PONTIFICIA UNIVERSIDAD CATÓLICA DEL ECUADOR

FACULTAD DE ECONOMÍA

Disertación previa a la obtención del título de Economista

Political budget cycles in Latin America

Sara Maí Suárez Guayasamín

maisugu@hotmail.com

Director: Nicolás Acosta

hnacosta@puce.edu.ec

Quito, agosto de 2022

Abstract

This paper examines the relationship between elections and fiscal policy in Latin America, 2000-2020. We find evidence of a deterioration of the fiscal balance and an increase in government expenditure in election years, confirming the existence of political budget cycles. Our GMM estimation suggests that government global fiscal deficit increases by 0.6% of GDP, government primary fiscal deficit by 0.8% of GDP, and government expenditure increases by 0.65% of GDP in election years. Additionally, these political budget cycles are significantly larger in countries with more corruption than those with lower corruption, based on the Corruption Perceptions Index published by Transparency International. The difference might be explained by institutional factors; in this case, in countries with higher corruption there are greater possible rents for politicians, so there is a bigger incentive to manipulate the fiscal tools before elections to maintain power.

Keywords: *political budget cycles, elections, public choice, institutions*

1. Introduction

Since Nordhaus (1975), the number of studies about leader's behavior during elections has been large and increasing. Specifically, it is frequently asserted that fiscal policy is more expansionary during election years. Incumbents' behavior during that period is an important concern in political economics, since they may distort policy-making to serve their interests (Mandon and Cazals, 2018). According to López (2016), the opportunity for leaders to hold in office depends on the economic and political conditions during the election period, which is the consequence of the actions of the previous government. This has led to extensive studies around the existence of Political Budget Cycles (PBCs, hereafter), which is the possibility of a macroeconomic cycle provoked by the political cycle. The existence of PBCs is an important factor in explaining how opportunistic incumbents might manage economic policy to induce economic expansions before elections (Brender and Drazen, 2005).

PBCs might prove that political actors act to please the electorate, and to do it, policies concentrate more on obtaining votes than on economic efficiency (López, 2016).

Therefore, social welfare is not the government's objective, but only a means to maximize its utility. Consequently, fiscal tools seem to be a way of manipulating the economy to influence the election results. Governments will choose policies that can capture as many votes as possible. Expansionary fiscal policies may cause significant wealth transfers, which contribute to gain votes. These wealth transfers can be public investment projects that allow more employment and opportunities, reduction of taxes, and increases in cash transfers to households (Schuknecht, 2000). They might be implemented through expenditure or revenue, and, in either case, deterioration in the fiscal balance before elections is expected.

According to Mandon and Cazals (2008), PBCs are likely to have adverse effects on economic growth and stability, since they are similar to shocks affecting national budgets. Additionally, public accounts that are manipulated because of elections reflect the imperfections of institutions and democracy (Mandon and Cazals, 2008).

The motivation behind the incumbent's decisions might be explained through the public choice theory, which translates the hypothesis and methodologies from economics to the explanation and analysis of social phenomena in the political sciences (Musgrave, 1973). In other words, it considers the individual studied in microeconomics equal to the politicians in public sectors, in motivations and behavior. Public choice theory, therefore, is based on the assumption of rationality. Rationality considers individuals capable of calculating and choosing results that determine their behavior, and seeking to maximize their utility, rational human beings are faced with a basic motivation of seeking their interest and take decisions coherently to achieve it (López, 2016).

On the other hand, politicians have to consider the behavior and motivations of the electorate. The voting decision depends in part on the voter's rationality, preferences, and access to information. According to Wolfers (2002), if voters have complete rationality, they should differentiate signals from noise, that is, the indicators that show the real capacities of the politicians from the external factors that can be attributed erroneously. In reality, many voters choose governments for the economic fluctuations that are not the result of their actions. Nevertheless, the voting decision means taking into account the relative costs and benefits of obtaining and processing information. Rationality, therefore,

depends if voters use efficiently the information available to determine the government's competence.

Wolfers (2002) suggests a first case, where voters interpret good economic results as evidence of the politicians' competence, but they do not differentiate signals from noise. In this scenario, politicians are encouraged to increment government expenditure before elections to convince the population that is a result of their good competences. Therefore, if there are more voters that do not distinguish pre-electoral manipulation (the increase of expenditure before an election), incumbents have a higher return to boost expenditure before an election. (Shi and Svensson, 2006). On the contrary, voters that do differentiate if the good results are from the government's competence or manipulation of government expenditure previous to elections will penalize them by not voting for the party or person in power. Either case depends on the personal preferences of voters, and especially, the availability and interest of obtaining information, taking into account the existent cost of access to information.

The incumbent's incentives depend on the politico-institutional environment. Specifically, "the more private benefits politicians gain when in power (i.e. higher rents of remaining in power), the stronger are their incentives to influence the voter's perceptions prior to an election" (Shi and Svensson, 2006). Specifically, there is a stronger incentive for expansionary policies before elections. According to Alesina and Tabellini (2008), the lack of information and asymmetric information are important factors because voters observe, to a certain extent, the state of the economy, but not the rents that incumbents are taking as their own. Voters face corrupt governments that want to appropriate part of the revenue for unproductive consumption or to pay favors to interest groups (political rent).

The politician's capacity to try to manipulate the election results through fiscal policy and the electorate's voting decision is subject to political, economic, or legal restrictions. The institutions of each country depend on the political power of the groups and persons that use it for their benefit. The political institutions determine the limits and incentives for other key actors in the political sphere, and these determine the distribution of political power, which affects economic institutions (Acemoglu et al., 2015). Therefore,

strengthening political institutions will affect positively economic institutions and the general state of the economy.

The evidence is not robust enough to conclude that political budget cycles are a universal phenomenon; nevertheless, studies do evidence their existence in less developed countries, new or weak democracies, and parliamentary systems. Streb and Lema (2009) find evidence that cycles are statistically significant only in Latin America (as opposed to OECD countries). Barberia and Avelino (2011) also find evidence that confirm that during election years, there is an increase in the fiscal deficit in Latin American countries, driven by an increase in government expenditure in the years 1973 to 2008.

Acemoglu et al. (2013) analyze the surge of populism in Latin America in more recent years, the authors explain that the cause is the unproportionate influence from the political elite, and, consequently, many decisions and policies benefit this elite, harming the sector of the population with lower socioeconomic levels. A form of populism, according to Streb and Lema (2009) is to increase the budget deficit in electoral years, without taking into account future consequences.

This paper focus on identifying the existence of PBCs in Latin America in the period 2000-2020, for this, it assembles a panel data set consisting of 18 countries. We find evidence that political budget cycles do exist. On average, the government global fiscal deficit increases by 0.6% of GDP, the government primary fiscal deficit by 0.8% of GDP, and government expenditure increases by 0.7% of GDP in election years. Government revenues did not present significant results. We also found evidence that there is a difference between countries with high or low corruption indexes, which is an institutional indicator: countries with high corruption indexes have stronger PBCs and a greater government expenditure increase.

The rest of the paper is structured as follows. Section 2 presents previous studies and results on PBCs. Section 3 presents the dataset and econometric specification. Section 4 presents the results from the model, the existence of PBCs in Latin America, and their difference in magnitude depending on the corruption index. In Section 5 we identify the different institutional factors that can explain the existence of PBCs and possible future investigations. Finally, Section 6 concludes.

2. Literature Review

The literature has been increasingly focused on political budget cycles, instead of political business cycles; Mandon and Cazals suggest that cycles are "more likely to occur for instruments such as fiscal policy, rather than for outcomes of economic policy, such as unemployment, growth, or inflation" (2018). Furthermore, there is the fundamental assumption that voters choose leaders based on economic variables and, consequently, the "degree, nature and timing of economic policies influence citizens' decision at the ballot box" (Barberia and Avelino, 2011).

Although PBCs have been extensively studied, their appearance is heterogeneous and conditional, they have been studied depending on different factors: the level of development, the quality of institutions, the features of the democracy, and constitutional characteristics (Mandon and Cazals, 2018). Some results indicate that PBCs appear in a greater magnitude in developing countries (Shi and Svensson, 2006, Schuknecth, 2000), low-level democratic countries (Gonzales, 2002), and in democracies recently established (Brender and Drazen, 2005). An explanation for this might be that voters are usually less informed and experienced, and consequently, manipulation from the government is expected to be more effective.

Schuknecth (2000), studied 24 developing countries for the period 1973-1992 and concludes that there is an evident increase in public expenditure in pre-electoral periods, and can explain the increase in fiscal deficit, which is of about 0.7% of GDP. Shi and Svensson (2006), on the other hand, through a panel data set of 85 countries over 21 years (1975 – 1995) found that on average, government fiscal deficit increases by almost 1% of GDP in election years. Moreover, "these political budget cycles are significantly larger, and statistically more robust, in developing than in developed countries" (Shi and Svensson, 2006). Streb and Lema (2009) compared the existence of PBCs in Latin America and OECD countries, where they found that cycles are statistically significant only in Latin America.

Mandon and Cazals (2018), through a Meta-Analysis (MRA), identified that the fiscal balance systematically deteriorates before elections, but that these conclusions should be

taken with caution, especially because of the possible exaggeration of results from researchers. They also indicate that recent studies demonstrate a decline in the magnitude of PBCs, which is a result of better estimates. However, most results indicate that the quality of political institutions is the most influential factor in the existence of PBCs.

Latin America, during the last decades, has been marked by macroeconomic fluctuations and widespread political instability. Consequently, a significant number of studies on PBCs has focused on the region[1]. Ames (1987) finds that in 17 Latin American countries, between 1947 and 1982, government expenditures increased by 6.3 % in the pre- electoral year and decreased by 7.6 % in the post-electoral year.

Other studies have focused on a subset of all Latin American countries. Mejía Acosta and Coppedge (2001) in a study of 8 Latin American countries between 1983 and 1998 found that the budget deficit during elections worsens. Barberia and Avelino (2011) find more recent results from the 18 Latin American countries in the years 1973 to 2008, confirming that there is an increase in government expenditure before elections and a deterioration of fiscal balance. However, their results show that evidence that PBCs are driven by recent democracies is less robust, and depend on the definition of a transitional democracy.

In our paper, we use data from the entire sample of eighteen Latin American countries for the period between 2000-2020 to clarify with up-to-date evidence the existence of PBCs, whether it comes from an increase in government expenditure or a decrease in government revenues and by differentiating between global fiscal balance and primary fiscal balance. Furthermore, to find evidence based on institutional factors, we classify the countries by a corruption index.

[1] We have chosen to focus on the contributions of cross-national empirical research. For studies on PBCs in specific Latin American countries, Drazen and Eslava (2010) contribute to de discussion.

3. Method

In this section, we present the model to test the effect of elections on fiscal variables, which takes de following empirical specification: ´

$$Y_{i,t} = \sum_{j=1}^{2} \gamma_j Y_{i,t-j} + \eta \mathbf{X}_{i,t} + \beta \mathrm{ELE}_{i,t} + c_i + \varepsilon_{i,t} \qquad (1)$$

We work with a dynamic panel model; the dependent variable is a function of its own lagged levels and a set of independent variables. The three measures of fiscal policy, which follow those used by Brender and Drazen (2005), are total government expenditure, total revenue collection, and the budget balance (global and primary), all as a share of GDP. **X** is a vector of control variables (logarithm of GDP per capita and growth rate as a share of GDP). The index *i* refers to the *N* observational units (country) and *t* is the year. $\mathrm{ELE}_{i,t}$ is an election dummy variable, c_i an unobserved country-specific effect, and $\varepsilon_{i,t}$ an i.i.d. error term, The control variables capture the effects of the business cycle on the budget surplus, government expenditure, and government revenue.

The existence of country-specific effects and the fact that the model uses lagged dependent variables causes the Ordinary Least Squares estimator biased. Therefore, we use Fixed-Effects (FE) estimators[2], which can eliminate the country-specific, effect, as used in Shi and Svensson (2006) and also makes the results comparable with a wider amount of papers. However, FE does not eliminate the bias caused by the lagged dependent variables. As established by Shi and Svensson (2006), the bias of the FE estimator, "depends on the length of the time series and only when it goes to infinity will the FE estimator be consistent" (2006). In our sample, the number of observations across countries is 21, which causes the FE estimator to be biased.

We avoid these problems by using the Generalized Method of Moments (GMM) estimator, developed for dynamic panel data by Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998). GMM estimator controls for unobserved country-specific effects and the bias caused by the lagged dependent variables. The model

[2] The Hausman test, which compares the results of using Fixed Effects (FE) and Random Effects (RE) estimators, rejects the null hypothesis, indicating that the correct model to use is Fixed Effects.

does not control for time effects, because it would control seasonality, and the data used is annual.

The data, except for the election year, is obtained from the World Economic Outlook (WEO) database, published by the International Monetary Fund. The data belongs to the General Government and as a share of GDP: global net lending/borrowing (BUDGETG), primary net lending/borrowing (BUDGETP), government total expenditure (EXPENDITURE), and government revenue (REVENUE). The percent change of GDP (Growth) and GDP per capita (GDPpp) data was also obtained from WEO.

The general government is conformed by the central government, state government, local government, and social security funds. The general government fiscal balance is the result of total general government revenues minus total general government expenditures. The revenues include social contributions, taxes other than social contributions, grants, and other revenues. On the other hand, expenditures include intermediate consumption, compensation of employees, subsidies, social benefits, other current expenditures (including interest spending), capital transfers, and other capital expenditures. Primary fiscal balance, unlike global fiscal balance, does not take into account the interest payments.

The key independent variable is the binary election variable: the electoral year dummy (ELECTION) which is equal to one in the election year and zero otherwise. The year of election is considered based on the rule of the semester. According to this rule, if an election was held during the first semester of year *t,* then the election year is coded as the year before, or $t - 1$, and if the election was held during the second semester of the year, the election year is coded as the same year of election (Barberia and Avelino, 2011). This is because the expansionary policies are expected to start during the fiscal year preceding the election if the ballot happens during the first semester. The electoral calendar was obtained from various sources from each country.

As mentioned, institutional factors have a great influence on the existence of PBCs. Measuring the rents of politicians is not easy, but following Shi and Svensson (2006), we will proxy for it using a corruption index published by Transparency International. Transparency International is an international non-governmental organization dedicated

to the fight against corruption and the index is built based on the degree of corruption as seen by business people and risk analysts. They define corruption as the abuse of entrusted power for private gain and thus affect economic development, exacerbates inequality, poverty, social division, and the environmental crisis. The Corruption Perception Index ranks 180 countries around the world by their perceived levels of public sector corruption, such as bribery, diversion of public funds, use of the public function for personal gain, nepotism in public administration, and capture of the state.

We rescale the original index by calculating the average world ranking from 2012 to 2020 for each country. Furthermore, we divide the countries into two groups, one group, "LOW CPI", has the average rank below the median, and "HIGH CPI" above the median. We classified as the third group in the estimations, excluding Chile, Costa Rica, and Uruguay, because the three countries have an average world CPI below 50, more than a standard deviation below the group average.

Table 1.A. provides an overview of the countries used in the sample, the number of elections that took place during the years 2000-2020, and their average rank. Our final sample consists of 18 countries and 378 observations. On average, in Latin America, the countries had 4.6 elections per country during the sample period (2000-2020), roughly one every fourth year.

Table 1.A.
Number of elections by country (2000-2020) and average CPI rank (2012-2020)

Country	Number of elections (2000-2020)	Average Corruption Index World Rank (2012-2020)
Argentina*	5	92
Bolivia	6	113
Brazil*	5	85
Chile*	4	24
Colombia*	5	93
Costa Rica*	5	44
Dominican Republic	5	124
Ecuador	6	108
El Salvador*	4	94
Guatemala	5	132
Honduras	5	134
Mexico	4	119
Nicaragua	4	143
Panama*	4	93
Paraguay	4	138
Peru*	5	93
Uruguay*	4	21
Venezuela	3	166

*Indicates a country that has CPI rank below the median, therefore, it belongs to the group Low CPI, the rest of the countries are classified as High CPI group.

Table 1.B., presents descriptive statistics of key variables. The average global fiscal balance for the period we analyze was -2.54% of GDP, which is a global deficit of fewer than 3% of GDP, with a standard deviation of 3.57. The primary fiscal balance was -0.44% of GDP with a standard deviation of 3.62. The government expenditure and revenue have an average of 25.8% and 23.2% of GDP, respectively.

Looking at the raw cross-country data, the average CPI rank differs greatly between the two subsamples (LOW CPI and HIGH CPI). The average rank in the 18 countries is 100, while the average with low CPI, is 71 and those with high CPI is 130.9.

The table presents data for Uruguay, Chile, and Costa Rica, the three countries that are excluded in the third group estimation. The global and primary fiscal deficit as a share of GDP is much lower than the other groups, and government expenditure as a share of GDP and government revenue as a share of GDP is lower too. The corruption index is also much lower, the average rank of the three countries is 30.

Table 1.B
Descriptive statistics of key variables

Variable	Sample	Mean	Std. dev.	No. obs.	No. countries
Global Fiscal balance/GDP	All	-2.56	3.57	378	18
	Low CPI	-2.56	2.91	189	9
	High CPI	-2.54	4.13	189	9
	URY,CHL,CRI	-2.04	2.00	63	3
Primary Fiscal balance/GDP	All	-0.44	3.62	378	18
	Low CPI	-0.24	2.64	189	9
	High CPI	-0.91	4.35	189	9
	URY,CHL,CRI	0.14	2.66	63	3
Government expenditure/GDP	All	25.79	7.75	378	18
	Low CPI	25.40	7.63	189	9
	High CPI	26.18	7.85	189	9
	URY,CHL,CRI	23.11	4.72	63	3
Government revenue/GDP	All	23.23	7.01	378	18
	Low CPI	22.99	6.93	189	9
	High CPI	23.47	7.10	189	9
	URY,CHL,CRI	21.07	5.54	63	3
Corruption Index	All	100	38.54	378	18
	Low CPI	71	30	189	9
	High CPI	131	17	189	9
	URY,CHL,CRI	30	10.3	63	3

In final sample all have data on general government fiscal budget balance, expenditure, revenue, elections, growth rate of GDP and GDP per capita; therefore, we have a completely balanced panel.

4. Results

We present the results for the four different dependent variables. All regressions include two lagged values of the dependent variable, two control variables (logarithm of real GDP per capita and growth rates), and an election dummy, as established in Brender and Drazen (2005).

Table 2.1 reports the findings of global fiscal balance. Columns 1 through 4 report the result of the FE estimation[3]. The negative coefficient estimate on ELECTORAL suggests a negative relation between global fiscal balance and elections. Column 1 presents the results from the full sample, which indicates that in Latin America, the global fiscal deficit as a share of GDP is 0.83 percentage points higher in election years.

This percentage is bigger for countries with a higher Corruption Index (Column 3), there is an increase as a share of GDP of 1.26 percentage points in election years, while for countries with a low Corruption Index (Column 2), the global fiscal deficit increases as a share of GDP only by 0.34 percentage points in the election years. We calculate a third group, excluding Uruguay, Costa Rica, and Chile, because their CPI is much lower than the other countries. In this fourth estimation (Column 4), the global fiscal deficit, as a share of GDP, is 0.91 percentage points higher in election years.

Columns 5 through 8 report the results for the GMM estimation[4]. Only the results for the full sample are significant[5], which confirms the existence of political budget cycles for Latin America, but in a lower dimension: during the election years, the global fiscal deficit increases by 0.58 percent of GDP.

[3] According to Lema and Streb (2009), when T (number of periods) is larger than N (number of countries), fixed effects works well. "This is because the bias in the FE estimator depends on the reciprocal of T; provided T is sufficiently large, the FE estimator of the coefficients will be consistent" (2009).
[4] For the GMM estimation, we use only the years 2004-2020 because the model requires a small T (number of periods compared to N (number of countries) ($T > N$). There are a total of 306 observations.
[5] The sample for the groups is too small (9 countries) and does not accomplish the requirements of the model.

Table 2.1
Elections and general government global fiscal budget balance

Dep. variable	Global fiscal budget balance							
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Method	FE	FE	FE	FE	GMM	GMM	GMM	GMM
Sample	Full	Low CPI	High CPI	High CPI*	Full	Low CPI	High CPI	High CPI*
ELECTORAL	-0.83**	-0.40**	-1.26*	-0.91**	-0.58**	1.29	-0.30	-1.07
	(0.30)	(0.16)	(0.56)	(0.35)	(0.25)	(4.87)	(4.51)	(1.92)
BUDGETG (-1)	0.69***	0.72***	0.69***	0.68***	0.63***	0.61**	0.70***	0.63***
	(0.05)	(0.05)	(0.07)	(0.05)	(0.08)	(0.21)	(0.16)	(0.16)
BUDGETG (-2)	-0.21***	-0.18***	-0.19***	-0.20***	-0.36***	-0.39	-0.19	-0.37**
	(0.03)	(0.04)	(0.03)	(0.03)	(0.11)	(0.22)	(0.15)	(0.13)
Growth	0.23***	0.31***	0.18***	0.22***	0.30***	0.34	0.21***	0.30***
	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)	(0.19)	(0.05)	(0.08)
LnGDPpp	-1.28***	-0.73**	-1.72***	-1.39***	-1.67***	-2.87	-3.18	-1.25
	(0.33)	(0.31)	(0.45)	(0.39)	(0.33)	(7.43)	(2.87)	(1.68)
Constant	9.00***	4.26	12.47**	9.71**				
	(2.93)	(2.87)	(3.80)	(3.34)				
Hansen test (a)					11.96	7.96	3.41	12.24
					0.61	(0.89)	(0.99)	(0.59)
Serial corr. (b)					-0.40	0.18	-0.64	-0.31
					(0.69)	(0.86)	(0.53)	(0.75)
No. countries	18	9	9	15	18	9	9	15
No. obs.	375	188	187	313	288	144	144	240
R-squared	0.60	0.75	0.57	0.59				

Notes: Full regression: $\text{BUDGETG}_{i,t} = \sum_{j=1}^{2} \gamma_j \text{BUDGETG}_{i,t-j} + \eta \mathbf{Z}_{i,t} + \beta \text{ELE}_{i,t} + c_i + \varepsilon_{i,t}$. Robust standard errors are shown in parenthesis: *** p<0.01, ** p<0.05, * p<0.1. For GMM estimates, robust standard errors are reported for the two-step covariance matrix developed by Windmeijer (2005). The instruments used in the GMM regressions are two lagged variables of the dependent variable, LnGDPpp, and Growth, ELECTORAL is instrumented by itself; the deviations were collapsed to minimize the number of instruments, as established in Roodman (2009). (a) Hansen test tests the over-identifying restrictions, and the validity of the instruments. The null hypothesis is that the instruments are not correlated with the error term. *P*-values are shown in parentheses. (d) Serial corr. is a test of the hypothesis that the error term in the regression is not serially correlated. *P*-values are shown in parentheses.

Table 2.2 reports the findings of primary fiscal balance. Primary fiscal balance, unlike global fiscal balance, does not take into account the interest payments. The primary fiscal deficit, therefore, is lower than the global fiscal deficit (Table 1.B). As in Table 2.1, columns 1 through 4 report the result of the FE estimation and 5 through 8 the GMM estimation results. The negative coefficient on ELECTORAL also suggests a negative relation between elections and primary fiscal balance. Column 1, the results for the full sample, indicate that in the election year, the primary fiscal deficit increases by 0.87 percent of GDP, a similar result tho the global fiscal deficit. The results for the group of countries with high CPI and excluding Uruguay, Chile, and Costa Rica, has also similar results. For the second column, low CPI, the result of primary fiscal deficit is higher (0.5) percentage point of GDP.

On the other hand, the results for the GMM estimation do differ. For the primary fiscal balance, the deficit increases, as a share of GDP, in election years by 0.82 percentage points, which evidences a stronger political budget cycle when the interest payments are not taken into account.

Table 2.2
Elections and general government primary fiscal budget balance

Dep. variable	Primary fiscal budget balance							
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Method	FE	FE	FE	FE	GMM	GMM	GMM	GMM
Sample	Full	Low CPI	High CPI	High CPI*	Full	Low CPI	High CPI	High CPI*
ELECTORAL	-0.87**	-0.50*	-1.24*	-0.96**	-0.82**	0.37	-1.01	0.02
	(0.30)	(0.25)	(0.55)	(0.36)	(0.32)	(0.92)	(0.92)	(1.05)
BUDGETP (-1)	0.72***	0.64***	0.76***	0.71***	0.87***	0.90***	0.88***	0.65**
	(0.04)	(0.11)	(0.05)	(0.05)	(0.06)	(0.15)	(0.24)	(0.24)
BUDGETP (-2)	-0.19***	-0.13	-0.18***	-0.18***	-0.20***	-0.21**	-0.04	-0.19**
	(0.04)	(0.12)	(0.04)	(0.04)	(0.06)	(0.07)	(0.21)	(0.07)
Growth	0.21***	0.29***	0.16***	0.20***	0.18**	0.34***	0.07	0.26*
	(0.04)	(0.05)	(0.05)	(0.04)	(0.06)	(0.07)	(0.21)	(0.12)
LnGDPpp	-1.52***	-1.16***	-1.76***	-1.56***	-1.55***	0.53	-2.18	-4.36
	(0.30)	(0.29)	(0.45)	(0.36)	(0.47)	(2.30)	(3.85)	(2.64)
Constant	12.11***	9.33***	13.68***	12.25***				
	(2.71)	(2.68)	(3.82)	(3.12)				
Hansen test (a)					16.98	5.71	3.77	10.76
					(0.26)	(0.97)	(0.99)	(0.71)
Serial corr. (b)					-0.71	-0.87	-0.75	-0.75
					(0.48)	(0.39)	(0.455)	(0.45)
No. countries	18	9	9	15	18	9	9	15
No. obs.	375	188	187	313	288	144	144	240
R-squared	0.64	0.71	0.62	0.63				

Notes: Full regression: $\text{BUDGETP}_{i,t} = \sum_{j=1}^{2} \gamma_j \text{BUDGETP}_{i,t-j} + \eta \mathbf{Z}_{i,t} + \beta \text{ELE}_{i,t} + c_i + \varepsilon_{i,t}$. See notes for Table 2.1.

Table 2.3 reports the results for expenditure. There is a positive relation between elections and expenditure, which indicates that in election years, general government expenditure increases. However, the results are only significant for the FE estimation for the full sample, and the group of countries that excludes Uruguay, Chile, and Costa Rica. As suggested, government expenditure increase during an election year is bigger in the group excluding the three countries named before, which includes countries with higher CPI.

Table 2.3
Elections and general government expenditure

Dep. variable	Government expenditure							
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Method	FE	FE	FE	FE	GMM	GMM	GMM	GMM
Sample	Full	Low CPI	High CPI	High CPI*	Full	Low CPI	High CPI	High CPI*
ELECTORAL	0.60*	0.26	0.90	0.72**	0.51	-0.38	-0.05	0.50
	(0.29)	(0.19)	(0.51)	(0.34)	(0.35)	(0.53)	(2.41)	(1.04)
EXPENDITURE (-1)	0.74***	0.84***	0.64***	0.72***	0.32**	0.26	0.25	0.28*
	(0.11)	(0.09)	(0.16)	(0.12)	(0.11)	(0.33)	(0.15)	(0.14)
EXPENDITURE (-2)	0.26***	0.14*	0.26***	0.27***	0.07	-0.10	-0.11	0.07
	(0.06)	(0.07)	(0.05)	(0.06)	(0.09)	(0.14)	(0.30)	(0.11)
Growth	-0.05	-0.17**	0.02	-0.04	-0.07	-0.33***	0.11	-0.06
	(0.05)	(0.05)	(0.04)	(0.05)	(0.12)	(0.04)	(0.19)	(0.12)
LnGDPpp	1.58***	0.83**	2.38***	1.73***	4.35***	3.01*	5.23***	4.91***
	(0.48)	(0.262)	(0.694)	(0.566)	(1.12)	(1.56)	(1.52)	(1.35)
Constant	-5.77*	-2.2	-9.44*	-6.31				
	(2.96)	(3.66)	(4.22)	(3.64)				
Hansen test (a)					16.81	3.62	7.80	13.16
					(0.27)	(0.99)	(0.90)	(0.51)
Serial corr. (b)					-1.07	-0.61	-1.16	-1.06
					(0.28)	(0.54)	(0.25)	(0.29)
No. countries	18	9	9	15	18	9	9	15
No. obs.	375	188	187	313	288	144	144	240
R-squared	0.61	0.79	0.58	0.61				

Notes: Full regression: $\text{EXPENDITURE}_{i,t} = \sum_{j=1}^{2} \gamma_j \text{EXPENDITURE}_{i,t-j} + \eta \mathbf{Z}_{i,t} + \beta \text{ELE}_{i,t} + c_i + \varepsilon_{i,t}$. See notes for Table 2.1.

Finally, Table 2.4 presents the results for the estimation of government revenue as the dependent variable. None of the results are significant. This suggests that the existence of a fiscal deficit by a reduction of tax collections during an election year is not a tool used by Latin American politicians to obtain votes.

Table 2.4
Elections and general government revenue

Dep. variable	Government revenue							
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Method	FE	FE	FE	FE	GMM	GMM	GMM	GMM
Sample	Full	Low CPI	High CPI	High CPI*	Full	Low CPI	High CPI	High CPI*
ELECTORAL	-0.17	-0.27	-0.08	-0.11	-0.15	0.79	0.78	0.50
	(0.12)	(0.15)	(0.21)	(0.14)	(0.15)	(1.85)	(1.37)	(0.71)
REVENUE (-1)	0.79***	0.76***	0.78***	0.79***	0.66***	0.81**	0.51**	0.57***
	(0.06)	(0.09)	(0.09)	(0.07)	(0.10)	(0.34)	(0.16)	(0.10)
REVENUE (-2)	-0.001	0.05	-0.01	0.004	-0.20**	-0.05	-0.17	-0.15
	(0.05)	(0.07)	(0.06)	(0.05)	(0.08)	(0.33)	(0.23)	(0.09)
Growth	0.15***	0.09**	0.20***	0.16***	0.17**	0.07	0.23*	0.17**
	(0.04)	(0.03)	(0.05)	(0.04)	(0.07)	(0.05)	(0.11)	(0.07)
LnGDPpp	0.18	0.20	0.08	0.14	1.68**	0.52	2.41	1.39
	(0.22)	(0.24)	(0.50)	(0.29)	(0.71)	(0.71)	(2.74)	(1.10)
Constant	2.98	2.48	4.41	3.31				
	(2.00)	(2.15)	(4.59)	(2.53)				
Hansen test (a)					13.33	7.20	3.50	8.75
					(0.50)	(0.93)	(0.99)	(0.85)
Serial corr. (b)					-0.65	-0.66	-0.42	-0.80
					(0.51)	(0.51)	(0.68)	(0.42)
No. countries	18	9	9	15	18	9	9	15
No. obs.	375	188	187	313	288	144	144	240
R-squared	0.75	0.75	0.76	0.76				

Notes: Full regression: $\text{REVENUE}_{i,t} = \sum_{j=1}^{2} \gamma_j \text{REVENUE}_{i,t-j} + \eta \mathbf{Z}_{i,t} + \beta \text{ELE}_{i,t} + c_i + \varepsilon_{i,t}$. See notes for Table 2.1.

Given the average global fiscal deficit in the sample (2.56% of GDP), the GMM restults suggest that, on average, the global fiscal deficit increases by 22.7% in election years. Primary fiscal deficit (the average in the sample is 0.44% of GDP), on the other hand, increases by 1.86% in election years. The difference between both measures is the inclusion of interest payments. The primary fiscal deficit (0.44 % of GDP) is much greater than the global fiscal deficit (2.56% of GDP) on average. When interest payments are taken into account, the deficit increase in election years is much larger than when they are not. Therefore, a possible explanation for this is that the debt does not change in election years, nor does the interest payments, but the deficit does increase, and it may be explained through an increase in government expenditure.

5. Discussion

The results for the relationship between elections and fiscal policies during electoral years suggest that there is a positive effect of elections on expenditure and negative effect on revenue and fiscal balance, which follows the theoretical predictions. However, we do not find statistical evidence of pre-electoral manipulation on revenue and expenditure (significant only for FE), a result similar to Mandon and Cazals (2008), but we do find statistically significant and robust manipulation of fiscal balance.

Mandon and Cazals explain these results by two findings: "(i) the fiscal balance systematically deteriorates before elections; (ii) the underlying mechanisms are not clear because the strategy of officeholders is context-dependent" (2008). According to the authors, the strategy adopted by leaders (revenue strategy, expenditure strategy or mixed strategy) depends on political issues, rents and the facility to manipulate fiscal tools (Mandon and Cazals, 2008).

Furthermore, our results show that there are systematic differences between countries with high or low corruption indexes. Countries with more corruption present a stronger deterioration of fiscal balance during election years. More corruption is related to higher rents, and higher rents are one factor that explains PBCs, according to a model created by Shi and Svensson (2006).

The authors built a model to explain that the politicians' rents of remaining in power and the share of informed voters can explain a large part of the differences in the size of policy cycles between developed and developing countries. The model concludes that the higher the politicians' rents of remaining in power, the stronger their incentives to increase spending or manipulate fiscal tools to improve the chance of re-election. On the contrary, a greater share of informed voters creates the opposite effect, more informed voters cause a smaller cycle because fewer voters can be influenced or manipulated by a pre-electoral boom.

In this paper, we focused only on the corruption index, but other studies have identified different institutional factors that affect the existence of political budget cycles. Gonzalez (2002) explains the strong emergence of PBCs in "imperfect democracies" when

compared to well-developed political systems. They analyze that there is a link between election cycles and the country's "index of democracy", which is reflected in the cost voters have when making a decision to vote, and the "index of transparency", which measures the magnitude of the economy's information asymmetry. Gonzalez concludes that it is precisely the lack of democracy that may generate greater incentives for the cycles to emerge.

Accordingly, an important question is if there are institutional factors in Uruguay, Chile, and Costa Rica that may differentiate them from other Latin American countries. Miranda (2018) analyses the three countries' democracies and explains that the three of them have the highest quality democracy in Latin America based on different reports and indexes. Some of the indexes evaluate individual safety, civic order, modern judicial system, administrative capacity, and effective fight against corruption, among others. Miranda exposes that the principal variable that explains the quality of democracy is the political party system.

For further research, we suggest an estimation of the political budget cycles specifically in Uruguay, Chile, and Costa Rica, to identify their existence and magnitude, as compared to the rest of the Latin American countries. Moreover, we also suggest the inclusion of more countries in the estimation (Caribbean countries may be an option) because for the GMM model a greater number of countries is recommended, to use for a longer period of time. Also, this study focused only on the pre-electoral year, if a broader analysis of political budget cycles in Latin America is desired, it should include what happens with fiscal manipulation the year after elections.

The effect of ideological orientation on the findings reported in this paper will be another task for further research. It would be an interesting analysis, due to the emergence of various governments with socialist views during the period of analysis.

6. Conclusions

This paper contributes to the political budget cycles literature in two main aspects. First, we provide an up-to-date empirical analysis of political budget cycles in Latin America, differentiated by global and primary fiscal balance. We find that, on average, government

global fiscal deficit increases by 0.6 percentage points as a share of GDP in election years and by 0.8 percentage points as a share of GDP in an election year.

Second, we show that the size of political budget cycles is much larger in countries with higher corruption indexes than those with lower corruption indexes. For those countries with lower corruption indexes, the global fiscal deficit increases by 0.5 percentage points, and the primary fiscal deficit increases by 0.4 percentage points, both as a share of GDP in election years. On the other hand, for those countries with high corruption index, the global fiscal deficit increased by 1.24 percentage points and the primary fiscal deficit increased by 1.26 percentage points, both as a share of GDP and in election years. There is a big difference between both results; the political business cycle in high corruption countries is more than double the one in low corruption countries.

In conclusion, the paper evidences the existence of political budget cycles, with great differences between countries in Latin America. The differences can be explained due to an institutional factor, in this case, corruption. The results confirm previous literature, that political budget cycles depend on the country's institutional factors and politicians do manipulate fiscal tools before elections. The political factor is, then, fundamental to take into account when analyzing business cycles, as well as politicians' decisions on fiscal policy.

7. References

Acemoglu, D., Egorov, G., & Sonin, K. (2013). A Political Theory of Populism*. The Quarterly Journal of Economics, 128(2), 771–805. https://doi.org/10.1093/qje/qjs077

Acemoglu, D., Johnson, S., & Robinson, J., (2015) Las instituciones como causa fundamental del crecimiento a largo plazo. En CAF (Ed.), *Economía Política del Crecimiento, Cadenas causales y mecanismos institucionales* (pp. 191-321).

Alesina, A., Campante, F. R., & Tabellini, G. (2008). Why is fiscal policy often procyclical?. Journal of the European economic association, 6(5), 1006-1036.

Arellano, M., Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. Review of Economic Studies 58, 277–297.

Arellano, M., Bover, O., 1995. Another look at the instrumental variable estimation of error components models. Journal of Econometrics 68, 29– 51.

Ames, B. (1987). The Congressional Connection: The Structure of Politics and the Distribution of Public Expenditures in Brazil's Competitive Period. *Comparative Politics*, *19*(2), 147-171.

Barberia, L. G., & Avelino, G. (2011). Do political budget cycles differ in Latin American democracies?. *Economía*, *11*(2), 101-134.

Blundell, R., Bond, S., 1998. Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics 87, 115– 143.

Brender, A., & Drazen, A. (2005). Political budget cycles in new versus established democracies. *Journal of monetary Economics*, *52*(7), 1271-1295.

Miranda, R. G. (2018). Democracia de alta calidad en América Latina. Análisis histórico comparado entre Chile, Costa Rica y Uruguay. *Política. Revista de Ciencia Política*, *56*(1), 89-106.

Gonzalez, M., 2002a.b. On democracy, transparency and economic policy: theory and evidence,Q dissertation. Princeton University.

López Sandoval, I. (2016) Elección pública y análisis institucional de la acción gubernamental. Economía Informa.

Mandon, P., & Cazals, A. (2019). Political budget cycles: Manipulation by leaders versus manipulation by researchers? Evidence from a meta-regression analysis. *Journal of Economic Surveys*, *33*(1), 274-308.

Musgrave, R. A. (1973). *Public finance in theory and practice*. McGraw-Hill Kogakusa.

Nordhaus, W. D. (1975). The political business cycle. *The review of economic studies*, *42*(2), 169-190.

Rogoff, K. (1990). Equilibrium political business cycles. Review of Economic Studies 55:1–16

Roodman, David. 2006. "How to Do xtabond2: An Introduction to 'Difference' and 'System' GMM in Stata." Working Paper 103. Washington: Center for Global Development.

Shi, M., & Svensson, J. (2006). Political budget cycles: Do they differ across countries and why?. *Journal of public economics*, *90*(8-9), 1367-1389.

Schuknecht, L. (2000). Fiscal Policy Cycles and Public Expenditure in Developing Countries. *Public Choice* **102,** 113–128.

Streb, J. M., Lema, D., & Torrens, G. (2009). Checks and balances on political budget cycles: Cross-country evidence. *Kyklos*, *62*(3), 426-447.

Wolfers, J. (2002). *Are voters rational?: Evidence from gubernatorial elections*. Stanford: Graduate School of Business, Stanford University

Windmeijer, F., 2005. A finite sample correction for the variance of linear efficient two-step GMM estimators. Journal of Econometrics 126, 25-51