

ECONOMIC AND POLITICO-INSTITUTIONAL VARIABLES APPLIED TO THE ANALYSIS OF SUBNATIONAL PUBLIC SPENDING IN ARGENTINA

*Ernesto Rezk**

The econometric analysis based on a fixed effect panel data model for the period 1993-2004, aimed at ascertaining whether the public spending of Argentine provinces was influenced by economic and fiscal variables and also by politico-institutional variables such as provinces' political sign, governors' possibility of reelection, structure of legislatures and provisions limiting public spending and public debt or conditioning the use of credit.

While estimated regression coefficients for fiscal effort, financial sufficiency, transfers and public debt were significantly different from 0, results fell short of being conclusive for the other variables, except for provincial political alignment with the central government, possibility of reelection and limits upon debt.

1 Introduction

According to the national constitution,¹ Argentina is a federal country with three levels of government: the national one, the provinces and the municipalities, each of which counts with fairly wide spending faculties and the power of raising their own fiscal revenues. Likewise, there is a national revenue sharing system whereby the central government transfers to the provinces and the autonomous city of Buenos Aires about the half of VAT, Income, Personal Goods and Oil Taxes' yield while, in turn, provinces transfer to municipalities a part of what they raise in terms of Property and Turnover Taxes and Stamp Duties.

The institutional framework clearly favours an interjurisdictional fiscal relation in line with what R. Bird (1996) called "federal finances", closer to a public choice-like approach in which provinces are constitutional entitled to negotiate on a par with the central government, as the 1853 Constitution and successive amendments reassure ample fiscal and spending powers to provinces and municipalities and place in provincial hands the responsibility of preserving the municipal autonomy within their jurisdictions. Nevertheless, the actual relation between the national government and the provinces – according to overwhelming statistical evidences – points in a different direction in so far as it shows that Argentina stands today as a centralized federation, in which intergovernmental fiscal

* National University of Córdoba, Argentina.

¹ By being a federal country, each of the 23 provinces and the autonomous city of Buenos Aires have their own constitutions.

relations are better depicted by an agency relationship in which the national government performs the role of the Principal and provinces that of Agents.²

In analyzing reasons for that, Rezk, Capello and Ponce (1997) pointed out the marked concentration of tax collection at the central level, which in turn reflected the effective assignment and exercise – mainly via the Revenue Sharing System³ – of fiscal faculties in the country. Suffice it in this connection to mention that the central government, provinces and municipalities at present respond for approximately 80, 16 and 4 per cent respectively of collected total fiscal revenues.

In the spending side, and owing to a process of spending decentralization dating from the nineties, provincial public spending amounts now to almost 40 per cent of all levels' consolidated public spending, being the provinces responsible for almost all Educational⁴ and Health Expenditures and for a substantial share in Housing, Welfare and Economic Expenditures. Nevertheless, and as mentioned above, the decentralizing process highly relying on conditioned transfers (earmarked funds represented in 2003 more than 35 per cent of central government's transfers to provinces) not only fell short of exhibiting a devolving feature but it did not either meet the 1994 constitutional amendment mandating that transfers of competences, services and functions to provinces would be effective only if the corresponding resource allocation,⁵ approved by the National Congress, and accepted by the provinces, occurred in due time.

Finally, the present secondary distribution of shared tax resources, whose coefficients for each province were arbitrarily set by the Law 23548, on the basis of coefficients for 1988 resulting out of diverse modifications in the existing Revenue Sharing Regime,⁶ and the attitude of provinces against deepening the use of their own tax sources, explain why national transfers (either shared revenues or earmarked funds) range between 75 and 95 per cent of most provinces' total resources.⁷ An immediate unwanted effect caused by this situation is the scarce accountability of the government level in charge of spending given that the principle of financial autonomy (upon which accountability in part rests, as the literature

² A similar situation in turn occurs between provinces and local governments within the jurisdiction.

³ The point can not be plaid down of provinces' lack of interest in using some other tax bases.

⁴ Except for the funds for national universities, which still remain as a part of the central government budget.

⁵ It must be emphasized that this mandate basically sought to guarantee that transfers of competences to provinces were accompanied by sufficient resources for the service's effective provision (in quantity and quality), which in fact did not occur when provinces were given the total responsibility of running primary and secondary schools in their jurisdictions.

⁶ It is still pending the new Revenue Sharing Regime, notwithstanding that the 1994 Constitution set 31 December 1996 as the deadline for its approval by the Congress. The Regime will have to be subject to a "convenio" law between the Congress and the provinces and it will have to guarantee, among other requirements, the automatic fund remission to provinces.

⁷ The important weight of the four richest provinces: Buenos Aires, Córdoba, Santa Fé and Mendoza, plus the autonomous city of Buenos Aires, places provinces' own resources between 40 and 50 per cent of total subnational revenues. It is worth mentioning however the total dependence from national transfers of provinces such as Formosa, La Rioja, Catamarca, Santiago del Estero and Jujuy.

stresses it) is far from being fulfilled, let alone difficulties in meeting also the principle of financial sufficiency.

Following this line of reasoning, the paper's main objective is to empirically verify, for the 23 Argentine provinces and the autonomous city of Buenos Aires, whether provincial public spending levels relate to the existing degrees of financial autonomy and sufficiency. Assuming in turn that economic and budgetary variables are also related to subnational public spending, the impact of the gross geographic product, the stock of public debt and transfers upon spending will also be assessed, the assumption being here that different reactions should be expected for the diverse categories of public expenditure.

Likewise, in acknowledging points debated in the more recent literature as to whether constitutional arrangements, or determined politico-institutional situations, affected or were neutral with respect to public spending level, the matter will be dealt with by resorting to categorical and dummy variables standing for the following hypotheses: possibility of reelection of provincial governors (and exercise of the right), provincial political sign *vis-à-vis* that of the central government, constitutional limits upon deficit spending, public debt and credit use (as opposed to the case in which these limits do not exist) and unicameral *vis-à-vis* bicameral provincial legislatures.

Results of the empirical analysis, obtained from a panel data model, are valuable not only in that they permit to explain with econometric fundamentals and solvency the mechanics of expenditure and the fiscal performance of Argentine provinces, but in clearing also the way to conclusions with strong policy implications for economic recommendations, on the basis of the combined contribution of fiscal variables of control and other variables standing for constitutional and politico-institutional constraints.

As for the structure of the paper, Section 2 presents a brief survey of recent articles related to the matter, Section 3 highlights some stylized facts of provincial spending, Section 4 develops the used econometric methodology, Section 5 shows econometric estimations with panel data and Section 6 concludes.

2 Brief survey of the recent literature

In a very interesting econometric study of 105 Spanish municipalities over 50,000 inhabitants, Bosch and Suárez-Pandiello (1995) aimed at testing a set of seven hypotheses concerning the political and financial behaviour of local governments in relation to their public spending. The model constructed assumed a "democratically-based" institutional system, political pluralism, electoral competition and authorities whose performance and activities were directed towards the fundamental objective of succeeding in being reelected.

By framing public choice and local public spending hypotheses within an analytical model Bosch and Suárez-Pandiello held that ideology was important, that

political negotiations increased spending, that per capita expenditure was higher the greater the population's participation in elections, that per capita local spending grew as local fiscal effort was enhanced, that local spending was lower when the "political colour" of local and central governments coincided and that a greater proportion of noticeable taxes yielded a lesser per capita local public spending.

In testing the validity of held assumptions, the authors found results significantly different from zero for the hypothesis that municipalities largely financed with visible individual taxes tended to spend less, whereas those local governments with greater financial liabilities (subject also to the burden of interest payments) or ruled by political parties without an absolute majority tended to spend relatively more. Unsatisfactory results were however found when the hypotheses somehow linking the level of expenditure to the municipal fiscal effort, the ideological sign, the electoral participation the political sign concordance between the local and the upper government level were tested.

Persson and Tabellini (2004) also investigated the effect of electoral rules and forms of government upon fiscal policy; more precisely, they contributed with an empirical paper whose objective was to analyze the impact of electoral rules and government forms on the size and composition of government spending; that is, to contrast fiscal outcomes under proportional and majoritarian elections as well as with presidential and parliamentary governments. The authors used information for 80 democracies⁸ for the period 1990-98, although they also reported results in a subset of 60 democracies for which data were available for a longer period.

Results obtained led the authors to conclude that presidential regimes induced smaller government sizes (lower public spending) than parliamentary democracies whereas majoritarian elections resulted in turn in smaller governments and smaller welfare programs (social spending) than in the cases of elections based on proportional representation regimes.

In an article very much related to the matter being studied in this paper, Bercoff and Nogués (2005) analyzed also the incidence of determined constitutional constraints upon the fiscal performance of governments; in particular, they assessed the possible links between a set of institutional variables and the provincial public spending in Argentina for the period 1991-2001. In highlighting the main findings in their empirical analysis, the authors concluded that while a strict budgetary design (*i.e.* legislatures were not given the faculty of raising spending levels submitted by the executive) stood as an efficacious mechanism to moderate expenditure levels, governors' possibility of reelection (contrariwise to what it would have been expected) did not show any impact upon spending. Results were statistically significant when political sign was tested: when governors and central government shared the same political sign, provinces seemed to face more effectively spending reductions; the same conclusion extended to bicameral

⁸ For the definition of democratic governments, the authors resorted to Gastil Indexes of political rights and civil liberties, varying from 1 to 7. They included countries not exceeding 5 in the average of the two indexes in the period 1990-1998.

legislatures deducing that bicameral system successfully operated checks and balances. Finally, and in relation to the impact of fiscal variables, Bercoff and Nougues found a strong negative correlation between accountability and spending levels: the higher the proportion of own resources the smaller the levels of per capita current spending (and also the proportion between current spending and the gross geographic product).

Fridrij (2006) in turn analyzed the response of the Argentine provincial public spending to control and fiscal variables in the two following periods: 1963-2001 and 1984-2001; the author also included the consideration of the impact upon spending of diverse institutional restraints made effective by constitutional amendments taking place in the periods mentioned. Concerning budget and control variables, the empirical exercise permitted Fridrij to assert that public spending positively reacted to a better economic performance (increases in gross geographic product) and to provinces' higher degree of economic opening whereas, on the other side, a growing fiscal independence and population increases tended to reduce spending, in the latter case as a result of scale economies.

With respect to institutional variables, Fridrij found firm econometric evidence that, while governors' possibility of reelection tended to increase public spending,⁹ bicameral legislatures and identical political sign for provinces and the central government worked in the other direction and favoured an expenditure reduction. Finally, the author pointed out the scarce or null statistical relevance found with respect to institutional variables standing for constitutional restraints, such as limits to debt and conditions for the use of credit by governments.

3 Stylized facts of provincial public spending

The performance of total, current and capital public spending of Argentine provinces for the period 1993-2006, as shown by Figure 1, exhibits features deserving several comments. As can be seen, lines in the graphic reflect the three situations that characterized the Argentine economy in the period considered; that is, the convertibility regime¹⁰ (1993-2001), the crisis of the convertibility, the default of external debt and the devaluation of the national currency (2002) and the post convertibility period (2003-06).

It is also worth emphasizing that all categories of provincial public spending showed a remarkable stability during the convertibility – in percent of gross domestic product – at least until 1997; inspection of figures in the ensuing Table 1

⁹ Let it be emphasized that this conclusion runs counter the evidence presented by Bercoff and Nougues (2005) but it coincides with econometric findings quoted in the present paper.

¹⁰ Convertibility refers to the currency board scheme implemented as of 1991 and by which the national currency (the peso) exchanged 1 by 1 with the U.S. dollar.

Table 1

Argentina – Provincial Public Spending
(percent of GDP)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Tot. Exp.	11.5	11.5	11.6	11.1	11.1	11.7	12.8	12.6	13.5	10.9	10.9	11.8	13.1	13.4
Curr. Exp.	9.9	9.7	9.8	9.4	9.4	10.0	11.2	11.4	12.3	10.1	9.7	10.0	10.9	11.0
Cap. Exp.	1.6	1.8	1.8	1.7	1.7	1.7	1.6	1.2	1.2	0.8	1.2	1.8	2.2	2.4

Source: Own estimates on the basis of data from the National Direction of Fiscal Relations with Provinces, Ministry of Economy, Argentina.

avails this assertion as total, current and capital expenditure averaged 11.3, 9.6 and 1.7 per cent respectively.

However, total and current public expenditure experienced a marked rise during the last four years of convertibility, as their share of gross domestic product climbed to average values of 12.7 and 11.2 per cent, respectively, from 1998 through 2001. Such a pattern seems to coincide with the time in which provinces, unable to satisfy their budgetary needs with dwindled shared revenues¹¹ or with their own tax resources, resorted massively to debt in order to somehow meet the principle of fiscal sufficiency.

The fall of provincial total and current public spending in 2002-03 was a direct consequence of the post convertibility crisis (default and devaluation) in which the gross domestic product underwent a loss of more than 15 per cent;¹² with relation to capital expenditure, the fall began earlier (in 1999) and responded rather to a crowding out effect caused by current public spending feeding on debt than to the effects of the economic crisis of 2001-02.

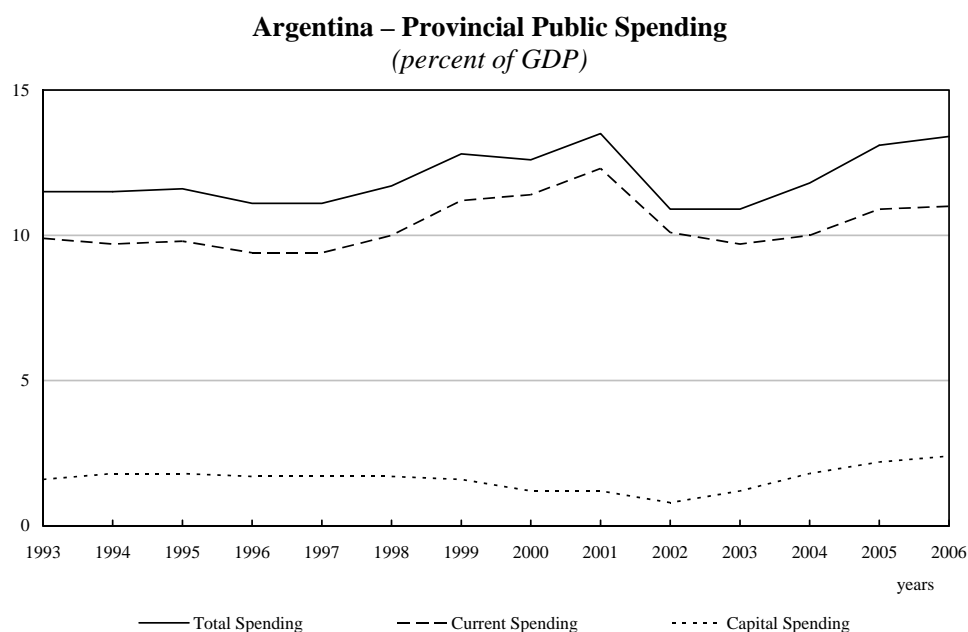
Finally, the economic recovery taking place as of 2002 and the declared policy goals of the new government that took office in 2003, in the sense that public investment and public and social services should reach higher levels, explain the catching up experienced by provincial public spending in 2004-06. However, it is important to point out that provinces acceded to increased national funds through transfers rather than through the revenue sharing system, as it could have been expected;¹³ let it in this regard be pointed out that while transfers amounted to 2.4

¹¹ One of reasons explaining the fall in share revenues accruing to provinces was the economic recession affecting the country since 1998 and lasting until 2002.

¹² The exact figures were 4.4 per cent in 2001 and 10.9 per cent in 2002.

¹³ As mentioned above, not only that the new revenue sharing system has not been enacted yet but also the transfer of national funds takes place on an increasingly discretionary basis.

Figure 1



Source: Figures in Table 1.

per cent of total provincial current revenues in 1993, they reached 7 per cent by 2005.

Figures in Table 1 and their representation in Figure 1 bring about another interesting possibility of analysis in so far as they are viewed in the light of the Downsian vote-maximising model and the political business cycle extensively treated in the literature of Public Choice. Whereas Downs (1957) developed the idea of a political market¹⁴ based on the assumptions that voters sought to maximize their utility and political parties the number of votes,¹⁵ it also enabled other analytical extensions to be possible as for instance its use to explaining the over expansion of public expenditure and to ascertaining whether – in pursuing vote-maximisation – governments could be causing macroeconomic cycles to happen, as suggested by diverse authors.

By examining carefully Table 1 and Figure 1, a preliminary conclusion is that a Downsian-like behaviour by provincial governments can not be ruled out at once.

¹⁴ Similar in its functioning to an economic market where goods were traded.

¹⁵ As Brown and Jackson (1983) pointed out, the median voter was the key subject as its preferences played a central role in the Downsian model of competition between political parties.

Table 2

Argentina – Provincial Tax Revenues and Transfers
(percent of current revenues)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PT/I	40.0	41.3	40.7	40.5	40.1	41.2	40.4	39.9	38.7	41.1	41.4	39.1	36.8	39.2
PT/T	35.5	37.3	35.4	35.1	36.7	36.5	35.7	31.3	33.4	33.4	34.2	32.4	32.1	32.7
TR/I	2.4	3.0	3.8	3.2	3.6	3.8	3.5	4.3	3.8	6.6	5.5	6.6	7.1	6.5

Source: Own estimates on the basis of data from the National Direction of Fiscal Relations with Provinces, Ministry of Economy, Argentina.

References:

PT/I = Provincial Taxes/Provincial Current Revenues

PT/T = Provincial Taxes/Total Taxes

TR/I = Transfers received from the national level/Provincial Current Revenues

Let it be pointed out, in the first place, that provinces have had three elections throughout the period considered (1995, 1999 and 2003) and in each most of governors runned for reelection. In the first two cases (1995 and 1999) total and current public expenditure underwent a rise in the year of election while they dwindled (in percent of gross domestic product) the year immediately after the election. The figures for 2003 appear to be contradicting what one would have been expecting although the situation was in that case much more complex, as the country was leaving the 2001-02 crisis and experiencing an economic recovery while, at the same time, the newly elected government made it clear its objective of gaining a higher state participation in determined fields such as public investment and social expenditure.

It is also clear that capital spending had a more stable pattern during the period and not always accompanied current spending swings, what is in fact reasserting that the latter's greater suitability for political aims and uses can not be paralleled by the former's at least on one account: the longer period required for a public investment to be available for voters' use or enjoyment.

Another of the article's objectives was to find out whether a major participation of own taxes enhanced provinces's accountability and differently affected public spending categories; in line with it, Table 2 summarizes the evolution of the following three ratios in the period considered: provincial own taxes/total current revenues, provincial own taxes/total tax revenues and transfers received/total current revenues, whose performance deserve the following two features to be pointed out.

Despite an assumedly stability in the first ratio, except for the years 2001 and 2005, provinces' performance in raising their own taxes has clearly worsened as the average fell from 36 per cent in 1993-99 to 32.8 per cent in 2000-06. Reasons explaining the loss of almost 10 per cent in share include a certain sluggishness or lack of effectiveness in provincial tax administrations as well as provinces' weak

commitment to furthering their tax bases; last but not least, the Congress delay in enacting the new revenue sharing system placed in the national government's hands the important instrument of non automatic discretionary transfers, which doubled their participation in provincial budgets (see Table 2) and for which access provincial governments permanently strive.

4 The econometric analysis with panel data

As pointed out above, the empirical assessment of the impact of economic, fiscal and politico-institutional variables upon provincial public spending was carried out by resorting to a panel data econometric approach, as it permitted to analyze the 24 Argentine provinces' spending performance (cross section units) during the period 1993-2004 (time series analysis).

The basic analytic framework consisted of a regression model with the form indicated by the following expression:

$$y_{it} = \alpha_i + B' x_{it} + \varepsilon_{it} \quad (1)$$

where vector y embodied the dependent variable for the 23 provinces and the city of Buenos Aires and vector x the K used regressors. Two alternatives were in turn resorted to in relation to the individual effect represented by α : one consisting in considering it constant all throughout the period, but specific for the unit or province (fixed effects) and another one in which the α same applied to all provinces (pooled regression).¹⁶ In the fixed effect model, with specific α for each province, differences between units were captured by the differences in the constant term and interpreted as a parametric displacement of the regression function.

The decision to privilege the fixed effects variant, instead of a single constant term for all provinces (pooled estimation), was based on results for ratio F which precisely determines group effect's significance by contrasting the null hypothesis that all α are similar.¹⁷

Although the fixed effect approach includes the case in which the regressor (or regressors) have different slopes for each of the cross section units, it was here taken that slopes of functions (estimated coefficients) were the same for all 24 jurisdictions. The econometric program used was Stata, that computes constant terms and regressors with a least square dummy variable (LSDV) model in which expression (1) becomes:

$$y_i = i\alpha_i + X_i\beta + \varepsilon_i \quad (2)$$

where i becomes now a matrix of dummy variables of order $i \times i$.

¹⁶ Greene (2000) pointed out that, even in this case, ordinary least squares still rendered consistent and efficient estimates of the common α as well as of regression coefficients.

¹⁷ Greene (2000) pointed out that, under the null hypothesis, the efficient estimate coincided with pooled least squares.

Problems of heteroskedasticity and autocorrelation turned up once the model was run as tests confirmed that the variance of errors was not constant for all cross section units and that errors were serially correlated. As is known, heteroskedasticity may respond to a set of causes, the most common being an erroneous functional formulation of equations, asymmetries in the distribution of model's regressors or atypical factors; nevertheless, the point must be borne in mind that this problem is fairly common when dealing with cross section information in which the units (in this case the provinces) markedly differ in size.

The literature stresses that in both the problems mentioned linearly unbiased, consistent and asymptotically distributed coefficients can still be obtained by using ordinary least square estimation methods; however, and in reason of their not exhibiting minima variances, estimations will not yield efficient or BLUE and larger confidence intervals will be called for making t and F values imprecise.

The lack of satisfaction with heteroskedasticity and autocorrelation in random errors led to the possibility of jointly tackling both problems (once identified) by resorting to Feasible Generalized Least Squares, run in stata with the command *xtgls*.¹⁸ For checking the correction, the Modified Wald¹⁹ Test for groupwise heteroskedasticity and the Wooldridge²⁰ Test for autocorrelation in panel data were implemented within Stata with the commands *xttest3* and *xtserial*, respectively, operating after the fixed effect panel data model was estimated.

In ruling out the use of a random effect model (or error component model) it is recalled here that this approach assumes that cross section units represent a random sample taken from a larger population whereas, in this case, all the 24 provinces were included (that is, the total population).²¹

The list and definition of used variables follow below, and their series for the period 1993-2004 were built on the basis of data obtained from the National Direction of Coordination with Provinces (www.mecon.gov.ar/hacienda):

<i>PBP</i> :	Geographic Gross Product
<i>GPT</i> :	Total Provincial Public Spending
<i>GC</i> :	Current Public Spending
<i>GCO</i> :	Consumption Public Spending
<i>GCAP</i> :	Capital Public Spending
<i>GA</i> :	Administrative Public Spending
<i>GS</i> :	Social and Welfare Public Spending
<i>GE</i> :	Economic Public Spending
<i>DP</i> :	Provincial Stock of Public Debt

¹⁸ As this command does not automatically compute fixed effects, dummy variables were introduced with *xi*.

¹⁹ In spite that tests checking for heteroskedasticity strongly rest on the assumption of normality of errors, Greene (2000) stressed that the Modified Wald Test would work even though the assumption did not hold.

²⁰ See Wooldridge (2002).

²¹ Random model's estimations were obtained, for the sake of verification, but results were not satisfactory.

<i>IT</i> :	Total Revenues
<i>T</i> :	Total Tax Revenues
<i>PT</i> :	Provincial Tax Revenues (levied within the jurisdiction)
<i>NT</i> :	National Tax Revenues (from the Revenue Sharing Regime)
<i>TRANSF</i> :	Received Current Transfers

The above series were expressed in per capita pesos of 2004 and calculated for each of the 24 Argentine provinces. The following two variables, accounting for fiscal performance, were also obtained:

<i>PARTRIB</i> :	It measures each province's degree of financial autonomy (as a proxy for its accountability level); the series results from the quotient between Own Tax Revenues and Total Tax Revenues
<i>SUFIN</i> :	Measures provinces' degree of financial sufficiency on the basis of their Annual Total Tax Revenues
<i>SUFINI</i> :	It measures provinces' degree of financial sufficiency on the basis of their Annual Total Revenues

In order to assess whether variables *PARTRIB* and *SUFIN* somehow influenced the structure of total public spending the following series, showing relations between public spending categories and total public spending, were also computed:

<i>GC_GPT</i> :	Current spending in percent of total public spending
<i>GCO_GPT</i> :	Consumption spending in a percent of total public spending
<i>GA_GPT</i> :	Administrative spending in percent of total public spending
<i>GS_GPT</i> :	Social spending in percent of total public spending
<i>GE_GPT</i> :	Economic spending in percent of total public spending
<i>GCAP_GPT</i> :	Capital spending in percent of total public spending

The following categorical variables were also included with the object of inferring whether provinces' constitutional arrangements and institutional performance somehow affected the various categories of provincial public spending:

<i>D1</i> :	Province's political sign: it takes value 1 when provincial and national ruling political parties coincide (or share a coalition) and value 0 in the opposite case ²²
<i>D2</i> :	It stands for the governor's constitutional possibility of being reelected: it takes value 1 when the constitution allows the reelection and 0 in the opposite case
<i>D3</i> :	It stands for the case in which governors exercise the right to be reelected: it takes value 1 in the last year of the governor's term (the fourth) and value 0 in the rest

²² This variable was used by J. Bercoff and J. Nougués (2005, op. cit.) and taken in turn from M. Jones *et al.* (1999).

- D4*: It stands for the case in which governors exercise the right to be reelected: it takes value 1 in the last two years of the governor's term (the third and the fourth) and value 0 in the rest
- D5*: Reelection right exercised: it takes value 1 in the first year of the new term and value 0 in the rest

Other possibilities of ascertaining the impact of constitutional arrangements upon provincial public spending, by using dummy variables, were also suggested and used by Fridrij (2006), from whom the following ones were borrowed:

- D6*: Budget amendments: it assumes value 1 when legislatures can – without restrictions – the project sent by the provincial executive and 0 when the opposite holds
- D7*: Budget amendments: it assumes value 1 when legislatures are constitutionally or legally entitled to enact budgets in which the level of expenditures (but not the deficit) been increased with relation to the project sent by the executive and 0 when the opposite holds
- D8*: Provincial debt: it takes value 1 when constitutional limits exists and 0 when they do not exist
- D9*: Provincial public spending: it takes value 1 when constitutional limits exist and 0 when they do not exist
- D10*: Limits in the use of credit: it takes value 1 if limits exist and 0 otherwise
- D11*: Limits in public spending: it takes value 1 if the limits do not exist and 0 otherwise

Finally, and in line with the widespread idea found in the literature (Tsebelis, 1995, Bercoff and Nougués, 2005) that a bicameral system introduced check and balance mechanisms in the functioning of both chambers, the ensuing dummy variable was also considered in the econometric analysis:

- D12*: Bicamerality: it assumes value 1 in provinces with two chambers and 0 in single provinces.

4 Analysis of econometric results

The econometric estimation of equation (2) above, using a fixed effect panel data model, yielded statistically significant and not significant results for the variables defined in the preceding Section. In this connection, some of main results concerning the effect of used variables upon the performance of provincial public spending (both in levels and in percent) are summarized in the ensuing tables and will be used to draw important preliminary conclusions.

Starting with variables in levels Table 3, including Total Provincial Public Spending as the dependent variable, shows the striking result that – conversely to what one might have expected – an increase in gross geographic product induced a spending reduction and, as will be shown, the same result applies to the rest of

estimations, although in most of cases the variable coefficient falls short of being statistically significant. Notwithstanding the fact that this feature deserves a deeper analysis, it might tentatively be argued that, on the one side, the product increase could be reducing the need for certain public goods²³ to be provided and, on the other, that product could be rather affecting spending via budgetary and fiscal variables such a fiscal effort and financial sufficiency as both are expected to increase following a raise in product.

According to figures in Table 3, three fiscal variables positively affect total public spending: the stock of public debt (*DP*), provinces' success in meeting their financial sufficiency targets (*SUFIN*) and transfers received from the central government (*TRANSF*). In relation to *DP*, its positive impact upon expenditure should be regarded as the consequence of the major financial burden (interest payments) as much as for the use given to funds captured by governments.²⁴ Surprising as it may appear, higher fiscal effort (*PARTTRIB*) by provincial governments did not result significant in any of the carried out estimations.

The point deserves been mentioned that, save for two cases, econometric estimations of constitutional and politico-institutional variables showed coefficients not significantly different from 0; the two exceptions were provincial governments' political sign (*D1*) and the exercise of the reelection possibility by governors (*D3*). In this connection, the negative sign and the statistical significance of *D1* confirmed Jones' hypothesis (1999), mentioned by Bercoff and Nogués (2005), that central governments' efforts to induce spending reductions in the subnational level held more chances of getting through when government levels shared the same political sign. Positive sign and significance of *D3* clearly indicate, in line with findings by Fridrij (2006), a raise in expenditures (political spending?²⁵) in the last year of governors' term²⁶ and, at the same time, the occurrence of a Downsian behaviour at the subnational level.

It is finally worth mentioning that, contrariwise to what has been asserted in other articles dealing with the subject (*i.e.* Bercoff and Nogués, 2005), the variable *D12* standing for bicamerality yielded neither in this case nor in the rest of estimations results significantly different from 0, for what the assumption of check

²³ An example of this is parents' attitude to send children to private primary and secondary schools once economic conditions make this possible.

²⁴ In general, apart from the fact that debt funds are used to defray current spending, many a provincial government customarily issued debt compulsory placed among civil servants, as is explained below.

²⁵ It is well known that certain budgetary categories of current spending, as for instance Goods and Non Personal Services, are used to channel expenditures whose reasonability and urgency is debatable, to say the least, as they respond to what is customarily considered political spending.

²⁶ This result differed from Bercoff and Nogués' (2005) who, apart from finding estimations not significantly different from 0, faced also negative coefficients; that is, governors able to be reelected would have more fiscal discipline in order not to endanger the fiscal sustainability of their next term.

Table 3⁽¹⁾**Argentina – Impact of Diverse Variables upon Provincial Total Spending**

H0: $\sigma(i)^2 = \sigma^2$ for all i
 chi2 (24) = 3080.50
 Prob>chi2 = 0.0000
 Wooldridge test for autocorrelation in panel data
 H0: no first-order autocorrelation
 F(1, 23) = 4.659
 Prob > F = 0.0416
 Cross-sectional time-series FGLS regression
 Coefficients: generalized least squares
 Panels: heteroskedastic
 Correlation: common AR(1) coefficient for all panels (0.3255)
 Estimated covariances = 24 Number of observations = 264
 Estimated autocorrelations = 1 Number of groups = 24
 Estimated coefficients = 31 Time periods = 11
 Wald chi2(30) = 3803.87
 Log likelihood = 76.62934
 Prob > chi2 = 0.0000

<i>GPT</i> /	COEFFICIENT	STD. ERR.	Z	P> Z	(95% CONF. INTERVAL)	
<i>PBP</i> /	-.0262136	.0117652	-2.23	0.026	-.0492731	-.0031542
<i>DP</i> /	.5995481	.1983562	3.02	0.003	.2107772	.9883191
<i>SUFIN</i> /	1.241492	.0580698	21.38	0.000	1.127678	1.355307
<i>TRANSF</i>	.6405429	.1487578	4.31	0.000	.348983	.9321027
<i>D1</i> /	-.0933396	.0247195	-3.78	0.000	-.1417889	-.0448902
<i>D3</i> /	.0585004	.0283648	2.06	0.039	.0029064	.1140943
<i>D10</i> /	.2759107	.1139945	2.42	0.016	.0524856	.4993358
<i>I2</i> /	-.5416421	.1628066	-3.33	0.001	-.8607371	-.2225471
<i>I3</i> /	-.2435578	.0992707	-2.45	0.014	-.4381247	-.0489909
<i>I4</i> /	.8297282	.117431	7.07	0.000	.599566	1.05989
<i>I5</i> /	.2795203	.2583435	1.08	0.279	-.2268237	.7858643
<i>I6</i> /	-.097306	.0800755	-1.22	0.224	-.2542512	.0596391
<i>I7</i> /	-.2978892	.0761615	-3.91	0.000	-.4471629	-.1486154
<i>I8</i> /	-.1437649	.0877632	-1.64	0.101	-.3157777	.0282479
<i>I9</i> /	-.3977195	.138359	-2.87	0.004	-.6688982	-.1265407
<i>I10</i> /	-.0222543	.1289005	-0.17	0.863	-.2748945	.230386
<i>I11</i> /	.2216774	.1552906	1.43	0.153	-.0826866	.5260414
<i>I12</i> /	.2004958	.2365889	0.85	0.397	-.26321	.6642016
<i>I13</i> /	.1757379	.0859684	2.04	0.041	.0072429	.3442329
<i>I14</i> /	-.0676224	.074419	-0.91	0.364	-.2134821	.0782373
<i>I15</i> /	1.809171	.1624894	11.13	0.000	1.490698	2.127644
<i>I16</i> /	.1364567	.091735	1.49	0.137	-.0433406	.316254
<i>I17</i> /	-.1866368	.0756852	-2.47	0.014	-.3349771	-.0382966
<i>I18</i> /	-.0006261	.254101	-0.00	0.998	-.4986549	.4974027
<i>I19</i> /	-.1567681	.0932255	-1.68	0.093	-.3394866	.0259505
<i>I20</i> /	2.59634	.2737979	9.48	0.000	2.059706	3.132974
<i>I21</i> /	-.1268332	.0681529	-1.86	0.063	-.2604103	.006744
<i>I22</i> /	-.5051935	.1160708	-4.35	0.000	-.7326881	-.277699
<i>I23</i> /	1.355789	.26042	5.21	0.000	.845375	1.866202
<i>I24</i> /	-.2007965	.0876577	-2.29	0.022	-.3726025	-.0289905
<i>_CONS</i>	.281256	.1091654	2.58	0.010	.0672957	.4952162

⁽¹⁾ For limitation of space complete sets of information on top of the table will not be provided for the rest of estimations. However, these can be obtained from the author on request (ernerezk@eco.unc.edu.ar).

Table 4

Argentina – Impact of Diverse Variables upon Provincial Current Spending

<i>gc</i>	Coefficient	Std. Err.	<i>z</i>	<i>P</i> > <i>z</i>	(95% Conf. Interval)	
<i>DP</i>	1.247633	.1410467	8.85	0.000	.9711866	1.524079
<i>SUFIN</i>	.8727302	.0402535	21.68	0.000	.7938348	.9516257
<i>TRANSF</i>	.4422955	.1184037	3.74	0.000	.2102285	.6743624
<i>DI</i>	-.0719928	.0201797	-3.57	0.000	-.1115443	-.0324412
<i>D3</i>	.0584488	.0208182	2.81	0.005	.0176458	.0992518

and balances played by double chambers could not be verified with the estimation of the panel data econometric model.²⁷

In spite that figures in Table 4, showing the impact of different variables upon current provincial spending, rendered similar results to the already mentioned in Table 3, the feature that deserves being pointed out is the higher positive impact of public debt upon current spending, which falls in line with a traditional distorting practice of subnational governments in Argentina; that is, to resort to debt for wage payments any time the economic cycle reduces tax revenues²⁸ or when fiscal resources fall short of needed due to the incorporation of temporary personnel to the public sector staff on a permanent basis.

The analysis carried out in the case of current spending is almost straightforwardly applicable to consumption public spending (Table 5), except for the fact that the estimate of the coefficient of constitutional limits to public spending (*D9*) resulted significantly different from 0. As before, public debt stocks, financial sufficiency, transfers and governors' reelection possibility had the effect of expanding public consumption spending whereas political alignment with the national government and constitutional limits to expenditure had a clear contractive effect upon spending; at the same time, results so far confirmed the almost null impact of geographic domestic product, financial autonomy and bicamerality upon expenditure levels.

Despite apparent similarities in results figures in Table 6, depicting the impact of economic and institutional variables upon social public spending, present a couple of worth emphasizing subtleties. Let it be noticed that gross geographic

²⁷ In the light of results, one may be led to test the opposite assumption; that is, whether the political trade off between both chambers will not cause expenditure to increase.

²⁸ As quoted above, an illustration of this was provinces' common practice of issuing public bonds that were compulsory placed among their civil servants under the form of wage payments. Those bonds were later channeled into the economic circuit via goods and services purchases and ended their cycle when the central government was forced to bail out provincial governments with serious financial strains.

Table 5

Argentina – Impact of Diverse Variables upon Provincial Consumption Spending

<i>gco</i>	Coefficient	Std. Err.	<i>z</i>	<i>P</i> > <i>z</i>	(95% Conf. Interval)	
<i>DP</i>	.0231569	.0030968	7.48	0.000	.0170873	.0292265
<i>SUFIN</i>	.013861	.0009152	15.14	0.000	.0120672	.0156548
<i>TRANSF</i>	.0064905	.0019705	3.29	0.001	.0026284	.0103527
<i>DI</i>	-.0023943	.0005717	-4.19	0.000	-.0035149	-.0012738
<i>D3</i>	.001397	.0004799	2.91	0.004	.0004563	.0023376
<i>D9</i>	-.0062527	.0030611	-2.04	0.041	-.0122523	-.0002531

Table 6

Argentina – Impact of Diverse Variables upon Provincial Social Spending

<i>gs</i>	Coefficient	Std. Err.	<i>z</i>	<i>P</i> > <i>z</i>	(95% Conf. Interval)	
<i>PBP</i>	-.0130482	.0067582	-1.93	0.054	-.026294	.0001975
<i>SUFIN</i>	.5950752	.0281897	21.11	0.000	.5398243	.6503261
<i>TRANSF</i>	.2340367	.0821124	2.85	0.004	.0730992	.3949741
<i>DI</i>	-.0423325	.0142338	-2.97	0.003	-.0702302	-.0144349
<i>D3</i>	.0473994	.0148756	3.19	0.001	.0182438	.07655

product had now a negative, though statistically significant, coefficient which could be indicating that the higher the product (as a proxy to welfare) the smaller the amount jurisdictions must devote to social spending needed to assist the poor;²⁹ also, the fact that public debt ceased here to be a significant variable falls in line with the already mentioned argument that governments mostly resorted to credit markets (or issued compulsory debt) to make up financial needs linked to current, administrative or consumption expenditure.

Inspection of figures summarized in Table 7 (the dependent variable is now capital public spending), brings to surface five elements clearly highlighting provincial governments' performance with regards to this spending category. First, the inverse relationship between product increase and capital formation; second, the hardly noticed incidence of constitutional and politico-institutional

²⁹ One might also think of an inverse ultrarationality sequence; that is, as gross geographic product expands people substitute some public goods (*i.e.* education, health) for private goods.

Table 7

Argentina – Impact of Diverse Variables upon Provincial Capital Spending

<i>gcap</i>	Coefficient	Std. Err.	<i>z</i>	<i>P</i> > <i>z</i>	(95% Conf. Interval)	
<i>PBP</i>	-.0083714	.0041741	-2.01	0.045	-.0165525	-.0001903
<i>PARTTRIB</i>	.5361989	.2804761	1.91	0.056	-.0135241	1.085922
<i>SUFIN</i>	.2287	.0254745	8.98	0.000	.1787708	.2786292
<i>TRANSF</i>	.1693215	.0910274	1.86	0.063	-.0090889	.3477318
<i>D10</i>	.2707979	.0938426	2.89	0.004	.0868698	.454726

variables upon public capital spending (except in one single case); third, the statistical relevance and positive sign of fiscal effort (*PARTTRIB*), that implies that capital spending is a linear function of provinces' own fiscal revenues; fourth, the statistical significance and negative sign of public debt stock indicating that provinces do not use debt funds for capital formation and fifth, and for similar reasons, transfers' poorer performance in the case of public investment.

Not surprisingly, the lack of correlation between product and public capital formation had already been noticed by Kamps (2005) in a study for 22 OECD countries but in the context of the relationship between private and public capital, the results of which led him to suggest that both were close substitutes and crowded out each other, at least in the short run.

It should by no means be strange that politico-institutional variables, such as *D3* whose performance was robust in the preceding estimations, did not result now statistically significant: in reason of their complexities, long construction periods and resources required, capital outlays did not properly fit political needs of governments intending reelection in the same quick way as current spending did. A remarkable exception was however the coefficient of *D10* whose positive sign and significance implied that limits placed on the use of credit worked in the direction of correctly favouring capital formation.

The sign and statistical relevance of provinces' fiscal effort (*PARTTRIB*) brings here out a result of undeniable policy content: the more provinces covered their expenses with own resources the higher capital outlays were. Another implication can be that greater financial autonomy in turn enhanced provincial governments' accountability as they tended to devote resources to spending categories other than administrative and consumption expenditure.

In pointing out next that the coefficient of public debt (*DP*) resulted not statistically significant it must be recalled that the performance of this variable followed in Argentina the pattern of resources needed by provincial governments mainly for their use in current public spending.

Table 8

Argentina – Impact of Diverse Variables upon Provincial Current Spending
(share of total spending)

<i>gc_gpt</i>	Coefficient	Std. Err.	<i>z</i>	<i>P</i> > <i>z</i>	(95% Conf. Interval)	
<i>DP</i>	.1427064	.0411776	3.47	0.001	.0619998	.2234129
<i>PARTTRIB</i>	-.2627773	.1522056	-1.73	0.084	-.5610949	.0355402
<i>D8</i>	-.0882975	.035305	-2.50	0.012	-.157494	-.019101

Finally, transfers showed here a poorer performance than in the preceding case; this been the result of theirs being largely and normally used by provinces for current spending and social expenditure of the “assistential” type.

The model’s econometric estimation has so far been carried out in levels and it sought to determine whether and how the selected economic, budgetary and politico-institutional variables impacted upon the different spending categories. It could be revealing whether the exogenous variables also influenced spending categories’ share of the total provincial expenditure and for that a set of estimations was performed, the most important being summarized in Tables 8 through 12.

Results shown in Table 8 permitted to confirm the expected assumption that both debt stock and fiscal effort, with different signs, respectively increased and reduced the participation of current public spending within total public spending. Conversely to what has already been shown, when current public spending (taken in levels) seemed not to respond to provinces’ major fiscal efforts, results here indicate that the greater the fiscal effort the higher the degree of accountability and visibility of governments’ decision on public spending was and that would be explaining why *gc_gpt* fell following rises in *PARTTRIB*.

The above results resulted also coherent with the sign and statistical significance of *D10* (limits on the use of credit) as it would be expected that the ratio *gc_gpt* decreased as constraints were imposed on the use of credit.³⁰

As *PARTTRIB* and *SUFIN* did not yield good results when jointly estimated, the estimation in Table 9 excluded the former and included the latter variable. As can be seen, results stressed the impact of public debt and financial sufficiency upon the ratio *gc_gpt*. Far from being contradicting, the value and significance of the coefficient of *SUFIN* also acknowledged the enhanced accountability feature; let it be mentioned here that, by construction, *SUFIN* resulted from adding

³⁰ In all cases, the value, sign and statistical significance of *D8* and *D10* coincided for what it was clear that both measured the same thing.

Table 9

Argentina – Impact of Diverse Variables upon Provincial Current Spending
(share of total spending)

<i>gc_gpt</i>	Coefficient	Std. Err.	<i>z</i>	<i>P> z </i>	(95% Conf. Interval)	
<i>DP</i>	.2262747	.0405518	5.58	0.000	.1467947	.3057548
<i>SUFIN</i>	-.0588137	.0094178	-6.24	0.000	-.0772723	-.0403551
<i>D10</i>	-.0728448	.0334996	-2.17	0.030	-.1385027	-.0071869

Table 10

Argentina – Impact of Diverse Variables upon Provincial Social Spending
(share of total spending)

<i>gs_gpt</i>	Coefficient	Std. Err.	<i>z</i>	<i>P> z </i>	(95% Conf. Interval)	
<i>DP</i>	-.1177668	.0239671	-4.91	0.000	-.1647414	-.0707922
<i>PARTTRIB</i>	-.2872668	.1036961	-2.77	0.006	-.4905074	-.0840262
<i>SUFIN</i>	-.0120527	.0063941	-1.88	0.059	-.0245848	.0004795

provincial tax revenues and fiscal funds from shared revenues. Another interesting feature is the negative impact of *D10* upon *gcd_gpt* showing that current spending participation in total spending got smaller as provinces had effective limits or constraints upon the use of public debt. Although it is not shown here, the same result would be obtained if *D8* (constitutional limits to debt) were used in place of *D10*.

Table 10, that summarizes results for *gs_gpt*, shows that increases in all the three variables whose estimated coefficients were statistically significant tended to reduce social expenditure share of public expenditure. In this connection, what is really reasserted by figures is that public debt was directed to current spending and that provinces' major fiscal effort and financial sufficiency made governments more accountable when taking decisions upon spending categories.

Figures summarized in Table 11 account also for a very interesting case as variable *ge* embodies not only capital outlays but also current public spending oriented towards all economic sectors in provinces. As may be seen, the percent of economic public spending in total public spending increased following enhanced financial sufficiency and the existence of constraints upon the use of credit while

Table 11

Argentina – Impact of Diverse Variables upon Provincial Economic Spending
(share of total spending)

<i>ge_gpt</i>	Coefficient	Std. Err.	z	P> z	(95% Conf. Interval)	
<i>DP</i>	-.1705062	.0280256	-6.08	0.000	-.2254353	-.1155771
<i>SUFIN</i>	.0339266	.0062561	5.42	0.000	.0216649	.0461884
<i>DIO</i>	.0551933	.0266332	2.07	0.038	.0029932	.1073933

Table 12

Argentina – Impact of Diverse Variables upon Provincial Capital Spending
(share of total spending)

<i>gcap_gpt</i>	Coefficient	Std. Err.	z	P> z	(95% Conf. Interval)	
<i>PBP</i>	-.0050534	.0016749	-3.02	0.003	-.0083361	-.0017707
<i>DP</i>	-.2518335	.041141	-6.12	0.000	-.3324683	-.1711987
<i>SUFIN</i>	.0725986	.0104155	6.97	0.000	.0521846	.0930125

decreased with public debt.³¹ The fact that *PARTTRIB* resulted here, and in other previous estimations, not significant might be implying that accountability was better represented by the variable *SUFIN* which somehow accounted for fiscal effort, as provincial tax revenues were resorted to in computing the series.

The magnitude of the ratio *gcap_gpt* was assessed using two different equation formulations, both of which rendered robust results. In the first case (Table 12), results backed the assumption that provincial public debt seldom went to capital formation whereas increased financial sufficiency (based on own taxes) in fact encouraged non current outlays. The impact of gross geographic product upon capital spending share of total spending, if any, was negative for reasons already given when results in Table 7 were analyzed.

In the second case, (Table 13) figures indicate that the ratio *gcap_gpt* was not only, and as expected, strongly and positively influenced by the two fiscal variables:

³¹ The sign in this case should not cause surprise as it depicts the several mentioned feature of provincial public debt, whose end is not capital outlays but current expenditure.

Table 13

Argentina – Impact of Diverse Variables upon Provincial Capital Spending
(share of total spending)

<i>gcap_gpt</i>	Coefficient	Std. Err.	<i>z</i>	<i>P> z </i>	(95% Conf. Interval)	
<i>DP</i>	-.1427064	.0411776	-3.47	0.001	-.2234129	-.0619998
<i>PARTTRIB</i>	.2627774	.1522056	1.73	0.084	-.0355401	.561095
<i>D10</i>	.0882975	.035305	2.50	0.012	.019101	.157494

Table 14

Signs of Statistically-significant Estimated Coefficients

	<i>PBP</i>	<i>DP</i>	<i>PARTTRIB</i>	<i>SUFIN</i>	<i>TRANSF</i>	<i>D1</i>	<i>D3</i>	<i>D8</i>	<i>D9</i>	<i>D10</i>
<i>gpt</i>	-	+		+	+	-	+			+
<i>gc</i>		+		+	+	-	+			
<i>gco</i>		+		+	+	-	+		-	
<i>gs</i>	-			+	+	-	+			
<i>gcap</i>	-		+		+					+
<i>gc_gpt</i>		+	-	-				-		-
<i>gs_gpt</i>		-	-	-						
<i>ge_gpt</i>		-		+						+
<i>gcap_gpt</i>	-	-	+	+						+

Source: Tables 3 through 13 above.

fiscal effort and financial sufficiency, but also by effective limits upon the use³² of credit; that is, when standing legal limits existed they caused public debt to be directed towards capital formation instead of current spending.

It is also noticeable that, contrariwise to what occurred when the econometric estimation was performed in levels, neither *D1* (political alignment) nor *D3* (reelection of governors) yielded coefficients significantly different from 0.

³² And, as mentioned, by constraints on the volume of credit (*D8*).

Table 14 above, summarizing results of all estimations, helps in visualizing which variables resulted statistically different from 0 (meaning that they impacted in fact total public spending and its different categories) and what signs they held.

5 Conclusions

The research carried out permitted to obtain conclusions which help to understand the mechanics of provincial public spending and subnational governments' behaviour in Argentina. Results can be extended to other federal countries undergoing a marked spending decentralization and also to unitary-like countries in which local governments have elected authorities.

The empirical analysis for the period 1993-2004, for which the fixed effect panel data econometric approach was resorted to, considered the impact of economic, budgetary and politico-institutional variables upon diverse spending categories and enable to arrive at the following preliminary conclusions:

- 1) Strikingly, and contrariwise to what was generally assumed, gross geographic product and provincial public spending appeared inversely related, possibly due to a proportionally lesser public goods demand (scale effects) as product grew or for the reason that gross geographic product was in this context better represented by budgetary variables, as for instance tax collection.
- 2) While provinces' higher financial sufficiency induced larger total public spending levels (in all categories), provincial tax revenues' large share within total tax revenues (major fiscal effort) was seen to dwindle current, consumption and social public spending in percent of total spending. That is, the more provinces' fiscal effort deepened the more visible provinces' use of resources (accountability enhancement) seemed to become.
- 3) Transfers received from the central government clearly led to increasing total public spending, although this was much more marked with regard to current spending than to capital outlays.
- 4) Increases in the stock of public debt boosted total public spending, current, consumption and administrative public spending while in turn shrank capital and economic public spending. This brings to surface not only the impact of the financial burden (represented by payment of interests) but also the fact that the use of credit by provincial governments did not accomplish the expected role of forming capital stocks.
- 5) Increases in gross geographic product negatively impacted upon social public spending. This can be interpreted as provinces been able to switch resources from attention to the poor to other areas as the expansion of the product helped to reduce poverty.
- 6) Major fiscal efforts by provinces led to more capital formation and to an increased participation of capital outlays in total public spending. In this case, results availed the idea of higher accountability and transparency in spending decisions stemming from a greater weight of own taxes in total fiscal revenues.

- 7) The negative relation between gross geographic product and public capital formation, despite what could normally be expected, had already been observed in the analysis for other countries and seemed to be depicting a situation in which – in the short run – private and public capital formation crowded out each other as they behave like substitutes.
- 8) The downsian-like behaviour and economic business cycle patterns, resulting from expansive spending programmes, found support in estimations as the coefficients of the variable standing for governors' reelection possibility resulted statistically significant in all spending categories, except for capital public expenditure. Likewise, the assumption was also proved that provinces tended to reduced their total spending when they shared the same political sign with the central government.
- 9) With regard to other categorical variables' econometric performance, statistical evidence was found that operating limits on public spending served the purpose of reducing consumption public spending. Likewise, the empirical analysis showed that constitutional and legal constraints placed upon the use and ends of resources from credit clearly tended to favour capital formation and boosted economic public spending to the detriment of current expenditure.
- 10) However, and contrariwise to what was asserted in preceding papers, only very weak evidences were found of the impact of bicameral legislatures upon public spending, for what the assumption of checks and balances could not be verified at the provincial level.

REFERENCES

- Bercoff, J. J. and J.P.Nougues (2005), "Las Constituciones y el Gasto Público: El caso de las provincias argentinas", 40° Annual Reunion of the Argentine Association of Political Economy, La Plata, Argentina.
- Bird, R. (1996), *Federal Finances*, international seminar on Fiscal Federalism, National University of Córdoba, Argentina.
- Bosch, N. and J. Suarez-Pandiello (1995), "Seven Hypotheses about Public Choice and Local Spending", *Public Finance*, Vol. 1.
- Downs, A. (1957), *An Economic Theory of Democracy*, Harper, New York.
- Fridrij, D.A. (2006), "Constituciones y Desempeño Fiscal. Lecciones del Caso Argentino. Evidencias a partir de Datos de Panel", 41° Annual Reunion of the Argentine Association of Political Economy, Salta, Argentina.
- Greene, W.H. (2000), *Econometric Analysis*, 4th Edition, Prentice-Hall, Englewoods Cliffs (N.J.).
- Gujarati, D.M. (2003), *Econometría*, McGraw-Hill Interamericana, México.
- Jones, M., P.Sanguinetti and M. Tommassi (1999), "Politics, Institutions and Fiscal Performance in Federal Systems: An Analysis of Argentine Provinces", in J. Poterba and J. von Hagen (eds.), *Fiscal Institutions and Fiscal Performances*, National Bureau of Economic Research, Chapter 6.
- Kamps, C. (2005), "The Dynamic Effects of Public Capital: VAR Evidence for 22 OECD Countries", *International Tax and Public Finance*, Vol. 12, No. 4.
- Persson, T. and G. Tabellini (2004), "Constitutional Rules and Fiscal Policy Outcomes", *American Economic Review*, Vol. 94, No. 1, pp. 25-45, March.
- Rezk, E., M. Capello and C. Ponce (1997), *La Economía Política del Federalismo Fiscal en Argentina*, Ediciones Eudecor, Córdoba, Argentina.
- Tsebelis, G. (1995), "La toma de decisiones en los sistemas políticos: actores de veto en el Presidencialismo, Parlamentarismo, Multicameralismo y Multipartidismo", in S. Saeigh and M. Tommassi (eds.), *La nueva política: racionalidad e instituciones*, Eudeba, Buenos Aires, Argentina.
- Wooldridge, J.M. (2002), *Econometric Analysis of Cross Section in Panel Data*, MIT Press, Cambridge (MA).