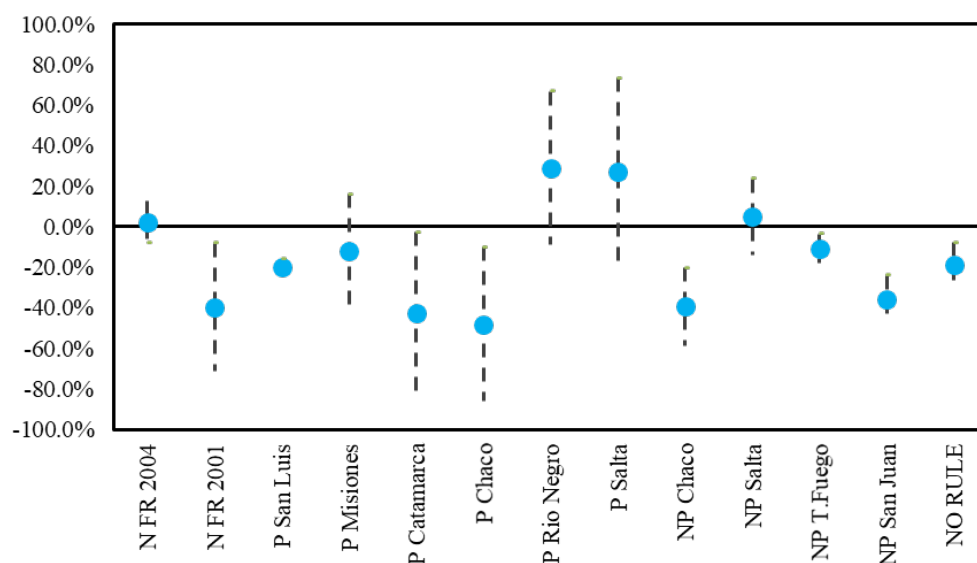
Figure 13 shows the results of the marginal effects for each type of FR that was considered.³¹ It can be seen that conclusions from previous sections still hold. In the absence of a FR, public investment decreases around 19 percent of fiscal consolidations. The presence of a flexible FR (the 2004 National FR) at national level neutralizes the drop in public investment in times of fiscal consolidation. However, the presence of a rigid FR (the 2001 National FR) at the national level does not help to protect public investment during fiscal consolidations. At the provincial level, mixed results are obtained. San Luis's FR, the most relevant one since it remained unchanged during the whole analyzed period, does not protect public investment during fiscal consolidations. Large heterogeneity is observed among the other provincial fiscal rules. Those for Salta, and Río Negro seem to protect public investment, while those for Catamarca and Chaco do not. In the case of Salta's FR, the provincial result still holds when its FR is combined with the national one.³²

³⁰ The new FR dummy variable has 16 categories which identify: i) the 2004 National FR; ii) the 2000 National FR, iii) the San Luis FR; iv) to ix) the Provincial FRs for Catamarca, Chaco, Misiones, Río Negro, Salta and Tierra del Fuego; x) to xv) the Mixed FR for Catamarca, Chaco, Salta, San Juan, Tierra del Fuego, and Tucuman; and finally, xvi) the No Rule category. In the case of Mixed FRs, we identify each as a single rule during the entire period under analysis (that is, by not splitting it depending on the two different NFR's).

³¹ The regression is reported in Table A.2., Column 2. The same comment on potential endogeneity concerns applies to these estimates, where both the national and provincial fiscal rules are considered (see Section 5.4). Here, the implementation of, for example, an instrumental variables strategy becomes even more difficult due to the need to instrument not only the national rule but also each provincial rule.

³² In this case we are testing the de jure definition of FR. Even though we used the available controls (especially discretionary transfers from the central government), there may be some confounding variables such as institutions.

Figure 13. Effect of National and Provincial Fiscal Rules on Public Investment Growth Rate during Fiscal Consolidations in Argentina



Source: Authors' compilation based on MECON data.

Note: Marginal effects with 90 percent confidence interval (dashed line).

6. Conclusion and Policy Implications

In this paper we analyze the implementation of fiscal rules in Argentina, a country that experienced an increase of about 15 percentage points in the expenditures-to-GDP ratio between 1993 and 2017 and suffered deterioration in its fiscal solvency that led to several episodes of debt default.

During the analyzed period there were several attempts to establish a FR at the national level, but the Law was only binding in the period 2004-2009. We reviewed the context when the FRs were approved and we found that the environment (e.g., international context, domestic fiscal position, political support, etc.) for the FR implementation matters. The 2004 FR was approved when the economy was growing, fiscal accounts were solid, and the government had a program with the IMF that included the approval of a fiscal responsibility law as a conditionality.

Thus, in 2004 Argentina moved towards an investment friendly FR, with ceilings imposed on current primary expenditures. However, between 2009 and 2016 expenditures that could be excluded from the FR's target increased and Argentina's FR was de facto suspended.

We simulate what would have been the evolution of the fiscal accounts had Argentina complied with the rules, and we find that the government could have saved substantial amounts

in a countercyclical fund even after reducing highly distorting taxes at the federal and provincial levels and securing a high level of capital expenditure as a share of GDP. Argentina's fiscal problems were a "political choice" that followed the decision to expand current primary government outlays by more than 10 percent of GDP.

We also explore the link between flexible FRs and public investment behavior during fiscal consolidations in Argentina at the provincial level. We find that a flexible FR helps to mitigate the negative effects of fiscal consolidations on public provincial investment, a result similar to that of Ardanaz et al. (2021) at the country level. This finding is robust to several specifications.

These analyses suggest that a FR is important to protect public investment. However, it will need to wait until the country improves its fiscal accounts, as previous attempts show that rules introduced during crises or fiscally overly restricted periods have always failed.

In regard to design, we think that both the Federal and provincial governments that adhere to the FR have to face a limit on the growth rate of current primary expenditures that cannot exceed inflation plus population growth (approximately 1 percent a year) given the relatively large size of the government. The rule could be complemented with a ceiling on public employment growth (not higher than population growth) due to the heavy burden that salaries and pensions impose on public accounts. This proposal is in the spirit of the 2017 Fiscal Agreement that was suspended at the end of 2019 and in that of the 2018 FR that is currently de jure in force.

To encourage the participation of all provinces, a "carrot-and-stick" process may be included in the law. One possibility is to create an investment fund with financing provided by the Federal government and multilateral agencies that can only be spent in the provinces that accepted the restrictions of the FR. Payments due to works in provinces not complying with the rule should go through a process of being firstly delayed and ultimately curtailed or interrupted. The use of the resources should be subject to strict social cost-benefit analysis, and the evaluation, control and auditing of the fund be the responsibility of the Federal Fiscal Responsibility Council.

References

- Alesina, A., and S. Ardagna. 2013. “The Design of Fiscal Adjustments.” *Tax Policy and the Economy* 27(1): 19 - 68
- Ardanaz, M., and A. Izquierdo. 2017. “Current Expenditure Upswings in Good Times and Capital Expenditure Downswings in Bad Times? New Evidence from Developing Countries.” Working Paper IDB-WP-838. Washington, DC, United States: Inter-American Development Bank.
- Ardanaz, M. et al. 2021. “Growth-Friendly Fiscal Rules? Safeguarding Public Investment from Budget Cuts through Fiscal Rule Design.” *Journal of International Money and Finance* 111(C).
- Argentina National Congress. 2017. Journal of the House of Representatives. Extraordinary Session – Meeting 26, Period 135. Available [here](#).
- . 2015. Ordinary Session - Meeting 10, Period 133. Available [here](#).
- . 2014. Ordinary Session - Meeting 18, Period 132. Available [here](#).
- . 2013. Ordinary Session - Meeting 16, Period 131. Available [here](#).
- . 2012. Ordinary Session - Meeting 19, Period 130. Available [here](#).
- . 2011. Ordinary Session - Meeting 16, Period 129. Available [here](#).
- . 2009. Ordinary Session - Meeting 14, Period 127. Available [here](#).
- . 2004. Ordinary Session - Meeting 16, Period 122. Available [here](#).
- . 1999. Ordinary Session - Meeting 17, Period 117
- Artana, D. et al. 2012. “Subnational Revenue Mobilization in Latin America and Caribbean Countries. The case of Argentina.” Working Paper IDB-WP-297. Washington, DC, United States: Inter-American Development Bank.
- Braun, M., and N. Gadano. 2007. “¿Para Qué Sirven las Reglas Fiscales? Un Análisis Crítico de la Experiencia Argentina.” *Revista de la CEPAL* 91: 53-65.
- Caceres, C., and M. Ruiz-Arranz. 2010. “What Fiscal Rule Would Work Best for the UK?” IMF Selected Issues Paper 10/337. Washington, DC, United States: International Monetary Fund.
- Cavallo, E., and A. Powell, coordinators. 2019. “Building Opportunities for Growth in a Challenging World.” 2019 Latin American and Caribbean Macroeconomic Report. Washington, DC, United States: Inter-American Development Bank.

- Cetrangolo, O. , J.P. Jiménez, F. Devoto and D. Vega. 2002. “Las Finanzas Públicas Provinciales: Situación Actual y Perspectivas.” Serie Estudios y Perspectivas 12. Santiago, Chile: Comisión Económica para América Latina y el Caribe (CEPAL).
- David, A., and N. Novta. 2016. “A Balancing Act: Reform Options for Paraguay’s Fiscal Responsibility Law.” IMF Working Paper 16/226. Washington, DC, United States: International Monetary Fund.
- Fundación de Investigaciones Económicas Latinoamericanas (FIEL). 2003a. *Instituciones Fiscales para la Argentina*. Buenos Aires, Argentina: Konrad Adenauer Stiftung and FIEL. Available [here](#)
- . 2003b. *El Ambiente de Negocios en las Provincias Argentinas*. Buenos Aires, Argentina: FIEL. Available [here](#)
- Gadano, N. 2003. “Rompiendo las Reglas: Argentina y la Ley de Responsabilidad Fiscal.” *Desarrollo Económico* 43: 231-263.
- IMF. 2009. “Fiscal Rules—Anchoring Expectations for Sustainable Public Finances.” IMF Policy Paper. Washington, DC, United States: International Monetary Fund. Available [here](#)
- IMF. 2017. “Fiscal Rules Dataset: 1985–2015.” FAD. Washington, DC, United States: International Monetary Fund, Fiscal Affairs Department. Available [here](#)
- Lledó, V., S. Yoon, X. Fang, S.Mbaye and Y. Kim. 2017. “Fiscal Rules at a Glance.” Background paper. Washington, DC, United States: IMF. Available [here](#)
- Makon, M. 2004. “Fondo Anticíclico: Sustentabilidad para Hoy y Mañana.” *La Nación*, May 30, 2004. Buenos Aires.
- Melamud, A. 2010. “Reglas Fiscales en Argentina: El Caso de la Ley de Responsabilidad Fiscal y los Programas de Asistencia Financiera.” Serie Gestión Pública N°71. Santiago, Chile: Comisión Económica para América Latina y el Caribe (CEPAL). Available [here](#).
- Melamud, A. y G. Rozenwurcel. 2018. “Reglas Fiscales para el Crecimiento y la Equidad: Una Contribución para el Caso Argentino.” Buenos Aires, Argentina: Anales Asociación Argentina de Economía Política.
- Munoz, E., and E. Olaberria. 2019. “Are Budget Rigidities a Source of Fiscal Distress and a Constraint for Fiscal Consolidation?” Policy Research Working Paper 8956. Washington, DC, United States: World Bank.

- Izquierdo, A., R. Lama, J.P. Medina, J. Puig, D. Riera-Crichton, G. Vuletin and C. Végh. 2019. “Is the Public Investment Multiplier Higher in Developing countries? An Empirical Exploration.” NBER Working Paper 26478. Cambridge, United States: National Bureau of Economic Research.
- Puig, J. 2014. “Multiplicador del Gasto Público en Argentina.” *Económica* 60: 188-210. Available [here](#).
- Riera-Crichton, D., C. Végh and G. Vuletin. 2016. “Tax Multipliers: Pitfalls in Measurement and Identification.” *Journal of Monetary Economics* 79(C): 30-48.
- Servén, L. 2007. “Fiscal Rules, Public Investment, and Growth.” Policy Research Working Paper 4382. Washington, DC, United States: World Bank.
- Uña, G., and N. Bertello, 2004. “Reglas Fiscales en Argentina: Experiencias Recientes y Propuestas para Mejorar Su Impacto en el Nivel Provincial.” Buenos Aires, Argentina: Fundación Konrad Adenauer Argentina.

Government Sources

Federal and provincial legislation available [here](#) and at provincial government websites. FFRC, <http://www.responsabilidadfiscal.gob.ar/>

Appendix 1. Fiscal Rules in Argentina

NATIONAL FISCAL LAWS

- ***Law 25.152/99. Fiscal Convertibility Law***

This law introduced two restrictions:

- **Expenditure rule:** Primary expenditure cannot grow more than nominal GDP or at most stay constant in periods of negative nominal GDP growth.
- **Balanced-Budget Rule:** Progressive reduction of the deficit from the 1999 figure. Equilibrium required from 2003 on.

It also included the implementation of the Anticyclical Fiscal Fund (FAF).

The Federal Fiscal Responsibility Council (FFRC) was created in 2000 to oversee the application of the law and to monitor implementation of the rules; it was empowered to impose penalties for non-compliance that ranged from public disclosure of any breaches to the partial withholding of budgetary transfers from the Federal government other than revenue-sharing resources (IMF, 2017).

- ***Law 25.453/01. Modification of the Financial Administration Law. Zero Deficit Law***

Balanced-Budget Rule with a target of zero deficit.

The law was declared unconstitutional by the Supreme Court and repealed by the 2003 Budget Law.

- ***Law 25.917/04. Fiscal Responsibility Law and Decree 1731/2004***

The law introduced several restrictions for the Federal government and for the provinces that adhered to it.

- **Expenditure Rule** (art. 10)
 - Primary expenditure (with some exclusions) cannot grow more than nominal GDP or at most stay constant in periods of negative nominal GDP growth.
 - If the debt rule is complied with or the nominal increase in resources is greater than nominal GDP growth, this rule applies only to current primary expenditure.

- Sales of fixed assets and debt cannot finance current expenditures or generate automatic increases for the following exercise, except for restructuring debt in more favorable conditions, financing from IFIs, or financing public works and social purposes.

- **Balanced-Budget Rule** (art. 19)

- National government and subnational jurisdictions should maintain a balanced budget, measured as the difference between current and capital income and expenditures on an accrual basis, net of those financed with IFI financed projects and capital expenditures destined to basic social and economic infrastructure.³³

- **Debt rule** (art. 20)

- Ratio of debt services to net current income should be below 15 percent.

- **Enforcement and escape clauses**

- Jurisdictions with an indebtedness indicator over 15 percent should run a primary surplus to converge to the limit and cannot access new debt—unless it is refinanced in better conditions or by IFIs or a national program, with a financial program guaranteeing services.
- Constitution of anti-cyclical fiscal funds
- Subnational government debt and guarantees operations must be authorized by the Finance Ministry.

- ***Law 26.530/09 (and amendments)***³⁴

Softens the expenditure rule and eliminates the debt rule from 2009 until 2016. Almost any expenditure could be considered deductible.

- ***Law 27341. Amendments to the FR for 2017***

- **Expenditure Rule**

- Nominal growth of current primary public expenditure below nominal GDP growth.

- **Balanced-Budget Rule**

- Jurisdictions with primary deficit must adopt measures convergent to a balanced budget.

³³ Includes expenditures to fulfill with educational financing requirements by national law.

³⁴Decree 2054/10 and Budget Laws 26728/11 (art. 61), 26.784/12 (art. 49), 26.895/13 (art. 66), Law 27.008/14 (art. 52), Law 27198/15 (art. 54).

- 10 percent reduction of deficit (percent of GDP).³⁵
- **Enforcement and escape clauses**
 - Jurisdictions with financial surplus can borrow to finance infrastructure works with no authorization, as long as there is no reversion to deficit.
 - Jurisdictions complying with the expenditure rule and the budget balance rule can borrow to finance their deficits.
 - Exceptions from articles 12 (sales of fixed assets), 21 first paragraph (debt rule), 15 last paragraph and 24 from law 25,917 and articles 2 and 3 from law 25,152.
- *Law 27.428/18. Modifies Law 25.917*
- **Expenditure Rule**
 - For provinces that adhered to the Law: Nominal growth of current primary public expenditure below annual inflation (National CPI, INDEC). Current primary expenditures exclude expenses financed by IFIs, transfers to local governments and transfers from the Federal government earmarked to priority expenditures defined by the Federal government. The provinces with fiscal surpluses are allowed to exclude investments in education, health and police.
 - For the Federal Government the rule applies to primary current expenditures excluding increases from the automatic indexation of pensions.
 - If nominal GDP growth is negative the primary expenditure is not forced to decline.
 - Provincial public employment cannot grow more than population, except provinces with surplus that can increase employment in social services.
 - Sales of assets can only be used for public investment.
 - Six months before the end of the governor mandate there can be no permanent increases in primary expenditures.

³⁵ For the National Government, the 10 percent decrease is computed net of the funds lost from the Nation-Provinces agreement of 2016.

- **Debt rule**
 - Provincial Debt Service has to be lower than 15 percent of current revenues (net of transfers to local governments).
- **Enforcement and Escape clauses.** The penalties for non-compliance are relatively lax.
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PROVINCIAL FISCAL LAWS

- **Córdoba.** Balanced budget rule and limits on current expenditure and debt growth.
- **Chaco.** Annual reduction of budget deficit until fiscal balance is reached.
- **Río Negro.** Primary surplus target and later global balance target. Provincial tax revenues had to be at least 6 percent of GDP.
- **Mendoza.** Balanced-budget target.
- **San Juan.** Balanced-budget target. Public debt ceiling and limit on wage expenditures as a share of revenues.
- **Misiones.** Balanced-budget target, debt ceiling and expenditure growth rule.
- **Formosa.** Balanced budget target, debt and debt growth ceilings, and primary expenditure growth rule.
- **Tucumán.** Balanced budget, current expenditures growth ceiling and limit on wage expenditures as a share of revenues.
- **Salta.** Balanced budget rule, debt ceiling and limits on expenditure and debt growth. Also limit on wage expenditures as a share of revenues.
- **Catamarca.** Budget deficit target.
- **San Luis.** Debt ceiling and expenditure growth ceiling.
- **Tierra del Fuego.** Balanced-budget rule.

Appendix 2. List of interviews with fiscal experts

Damian Bonari. Former Ministry of Economy (2019) and Undersecretary of Policy and Economic Coordination (vice-ministry, 2015-2019), Buenos Aires Province; Director of Analysis of Public Expenditure and Social Programs, Ministry of Economy (2000-2012).

Paulino Caballero. Former Undersecretary of Relations with the Provinces, Ministry of the Interior (2015-2019).

Oscar Cetrangolo. Public Finances Professor, University of Buenos Aires. Former Undersecretary of Relations with the Provinces, Ministry of Economy (1999-2001).

Patricia Farah. Coordinator of the CFFR (since 2005).

Osvaldo Giordano. Ministry of Finance, Cordoba Province. Former Secretary of Public Revenues and of Social Security, Cordoba Province. Former Secretary of Employment, National Ministry of Labor.

Juan Sanguinetti. Former Undersecretary of Finances, Buenos Aires Province. Former Director of Relations with Provinces (Ministry of Economy).

Appendix 3. Quantitative Approach

Table A.1. Descriptive Statistics

Variable	mean	sd	p10	p90	N	min	max
Growth rate of public investment	3.0%	39.4%	-44.0%	50.7%	624	-167.4%	146.4%
Growth rate of population	1.5%	0.7%	0.9%	2.4%	624	-0.7%	4.3%
Growth rate of revenues	4.2%	10.5%	-6.9%	17.6%	624	-55.6%	35.6%
Growth rate of public investment to total revenues ratio	-0.1%	4.2%	-4.9%	4.8%	624	-14.4%	22.5%
Growth rate of public investment to total spending ratio	-0.1%	3.7%	-4.2%	4.0%	624	-14.9%	19.9%
Fiscal Consolidation	45.5%	49.8%	0.0%	100.0%	648	0.0%	100.0%
Debt to total revenues	66.5%	64.9%	11.2%	148.0%	552	0.6%	462.7%
Growth rate of Discretionary Transf	21.0%	52.5%	-34.6%	81.1%	614	-292.9%	250.9%
Growth rate of Capital Discretionary Transf	21.0%	104.0%	-79.3%	124.6%	527	-471.2%	459.3%
Growth rate of Current Discretionary Transf	19.3%	57.1%	-39.6%	81.5%	614	-292.3%	283.7%
Growth rate of Automatic Transf	17.5%	24.4%	-3.0%	32.5%	618	-221.7%	301.9%
Growth rate of Revenue Sharing Syst. Transf	18.5%	26.9%	-9.1%	41.1%	617	-201.4%	270.2%
Growth rate of other Transf	12.0%	32.8%	-7.4%	35.2%	618	-257.6%	379.3%

Source: Authors' compilation based on MECON and INDEC data.

Note: yoy% variation of variables in real terms.

Table A. 2. Panel Regression of Figures 9 and 10 in the Main Text

	Growth rate of public investment	
	[1]	[2]
Fiscal Consolidation	-0.119** (0.0562)	-0.187*** (0.0654)
FR compliance (continuous def.)	1.325 (0.850)	
Fiscal Consolidation*FR compliance (continuous def.)	-2.866** (1.347)	
FR de facto (CE ceiling)		
Fiscal Consolidation*FR de facto (CE ceilings)		
Growth rate of population	-0.639 (2.013)	
Growth rate of revenues (t-1)	-0.135 (0.380)	
FR N 2004		0.0222 (0.0311)
FR N 2001		0.186 (0.157)
FR P San Luis		0.119*** (0.0235)
FR P Catamarca		0.00400 (0.203)
FR P Chaco		0.250 (0.206)
FR P Misiones		0.199 (0.167)
FR P Rio Negro		-0.130 (0.163)
FR P Salta		0.251 (0.168)
FR P Tierra del Fuego		-0.754*** (0.145)
FR NP Catamarca		0.0472 (0.0682)
FR NP Chaco		-6.22e-05 (0.0235)
FR NP Salta		-0.0426 (0.0264)
FR NP San Juan		0.137*** (0.0279)
FR NP Tierra del fuego		0.235*** (0.0354)
FR NP Tucuman		0.0371 (0.0370)
Fiscal Consolidation * FR N 2004		0.212** (0.0865)
Fiscal Consolidation * FR N 2001		-0.209 (0.183)
Fiscal Consolidation * FR P San Luis		-0.0132 (0.0569)
Fiscal Consolidation * FR P Catamarca		-0.240 (0.258)
Fiscal Consolidation * FR P Chaco		-0.293 (0.245)
Fiscal Consolidation *FR P Misiones		0.0663 (0.183)
Fiscal Consolidation *FR P Rio Negro		0.479** (0.235)
Fiscal Consolidation *FR P Salta		0.459 (0.282)
Fiscal Consolidation * FR NP Chaco		-0.207** (0.0966)
Fiscal Consolidation *FR NP Salta		0.237** (0.112)
Fiscal Consolidation *FR NP San Juan		-0.173** (0.0831)
Fiscal Consolidation *FR NP Tierra del fuego		0.0788 (0.0712)
Observations	363	507
Number of prov	15	24
Random Effects	Yes	Yes
Controls	Yes	Yes

Source: Own elaboration based on MECON. Note: robust cluster standard errors in parenthesis.
Significance level * p < 0:10, ** p < 0:05, *** p < 0:01, respectively. Intercepts and year dummies are included but not reported.