



Munich Personal RePEc Archive

Electoral Budget Cycles: The case of the Argentine Provinces

Medina, Leandro and Lema, Daniel

AAEP

2004

Online at <https://mpa.ub.uni-muenchen.de/21504/>
MPRA Paper No. 21504, posted 19 Mar 2010 22:47 UTC

Electoral Budget Cycles: The case of the Argentine Provinces

Leandro Medina*
IADB and Universidad del CEMA

Daniel Lema **
INTA and Universidad del CEMA

September 2004

Abstract

This paper presents subnational evidence of electorally-motivated changes in the level of public expenditures, budgetary deficits and composition of public expenditures in Argentina. The empirical study is made using a dynamic panel data analysis (GMM) for 22 provinces during period 1985-2001. We find evidence of political cycles in policies around the election date. Results shows that deficits and public expenditures increase in election years. Evidence also suggest that expenditures shift toward more visible public investment and away from current consumption goods.

JEL Code: D72, E62

* E-mail: leandrom@iadb.org; lm02@cema.edu.ar

**E-mail: dl@cema.edu.ar

Electoral Budget Cycles: The case of the Argentine Provinces

I.- Introduction

The literature that relates policy makers' performance to the economic variables is almost started with economy itself. However, it was not until the end of the last century that policy makers' behavior, motivated by their craving for winning the elections, was formally studied as the origin of the cycles in economic variables,

Those studies were first based on adaptative expectations; that is to say, the assumption that, in future, the voter will act partly on the basis of what happened in the past, and thus, he or she can systematically be deceived. Later on, and following the advancement of economic science, rational expectations were taken as the basis. In this case, the voter is rational –taking the best possible decision on the grounds of the information at hand- and builds conjectures related to the competency (or capacity) of the politician.

In relation to what motivation an incumbent may have, there is a division between opportunist politicians and ideologist politicians (or partisans); namely, those who want to rule for the sake of power itself, and those who want to do so in order to put their political parties' policies into practice.

In Argentina, the literature has not yet analyzed the phenomenon of budget cycles in election times deeply. Meloni (2001) explores this issue by analyzing the change in provincial current expenditure and its relation with the votes obtained by the governing party. However, this is not explicitly performed within the framework of the theory of the cycle; for which reason there are still other aspects to be analyzed.

Since reelection for the office of governor is allowed in 18 out of the 23 provinces, it might seem convenient to enquire into the possibility of the existence of cycles in fiscal variables that may represent some kind of opportunist behavior on the part of the politician currently in office.

This work is aimed at empirically analyzing the evidence of cycles in fiscal deficit and in expenditure (as a percentage of the GGP¹) in the Argentine provinces for the period 1985-2001, using the elections date as the main variable explanatory of those cycles. In this case, the year of the election for governor in each province. This will be first realized within the

¹ Gross Geographic Product

framework of the theory of the cycles (Nordhaus, Rogoff) and will be later empirically implemented following Block (2002) and making an econometric estimate of dynamic panel data. Apart from the cycle over deficit and level of expenditure, we are aimed at testing the composition effect. This means observing how the portion of current expenditure and capital expenditure fluctuate within expenditure, so as to assess if this effect shows any electoral or post electoral bias.

II- The Electoral Budget Cycle

The first models that formalize the political behavior that generates cycles in economic variables in relation to the electoral calendar can be separated into two main currents. One of them, that called '*Opportunistic Political Business Cycle*' makes emphasis on the opportunistic nature of the politician. This means that they have no other preference but to hold office, for which reason they act in such a manner so as to maximize the chances of being re-elected. The pioneering work of Nordhaus (1975) is within this trend, depicting the politician as a manipulator of pre-electoral politics. Lindbeck (1976) also follows this line of research.

There is another branch of the literature, the one in '*Partisan Political Business Cycle*' that stresses the partisan nature – as an ideological aspect- of the incumbent (Hibbs 1977). In this case, the motivations to generate cycles in economic variables are originated in the ideological point of view of the politician.

Models from the first stage are particularly based on adaptative expectations. This behavior is sometimes called myopia (or irrationality) on the part of the voter since, once the politician adopts expansive policies, the voter does not remember or does not take into account those recessive policies adopted by the incumbent in the past that they are likely to repeat in the future. It is worth noting that these models are based on the presence of a negative relation between unemployment and inflation (variables of monetary policy); that is, the possibility of exploiting a '*Phillips curve*'.

Models based on rational expectations (Kydland and Prescott 1977; and Barro and Gordon 1983) started to appear in the 80s. These models assume that the voter is rational and consequently makes his or her own decisions in the best possible way and on the basis of all the information he or she bears. During the 90s -as well as in the present work-

emphasis is made on fiscal policy rather than on monetary policy as the generator of cycles. Among the papers that are representative of this period are those by Rogoff and Sibert (1988) and Rogoff (1990). Here, the opportunist politician manipulates the expenditure policy during electoral years with the sole purpose of showing that they are competent, thus increasing their chances of winning the elections.

Recently, the literature has explored not only the level effect on fiscal variables but also the so-called composition effect; that is, how expenditure components (such as consumption and investment) change during this cycle of electoral origin. Among the contributions, those of Schucknecht (2000) and Block (2002) can be referred to. Research into how institutional variables impinge or might impinge on the cycle is not less relevant. That is, how strong institutions should temper the cycle and how, on the other hand, weak institutions would make way for the opportunist politician to distort policies. This kind of study, based on the exploration of institutional variables and their effects on the level and composition of the cycle can be seen in Shi and Svensson (2002) and in Block (2002).

The present work follows the line of models called 'opportunist –rational' that, according to the definition by Alesina (Alesina, Rubini and Cohen 1997) present the following distinctive characteristics:

- (i) Short-term manipulation of instruments of fiscal or monetary policy.
- (ii) Strengthening of policies after the elections.
- (iii) Non-systematic effects on unemployment.
- (iv) Politicians struggling for re-election.

II.1.- Theoretical Framework

The conceptual scheme of the present work follows the model by Rogoff (1990) where the opportunist politician generates cycles in the economic variables while trying to show their competency, which cannot be directly observed by the voter. In this way, they are trying to increase their chances of being re-elected for their office.

One of the main issues considered for the development of these models is asymmetry in information: if the voter were able to directly observe the capacity or competency of the politician, their decision would be obvious. The fact is that if competency is not easily

observable then there is some possibility that the politician manipulates fiscal policy in such a manner that they might seem to have more competency than the one they really have, thus augmenting the chances of winning the electoral struggles.

Rogoff's model could be outlined in a simple way as follows: the politician produces public good and for that purpose, they combine two elements: On the one hand, the taxes they collect, and on the other hand, their competency. The latter can be thought of as a parameter of productivity, since capable incumbents need less resources to make more things and vice-versa.

The voters observe taxes and expenditure (which has different grades of visibility) and use that information to make inferences about the politician's capacity, which is not directly observable. Consequently, since the electors are forced to speculate, there is some likelihood q that the politician might be re-elected, and $(1-q)$ that they might not. This information is known by them, for which reason they are tempted to take political steps so as to augment their chances for re-election q .

Rogoff concludes that given the informational asymmetries regarding the politician's capacity, expenditure will be increased by them - particularly that clearly seen by the voter - so as to pretend to be the most capable politician. This in turn will increase reelection chances.

II.2.- Visible and Non-Visible Expenditures

There are some aspects of this issue which are worth noting. As it can be clearly seen, we have so far only referred to biases in expenditure towards its most clearly seen components. Literature on this matter is not absolutely defined towards one particular position.

Rogoff states that at election times, expenditure biases towards current expenditure. This means that the composition changes and increases current expenditure as a percentage of total expenditure. As stated before, it can be said that this point of view is not universally shared and that empiric evidence also appears divided.

On the one hand, Schuknecht (2000) assumes that the bias in expenditure in developing countries is towards capital goods. He states that inaugurating great public works right before the elections, and then bringing them to a halt immediately after seems to be easier

than increasing current expenditure, since the latter can entail short and long term commitments.

Following this trend, Krueger and Turán (1993) -when analyzing the electorate consolidation process in Turkey- argue that there are pre-electoral increases in both investment and infrastructure programs.

The problem about Schuknecht's study is that his empirical analysis is performed over level effect. This means that current expenditure and capital expenditure are tested as per capita GDP percentage and both are found to increase before elections. Nevertheless, the composition effect, that is, the current (or capital) expenditure as a percentage of total expenditure is not directly analyzed. Consequently, it is in fact found out that total expenditure increases before elections. However, nothing unequivocal can be stated regarding the bias of the composition effect. Similarly, the work by Krueger and Turán does not test composition effect either.

On the other hand, Block (2002) follows Rogoff's line of thought and argues that the bias in the composition effect moves towards current expenditure. However, he admits that the evidence accounting for his hypothesis becomes stronger when only the richest countries in the sample – controlling GDP per capita – are taken into account.

In the present work, the intuition by Schuknecht (2000) will be used for the bias in the composition effect; however, the methodology by Block (2002) will be used in the construction of variables (current expenditure as percentage of total expenditure) in order to test that effect. The reason why the intuition by Schuknecht is used lies in the composition of the items of current expenditure and capital expenditure, the most important category of current expenditure being expenditure on personnel which is permanent staff. Consequently, it even sounds irrational that the cycle does not have that origin since if it did, the politicians would be generating permanent commitments. On the other hand, expenditure in capital is greatly constituted by the building item which describes all the expenditures made under that category. Consequently, it can be sensed that the composition effect is likely to be biased towards the expenditure in capital.

II.3.- The Argentine Provinces

The idea that budget cycles of electoral origin can be found at sub-national levels clearly appears in the National Constitution, under sections 122 and 123.

Section 122: 'The provinces provide their own local institutions and are governed by them. They choose their governors, legislators and the rest of the provincial officers, without intervention of the Federal Government'.

Section 123: 'Each province writes its own constitution, pursuant to what is stated by Section 5, thus ensuring municipal autonomy and regulating its scope and content in the institutional, political, administrative, economic and financial orders'². The independence established by the National Constitution is an element that results sufficient for the potential existence of budget cycles of electoral origin at a provincial level.

On the other hand, if we consider that what we are looking for are opportunist incumbents in office who are trying to take steps in order to retain the power, the fact that 18 provinces allow for the re-election for Governor is of relevant importance³.

However, two exceptions have to be made. The City of Buenos Aires is excluded from the analysis since it was only in the year 1996 that the elections for Chief of Government were held. Up to that moment, the City Mayor was directly appointed by the National Executive Power. The province of Corrientes is another exception, due to the fact that it had to undergo two federal interventions during the 90s. The first one, in 1991, was due to disagreement between the provincial electors; and the one in 1999 was due to serious social disturbances. It is for these reasons that neither of the districts was taken into account for the analysis.

III.- Data

As it was previously mentioned, the object of the present work is to analyze empirically the possible presence of cycles in expenditure at sub-national level. For assessing financial result and total provincial expenditure, data from the provincial budget is used. The source of this data is the Dirección Nacional de Coordinación Fiscal con las Provincias, from the Secretaría de Hacienda del Ministerio de Economía y Producción de la Nación.

² National Constitution

³ It is also worth noting that in those provinces where re-election is not allowed, the incumbent supports any of their descendents, particularly in the case of the Bussi family in Tucumán (Meloni 2001).

Two alternative data sources are resorted to in order to make estimates for GGP (Geographic Gross Product). The first one was performed by Mirabella and Nanni⁴ from the Universidad de Tucumán who, approach the GGP (Geographic Gross Product) via household electricity consumption. The second one is the data base from the Ministry of the Interior (PROVINFO) that also makes use of data from the 'Consejo Federal de Inversiones' (CFI).

Occurrence of the cycle is particularly analyzed in the variables provincial financial result and provincial total expenditure, both as a proportion of provincial GGP. Additionally, the so-called composition effect will be analyzed; that is, what percentage of expenditure is devoted to current consumption, and what percentage is devoted to capital expenditure. In this case, it can be said that the most important item of current expenditure is expenditure in personnel, which is absolutely constituted by the permanent staff of provincial public servants. On the other hand, it can be stated that building is the most important item of expenditure in capital and it represents the expenditure during the period, whether in specific or general plans.

The period of analysis ranges from 1985 to 2001 for all the Argentine provinces, except for Corrientes and the Autonomous City of Buenos Aires (22 districts). The variables used for the estimates are as follows:

- PBG_{it} : Geographic Gross Product of the province i during the year t
Source: (a) PROVINFO and CFI (b) Mirabella and Nanni (op.Cit.)
- GT_{it} : Total Public Expenditure divided by GGP from the province i in the year t
Source: own elaboration based on MECON (Ministry of Economy)
- DEF_{it} : Fiscal Balance [Deficit (-) Surplus (+)] divided by provincial GGP i in the province i in the year t
Source: own elaboration based on MECON

⁴ Estimates of provincial GGP from the Project 'Economic Growth and Human Development' from the CIUNT, performed by María Cristina Mirabella de Sant and Franco Eugenio Nanni.

- GC_{it} : Current Expenditure divided by public total expenditure of the province i in the year t
Source: own elaboration based on MECON
- $CREC_{it}$: per capita PBG Growth rate in the province i between the year t and the $t-1$
Source: own elaboration based on MECON and INDEC
- ELE_{it} : Binary variable that assumes value 1 if in province i elections were held during the year t and 0 otherwise.
Source: own elaboration based on the Electoral Guide.
- PBC_{it} : Variable assuming value 1 if ELE_{it} is equal to 1; -1 if ELE_{it-1} is equal to 1 and 0 otherwise.
Source: own elaboration based on the Electoral Guide

All values are expressed in constant 1993 pesos deflated by the combined prices index (wholesale-consumer) from the INDEC.

A detail of the descriptive statistics of the variables is presented in the following table:

Descriptive Statistics

	Growth			
	Def/GGP	per capitaGGP	GT/GG P	GC/GT
Mean	-0.0262	-0.0119	0.2503	0.8074
Median	-0.0156	0.0011	0.2181	0.8300
Standard deviation	0.0378	0.1662	0.1558	0.0912
Minimum	-0.1879	-2.6394	0.0105	0.4453
Maximum	0.0470	0.4364	0.8687	0.9525
Observations	373	346	373	374

Source: Ministry of the Interior, CFI and Ministry of Economy and Production

	Per capita GGP Growth			
	GGP Def		GT/GGP	GC/GT
Mean	-0.0282	0.0139	0.2378	0.8074
Median	-0.0155	0.0105	0.2062	0.8300
Standard deviation	0.0573	0.0802	0.1226	0.0912
Minimum	-0.7457	-0.2878	0.0519	0.4453
Maximum	0.0579	0.3228	0.8121	0.9525
Observations	373	351	373	374

Source : Universidad Nacional de Tucumán and Ministry of Economy

IV.- Empirical Analysis

The theoretical background mentioned suggests that fiscal variables can be influenced by the occurrence of elections, thus generating budget cycles of electoral origin. A relation between a determined fiscal variable, y_{it} and the electoral cycle can be described as follows:

$$y_{i,t} = \alpha + \sum_{j=1}^k \beta_j y_{i,t-j} + \sum_{j=1}^m \gamma_j x_{j i t} + \delta_1 ELE + \eta_i + \varepsilon_{it}$$

for $i = 1..N$, $t = 1..T$, $j = 1 ..k$, where ELE is a binary variable that indicates if an election took place in province i during the year t ; x is a vector of other control variables that in our particular case include the level of Geographic Gross Product (GGP) and the growth rate of the Geographic Gross Product.

This specification represents a standard dynamic panel, where the dependent variable is function of its own lagged levels, of set of controls (x_j), of the time when elections take place and of a specific effect per province (η_i). The term ε_{it} is a random error that is assumed iid.

Assuming that the unobservable specific effects are identical per province, that the error term is not serially correlated, and that the explicative variables are strictly exogenous then it is likely to estimate this relation through ordinary least squares. However, these assumptions may not be fulfilled in the panel, particularly the assumption of equality of the unobservable effects per province. This being so, then estimates OLS are inconsistent since the dependant variable is correlated to the error term made up of $w_{i,t} = \eta_i + \varepsilon_{it}$.

It is possible to control the specific effects making use of the panel data Fixed Effects Method. However, the transformed error term will still be correlated with the lagged dependent variable. The bias will depend on T ; and provided T tends to infinite, the estimate of fixed effects of the coefficients will be consistent.

With this mind, the estimate through Generalized Method of Moments (GMM) designed for dynamic models by Arellano and Bond (1991) is taken into account for the estimates. The Arellano-Bond strategy consists of differentiating the equations so as to eliminate the specific effects and solve the inconsistency using the lagged values of the variables as instrumental variables. Assuming the error term is not serially correlated, the dependent variable lagged two periods or more constitute valid instruments for the new dependent variable in differences. Likewise, the same can be said for the control variables.

It will be assumed in our particular case that the vector from variables x_{jit} is slightly exogenous or predetermined; that is to say, it is not correlated with future realizations of the error term. The elections variable will be considered strictly exogenous.

Estimates are performed using three methods: OLS, Fixed Effects and GMM for a unbalanced panel. The GMM method seems to be preferable due to the characteristics

previously mentioned. Nevertheless, since it makes use of the lagged values of the variables as instruments, the set of observations available is smaller. For this reason and for comparative purposes, results from the three methods are reported.

The political cycle was modeled including the binary variable ELE that assumes value 1 in election years, and 0 in the rest of the years. Variable PBC (Political Budget Cycle) is also used, taking value 1 during the election year, -1 in the following year and 0 in the remaining ones. This variable imposes the restriction that expansion previous to the election is equivalent in magnitude to the posterior contraction.

Three fiscal variables will be used: ratio of provincial budget balance to PBG (DEF), ratio of total provincial expenditure to PBC (GT) and expenditure in consumption relative to total provincial expenditure (GC). Two basic controls will be included: the level of geographic gross product (GGP) and growth rate of the GGP (CREC).

V.- Results

Table 1 of the Appendix shows the results of the elections over budget deficit, using as controls the GGP and the growth of GGP per capita, according to data from the Ministry of Economy. In the estimate through OLS, variable ELE presents a negative sign as expected, although coefficient estimate is not statistically significant (prob=0.17). In the transformation “within” (column 2) the specific effects per province are eliminated; however, it is observed that the coefficient for ELE has values similar to the case of the OLS.

The results of GMM are presented in column 3. The coefficient of ELE is negative and significant, and it implies that fiscal deficit as a proportion of GGP increases almost half percent point (0.46) in electoral years. In the same column, Sargan' s test is reported, where the null hypothesis is that the instrumental variables are not correlated to the residuals and the serial correlation test, in which the null hypothesis where the errors in the equation in differences does not present serial correlation of the second order. The estimate satisfies both tests. This means that no evidence is found of the serial correlation of the first order (in levels) nor of the identification of restrictions.

In columns 4,5 and 6 the results are observed making use of the variable PBC as a regressor for the elections. In this case, the coefficients estimated by OLS and Fixed Effects (FE) are

significantly negative, showing that the level of electoral cycle –defined as the increase in deficit during the election year and the contraction of the following- it is approximately 0.7% of GGP. The result for the estimate by GMM is similar in magnitude and significance.

Table 4 shows the same estimates performed with the control variables PBG and CREG and making use of data from the Universidad Nacional de Tucumán for the assessment of Geographic Gross Product. The coefficients present the expected signs; however, they are not significant in the case of ELE, whereas significance increases for PBG even though the value differs from the previous estimates, finding a range of variation in deficit in the cycle in between 1% (OLS) and 0.3% (GMM) in GGP.

Table 2 shows the effects of the electoral cycle over total public expenditure in the provinces, measured as a proportion of GGP. For variable ELE the effect is positive and significant for all cases, with a value indicating that the rate of expenditure over GGP increases almost a point during the year of elections. Estimates with PBC as an explicative variable show similar results. The cycle near the elections is seen to have a magnitude of 0.7 percentage points approximately. Table 5 showing the results for the set of alternative data of GGP presents similar results for change in expenditure, even though significance and the value in the coefficients is smaller depending on the method of estimate and the variable being used. To summarize, it can be inferred from the estimates regarding total expenditure that there is evidence of a cycle near elections years, which increases expenditure between 0.7 and 1 percentage points of GGP.

Finally, table 3 shows the estimates performed so as to evaluate the effect of the composition in provincial expenditure. The dependent variable GC used represents the expenditure in consumption goods as a proportion of total provincial expenditure. The negative sign for the estimated coefficients of ELE and PBC indicates that current expenditure during elections times decreases, suggesting a slight bias towards capital goods expenditures. In the case of ELE the level of significance is low for OLS and FE, whereas for GMM the coefficient is significant and has a magnitude of 0.1 points percent during elections year. The case of the PBC shows similar results, even though the magnitude of the coefficient estimated by GMM shows that the decrease is in almost 0.5 percentage points. Table 6 shows the same, making use of the set of data from alternative PBG. In this case,

the results for ELE have positive sign but they are not different from zero under none of the methods of estimation, and for PBC, they have the expected sign but they are not significantly different from zero, either.

VII.- Conclusions

This paper presents evidence about the presence of budget cycles of electoral origin in 22 Argentine provinces, for the period 1985-2001. These findings are consistent with the hypothesis presented by the literature of rational and opportunist cycles that suggest there are manipulations of instruments from fiscal or monetary policy during elections, and that there is a strengthening of the policies after elections.

From the econometric estimations, it can be inferred that during the years of provincial elections, budget deficit tends to increase approximately half a point percentage of provincial GGP, according to the results obtained with variable ELE as explanatory. Likewise, using the alternative definition of PBC (variable that conditions the growth of pre-electoral deficit to a post-electoral decrease with the same magnitude) cyclical effects in the order of 0.7 percentage points of GGP can be observed.

Increase in provincial deficit can be explained both as increase in expenditure and as decreases in taxes. In our case, we will explore the first possibility observing that total expenditure tends to increase in approximately one point percentage of the GGP when the independent variable is ELE and it is near 0.7 for PBC. It can be remarked that estimates performed on the basis of alternative data of GGP, the values are relatively smaller (0.5%).

Another hypothesis of the theory of the electoral cycles (Rogoff 1990) is that during election times the composition of expenditure tends to increase in the most clearly visible components. The relevant literature makes different considerations about what the most visible components are. Whereas Rogoff (1990) and Block(2002) suggest that the latter are consumption goods (current expenditure), Schuknecht (2000) and Krueger and Turán (1993) state that this can take place in developed countries but that there are reasons to think that in developing countries, non-current expenditures are more visible. Intuition behind this argument is that the inauguration or beginning of public works (constructions, roads, bridges) can be highly visible during electoral times, but they can be stopped or postponed during post-electoral times.

Our work follows the Schuknecht (2000) approach to estimate the bias in the composition effect; but Block's methodology (2002) is used in the construction of variables (current expenditure as percentage of total expenditure) to test that effect. Certain evidence is found in favor of a bias towards non-current expenditure; particularly the effect is significant for variable PBC in the estimate through GMM, although the fall in current component is relatively low.

Finally, a dimension that could be explored is the inclusion of institutional variables in the econometric estimation, for example, effective division of powers and institutional development of the provinces. It is highly likely that further work in the identification of institutional control variables could contribute to study the quantitative effects of electoral cycles more in depth.

VII. – Appendix

Table 1: Elections and Deficit⁵

Data: Mecon

Ecuation	1	2	3	4	5	6
Estimation	OLS	FIXED EFF.	GMM	OLS	FIXED EFF.	GMM
ELE	-0.0055	-0.0044	-0.0046			
S.E.	0.0041	0.0034	0.0002			
p-value	0.1769	0.1955	0.0000			
PBC				-0.0077	-0.0068	-0.0066
S.E.				0.0023	0.0020	0.0001
p-value				0.0013	0.0008	0.0000
Sargan test			17.51			17.57
p-value			1.00			1.00
Serial Corr.			-1.00			-0.72
p-value			0.3154			0.4694
N° obs	304	304	282	304	304	282
R ² ajust.	0.41			0.43		

⁵ Note: Dependent variable DEF

Estimated Regressions:

$$DEF_{it} = \alpha + \beta_1 DEF_{it-1} + \beta_2 DEF_{it-2} + \beta_3 DEF_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 ELE + \eta_i + \varepsilon_{it}$$

$$DEF_{it} = \alpha + \beta_1 DEF_{it-1} + \beta_2 DEF_{it-2} + \beta_3 DEF_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 PBC + \eta_i + \varepsilon_{it}$$

OLS imposes the restriction $\eta_i = \eta \forall i$.

In GMM estimation variables ELE and PBC are strictly exogenous, variables CREC and PBG are predetermined. Estimations performed without constant

Sargan test is distributed as a χ^2 under the H_0 of validity of instruments.

Serial correlation test controls the second order correlation in first differences of residuals and is asymptotically distributed as $N(0,1)$ and H_0 is absence of serial correlation.

Table 2: Elecciones y Gasto Público Total /PBG⁶

Data PBG Ministerio de Economía-

Ecuation	1	2	3	4	5	6
Estimation	OLS	FIXED EFF.	GMM	OLS	FIXED EFF.	GMM
ELE	0.0112	0.0102	0.0098			
S.E.	0.0053	0.0041	0.0009			
p-value	0.0369	0.0150	0.0000			
PBC				0.008754	0.0077	0.0070
S.E.				0.003205	0.0029	0.0004
p-value				0.0067	0.0085	0.0000
Sargan test			19.77			18.68
p-value			1.00			1.00
Serial Corr.			-0.38			-0.38
p-value			0.70			0.70
N° obs	304	304	282	304	304	282
R ² ajust.	0.427321			0.946440		

⁶ Note: Dependent variable GT

Estimated Regressions:

$$GT_{it} = \alpha + \beta_1 GT_{it-1} + \beta_2 GT_{it-2} + \beta_3 GT_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 ELE + \eta_i + \varepsilon_{it}$$

$$GT_{it} = \alpha + \beta_1 GT_{it-1} + \beta_2 GT_{it-2} + \beta_3 GT_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 PBC + \eta_i + \varepsilon_{it}$$

OLS imposes the restriction $\eta_i = \eta \forall i$.

In GMM estimation variables ELE and PBC are strictly exogenous, variables CREC and PBG are predetermined. Estimations performed without constant

Sargan test is distributed as a χ^2 under the H_0 of validity of instruments.Serial correlation test controls the second order correlation in first differences of residuals and is asymptotically distributed as $N(0,1)$ and H_0 is absence of serial correlation.

Table 3: Elecciones y Composición del Gasto (Gasto Cons. /Gasto Total)⁷

Data PBG Ministerio de Economía-

Ecuation	1	2	3	4	5	6
Estimation	OLS	FIXED EFF.	GMM	OLS	FIXED EFF.	GMM
ELE	-0.0017	-0.0005	-0.0011			
S.E.	0.0068	0.0059	0.0003			
p-value	0.7988	0.9262	0.0010			
PBC				-0.0052	-0.0040	-0.0044
S.E.				0.0038	0.0036	0.0004
p-value				0.1740	0.2611	0.0000
Sargan test			16.62			19.33
p-value			1.00			1.00
Serial Corr.			0.55			1.05
p-value			0.58			0.295
N° obs	304	304	282	304	304	282
R ² ajust.	0.573651			0.575954		

⁷ Note: Dependent variable GC

Estimated Regressions:

$$GC_{it} = \alpha + \beta_1 GC_{it-1} + \beta_2 GC_{it-2} + \beta_3 GC_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 ELE + \eta_i + \varepsilon_{it}$$

$$GC_{it} = \alpha + \beta_1 GC_{it-1} + \beta_2 GC_{it-2} + \beta_3 GC_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 PBC + \eta_i + \varepsilon_{it}$$

OLS imposes the restriction $\eta_i = \eta \forall i$.

In GMM estimation variables ELE and PBC are strictly exogenous, variables CREC and PBG are predetermined. Estimations performed without constant

Sargan test is distributed as a χ^2 under the H_0 of validity of instruments.Serial correlation test controls the second order correlation in first differences of residuals and is asymptotically distributed as $N(0,1)$ and H_0 is absence of serial correlation.

Table 4. Elecciones y Déficit/PBG⁸

Data PBG Univ. Nac. de Tucumán

Ecuation	1	2	3	4	5	6
Estimation	OLS	FIXED EFF.	GMM	OLS	FIXED EFF.	GMM
ELE	-0.010690	-0.009054	-0.0002			
S.E.	0.008935	0.007991	0.0008			
p-value	0.2324	0.2581	0.813			
PBC				-0.010058	-0.008450	-0.0029
S.E.				0.005156	0.004460	0.0006
p-value				0.0520	0.0591	0.0000
Sargan test			18.16			17.25
p-value			1.00			1
Serial Corr.			0.39			1.34
p-value			0.69			0.17
N° obs	329	329	285	329	329	285
R ² ajust.	0.356735			0.365435		

⁸ Note: Dependent variable DEF

Estimated Regressions:

$$DEF_{it} = \alpha + \beta_1 DEF_{it-1} + \beta_2 DEF_{it-2} + \beta_3 DEF_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 ELE + \eta_i + \varepsilon_{it}$$

$$DEF_{it} = \alpha + \beta_1 DEF_{it-1} + \beta_2 DEF_{it-2} + \beta_3 DEF_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 PBC + \eta_i + \varepsilon_{it}$$

OLS imposes the restriction $\eta_i = \eta \forall i$.

In GMM estimation variables ELE and PBC are strictly exogenous, variables CREC and PBG are predetermined. Estimations performed without constant

Sargan test is distributed as a χ^2 under the H_0 of validity of instruments.Serial correlation test controls the second order correlation in first differences of residuals and is asymptotically distributed as $N(0,1)$ and H_0 is absence of serial correlation.

Table 5. Elecciones y Gasto Público Total /PBG⁹

Data PBG Univ. Nac. de Tucumán

Equation	1	2	3	4	5	6
Estimation	OLS	FIXED EFF.	GMM	OLS	FIXED EFF.	GMM
ELE	0.0096	0.0045	0.0050			
S.E.	0.0046	0.0033	0.0010			
p-value	0.0369	0.1789	0.0000			
PBC				0.0073	0.0051	0.0050
S.E.				0.0026	0.0019	0.0006
p-value				0.0060	0.0093	0.0000
Sargan test			21.19			20.23
p-value			1.00			1.00
Serial Corr.			0.09			0.37
p-value			0.92			0.71
N° obs						
R ² ajust.	0.895317			0.896147		

⁹ Note: Dependent variable GT

Estimated Regressions:

$$GT_{it} = \alpha + \beta_1 GT_{it-1} + \beta_2 GT_{it-2} + \beta_3 GT_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 ELE + \eta_i + \varepsilon_{it}$$

$$GT_{it} = \alpha + \beta_1 GT_{it-1} + \beta_2 GT_{it-2} + \beta_3 GT_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 PBC + \eta_i + \varepsilon_{it}$$

OLS imposes the restriction $\eta_i = \eta \forall i$.

In GMM estimation variables ELE and PBC are strictly exogenous, variables CREC and PBG are predetermined. Estimations performed without constant

Sargan test is distributed as a χ^2 under the H_0 of validity of instruments.Serial correlation test controls the second order correlation in first differences of residuals and is asymptotically distributed as $N(0,1)$ and H_0 is absence of serial correlation.

Table 6: Elecciones y Composición del Gasto (Gasto Cons. /Gasto Total)¹⁰

Data PBG Univ. Nac. de Tucumán

Ecuation	1	2	3	4	5	6
Estimation	OLS	FIXED EFF.	GMM	OLS	FIXED EFF.	GMM
ELE	0.001474	0.002165	0.0010			
S.E.	0.006912	0.006218	0.0034			
p-value	0.8313	0.7280	0.7550			
PBC				-0.003210	-0.002098	-0.0022
S.E.				0.003931	0.003764	0.0014
p-value				0.4147	0.5776	0.1190
Sargan test			20.48			20.90
p-value			1.00			1.00
Serial Corr.			0.76			0.92
p-value			0.44			0.35
N° obs						
R ² ajust.	0.587189			0.587970		

¹⁰ Note: Dependent variable GC

Estimated Regressions:

$$GC_{it} = \alpha + \beta_1 GC_{it-1} + \beta_2 GC_{it-2} + \beta_3 GC_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 ELE + \eta_i + \varepsilon_{it}$$

$$GC_{it} = \alpha + \beta_1 GC_{it-1} + \beta_2 GC_{it-2} + \beta_3 GC_{it-3} + \gamma_1 PBG + \gamma_2 CREC + \gamma_3 PBC + \eta_i + \varepsilon_{it}$$

OLS imposes the restriction $\eta_i = \eta \forall i$.

In GMM estimation variables ELE and PBC are strictly exogenous, variables CREC and PBG are predetermined. Estimations performed without constant

Sargan test is distributed as a χ^2 under the H_0 of validity of instruments.Serial correlation test controls the second order correlation in first differences of residuals and is asymptotically distributed as $N(0,1)$ and H_0 is absence of serial correlation.

VIII. - References

- Alesina A.; Roubini N. and Cohen G (1997): “Political Cycles and the Macroeconomy”; Cambridge: MIT Press.
- Arellano, M., and S. Bond (1991): “Some Tests of Specifications for Panel Data: Monte Carlo Evidence and an Application to Employment Equations”, *Review of Economic Studies*) 58:277-97.
- Block S (2002): “Elections, Electoral Competitiveness, and Political Budget Cycles in Developing Countries”; CID Working Paper N° 78.
- Hibbs, D. (1977): “Political Parties and Macroeconomic Policy.” *American Political Science Review*, 71:467-87.
- Krueger, A. and I. Turan (1993): “The Politics and Economics of Turkish Policy Reform in the 1980's.” in R.Bates and A. Krueger, eds., *Political and Economic Interactions in Economic Policy Reform: Evidence from Eight Countries*, Oxford: Basil Blackwell.
- Lindbeck, A. (1976): “Stabilization Policies in Open Economies with Endogenous Politicians.” *American Economic Review Papers and Proceedings*, p. 1-19.
- Meloni, O. (2001): “Gobernadores y elecciones: ¿Es “negocio” ser austero? Evidencia a partir de Data en Panel”; XXXVI Reunión Anual de la AAEP.
- Mirabella de Sant, M.(2002):”Diferencias de bienestar entre provincias de Argentina”;XXXVII Reunión Anual de la AAEP.
- Nordhaus, W.(1975): “The Political Business Cycle.” *Review of Economic Studies* 42:169-90.

- Rogoff, K.(1990): “Equilibrium political budget cycles”; American Economic Review; v. 80; N° 1; p. 21-36.

- Shi M. and Svensson J.(2001): “Conditional Political Business Cycles”; Working Paper; IIES Stockholm University.

- Schucknecht, L.(2000) “Fiscal Policy Cycles and Public Expenditure in Developing Countries”; Public Choice, 102 115 130.