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Economic and Politico-Institutional Variables Applied to the Analysis of Subnational Public Speding in Argentina

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Cómo citar este documento:

Economic and Politico - Institutional Variables Applied to the Analysis of Subnational Public Speding in Argentina

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Abstract

Using a panel data with fixed effect for the period 1993-2004, we aim at ascertaining whether the participation of public expenditure categories in total public spending of Argentine provinces was influenced by economic, fiscal and politico-institutional variables, such as provinces' political sign; possibility of reelection of the executive branch; provisions limiting public spending, public debt, or restrictions to the use of credit; and the structure of the legislative bodies.

While estimated coefficients for fiscal effort, financial sufficiency, and public debt were significantly different from zero, results fell short of being conclusive for the other variables, except for categorical variables standing for limits on spending and credit use.

Keywords: Provincial Public Spending, Accountability, Financial Autonomy and Sufficiency, Politico-Institutional Variables, Fixed Effect Panel Data.

JEL Classification: H72 , H11

Resumen

El análisis econométrico realizado, en el marco de un modelo de datos de panel con efectos fijos, para el período 1993-2004, tuvo el objetivo de determinar si la participación de diversas categorías de gasto público en el gasto público total de las provincias argentinas estuvo influida por variables económicas, fiscales y político institucionales tales como la posibilidad de reelección, normas que limitan el gasto público o el endeudamiento o que condicionan el uso del crédito.

Mientras que los coeficientes de regresión estimados para el esfuerzo fiscal, la suficiencia financiera y la deuda pública fueron significativamente diferentes de cero, los resultados distaron de ser satisfactorios en el resto de los casos, salvo por las variables que representaban límites impuestos sobre el aumento del gasto o el uso del crédito público.

Palabras Clave: gasto público provincial, respondabilidad, autonomía y suficiencia financiera, variables político institucionales, datos de panel efectos fijos.

Clasificación JEL: H72 , H11

I. Introduction

According to the national constitution[2], Argentina is a federal country with three levels of government: the central one, the provinces and the municipalities, each of which counts with fairly wide spending faculties and the power of raising 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 nearly half of VAT, Income, Personal Goods and Oil Taxes*'* yield while, in turn, provinces transfer to municipalities a part of what they collect in terms of Property and Turnover Taxes and Stamp Duties.

The institutional framework clearly favours an inter jurisdictional fiscal relationship in line with what R. Bird (1996) called *Federal Finances*, closer to a public choice-like approach in which provinces are constitutionally entitled to negotiate on a par with the central government, since 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

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

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 relations are better depicted by an *Agency Relationship* in which the national government performs the role of the Principal and provinces that of Agents[3].

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 –via the Revenue Sharing System mainly[4]– of fiscal faculties in the country. Suffice in this connection to mention that the central government, provinces and municipalities respond at present for approximately 80%, 16% and 4% respectively of collected total fiscal revenues.

In the expenditure side, and owing to a process of spending decentralization dating from the nineties, provincial public spending amounts now to more than 40% of all levels' consolidated public spending, being the provinces responsible for almost all Educational[5] 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% 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[6], 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

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

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

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

6. 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.

modifications in the existing Revenue Sharing Regime[7], 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% of most provinces' total resources[8]. An immediate unwanted effect of 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 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 spending categories' share of total public spending relate to the existing degrees of financial autonomy and sufficiency. Assuming in turn that economic and budgetary variables are also related to provincial 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 from the diverse categories of public expenditure.

Likewise, and acknowledging debates reflected 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 treated 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

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7. 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.

8. The important weight of the four richest provinces (Buenos Aires, Córdoba, Santa Fe and Mendoza) plus the autonomous city of Buenos Aires, places provinces´ own resources between 40% and 50% 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.

fundamics 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 economic and fiscal variables and other variables standing for constitutional and politico-institutional constraints.

As for the structure of the paper, Section II presents a brief survey of recent articles related to the matter, Section III highlights some stylized facts of provincial spending, Section IV develops the used econometric methodology, Section V shows econometric estimations with panel data and Section VI concludes.

II. BRIEF SURVEY OF THE RECENT LITERATURE

In a very interesting econometric study of 105 Spanish munici-palities 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[9] 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.

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9. As will be mentioned below, this hypothesis had been earlier introduced by Alt and Lowry (1994).

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.

Jones, Sanguinetti and Tommasi (2000) produced in turn an interesting contribution focused in the impact of political and institutional factors upon the fiscal outcome and behaviour of Argentine provinces. In developing the arguments, the authors contended that the matter could be regarded as a common pool game at two levels: within each province and across political units; in this connection, the existence of a revenue sharing system whereby taxes were centrally collected and later distributed to provinces enabled an over spending bias across jurisdictions in so far as each province tried to overuse the national common source of fiscal revenues. Jones et al (2000) conducted an estimation of a pooled cross section of 23 jurisdictions, from 1985 through 1996, aimed at analyzing the determinants of revenue and spending in the Argentine provinces; in doing so they hypothesized the effect of political and institutional variables stating that provinces receiving larger percentages of per capita transfers (from the revenue sharing system) would have higher per capita expenditures, that provinces sharing the same political sign than the central government would be subject to a more stricter fiscal discipline[10] (i.e. lower per capita spending than otherwise) and that provincial per capita expenditures would be higher in election years than in the rest of the period. It is worth mentioning that the paper's empirical conclusions somehow availed the stated hypotheses since not only Jones et al could supply evidences of the expansionary effect of inter governmental grants upon provincial spending[11] but showed too that party discipline (similar political signs) played a significant role in checking the expansion of provincial spending. Also electoral spending cycles were detected implying higher provincial expenditure in election years as compared with other years.

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

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10. In this point, Jones et al adhered to Alt and Lowry's prediction (1994) in their study of the fiscal performance of US states, according to party affiliation.

11. Jones et al explained this feature as the result of decoupling tax and spending decisions.

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 democracies[12] 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 a smaller government size (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 Nougués (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 Argentine for the period 1991-2001.In highlighting the main findings of 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 the hypothesis of the similar political sign was tested, as results fell in line with predictions by Jones et al (2000): when governors and central government shared the same political sign, provinces seemed to face more effectively spending reductions; the same conclusion extended to the structure of legislatures deducing that bicameral system successfully operated checks and balances. Finally, and in relation to the impact of fiscal variables, Bercoff and Nougués 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

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12. 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.

following periods: 1963-2001 and 1984-2001; the author also evaluated 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[13], 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.

The fiscal behaviour of both national and subnational governments, followed by incumbents attempting to achieve their re-election, was also a matter of extensive conceptual and empirical treatment; in this connection, credits should be given to Downs' seminal paper (1957) by which the idea of a vote-maximizing model and the emergence of political business cycles were introduced and extensively referred to later in the literature of Public Choice. In putting forward the idea of a political market[14] based on the assumption that voters sought to maximize their utility and political parties the number of votes[15], Downs' developments also enabled other analytical extensions as for instance their use to explaining the possibility of macroeconomic cycles caused by governments' over expansion of public expenditure when pursuing vote-maximization goals, as suggested by diverse authors. Closely related to Downs' model, Nordhaus (1975) in turn modeled the manipulation of economic policy by incumbents in election years aiming at showing how pre-election expansionary fiscal policies could help politicians to get reelected.

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13. Let it be emphasized that this conclusion runs counter the evidence presented by Bercoff and Nougués (2005) and econometric findings quoted in the present paper, when the response of spending categories to the hypothesis was tested.

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

The matter deserved particular attention from Brender and Drazen (2005) who focused their article in the existence of political business cycles (deliberate economic activity increases in election years in order) as well as of political budget cycles, resulting from election-year increases in expenditures or tax cuts, in both cases stemming from incumbents' endeavours to improve their reelection prospects. Although many empirical studies give evidence of political budget cycles (expansionary fiscal policies) more often occurring in less developed countries, these authors revised empirical evidence on the performance of expansionary fiscal policies at the subnational level for countries like the United States, Colombia or Israel (Peltzman, 1992, Brender, 2003 and Drazen and Slave, 2005) and arrived at the surprising conclusion that voters might as well punish, rather than reward, loose fiscal policies in election years, putting thus at stake incumbents' chances of being reelected. In an attempt to check by themselves whether the hypotheses that increased deficits during an election year, and loose fiscal policies during the term in office, helped reelection could be econometrically proven, Brender and Drazen undertook an large scale evaluation of a cross section of 74 countries for the period 1960-2003 and showed that expected results from opportunistic political budget cycles were not supported by the empirical evidence, no matter the type of country analyzed, and contrariwise, some evidence was found that loose fiscal policies over the incumbent's term of office were somehow associated with a statistically significant lower probability of reelection.

The occurrence of Downsian-like behaviours and political budget cycles was also analyzed by Meloni (2008) departing from the widespread idea in the literature that incumbents following an opportunistic behaviour, and seeking to enhance their chances of continuing in office, increase public spending (or fiscal deficit) or change the expenditure mix[16], either in the pre-election period or in the election year. In this line of reasoning, Meloni aimed at testing the existence of clientelistic and election public budget cycles in Argentine provinces for what he resorted to a dynamic panel data model including dependent fiscal policy variables such as per capita total expenditures, salaries, provincial fiscal revenues and the ratios of current to capital outlays and of current spending to direct investment; the panel included the 24 provinces and extended from 1984 to 2004. For

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16. As Meloni stressed it, the change in the spending mix is aimed at favouring the so called "visible" outlays, or politically oriented expenditures such as jobs and transfers rather than infrastructure.

testing clientelistic-augmented and election political budget cycles in Argentina, Meloni used dummy variables respectively taking value 1 for the election year, the year before and two years before and 0 otherwise; likewise, and for controlling for political influences he borrowed from Jones, Sanguinetti and Tommasi (2000) the fiscal discipline variable indicating that central and provincial governments shared the same political sign and finally included the impact of socio economic variables such as the rate of growth of per capita gross domestic product and unemployment rates. Meloni's main conclusions were that while per capita total expenditures were high in election years, as well as one and two years before the elections, no evidences were found of changes in election year expenditure mix[17]; finally, and concerning governors' efforts to enhance their reelection prospects, evidences seemed to rule out manipulation of local taxes in favour of the more direct current expenditure instrument.

III. Stylized Facts of Provincial Public Finances in Argentna

The performance of total, current and capital revenues and spending of Argentine provincial governments during the period used for the econometric estimations exhibits features deserving several comments, as shown by tables and figures below. As can be seen, ratios in the tables and their corresponding graphical representation account for three situations that characterized the Argentine economy from 1993 through 2004; that is, the convertibility regime[18] (1993-2001), the exit of the convertibility, the default of external debt and the devaluation of the national currency (2002) and the beginning of the post default period (2003-2004).

According to the ratios shown in table 1, provincial total and current revenues showed a fairly stable behaviour between 1993 and 2001, only disturbed by a slight cyclical pattern well depicted by the graphs in figure 1, whose peaks and troughs were respectively reached in 2000 and 1995. It is also worth emphasizing that the almost perfect correlation between both mentioned ratios stems from the fact that current revenues practically accounted for the 95% of total revenues, and the latter in turn acknowledged an overwhelming and constant tax content. On the other

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17. Meloni speculated in this connection that clientele securing instruments such as transfers and subsidies were preferred by incumbent governments in place of infrastructure spending.

18. 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.

side, and despite its low significance, the ratio for capital revenues showed a marked cyclical pattern to the extent that, in 1997, its value doubled the period average.

As pointed out, the close correlation between total and current revenues can also be viewed from another angle, by analyzing figures in table 2; in this connection, the two first ratios indicate that tax revenues account in average for about 85% of current revenues for what—and relating with figures in table 1—ratios reassert that total provincial revenues practically rest on funds both from own and shared tax revenues[19].

Revenues' constancy in percent of gross domestic product, as shown from 1993 through 2001, was endangered mainly by the important product' loss caused by the exit of convertibility and the devaluation of the national currency and this was in turn reflected in the tax revenue/current revenue ratio's minimum value for 2002. Let it be noticed that this feature, in addition to the dwindled value of the current revenue/gdp ratio for the same year, curiously acknowledged an anticyclical behaviour of provincial taxation in Argentina, which also persisted in 2003-2004 when the Argentine product began again to grow.

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19. This feature will be resorted upon later, in Section IV, in relation to the use of the degree of financial autonomy as an explanatory variable.

Table 1
Argentina – Provincial Public Revenues
(in percent of gross domestic product)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
CURRENT REVENUES	10.47	10.40	10.08	10.26	10.52	10.71	10.97	11.20	10.91	10.15	11.13	12.46
CAPITAL REVENUES	0.31	0.23	0.27	0.42	0.61	0.36	0.42	0.25	0.27	0.21	0.21	0.39
TOTAL REVENUES	10.78	10.63	10.35	10.69	11.14	11.08	11.38	11.45	11.18	10.36	11.35	12.85

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

Table 2
Argentina, Provincial Fiscal Revenue Ratios

|	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
PROVINCIAL TAX REVENUES/ CURRENT REVENUES	35.52	36.16	35.27	35.09	35.36	36.39	35.54	34.13	33.34	33.40	34.25	32.40
NAT. AND PROV. TAX REVENUE/ CURRENT REVENUE	88.99	87.78	86.89	86.69	88.35	88.67	88.44	85.66	86.43	81.37	82.39	83.08
CURRENT TRANSFERS/ CURRENT REVENUES	2.51	2.96	3.71	4.16	3.62	3.62	3.65	4.60	3.90	6.58	5.53	6.55

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

Figure 1
Argentina, Provincial Revenues
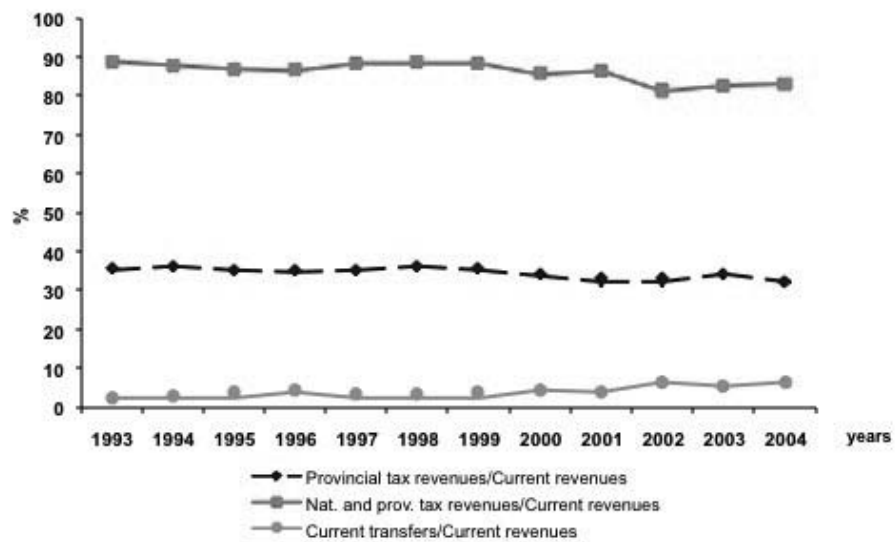**(in percent of gross domestic product)**
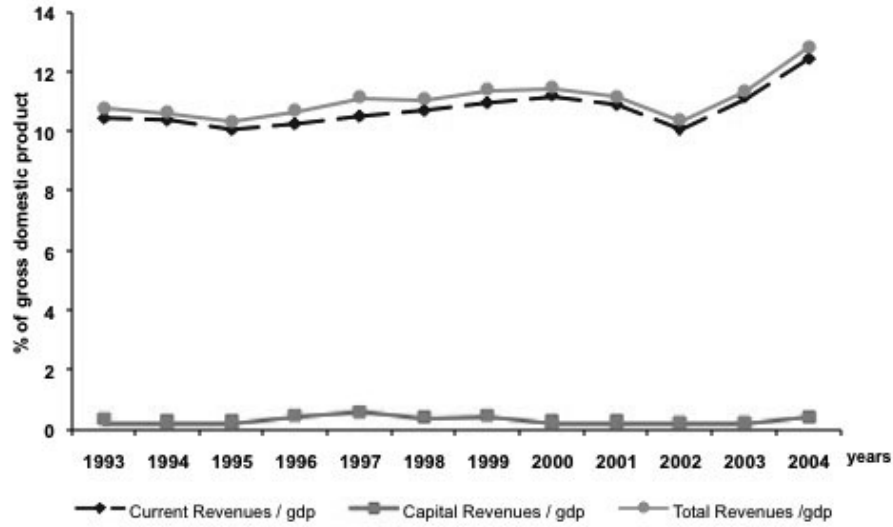
Figure 2
Argentina, Provincial Fiscal Revenue Ratios

The empirical evidence also shows that all categories of provincial public spending exhibited a remarkable stability during the convertibility –in percent of gross domestic product– at least until 1997. As is easily noticed, figures in the ensuing table 3 avail this assertion as total, current and capital expenditure averaged 11.3%, 9.6% and 1.7% 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%, 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 revenues[20] 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 2002-2003 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%[21]; with relation to capital expenditure, the fall began earlier (in 1999) and responded rather to crowding out effects caused by current public spending feeding on debt than to the impact of the economic crisis of 2001-2002.

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 experimented by provincial public spending in 2004-2006[22]. 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[23], providing thus support to the assertion that actual fiscal federalism suffered a setback compared to preceding decades; figures in table 2 are in this case worth mentioning as they show that while current transfers amounted to 2.51% of total provincial current revenues in 1993, they climbed to almost 7% in 2004.

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20. 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.

21. The exact figures were 4.4% in 2001 and 10.9% in 2002.

22. Not shown in tables and figures.

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

Ratios in table 3 and their representation in figure 3 bring about another interesting possibility of analysis in so far as spending can also be assessed in the light of the Downsian vote-maximizing model and the political budget cycle above quoted when analyzing Brender and Drazen (2005) and Meloni's contributions (2008).

By carefully examining plots in figure 3, a preliminary conclusion would be that a Downsian-like behaviour by provincial governments could not be ruled out at once. 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 one most of governors ran for reelection. Given that, in the first two cases (1995 and 1999), total and current public expenditure peaked in the year of election while they dwindled (in percent of gross domestic product) the year immediately after the election, an econometric test seems to be required in order to assess whether the hypothesis of a political business cycle's occurrence can be statistically proven. Figures for 2003 appear to be contradicting what one would expect although the situation was in that case more complex, as the country began to leave behind the 2001-2002 crisis and benefited from 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 tax revenues/total current revenues, provincial and funds from the revenue sharing system/total current revenues and current transfers/total current revenues, whose performance deserve analysis.

Despite some apparent stability in the first ratio, provinces' performance in raising their own taxes clearly impaired as the average fell from 35.61% in 1993-1999 to 33.50% in 2000-2004. Reasons explaining

Table 3
Argentina – Provincial Public Spending
(in percent of gross domestic product)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
CURRENT SPENDING	9.93	9.72	9.77	9.41	9.43	9.98	11.20	11.36	12.33	10.11	9.74	10.02
CAPITAL OUTLAYS	1.60	1.76	1.84	1.71	1.75	1.75	1.64	1.25	1.22	0.77	1.17	1.75
TOTAL SPENDING	11.53	11.48	11.60	11.12	11.18	11.73	12.84	12.62	13.55	10.88	10.91	11.77

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

Table 4
Argentina – Provincial Financial Debt Stock

| PROVINCIAL DEBT STOCK,	1996	1997	1998	1999	2000	2001	2002	2003	2004
BILLIONS OF CURRENT PESOS	13922	11802	13164.1	16565.3	21 348	29971.7	68531	70642.6	75245.2
IN PERCENT OF GDP	5.1%	4.0%	4.4%	5.8%	7.5%	11.2%	21.9%	18.8%	16.8%

Source: Own estimates on the basis of data from the National Direction of Fiscal Relations with Provinces, Ministry of Economy, Argentine
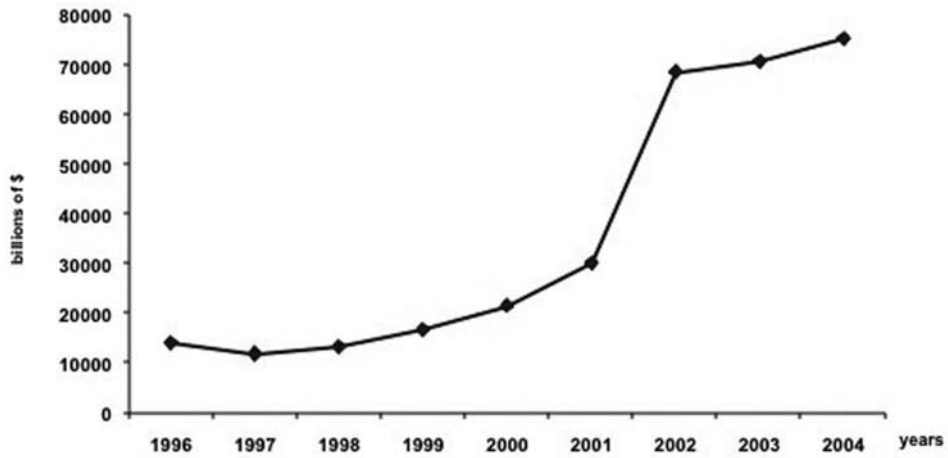
Figure 3
Argentina, Provincial Public Spending
(in percent of gross domestic product)
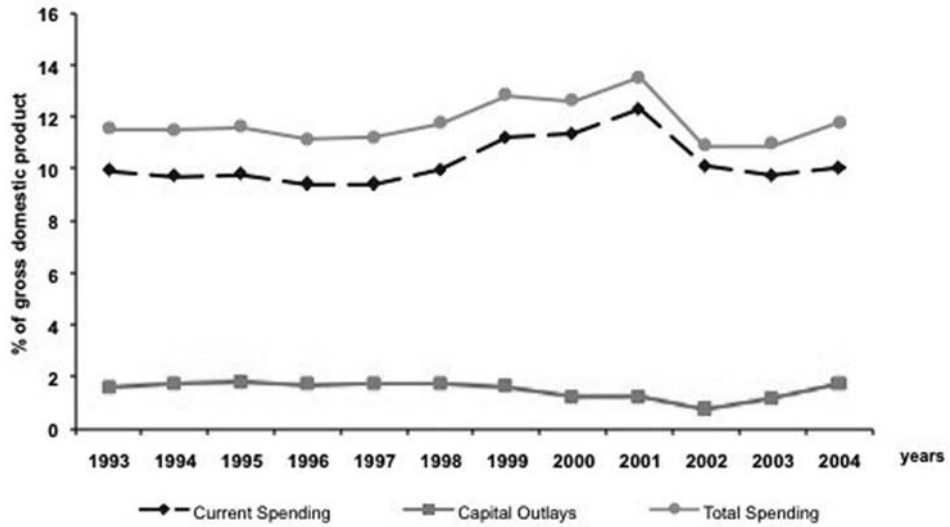
Figure 4
Argentina, Provincial Financial Debt Stock
in billions of current pesos

the loss of 6% 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. Similarly, although in a smaller proportion, consolidated fiscal resources (provincial and revenue sharing funds) worsened in the period from 87.97% of current incomes in 1993-1999 to 83.79% in 2000-2004, mainly owing to the Congress delay in enacting the new revenue sharing system; this in turn placed in the central government's hands the important instrument of non automatic discretionary transfers, which more than doubled their participation in provincial budgets (see table 2 and figure 2) and for whose perception provincial governments permanently strive.

Table 4 and figures 4 and 5 offer interesting insights related to one of explanatory variables to be included in the model of the ensuing Section IV. As illustrated below, during 1997-2001 provinces steadily resorted to debt in order to make up the gap between a rising current public spending[24] and current revenues. Explanations for that need to be sought in the sluggish performance of tax revenues due to a slower gross geographic product's growth path but mainly in the notorious lack of fiscal discipline prevailing in provinces during the last years of convertibility (1999-2001) which resulted in that current public spending's participation in product rose more than two percent points, as shown by table 3 and figure 3.

The situation turned dramatic in 2002-2003 when most of provincial governments had to massively resort to issuing quasi money (public bonds) compulsory used to pay civil servants' wages; the growing burden of provincial debt in these years is illustrated by the debt stock ratio in table 4 and also well depicted by the plots in figures 4[25] and 5.

As it happened in preceding economic crises, provinces' common practice of issuing public bonds that were compulsory placed among their civil servants through the mechanism of wage payments had important and unwanted consequences. People immediately channeled bonds into the market, via purchases of goods and services and the quasi moneys' cycle only ended when the central government intervened to bail out provincial governments undergoing serious financial strains.

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24. See figure 3.

25. The plot in figure 4 shows that the nominal debt stock increased almost 230% in 2002. As the inflation for that year reached 39.6% (due to the exit of convertibility and the domestic currency devaluation), the debt stock still experienced on increase of almost 190% with respect to 2001.

The incidence of provincial financial debt stocks tended however to recede as of 2003 mainly due to the recovery of the national economy, which naturally diminished the burden of public debt upon provincial treasuries, but also following the mentioned generalized bail out by the central government whose main objective was to restore monetary order by doing away with all the quasi money instruments created by provincial governments.

Figure 5
Argentina, Provincial Financial Debt Stock
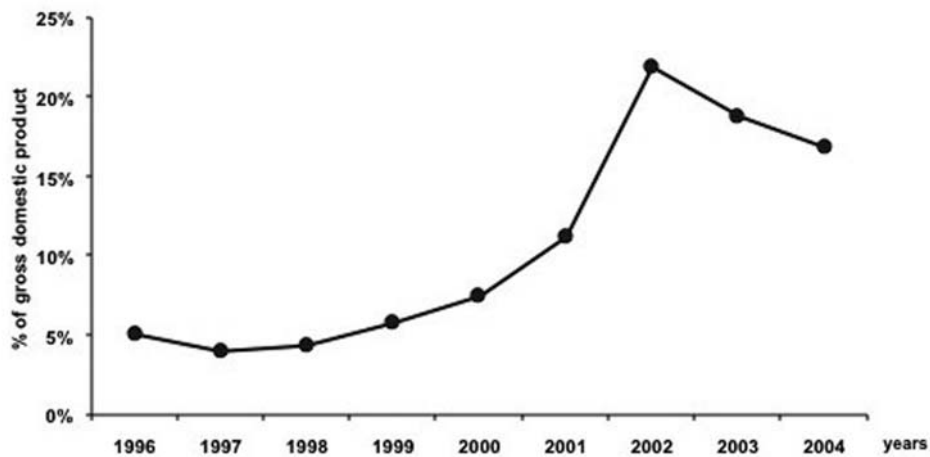
IV. THE THEORETICAL FRAMEWORK AND THE PANEL DATA MODEL

In analyzing the performance of provincial public spending in Argentina the idea is put forward that variables of economic, fiscal and institutional nature not only affect the level of public spending but also, and mainly, its composition. Thus, in addition to the traditional macroeconomic theory suggesting that expenditures relate directly with the level and growth path of product, in so far as gross increases in domestic product avail provinces to accede to more shared funds whereas gross geographic product directly impact on their own fiscal revenues[26], it might well happen that the

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26. Curiously enough, econometric estimations showed that the impact of product upon spending fell short of confirming the expected results.

relationship could be more ambiguous if spending categories (in percent of total spending) were used in place of expenditure in levels.

Nevertheless, a more interesting approach to the analysis of subnational public spending comes from the normative theory of fiscal federalism and federal finances[27] in so far it stresses that governments' spending performance in supplying public goods at the required amounts and quality levels is seen to be closely related to the amount of fiscal revenues upon which the jurisdiction exercises direct control; that is, its degree of financial autonomy. In other words, the higher the percent of tax revenues collected[28] by the provinces the more accountable their governments are expected to be towards taxpayers. Contrariwise, the more provincial governments rely on revenues and transfers[29] from upper jurisdictions the more diffuse its accountability degree becomes. The just described normative standpoint is here used to empirically show that the degree of financial autonomy, via an immediate impact upon governments' accountability, directly affects different spending categories' share of total spending.

Following the same argumentative line the principle of financial sufficiency, that is, the fact that provincial governments meet all their spending commitments without the need to resort to borrowing in order to restore the budget constraint[30], has also been seen to influence not only the amount but also the composition of public spending. The inclusion of this explanatory variable, as well as of debt stocks, amounts therefore to reflect in the econometric model the hypothesis that determined spending categories' participation in total spending respectively decrease/increase with the former and increase/decrease with the latter variable.

A new approach which, apart from economic and fiscal variables also considers politico-institutional features of fiscal federalism[31], has recently gathered the attention of economists involved with the analysis of

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27. See for instance Bird (1986, 1994,1996).

28. Needless to say, tax collection by the province also implies the faculties to tax and to define tax bases, tax payers and tax rates.

29. An interesting case emerges when analyzing transfers of shared revenues in countries like Argentina, in which provinces expressly delegate taxes and tax collection (i.e. VAT, Income Tax) to the central government but whose yield is yet legally considered as provinces´ own.

30. The principle of financial sufficiency must mainly be considered with relation to current expenitures as the important intergenerational impacts of public investment turn reasonable to resort to debt for financing capital outlays.

31. See Section II above.

subnational spending. In particular the approach, which somehow updates the interest for the Downsian developments of the political business and budget cycles, places the focus on provinces' constitutional and legal arrangements concerning matters such as bicameral legislatures, governors' possibility of reelection, constitutional or legal limits to public spending or to provincial public borrowing and also conditions for use of credit. This line of study also considers the impact of central level-provinces political alignment and the effect of voting and electoral rules[32] upon subnational fiscal discipline and spending.

Based on the ideas sketched in the preceding paragraphs, the basic analytic framework of the estimated panel data model consists of a regression equation with the form indicated by the following expression:

$$y_{it} = \alpha_i + B' x_{it} + e_{it} \qquad (1)$$

In which vector y embodies the dependent variables for the 23 provinces and the city of Buenos Aires and vector x the K used regressors or explanatory variables; as usual, e stands for the random error term.

The following series, showing different public spending categories in percent of total provincial public spending, were in turn provincially computed and stand for the panel data model's dependent variables:

- *CUPS_TSP*: Current spending in percent of total public spending.

- *COPS_TSP*: Consumption spending in percent of total public spending.

- *SOPS_TSP*: Social spending in percent of total public spending.

- *ECPS_TSP*: Economic spending in percent of total public spending.

- *CAPS_TSP:* Capital spending in percent of total public spending.

whereas the explanatory variables, accounting for economic, fiscal and borrowing performance, are represented by:

- *GGP*: Per capita gross geographic product of provinces. There exists ambiguity about the coefficient's sign given that spending categories are expected to differently react to this variable's level[33].

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32. See Persson and Tabellini (2004).

33. Reasons for that are given in the next Section, when econometric estimations are analyzed.

• *RESPOND:* The variable's value obtains from the quotient between provincial tax revenues and provincial current revenues. The ratio measures each province's degree of financial autonomy, as a proxy for the accountability level and the coefficient's sign is expected to be negative in the case of current, consumption and social spending and positive for economic and capital spending.

• *RESPOND1*: It also stands for provinces' degree of financial autonomy and differs from the preceding one in that the numerator also includes provincial tax revenues and funds from the revenue sharing regime accruing to each province. As with RESPOND, negative coefficient's signs are expected in the case of current, consumption and social spending and positive ones for economic and capital spending.

• *SUFIN:* It measures provinces' degree of financial sufficiency on the basis of the quotient between current revenues and current spending. The coefficient's sign is expected to be positive in the case of current, consumption and social spending as, letting aside efficiency considerations, higher degrees of financial sufficiency somehow enhances governments' possibilities of incurring in the mentioned expenditure categories.

• *PD:* Per capita provincial stock of public debt. A positive coefficient's sign is expected for current spending[34] and a negative one in the rest of cases.

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

• *D1*: 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[35]. In line with the idea that central governments are in a position of encouraging fiscal discipline in provinces sharing the same political sign, current, consumption and social spending variables' coefficients should in this case be negative.

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34. PD´s positive coefficient in this case reflects the mentioned practice of Argentine provincial governments consisting in resorting to debt for wage payments any time the economic cycle reduced tax revenues, or when fiscal resources fell short of needed, due to the incorporation of temporary personnel on a permanent basis.

35. This variable was used by J. Bercoff and J. Nougués (2005, op. cit) and taken in turn from M. Jones et al (2000).

• *D2*: 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. Should the Downsian hypothesis of the political business cycle hold, current, consumption and social spending variables' coefficients will be positive.

• *D3*: 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. As in the previous case, positive coefficient's signs are expected for current, consumption and social spending variables.

• *D4*: Reelection right exercised: it takes value 1 in the first year of the new term and value 0 in the rest. Following the hypothesis that governments, once reelected, aim at regaining fiscal discipline, negative variables' coefficient signs are expected for current, consumption and social public spending.

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:

• *D5*: provincial debt: it takes value 1 when constitutional limits exist and 0 when they do not exist. Effectiveness of limits should be reflected in negative coefficients for current, consumption and social spending variables and positive ones in the case of economic and capital public spending.

• *D6*: limits in the use of credit: it takes value 1 if limits exist and 0 otherwise. As above, negative coefficients are expected for current, consumption and social spending and positive ones otherwise.

• *D7*: provincial public spending: it takes value 1 when constitutional limits exist and 0 when they do not exist. Variables' coefficient signs are expected to behave as in D5 above.

• *D8*: limits on public spending: it takes value 1 if limits do not exist and 0 otherwise. Needless to emphasize, absence of limits should result mainly in positive coefficients for current and consumption public spending and, to some extent, for social spending.

Finally, and in line with the widespread idea found in the literature (Tsebelis, 1995; Bercoff and Nougués, 2005) that a bicameral system

introduces check and balance mechanisms in the functioning of both chambers, the ensuing dummy variable is also considered in the econometric analysis:

• *D9:* Bicamerality: it assumes value 1 in provinces with two chambers and 0 in single-chamber's provinces. Following the thread of arguments, check and balances will more likely impose discipline on current and consumption spending, for what these variables' coefficients should bear negative signs.

V. ANALYSIS OF ECONOMETRIC RESULTS

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

The series for the dependent and explanatory variables used in the estimation were built on the basis of data obtained from the National Direction of Coordination with Provinces (www.mecon.gov.ar/hacienda), available under the following headings:

Geographic Gross Product

Total Provincial Public Spending

Current Public Spending

Consumption Public Spending

Capital Public Spending

Social and Welfare Public Spending

Economic Public Spending

Provincial Stock of Public Debt

Total Revenues

Total Tax Revenues

Provincial Tax Revenues (levied within the jurisdiction)

National Tax Revenues (from the Revenue Sharing Regime)

Series for the Geographic Gross Product of provinces were built from information provided by Provincial Statistical Offices, the National Institute of Statistics and Censuses and the National Direction of Regional Economic Programming. The information mentioned above (including geographic gross product) was obtained or computed for each of the 24 Argentine provinces and converted into per capita pesos of 2004.

The usual two alternatives were in turn resorted to in relation to the individual effect represented by a in equation (1): one consisting in considering the term constant all throughout the period, but specific for each unit or province (fixed effects) and another one in which the same a applies to all provinces (pooled regression)[36]. As known, in the fixed effect model, with specific a for each province, differences between units are captured by the differences in the constant term and interpreted as a parametric displacement of the regression function.

In choosing between the two alternatives[37], the decision for 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 a are similar[38].

Although the fixed effect approach includes the case in which the regressors have different slopes for each of the cross section units, it was here taken that the coefficients of slopes 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:

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

where i stands now for the matrix of dummy variables of order $i \times i$.

Problems of heteroskedasticity and autocorrelation turned up once the model was run as tests confirmed that the variance of errors was not

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36. 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.

37. In discarding 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).

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

constant for all cross section units and that errors were serially correlated. As it 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 with ordinary least square estimation methods; however, and in reason of theirs not exhibiting minima variances, estimations will not yield efficient estimators or BLUE and larger confidence intervals will be called for and that makes 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[39]. For checking the correction, the Modified Wald[40] Test for groupwise heteroskedasticity and the Wooldridge[41] 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.

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 the main results concerning the effect of the used variables upon the performance of categories of provincial public spending are summarized in the ensuing tables and will be used to draw important preliminary conclusions.

According Table 5, showing results for Current Spending's share of Total Provincial Public Spending as the dependent variable, only three estimated coefficients exhibit the expected sign and proved to be statistically significant; that is, these corresponding to the provinces' degree of

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

40. 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.

41. See Wooldridge (2002).

financial autonomy (RESPOND1)[42] and the stock of public debt (DP)[43] and the one for the categorical variable D5, standing for constitutional limits on provincial public debt[44].

The statistical significance of RESPOND1 falls in line with the upheld hypothesis that higher financial autonomy will lead to current spending's lesser weight in total expenditures. Another form of explaining this result is that the greater the proportion of fiscal resources accruing from within the jurisdiction the more accountable governments will be when meeting people's real demand for public goods, the latter not being necessary related to increases in current or consumption expenditure[45].

The significance and sign of PD reveals in turn another feature of the Argentine provincial public spending, already highlighted when defining the variable. The provincial performance clearly shows that, either being an usual recourse to credit or a compulsory placed debt[46], the result in general is an increase of current spending owing to the major financial burden (interest payments) as much as for the use given to funds captured by governments. There is also a close connection with the result for D5, in so far as it is indicating that current spending's participation tends to decrease when limits exist to the use of public credit.

The point deserves been mentioned that, save for the case of D5[47] (constitutional limits to debt o limits to the use of public credit), econometric estimations of constitutional and politico-institutional variables' coefficient showed in the rest of cases to be not significantly different from 0. Thus,

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42. It needs to be stressed that whenever RESPOND1 resulted statistically significant and held the expected sign, RESPOND also did it. Therefore, the decision to use the former variable in order to represent financial autonomy aimed at emphasizing the point that shared fiscal revenues should also be considered a part of provinces' own fiscal resources.

43. Comments to the preliminary version suggested to use the lagged value of public debt stock as the explanatory variable, instead of the contemporaneous one, as usually found in the literature. Econometric estimations using PD(1) also resulted significantly different from 0 but they did not show an overwhelming superiority with regards to PD, which can be explained by the already mentioned feature of provincial governments issuing debt to defray current expenses.

44. Results are always similar if D7 (limits on the use of credit) is used instead of D5.

45. Although the conclusion may appear somehow misleading as the current component of public goods is by no means minor (for instance in health or education), people in general considered excessive or disproportionate current spending's participation in total expenditure, specially when compared with capital outlays' share of spending. Likewise, there is a widespread believe among population that increases in current spending, beyond certain limits are of no use as they only serve governments´ political or electoral objectives.

46. In general, apart from the fact that debt funds are often used to defray current spending, many a provincial government customarily issued debt compulsory placed among civil servants, as was already explained mentioned in the analysis of stylized facts.

47. In all cases, the value, sign and statistical significance of D5 and D6 coincided for what it was clear that both measure the same thing.

neither Jones' hypothesis (2000), mentioned by Bercoff and Nougués (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 (D1) nor Fridrij's assertion (2006) of rising expenditures (political spending?[48]) in the last year of governors' term[49] (D2) were endorsed by the econometric estimations[50] showing the performance of the expenditure mix.

Table 5[*]

Cross-sectional time-series FGLS regression
Coefficients: generalized least squares
Panels: heteroskedastic
Correlation: common AR(1) coefficient for all panels (0.2462)

CPS_TPS	COEFFICIENT	STANDARD ERROR	z	P>z
RESPOND1	-.3033546	.0690631	-4.39	0.000
PD	.1550476	.0405192	3.83	0.000
D5	-.0883199	.0338654	-2.61	0.009
I2	.0316938	.0409644	0.77	0.439
I3	-.0612838	.0221241	-2.77	0.006
I4	-.2443454	.0330849	-7.39	0.000
I5	.0626454	.0206802	3.03	0.002
I6	-.0055662	.0182640	-0.30	0.761
I7	.0447182	.0404830	1.10	0.269
I8	-.0382517	.0228341	-1.68	0.094
I9	-.0660853	.0319994	-2.07	0.039
I10	-.0596514	.0235956	-2.53	0.011
I11	-.1796949	.0264132	-6.80	0.000
I12	-.1075751	.0306639	-3.51	0.000
I13	-.0746627	.0295836	-2.52	0.012
I14	-.1201099	.0246233	-4.88	0.000
I15	-.2226591	.0364351	-6.11	0.000
I16	-.0744308	.0224758	-3.31	0.001
I17	-.0662514	.0235399	-2.81	0.005
I18	-.0692306	.0215021	-3.22	0.001
I19	-.2578547	.0272491	-9.46	0.000
I20	-.2710835	.0455518	-5.95	0.000
I21	.0908449	.0400466	2.27	0.023
I22	-.0546922	.0202652	-2.70	0.007
I23	-.1612768	.0356414	-4.52	0.000
I24	-.0638533	.0226803	-2.82	0.005
CONS.	1.1119570	.0528507	21.04	0.000

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

It is finally worth mentioning that, contrariwise to what has been asserted in other articles dealing with the subject (i.e. Bercoff and Nougués, 2005), the variable D9 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 and balances played by double chambers could not be verified with the estimation of the panel data econometric model[51].

Although most of results in Table 6, that shows the impact of different variables upon provincial consumption spending's share of total public spending, do not run counter those already mentioned in Table 5, some apparent contradictions deserve being considered as is the case of a negative coefficient for public debt. The explanation needs to be sought at the different items embodied by both spending categories with salaries of permanent labour bearing an overwhelming weight within current expenditure, while consumption public spending includes only personnel contracted on a temporary basis.

Table 6 also shows the striking result that –conversely to what one might expect- an increase in gross geographic product induces a reduction in consumption spending's share. Notwithstanding the fact that this feature would deserve a deeper analysis, it might tentatively be argued that, on the one side, product increases could be reducing the need for certain public goods[52] to be supplied and, on the other, that product could be rather indirectly affecting spending via budgetary and fiscal variables such fiscal effort and financial sufficiency as both are expected to increase following a raise in product. SUFIN's coefficient sign and statistically significance may somehow being providing support to the preceding hypothesis.

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48. Certain budgetary categories of current spending, as for instance' goods and non personal services', are often used to channel expenditures whose reasonability and urgency is debatable, to say the least, as they respond to what is customarily considered political spending.

49. It is worth quoting , in this connection, that Bercoff and Nougués' (2005) also found estimations not significantly different from 0 and bearing negative signs; they explained the results saying that governors able to be reelected had more fiscal discipline in order not to endanger their next term´ fiscal sustainability.

50. A positive and significant coefficient for D2 would have hinted a Downsian behaviour at the subnational level.

51. 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 certain expenditure categories to increase their participation.

52. An example of this is some parents' attitude to replace public for private schooling once economic conditions make this possible.

Estimations for categorical variables yielded in change mixed results; whereas coefficients and signs for D5 and D7 clearly indicate that consumption public spending share will fall should limits exist to public debt and public spending and to the use of credit, D1's coefficient sign does not confirm the hypothesis stating that the central government has the power and will to fiscally discipline provincial governments sharing the same political space. As before, no statistically clear evidences were found of a relationship between a Downsian-like behaviour and this consumption spending category.

Table 6

Cross-sectional time-series FGLS regression
Coefficients: generalized least squares
Panels: heteroskedastic
Correlation: common AR(1) coefficient for all panels (0.3082)

COPS_TPS	Coefficient	Standard Error	z	P>z
RESPOND1	-.01146	.0023907	-4.80	0.000
PD	-.005661	.0010699	-5.29	0.000
GGP	-.00032	.0000868	-3.69	0.000
SUFIN	.00129	.0002839	4.31	0.000
D1	.0007123	.00033	2.16	0.031
D5	-.0020615	.0004431	-4.65	0.000
D7	-.0063895	.0027256	-2.34	0.019
CONS	.0422443	.002892	14.61	0.000

Estimations in the ensuing Table 7, showing the impact of explanatory variables upon social public expenditures' participation in total spending, permit once more to verify that difficulties are soon encountered when trying to identify a single behavioural pattern of subnational public spending. On the one hand, while coefficients and signs for financial autonomy, stock of public debt and limits on provincial debt (use of credit) and public spending fall in line with theoretical predictions, the sign of D8's coefficient is difficult to explain, to say the least.

In spite of apparent similarities with results for current spending, results in table 7 present another worth emphasizing subtlety. Let it be noticed that gross geographic product has a negative though statistically significant coefficient which indicates that the higher the product (as a proxy to welfare) the smaller the amount jurisdictions devote to social spending needed to assist the poor[53]. On the other hand, the fact that public debt's coefficient is here significant and negative 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.

Thus, whereas signs for RESPOND, PD, D5 and D7 reaffirm the theoretical idea that higher accountability somehow displaces fiscal resources from spending items in which salaries and other current spending prevail, and the same is expected to happen when limits on spending or use of credit exist, no straightaway explanation exists for GGP and D8's negative coefficients. It may however be hypothesized that the need for additional social and welfare expenditures decreases as product grows, this being particularly observable in the case of health spending and population's lesser pressure on public hospitals[54] during economic expansions; nevertheless, there is no a simple explanation for D8's negative sign as not constitutionally or legally set limits on public spending should produce the opposite result, that is, to bring about higher percent participation of expenditures traditionally viewed as governments' political instruments[55].

A rather intriguing feature of results is that by being most of categorical variables, except for the three above mentioned, not statistically different from 0, situations of political business cycles were ruled out while the check and balance mechanisms of bicamerality could not be proven in relation to social expenditure participation in total spending.

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53. 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.

54. As declared labour has in Argentina the right to receive health services from private clinics and hospitals, an employment rise via increases in product normally means less pressure on public hospitals.

55. It goes without saying that, let aside education and health, people normally regarded social spending as "asistencialista" expenditure delivered not in function of needs but of political or electoral convenience.

Table 7

Cross-sectional time-series FGLS regression
Coefficients: generalized least squares
Panels: heteroskedastic
Correlation: common AR(1) coefficient for all panels (0.1815)

COPS_TPS	Coefficient	Standard Error	z	P>z
RESPOND1	-.2834027	.1047305	-2.71	0.007
PD	-.1375181	.0220596	-6.23	0.000
GGP	-.0024277	.0013279	-1.83	0.068
D5	-.0815088	.0233632	-3.49	0.000
D7	-.0539077	.0276752	-1.95	0.051
D8	-.0665130	.0238131	-2.79	0.005
CONS	.7086145	.0518106	13.68	0.000

Inspection of figures summarized in Table 8 (capital outlays as a percent of provincial public spending is now the dependent variable), brings to surface four features clearly highlighting provincial governments' performance with regards to this spending category. First, the not found relationship between product and capital formation; second, the hardly noticed incidence of constitutional and politico-institutional variables upon public capital spending (except in two cases); third, the statistical relevance and positive sign of fiscal effort (RESPOND1), that implies that capital spending proportionally increases as provincial financial autonomy rises and fourth, the statistical significance and negative sign of public debt stock indicating that provinces do not use debt funds for capital formation.

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 some politico-institutional variables, such as D2 and D3 did not result statistically significant: in reason of their complexities, long construction periods and resources required, capital outlays do not properly fit political needs of governments intending reelection in the same quick way as current spending does. Two remarkable exceptions, in relation to categorical variables, were however the coefficient of D5 whose positive sign and significance implies that limits placed on the amount and use of credit works in the direction of correctly favouring capital formation, contrariwise to what was shown for current spending (see table 5).

The sign and statistically relevance of provinces' financial autonomy (RESPOND1) brings here out a result of undeniable policy content: the more provinces cover their expenses with own fiscal resources the higher the participation of capital outlays in terms of total provincial spending. Another interpretation can be that greater financial autonomy in turn enhances provincial governments' accountability as they tend to devote resources to spending categories of greater visibility and others than current and consumption expenditures.

In pointing out next that public debt (PD), apart from being statistically significant also has a negative coefficient, it must be recalled the mentioned performance of this variable in the Argentine subnational level, in which the recourse to compulsory debt usually responded to provincial governments' need of resources mainly to face civil servants' payroll.

Although not statistically significant, D8's positive coefficient somehow shows that limits on public spending, apart from curtailing current expenditure, may also induce capital outlays' larger participation in total spending.

In sum, robust results rendered by estimations in table 8 support the advanced arguments that financial autonomy (based on own taxes and shared revenues) in fact encourage capital outlays whereas debt resources do not as the latter seldom go to capital formation. The impact of gross geographic product upon this spending category, if any, is negative for the above suggested short run crowding out between public and private investment.

Table 8[56]

Cross-sectional time-series FGLS regression
Coefficients: generalized least squares
Panels: heteroskedastic
Correlation: common AR(1) coefficient for all panels (0.2323)

COPS_TPS	Coefficient	Standard Error	z	P>z
RESPOND1	.2880	.0690419	4.17	0.000
PD	-.1558058	.040493	-3.85	0.000
D5	.0949329	.0282493	3.36	0.001
D7	-.0527281	.028794	-1.83	0.067
D8	.0063849	.0282715	0.23	0.821
CONS	-.1007452	.0528166	-1.91	0.056

Figures summarized in Table 9 account also for a very interesting case as variable ECPS_TSP 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 dwindles following enhanced financial sufficiency and increases when constraints exist; far from being contradicting, results show –as predicted- that financial sufficiency deters the current component of economic expenditures from expanding and yet limits on debt and credit use expand in turn the capital component. For reasons given above, the public debt stock will shrink economic spending share of total spending[57]. The fact that financial autonomy does not play any role, as did in previous estimations, may be interpreted in the sense that accountability is better represented here by the variable SUFIN as, by standing for the ratio between current revenues and spending, is somehow implying that the fiscal effort needed for financial sufficiency is not used in defraying the current component of this spending category.

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56. Fixed effect for i7 dropped due to collinearity.

57. 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 9

Cross-sectional time-series FGLS regression
Coefficients: generalized least squares
Panels: heteroskedastic
Correlation: common AR(1) coefficient for all panels (0.2096)

ECPS_TSP	Coefficient	Standard Error	z	P>z
SUFIN	-.0138	.0045647	-3.04	0.002
PD	-.1162831	.0282295	-4.12	0.000
D5	.0635178	.0270747	2.35	0.019
CONS	.0839013	.008405	9.98	0.000

The ensuing Table 10, summarizing results of all estimations, helps visualizing signs of statistically different from 0 coefficients and, therefore, how explanatory variables actually impact upon different spending categories' participation in total provincial public spending:

Table 10
Signs of statistically significant estimated coefficients

VARIABLES	RES-POND 1	SUFIN	PD	GGP	D1	D5	D7	D8
CPS_TPS	c		+			-		
COPS_TPS	-	+	-	-	+	-	-	
SOPS_TPS	-		-	-		-	-	-
CAPS_TPS	+		-			+	-	

VI. Conclusions

The research carried out permits to obtain conclusions which helps to understand the performance of provincial public spending's categories in Argentina; particularly, how the latter react to economic, fiscal and categorical variables. Results can be extended to other federal countries undergoing a marked spending decentralization and also to unitary-like countries in which locally elected authorities are able to affect the spending composition.

The empirical analysis for the period 1993-2004, for which a fixed effect panel data model was resorted to, departed from a theoretical framework founded on the fundamentals of fiscal federalism and federal finances, in turn enriched with the consideration of the impact of politico-institutional variables upon diverse spending categories. Coefficients' estimation enabled to arrive at the following preliminary conclusions:

- The hypothesis of the relationship between financial autonomy and accountability resulted widely proven in respect of all spending categories as tax revenues' larger share within current revenues (major own fiscal effort) was seen to dwindle current, consumption and social public spending in percent of total spending and to increase in change capital outlays' participation; that is, the more provinces' fiscal effort deepened the more visible provinces' use of resources (accountability enhancement) seemed to become.

- In reinforcing the above mentioned results, major fiscal effort by provinces led to an increased participation of capital outlays in provincial 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.

- The results for financial sufficiency (SUFIN) as an explanatory variable were, in context of the analysis of public spending categories' performance, far from being satisfactory as only in two regression equations coefficients were statistically significant. Nevertheless, its negative impact upon economic spending participation may be somehow implying a discouraging effect upon economic spending's current content resulting from SUFIN's fiscal effort component.

- Increases in the stock of public debt boosted current public spending while in turn shrank capital and economic public spending. This brought to surface not only the impact of the financial burden (represented by interest payments) but also the fact that the use of credit by provincial governments did not accomplish the expected role of forming capital stocks.

- Strikingly, and contrariwise to what was generally assumed, gross geographic product and categories of provincial public spending did seldom appear 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. Let it however be stressed that results showed a negative impact of gross geographic product upon participation of social public spending, which can be interpreted as provinces been able to switch resources from attention to the poor to other spending categories since the expansion of the product helped to reduce poverty.

- On the other hand, the not existing relationship between gross geographic product and public capital formation's share, 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 behaved like substitutes.

- With regard to categorical variables, their econometric performance fell in general short of yielding conclusive results; however, clear statistical evidence was found that operating limits on public debt served the purpose of reducing current, consumption and social public spending participation in provincial spending. Likewise, the empirical analysis showed that constitutional and legal constraints placed upon the use and ends of resources from credit clearly tended to enhance capital formation and economic spending's share of total to the detriment of other expenditure categories.

- The downsian-like behaviour and economic business cycle patterns, based on the idea of expansive spending programmes incurred by governments in electoral years, did not find support in estimations as coefficients of variables standing for governors' reelection possibility (D2 and D3) did not appear statistically significant in

any spending category, nor the hypothesis of governments' fiscal discipline once reelection is achieved (D4). Nevertheless, the possibility of political budget cycles taking place at the Argentine provincial level can not be ruled out at once since they still might have happen with regards to provincial spending levels (total or by categories) as roughly suggested by table 3 and figure 3 in Section III.

- The assumption could not either been proved that provinces tended to reduced certain spending categories when they shared the central government's same political sign (hypothesis of fiscal discipline being imposed from above). The only case in which this variable resulted statistically significant was with consumption expenditure participation in total spending as the dependent variable and the coefficient held not the expected sign.

- Also, and contrariwise to what was asserted in related papers about legislatures' assumedly influence upon provincial public spending, only very weak or nil evidences were found backing the assumption that bicamerality's checks and balances influenced the participation of diverse spending categories within total provincial spending.

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