

**DECENTRALIZATION, FISCAL DISCIPLINE IN  
SUB-NATIONAL GOVERNMENTS, AND THE  
BAILOUT PROBLEM: THE CASE OF ARGENTINA**

**Juan Pablo Nicolini<sup>\*</sup>, Josefina Posadas<sup>\*\*</sup>, Juan Sanguinetti<sup>\*\*\*</sup>, Pablo Sanguinetti<sup>\*\*\*\*</sup>  
& Mariano Tommasi<sup>\*\*\*\*\*</sup>**

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<sup>\*</sup> Universidad Torcuato Di Tella.

<sup>\*\*</sup> Universidad Nacional de La Plata.

<sup>\*\*\*</sup> Investigador del Centro de Estudios para el Desarrollo Institucional - Fundación Gobierno y Sociedad.

<sup>\*\*\*\*</sup> Universidad Torcuato Di Tella.

<sup>\*\*\*\*\*</sup> Centro de Estudios para el Desarrollo Institucional - Fundación Gobierno y Sociedad & Universidad de San Andrés

## **1. Introduction.**

Argentina is a democratic country with a federal system and tradition since pre-independence times of strong provincial governments and politics. The country is relatively well endowed both in terms of natural and human resources, and has always been considered a candidate for strong, sustained growth and development. Nevertheless, most of this potential has not materialized in the past due to a very peculiar politico-economic history. That history has been, in part, related to a conflict over the distribution of fiscal resources, with the different political jurisdictions as key actors. In this respect, and within the context of the various reforms already taken in other areas, the reform of its federal fiscal (and political) institutions is likely to be a key determinant of whether Argentina will be able to consolidate a sustained path of economic and social development.

Argentina is divided into 24 autonomous political jurisdictions consisting of 23 provinces and the City of Buenos Aires. With approximately 50% of total public spending occurring at the sub-national level, it is the most decentralized country in Latin America. At the same time, the most important taxes are collected at the national level, which implies a significant degree of vertical imbalance.

Having a federal system, political autonomy of sub-national governments is quite high. Furthermore, provincial politics is an important building block of national politics, due to the nature of the electoral system (Jones 1995 and 1997). Thus, a high degree of fiscal decentralization (at least on the expenditure side) coupled with high institutional and political autonomy and heterogeneity makes Argentina a very appealing case in which to study the interplay of institutional and political factors in the working of federal finances.

Provincial fiscal decisions have always had a significant impact on the overall public sector finances. In the 1980s the provinces were responsible for a considerable part of the consolidated public sector deficit. A number of measures have been taken over the last decade, which have tended to reduce the space for unsustainable fiscal behavior of the sub-national governments. Yet, the situation is far from being resolved, and their future performance remains crucial for the consolidation of macroeconomic stability.

The indicated high degree of vertical fiscal imbalance has been addressed with a complicated system of intergovernmental transfers, among which the most important is the tax-sharing regime (Coparticipación Federal de Impuestos). As it will be clear from what will be discussed below, throughout the years the underlying legal framework of the “coparticipation” system was repeatedly altered, and it has been the source of numerous conflicts. These periodic modifications led to the current situation in which the whole system has reached a high level of complexity. As many observers have shown, this intricate scheme (christened the “fiscal labyrinth”) does not correspond with any economic criteria, and provides all sorts of perverse incentives for the provincial leaders to overexploit the common pool of national taxation. One of the implications is that, oftentimes, provincial authorities behave as if they did not face a hard budget constraint, anticipating the “ex-post” assistance from national sources.

The aim of this study is to look into the determinants of fiscal performance of sub-national governments in Argentina. We will do that through a careful analysis and examination of the overall regime of incentives, through an analysis of salient episodes of “bailout” and through cross-sectional empirical analysis.

The bailout episodes to be analyzed will include mostly those that occurred in the relationship between the national and provincial governments<sup>1</sup>. We will be interested in the process that caused the crises and how both the provinces and the federal government reacted, emphasizing what were the incentives and constraints each faced. We will also try to explain the actual form that the bailout takes. Transfers, as mentioned above, are just one way; others include loans, anticipation of taxes, guarantees, transfers of expenditure responsibilities, assumption of liabilities of the sub-national government, etc.

The empirical analysis will emphasize those determinants of bailout related to the institutional design of intergovernmental fiscal institutions. Thus, the study will have direct implications regarding the strengths and weaknesses of the current institutional framework in generating sound fiscal behavior by the different levels of government.

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<sup>1</sup> The usage in Argentina, which we follow throughout this document, is to refer to the federal government as “the national government.”

The rest of the study is organized as follows. Section 2 introduces some definitions and the institutional context that has shaped the working of fiscal federalism in Argentina. Section 3 describes the bailout episodes to be investigated. We finish in section 4 with some general conclusions and present some ideas for future research.

## **2. Bailout: some definitions and the institutional features of fiscal federalism in Argentina.**

Before going into the details of the bailout episodes we identified for Argentina, it is useful to be explicit about what we mean by bailout and their possible determinants. Though this analysis has been presented with at a great length in chapter 1 of this book, we want to extend some of the concepts that are explained there to fit more closely the case of Argentina. Also, the understating of the bailout episodes will be enhanced by the analysis of some basic features of the working of fiscal federalism in Argentina which will be common to all the episodes to be analyzed in section 3. That is why we also dedicate this section to the analysis of these features.

### **2.1 Bailout: definition and determinants.**

As suggested by the analysis presented in chapter 1 bailouts are situations where a federal government, by assuming an obligation of a sub-national government, deviate from an ex-ante rule (explicit or implicit) taking an ex-post action that was not contractually pre-established. If this ex-post incentive to deviate were anticipated by the sub-national government, it would generate an opportunistic behavior from the part of the latter. This opportunistic behavior will be reflected in unsustainable fiscal behavior enlarging the exposition of the jurisdiction to a crisis in the event of an exogenous shock. We want to emphasize two aspects of this definition of bailout. First, deviation of a rule; second, opportunistic behavior. Both conditions are important.

We may have a case in which there is a deviation from a rule but not opportunistic behavior -for example, the case in which a provincial obligation (i.e debt) with the central government is rescheduled or condoned because of an exogenous event such as a natural disaster. Again this case can be interpreted as an optimal response of the system in view of the impossibility to write down fully contingent contracts. This episode is in some sense

part of the implicit contract established among the various levels of governments; it is efficient and it cannot be interpreted as a bailout.

There are, on the other end, cases of sub-national governments behaving opportunistically but as a consequence of an ex-ante-established rule that distorts its incentives on a permanent basis. For example, the existence of regime of transfers that distributes resources taking into account the number of public employees in each jurisdiction. Here again we cannot talk about a bailout, as the irresponsible fiscal behavior is part of the current system of rules governing the relationship among the various levels of governments.

Of course between these two polar cases there may be situations where the identification of bailouts is not as clear-cut. This, in fact, occurs in many real-world cases as problems of information does not allow the analysts to identify where there was an opportunistic behavior involved. This is because sub-national actions (example: tax effort) in many circumstances are not directly observable. Which means that one cannot differentiate from what can be explained by really exogenous events from fiscal misconduct. This is actually part of the problem and explains why in practice bailout occur. In the episodes we describe below in section 3 this issues will have some importance.

The above analysis provides us with a definition of bailout that we will attempt to apply to the cases studied in the next section. We also need a prior regarding what are the determinants of bailout. Here again we follow closely what has already been suggested in chapter 1 though we make some extensions that are relevant to the case of Argentina.

One key factor that make the ex-post incentives of the federal government to deviate from those ex-ante is the cost of adjustment that the lower government has to face in times of distress. In a situation where the central government cares about the welfare of the population, this factor will affect the incentives of the authorities to intervene. These costs of adjustment will, in turn, depend on the degree of flexibility that the sub-national government has to change taxes and or expenditures. As suggested by Eichengreen and Von Hagen (1996), a key explanatory variable in this respect is the degree of autonomy

that jurisdictions have to set or change tax rates or create taxes as well as the degree of vertical imbalance or the proportion of expenditures financed out of local revenues.

Externalities have also been indicated as another factor affecting the ex-post incentives of the federal government to intervene. Wildasin (1997) emphasizes the negative externalities that a fiscal crisis in a given jurisdiction can cause in the remaining states. For example, if a province fails to pay back in time a debt obligation in the international market, it may induce an increase in the cost of indebtedness to the rest of the country. This externality argument conduces to a "too big to fail" prediction where a key determinant of who is bailed out depends on its size; as this will relate to the magnitude of the externality. We will investigate this hypothesis in the next section, especially when we analyze an episode related to the Province of Cordoba.

Another factor that has been emphasized as affecting the ex-post incentives of the federal government is the political cost/benefit the government receives by intervening at the sub-national level. In this regard, election times could make a federal government more sensitive to pressures from local jurisdiction especially when the jurisdiction is important in terms of votes. The political costs that the federal government may endure because of failing to help the jurisdiction will depend also on whether the fiscal problems could in part be associated with actions taken by the central authorities. In these situations we may expect that the federal government's incentives to intervene will be higher. One situation which will be relevant in this regard, is where the federal government is actually in charge of the sub-national (provincial) affairs because of a political and institutional federal intervention. Other situations are those in which the fiscal problems faced by the jurisdiction are in part a consequence of a national policy. In this sense some of the episodes of bailout to be analyzed below have also occurred in the context of policy changes originating at the national level (i.e the reform of the pension system), or shocks that affected the economy as a whole (the crises generated in 1985 by the Mexican devaluation). Thus someone can make the case that the ability of the local economy to adjust to such shocks is contingent upon the National economic policy regime.

Finally, within the political economy considerations, it is important to study how incentives of the central authorities are affected by the fact that sub-national authorities

belong to the same party of the federal government. In general the effect of this variable could go either way depending whether party discipline exists or not. Thus, in the case where there is a high degree of party discipline, the federal government in order to obtain support for their initiatives would not need to "buy" that support (votes) from jurisdictions run by its own party. Instead, it may need to do so with jurisdictions run by other political parties. There is some evidence for Argentina of a relative high level of party discipline (see Jones 1997). Also Jones et al (1999a) found that when analyzing the overall fiscal behavior of provincial administrations, party discipline have been a visible determinant checking, on average, expansive fiscal policies. However the role of this political variable has not been investigated in bailout type events and we will do this in the next section specially when analyzing the National Treasury Contributions (NTC).

Whether the ex-post incentives of the federal government to intervene will actually precipitate a bailout will depend on institutional factors that make the federal government more or less sensitive to those ex-post pressures. It will also depend on the presence of rules at the local level that, given the set of incentives facing the federal government, makes the local jurisdiction to take more or less advantage of these opportunities.

Some federal institutions, even though not explicitly designed to address intergovernmental relations, can operate as an effective break to the ex-post accommodation of the financial needs of local jurisdictions. Those include fiscal rules on debts or deficits, restrictions on monetary financing, independent central banks, currency-board arrangements etc. As we will see in the next section this has been a key factor in the case of Argentina after the convertibility plan was launched.

Also, of course, provincial level institutions will reduce (or exacerbate) the incentives for local authorities to misbehave. Within them we can mention budget balance laws set at local level (very common in other countries like USA), borrowing limits, independent audit agencies, etc. Jones at al (1999b) tests the effect of these institutional features on provincial expenditures. In the analysis of the next section we investigate whether some of these institutional variables have had any significant effect in the provinces that have been going to a bailout episodes.

## **2.2 Institutional features of the working of fiscal federalism in Argentina.**

Certain basic institutional features of the working of fiscal federalism in Argentina bear direct implications for the analysis of bailouts and will play a key role in some of the episodes to be presented in section 3. Thus, in this sub-section presents an overview of these features. We describe the division of expenditure and tax responsibilities between the national and provincial jurisdictions and indicate the resulting level of fiscal vertical imbalance. We also briefly analyze how this vertical imbalance has been addressed through intergovernmental transfers. Also, we describe briefly some provincial fiscal institutions, such as the existence of formal limits for provincial borrowing, the regulation of provincial transfers going to municipalities, the use of federal transfers as guarantees in provincial loans operations and the legal status of provincial state banks.

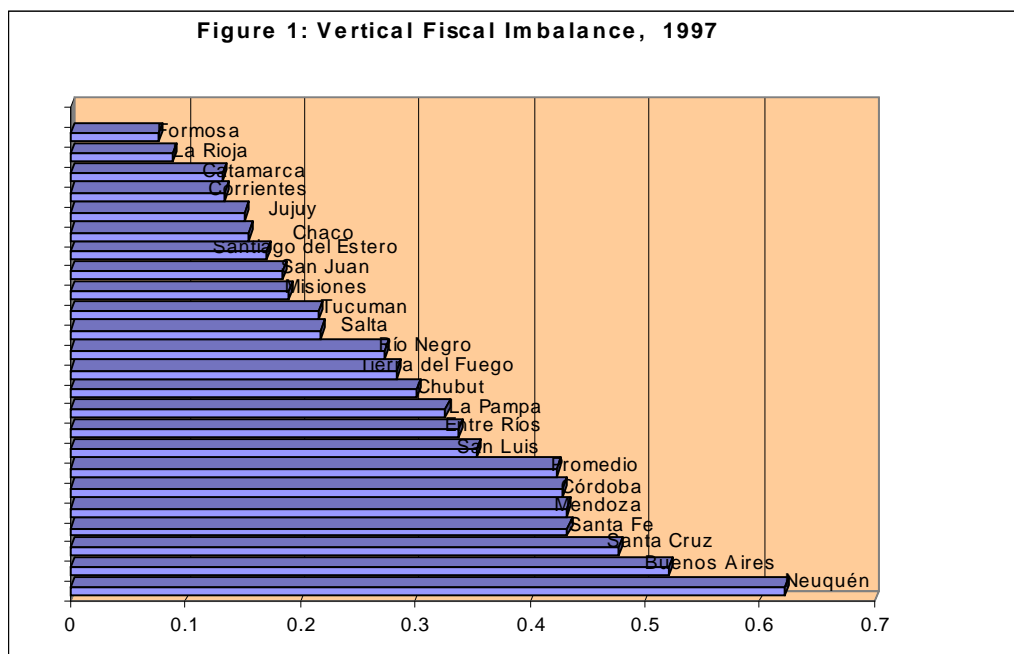
As indicated in the introduction Argentina is one of the most decentralized countries in Latin America in terms of public spending, with approximately 50% of the total occurring at the sub-national level (Interamerican Development Bank, 1997).<sup>2</sup> On the revenue side we have the inverse picture, with most important taxes collected at the national level. This leads to a high degree of vertical fiscal imbalance. From 1985 to 1995, an average of 65% of provincial expenditures were financed through transfers from a common pool of national taxes, with only 35% financed from direct own-provincial revenues. As Figure 1 shows, there is a high variation around this 35% (weighted) average.<sup>3</sup> Ten provinces finance less than 15% (and sixteen provinces less than 20%) of their spending with their own resources. Most of the transfers coming from the federal government are carried out on behalf of a delegation of tax authority from the provinces. As a consequence the use of 71% of the transfers is left to the discretion of provincial governments, while the remaining 29% of the transfers are earmarked for specific activities.

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<sup>2</sup> If we exclude the pension system, provincial plus municipal spending in 1997 was twice as large as spending by the federal government (Piffano, 1998).

<sup>3</sup> The simple average is just 23%, the difference being explained by the fact that the larger provinces (like Buenos Aires) tend to have smaller imbalances.

Figure 1. Vertical fiscal imbalance by province.



The Argentine Constitution establishes that the federal government will use tariffs on foreign trade to finance its expenditures, while provinces will finance themselves through taxes on the production and consumption of specific goods. Over time, however, for economic and political reasons, the national government became the main agent responsible for the collection of most taxes at the provincial level. The process by which these taxes, once collected, are then re-allocated to the provinces has been the source of numerous conflicts and modifications (see Porto and Sanguinetti (1993)). Argentina’s first national tax-sharing agreement (“Ley de Coparticipación Federal de Impuestos”) dates from 1935.<sup>4</sup> Periodically new tax laws have been written to regulate this distribution. The current law dates from 1988. It established that the federal government retains 42% of these taxes while 57% were distributed among the provinces, with the remaining 1% set aside “to finance unforeseen crises in the provinces.”<sup>5</sup> The law also establishes the percentages of the secondary distribution, and is supplemented by several other laws regulating the distribution and destination of some specific taxes that finance a set of predetermined activities.

<sup>4</sup> These laws define the share of specified taxes to be transferred from the central government to the provinces (“primary distribution”) and the way in which these funds are to be allocated among the provinces (“secondary distribution”).

Some of the main features of the 1988 coparticipation scheme prevail today, even though there have been numerous changes and adjustments. One of the main changes was to establish “preparticipations,” that is, to redirect parts of the tax revenue originally going into the tax-sharing pool, towards other purposes. (For instance, in 1992 and 1993 the national government was able to achieve a 15% reduction of the amount to be shared with the provinces, in order to finance the growing social security deficits.) Another important change was to provide some fixed-sum transfers and a minimum transfer guarantee to the provinces. Another factor was the decentralization of many educational and health services since 1992. This was to be financed by a transfer equivalent to the estimated cost of the services transferred. According to the World Bank (1996), the tax sharing system has reached a high degree of complexity, not corresponding with any economic criteria.

Both, the high degree of vertical imbalance plus the lack of transparency and discretionary character of some of the transfers going to provinces have had visible consequences in the fiscal behavior of some jurisdictions. In particular, the system has generated a moral hazard problem that undermines the incentives of lower units to behave in fiscally responsible ways. Jones, Sanguinetti and Tommasi (1997 and 1998) provide (indirect) empirical evidence on these “common pool” incentive effects induced by the coparticipation regime. They show: (1) that the larger provinces “internalize” more the federal tax cost of their spending; (2) that the provinces that are more favored by the “secondary coparticipation” (beyond the mere devolution of the taxes collected by the national government in the province) are more inclined to fiscal profligacy; and (3) that the national executive is able to discipline the governors from their same party into internalizing some of these costs.<sup>6</sup>

Within Argentina’s federal structure all levels of government are generally permitted to borrow both domestically and abroad. During the 1980s both levels of government borrowed extensively, reflecting the weak fiscal management of the period. In addition, both accumulated sizable arrears on payments for wages and pensions, to suppliers and for

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<sup>5</sup> In practice, these funds, called National Treasury Contributions (ATNs) are distributed in a discretionary way by the National Executive, through the Ministry of the Interior (the most “political” of ministries).

<sup>6</sup> Also, in a situation of large vertical fiscal imbalances (plus other considerations to be made later), the workings of local democracy do not induce prudent fiscal behavior by local authorities. Saront (1998) shows that (as in the U.S., see Peltzman 1992) voters penalize federal spending but (unlike the US case) they reward local spending.

debt service.<sup>7</sup> In many provinces, the provincial Constitution imposes some restrictions on the borrowing ability of the government (Sanguinetti and Tommasi (1997)). In some jurisdictions it requires an extraordinary legislative majority to approve new debt; they also impose restrictions on the level of indebtedness and on the use of debt. Nevertheless, in most provinces, these restrictions are very mild and when they specify quantitative limitations they are rarely binding. It is not surprising then to find that borrowing limits had no significant effect on the fiscal behavior of provinces (Jones, Sanguinetti and Tommasi 1998 ).

Provincial state banks had in most provinces a legal status that makes them very dependent on the provincial executive power. Thus in practice they acted as captive sources of financing. In this sense, the provincial government banks were considered to be akin to the central bank of each province: they provided funds to the provincial governments upon demand and, in turn, received rediscounts from the Central Bank of Argentina.<sup>8</sup> Given their portfolio of bad assets (resulting to a significant extent from lending to provincial governments) provincial banks were among the prime candidates for restructuring and consolidation, process that was accelerated after the 1995 Tequilla crises induced a run against most provincial financial institutions. As of mid 1998 only six provincial banks remain in the hands of the provincial public sectors.

A key change in the economic context that has had noticeable effects in the behavior of provincial (and of course national) finances has been the strong commitment to inflation stabilization of the federal government since 1991. By establishing a currency board arrangement, the Convertibility Law of March 1991 ended inflationary Central Bank financing of public sector deficits. Before this period the federal government was able to accommodate the expansion in provincial expenditures through inflationary financing. It did this through two channels. First, directly through the above indicated loans that the central bank made to provincial banks. Second, by the increase in the federal government outlays, in turn motivated by increasing transfers to provincial jurisdictions, that need to be financed by monetary expansion.

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<sup>7</sup> During the 1990s the federal government tried to consolidate those arrears; the clearance operation added up to a total of 9 percent of 1995 GDP.

<sup>8</sup> For example, those rediscounts amounted to over 2 percent of annual provincial spending during 1983-1990.

We might expect that the hardening of the budget constraint of the central government that the convertibility law brought in would reduce the incentives of the provincial governments to misbehave as they anticipate that federal authorities face strong restrictions to ex-post accommodate provincial fiscal deficits. Jones et al (1999) empirically investigated this hypothesis and found some evidence that indeed after convertibility provincial finances have behave on average less expansive. In particular, they found a strong positive effect on provincial revenues per capita and a negative (though more modest) effect on provincial expenditures.

Still, while recent changes have reduced the degree of freedom for carrying out extraordinary financing operations, as we will see in the next section, they have not been sufficient to eliminate them completely. As indicated above, there are almost no formal limitations on domestic currency borrowing operations, and provincial governments have continued the practice of pledging future coparticipation receipts as a collateral for borrowing from commercial banks. In addition, they have sometimes developed alternative sources of financing. For instance when faced with a cash crisis in 1995, several provinces issued “coupons” in lieu of wage payments

### **3. Bailout episodes.**

In this section we identify and analyze some episodes that respond to the characterization of bailout developed in chapter 1 and in section 2.1. We will concentrate our attention to those occurring at the federal-provincial level<sup>9</sup>.

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<sup>9</sup> Following the terms of reference, we have concentrated on “bailouts” to subnational governments, although in Argentina there have been other entities subject to bailouts of non-trivial amounts. The most recent case is the bailout extended to Unión Obrera Metalúrgica. The Steel Workers Union has been very important in the history of Peronism. Its leader, Lorenzo Miguel, had been opposed to President Menem in the latter’s shift towards free-market policies; yet, in an act of reconciliation, the National Government assumed those Unions obligations prior to July 31, 1989, which hadn’t expired. These arrears with suppliers amount to \$ 65 million. The administrative decision was taken by the Jefatura de Gabinete. A similar case is the bailout to the National Institute of Social Services for the elderly (INSSJyP) in 1997. Through decree 197/97 the Nation assumes all its liabilities. The decree does not specify the amount, although it establishes that those debts will be serviced through a budget allocation that cannot exceed \$100 million per year. Also, the National Government gave it a \$220.000 loan through the National Health Insurance Administration (ANSSAL).

The episodes we present below are in general not differentiated by which province (and at what time) got involved in the bailout operation but more on the type of instrument or institutional set up used to help the jurisdiction in trouble. Though, if we think of money as fungible (both economically and politically), we should not worry about the program or institutional setup of each particular “bailout”, but about the total amount of money transferred from the center to any particular jurisdiction in any particular period. Still, given the uncertainty or the lack of information regarding the ultimate motives that guide fiscal decision of both federal and provincial authorities, it is useful to concentrate the attention on the nature of the mechanisms by which funds are transferred across jurisdictions. This is because they implicitly reveal the incentives that were critical in motivating the federal intervention. Furthermore, money is not totally fungible (specially in political terms)<sup>10</sup> so that to a certain extent the classification of episodes by the type of institutional set up used to help a given jurisdiction will not undermine the analysis.

### **3.1 The nationalization of the Provincial Pension Systems.**

One of the main sources of deficits in the provincial finances was the state provincial pension system. These systems generated large deficits due to poor mechanisms for collecting revenues and to generous benefit payments. Between 1994 and 1996 the National government took direct responsibility of the operation of the provincial pension systems in eleven jurisdictions (they were “nationalized”), merging them with the national system.<sup>11</sup> As a consequence, the national government had to assume a significant fiscal cost given the disequilibria present in those regimes. In what follows we first describe the provincial pension systems. We then analyze the economic and institutional context within which the national government took responsibility of provincial social security. We finish with a discussion of how the total cost, including those of political nature, were shared among the various actors and the extent to which the transfer of local government expenditures responsibility to the national authorities constituted a bailout.

#### **The main characteristics of the provincial pensions systems**

Up to 1994 all provinces administered their own system of social security for provincial and municipal public workers, and the personnel of provincial public companies, provincial banks and other decentralized organisms. In some jurisdictions there were also

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<sup>10</sup> See, for instance Iarizkower, Saiegh and Tommasi (1999) and Coate and Morris (1995).

<sup>11</sup> For a historical analysis of the whole pension system in Argentina, see Fiscella (1990).

special regimes for housewives (Catamarca, Entre Rios and La Rioja) and “pensiones graciabiles” in Buenos Aires and La Rioja.<sup>12</sup>

These provincial regimes were organized as pay-as-you-go systems with state guarantee (as the National regime). Thus, pension payments were financed with active workers' contributions and those of the provincial and municipal government employers' contributions. The provincial regimes granted 3 types of benefits: ordinary retirement, disability retirement, and pensions for the direct beneficiary' s death.

In general the provincial regimes had very benevolent eligibility conditions. As we show in Table 1 in most jurisdictions the minimum age was less than 60 years both for men and women. Besides, in the case of provincial special pension regimes like those of the police, teachers and justice there are specific (more benevolent) standards regarding age and other requirements.<sup>13</sup>

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<sup>12</sup> “Pensiones graciabiles” are extraordinary pensions that can be granted by the provincial executive independently of the individual's contributions to the system. They pay 70% of the minimum ordinary pension.

<sup>13</sup> In the case of Entre Rios the teachers pension regime doesn' t contemplate a minimum age for retiring (only 25 years of active work). This generated a great quantity of "young pensioners", since in this jurisdiction most public employees belong to this sector (Novedades Economicas, 1993).

Table 1. Legal requirements of provincial pension systems.

Table 1																		
Provincial Pension Systems: Legal requirements																		
Province	General Regime						Teachers Regime						Police Regime					
	Individual Contribution	Employers Contribution	Age requirements		Years of service and contribution		Individual Contribution	Employers Contribution	Age requirements		Years of service and contribution		Individual Contribution	Employers Contribution	Age requirements		Years of service and contribution	
	(in %)	(in %)	Minimum age men	Minimum age women	years of service	years of contribution	(in %)	(in %)	Minimum age men	Minimum age women	years of service	years of contribution	(in %)	(in %)	Minimum age men	Minimum age women	years of service	years of contribution
Buenos Aires	14	12	60	60	35	22	16	12	50	50	30	22	18	20	no minimum	no minimum	no minimum	no minimum
Catamarca	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	13	18	50	50	22/25	22/25
Córdoba	14.5	20	58	55	30	30	14.5	22	55	50	25	25	17	23	55/58	53/56	25/30	25/30
Corrientes	18.5	18.5	65	60	30	30	18.5	18.5	65	60	30	30	18.5	18.5	50/55	50/55	s/d	s/d
Chaco	11/14	16/18	60	60	30	30	14	18	no minimum	no minimum	30	30	14	18	42	42	17	17
Chubut	10	14	55	55	30	16	12	14	no minimum	no minimum	30	16	14	18	no minimum	no minimum	25/30	25/30
Entre Ríos	16	16	62	57	30	30	13	8.5	57	52	25	25	10	17	43/46	43/46	25/27	25/27
Formosa	7	10	55	50	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	15	21	s/d	s/d	s/d	s/d
Jujuy	12	14	55	60	25/30	25	14	16	no minimum	no minimum	30	20	14	16	no minimum	no minimum	no minimum	no minimum
La Pampa	10	17	60	55	30	20	12	19	57	57	35	35	14	25	no minimum	no minimum	25/30	25/30
La Rioja	17/20	15.5	60	55	30	20	17	19	no minimum	no minimum	30	25	17	23	53/55	48/50	25/30	25/30
Mendoza	13	16	65	62	30	30	16	19	52	52	25	25	16	23	50	55	30/35	22/27
Misiones	11	13	60	55	30	30	13	16	55	52	30	30	15	16	45/58	43/56	20/36	23/25
Neuquén	7	5	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d	s/d

Río negro	11	21	60	60	30	30	13	23	52	52	30	30	13	25	no minimum	no minimum	20	20	
Salta	15	18	60	58	30	30	16	19	55	53	30	28	19	20	no minimum	no minimum	25/30	25/30	
San Juan	15	18	63	58	30	30	18	18	s/d	s/d	s/d	s/d	16	18	60	55	30	28	
San Luis	15	12	65	60	30	27	17	17	55	52	25	15	17	20	no minimum	no minimum	30	15	
Santa Cruz	12	10	s/d	s/d	s/d	s/d	14	10	s/d	s/d	s/d	s/d	16	18	s/d	s/d	s/d	s/d	
Santa Fe	13	12.2	60	55	30	30	13	12.2	50	50	30	30	15	21	no minimum	no minimum	no minimu m	no minimu m	
Sgo. Del Estero	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	18.5	18.5	50	48	20/25	20/25
Tucumán	12	14	55	51	30	30	12	14	55	50	30	25	16	20	45/58	43/56	25/30	25/30	
Tierra del Fuego	13	7.5	55	50	25	25	13	7.5	43	43	25	25	s/d	s/d	s/d	s/d	s/d	s/d	
MCBA	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP	SIJP						
SIJP (Nacional)	11	16	65	60	30	30													

Additionally, some jurisdictions (for example, Córdoba and Rio Negro) established early retirement for a limited time period, allowing access to the pension benefits with a significant reduction in the age requirement and other legal requisites, with the objective of reducing personnel.

These benevolent conditions, in particular early retirement, implied, together with demography, a very low relationship between active and passive workers. This is a key variable determining the sustainability of a pay-as-you-go system. There is some evidence that this relationship has been declining in the past years though historical series for this indicator are not available. Table 2 shows the value for the ratio of passive and active workers in 1994 for 17 provinces. We see that for some jurisdictions this ratio is quite low, though still higher than that at the national level.

Another factor that contributed to generate deterioration in the financial situation of the provincial social security system was the relatively high level of benefits in relation to the average wage of the active workers. As we see in Table 2, for example, in Misiones, Entre Rios and Formosa the average pension payment was even larger than the average wage in the Provincial and Municipal public sector.

*Table 2. Passive-Active worker relationship and average wage and pension payments in some provinces. 1994.*

**Table 2**  
**Provincial Pension Systems: Economic and Finance Indicators, 1994**

	pension payments	average wage	active / passive	pension deficit (1)	
	in pesos	in pesos	ratio	in million of pesos	as % of PE (2)
Santiago del Estero	769.1	s/d	s/d	45.2	65.5%
Catamarca	617.4	s/d	s/d	25.2	45.8%
GCBA (3)	582	628	1.83	193.0	43.8%
Jujuy	795.6	879.6	3.39	45.1	34.4%
Santa Cruz	s/d	s/d	s/d	25.7	32.9%
San Juan	836.7	946.7	2.01	64.7	30.0%
Santa Fé	732.7	955.4	2.39	138.6	29.2%
Tucumán	698.4	787	2.23	51.7	21.3%
San Luis	607	990.9	2.22	16.3	20.6%
Entre Ríos	971.3	894.5	3.03	54.2	19.9%
Chubut	s/d	s/d	s/d	12.7	18.4%
Corrientes	708.9	722	2.68	31.9	18.3%
Buenos Aires	581.2	853	2.64	227.3	16.9%
Mendoza	664.4	1072.6	2.42	36.9	13.9%
La Pampa	s/d	s/d	s/d	6.4	12.5%
La Rioja	814.6	922.6	1.77	15.2	12.5%
Salta	733.5	857	2.63	21.1	10.7%
Córdoba	1016.6	1088.7	2.42	67.9	8.6%
Chaco	850.8	929.9	3.2	14.4	8.1%
Misiones	875.6	787.3	5.55	4.5	3.8%
Formosa	798.1	744.6	4.85	2.1	2.2%
Río Negro	1029.1	1101.6	3.34	3.1	1.9%
Neuquén	s/d	s/d	s/d	1.1	1.8%
Tierra del Fuego	s/d	s/d	s/d	0.0	0.0%
Total	s/d	901.8	2.65	1104.3	19.3%
Régimen Nacional	299.2	s/d	1.35		

(1) Transferencias presupuestarias a organismos de la seguridad social.

(2) PE: Pension Expenditure

(3) Corresponde a 1993

Fuente: Elaboración propia en base a Secretaría de Programación Económica y Regional

In part as a consequence of the above factors, since the middle of the eighties these provincial regimes (as well as the national system) entered into a serious crisis. In these years the genuine contributions to the system became insufficient to finance benefit levels. As a consequence, the regimes began to show important budgetary imbalances. For the 24 jurisdictions taken together, and using the transfers that the provincial treasuries had to make to the provincial pension systems as an estimator, the increase in the deficits between 1990 and 1994 was around 54%, from 596 millions in 1990 to approximately 1100 millions in 1994. In 1995 the amount of these transfers was about the same magnitude.

Looking at the deficit in the pension systems by province (see Table 2), we observe that in 1994, the year before the transfers of the pension system started, the situation of the

different provinces was heterogeneous. In terms of the pension benefit's expenditures, the most pressing imbalances corresponded to Santiago del Estero (65% of the expenditure), Catamarca (45.8%), the City of Buenos Aires (43.8%) and Jujuy (34.4%) .

In the context of that critical financial situation, the Argentine economy was seriously affected by the tequila shock produced by the Mexican devaluation of mid-December 1994. The strong financing restriction faced by many provincial jurisdictions during 1995 limited seriously the possibility that the provincial treasuries could allocate special funds to close the deficits in provincial pension systems. This generated significant delays in benefit payments in many jurisdictions. One of the most dramatic cases in this regard was the province of Rio Negro whose arrears with retired people were eight months in mid-1995. Other jurisdictions that accumulated important delays in their pension payments were Tucumán, Jujuy, Salta and San Juan.

These delays in benefit payments helped to promote an atmosphere favorable for the transfer of provincial regimes to the national level, though an understandable distrust was observed on the part of public-sector employee unions. Still most of the retirees supported the move. Thus, some of the newly elected governors that were appointed in 1995 took the opportunity of the situation and accepted the offer of the national authorities to transfer the pension system.

### **The institutional setting and fiscal costs involved in the transfer of the pension systems.**

As indicated before, in August of 1993, the national government and the provinces signed a second Fiscal Pact called the Federal Pact for Employment, Production and Growth ("Pacto Fiscal para el Empleo, la Producción y el Crecimiento"). With this agreement the national government sought to introduce substantial reforms at the provincial level. On one hand, in an attempt to improve provincial tax systems, the Government negotiated the elimination of distorting provincial taxes – in particular it pushed for the substitution of the tax on gross revenues for a provincial sales tax.<sup>14</sup> On the other hand, it also aimed at achieving privatization and deregulation of economic activities under the control of the provincial administrations. The main incentive that the national authorities offered was the

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<sup>14</sup> Which never materialised.

transfer of provincial social security systems that were already representing a heavy load for provincial finances (interestingly, the wording used in the agreement was that the national government would "accept" those systems).

But the national government also wanted (through this nationalization) to transform the provincial pension systems, making them compatible with the already-reformed national regime. In particular, the objective was to eliminate the privileges of different special pension regimes and to incorporate progressively the universe of workers into the newly created capitalization system. Thus, the actual transfer of the pension systems involved also the signing of a "transfer act" which had to be ratified by the local legislature and which established strong conditionality clauses. Among them, one established that the province delegated to the Nation the ability to legislate in social security matters, and that the province assumed the firm commitment not to dictate any laws that allowed directly or indirectly the creation of new provincial pension systems. Also, the local government accepted the authority of the National Treasury to make the withholdings from coparticipation income to cover the payment of the personal and employer contributions to the new nationalized system. Finally, a very important clause was that which established that the province assumes all the responsibility for the consequences of any judicial action promoted by the beneficiaries, even when these actions were based on the alleged unconstitutionality of the proposed policy.

An important aspect to highlight is that at the moment of the signing of the "Fiscal Pact" there was no reliable estimation of the fiscal cost involved in the operation. The only information available was the transfers that the provincial treasuries had to make to the provincial agencies in charge of the operation of the pension systems. As it will be clear below, this transfer turned out to be a poor estimator of the actual fiscal cost that had to be incurred by the central authorities.

The strong conditionality clauses that had to be accepted by the local government to be eligible for the transfer originated a strong resistance in the active workers and their local unions, a resistance that moved to the local legislatures. In view of this, the shift was achieved relatively easily only in those places where the national government had much stronger negotiating power and control of the local affairs. The first provinces to transfer

the provincial pension systems were Catamarca, Santiago del Estero and the City of Buenos Aires, all in 1994. In Santiago del Estero the change coincided with a period in which the province was under the intervention of the National Government, while the mayor of City of Buenos Aires was (at the time) appointed by the President.<sup>15</sup> In the case of Catamarca, the change took place right before a federal intervention.

As the financial and fiscal situation of provinces worsened during 1995 more jurisdictions agreed to relinquish their pension systems. In December of 1995 it was negotiated and transferred that of Salta. One month later, in January 1996, San Juan and Mendoza agreed to do the same and then in March came the turn of La Rioja. Finally, between April and November of that year Jujuy, Rio Negro, Tucuman and San Luis accomplished the nationalization of their pension systems.<sup>16</sup>

Table 3 presents the list of provinces (in bold) that during 1994-1996 transferred their social security systems to the national level and the "short run" fiscal cost assumed by the national authorities calculated as the deficits between income and expenditures in each provincial system. Here we should point out that these deficits were higher than the allocations made by provincial treasuries, given that when the transfer was executed the province affected extraordinary revenues (for example pre-allocation of tax revenues) to meet the pension system deficits<sup>17</sup>. Thus, the while aggregate financial cost for the national government was estimated at about 500 millions a year in 1996, it jumped to more than \$1.500 millions in 1998.<sup>18</sup>

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<sup>15</sup> This changed after the Constitutional reform of 1994; the City of Buenos Aires became autonomous, and had its mayor elected directly by the voters for the first time in 1995.

<sup>16</sup> After that there was a change in the Ministry of Economics, and the new team was not enthusiastic about pushing for any further consolidation of provincial pension regimes.

<sup>17</sup> In anticipation of this change of rules, several new pensions were granted.

<sup>18</sup> The national government asked for financial aid from IDB and BIRF to finance a portion of this cost (US\$ 750 millions). The program incorporated conditionalities towards the Nation and towards the provinces. It is important to note that a demographic model was developed to estimate the fiscal effect of the transfer (Table 4). As it can be observed in the table, the actual fiscal cost far exceeded the estimates.

*Table 3. Provinces that transferred the pension regime and fiscal cost for the federal government.*

<b>Table 3</b>			
<b>Nationalization of the Provincial Pension Systems: Fiscal Cost</b>			
	Date of the Agreement	Fiscal cost ( in million of pesos)	
		Estimated Year 1996	Actual Year 1998
Santiago del Estero	14/07/1994	s/d	158.8
Catamarca	17/07/1994	s/d	132
Salta	31/12/1995	79.8	115.7
Mendoza	26/01/1996	102	143
San Juan	30/01/1996	90.9	135.4
La Rioja	29/03/1996	64.6	124.8
Río Negro	01/05/1996	44.5	109.4
Jujuy	31/06/96	55.0	106.2
Tucumán	15/07/1996	32.2	192.5
San Luis	18/09/1996	32.8	48.7
GCBA	s/d	s/d	256.6
Total		501.8	1523.1
Source: Secretaría de Programación Económica y Regional y Secretaría de Hacienda			

### **Was a bailout extended?, which were its determinants?**

In order to see whether this episode can be characterized as a bailout it is convenient to go back to our conceptual framework presented in section 2. There we indicated that a bailout situation is characterized by the presence of two conditions: deviation of a rule and opportunistic behavior from the part of sub-national government, in part, motivated by the anticipation of the ex-post incentives of the federal government to deviate.

Regarding the first condition, is difficult to understand the nationalization of the provincial pension funds as an ex-ante rule that the federal government set well in advance as a part of the initial set of reforms that characterized the convertibility period. Indeed the “Pacto Fiscal”, in the context of which the possibility of transferring the pension system first appeared, can be interpreted as an ex-post move of the federal government trying to solve on a more or less permanent basis the already serious problems that the deficit of the pension system were causing. Though compelled to act, the federal government still wanted to obtain some advantages in exchange. In this sense, a key objective was to reform the provincial pension systems (so as to make them more sustainable intertemporally); it

also sought to introduce other reforms in provincial finances and to obtain more funds (through pre-coparticipations) in order to finance the growing deficit of the national social security system. In sum the "Pacto Fiscal" was a complex ex-post trade.

To what extent this intervention was anticipated ex-ante by provincial authorities and in part motivated a more expansive behavior?. This is difficult question to answer given the information available. Nevertheless, we already documented that many of the provincial systems that were later on transferred have been very benevolent in terms of eligibility requirements and pension benefit payments. Even though before August 1993 (when the Pact was signed) it could have been difficult to anticipate the intervention of the federal government through this scheme, provincial authorities could have anticipated other types of financial aid which were more common at that time (i.e national treasury contributions). In any case, at the end of 1993 the possibility of nationalizing the provincial system was already "available" and there is some evidence (see ANSES 1999) that some jurisdictions accelerated the granting of very benevolent pensions before transferring the system. Also, the federal government passively absorbed the provincial pension outlays independently of the magnitude of the imbalances that were present in the systems. The conditionality involved in the operation didn't depend on the lower or higher deficit presented in each province.

Still we did not observe a rush from provincial government to accept the national authorities' "offer". So why is that some provinces accepted and others not? What were the determinants that pushed the federal government to act in the case of some jurisdictions (and the local authorities to favor that intervention) and not to intervene in the case of others?. To perform the analysis of the determinants it is convenient to recall the framework we presented in section 2. There we mention that the cost of adjustment that the local jurisdiction has to endure to avoid bailout is a critical factor affecting the ex-post incentives of the federal government. In this case this cost can be measured by the magnitude of the deficit in the pension system both in terms of total pension's expenditures and especially in terms of provincial total own revenues.

In Table 4 we present information on these indicators. The data suggests that, in general, social security systems with the highest unbalance were those transferred. Undoubtedly,

the fiscal benefit (in terms of avoiding fiscal adjustment) in those provinces was significant<sup>19</sup>. Regarding the cost of adjusting internally, provinces had two instruments for doing so: on one end to push for a reform that tightened the requisites to access pension benefits, on the other, assigning tax revenues to compensate the disequilibria.<sup>20</sup>

In fact, there has been no provincial reform, which permanently tightened the retirement conditions (no one took the first avenue). Some provinces did assign specific taxes to reinforce the financing of their pension systems; in general they used internal taxes and lottery taxes (Buenos Aires and Medoza). But, we will see the ability to obtain resources was limited given the magnitude of the deficits, making it almost impossible to resolve through these channels.

The cost of adjustment indicator calculated as the pension system deficit as a proportion of the province's own revenues (see Table 4) indicates that for some provinces the tax effort needed to finance these deficits would have been quite significant. Even if they allocate all their own revenues to the pension system the deficits could not have been financed.

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<sup>19</sup> There were some exceptions to this rule: Mendoza, which decided to transfer its system to the Nation even when its unbalance was relatively low (13,9 as % of pension expenditures), and Santa Cruz and Santa Fe, which decided not to transfer their social security systems though they had important unbalances in their systems (32.9 the first, 29.2% the second). In the case of Mendoza, we must point out that the retirement fund had extraordinary tax receipts assigned to it, which diminished its unbalance considerably.

<sup>20</sup> It is true that, indeed, many provinces passed emergency laws that ameliorated, although temporarily, the disequilibria in the pension systems.

<b>Table 4</b>								
<b>Nationalization of the Provincial Pension Systems: Economic and political determinants</b>								
Provinces	Pension system transferred	Cost of Adjustment			Political-economy considerations			
		Pension deficits (1994)			political cost (2)	party affiliation of the governor	Provincial legislature (1996)	
		in millions	in terms of	in terms			Representatives	Senators
			pension expenditures	of provincial tax revenues	Year 1996	Year 1996		
<b>Ciudad de Buenos Aires</b>	<b>Yes</b>	<b>193.0</b>	<b>43.8</b>	<b>8.2%</b>	<b>4.2%</b>	<b>Inter.Federal</b>		
<b>Buenos Aires</b>	<b>No</b>	<b>227.3</b>	<b>16.9</b>	<b>6.2%</b>	<b>5.4%</b>	<b>PJ</b>	47.8%	
<b>Catamarca</b>	<b>Yes</b>	<b>25.2</b>	<b>45.8</b>	<b>95.8%</b>	<b>18.5%</b>	<b>FC</b>	<b>48.8%</b>	<b>62.0%</b>
Córdoba	No	67.9	8.6	7.9%	5.4%	UCR	54.6%	
Corrientes	No	31.9	18.3	45.1%	9.2%	PAL	50.0%	
Chaco	No	14.4	8.1	17.8%	9.1%	PJ	31.3%	
Chubut	No	12.7	18.4	24.3%	12.5%	UCR	59.3%	
Entre Ríos	No	54.2	19.9	21.8%	8.3%	PJ	53.6%	
Formosa	No	2.1	2.2	7.7%	15.9%	PJ	60.0%	
<b>Jujuy</b>	<b>Yes</b>	<b>45.1</b>	<b>34.4</b>	<b>90.5%</b>	<b>11.4%</b>	<b>PJ</b>	<b>52.1%</b>	
La Pampa	No	6.4	12.5	7.7%	9.5%	PJ	57.7%	
<b>La Rioja</b>	<b>Yes</b>	<b>15.2</b>	<b>12.5</b>	<b>65.3%</b>	<b>23.2%</b>	<b>PJ</b>	<b>96.4%</b>	
<b>Mendoza</b>	<b>Yes</b>	<b>36.9</b>	<b>13.9</b>	<b>8.6%</b>	<b>6.8%</b>	<b>PJ</b>	<b>54.1%</b>	<b>52.6%</b>
Misiones	No	4.5	3.8	5.5%	8.1%	PJ	52.5%	
Neuquen	No	1.1	1.8	0.9%	16.9%	MPN	62.9%	
<b>Río Negro</b>	<b>Yes</b>	<b>3.1</b>	<b>1.9</b>	<b>2.5%</b>	<b>12.6%</b>	<b>UCR</b>	<b>51.1%</b>	
<b>Salta</b>	<b>Yes</b>	<b>21.1</b>	<b>10.7</b>	<b>20.4%</b>	<b>9.2%</b>	<b>PJ</b>	<b>70.0%</b>	<b>86.9%</b>
<b>San Juan</b>	<b>Yes</b>	<b>64.7</b>	<b>30.0</b>	<b>103.2%</b>	<b>9.9%</b>	<b>PJ</b>	<b>62.2%</b>	
<b>San Luis</b>	<b>Yes</b>	<b>16.3</b>	<b>20.6</b>	<b>21.4%</b>	<b>10.4%</b>	<b>PJ</b>	<b>60.5%</b>	<b>100.0%</b>
Santa Cruz	No	25.7	32.9	47.5%	22.4%	PJ	62.5%	
Santa Fe	No	138.6	29.2	16.2%	6.1%	PJ	56.0%	
<b>Santiago del Estero</b>	<b>Yes</b>	<b>45.2</b>	<b>65.5</b>	<b>78.6%</b>	<b>8.9%</b>	<b>Inter. Federal</b>		
<b>Tucuman</b>	<b>Yes</b>	<b>51.7</b>	<b>21.3</b>	<b>33.2%</b>	<b>8.4%</b>	<b>FR</b>	<b>37.5%</b>	
Tierra del Fuego	No	0.0	0.0	0.0%	18.6%	MPF	46.7%	
(1) Transferencias presupuestarias a organismos de la seguridad social.								
(2) Empleados públicos estatales y municipales como % de la cantidad de electores								
Source: Elaboración propia								

Another determinant that was emphasized in section 2 was the political cost/benefit the federal government and the local government have to bear for engaging in a bailout operation. In the case of the provincial pension systems, given the conditionality imposed by the federal government (in terms of the features of the newly nationalized regime), there was a basic trade off involved. In each jurisdiction the benefit given by the elimination of the deficit in their pension systems (basically the avoidance of a fiscal adjustment) have to be compared with the political cost associated with the inclusion of active public employees in a more restrictive social security system. In this regard, the fact that the transfers accelerated somehow after mid 1995 when national and provincial elections were held suggests that to have this issue in the pre-electoral agenda would have implied important political cost.

To try to quantify the impact of this phenomenon we will measure the political cost as the percentage of public employees (both in the provincial and the municipal levels) within the total quantity of voters in each province. Table 4 shows a high participation of public employment in the number of voters in the case of Catamarca, Chubut, Formosa, La Rioja, Neuquén, Santa Cruz and Tierra del Fuego. Amongst this group, only Catamarca and La Rioja transferred their social security systems. Due to the fact that the deficit was considerably high in these provinces, it is very probable that the fiscal benefit compensated the higher political cost.

Another political variable that could have played an important role is whether the same party ruling at the national level ran the provincial administration. Given that the transferring of the pension system was, at least initially, part of a broader trade between provinces and the national government, we may find that, if party discipline is important, then other things constant Peronist (or federal intervened) provinces would have had more incentives to participate compared to non-peronist jurisdictions. As shown in table 4 many of the provinces that transferred their pension system were run by the peronist party or under federal intervention (i.e Santiago del Estero), though we have the cases of Rio Negro and Catamarca that were under radical administrations and joined the transfer scheme.

The final political variable we want to consider is the composition of the provincial legislature, since the transfer required its ratification through a provincial law. Table 4 shows information on this variable. What we see is that most of the governors that decided to transfer had political majority in their legislatures. The exceptions to this rule were Catamarca and Tucumán.

In order to assess more formally the impact of the identified variables we will run two types of statistical exercises. On the one hand we compare the means of the variables for the two groups of provinces (the provinces that transferred the pension and the provinces that didn't). We compare the means using parametric and non-parametric tests. On the other hand, we will estimate the impact of the different variables on the probability that a given province transfers its pension system.

Table 5 shows the means of the variables for the two groups of provinces. As it can be seen when the deficit is measured in terms of pension expenditures we find that the jurisdictions that transferred the pension system have deficits that double those corresponding to the other group. We obtain an even greater difference in the means when the deficit is measured in terms of provincial tax. The percentage of provinces that were governed by the same party of the President it is also higher for first group. On the other hand, the political cost variable have practically the same mean for both groups.

The next step is to test the statistical significance of the differences in the means. To do that we use parametric (t-student) and non-parametric (Wilcoxon) tests. The results are shown in Table 6. Only the pension deficit as % of expenditures and the same variable measured in terms of provincial taxes have a significant different in means for the two groups. This result is robust since it is found in all the tests. Given this result it is not surprising to find that in the Probit estimation only these variables came out with the right sign and significant (see Table 7).<sup>21</sup> Nevertheless, the very reduced level for the R2 indicator suggests that our model leaves a significant proportion of the decision to transfer unexplained.

<b>Table 5</b>						
Variables	All Provinces		Provinces that Transfer		Provinces that do not transfer	
	Obs	Mean	Obs	Mean	Obs	Mean
Pension system deficit as a percentage of Expenditures	24	0.197	11	0.273	13	0.133
Pension system deficit as percentage of own revenues	24	0.369	11	0.587	13	0.184
Political Cost	24	0.113	11	0.112	13	0.113
Governor Party	24	0.667	11	0.727	13	0.615
Divided Government	22	0.227	9	0.222	13	0.231

<b>Table 6</b>						
Variables	T-test				Wilcoxon rank-sum test	
	Mean (0)	Mean(1)	t	t (unequal variance)	z	
Deficit (generated by the Pension System) as a percentage of Expenditures	0.133	0.273	-2.3023*	-2.1990*	-3.161	
Pension system deficit as percentage of own revenues	0.184	0.587	-2.7584*	-2.6082*	-2.636**	
Political Cost	0.113	0.112	0.0501	0.0502	-0.29	
Governor Party	0.6153	0.7272	-0.5586	-0.5626	-0.567	
Divided Government	0.2307	0.2222	0.0448	0.0448	0.046	

<b>Table 7</b>		
Probit Estimation	Probability of transfer	
Independent Variable	Probability of transfer.	
Constant	0.946*	-0.811*
	(-1.968)	(-2.064)
Pension System deficit as percentage of expenditures	4.418*	
	(2.017)	
Pension system deficit as a percentage of tax revenues		2.066*
		(2.258)
Pseudo R2	0.1598	0.2122
Note: "t" statistic in parenthesis; "***" significant at 1% level;		
"**" significant at 5% level.		

<sup>21</sup> As we have few observations, we introduce only one variable in each estimation.

### **3.2 The case of Treasury Loans to provinces (in the form of BOTESO 10) during 1992-94.**

Between 1992 and 1994 the federal government assisted financially seven (7) provinces that were going through fiscal and financial difficulties. Financial aid took the form of handling national treasury bonds available at the federal level at that moment. By using this ad-hoc mechanism the central government granted loans for a total of U\$S 800 millions to these jurisdictions. In what follows we describe briefly the economic and fiscal situation of the jurisdictions that received this assistance and the main features of the loans, in particular, the terms of the contracts and whether there was some conditionality involved. We then discuss the institutional and political context in which these jurisdictions received the assistance and we make a general appraisal of the episode as a case of bailout.

#### **The economic and fiscal background in the assisted provinces and the main features of the loans**

Table 8 presents the list of the seven provinces that were favored with these operations, the date when the rescue took place, the amount received, the fiscal deficit in the provinces in the previous year and other fiscal and economic indicators. We observe that most of the jurisdictions that received the assistance were relatively poor provinces that were suffering serious fiscal deficits and increasing debt in the period immediately before they received the loans. Moreover, the possibility for these jurisdictions of obtaining new debt in the financial markets was seriously damaged because they already had a high proportion of their coparticipation income compromised in the execution of loan's guarantees taken in previous years.

Table 8. List of provinces involved in BOTESO 10 Loans. Other provincial fiscal indicators.

**Table 8**  
**Treasury Loans made in Bonds (BOTESO 10): provincial fiscal indicators**  
**in millions of pesos**

	Amount	Date	Fiscal indicators (year 1994)			
			Resultado fiscal (1)		Stock deuda (2)	debt service (3)
			in millions	In % of expenditures		
Ciudad de Buenos Aires	0		76.4	2.8	103.2%	386.9
Buenos Aires	0		-304.4	3.8	37.8%	241.3
<b>Catamarca</b>	<b>70</b>	<b>20/01/1994</b>	<b>-97.9</b>	<b>20.1</b>	<b>78.8%</b>	<b>23.0</b>
Córdoba	0		-399.3	15.7	46.7%	147.3
<b>Corrientes</b>	<b>70</b>	<b>09/10/1992</b>	<b>-84.2</b>	<b>15.3</b>	<b>s/d</b>	<b>36.3</b>
<b>Corrientes</b>	<b>199.9</b>	<b>25/03/1994</b>	<b>-35.6</b>	<b>5.2</b>	<b>89.3%</b>	<b>150.8</b>
Chaco	0		-55.4	7.3	76.6%	52.1
Chubut	0		-184.1	29.9	14.4%	45.7
Entre Ríos	0		-71.5	6.9	41.7%	75.9
<b>Formosa</b>	<b>150</b>	<b>30/06/1994</b>	<b>-146.3</b>	<b>21.5</b>	<b>68.3%</b>	<b>227.6</b>
Jujuy	0		-128.7	19.4	42.1%	17.4
La Pampa	0		-35.7	7.6	0.0%	0.7
La Rioja	0		-21.0	4.1	120.3%	19.8
Mendoza	0		-10.2	0.8	20.3%	60.5
<b>Misiones</b>	<b>6</b>	<b>08/03/1994</b>	<b>-76.4</b>	<b>11.6</b>	<b>42.6%</b>	<b>15.3</b>
Neuquén	0		-126.6	14.0	7.5%	68.2
<b>Río Negro</b>	<b>68</b>	<b>21/01/1994</b>	<b>-168.4</b>	<b>22.0</b>	<b>61.1%</b>	<b>19.2</b>
Salta	0		-52.6	6.6	37.9%	43.5
San Juan	0		-252.1	31.6	51.5%	16.5
San Luis	0		-11.3	2.5	0.0%	0.1
Santa Cruz	0		-45.7	8.8	16.3%	4.6
Santa Fe	0		-1.3	0.1	18.1%	5.4
<b>Santiago del Estero</b>	<b>78</b>	<b>26/11/1993</b>	<b>-77.0</b>	<b>11.3</b>	<b>s/d</b>	<b>45.2</b>
<b>Santiago del Estero (6)</b>	<b>80.4</b>	<b>21/03/1994</b>	<b>-23.2</b>	<b>3.2</b>	<b>26.4%</b>	<b>61.2</b>
<b>Tucumán</b>	<b>80</b>	<b>14/07/1994</b>	<b>-25.1</b>	<b>2.8</b>	<b>7.3%</b>	<b>35.9</b>
Tierra del Fuego	0		-85.7	24.1	61.0%	6.3

(1) Sin privatizaciones

(2) En % de las erogaciones provinciales

(3) Intereses de la deuda más amortizaciones

Source: Elaboración propia

The importance of the rescue operation involved in these loans can be appreciated by the fact that these funds represented a significant proportion of the financial needs of the jurisdictions. If we consider only the loans granted during 1994 we see that these loans covered 89,5% of the necessities of financing of these provinces in that year. When we include the loans made to Corrientes in 1992 and to Santiago del Estero in 1993, the total amount of resources that were handed out reached 800 millions dollars.

To understand the reasons why the federal government used such an instrument to assist the jurisdictions, we must realize that since 1991, with the establishment of the convertibility plan, the federal government faced much stronger restrictions to help provinces in financial difficulties. Neither direct loans of the treasury nor rediscounts of the Central Bank were possible alternatives. Also most of the other transfers to provinces

were implemented through automatic mechanisms that leave small room for discretionary operations of the magnitude that were required. Thus one way out from these restrictions was to use the remaining amount of treasury bonds that the national government issued in 1992.<sup>22</sup>

The institutional set up used to grant these loans was the signing of an agreement between each province and the national government. These agreements were designed by the Ministry of Economy and were signed by the National Treasury Secretary and by the Province's Governor. The texts of the agreements already offered some justifications for the rescue operation. They said, for example, that the economic-financial difficulties in the province could conspire against the political and social stability in the jurisdiction and therefore justified a financial intervention from the federal government.

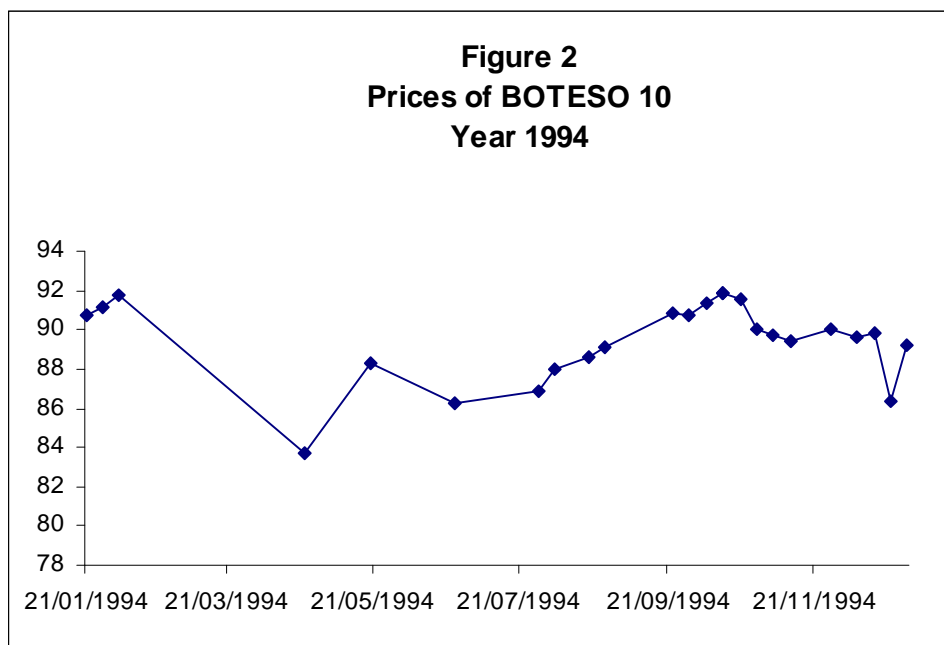
In this context and to avoid a new situation where the provinces were to ask for funds again in the future, some of the agreements established fiscal conditionality clauses. Among them, targets for the reduction of the fiscal deficit, the freezing of the number of public employees, and the prohibition to contract new indebtedness.<sup>23</sup>

Once the agreement was signed the province took the bonds to a financial agent of the private sector for their exchange. This financial agent had to carry out a gradual placement of these bonds in the market so as guarantee a normal absorption of the titles, avoiding pronounced falls in their prices. Nevertheless, as shown in Figure 2, these fall could not be avoided, at least in the first quarter of 1994, when we observe a significant fall in the price of these financial titles, coincident with the launching of many of these loans operations. This generated a fiscal cost to provinces given the increment in the implicit interest rate of the loans.

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<sup>22</sup> The decree 211/92 settles down in its article 2° the following characteristics of the public title: a) Denomination: Funds of the Treasury to 10 years of term; b) Currency of emission American dollars; c) Total amount of the emission: five hundred millions (US\$ 500 millions); d) emission date: April of 1990; e) Maturity: 10 years; f) Amortization: it will be made in thirty (30) successive quarterly installments. The first twenty-nine (29) payments will be equivalent to (3,30%), and the last to (4,30%), of the amount emitted plus the capitalized interests yielded during the first thirty (30) months. The first installment dues after the first thirty three (33) months of the emission date; g) Interest: they will yield the interest rate payed for three month deposits in eurodollars in the London Market (LIBOR). The interests will be capitalized during the first thirty (30) months and they will be paid together with the amortization payments.

Figure 2. Prices of Bonds (BOTESO 10).



The agreements also included a clause that explicitly established that the loans should be canceled through the automatic affectation of the resources that the provinces have by virtue of the coparticipation regime of law 23.548. This clause assured that the loans were to be paid back in the originally established dates. Indeed, when the loans came due the national government started retaining the amortization and interest payments from the coparticipation funds corresponding to each jurisdiction.

### **Was a Bailout extended? Which were its determinants?**

We clearly see that in this episode the intervention of the federal government did not respond to any pre-established rule. The handing of public bonds to provinces was not included within any of the federal fiscal institutions that regulated the fiscal relationship among the central and provincial governments. The national authorities to pay its own obligations originally issued those bonds. Thus, the intervention of the federal government in this case meets one of the conditions of bailout we indicated in section 2. It is more difficult to find direct evidence regarding moral hazard or opportunistic behavior from the part of the sub-national government (motivated, in part, by the anticipation of the federal government reaction). Nevertheless, we already documented that these provinces were running significant and unsustainable fiscal deficits for various years. Moreover some of

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<sup>23</sup> As explained below, these targets were not achieved.

them received the same type of discretionary transfers in two occasions, proving that they did not see credible any promise of the federal government not to come to the rescue again. Thus this episode of handling national bonds to provincial administrations in financial problems meet our definition of bailout.

But how much money was involved in these bailout operations?. What was the magnitude of the gifts or subsidies involved? At first sight it may seem that, given that loans were eventually repaid in full by most provinces, there was no gift involved and the whole episode was just a simple loan operation. But this is not the case if we consider the fact these loans implied a lower financial cost than other financing alternatives. The key issue is that these titles paid a rate significantly smaller (even considering the rise in the implicit rate mentioned above)- than other alternatives available for provincial governments at that time. In order words, provinces were able to borrow at a rate that reflected the risk premium of the federal government rather than their own (higher) risk premium<sup>24</sup>.

Also, though there was some conditionality clauses included in the agreements, those clauses were never operative in practice. On the contrary, the fiscal situations in most provinces that received the loans continued to deteriorate afterwards. In some cases, like Santiago del Estero and Corrientes, the national government had to come again to the rescue using the same type of loans in two and one opportunities, respectively.

Why was the federal government willing to support the provinces in the way it did? Why those provinces and not others?. Table 9 presents a series of economic and political indicators that were suggested by the analysis presented in section 2 and can help to understand the determinants of bailout.

On the one hand, and starting by the cost of adjustment, we see that the financial situation of many of the jurisdictions that'd got financial aid in BOTESO 10 were indeed very complicated, with fiscal deficits higher than 20 % of their expenditures. The pressing fiscal problem of these jurisdictions was reflected in significant arrears in the salaries of public

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<sup>24</sup> A similar case but at an international level occurred when, in the aftermath of the Tequila crisis, the US Treasury granted Mexico a loan at below market rates. Though Mexico eventually paid back the full amount of the loans, it received an implicit gift by the saving in interest payments.

employees and suppliers. Could have the involved jurisdictions adjusted themselves without the assistance of the federal authorities?. To assess this possibility we constructed an indicator of the cost of adjustment measured as the ratio of the deficit to provincial own revenues. As we show in table 9, in provinces like Catamarca and Formosa, the deficits represented more than three times what they collect in local taxes. For most of the jurisdiction that received the BOTESO loans this indicator is quite high, suggesting that jurisdictions would have to go through a significant cost if they were deprived from the federal government help. Of course one key determinant of this phenomenon is that most of these jurisdictions have a very high level of vertical fiscal imbalance; that is, they control only a small part of the total amount of resources they receive (see table 9).

<b>Table 9</b>							
<b>Treasury Loans made in Bonds (BOTESO 10): Determinants of bailout</b>							
	Amount	Cost of adjustment			Political-economy consideration		
		déficit / recursos propios	vertical imbalance (1)	share of votes	Party in power (2)	Legislature	
						Representatives	Senators
Ciudad de Buenos Aires	0	0.03	0.931078549	0.113830054			
Buenos Aires	0	0.074	0.52839613	0.370521403	1	0.4783	
<b>Catamarca</b>	<b>70</b>	<b>3.314</b>	<b>0.075885636</b>	<b>0.007890927</b>	<b>0</b>	<b>0.4878</b>	<b>0.62</b>
Córdoba	0	0.389	0.478782601	0.089492835	0	0.5455	
<b>Corrientes</b>	<b>70</b>	<b>0.209</b>	<b>0.150269028</b>	<b>0.024259326</b>	<b>1</b>		
<b>Corrientes</b>	<b>199.9</b>	<b>0.938</b>	<b>0</b>	<b>0.024259326</b>	<b>1</b>	<b>0.5</b>	
Chaco	0	0.605	0.129842532	0.024527484	0	0.3125	
Chubut	0	1.325	0.323790751	0.00996872	0	0.5926	
Entre Ríos	0	0.232	0.309018434	0.032574468	1	0.5357	
<b>Formosa</b>	<b>150</b>	<b>3.711</b>	<b>0.073683238</b>	<b>0.010908851</b>	<b>1</b>	<b>0.6</b>	
Jujuy	0	1.002	0.240764896	0.013549314	1	<b>0.5208</b>	
La Pampa	0	0.276	0.29956924	0.008518178	1	0.5769	
La Rioja	0	0.384	0.110431609	0.006724789	1	<b>0.9643</b>	<b>0.526</b>
Mendoza	0	0.014	0.499348528	0.041869364	1	<b>0.541</b>	
<b>Misiones</b>	<b>6</b>	<b>0.743</b>	<b>0.172082903</b>	<b>0.021264464</b>	<b>1</b>	<b>0.525</b>	
Neuquén	0	0.267	0.607767497	0.010739797	0	0.6286	
<b>Río Negro</b>	<b>68</b>	<b>0.804</b>	<b>0.350778651</b>	<b>0.012853422</b>	<b>0</b>	<b>0.511</b>	<b>0.869</b>
Salta	0	0.254	0.278605663	0.024178861	0	<b>0.7</b>	
San Juan	0	3.043	0.151834242	0.016005109	1	<b>0.622</b>	<b>1</b>
San Luis	0	0.132	0.197588184	0.00911623	1	<b>0.6047</b>	
Santa Cruz	0	0.247	0.360776062	0.004186363	1	0.625	
Santa Fe	0	0.001	0.470981379	0.090226545	1	0.56	
<b>Santiago del Estero</b>	<b>78</b>	<b>1.5</b>	<b>s/d</b>	<b>0.020210066</b>	<b>1</b>	<b>0.511</b>	
<b>Santiago del Estero (3)</b>	<b>80.4</b>	<b>0.969</b>	<b>0.124062616</b>	<b>0.020210066</b>	<b>1</b>		
<b>Tucumán</b>	<b>80</b>	<b>0.457</b>	<b>0.318955661</b>	<b>0.034344254</b>	<b>1</b>	<b>0.375</b>	
Tierra del Fuego	0	0.238	0.228713935	0.002238768	0	0.4667	

How much does the ex-post incentives of the federal government could have been affected by political economy considerations? To analyze this issue we constructed a variable measuring the participation of each jurisdiction in the total national votes. As we see in Table 9 most of the jurisdictions that received assistance from the federal government were not very important in terms of national votes. This is no surprising given that they are relative small and poor jurisdictions. On the other hand it is also interesting to consider whether there was any regularity in terms of the party affiliation of the jurisdiction that got the assistance from the national authorities. In this regards the data shown in table 10 suggests that Boteso loans have been granted independently of political affiliation. For example loans have been granted to provinces belonging to the opposition (Río Negro and Catamarca), provinces whose governors were ‘justicialistas’ (Misiones, Tucumán and Santiago del Estero) and provinces that were intervened (Corrientes and Santiago del Estero).

<b>Table 10</b>						
Variables	All Provinces		Provinces that Received Bonds		Provinces that do not received bonds	
	Obs	Mean	Obs	Mean	Obs	Mean
Cost of Adjustment	26	0.8135	9	1.4044	17	0.5006
Vertical Imbalance	25	0.2964	8	0.1575	17	0.3618
Share of Voters	26	0.0388	9	0.0178	17	0.0500
Divided Government	23	0.2609	8	0.2500	15	0.2667
Presidential Party	25	0.5600	9	0.4444	16	0.6250
Institutional Index	25	23.4000	9	21.9444	16	24.2188

As we did with the case of the last episode we want to formally investigate the statistical significance of the above-indicated variables in the decision of the national government to bailout some provinces. We use the same techniques as of provincial pension system episode. Table 10 shows the mean values for the relevant variables for the two groups<sup>25</sup>. We observe that, as we already suggested, provinces that received loans have a higher mean deficit, face a higher cost of adjustment and have also a higher vertical fiscal imbalance. Regarding the political variables we see that benefited provinces have, on average, a lower participation in national votes compared to those that did not get the

<sup>25</sup> The total number of provinces-years when a bailout was observed is 9 , corresponding seven to year 1994, and two other cases: Corrientes in 1992 and Santiago del Estero in 1993.

loans. Also the bailout jurisdictions belonged, on average, in a great proportion to parties other than that in power at the national level.

In table 11 we show the results of the different tests. Only the differences in the cost of adjustment and in the vertical imbalance came out statistical significant using the three tests. Thus it is not surprising that these variables are significant in the Probit estimation (see Table 12). Though the explanatory power of the regressions are not very high, we can conclude that the adjustment cost has been a significant determinant of the decision of the federal government to bailout these provinces thorough the BOTESO instrument.

Variables	T-test				Wilcoxon rank-sum test
	Mean (0)	Mean(1)	t	t (unequal variance)	z
Cost of Adjustment	0.5005	1.4044	-2.3266*	-1.9920^	-2.561*
Vertical Imbalance	0.3617	0.1575	2.5603*	3.0807*	2.448
Share of Voters	0.05	0.01777	1.073	1.4834	0.14
Divided Government	0.2666	0.25	0.0829	0.0826	0.085
Presidential Party	0.625	0.4444	0.8504	0.8374	0.855
Institutional Index	21.94	24.22	0.7141	0.8653	0.57

Independent Variable	Probability of receiving bonds			
Constant	0.948 (1.494)	-0.9088* (-2.502)	-1.0254* (-2.032)	0.2881 (0.327)
Vertical Imbalance	-5.7855* (-2.259)			
Cost of Adjustment		0.5977* (2.031)		
Institutional index				-0.0281 (-0.758)
Pseudo R2	0.2588	0.145	0.0468	0.0181
Note: "t" statistic in parenthesis; "****" significant at 1% level;				
"***" significant at 5% level.				

### 3.3 Provincial fiscal crises and the National Treasury Contributions.

National Treasuries Contributions are discretionary transfers made by the central government to provinces, which are going through financial difficulties and do not require from the latter any obligation in terms of paying back the funds. The discretionary character of the National Treasury Contributions (NTC) comes mostly from the fact that its

distribution among provincial jurisdictions is totally left unspecified and to the will of the national authorities. Thus these transfer represented an “open window” through which the federal authorities may accommodate expansive, non-sustainable, fiscal behavior of provincial jurisdictions. In what follows we described the legal framework that regulates the working of these transfers and their aggregate evolution in the last 25 years. We then study the distribution of these funds among different provinces, trying to understand the logic of it, both in terms of economic and political economy considerations. We end up with an appraisal of the working of these transfers as a possible mechanism behind bailout-type episodes.

### **The legal framework regulating the National Treasury contributions and their evolution over time and across jurisdictions**

The origin of this type of transfers can be traced out to the National Constitution. Art 67, part 8 reads ...”It corresponds to Congress to establish subsidies from the National Treasury to provinces whose tax income do not match ordinary expenses set up in their budgets...”. Following this constitutional prescription the 1988 Tax Sharing Law 23548, currently in place, established that these transfers are going to be financed with 1% of the pool of shared tax resources, and that the objective of these transfers is ...”to address emergency situations and financial disequilibria in the finances of provincial governments...”. The law also established that the Interior Ministry is the one in charge of the distribution of the funds and to inform about the use of these resources.

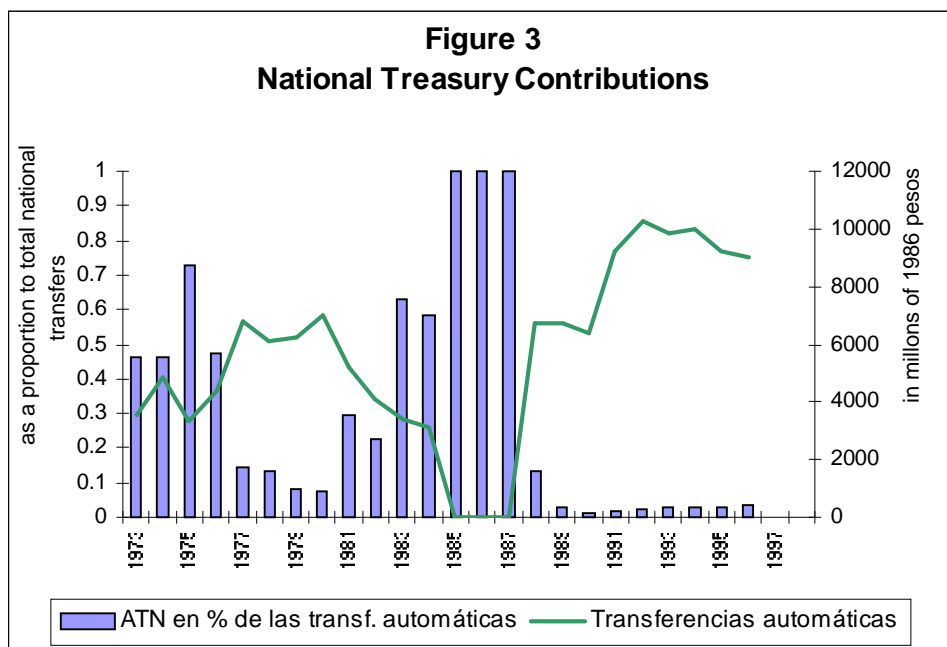
The NTC had a long history in the National-Provincial fiscal regime. Until 1935 they were the only funds that the central government delivered to the jurisdictions. After that year other automatic transfers to distribute federal resources across jurisdictions joined the NTC. Figure 3 shows the aggregate evolution of NTC during the last 25 years, together with the funds distributed through automatic transfers. In general it is possible to notice a negative association between these two series, suggesting that the discretionary NTC transfers were used when the automatic transfers declined.<sup>26</sup> For example, in the seventies and mid eighties when inflation raised considerably, the increasing use of NTC was a way for provinces to share in the national government’s resources coming from the inflation tax

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<sup>26</sup> More generally, it would be desirable to look at ATNs as a componente in the larger “general-equilibrium” federal fiscal game, including even the strategic use of seignorage as a weapon of the national government (see Saiegh and Tommasi 1998).

(which, on the other hand, was causing a decline in the real value of regular taxation, both national and provincial.)

Figure 3. Evolution of aggregate NTC.



Between 1985 and 1988 the NTC played a central role in the financial relationships between the Nation and Provinces. The absence of a federal tax sharing agreement - the one established by the law 20.221 expired at the end of 1984- left the NTC as the only legal framework through which the central government distributed federal resources among provincial jurisdictions. Nevertheless, the NTC system was totally discretionary, with no criteria to guide the distribution of funds. Thus, federal authorities were subject to increasing pressures from provinces and those with a better “technology” to do so -strong political clout- were able to rise their share in total resources.<sup>27</sup>

With the sanction of the law 23.548, at the end of 1987, the distribution of the federal funds was again under a proper legal framework. The new law established the secondary distribution of the new tax-sharing regime and also, as indicated, it set up the legal framework for the NTC.

<sup>27</sup> As we show below one province that was very successful in this political game was La Rioja.

The discretionary character of the National Treasury Contributions (NTC) is illustrated by the fact that their distribution among provincial jurisdictions is totally left unspecified and to the will of the national authorities. This feature is reflected in the actual distribution of these funds. As it is shown in Table 13, during the last years the assignment of NTC was tilted towards a small group of jurisdictions. One of the most favored provinces was La Rioja which during 1990-1998 obtained an average of 33% of the total funds delivered thorough this mechanism<sup>28</sup>. Other jurisdictions that made intensively use of these transfers were Tucumán, Salta, Mendoza and Corrientes.

Still the fact that over a more or less prolonged period of time certain provinces have been receiving a significant amount of resources from the federal government through NTC does not imply a bailout per-se. On the one hand, these transfers by design are geared to assist provinces in financial distress. So in principle we could have the case that those provinces that received more funds during the period under study were subjected more often to shocks compared to the other jurisdictions. Still, given the discretionary character of the NTC, they may have been allocated not following any sort of contingent rule, but taking into account other ex-post considerations like the political affiliation of the governor vis a vis the presidency. If this were the case, then the incentives of the of the local government to behave would be distorted implying that NTC were at least in part geared to bailout provinces that were politically closer to the federal administration. In the next section we empirically investigate this hypothesis.

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<sup>28</sup> In this regards it is interesting to note that the increase in La Rioja's share within the total NTC transfers coincided with fact that Menem, former governor of that province, held the presidency.

Table 13 . Distribution by province of NTC between 1990-1998

**Table 13**  
**Distribution of NTC by province, 1990-1998**  
**in millions of 1996**  
**pesos**

Province	1990	1991	1992	1993	1994	1995	1996	1997	1998
Ciudad de Buenos Aires		-	-	-	-	-	-	-	-
Buenos Aires	3,450	9,403	27,536	4,619	11,903	4,420	13,031	14,134	8,530
Catamarca	11,020	5,163	2,814	2,803	2,533	896	596	627	3,253
Córdoba	1,129	1,979	5,377	9,333	9,592	11,706	7,634	8,268	14,188
Corrientes	876	4,642	21,054	49,022	16,494	12,482	6,530	8,823	15,464
Chaco	3,342	1,160	6,909	11,881	13,645	16,275	11,421	9,380	10,744
Chubut	3,821	952	3,593	1,752	4,179	4,031	4,562	3,884	9,993
Entre Ríos	2,764	4,582	8,442	10,480	7,440	7,286	8,618	10,736	19,941
Formosa	6,856	21,038	17,336	4,268	8,769	13,498	14,731	10,852	8,055
Jujuy	641	3,318	1,759	6,594	2,691	6,749	12,554	17,230	10,514
La pampa	3,261	2,083	8,241	9,110	9,466	6,779	7,813	912	18,841
La Rioja	13,874	59,081	77,584	108,110	115,362	103,234	108,123	94,973	93,345
Mendoza	1,382	3,095	9,547	4,746	6,901	2,628	2,892	5,746	7,667
Misiones	1,870	60	578	8,059	1,868	1,433	4,085	10,732	12,731
Neuquén	36	818	4,874	5,638	12,442	14,125	26,867	21,885	30,766
Río Negro	759	1,830	8,392	5,702	21,971	15,289	9,035	5,145	5,513
Salta	8,192	4,330	4,799	14,111	10,036	17,350	1,700	10,902	10,486
San Juan	4,038	3,868	3,467	4,141	2,786	14,752	17,414	20,407	23,231
San Luis	99	3,214	4,296	4,014	12,916	6,211	1,640	2,820	3,305
Santa Cruz	3,252	4,211	4,070	4,205	5,572	5,435	1,879	652	2,216
Santa Fe	4,589	3,586	3,794	16,404	11,713	10,004	3,250	8,855	15,483
Santiago del Estero	3,134	1,056	3,090	10,607	17,254	13,528	16,311	16,084	13,980
Tucumán	6,449	3,943	4,120	17,519	6,965	7,257	13,925	16,792	23,679
Tierra del Fuego	5,483	5,356	19,597	5,351	4,084	3,225	3,548	5,253	7,674
Total	90,316	148,766	251,269	318,469	316,580	298,593	298,159	305,092	369,600

Fuente: CECE 1997 y Secretaría de Hacienda

## **The NTC as contingent rule to smooth shocks in provincial finances: separating risk sharing from redistribution.**

We are going to interpret the NTC transfers as an implicit contingent rule that helps provincial government to moderate the effect of random shocks on their fiscal decisions (taxes and expenditures). In the appendix we present a very simple model where federal transfers are motivated by this risk-sharing motive. From the solution of a very simple planning problem we obtain the optimal rule that those transfers have to obey. This is given by the following condition,

$$T_j = (1/(1+\phi_j)) F - (\phi_j / (1+\phi_j)) R_j + (1/(1+\phi_j)) R_{-j}$$

Where:

$T_j$ = amount of NTC transfers received by the j jurisdiction.

$F$ = the total amount of resources to be distributed across jurisdictions.

$R_j$ = revenues of province j.

$R_{-j}$ = revenues collected by all provinces minus the j jurisdiction.

$\phi_j$ = Parameter that is a function of the weights that different provinces receive in the federal government's utility function.

As we see, equation (1) suggests the very intuitive result that transfers to region j increase when there was a bad realization (negative shock) in that province's tax revenues and also when all other jurisdiction receive, as a whole, a good realization. This will assure that public provincial expenditures will be proportional across provinces and across states of nature.

The above optimal risk sharing rule allows for transfers to be also affected by distributional considerations as represented by the different values that the  $\phi$  parameters can take for different jurisdictions. It is easy to show (see the appendix) that this parameter will decrease when the weights of the involved jurisdiction in the federal government utility function rises. Notice that this parameter affects not only the constant term but also the slopes of the transfer rule. In the empirical implementation of expression (1) that we

perform below we will assume that this parameter is a function of the governor's party affiliation vis a vis that of the president. Thus, the weight that jurisdiction  $j$  receives in the federal government utility function depends on this political variable and we hypothesize that being of the same party of the president gives an extra bargaining power to the jurisdiction to get an extra share of the total NTC transfers.

We are going to estimate equation (1) using panel regressions with data corresponding to the 1983-1997 period. We do that because we don't have enough annual data as to perform reliable regressions for each province. Our sample is composed by 23 provincial jurisdictions and 14 years<sup>29</sup>. Equation (1) has been estimated normalizing all the variables by the total transfers distributed to all provinces (we divided all terms by  $F$ ). Thus the dependent variable is actually the share of each province in total NTC transfers. The explanatory variables  $R_{jt}$  and  $R_{-jt}$  include in both cases local tax revenues and automatic transfers received from the federal government. The party affiliation variable,  $Prespar$ , is a dummy that takes the value of one when the party of the governor coincides with that of the president. We notice that during the chosen sample period there have been important changes both of the party ruling at the national level as well as those at the provincial level. So the dummy variable not only varies across jurisdictions but also across time.

Table 14 presents the results of the estimation. In Column (1) we run the regression without including any political variable. In column (2) we include the  $Prespar$  variable affecting only the constant of the regression. Finally in equation (3) we run the full model with the political variable affecting also the slopes of the local revenue variables. As we see, in all specifications we obtain that the coefficient for the local revenue variable is negative and significant while that corresponding to revenues of the rest of the jurisdictions is positive and significant. Thus, as predicted by the theory, we conclude that at least in part the NTC transfers have worked as an implicit contingent rule to smooth shocks in local government revenues. Beyond this result, we also find evidence that the distribution of these discretionary transfers have followed political considerations. This is supported by the positive and significant value of the  $Prespar$  variable when is included as an additional constant term in the regression. Thus, other things constant, being from the same party of

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<sup>29</sup> We drop from the sample the Federal District (Capital Federal) given that in most years that jurisdiction was not an independent political unit. Also we drop year 1989 because in that year there were two different presidents (from different parties) at office.

the president increases in 1.3 percentage points the share of a given jurisdiction in the total amount of these grants. On the other hand, and in contrast with what is suggested by the theoretical model, we find that the political variable has not significant effect on the slopes of the regression.

<b>Table 14</b>						
Panel Regressions						
Explanatory variable: provincial share in NTC						
independent variable				R1	R2	R3
Constant				0.0434 (8.98)	0.039 (7.21)	0.036 (5.43)
R <sub>j</sub> (Local revenues)				-0.0043 (-4.52)	-0.00401 (-4.08)	-0.0035 (-2.71)
R-j (Sum of other provinces revenues)				0.00017 (2.84)	0.00014 (2.13)	0.00015 (1.88)
Prespar					0.013 (2.47)	0.021 (1.77)
Prespar*R <sub>j</sub>						-0.00041 (-0.35)
Prespar*R-j						-0.000065 (-0.53)
Model				FE	FE	FE
Observations				322	322	322
R2				0.064	0.082	0.082
"t" statistic in parenthesis.						

### **Did the working of the NTC constitute bailout episodes?**

We want to end up this section with an overall assessment of the working of the NTC transfers in Argentina as a mechanism that have served to sustain bailout episodes in the fiscal relationship between provincial and federal governments. As we indicated earlier, the intervention of the federal authorities in case of provincial financial difficulties using NTC was fully contemplated in the legislation so this undermines somehow the bailout interpretation of these transfers. However, we have found that in practice the working of these transfers followed other types of ex-post considerations. In particular there is a clear bias in the distribution of transfers towards those provinces politically closed to the party ruling at the federal government. Can we interpret this estimated bias as a measured of bailout?. In section 2 we have indicated that any ex-post deviation of the federal government from an ex-ante explicit or even implicit rule can be interpreted as a bailout. Here we

identified an ex-post deviation of the federal government from an implicit contingent rule in terms motivated by ex-post political consideration. Thus we think the case of NTC falls within our definition of bailout. Within this interpretation, some of the NTC funds directed to provincial jurisdiction were not justified by the occurrence of exogenous shocks, but by the political color of the local party in power, and this helped to sustain irresponsible fiscal behavior in those jurisdictions.

### **3.4 The role of the National Government in the fiscal crisis of Cordoba.**

From the return of the democracy in 1983 there have been numerous episodes in which the national government used extraordinary resources to face fiscal and financial crisis at the provincial level. Among the episodes that had more public exposure we have the recurrent crisis in Jujuy which forced its governor to quit in 1998, the crisis in Tucuman during 1993 (where divided government was important), the crises in Santiago del Estero in 1993 and 1994 that culminated with riots in which the Governor's house was set fire and the province was then intervened by the federal government. Finally we also have the case of Rio Negro in 1995 where the province went almost bankrupt as a consequence of the accumulated debt together with the effect of the Tequila shock. As described before, there were many ways in which the federal government sent extraordinary resources to these provinces; among the most important: advances of coparticipation resources, National Treasury Contributions and loans in public titles (BOTESO 10).

All these crises had the common denominator of occurring in relatively poor jurisdictions that had fiscal problems in previous years, and where the social and economic situation aggravated by local political instability which aborted any type of public initiative at changing things. At the same time, the federal government had come into the rescue motivated not only by the magnitude of the crises but also because it had a political gain (or avoidance of a political cost) at stake.

There is one case of a provincial financial crisis that cannot be accommodated in the above description, the case of Cordoba in 1995. Cordoba, a large province that underwent a serious collapse in its finances, was run by the opposition party (and within the opposition party, the line most opposed to the central administration policies). Did the response of the province and that of the federal government differ in this crisis compared to others? Was a

bailout granted? In order to answer these questions, we describe below the events that eventually prompted the financial collapse in 1995. We then analyze the actions taken by the federal government and the provincial government, including the type of financial help handed out by the central authorities as well as the measures taken by the province to avert the crises. We finish with a short discussion of the possible interpretation of this as a bailout episode.

### **Background of the crises: Politics and fiscal policy in Cordoba before 1995.**

Córdoba, located in the center of the Argentinean territory, is the third largest Argentine province in terms of its GDP. Together with Buenos Aires, Santa Fe, Mendoza and the City of Buenos Aires it constitutes the “advanced” jurisdictions. From the return of democracy the radical party has governed Córdoba. In 1991, Eduardo Angeloz (losing Presidential candidate in 1989) was elected for a third term as Governor, thanks to a favorable verdict of the provincial supreme court regarding re-election. The governor and their local coalition have strongly opposed most of the economic policies run at the federal level. We should say that this originated not only by the fact that Córdoba was run by the opposition, but also by a tradition of Córdoba to oppose “centralist” initiatives coming from the federal authorities. Thus, as we showed before, it had not joined the other provinces in transferring the public sector pension system. Also, it refused to sign the two federal fiscal pacts of 1992 and 1993. Through these pacts the provinces agreed to undertake certain reforms in exchange for a guarantee of a minimum level of coparticipation transfers.<sup>30</sup> Finally, it refused to privatize most of its provincial public enterprises and banks.

The fiscal behavior of Córdoba during the second and third terms in office of governor Angeloz was characterized by a chronic and growing budgetary imbalance. This imbalance has as its immediate cause a rapid increase in public outlays (expenditures raised 159% between 1990 and 1994 together with a very poor performance in tax collection (Anuario de la Bolsa de Valores de Córdoba, 1998). The fiscal deficit reached its maximum value in 1994, with a global deficit of \$359 millions, representing 14% of the expenditures (see Table 15).

*Table 15. Cordoba: main fiscal indicators 1991-1997.*

**Table 15**  
**Cordoba: main fiscal indicators 1991-1997.**  
**in millions of pesos**

	1990	1991	1992	1993	1994	1995	1996	1997
Total income	842	1111	1651	2219	2183	2218	2138	2421
Own resources	364	429	702	871	1026	976	994	956
national transfers	462	665	909	1011	1058	1220	1123	1436
Other (2)	16	17	40	337	99	22	21	29
Total Expenditure	980	1264	1808	2386	2542	2403	2056	2349
Deficit	-138	-153	-157	-167	-359	-185	82	72
- as % of the expenditure	-14%	-12%	-9%	-7%	-14%	-8%	4%	3%
Debt payments	4	24	57	84	35	267	403	171
Total financial needs	142	177	214	251	394	452	321	99

Notas: (1) Actualizados por el índice de precios combinados, a precios de abril de 1991.

(2) En 1993, se incluye 235 millones de pesos correspondientes a la cesión al Banco de la Provincia de Córdoba.

Fuente: Cuentas de Inversión del Gobierno de Córdoba.

The accumulation of fiscal deficits in previous years generated a very serious problem of debt overhung at the end of 1994, with an outstanding consolidated public debt of around \$684 millions. The main creditors were the official provincial bank, with \$400 millions, and private banks with \$115 millions (see Table 16). The use of the provincial bank as a source of financing is not new in the provinces, but Cordoba had been using it at an accelerating pace. For example in 1993, in a desperate move to obtain fresh resources the provincial administration “sold” to the provincial bank the “asset” of unpaid taxes. This implied an income of about 235 millions for the provincial government.<sup>31</sup> As we will see below the overexploiting of the provincial bank as a source of cheap financing was one of the reasons that prompted the collapse of the province in 1995.

<sup>30</sup> We will see below that this refusal turned out to be very costly for the province.

<sup>31</sup> If this income is not computed the fiscal deficit corresponding to 1993 would have been 400 millions instead of the reported 167 millions.

*Table 16. Cordoba: evolution and composition of Public Debt*

**Table 16**  
**Cordoba: evolution and composition of Public Debt**  
**in millions of pesos**

	1990	1991	1992	1993	1994	1995	1996	jun. 1997
Deuda consolidada	96.1	44.5	136.1	444.7	648.3	820.8	931.4	869
Banco de la Provincia de Córdoba	60.8	8.2	67.3	162.3	400.4	203.3	181.2	119.7
Banco Social de Córdoba	0	0	21	34.8	49	6.7	0	0
Otros Bancos	24.8	0	3.4	163.3	115.2	119.1	3.3	72.8
Gobierno nacional	0	23.6	22.5	32.6	32.6	6.7	6.7	6.7
Otros conceptos (2)	0	0	0	0	0	419	662.4	585
de organismos descentralizados	9.5	8.1	17.9	42.7	36.9	38.9	29.8	30.8
cuentas especiales	1	4.6	4	9	14.2	27.1	48	54
Deuda flotante				312	320.6	509.3	311.4	422.2
Deuda Total	96.1	44.5	136.1	756.7	968.9	1330.1	1243	1291.2

Notas: (2) Incluye adelantos de la coparticipación federal, emisión CECOR ley 8,482 y Bono Patreótico Solidario.

Fuente: Bolsa de Comercio de Córdoba en base a Ministerio de Economía y Finanzas.

Another way of financing the increasing deficits was through the “floating debt,” constituted by delays in payments of public sector wages, state pensions and arrears with suppliers. When we add this other sources of (compulsive) financing, the debt climbed to \$1.000 millions at the end of 1994. This stock of debt represented, practically, 100% of the province own revenues (including transfers) for that year.

### **The unfolding of the crisis: the effect of the liquidity crises caused by the Mexican Devaluation**

In the context of this very fragile fiscal situation, at the beginning of 1995, the Mexican devaluation generated in Argentina a liquidity crisis and one of the most serious bank panics that the country has ever experienced. The run against banks affected specially the provincial institutions, as they were perceived to be the least solvent within the financial system -- this perception was correct in the case of Banco de Cordoba. The magnitude of the run suffered by the bank can be illustrated by the fact that it lost 400 millions in deposits between the end of 1994 and 1995. This crisis in the provincial bank had a significant impact on the provincial finances during 1995. Not only the province could no longer use its bank as a source of financing, but also it had to use provincial fiscal resources to avoid the bank going into bankruptcy. It is estimated that the provincial

treasury had to make an extraordinary contribution of 250 million to maintain the bank in operation

Besides the problem with its provincial bank the province had to suffer at the beginning of 1995 an important fall in its total revenues coming both from a reduction in their own tax collection and also from the reduction in transfers received from the federal government. Both factors were a consequence of the acute recession that affected the economy at the beginning of 1995. Still the reduction in transfers from the federal government was larger compared to other provinces because Cordoba, as indicated previously, did not sign the Fiscal Pact of 1992 which assured a lower bound for these resources. Thus, while during 1995 the rest of the jurisdictions suffered a 2.8% decline in federal transfers, Cordoba was hit by an 8% reduction<sup>32</sup>.

As a consequence of all the above factors the province faced a strong financial restriction since the beginning of 1995 entering into a default-type situation as it could not meet their more immediate expenditure commitments -- in particular, payments to public employees, contractors and suppliers. By the middle of 1995 the delay in these obligations reached three months and the social situation was very unstable with protest and riots gaining momentum

### **The actions taken by the Central and Provincial authorities**

Though the province was in a very difficult situation since the end of 1994, the federal government intervened offering some financial assistance only after July 1995, once the incumbent governor stepped down and a new elected administration took the post<sup>33</sup>. Though the new administration was from the same party as the former (Radicals), it was more akin to reach an agreement with the national authorities. Thus, the federal assistance was offered in the context of a formal agreement signed between the new provincial authorities and the executive branch of the federal government

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<sup>32</sup> Besides, a % of coparticipation income was retained by the central authorities in payments of previous loans taken with the baking system.

<sup>33</sup> The critical economic and social situation forced the new administration to take office before the stipulated time.

The emergency assistance offered by the federal government consisted in three types of instruments. In the first place, the national government granted a bridge loan for \$70 millions through the Banco de la Nación Argentina. Also the central authorities committed to pay to Cordoba what would have received by the guarantee clause stipulated in the Federal Pact<sup>34</sup>. One year later the province received more than 100 million dollars as a consequence of this instrument. Finally, Cordoba received an advance in its coparticipation payments of around \$ 70 millions.

An important feature that distinguishes this episode from other provincial crises is that in the case of Cordoba a rather draconian adjustment in the provincial finances was introduced by new governor <sup>35</sup> (see Dillinger and Webb, 1998). This severe adjustment included a reduction in 14.000 jobs, a reduction of the work day to 6 hours, and a wage decrease of 10%, plus the transfer of 1500 health workers to the municipalities without compensation. These cuts reduced the wage bill by \$ 270 million in 1996. Capital spending was cut by 40 percent. The new authorities met the debt with suppliers and public employees issuing a bond (CECOR)<sup>36</sup>. They also used that bond to pay coparticipation transfers to municipalities (100% of municipal coparticipation was paid in CECOR, and the municipalities in turn paid with them the salaries to their public employees and other obligations). CECOR's could be used to pay taxes at par value or discounted on the secondary market at 80 percent.

The adjustment was very effective in reverting the important fiscal imbalances of the province in a relative short period of time. By the end of 1995, the deficit was reduced by half compared to 1994 and in 1996 the province achieved for the first time in many years a fiscal surplus (see table 15). Though relatively successful, the pain that the adjustment impinged on the population would end up having a cost for the party in government. In 1999 and in spite of a good administration, the radical party lost the elections against a peronist candidate, putting an end to a long period of radical administrations.

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<sup>34</sup> As a required first step the new administration had to signed the Federal Pact , a move resisted so tenaciously by the previous administration.

<sup>35</sup> The new authorities requested a technical mission form the World Bank to analyse a public sector reform proposal. The Bank, through the report "Córdoba-Public Sector Assessment: Proposals for Reform" made recommendations to heal provincial finances permanently. The proposal included the privatization of banks and public enterprises, the transfer of the pension system to the National government, joining the Fiscal Pact, and the RESCATE of CECOR. The provincial government only considered the joining of the Fiscal Pact.

## **Was a Bailout extended? Was it significant?**

The case of Cordoba is interesting on various grounds. On one hand, we see an ex-post intervention of the federal government through some short-term instruments (no originally established to deal with this issues, like the Banco de la Nacion's loan) to try to ease a very acute fiscal crisis in a province. This fiscal crisis was caused, in turn, by a very un-responsible fiscal behavior that overexposed Cordoba to shocks. This feature makes the episode a clear case of bailout. Still the amount of money involved in the bailout was relative small. Though the central authorities ex-post handed some help, we see that the province did the major part of the adjustment itself. The total amount of resources received from the center was not that much specially taking into account the size of Cordoba. The immediate money got by Cordoba was about 140 millions and, as we indicated, the debt overhang in mid July was around 1000 millions dollars. What were the reasons that somehow checked the ex-post incentives of the federal government to intervene in a much significant way?.

One explanation is that the cost of adjustment that eventually the population would have to bear in the absence of any mayor financial help from the center didn't have a close correlation in term of political costs. In this sense we cannot live aside the fact that the opposition party led the province so the federal government did not perceived any import political cost if failed to help the province in problems<sup>37</sup>.

A second explanation we must stress is that the federal government at that moment didn't have many instruments available to help Cordoba, specially given the amounts of funds required and the fact that the National Administration was itself facing a very difficult situation. As it is well-known the Mexican devaluation generated in Argentina a very fragile situation in the first half of 1995, with a very acute banking crisis. All the efforts of the federal authorities at that moment were geared to avoid that the banking crisis transformed itself in a currency panic which could forced the government to abandon convertibility.

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<sup>36</sup> The issuance of CECOR bonds reached \$ 800 millions. Those bonds had a two-year maturity, 12% annual yield, and they were available on months 15, 21 and 24.

<sup>37</sup> On the contrary there could have been certain speculation that when the population suffered the adjustment it will make pay the local radical party for that (as it actually happened).

Thus both political and inflation-stabilization commitment type considerations significantly reduced the ex-post incentive of the federal government to intervene in a large-scale form. Then it is not surprising to find that faced with this situation the new provincial administration forced the strong adjustment in the local finances which was a key ingredient in the solution of the crisis. Thus the size of Cordoba coupled with the very difficult financial situation at the national level worked as a break to the financial help the federal government can handle without risking national macroeconomic stability. This is the case not only of Cordoba, but also of other large provinces like Buenos Aires, La Pampa or Santa Fe. It is not surprising then that those jurisdictions were not part of the financial rescue operations as it has been the case with other smaller and poor provinces.

#### **4. Concluding remarks.**

We want to conclude with a general assessment regarding the occurrence of bailout episodes between different level of government in Argentina. First of all, we should mention that we have been able to identify several episodes of bailout in the relationship between provinces and the national government. The main features of those episodes were associated with jurisdictions running very unsustainable fiscal policies that at some point moved the province into almost bankruptcy. The exact time when the province entered into a serious fiscal crisis was in some episodes prompted by the occurrence of a exogenous shocks in the economy like it was the case with the Tequila crisis during 1995. In this regard, the intervention of the federal government nationalizing the provincial pension systems and also in the case of Cordoba was mainly accelerated by the effect that tequila shock had on the finances of those provinces. On other occasions, like in the BOTESO episode, we observe that provincial fiscal distress was associated with an acute political crisis, which in turn motivated the financial and political intervention of the federal government.

Still we saw that the federal government in general did not set up extensive and generous rescue operations. They were more a case-by-case-type solution. Using these mechanism and negotiations the federal government tried to obtain some benefits (in terms of provincial adjustment, reforms, etc.) in exchange of the financial help it handed out. Even

though with some small and poor jurisdiction the central authorities showed itself benevolent (recall some BOTESO operations with Corrientes or Santiago del Estero), with others, and specially with big provinces like Cordoba, the federal money involved was quite reduced, being the province itself the one who supported most of the cost of adjustment.

Which were the reasons for this kind of asymmetry?. Well, as we pointed out, within the determinants that affected the ex-post incentives of the federal government, we have emphasized the role of political variables. In the sense, in the case of some small jurisdiction the federal government was actually running the province (as a consequence of the local fiscal and political crisis the central authorities had intervened the jurisdictions). Thus any wrong doing in the management of local affairs was easily identified with the federal administration, which in turn could have had negative consequences in terms of votes). In the case of Cordoba we pointed out that this was not the case. On the contrary, the opposition party was in charge of the province and the local administration pursued a policy which was quite independent of what was being proposed at the national level. Thus it was quite clear that the political cost of an eventual crisis was going to be supported mostly by the local radical administration.

But besides politics we also emphasized that after 1991 the federal government has much less room to accommodate provincial deficits (and of course national deficits). By establishing a currency board arrangement, the Convertibility Law of March 1991 ended inflationary Central Bank financing of public sector deficits. Before this period the federal government was able to accommodate the expansion in provincial expenditures through inflationary financing, but not any more since 1991 onwards. In this regard, it is not surprising to find that the federal authorities handed out extraordinary resources to jurisdiction with serious fiscal problems using, basically, loans, most of which were repaid in full (i.e BOTESO).

We might expect that the hardening of the budget constraint of the central government that the convertibility law brought in would have reduced the incentives of the provincial governments to misbehave. This is because they would have anticipated that federal

authorities face strong restrictions to ex-post accommodate provincial fiscal deficits. But then the bailout evidence we just describe seems to contradict this prediction.

This is not so much if we consider the fact that before convertibility the evidence on bailout is "contaminated" by the fact that provincial governments (as well as the national authorities) have always the possibility to ask for inflationary finance. In the past financial crisis were avoided by the extraordinary resources that inflation could assure in the short term. Thus the evidence of bailout and fiscal crisis in some provinces we described above can be seen as a signal of a new fiscal regime, where if province deviate from responsible fiscal behavior and fall into fiscal distress, there is no automatic response by the center coming to the rescue. On the contrary, the solution to the crisis is based, in part, on a strong adjustment by the involved province.

## **Appendix A**

The analysis of this issue and the empirical application to Argentina will be facilitated if we consider the following stylized model. Consider an economy with a federal government and  $N$  local governments. All local governments maximize the utility function of their own representative consumer. Representative consumers in all localities have the same preferences over private  $c$  and public goods  $g$ , given by

$$E(U(c_j) + H(g_j))$$

Local endowments are stochastic. The federal endowment is zero, the sole function of the federal government being to redistribute income between localities. The redistribution may serve the purpose of both wealth redistribution and risk sharing.

The budget constraint of the representative individual in region  $j$  is,

$$A_j - R - F_j = c_j$$

Where,

$A_j$  is provincial output, a random variable

$c$  is private consumption

$R_j$  is local government revenues

$F_j$  is federal government revenues.

### Timing

Both government levels decide on their tax rates

Shocks at the provincial level are realized

We assume that both levels of government chose tax rates, but revenues are subject to shocks. This assumption is consistent with the way policy is actually chosen, since fiscal variables are typically decided on parliaments on the basis of tax rates, and very rarely change as on the basis of general aggregate conditions. This is the basis of viewing government debt as an expenditure-smoothing device. Therefore, we assume that

$$R_j = R_j^* + \varepsilon_j$$

Where  $R_j^*$  is chosen by the government and  $\varepsilon_j$  is a random shock. Let  $\Pi$  be the column vector of the shocks for all  $j$ . We assume, for simplicity, that  $\Pi$  is distributed as a multivariate normal with mean  $\mu$  and variance matrix  $\sigma$ .

Incidentally, note that private consumption is fully determined by government - local and federal- tax rates and the shocks, so the analysis will focus on redistribution and smoothing of the public good only<sup>38</sup>.

The optimal solution from the federal government point of view, once tax rates have been chosen, is to choose transfers  $T_i$  to maximize,

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<sup>38</sup> This modeling choice implies that ex-post, there is no substitution of private and public goods. Alternative specifications could contemplate the possibility of a local government choosing a lower tax rate to increase private consumption on the locality. We do not address this issue in this version.

$$\sum \theta_j H(g_j)$$

subject to,

$$g_j = R_j + T_j$$

$$\sum T_j = \sum F_j = F$$

given the weights  $\theta_j$ . As it is standard in these consumption smoothing models, the optimal solution is to equalize marginal utilities across agents, weighted by the  $\theta$ 's

$$\theta_i H'(g_i(s)) = \theta_j H'(g_j(s))$$

for all  $i, j$  and all states of nature  $s$ .

If we assume that the function  $H$  is homothetic, then

$$g_i(s) = \gamma_{i,j} g_j(s)$$

where  $\gamma_{i,j}$  depends on the  $\theta$ 's and the parameters of the utility function. Thus, total government expenditures ought to be proportional for all local governments in all states of nature,

$$R_i(s) + T_i(s) = \gamma_{i,j} (R_j(s) + T_j(s))$$

Replacing these conditions on the federal government budget constraint

$$T_j + \sum_{i \neq j} T_i = T_j + \sum_{i \neq j} (\gamma_{i,j} (R_j(s) + T_j(s))) = F$$

where we leave implicit the conditioning on the state. After some manipulations we arrive at,

$$T_j = (1/(1+\phi_j)) F - (\phi_j / (1+\phi_j)) R_j + (1/(1+\phi_j)) R_{-j}$$

Where;

$$\phi_j = \sum_{i \neq j} \gamma_i^j$$

$$R_j = \sum_{i \neq j} R_i$$

Thus, the transfer to the local government is a linear and increasing function of the federal resources, and the sum of all other provinces local resources, while it is a decreasing function of own local resources, as it is standard in risk sharing models.

Note that the theory provides sharp predictions regarding the relationship among the parameters of the linear restriction and between them and the implicit Pareto weights.

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