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FISCAL DECENTRALIZATION IN MEXICO:

THE BAILOUT PROBLEM

Abstract

The purpose of this paper is to identify and analyze the determinants and consequences of bailing out sates, in particular, those observed in México. This case is important because lessons can be obtained for other LDCs. It is important to pinpoint that bailouts of lower level governments have not been the object of much research in economics.

Resumen

El motivo de este documento es el de identificar y analizar los determinantes y las consecuencias de rescatar financieramente a las entidades federativas en México. Este caso es interesante debido a que se pueden extraer implicaciones para otros países en desarrollo. Es importante destacar que este tipo de estudios no ha sido objeto de la literatura económica, de aquí su relevancia.

1. Introduction

During the last few years we have been witnessing to several subnational government (SNG) debt crises in the world. The Minas Gerais default in Brazil is the most notorious example. But the Tequila crisis also brought an important crisis in the SNG credit markets in México. In this latter case, the Mexican federal government virtually bailed out most of the states. But the 1995 bailout is not the only episode in Mexican history. Some bailouts actually took place before the tequila crises despite the fact that Mexico was an even more centralized country. The purpose of this paper is to document and analyze these episodes in the Mexican case.

Even though there have been several bailouts in Mexican history, the tequila crisis rescues were the first ones in a long time to be widely published and were extended for all states because of debt problems while in past specific state circumstances appear. For this reason, most recent episodes of bailout of local States in Mexico raise many issues again. First, it could just have set the precedent for future bailouts and the states will have incentives to keep borrowing beyond their capacity to repay. That is, a moral hazard problem was created and States see borrowing as a strategic behavior to obtain additional federal extraordinary funds.

Second, the federal government claims that the 1995 state bailout was an excellent point of departure to impose fiscal discipline to States, as it acted like an IMF office (self claimed "Interstate Monetary Fund"). Third, this process could also have shown that States and municipalities have very limited sources of revenue and that a reform in the fiscal intergovernmental relations was necessary. Finally, political motivations could have emerged from this process, as Mexico has become a more democratic society.

All these points are studied in this paper. This work suggests that the explicit generalized bailout carried out by the federal government in México in 1995 created a moral hazard problem. There is ample evidence that states overborrow because it is a way to obtain additional extraordinary funds. Another result of the analysis is that the existing institutional-legal framework is not adequate, since it provides incentives for states to borrow and for banks to lend without evaluating the risk of the project.

Likewise, the importance of the state is a major determinant in providing bailout transfers. Also, the more fiscal need a state government has when the state government is incapable of adjusting its expenditure, the more likely the state to get an extraordinary transfer during the period of study. On the other hand, political variables are not an important determinant of a bailout, except, perhaps, when there are state elections. That is, the transfer is provided, but not for partisan reasons, since most states were actually governed by the same party, but because elections require more money in the state budgets.

It is also shown that excessive indebtedness of local states may have equity implications as well: bailouts tend to be highly regressive, as the poorer –low indebted- states receive much less in extraordinary resources.

From the productivity side of borrowing, our results suggest that the debt acquired by the local governments during the period under study have not generated local revenues. Particularly, debt acquired with development banks has been irrelevant to promote productive activities in the states. Commercial bank debt has succeeded in increasing investment but not in raising state own revenues. This result may be seen as hidden bailout carried out by the development bank.

In terms of policy lessons, the study suggests that the rules-based approach for the case of México is the adequate way of avoiding overborrowing at least in the short and medium terms, but additional actions should be taken to try to *mimic* market-discipline. The great advantage of the rules based system of checking excessive SNG indebtedness is that it is transparent and unbiased, qualities that contribute to minimize political bargains and discretionality. Possible disadvantages are: some degree of inflexibility tends to be introduced in the system and, as a consequence, local entities will always be trying all possible ways to circumvent the rules. Moreover, in the context of greater democracy, partisan divisions between levels of government might turn out to provoke greater conflicts when an opposition party gains access to the SNG. Although these disadvantages may operate in the short-run, in the medium and long run the rules can be changed and adjusted to new circumstances and necessities.

Finally, the paper warns about a potential problem in SNG credit markets, namely, contingent liabilities. It is shown that while the total state and local debt do not pose a macroeconomic problem, since it only represents 2 per cent of GDP, contingent liabilities (associated with public pension plans) could become a problem as they represent more than 6 per cent of GDP, and could reach 10 per cent. The politics of public sector employment and unions involved in these liabilities could also prove to be explosive in the future.

The paper is divided as follows: Section 2 presents a nutshell of Mexican fiscal federalism. This is important to understand how the credit market works. Section 3 provides an examination of the evolution of state debt, while section 4 explores the possible explanations for the bailouts. In section 5 a preliminary evaluation of the generalized bailout is done. Section 6 presents the policy implications and recommendations. Finally, section 7 concludes.

2. Institutional arragenments

México is a Federal Republic conformed by three levels of government: the central government, 32 local entities (which include 31 states and the federal district[1]) and

[1] During the course of this study we do not make the distinction between a state and a federative entity. We treat them as synonyms.

2477 municipalities. The country, as many in the region, is characterized by strong regional disparities. While Federal District, state of México and Nuevo León produce about 40 percent of total GDP, Chiapas, Guerrero, Hidalgo and Oaxaca reached only a subtotal of 7 per cent as a share of total GDP; clearly the Southern part of México is by far the poorest region in the country.

To understand the Subnational Government bailout processes, this section first examines the fiscal intergovernmental relations as a background for discussion. We emphasize the tax assignment and responsabililities of each level of government.

2.1 Historical Antecedents

As Mexico became an independent Nation, the federalist principle was adopted, mainly to subdue some secessionist tendency existent at the time, especially in certain zones. Mexican Federalism followed the US model. The independence of local governments reached its peak during the XIX century when not only did local states had their own fiscal systems but their own currency. At the beginning of the XX C, the Mexican Revolution erupted. At the end of this civil war expenditures responsibilities and the fiscal power of the federal government gained some strength, but it was until the creation of the now called Partido Revolucionario Institucional (PRI)[2], that the political power concentrated in only one party, which permitted the establishment of a system formally based on three levels of government: Federal, State, and Municipal, but with every centralized political and fiscal control.

The federal government played a very important role in the modernization of the country, a fact that reshaped the relation between Subnational governments and the central government. There were other elements that strengthened centralization, especially the import substitution industrialization strategy that was operated in Mexico for nearly forty years. This strategy of development required huge amounts of public investment, which was directed to support productive capacity. These two elements strengthened the fiscal power of the federal government. Meanwhile, SNGs were gradually limited through various fiscal coordination agreements to only two main sources of tax revenue: a turnover sales tax for states and property tax for municipalities. Those taxes did not yield enough revenue to pay for many of the necessary local public goods. In the end, this created a situation in which the central government ended up being *rich* while Subnational governments were *poor*.

By the 1970s tax policy in the country created serious distortions. Coexistence of federal and state taxes not only favored tax cascading (and thus inefficient allocation of resources) but also made it difficult to administer taxes because there was no collaboration among the different levels of government. After failed efforts at tax coordination which were only partially successful, the National System of Fiscal Coordination (NSFC) was created in 1980, together with the introduction of a unique federal value added tax, with the principal objective of

[2] Originally, the name was Partido Nacional Revolucionario and was created by Calles.

harmonizing fiscal relations among levels of government. This system regulates, since then, fiscal intergovernmental relations in México. We now describe this system.

2.2 Tax assignment

In theory, the National System of Fiscal Coordination (NSFC) regulates fiscal intergovernmental relations in México working through *"Letter of Intent"* in which states and municipalities resign their right to levy the main taxes in their jurisdictions. Table 2.1 presents the tax assignment. The two main functions of the NSFC are as follows (i) it compensates states and municipalities for the resignation of the power to tax; and, (ii) it regulates the transfers from rich to poor states through the redistributing component of the formula.

It can be noted from the table I.1 that the federal level collects the main taxes: the value added and the corporate and personal income taxes, which generate 70 per cent of total tax revenue to the public sector. The only sources of own revenues of lower levels of government are basically property taxes, payroll tax, fees and user charges.

In essence the NSFC is a *revenue sharing* system, where states share revenues coming from the main taxes. They sign formal agreements of administrative collaboration with the federal government. The NFCS was created to harmonize the Mexican Tax System, an attempt to avoid fiscal differences, which could affect productive activities. The system has experienced different changes, but funds have always been distributed to States and Municipalities through a formula[3]. One of the major changes in the NSFC history is the 1980 change, which allowed the introduction of the value Added Tax at the same time. No other major change has been made since then. Changes have focussed on the percentage that is redistributed. Initially 18.7 per cent of total tax income (see Table 1.1) was redistributed among states through the formula; this percentage was increased in 1995 to 20.5 per cent as a result of the decentralization process initiated in México that year.

[3]This formula contains several shortcomings. In addition, the federal government transfers resources to municipalities through the States which in turn redistribute these funds to local government according to their own legislatures. For a discussion see Hernández (1998). With respect to the formula, several authors (Arellano, 1994; Hernández, 1998) have identified different limitations. Mainly, a) it supposes homogeneity in regions and thus homogeneity in costs of offering the public service; b) the part of the formula that rewards the positive changes in tax collection is based only in some specific taxes and does not include potential total tax collection; this element favors rich states because they have broader tax base; c) future collection is very sensible to the base year; d) there is asymmetric information in terms of the effort a state makes. This formula was not changed during the decentralization/deconcentration process of 1995-98.

Table 2.2 shows total public sector revenues. As it can be observed, federal sources of revenue (excluding oil rent) accounted for more than 93 percent on average in the period of 1992-1995. This strongly suggests that vertical fiscal imbalance is present in México. This is still true even after the decentralization process carried out in Mexico in the period 1995-98. This is so because the decentralization did not give back any tax powers; it only included matching and target transfers. From this point of view the process can be considered as a deconcentration process that gave more transparency to the intergovernmental relations and at the same time made them more balanced horizontally[4].

Although this is its best known feature, Mexican intergovernmental fiscal relations are more complex than that. There exists the perception that fiscal intergovernmental relations are documented and regulated solely by the NSFC. In fact, most authors (see Arellano, 1994, Martínez Almazán, 1989) suggest so. When these relations are analyzed one has to keep in mind that Mexico has a long historical background of centralization. Direct federal expenditures carried out in the states and municipalities are an important part of the picture.

2.3 Expenditure responsabilities

Table 2.1 also shows the distribution of responsabilities among the three levels of government. As it can be appreciated there are some that are shared. These shared responsabilities have increased in number since 1995 (table shows recent distribution of expenditure responsabilities) when the federal government took strong actions of decentralization. The federal government funds most of these shared activities. There are debates now on the basis these transfers are carried out. Cayeros (1999) provides evidence that the per capita distribution for 1999 is fair, though the distribution criteria for some activities are not clear enough.

Despite being more equal for 1999, the federal transfers before that year contained high degree of discretionality. For this reason, when analyzing the financial intergovernmental relations in Mexico before 1998-99, we should include all transfers and federal public investment in the states. Traditionally, state governors and finance ministers have spent an important part of their time lobbying in the center in order to get resources, via federal public investment or via extraordinary transfers. Nevertheless, as we just mentioned, since 1995-97 this has apparently started to change.

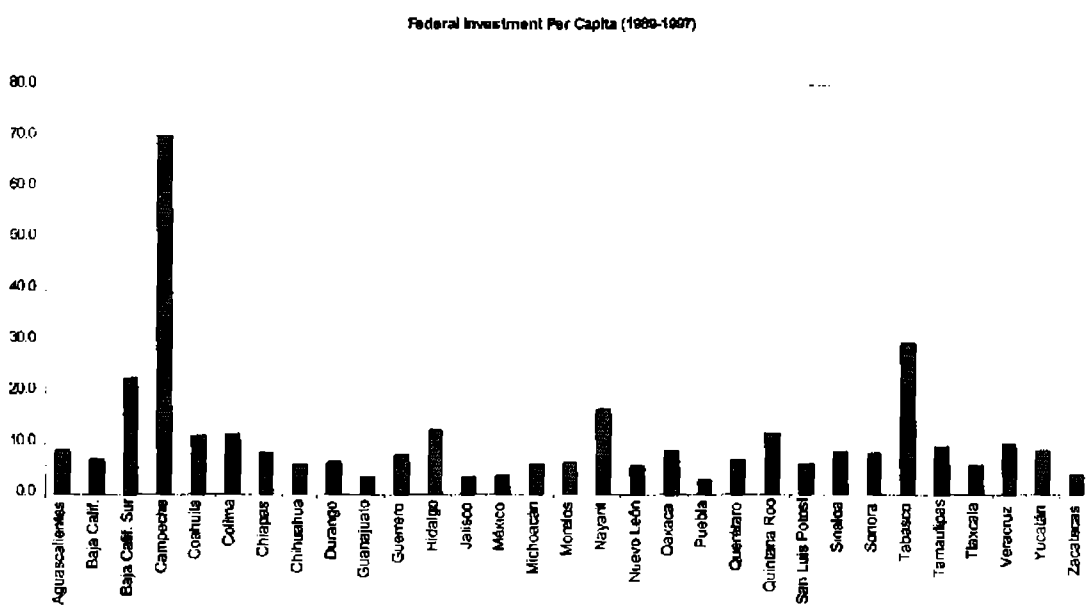
To provide an illustrative example of the degree of discretionality in federal government transfers during the previous years of the decentralization process (other than the revenue-sharing formula), Graph I.1 present the federal public investment in states. The average coefficient of variation of federal public investment for the

[4] For details on the process until 1997, see Hernández (1998). For the regional inequality, see Díaz Cayeros, (1995).

period 1989-1997 is 1.13, which suggest an unequal distribution among states (see the graph 2.1 also)[5].

While federal public investment has declined in importance over the years, a specific component within it became highly significant since the 1980s as the prime source of finance for local public works. Initially considered within the budget as part of the regional development funds, resources within budgetary item 26 (the social development item) became during the 1988-1994 presidential period the cornerstone of an ambitious poverty alleviation strategy, the Programa Nacional de Solidaridad (PRONASOL). PRONASOL has been criticized for the alleged manipulation of the distribution of resources according to electoral imperatives, and the high degree of discretional exerted by the president in the use of those funds. Regardless of the validity of those critiques, federal resources in the social development item became the most important source for municipal governments to finance public investment.

Graph 2.1



Source: INEGI

With the new federal administration entering in 1994 some of the critiques to PRONASOL were eliminated, by creating formulas for the distribution of resources among states, and later on all the way to the municipal level, according to poverty indicators. These efforts at making these conditional transfers more transparent culminated in the 1998 federal budget with the creation of budgetary item 33, which

[5] For a further analysis of this point, one would have to study whether the federal government wanted to maximize public sector revenue thorough public investment in some specific key states (for example Campeche and Tabasco, which are oil states). This is out of the scope of this study.

attempted to put together all the funds transferred in one way or another to SNGs. While the bulk of item 33 is made up by education transfers resulting from the decentralization of federal education carried out in 1992, the most prominent debate has still been centered on the allocation of municipal funds for public investment projects.

2.4 Subnational Debt regulation in México

2.4.1 Institutional framework before the 1995 financial crisis

This subsection describes the institutional and legal design in the National Fiscal Coordination Law (NFCL).

Subnational government borrowing is regulated firstly by the National Constitution. The Federal Congress has the power to establish the bases upon which the executive branch may arrange loans and take responsibility for public debt. The criteria that all local entities must respect is contained in article 117, fraction VIII, for the local entities; and, article 115, fraction VI, for the municipalities. It is stated that Subnational governments can only borrow in Mexican pesos and only from Mexicans. With respect to this, Banobras -a Development Bank lending to SNGs- and other financial institutions have found the way to lend in pesos while they get the funds in foreign currencies.

These articles also state that they can borrow only for the purpose of productive investment. In accordance with the benefit principle of public finance, to the extent that benefits from local public investment projects accrue over a number of years into the future (which is the case with infrastructure projects), it is both fair and efficient for future generations to share the cost of financing such projects. Borrowing for local capital development projects thus has a sound conceptual rationale. Moreover, borrowing may be the only practical way to finance major capital outlays without large, and undesirable, variations in local tax rates and charges from year to year. The gearing effect of borrowing allows a higher level of investment to be achieved than can be supported by local governments' current resources, thus contributing to accelerating the pace of local development. Where local public investments had previously been financed predominantly from grants from a higher level of government, a shift to loan financing can bolster incentives for local revenue and improved cost recovery through user charges.

The details for guaranteeing state credits are contained in article number nine of the National Fiscal Coordination Law (NFCL), created in 1980, which states that these entities can borrow from commercial and/or development banks to finance investment projects only, subject to the previous authorization of the State Congress.

Before 1997, article number nine allowed local entities (States and Federal District) to have their federal transfers as collateral. In case of arrears or a threat of default, on behalf of creditors, the federal government could deduct debt service payments (on registered debt) from revenue sharing transfers before the funds are

transferred to states each month. This amount, in turn, is handed out to the creditor bank. This arrangement started in the 1980s when the whole banking system was nationalized.

On the other hand, for individual cases, the state government proposes the debt level each year and State Congresses are the ones that approve the ceiling for each year. This includes municipal debt. Municipalities in principle can get debt, but the state has to be the guarantor; for this reason the State Congress has to approve municipal debt.

The institutional arrangement previous to the crisis was very simple. For *participaciones* to be utilized as collateral, states only needed to register the new debt contract before the Secretaría de Hacienda, previously authorized by their State Congress. The treasurer could in principle deny the registration of the new debt. In this case the debt was not backed by *participaciones*. This case was rather rare. This may have been the main instrument used by the federal government to control the indebtedness of Subnational governments.

2.4.2 The 1997 modification of legal framework for SNG debt

The 1997 reform of the ninth article of National Fiscal Coordination Law confers to State and Local governments' new obligations in this subject. The legislation still allowed Subnational governments to utilize debt to finance their investment projects, and may still use their federal transfers as collateral. However, in case of arrears or a threatening to default, banks would not be able to ask the Treasury Department to discount the corresponding amount from the defaulting State's federal transfers. They would have to exercise the collateral according to what is considered in the State Debt Laws, i.e., both parts would have to create the repaying mechanism. In other words, Subnational governments would be responsible in repaying their contracted debts when federal transfers are used as collateral.

2.5 Political Arena

Mexico's political transformation has been going through during the last years, which affects SNG credit markets. Parallel processes of democratization have dramatically reshaped intergovernmental relations. From a disciplined system long dominated by one political party at all levels of government, Mexico is passing to a highly competitive complex configuration of local political profiles where it is increasingly common to find divided local governments (where the legislature is fragmented or controlled by a party different from the governor) or municipalities that are governed by parties different from the local or the federal executive. The federal executive under the PRI has repeatedly been accused of manipulating financial instruments in order to produce favorable political cycles (Ames, 1989; Weldon and Molinar, 1994; Lamoyi and Leyva, 1998). But the erosion of federal authority is evident in many spheres. In fact, the main contenders to the presidential

race of 2000 are all governors (Vicence Fox for the PAN; Manuel Bartlett and Roberto Madrazo for the PRI; and Cuauhtémoc Cárdenas for the PRD), while in the past presidential precandidates always came from the president's cabinet. Thus, the relative importance of local politicians, especially governors, has reshaped the financial relation between the federal and state governments, making local fiscal discipline less strong and federal bailouts more likely.

2.6 Summing up

For the purposes of this work, it is important to know that in 1980 states resigned their power to tax. If they were to receive revenue shares, they would not impose any indirect taxes on sales or industry. Tax collection, then, is mainly made by the federal government and then part of it (20 per cent) is redistributed to states and municipalities through a formula.

The main deficiencies of the system that have been identified come from the lack of tax independence to local governments and from the formula itself.

In sum, fiscal intergovernmental relations in México are complex. Efforts of decentralization have been made particularly during the Zedillo Administration (1994-), attempting to complete the process, which started with education, to other areas such as health and public safety. For 1999, of each peso the federal government spends, nearly 31 cents are spent by SNG's; however, these decide only 14 cent, of each peso for expenditure while the rest is only executed by SNG's.

3. Evolution of State Debt

To understand the 1994-95 bailout carried out in México, it is worth examining the evolution of the Subnational debt in the 1990s. As we will show in this section, the debt problem does not pose yet a macroeconomic problem. However, it represents a burden on many individual states. Hence, actions by the federal government should be taken, especially given the long tradition of centralization existent in México.

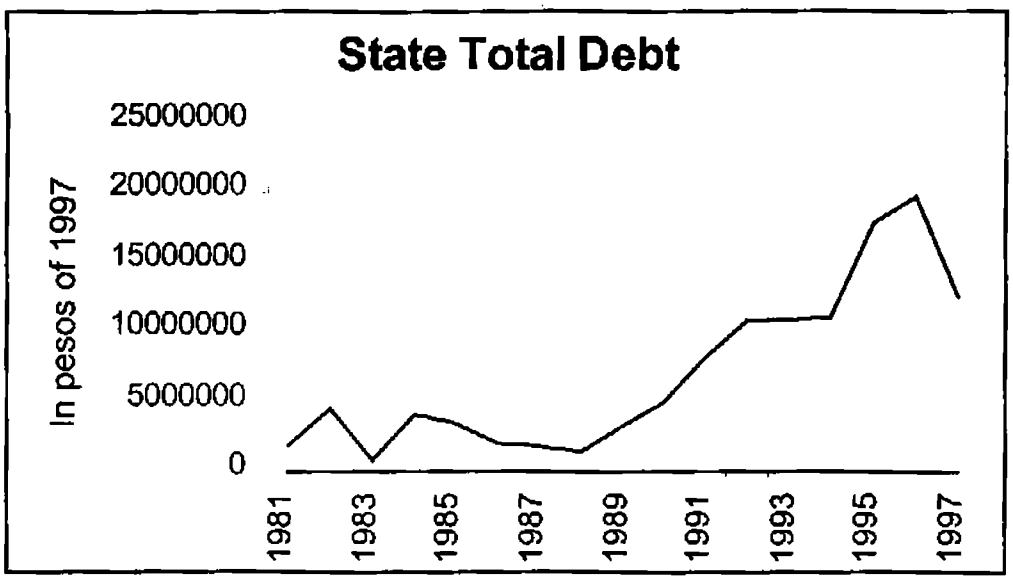
3.1 Evolution of Debt

In contrast to other Latina American countries like Argentina and Brazil, Subnational Government (SNG) debt has not yet been a problem of macroeconomic magnitude –though it could become so. Total Debt (excluding Distrito Federal) reached 45 billion pesos by 1994 or 1.8 percent of GDP and as a percentage of total public sector debt, it represented about 6 percent. However, it is important to note

that the accumulation of state debt in the period 1988-1993[6] rose at an annual rate of 62 per cent (see, Gamboa, 1998, and Graph 3.1).

SNG debt grew 8 percent in real terms from 1994 to 1995 mainly due to the increase in interest rates that resulted from the financial crisis. Since then and until 1998 total SNG debt fell by 20 percent in real terms, if we exclude the Federal District. This reduction can be explained by the bailout carried out by the federal government.

Graph 3.1



Source: SHCP

The burden of debt by 1995, however, represented a fiscal problem for the majority of the states. With respect to the structure of this type of debt, it can be appreciated from Tables 3.1 and 3.2 and Graph 3.2 that it was concentrated in a few states in 1994. (Jalisco, México, Nuevo León, Querétaro and Sonora, which accounted for 60 percent of the total; and to a lesser extent Baja California, Chiapas, Chihuahua, Durango, and Sinaloa). Many others presented fiscal problems with high relative levels of debt, even though it was low in absolute terms (Aguascalientes, Baja California Sur, Quintana Roo and Tamaulipas).

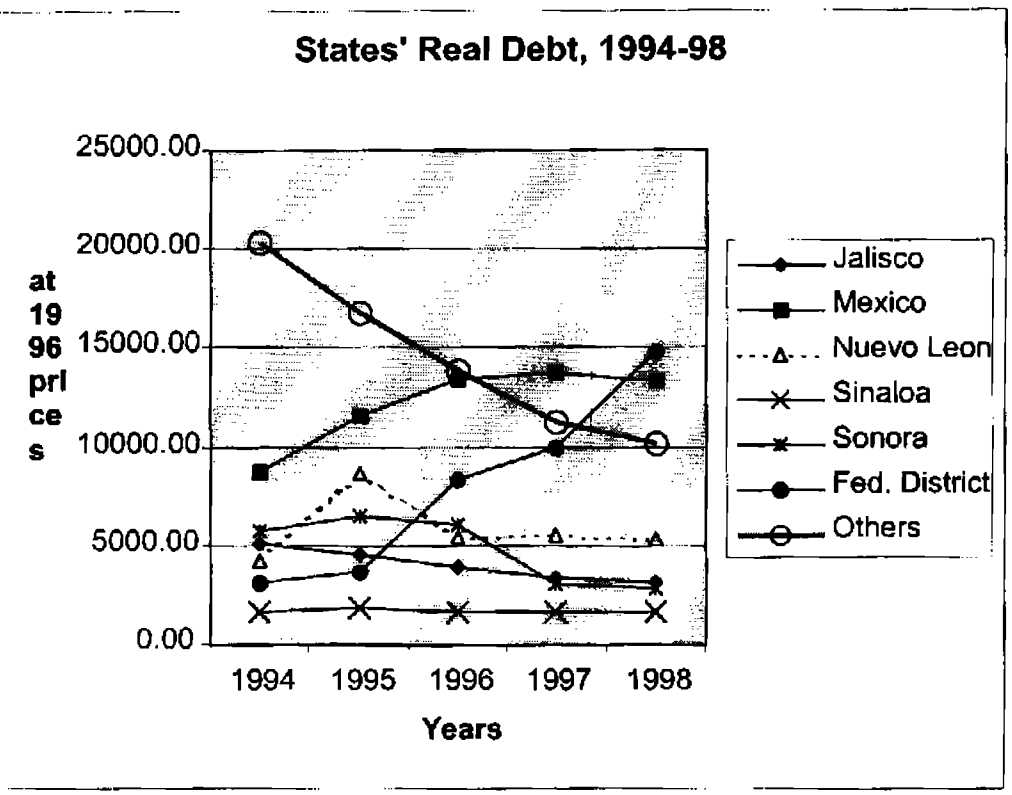
Debt is a burden on SNG finances in part because they have little disposable income with which to service it. Table 3.3 presents the ratio of total debt to disposable income[7]. This ratio ranges from a maximum of 1.9 for Sonora to a minimum of 0.04 for Hidalgo with an average value of nearly 0.8 and a coefficient of variation of 0.66, suggesting a high degree of dispersion in the figure. These

[6] The distribution among states of this debt for this period is hard to find.

[7] Nest disposable income is defined as total revenue less municipal transfers less educational transfers.

s show an important degree of financial vulnerability. The same can be ated with the ratio of total debt to net block transfers[8] (see Table 3.4).

Graph 3.2



Source: SHCP

Therefore, financial vulnerability was accompanied by a limited possibility ng additional revenues because the taxing system in Mexico is very zed (see Table 2.1). As mentioned before, the only sources of own revenues r levels of government are basically property taxes, payroll tax, fees and user

All other major taxes are assigned to the federal government. Subnational nents are consequently heavily dependent on federal revenue sharing, and on deral transfers, especially after the reform implemented since 1995.

This can also be appreciated by looking at the ratio of net *participaciones* to otal income. This ratio represented an average of nearly 80 percent (see .5). The ratio of current expenditure to net *participaciones* by then was on 77 percent (see Table 3.6). These figures suggest that states' *participaciones* eady tied and there was a little flexibility of absorbing a shock. It has to be t it is difficult for states and to further reduce the current expenditures as they

lock transfers are the total block transfers minus the municipal block transfer.

have to pay teachers, state police, doctors and so on. What is more, there has been an increasing demand for hiring more of these state employees.

It also should be noted that this is so, in part due to a deficient decentralization in education. The decentralization process in education placed a burden on states in the following manner. Before the decentralization in education there were federal hired teachers as well as state hired because education is a shared responsibility (recall Table 2.1). State teachers were paid according to financial capacity of each state. After the decentralization, the wages of both types of teachers were uniformed. Yearly negotiations are made between the Federal National Union of teachers and the federal government. When they reach an agreement, states have to at least replicate the federal increase[9]. This process has posed a financial burden in many states (mainly Baja California, Chihuahua, State of México, Guanajuato and Querétaro[10]).

Public security, on the other hand, has become an important demand. States have faced an increasing demand of a bigger number of policemen. This has also contributed to have the current expenditure tied ex ante.

It should be noted, however, that the high ratio of current expenditures to participaciones also suggests –at least in part- that states were not administrating efficiently, especially when compared to the average of OECD provinces/states, where this ratio ranges between 47 and 56 percent (see Hernández, 1998).

4. Possible Determinants of the Bailout

To better analyze the bailouts in Mexican history, we make the following considerations regarding transfers. For these to be a bailout some basic characteristics must be met:

A. Source and receiver: from a higher level government to a lower level one.

B. Temporary: it cannot be provided every period, although, its benefit can certainly last for an extended time (in the case of a debt re-negotiation) and it can be recurrent. This would rule out as bailouts all funds that are previously established by the federal government, even if the repartition of the fund does not follow an established formula.

C. Discretionary: it cannot proceed from an established rule. B and C imply that the transfer from the federal government is a violation of its established procedure, and therefore, we have to assume that the federal government is forced to provide it. The federal government is time inconsistent.

[9] That is, state teachers are followers, while the federal union is the leader.

[10] Some states (Oaxaca, Federal District and Hidalgo) do not have state teachers. Thus they do not have this specific problem.

D. Consequence of an unobserved circumstance: it cannot be provided in response to an event that affects local finances but is completely out of the control of the local government (like a natural disaster or less funding for a previously federally provided function). That is, there is an element of moral hazard.

E. It responds to the financial need of the local government, which is evident from its debt level, repayment needs, and limited flexible expenditure.

4.1 The Bailout

As noted previously, many states were highly indebted by 1994. On average total debt represented 80 per cent of sate total disposable income (or alternatively, nearly 100 per cent of yearly net block transfers). When the financial crisis of December 1994 erupted, interest rates skyrocketed above 100 per cent levels, and states simply could not service their debt. This is in part due to the lack of financial instruments to absorb external shocks. On the other hand, commercial banks were experiencing liquidity and capitalization problems (see Hernández y Villagómez, 1998).

For these reasons, the federal government had the pressure from the states and commercial banks to provide a major bailout. Thus, federal government implemented a program called *Programa de Fortalecimiento Financiero de los Estados*[11] *(PFFE)*. This program's cost was around 7,000 millions pesos in 1995, which represented more than 17 percent of the *participaciones* for that year. In practice this was a bailout[12]. This program has continued until 1998. Allegedly, this program has come to an end starting 1999.

The next subsection presents the mechanics of the bailout. Next we provide the possible determinants of the bailout extended in México.

4.2 The mechanics of the 1994-1995 bailout

The PFFE was intended to promote financial discipline among states and was part of Ramo 23, a federal government budgetary item. The program required states, starting in 1995, to restructure their debt in Unidades de Inversión (UDIs), a new unit of account indexed to inflation. For those states, that voluntarily restructured their debt into UDIs, extending term structure to 10 or 15 years starting in 1995 with a two-year period of grace, the federal government would provide a grant to pre-pay part of the stock of debt. The amount was going to be determined according to a study of the finances of each state.

[11] This Program existed since 1992, but it was not widely used until the Tequila crisis.

[12] Some government officials have claimed that this was not a bailout because the source of the problem was a macroeconomic one, which is a federal government responsibility. However, this should be true for all countries; many of them have experienced major financial crises and have not bailed out highly indebted states (most recent examples include Japan and S. Korea). See also our definition of bailout above.

To obtain access to the program, states had to sign a "letter of intention". In this letter, they committed themselves to balance their budgets (which included reduction in current expenditures, increase in own revenues and privatization of some public enterprises), present all financial statements in a uniform way (using the same methodology), reduce their debt ratios, and publish or update a state debt law to regulate and restrict the state and municipalities debt.

In 1995 all states signed the Letter of Intent (*convenios*) with the federal government. The Program has continued until 1998.

4.3 Possible Causes of the Bailout

In principle there are three possible causes for the bailout. First, the vertical fiscal imbalance hypothesis is in principle appealing. Second, the legal and institutional framework contains perverse incentives for moral hazard in this market; thus is could also be a determinant. A third element could well be the *too-big-to-fail* hypothesis. Finally, state's fiscal indiscipline could also be a reasonable determinant. The rest of this study is spent analyzing these issues, and evaluating its consequences.

4.3.1 Vertical Fiscal Imbalance

As discussed earlier, the federal level collects the main taxes: the value added and the corporate and personal income taxes, which generate 70 per cent of total tax revenue to the public sector. The only sources of own revenues of lower levels of government are basically property taxes, payroll tax, fees and user charges (see Table I.1). For this reason, of the total revenue of public sector, states and municipalities collect on average for the 1992-97 period only 7 per cent.

As noted previously the main source of revenue for states and municipalities are the net block transfers. When a macroeconomic shock occurs, they have little flexibility to absorb it since unconditional transfers are highly pro-cyclical. On the other hand, since 1995-96, when decentralization efforts started, states and municipalities have obtained higher transfers, but most of these are either in the form of matching grants or earmark transfers. Thus, these transfers are already committed and, what is more, the system has posed some inflexibility on state's finances[13]. Particularly, the matching grant pose some inflexibility because there is a "piece of cake" of which everyone wants a share, and the only way to get a share is spending some money to get more money (the *pari-passu*), regardless of the priorities of the state and/or municipality.

In sum, the vertical imbalance determinant is important in explaining the generalized bailout of 1995, as states cannot levy taxes to absorb shocks. In the econometric analysis presented later, the same conclusion is obtained. It should be

[13] Here we do not criticize the transfer system. We are just pinpointing that they bring some specific problems, given the legal and institutional framework existing in México.

noted that from this discussion we do not necessarily suggest a tax devolution. It should be taken with care that, for the case of Mexico, there exists other alternatives for overcoming this particular problem (see Inman and Rubienfield, 1996; and Mclure and Díaz Cayeros, 1999). In particular, a surcharge in the corporate and personal taxes and the value added tax might work in México.

4.3.2 The Institutional-Legal Design Factor

This subsection describes the institutional and legal design in the National Fiscal Coordination Law (NFCL). This is important because this element may have contained the wrong incentives for both, creditors and borrowers.

As discussed earlier in the document, before the reform implemented in January 1st, 1997 after the tequila bailout, article number nine allowed local entities (States and Federal District) to have their federal transfers as collateral. In case of arrears or a threat of default, on behalf of creditors, the federal government could deduct debt service payments (on registered debt) from net block transfers before these funds were channeled to states each month.

The institutional arrangement previous to the crisis was very simple. For *participaciones* to be utilized as collateral, states only needed to register the new debt contract before the federal government (Secretaría de Hacienda), previously authorized by their State Congress. The treasurer could in principle deny the registration of the new debt. In this case the debt was not backed by *participaciones*. This case was rather rare.

The above legislation had two implications regarding the behavior of suppliers and debtors.

First, banks had incentives to make loans to Subnational borrowers, as the credit risk was virtually nil, that is, repayment was guaranteed by the federal government under the above procedure. Second, states had also incentives to borrow because, under the above conditions, the federal government would always bail them out. The latter is explained as follows.

Provided that the main source of revenues for the states comes from the federal transfers, and that their current expenditures represent on average nearly 80 per cent of their total expenditures, the local entities had most of their disposable income **committed** (see Table 3.6). Recall our previous discussion in the sense that it is difficult for states to further reduce the current expenditures as they have to pay teachers, state police, doctors and so on. On the contrary, there is an increasing demand for hiring more of these state employees (review section 2).

This means that in case their net block transfers were seized, they would not have been able to operate; this in turn would bring high political costs at both local and federal levels[14]. Consequently, the federal government has no alternative but to indirectly bailout the defaulting state.

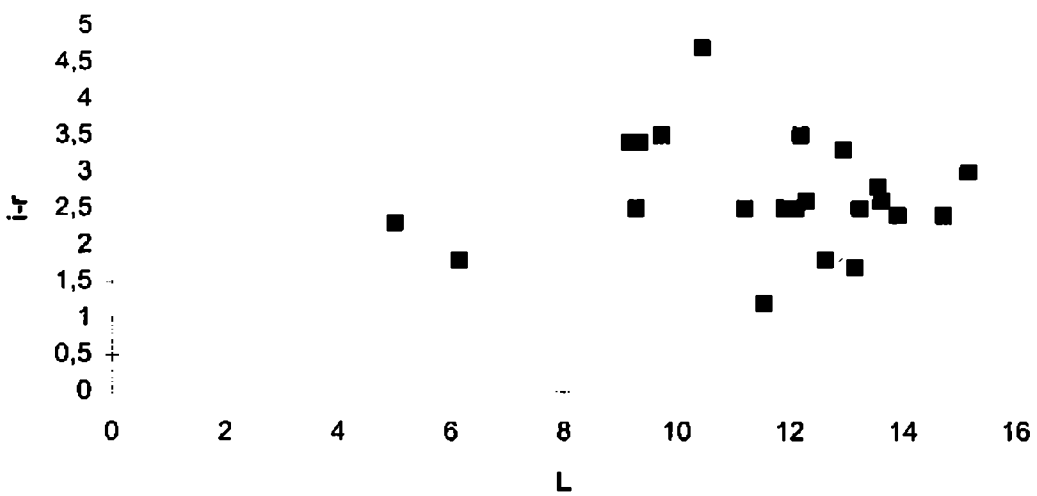
[14] It is very common to see state's workers demonstrations in both places: the state capital city and in the federal district.

The above two points could explain in part the over-borrowing behavior in Subnational credit markets, and the lack of an explicit local regulation for neither borrowing nor the obligation to present and/or publish their financial statements. This in principle would make project evaluation very difficult for lending institutions. These institutions rarely made the evaluation, as the credit was risk-free[15].

In the credit market literature (specially Stiglitz and Weiss, 1981) and in particular the sovereign credit markets literature (Eaton and Gerzowitz, 1981; Ketzler, 1984; Hernández, 1995; among others), there would exist credit rationing, in an equilibrium position. Under this environment banks would be forced to evaluate the risk of the project, which in turn would force states to disclose information. Thus, this would promote market discipline. Under the observed Mexican institutional framework, where the creditor does not face a risk (or transfers the risk to a national level) there is no credit rationing. This suggests that spreads should have been very small, only reflecting administrative costs. This was not the case in México, where we observed spreads (i-r, in graph) as high as 10 percentage points (see graph 4.1[16]).

Graph 4.1

State Credit Demand



Source: Banco de México

[15] The risk does not disappear; it is passed on to the federal government.

[16] The graph contains average interest rates per state, and it is only intended to show that spreads were high in a low risk environment for the creditor. We agree that a demand curve depends on many other factor, not reflected in the graph. See also, Hernández, 1997.

*4.3.3 The **too-big-to-fail** Hypothesis and the political factor*

The *too-big-to-fail* factor is a non-observable phenomenon. Here we utilize an econometric method to test the hypothesis. This econometric analysis allows us to test this hypothesis and, at the same time, other hypotheses such as a political one. These two may help to explain the incentives that the federal government has to bailout states.

In this section we include not only the 1990s, but a previous period (1980-1990) in which the national government acquires an importance that overwhelms every local government. In this period, bailouts are quite rare, there is some anecdotal evidence of them happening, but there is no official information on their size and allocation.

To detect possible hidden forms of bailout in this section, we use an alternative approach. Based on the hypothesis that federal bailouts were secret transfers, not registered as state revenues, we analyze reductions in debt stocks that are unrelated to state government surpluses. That is, when we find that a state government experiences a reduction in its stock of debt, in real terms, and this decrease is not explained by a surplus in its financial balance (measured on an income/expenditure basis), we suspect that there was a bailout. The interviews carried out with former state finance secretaries and development bank authorities left us with the impression that most bailouts came in the form of debt renegotiations with development banks. The softer conditions included lower interest rates and debt forgiveness, which given the absence of official information, validates our approach through debt reductions. We have information for just a fraction of the period (1981-1992), but we expect this analysis to complement the subsequent period. The information on debt stocks and public finances comes from different sources (the first one from the banking system and the second for the state governments); therefore crossing this information seems like a good way of finding hidden practices.

In what regards the 1990s, this bailout started with the rapid accumulation of debt at the beginning of the 1990s, leaving state governments in a vulnerable position when interest rates increased sharply after the 1994 crisis. In this case, there is official information on cash transfers from the federal government to state governments, which will be used. The cash transfers that were provided by the federal government are called *transferencias extraordinarias* (extraordinary transfers). We also follow our previous approach for this period, as debt renegotiated with development banks and commercial banks (with the likely participation of the federal government) would not enter in cash transfers.

Therefore, the two variables that are employed in this paper to measure bailouts satisfy the basic conditions. Both the extraordinary transfers and the changes in debt unmatched by financial surpluses are temporary and discretionary. As transfers related to natural catastrophes do not enter in extraordinary transfers, but are registered as revenues by state governments, our bailout transfers do not

respond to an objective need due to a factor external to the control of the local government. At this moment we have to take a moment to mention that the extraordinary transfers responded to an alleged mismanagement of macroeconomic policy by the federal government, and in that respect, these transfers compensate for a national catastrophe. However, the size of the transfer, and the year in which it was provided to every state, will give us relevant information on the motivation of the federal government to provide its discretionary and temporary help. Extraordinary transfers respond to an objective fact: the financial need of the state government, while debt reductions are to be considered only for those cases in which the state government does not enjoy a healthy financial situation. Finally, our proposed measures of bailout transfers actually took place and are observable.

In our econometric test, we include several indicators that try to explain the size of the bailout as a function of the importance of the state, political situation of the state, and their fiscal flexibility. As the fiscal rules that determine state governments access to credit are basically the same for each state, ex-ante circumstances that allow for bailouts are not included.

For the sample period 1995-1997, in which data of actual bailouts, there are five measures of bailout: 1) extraordinary transfers; 2) (1) plus temporary transfers for heavy education load and from the Ministry of Finance; 3) (2) plus temporary transfers for other purposes; 4) reductions in debt that happened in years in which there was a deficit; and, 5) reductions in debt that happened in years in which there was a surplus of less than half the reduction in debt. These five measures follow the two approaches described above; the first three follow data on actual bailout transfers, while the last two reflect unexplained reductions in debt stocks. The five variables turned out to behave as two, as the first three show the same significant variables, as well as the last two. But the behavior of the two groups is completely different as will be seen below.

Table 4.1 presents the variables that are used in the cross section/time series regressions[17]. The first two variables represent the importance of the state government: one is the proportion of the total population of the state that formal workers (registered for social security contributions) represent (BTF)[18]; the second

[17] All the bailout measures that appear in the referred table are divided by total state government revenues, as this variable provides the best measure of the importance of the bailout for the state government. The two variables that measure state government fiscal flexibility (current expenditure and educational expenditure) are presented as a fraction of total expenditure. Vertical imbalance is obviously the ratio of state governments' own revenues to total revenues. By the way current expenditure is a measure of fiscal flexibility because it includes wages and operating expenditures of the state government. It also includes other concepts that could be adjusted as equipment, but given the aggregation of the fiscal information that we have, it is the concepts that contains the more difficult to adjust expenditures.

[18] The variable BTF (stands for "too big to fail") is the ratio of workers registered in the Social Security Institute (IMSS) to total population. Workers affiliated to the IMSS are in the formal sector of the economy, therefore this ratio is a measure of the degree of development of the state. The other

one is income per-capita (gross state product divided by population) (PIBC).[19] The third and fourth variables represent the flexibility that the state government has to adjust its expenditure to attend debt service. The third variable is the ratio of current expenditure to total expenditure (primary expenditure) (GC), while the next one is the fraction that education represents of total expenditure (GE). The last three variables represent political pressures in bailing out local governments. The sixth variable is a dummy that takes the value of one when there are municipal elections in the state. The seventh is also a dummy that takes the value of one when there is an election for governor. Finally, the eighth variable is a variable that multiplies the fraction of the votes received by the PRI[20] in local elections multiplied by the dummy of municipal elections.

Table 4.1b presents the same regression for the period 1982-1992. Results here show that the BTF and own revenues to total revenues (representing the fiscal imbalance) are important in explaining the bailout. The sign of fiscal imbalance variable is negative, which suggests that those states that were rescued are those with low flexibility to adjust the shock.

Table 4.2 shows the results of the cross section/time series regressions, in which we employed a common constant. When the extraordinary transfers, as well as these added by transfers for specific purposes, are used as dependent variables the independent variables that show the expected sign and a relevant coefficient are income per-capita and current expenditure. Neither the educational expenditure, the proportion of industrial workers or any of the political variables turned out to be significant. On the other hand, when the change in debt is the dependent variable, the fraction of industrial workers in total population is significant, and in some cases, the state elections dummy.

4.3.3.1 Tobit Estimates

Cross sectional probit estimates were also attempted for each year to account for possible measurement errors, yielding inconclusive results. The independent variables failed to explain the probability of having a bailout in a particular state (using as the dependent variable with value 1 if a bailout existed as measured by extraordinary transfers and 0 when there was no transfer). We could not explain the

variable that is employed to capture the "too big to fail" hypothesis is GDP per capita, which also measures development and economic importance. The two variables differ in that BTF is not subject to the measurement problems associated with accounting for fiscal capital at the state level and it isolates from high-income concentration that could be behind a high per capita GDP.

[19] The National Statistics, Geography and Information Institute (INEGI) reports gross state product for 1995 and 1996. For 1997 we assumed that all the sates observed the nominal growth of national GDP.

[20] The PRI is the political party that has held the federal presidency for the whole period of analysis.

probability of having a high bailout in per capita terms either (measured as a dependent variable with a value of 1 when the per capita transfer was larger than the average), or a high bailout as a percentage of state GDP (with a value of 1 when this indicator was above the average). Hence a more appropriate strategy consisted in running tobit estimates which account for both the presence of a bailout and the variation in the levels found in it.

The first set of tobits presented as Table A1 in Appendix A uses as the dependent variable the bailout according to definition 3), where extraordinary transfers in ramo 23 are considered to be a bailout, together with extraordinary transfers for education, in hacienda and for other purposes. Very similar results are obtained if instead of using definition 3), narrower definitions of extraordinary transfers are used as the dependent variable. The independent variables are, where XX refers to the relevant year, formal workers as a proxy for size (trabXX); current expenditure as a percentage of total expenditure (corrXX); state revenue (including revenue shares) (ingtXX); a dummy variable for whether municipal elections took place (elemXX), vertical imbalance measured as the percentage of revenue shares in state revenue (vimbXX); and per capita state GDP (ppcXX).

Current expenditure and state revenue have a positive significant effect, which confirms our previous findings. Per capita GDP is usually significant and positive, suggesting that the too-big-to-fail hypothesis can be rephrased as a too-rich-to-fail issue. Municipal effects seem to be important in 1996, which is a peculiar year because all the electoral competition was concentrated in those races, since there were no governor elections at all. However, this effect is not robust to alternative specifications. Vertical imbalance and size are never significant. The pseudo R2 of the estimates is not too high, which suggests that there are other variables that explain the probability and size of a bailout; but the important issue is that our hypothesized relationships are still true under this specification.

The next set of tobits (see Table A2 in Appendix A) verifies the plausibility of our findings for the alternative definitions of bailout dealing with reductions of debt not justified by superavits. This exercise is only carried out for 1997, since 1996 had no bailouts according to this definition and 1995 failed to produce any meaningful results. Vertical imbalance seems to be the most important explanation for this definition of bailout, while state GDP seems to play a role, as expected within a too-rich-to-fail hypothesis. Municipal effects are almost significant, but with a negative sign. The negative sign of this political variables is puzzling, and merits further future research.

The analysis shows that the importance of the state (a pseudo *TBTF* hypothesis) is the major determinant in providing bailout transfers, supporting our previous conclusion that extraordinary transfers are regressive. The importance could be measured in different ways, but in the two proposed here, it turned out relevant. The second consideration is the fiscal need of the state government, when the state government is incapable of adjusting its expenditure, the extraordinary transfer follows. Finally, the political variables are not an important determinant of

the bailout, except, perhaps, when there are state elections. That is, the transfer is provided but no for partisan reasons but probably because the elections require more money to the states. Table III.2 presents a regression using fixed effects.[21]

An anecdotal evidence may also help to deal with the measurement error: Baja California, the state that started the call for more decentralization of government functions and revenues, asked for help from the Federal Government, but it obtained it in the form of extraordinary transfers and more educational expenditure. But in 1994, this state experienced a large reduction in its outstanding debt (30% in real terms), and the state was almost in bankruptcy (Local Newspaper: *La Voz*, de Tijuana). We may find similar cases elsewhere in México.

Finally, an additional determinant can be considered. This is the fiscal indispline factor. This element will be analyzed later in the paper, for a better exposition.

4.4 Is debt productive?: A possible form of hidden bailout[22]

In accordance with the benefit principle of public finance, to the extent that benefits from local public investment projects accrue over a number of years into the future (which is the case with infrastructure projects), it is both fair and efficient for future generations to share the cost of financing such projects. Borrowing for local capital development projects thus has a sound conceptual rationale. Moreover, borrowing may be the only practical way to finance major capital outlays without large, and undesirable, variations in local tax rates and charges from year to year. The gearing effect of borrowing allows a higher level of investment to be achieved than can be supported by local governments' current resources, thus contributing to accelerating the pace of local development. Where local public investments had previously been financed predominantly from grants from a higher level of government, a shift to loan financing can bolster incentives for local revenue and improved cost recovery through user charges.

These two hypotheses (that the debt should be invested in infrastructure projects, and that it may increase in the future local own revenues) will be tested for México in this section. This is important for the Mexican case, because it can help to identify channels of hidden bailouts.

As we have already mentioned, the Mexican NFCL was designed under these basic principles of public finance. That is, according to the NFCL state and local governments can only borrow to finance investment projects. If this were the case one would expect an increase in debt ratios to be associated to increases in local investment. On the other hand, one would expect a positive relation between an increase in the level of debt and own revenues.

[21] Per-capita income is not included because of what was said in footnote 13.

[22] This section draws heavily on Gamboa (1998).

First, we ran a panel regression (adjusted for fixed effects) where the dependent variable is changes of own revenues and the independent variable both debts –(commercial and development banks). Results are presented in Table 4.3. None of these variables are statistically significant. Even when one considers some sort of lag, the relation is no significant. This suggests that the debt has not been used for productive activities.

Nevertheless, the relation can be different. That is, provided that it is investment the one that should produce streams of income, we ran a panel (again adjusted for fixed effects) with own revenues as the dependent variable and investment as the independent variable. Results are presented in Table 4.4. As it can be appreciated, the result has the right sign but it is not statistically significant. Again, this suggests that the debt has not been used for productive activities.

However, it is possible that the debt has been taken to finance social investment activities that do not accrue any revenue. This type of investment can be socially very well justified and that future generations will be taxed as well. For this reason we now test whether the borrowing has been used to increase investment (both that one that generates stream of income and that with social benefits) as it is stated in the Mexican Constitution. We ran a panel regression adjusted for fixed effects and the dependent variable is the investment with the rate of change of debt contracted with both commercial and development banks. Results are presented in Table 4.5. These are striking. On the one hand, commercial bank debt is positive and statistically significant related to investment, while development bank debt is negative and statistically significant related to investment. These results can be interpreted as follows. Commercial banks may evaluate the credit better than Banobras does, or states governments are more careful in their evaluations of commercial debt than with development banks.

We can conclude that the debt acquired by the local governments during the period have not generated revenues. Particularly, the debt acquired with the development bank has been irrelevant to promote productive activities in the states. The commercial bank debt has succeeded in increasing investment but not in raising own revenues.

This result is especially important because it could reflect that federal government indirectly bails out state through the development banks, i.e., this suggests possible hidden bailouts.

It is convenient, though, to acknowledge the limitations of this approach. First, the period under study (1992-98) contains the financial crisis. This could show the effects of the federal government intervention that the fixed effect methodology may not catch. Second, the maturing process of investment is wide and public investments can take longer to impact.

4.6 Credibility of Withholding Participaciones: some examples

A crucial issue is to assess the credibility of the promise of public debt being guaranteed by federal revenue shares. Would the federal government make guarantees effective if and when the time comes to do so? That is, are states assuming implicitly that if they are unable to pay for their debt the federal government will withhold revenue shares or bail them out instead? Do creditors foresee a bailout, or do they count upon federal withholding of guarantees? Since most of the revenue sharing funds a state receives are already committed to current spending, it would not be so easy for the federal government to withhold revenue shares, if it believed that the state finance minister or governor will eventually come begging for a handout in ramo 23 or somewhere else in the federal budget to cover, for example, the state teacher's payroll. There is good evidence suggesting that at least part of the debt is incurred in order to pay for current, rather than capital expenditures. Anecdotal evidence suggests that the credibility of withholding federal revenue shares is not too large.

The first case of public debate over guarantees, and in general, state debt, was that of Baja California under the first opposition governor, Ernesto Ruffo, who defeated the PRI candidate in 1989. In the case of Baja California, the state was running a deficit in 1989 of around $20,000 million old pesos, so the brand new governor contracted debt for 25,413 million old pesos (Campuzano, 1995; p.208). The justification was peculiar, to say the least, since the Ruffo government argued that it needed this debt since teacher wage rises were far superior to the increase in revenue shares (39 as compared to 12 per cent). Of course the opposition (PRI) fraction of the local legislature pointed out that current expenditure could not be a justification for contracting debt. By 1993 a debate raged in the local public opinion as to whether the state government was close to bankrupcy. The finance minister, Eugenio Elorduy, argued, however, that the debt burden constituted only 20 percent of revenues, or around 1.2 percent of the state GDP. In february 1994 the state government attempted to issue bonds in the open market, to service its debt. These bonds were not issued, but instead, by 1995, the state benefitted from the generalized bailout of that year. However, it is interesting to note that every commentator expected that bailout even before the shock of December 1994 took place. As Campuzano puts it, writting before the bailout, "regardless of the fact that at the end of the sexenio the federal government will take over the debt... in the short run interest payments on the outstanding debt will increase" (p.213).

A most recent example, of a possible the lack of credibility in federal withholding, but in this case directly related to the federal development bank, Banobras, is provided by Chihuahua. The PRI governor of that state, Patricio Martinez, came into a conflict with the federal government over the legalization of smuggled cars in the state. The Chihuahua government issued at the beginning of 1999 a sticker which would make smuggled cars, which constitute around a third of the state cars, immune from federal requisition. That sticker would collect almost as

much revenue as the car property tax (tenencia). Federal authorities found this measure unacceptable, so in retaliation, the Secretaría de Hacienda, upon a "request" from Banobras, announced at the beginning of April that it would withhold 12 million pesos of revenue shares to the state. This, it was argued, was unrelated to the illegal car conflict, but as a response to the pending payments of a loan requested by the previous government of 30 million pesos for housing construction. The withholding of 12 million pesos only represented 0.3 percent of the state revenue shares, although it made up around 10 percent of what was collected from the car property tax (tenencia). Upon the threat by the state government of stopping payment on other loans, especially those related to the water supply organism, a few weeks later, in April 27 Hacienda announced it would not fulfill its threat. Two features are particularly significant about this case. First, it seems to be a common practice for loans to Banobras, the development bank, to be in arrears. Second, upon the threat of stopping payment of water debt and having a snowball effect with other states, the federal government did not fullfill its threat of withholding participaciones.

Finally, in august, 1999 the state of Nuevo León (a northern state with an opposition governor) threatened to abandon the Fiscal Coordination System (i.e the revenue-sharing system). The reason was that the governor claimed that the state was financing poor southern states. According to him for every peso they generated in the state, the federal government gave them back - in the form of block transfers—only 10 cents. For this reason the state had insufficient financial resources to build water infrastructure. After some negotiations the state got 50 million pesos from the federal government via the National Water Commission.

5. A Preliminary Evaluation

After the bailout, actions were taken to correct some of the distortions. Federal government faced a strong pressure to reform the existent fiscal federalism in the country. The analysis of this process is out of the scope of this paper[23]. For the purpose of this paper it is enough to point out that the percentage of the revenue sharing formula was increased from 18.7 to 20.5 per cent, which in principle would help out states to face their responsabilities in a more efficient way. At the same time, earmarked and matching transfers were increased to states and municipalities. In addition, article nine of the NFCL was modified to induce market discipline. This section examines and preliminary evaluates the changes concerned with SNG credit markets.

[23] See Hernández (1998) and McLure and Díaz Cayeros (1999) for a preliminary discussion on this issue.

5.1 A Corrective action: The modification of article nine of the FCL

Under the environment described above, the legislation needed a change to induce market discipline in Subnational borrowing. The 1997 reform of the ninth article of National Fiscal Coordination Law confers to State and Local governments' new obligations in this subject. The legislation still allowed Subnational governments to utilize debt to finance their investment projects, and may still use their federal transfers as collateral. However, in case of arrears or a threatening to default, banks would not be able to ask the Treasury Department to discount the corresponding amount from the defaulting State's federal transfers. They would have to exercise the collateral according to what is considered in the State Debt Laws, i.e., both parts would have to create the repaying mechanism. In other words, Subnational governments will be responsible in repaying their contracted debts when federal transfers are used as collateral. In addition, they are obliged to publish their debt levels.

The modification intended to produce two important consequences. First, States would have to financially discipline themselves. Second, banks would be forced to analyze the project risk when making loan.

These changes in principle would induce discipline in Subnational Credit Markets:

1. Agents would respond to changes in interest rates.

2. States and local governments would define mechanisms under which borrowing is optimum, and would be forced by banks to present their financial statements when soliciting a credit.

3. The possibility of bail out would be reduced significantly as the federal government is kept out of the market.

The Program of Strengthening Finance of States (PFFE) initiated in 1995 and continued until 1998. The federal government claims that it has come to an end and it has officially disappeared in 1999. Supposedly this program ends because the states are now financially stronger, and they have written or updated their Debt Laws. This section evaluates the Program. Our analysis suggests that states are not financially strong, and that the bailout created important moral hazard problems.

5.2 Did the modification of the Law induce market discipline?

We have mentioned that one of the objectives for modifying article number nine of the NFCL was to induce market discipline (a necessary, not sufficient condition for avoiding Subnational bailouts). However, as we show now, this can not be evaluated because the change in the law has been already circumvented.

After the modification of the article number nine of the NFCL (January 1997), Subnational governments found themselves in serious difficulties to obtain credits, especially from commercial banks. For this reason, the federal government and the local entities designed in 1997, an alleged *temporary*, scheme by which the latter ones give the former a *mandate* to apply the former mechanism.

These days the federal government is studying the possibility of creating a Trust Fund (Fideicomiso de Fuente Alterna de Pago, FFAP) to execute the guarantee. That is, this Trust would be in charge of receiving from the federal government the *participaciones federales* and in turn to channel them to Subnational governments. In case of arrears, the Trust fund would channel the corresponding amount to the creditor.

However, under the mandate scheme banks are not forced to take losses and they do not have incentives to evaluate the risk of the credit as they can obtain from the federal government the *participaciones* independently of the project evaluation. Likewise, in case of the creation of a Trust fund like the one just described, we would have the same effects.

It seems that these actions have *circumvented* the spirit of the modification of the article number nine, which was originally intended to deter indiscipline in the credit markets. Thus, there is some evidence that the generalized bailout created moral hazard problems. As long as the federal government remains in the picture of Subnational credit markets, the possibility of bailout remains. (For formal proof, see Hernández 1997).

5.3 Has the bailout created a moral hazard problem?

The stock of debt and the degree of indebtedness examined above cannot alone reveal the financial weaknesses of the Mexican states. In fact, the relatively "small" size of the outstanding debt of the SNG in Mexico does not correspond to the capitalization of their past "large" fiscal deficits. The reason is that substantial part of fiscal deficits of the SNG has been repeatedly relieved by the federal government through extraordinary, discretionary transfers (to cover non-anticipated wage increases, investment expansion etc.) and other forms of bailouts (e.g., the 1995 ad hoc transfers for debt reduction and rescheduling).

Graph 5.1 shows the evolution of states' primary balance and its financing. It can be observed that the states' fiscal stance experienced a serious deterioration until 1993 (when the aggregate primary deficit reached 0.4% of national GDP). Since 1994 the situation apparently changed, and the statistics show even a primary surplus as of 1995. However, a closer look into the data reveal that:

(a) there was no primary surplus being generated by the states in the period 1995-97, since the Extraordinary Transfers is not a revenue component of the states that benefited from the bailout but, instead, they were a financing item (and should be treated below the line);

(b) the primary *deficit* continued deteriorating even after 1995, because the debt restructuring did not lead, in most cases, to any effective fiscal adjustment in the states' budget *flows*.

The financial deal involved basically a debt *stock* relief and it was ineffective to resolve the structural fiscal imbalances. As a consequence, Mexican states' current fiscal stance is possible **not sustainable**, and if serious fiscal adjustment is not carried out soon the states will be pressing the federal government again for another debt bailout to make them solvent again. The distance between Real Primary Balance and Real Primary Balance Excluding Extraordinary Transfers basically shows the *size* of the bailout that benefited the states since 1995.

The graph also suggests a moral hazard problem. Even though states and municipalities have experienced an increase in federal transfers (both block and matching), they keep incurring in fiscal deficit because they know they will be bailed out. Furthermore, the total debt of states (except for the Distrito Federal) decreased from 45 billion pesos to 36 billion pesos, i.e., 20 percent, which arguably could make it easier to manage the states finances. The graph suggests the contrary.

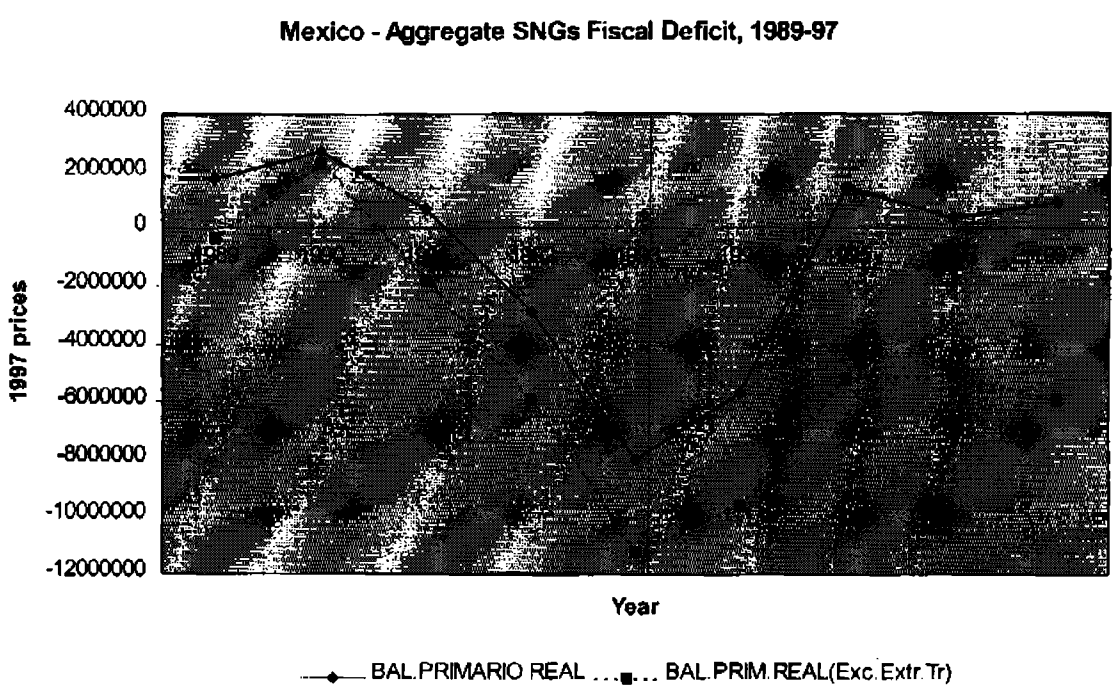
5.3.1 An additional possible determinant of bailout: Fiscal Indiscipline

The above situation suggests that states could well be more disciplined. There is some evidence that with the additional block and matching transfers that states and municipalities are now receiving, they have been softer in raising own revenues (see graph II.3). The argument of moral hazard then is appealing. In fact, Diaz Cayeros (1999) shows that, for the case of the payroll tax, which constitutes the most important source of state tax revenue, there is a perverse incentive for local tax effort given by revenue sharing: for each peso of revenue shares a state receives, they collect seven cents less through the payroll tax. Although the effect seems to be small, the main issue this raises has to do with the incentive compatibility of the way in which revenue shares are allocated to states, with few built in incentives to reward state tax collection. Moreover, payroll tax collection, although it constitutes the most important state tax, represents less than 5% of state revenue, as compared to 75% coming from revenue sharing. These results were obtained by running the regression presented in Table 5.1 where the estimate includes as independent variables the state GDP (gdp), the tax rate (rate), revenue shares (share) and the percentage of formal workers in the state economy (formal).

Hence, given the relative size of payroll tax collection vis-a-vis revenue sharing, this disincentive effect is very large. Thus fiscal indiscipline could also be a determinant of the bail out.

Thus the presence of moral hazard is quite problematic, to the extent that state own finances are so weak. This problem is reinforced by an additional factor: *de facto* the legal framework expressed in article nine of the NFCL works in the same way as before. This is shown next.

Graph 5.1



Source: SHCP

5.4 Distributional Effects

As we have already mentioned, the federal government helped out states to repay their standings stocks of debt through the PFFE described earlier. The criteria for resource distribution among states, according to the federal government, was as follows:

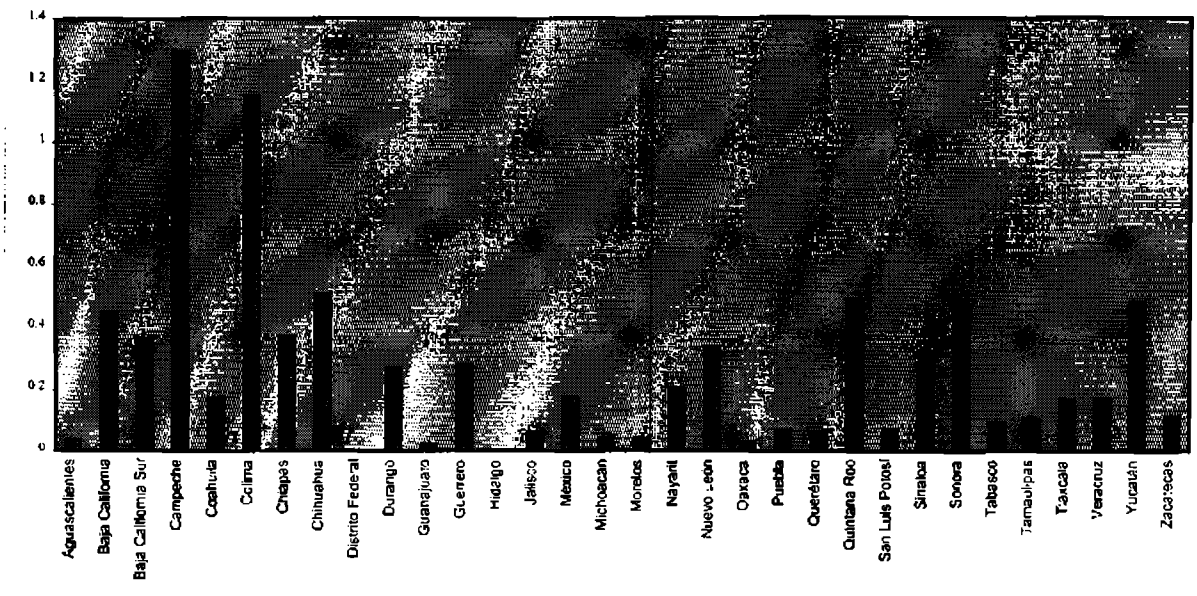
- Financial Situation of States
- Signing a "Letter of Intent"
- Levels of Debt
- Restructuring the peso debt into Unidades de Inversión (UDIs)
- Budget programming advice from the federal government.

As it can be seen, these are not clear rules, and in principle the bailout may have created moral hazard problems. Authorities claim this program was going to help highly indebted states. However, it appears as if this procedure punished the well-behaved states.

It is true that the process reduced the possibility of state bankruptcy, but the argument that states are now financially stronger has to be evaluated in detail. Graph II.2 shows per-capita extraordinary transfers by state for the period 1995-1997.

Graph 5.2

Extraordinary Transfer Per-Capita (1995-97)



Source: SHCP

As it can be seen in the graph, per capita extraordinary transfers present a high degree of variation, with a coefficient of variation reaching 1.1522. The most benefited states were Campeche, Colima, Chihuahua, Qintana Roo, Sonora, and Yucatán, and to a lesser extent Nuevo León, Sinaloa, Guerrero, Chiapas, Baja California, Baja California Sur, Durango and Estado de México.

Furthermore, excessive indebtedness of local state may have equity implications. We can observe that the most indebted states are those with a high per capita GDP. Thus, bailouts tend to be highly regressive, as the poorer –low indebted- states receive much less in extraordinary resources.

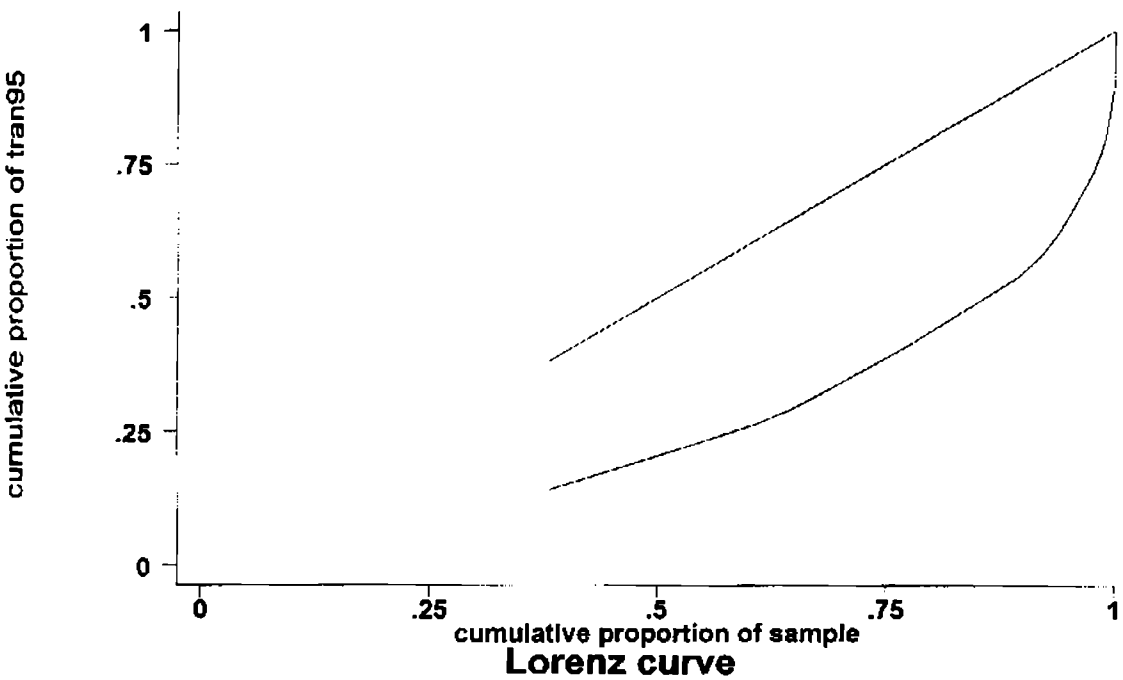
It is difficult to evaluate *ex ante* the reasons why the federal government apparently favored some states. The question one would need to answer here is why poorer states do not borrow much? There are many possible answers to this question. However, it is important to note that it has some degree of regressiveness

as most of the benefited states present high GDP per-capita except for Guerrero and Chiapas. But these two are politically important[24].

On the other hand, Graph 5.3 provides a visual depiction of the degree of inequality across states in the distribution of the extraordinary transfers provided by the Federal government in 1995. The Lorenz curve, weighted by population, reveals that states concentrating a third of the national population received no bailout, while the last decile, comprising only five states (Campeche, Baja California Sur, Guerrero, Nuevo León and Sonora) received around thirty percent of the total bailout. It is important to note that this top decile of states, which received in per capita terms bailouts of at least 110 Mexican pesos each (the average per capita bailout was 67 Mexican pesos, while the average for this decile was 176 Mexican pesos), included rich states in terms of their income, as well as the most important oil producing state.

Likewise, the Gini coefficient of the distribution of federal funds is extremely high at 0.5131, and a similarly high level of inequality is found for the GDP weighted Gini coefficient, which takes a value of 0.4665. Similar results are obtained for subsequent years. In 1996 and 1997 the allocation of extraordinary transfers becomes, in fact, even more unequal, exhibiting population weighted Gini coefficients of 0.5581 and 0.6523 respectively.

Graph 5.3



Source: Own calculation

[24] Guerrero in 1995 presented a new guerrilla movement, while Chiapas guerrilla erupted in 1994.

Table 5.2 provides the Gini inequality coefficients and Thiel entropy indexes calculated for 1995 with all of our measures of bailout, which for comparison purposes are contrasted with the inequality of the distribution of revenue shares. It also shows how the allocation of financial resources across states becomes more equal when revenue shares are added to state own revenue (which confirms the slightly redistributive nature of participaciones), while extraordinary transfers slightly increase the degree of inequality. Similar results are obtained for 1996 and 1997.

5.5 Contingent Liabilities

We have concluded that Subnational debt problem reflects both vertical fiscal imbalance and some degree of fiscal indiscipline, among other problems. From the macroeconomic perspective the level of debt is not a problem because the total Subnational debt represents only 2 percent of the country. It must be noticed, however, that important existing channels of soft budget constraints are not revealed by these statistics, and are generating hidden direct and indirect liabilities to the SNG.[25] Thus, given the existent moral hazard problem in SNG debt market, contingent liabilities become an important issue. This section describes the most important off-budget debt.

This is the case with the contingent liabilities that is running off budget, e.g., SNG's social security systems (pay-as-you-go pension and health schemes provided by the SNG to their employee, but not properly funded). Still incomplete estimates reveal that the size of outstanding contingent debt is really daunting (table 5.3, at present value as of 1997). While the total of direct and indirect debt mounted to $72 billion pesos in 1998, a partial account of the states' contingent debt for pension alone reached $167 billion pesos in 1997 (about 6% of national GDP).

This becomes a federal problem from any perspective. On the one hand, vertical imbalance makes it difficult for states to solve this problem. On the other, states know they will be bailout because, we have shown, federal government created a moral hazard problem as a result of the bailout carried out in 1995, which continued until 1998.

6. Policy recommendations

Given our previous analysis, we can say that not all SNG debt have contributed to the welfare of the state. We have shown that SNG have all the incentives to accumulate debt because federal government has established reputation of distributing additional extraordinary resources to highly indebted states. That is,

[25] Besides the guarantees provided by the Federal District, States and Municipalities to their respective parastatals (decentralized agencies and public enterprises)

indebtedness has become a state's strategic behavior to get additional funds. For that reason, actions have to be taken to avoid that behavior. This section revises the different alternatives to control or regulate debt in SNG.

Yet fiscal decentralization in Mexico is a political decision and it seems irreversible, Mexican authorities are justifiably concerned with the risks involved in its scope, implementation sequencing and speed. Authorities are conscious about and well motivated by the political, efficiency, and equity benefits resulting from the decentralization, but are also aware of the possible trade-off between an increased autonomy in expenditure/revenue decision-making to the Subnational governments (SNG) and a responsible macroeconomic management.

The macroeconomic destabilizing potential of SNG is well know, especially in a federation like Mexico, where States are sovereign in their territorial domain, a provision granted by the Federal Constitution. As states are free to increase outlays, even under balanced budget they may affect macroeconomic equilibrium, since public expenditure multipliers tend to be larger than revenue multipliers[26]. Moreover, decentralized decisions tend to amplify the pro-cyclical effect of fiscal policy and, in the absence of appropriate policies, tend to increase public debt. In fact, SNG tend to increase expenditures during periods of economic expansion, but are more reluctant to reduce expenditures during recessions. This reflects soft budget constraint situations, where the SNG operates with a deficit and increasing indebtedness during recessions. Despite of the fact that the federal government in Mexico has frequently used discretionary grant transfers (the so-called *"transferencias extraordinarias"*) to rescue local entities in financial trouble, the States of Coahuila, Guerrero, Mexico, Morelos, Nuevo Leon, Puebla, Quintana Roo, Sinaloa, Sonora, Tamaulipas, Zacatecas, and Distrito Federal increased their real indebtedness substantially during the 1995 recession (see section 2).

Soft budget constraints and increasing indebtedness of SNG may end up having deleterious macroeconomic effects in the short-run, because of their direct impact on monetary expansion, inflation, interest rate, and balance of payments. In the medium and long-run, excessive SNG indebtedness may crowd out private investments and reduce economic growth, and may have a perverse intergenerational equity effect, especially if the social rate of return of public spending is low and Subnational governments cannot internalize all the benefits.

Therefore, a prior condition to guarantee successful and sustainable decentralization in Mexico is to make sure that decentralization, on one hand, improves the social rate of return of public expenditures, and, on the other, it does not aggravate short-term macroeconomic instability. Thus, any policy strategy option should include incentives to assure that: a) hard budget constraint principle is always in place; (b) public investments generate the highest possible social rate of return, and (c) public borrowers show enough capacity to pay back their loans (i. e,

[26] In the present conditions in Mexico, the impact of SNG expenditure is bigger, because the States are operating with deficits.

that the borrowers are creditworthy). The incentives will be more effective if SNG were involved in the decision making process of the overall fiscal envelope, and be accountable for their share of responsibility. The latter, to be achieved through persuasion mechanisms and a cooperative approach, requires a coordinating leadership of the federal government, by assigning responsibilities and monitoring outcomes.

6.1 Management of SNG Debt

Who (and how) should evaluate the capacity to pay of SNG, in order to avoid excessive indebtedness? Many options of SNG debt management systems are available for the Mexican government. [27]. The most general and common systems are: (a) the financial market discipline itself; (b) the federal government, through strict, case by case control; and (c) the establishment of explicit, general rules. Sometimes a combination of these systems is applied, depending on the particular market condition.

6.1.1 Reliance on Market Discipline

The market discipline is the most desirable code of behavior and set of benchmarks to follow. However, the conditions for the market discipline to work properly and be effective are very strict, and have hardly being fully observed even in federations where financial markets are developed. This evidence has convinced many governments not to rely solely on market discipline. Similarly, in Mexico market discipline is not enough, because of the following prevailing market failures.

a. *Restrictions on the financial market* - Market discipline is only effective if financial market is free and open. In Mexico, financial market is not entirely free or open. Restricted access to foreign capital market limits options, and compulsory allocation of resources (including those of official financial agencies' and parastatals) to the placement of government bonds amplifies the indebtedness capacity of the public sector and leads to suboptimal financial sector portfolio composition.

b. *Lack of transparence* - Without adequate dissemination/availability of information, and full transparency on debt outstanding and capacity to pay by the borrowers, market discipline fails. In Mexico, the activity of obtaining reliable financial information, especially those of the SNG, is not a trivial endeavor. Still not all states and municipalities follow a standardized plan of accounting, or keep clear and uniform registers of their assets and liabilities, or publish and disseminate

[27] For a survey and a discussion of the relevant international experience see Ter-Minassian and Craig (1997) and Lane (1993).

information on debt and capacity to pay on a satisfactory, systematic and reliable basis. Moreover, extra-budget/contingent liabilities, hidden either under indirect indebtedness taken by SNG through their parastatals or under their soaring pension fund obligations, are major areas demanding considerable transparency improvement in Mexico.

c. *Moral hazard conduct* - If moral hazard incentives permeates the relationship of the public sector with the financial system, the efficacy of the market discipline as a check for SNG excessive indebtedness is seriously jeopardized. In Mexico, the federal government has usually intervened to rescue SNG in financial difficulties. These frequent bailouts (either by means of ad hoc "extraordinary" grant transfers or across-the-board debt rescheduling) have fed expectations of future rescue operations and encourages moral hazard behavior, both on the part of the SNG and of the lenders. As an example, the current mechanism of automatic federal guarantee and liquidation (with sequestration of federal transfers), still offered by Article 9 of the *Ley de Coordinación Fiscal* (by the so-called "mandatos" from the states), represents a major distortion that encourages lenders to disregard risk evaluation and SNG to irresponsible indebtedness.

d. *Insensitiveness to market signals* - Market signals (interest rate and possibility of market exclusion) can discipline borrowers to seek for financial policies that are consistent with solvency situation. But for the market discipline to be effective, the borrower should be sensitive to market signs. Increases in the interest rate should stop or at least make the borrower review its borrowing decision. It is highly improbable; however, that governors and *presidentes municipales* in Mexico's current financial and political situations would be enough concerned with the market signals when deciding on their expenditure.

In Mexico, given the present market conditions, sole reliance on market discipline is definitively **not** the way to go, at least for the time being. Therefore, adequate preventive formal regulation for checking excessive SNG indebtedness is called for. In order to minimize distortions, and encourage development of market practices, the necessary regulation should "mimic" desirable market discipline to the extent possible.

There is, however, a Mexican example of reliance on market mechanisms. This took place before the Mexican Revolution. By then, as we support later, it existed a fiscal separation and the political conditions were very different as it did not exist a hegemonic party.

6.1.2 Direct Administrative Control

At the other extreme opposite to the sole reliance on market discipline is the enforcement of central direct administrative controls to check excessive SNG indebtedness. The direct control approach, however, has been used more frequently by unitary countries, and less so by federations. Local entities in Mexico also enjoy ample autonomy granted by the federal Constitution, and the direct control system may not be an adequate approach.

6.1.3 Rules Based Approach

The previous section indicated that direct administrative control is a poor approach from an efficiency standpoint. Conversely, there are strong reasons supporting adequate rules based approach to curb SNG access to the capital market. Rules can only be effective if they can be substantiated in a simple, transparent, and across-the-board set of legally binding instruments (e.g., the Constitution or ordinary laws). In general, these rules should mainly comprise quantitative limits, and procedural norms, which respect or imitate, to the extent possible, the market practice of good financial discipline and creditworthiness indicators. Being constantly submitted to reviewing, some of these rules should be established preventively, others should wait and only be implemented according to necessity of particular situations.

The great advantage of the rules based system of checking excessive SNG indebtedness is that it is transparent and impartial, qualities that contributes to minimize political bargains and discretionality. Possible disadvantages are: some degree of inflexibility tend to be introduced in the system and, as a consequence, local entities will always be trying all possible devises to circumvent the rules. Although these disadvantages may operate in the short-run, in the medium and long run the rules can be changed and adjusted to new circumstances and necessities. As far as the short-run rigidities, they are the very purpose of the rules in order to save the hardening of the budget constraints. Therefore, we suggest the rules-based approach for the case of México, but trying to mimic the conditions of market-discipline.

6.2 An Example of Market Mechanism in México: the 1920s

Precedents of state bailouts in Mexico go as far back as to the beginning of this century. During that period of reconstruction, in the aftermath of the Mexican Revolution, the federal government attempted to return to creditworthiness and to construct institutions for a liberal economic program that would produce the take-off of the economy. State debt constituted a problem not so much because of its absolute amounts, but because of the reputation and credibility effects it generated on creditors, which as mentioned above, is similar nowadays.

The federal government assumed the debts of Sinaloa, Tamaulipas, Veracruz and the Federal District in the Formal Agreements with the International Committee of Bankers on Mexico signed in 1922 and 1925. This bailout proved to be credible because it happened in the context of relatively hard state budget constraints, and was coupled with a definite limitation in state monetary emission. At the time, state governments did not face a disciplining mechanism through the political system, such as that created after 1929 by the single party. They faced, instead, market constraints that prevented them from becoming indebted, coupled with monetary and fiscal institutions which made future federal bailouts hard to expect. Although some other state debts were probably assumed by the federal government years later, there is little information about these instances, which suggests they were minor events.[28] This suggests that market constraints have worked well in Mexican credit markets whenever they have been set.

Two elements are important for explaining this. First, fiscal intergovernmental relations and, second, the political arena.

From the fiscal perspective, the authority in Mexico was highly fragmented in the 1920s. The federal government collected less than two thirds of the public sector's total revenue, to a large extent through oil taxes, while state governments collected most of the remainder. The structure of state taxes was highly idiosyncratic and diverse. Besides transaction taxes and fees for specific services rendered by local governments, the rural property tax (*propiedad raiz rústica*) and the tax on real estate transactions (*traslación de dominio*), state and municipal governments levied taxes on sales, production, excises on sisal and other agricultural products, mining activity, etc. (For a discussion of the various taxes see Diaz Cayeros, 1997). The overall effect of this tax structure was to impose differential tax burdens depending on location and productive activity; to restrict the regional mobility of goods and factors of production; and hence to limit the expansion of markets.

In 1926, revenue shares (*participaciones*) were not substantial. They only constituted 1,544 thousand pesos; while 21,537 thousand pesos were transferred from the state governments to the federal one through the *contribución federal*. This transfer had its origins in the "contingent tax" of 1824 which was originally meant to be collected through a rule of proportionality in each state. Given that such proposal was impractical, in 1831 the contingent tax became a 30% transfer of all public rents collected in each state. The idea of such transfer was derived from the notion that a federal state involved self limitations on state governments in order to sustain the unity of the federal government. During the 19th century many states refused to pay this transfer, probably under the impression that the federal arrangement did not

[28] In the Sterrett and Davis (1928) report there is a comment regarding the lack of data even at that time: "no official information is available regarding the public debt of the states or municipalities, but it is generally believed that their floating indebtedness on account of services and for supplies is substantial and that some of it has been long outstanding" (p.32). Moreover, Sterrett and Davis (1928) considered that states and municipalities were in such a fiscal condition that realizing the value of their debts would be "problematical both as to amount and to time" (p.32).

provide them with any service that would justify it. However, as the 19th century proceeded, the transfer from states to the federal government became an established aspect of intergovernmental finances. During the years of relative stability of the *Porfiriato* at the end of the 19th. Century, the *contribución federal* was set at a rate of between 25 and 30% of state revenue collection. After increasing the rate to 50% during the years of the crudest fighting in the revolution, and a transitory rate of 60% in 1917 the transfer was set at 25%, to a large extent as a consequence of the better condition in federal finances which were benefiting from world demand for oil and other commodities. In 1928 the transfer was reduced again to 20%.

In spite of its importance, the *contribución federal* made up only 7% of federal revenue. Most federal revenue was collected through imports (25%); excises which contained provisions for revenue sharing (15%); oil and mining (10%); fees and charges (16%); export taxes on oil (5%); the newly introduced income tax (6%) and stamp taxes and other taxes on documents and transactions (8%). Thus the condition of fiscal separation, from the point of view of state governments, was practically complete; and from the federal point of view, sharing agreements only made a fraction of revenue.

From the political perspective, the democratic credentials of Mexico were not the best in the 1920s. Elections with universal male suffrage were held regularly; but their results were often not respected. However, as compared with the later period of PRI hegemony, state authorities had a greater say over the policies enacted in a particular region. Regional strongmen were able to effectively pursue, for example, land reform, even when the federal government wanted to limit those policies, precisely because they responded to the powerful organized interests of the local peasantry. In the same way, other governors opposed land reform due to their alliance with the landed oligarchy. Although the mobility of persons was limited, it was much larger than what had prevailed during the Porfiriato, where Haciendas generated, through debts, something resembling indentured servants. In the 1920s labor mobility was enhanced also by progressive labor legislation. Therefore, there were conditions to put into effect the type of regional competition the Tiebout model considers.

With the two elements in mind –fiscal and political, we now describe the 1920s bailout. Table 6.1 provides figures of the state debt that was covered by the federal government under the Agreements with the International Committee of Bankers on Mexico in 1927.

Federal debt was paying an interest of 4% at the time when this state debt was issued, which reflects that creditors distinguished risk from each level of government what was the rate that state debt paid? The interest paid was lower, however, than that paid by federal treasury notes of 1913 (6%). Of these loans, only those to the Municipality of Mexico City had an explicit guarantee of the federal government. These amounts might not seem to be substantial, compared to the 872,913 thousand pesos of Government debt covered by the agreements, or the 263,425 thousand pesos of railway debt, but they made up much more than the loans

the federal government had extended to state governments a 1,260.7 thousand pesos or the 1,362.2 owed by municipalities.

It is not very difficult to understand why those states were rescued: oil producing states like Veracruz and Tamaulipas; agricultural interests in Sinaloa, which were very dear to the Sonora dynasty that had triumphed in the revolution; and the Federal District which for all purposes became, with the elimination of the municipal government of the city in 1925, another department in the federal bureaucracy.

Even though there were probably some bailouts later on, the experience of the 1920s shows that they were not recurrent and this proved them to be credible because they happened in the context of relatively hard state budget constraints, and were coupled with a definite limitation in state monetary emission. At the time, state governments did not face a disciplining mechanism through the political system, such as that created after 1929 by the single party. They faced, instead, market constraints that prevented them from becoming indebted, coupled with monetary and fiscal institutions which made future federal bailouts hard to expect. This experience, then, is important and enlightening of the future bailouts carried out by the federal government in México, especially in the 1990s. Likewise, it is worth realizing that market mechanisms should be encouraged to regulate SNG debt.

6.3 Recommendations for the short run

In what follows, we present some possible short-run policy recommendations for México.

a. *limiting borrower's maximum debt service ratio* SNG should not be allowed to be further indebted if their debt service ratio (flow of due interest and amortization over flow of disposable revenue) exceed certain limit, say 12%. A debt service commitment above this limit will likely jeopardize the delivery of normal public services.

b. *limiting borrower's maximum level of total indebtedness* - SNG should not be allowed to be further indebted if their total indebtedness indicator (ratio of outstanding debt—including indirect and contingent liabilities—to disposable annual revenue) exceed certain limit. This indicator of indebtedness will complement information contained in indicator a. to the extent that the latter do not capture the debt burden of loans and credits that are still benefiting from grace period. Both indicator a. and indicator b. aims to protect the SNG solvency.

c. *limiting banks' portfolio exposition to public sector* - As a desirable prudential rule banks' portfolio exposition to public sector should be constrained by certain maximum limit. This limit should be enforced on the total bank by bank asset to the total SNG as well as to each public sector entity individually. Stricter norms and

supervision should be applied on the official credit institutions (e.g., BANOBRAS, Nacional Financiera).

d. *enforcing strict bank reserve requirement* - Besides the regular reserve requirement on banks imposed by the monetary authority, especial provisions should be especially enforced on their operations with SNG. Special regulatory and supervisory framework should be in place to preempt problems with SNG that start showing financial difficulties.

e. *implementing the new rule of using "participaciones" as debt collateral* -- The current practice of automatic guarantee of SNG debt by the federal government has no place in healthy intergovernmental fiscal relations and should be eliminated. The revised version of the Article 9th of the *Ley de Coordinacion Fiscal* that was to be effective as of January 1, 1997 should be enforced immediately, and the tactic of the "mandatos" given by the SNG to the federal government should be completely revoked for this case. The objective of the new version of Article 9th, by making the SNG more accountable and transparent, and by encouraging lenders to evaluate risks more seriously, should be fully implemented.

f. *encouraging dissemination of risk rating of SNGs* - To help improving transparency and encourage the financial system to operate as close as possible of the market discipline, the practice of creditworthiness analysis should be encouraged. In the US and Canada this practice is very common and a reasonable number of private risk rating companies plays a central role in helping SNG to tap important financing from the capital market and lenders to gauge risks and limit SNG's excessive indebtedness. Because of market failures, developing countries do not have the same practices well established. In Mexico creditworthiness analysis and risk rating of seven States (Quintana Roo, San Luis Potosi, Coahuila, Puebla, Mexico, Aguascalientes, and Chihuahua) were carried out for the first time by a single rating company last year. Unfortunately, it seems that data accuracy may have affected the results of this initial experiment, and although all analyzed States were top-rated, some of them are now facing serious financial difficulties. In addition these analysis did not contained contingent liabilities. Hence, financial vulnerability was not reflected.

7. Conclusions

This paper has attempted to document and analyze state government bailouts in this century. Results suggest that the explicit generalized bailout carried out by the federal government in México in 1995 created a moral hazard problem. It is clear from the analysis that states overborrow because it is a way to obtain additional extraordinary funds. Another result of the analysis is that the existing institutional-

legal framework is not adequate, since it incentives states to borrow and banks to lend without evaluating the risk of the project.

Another important result is that the importance of the state is a major determinant in providing bailout transfers. The importance could be measured in different ways, but in the two proposed here, it turned out relevant. The second consideration is the fiscal need of the state government, when the state government is incapable of adjusting its expenditure, the extraordinary transfer follows. Also, the political variables are not an important determinant of the bailout, except, perhaps, when there are state elections. That is, the transfer is provided but no for partisan reasons but probably because the elections require more money to the states. Furthermore, excessive indebtedness of local entities may have equity implications: bailouts tend to be highly regressive, as the poorer –low indebted- states receive much less in extraordinary resources.

From the productivity side of borrowing, our results suggest that the debt acquired by the local governments during the period have not generated revenues. Particularly, the debt acquired with the development bank has been irrelevant to promote productive activities in the states. The commercial bank debt has succeeded in increasing investment but not in raising own revenues. This may suggest a hidden bailout.

In terms of policy lessons, the study suggests that the rules-based approach for the case of México is the adequate at least in the short-medium term, but additional actions should be taken to try to mimic the conditions of market-discipline. The great advantage of the rules based system of checking excessive SNG indebtedness is that it is transparent and impartial, qualities that contributes to minimize political bargains and discretionality. Possible disadvantages are: some degree of inflexibility tend to be introduced in the system and, as a consequence, local entities will always be trying all possible devises to circumvent the rules. Although these disadvantages may operate in the short-run, in the medium and long-run the rules can be changed and adjusted to new circumstances and necessities.

Finally, the paper warns about a potential problem in SNG credit markets, namely, the contingent liabilities. It is shown that while the total state and local debt do not pose a macroeconomic problem since it only represents 2 per cent of GDP, the contingent liability could become a problem as it represents more than 6 per cent of GDP.

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Table 2.1

SOURCES OF REVENUES	RESPONSABILITIES
Federal Government Taxes	Federal administration
Corporate Income Tax	Service of Domestic and Foreign Debt
Personal Income Tax	Defense
Tax on assets of enterprises	Post and Telecommunications
Value Added Tax	External affairs
Duty on oil extraction	Irrigation
Oil export tax	Foreign Trade
Tax on production and services (excises)	Railways, highways, airways, and shipping
Tax on new vehicles	Federal and Border police
Tax on the ownership of vehicles	
Import duties	
Miscellaneous	
Shared Taxes	Shared Expenditures
Income taxes	Health
Value added tax	Education
Excises	Specific purpose grant program
Oil export duties*	Solidaridad
Import duties	Single development Agreements
Tax on ownership of vehicles**	Special Police
Tax on new cars**	National Parks
State Government taxes	State Expenditures
State payroll tax	State Administration
Real state transfer tax	State infrastructures
Tax on motor vehicles older than 10 years	State public order and safety
Tax on the use of land	Sanitation and water supply
Education tax	Service of state debt
Indirect taxes on industry and commerce	Public Libraries
Fees and licenses for some public services	
Municipal Government Taxes	Municipal Expenditures
Local Property Tax	Local Administration
Real State Transfer Tax	Local public order and safety
Water fees	Local transportation
Other local fees and licenses	Local infrastructure including water supply and sanitation
Residential development	Local Transit
Other indirect taxes on agriculture, industry and commerce	Waste Disposal and street lighting
	Slaughter, cementeries, and parks

Source: Amieva (1997)

Table 2.2

Public Sector Total Revenue
(millons of pesos, 1997)*

Concepto	1992	1993	1994	1995	1996	1997
Ingreso Federal	685,216.08	698,316.74	699,638.60	605,023.87	668,359.82	694,900.60
Ingreso Estatal	17,380.88	18,348.01	15,379.96	16,143.67	12,362.68	12,280.75
Ingreso Municipal	13,769.68	17,859.96	20,567.62	11,139.04	11,898.60	13,750.33
Ing. Total Sector Público	716,366.64	734,524.71	735,586.18	632,306.59	692,621.10	720,931.67
Shares (includes petroleoum revenue)						
Ingreso Federal	0.96	0.95	0.95	0.96	0.96	0.96
Ingreso Estatal	0.02	0.02	0.02	0.03	0.02	0.02
Ingreso Municipal	0.02	0.02	0.03	0.02	0.02	0.02
Shares (excluding petroleoum)						
Ingreso Federal	0.94	0.93	0.93	0.93	0.94	0.94
Ingreso Estatal	0.03	0.03	0.03	0.04	0.03	0.03
Ingreso Municipal	0.03	0.03	0.04	0.03	0.03	0.03

Source: SHCP e INEGI

Table 3.1

Mexico – Total Debt, 1994-98
(million of pesos of 1996)

State	1994	1995	1996	1997	1998
Aguascalientes	660.3	413.2	339.2	237.9	162.5
Baja Cal. Norte	1,813.4	1,290.5	1,214.3	1,144.2	1,093.0
Baja Cal. Sul	552.0	398.8	350.6	373.4	323.8
Campeche	905.3	619.4	518.1	347.5	163.3
Coahuila	935.2	1,244.4	1,116.4	492.0	476.4
Colima	348.1	354.0	291.0	196.6	137.7
Chiapas	1,858.9	1,333.0	1,088.1	797.1	666.3
Chihuahua	1,671.7	1,633.0	1,538.5	1,400.2	1,139.4
Durango	1,001.4	621.2	606.7	591.8	577.0
Guanajuato	735.8	553.2	464.5	428.7	406.9
Guerrero	935.7	1,153.2	983.7	968.7	897.5
Hidalgo	41.0	19.1	16.1	10.5	7.7
Jalisco	5,100.6	4,531.2	3,876.2	3,321.6	3,159.5
Mexico	8,785.8	11,615.7	13,396.7	13,769.0	13,282.4
Michoacan	452.8	344.3	251.8	179.1	179.9
Morelos	261.8	312.7	244.1	302.7	285.7
Nayarit	403.8	252.1	178.0	95.5	74.8
Nuevo Leon	4,260.3	8,637.1	5,463.5	5,559.6	5,341.9
Oaxaca	472.2	197.5	192.9	168.1	186.9
Puebla	283.2	431.9	308.7	291.6	341.9
Queretaro	2,327.2	1,464.7	1,016.8	879.6	831.8
Quintana Roo	816.9	864.6	740.3	698.4	722.1
San Luis Potosi	627.5	572.9	543.9	496.9	506.8
Sinaloa	1,584.8	1,797.5	1,677.4	1,600.9	1,582.4
Sonora	5,714.7	6,543.5	6,085.5	3,044.4	2,853.6
Tabasco	939.9	461.3	411.1	358.0	428.0
Tamaulipas	668.5	714.8	363.8	261.3	200.0
Tlaxcala	247.1	70.8	0.0	0.0	0.0
Veracruz	631.9	509.8	262.3	65.3	37.3
Yucatan	553.5	387.1	320.9	308.5	207.4
Zacatecas	224.8	511.9	468.8	195.6	97.4
SUB TOTAL	45,816.2	49,854.4	44,329.9	38,584.9	36,371.4
Fed. District	3,090.2	3,725.7	8,322.3	9,913.1	14,847.1
TOTAL	48,906.4	53,580.2	52,652.2	48,498.0	51,218.5

Source: SHCP

Table 3.2

Mexico - Total Debt, 1994-98
(share in the total outstanding debt of the federation)

State	1994 %	1995 %	1996 %	1997 %	1998 %
Aguascalientes	1.4	0.8	0.6	0.5	0.3
Baja Cal. Norte	3.7	2.4	2.3	2.4	2.1
Baja Cal. Sur	1.1	0.7	0.7	0.8	0.6
Campeche	1.9	1.2	1	0.7	0.3
Coahuila	1.9	2.3	2.1	1	0.9
Colima	0.7	0.7	0.6	0.4	0.3
Chiapas	3.8	2.5	2.1	1.6	1.3
Chihuahua	3.4	3	2.9	2.9	2.2
Durango	2	1.2	1.2	1.2	1.1
Guanajuato	1.5	1	0.9	0.9	0.8
Guerrero	1.9	2.2	1.9	2	1.8
Hidalgo	0.1	0	0	0	0
Jalisco	10	8.5	7.4	6.8	6.2
Mexico	18	21.7	25	28	26
Michoacan	0.9	0.6	0.5	0.4	0.4
Morelos	0.5	0.6	0.5	0.6	0.6
Nayarit	0.8	0.5	0.3	0.2	0.1
Nuevo Leon	8.7	16.1	10	12	10
Oaxaca	1	0.4	0.4	0.3	0.4
Puebla	0.6	0.8	0.6	0.6	0.7
Queretaro	4.8	2.7	1.9	1.8	1.6
Quintana Roo	1.7	1.6	1.4	1.4	1.4
San Luis Potosi	1.3	1.1	1	1	1
Sinaloa	3.2	3.4	3.2	3.3	3.1
Sonora	12	12.2	12	6.3	5.6
Tabasco	1.9	0.9	0.8	0.7	0.8
Tamaulipas	1.4	1.3	0.7	0.5	0.4
Tlaxcala	0.5	0.1	0	0	0
Veracruz	1.3	1	0.5	0.1	0.1
Yucatan	1.1	0.7	0.6	0.6	0.4
Zacatecas	0.5	1	0.9	0.4	0.2
SUB TOTAL	94	93	84	80	71
Fed. District	6.3	7	16	20	29
TOTAL	100	100	100	100	100

Source: SHCP

Table 3.3

TOTAL DEBT / DISP. INCOME
(thousands of pesos, 1997)

STATES	1994	1995	1996	1997
Promedio	0.79	0.835	0.76	0.7
Coef Variación	0.61	0.733	0.73	0.66
Aguascalientes	0.85	0.617	0.55	0.45
Baja Calif.	0.84	0.615	0.61	0.6
Baja Calif. Sur	1.58	1.211	1.03	0.77
Campeche	1.2	0.719	0.62	0.47
Coahuila	0.61	0.82	0.67	0.59
Colima	0.73	0.868	0.68	0.48
Chiapas	0.73	0.535	0.37	0.27
Chihuahua	0.68	0.506	0.73	1.38
Durango	0.8	0.596	0.51	0.68
Guanajuato	0.31	0.131	0.17	0.18
Guerrero	0.53	0.95	0.63	0.58
Hidalgo	0.04	0.02	0.02	0.01
Jalisco	1.27	1.033	1.03	0.81
México	1.31	1.791	1.67	1.66
Michoacán	0.23	0.186	0.15	0.12
Morelos	0.2	0.274	0.24	0.28
Nayarit	0.54	0.405	0.22	0.15
Nuevo León	1.1	1.798	2.33	1.54
Oaxaca	0.31	0.074	0.13	0.14
Puebla	0.1	0.289	0.12	0.12
Querétaro	1.49	1.474	1.03	0.87
Quintana Roo	1.39	1.135	1.2	1.09
San Luis Potosí	0.53	0.546	0.5	0.44
Sinaloa	0.89	1.026	0.94	0.84
Sonora	1.88	2.767	1.84	1.32
Tabasco	0.31	0.218	0.14	0.32
Tamaulipas	0.95	0.855	0.2	0.14
Tlaxcala	0.37	0.109	0	0
Veracruz	0.07	0.038	0.06	0.02
Yucatán	0.53	0.255	0.32	0.3
Zacatecas	0.24	0.637	0.6	0.18

Source: SHCP

Table 3.4

TOTAL DEBT /NET BLOCK TRANSFERS
(thousands of pesos, 1997)

STATES	1994	1995	1996	1997
Total	0.94	1.09	0.9	0.825
Aguascalientes	1.04	0.65	0.57	0.45
Baja Calif.	1.14	0.8	0.82	0.788
Baja Calif. Sur	1.56	1.25	1.08	0.774
Campeche	1.23	0.78	0.76	0.486
Coahuila	0.67	1.05	0.86	0.732
Colima	0.83	0.99	0.75	0.529
Chiapas	0.86	0.79	0.47	0.354
Chihuahua	1.02	0.73	1.03	1.958
Durango	0.86	0.66	0.56	0.728
Guanajuato	0.35	0.3	0.21	0.216
Guerrero	0.62	1.16	0.77	0.723
Hidalgo	0.04	0.02	0.02	0.01
Jalisco	1.32	1.34	1.25	0.961
México	1.62	2.21	1.97	1.939
Michoacán	0.26	0.25	0.17	0.132
Morelos	0.28	0.38	0.28	0.342
Nayarit	0.63	0.44	0.23	0.159
Nuevo León	2.05	3.26	3.14	2.568
Oaxaca	0.33	0.08	0.12	0.132
Puebla	0.13	0.37	0.15	0.138
Querétaro	2.06	1.87	1.15	1.006
Quintana Roo	1.7	1.16	1.48	1.318
San Luis Potosí	0.55	0.59	0.54	0.436
Sinaloa	1.02	1.2	1.15	1.035
Sonora	3.17	3.9	2.3	1.681
Tabasco	0.35	0.24	0.15	0.347
Tamaulipas	0.45	1.22	0.25	0.174
Tlaxcala	0.38	0.13	0	0
Veracruz	0.07	0.04	0.06	0.022
Yucatán	0.58	0.29	0.36	0.329
Zacatecas	0.25	0.69	0.62	0.179

Sorce: SHCP

Table 3.5

Net Part. / Disp. Inc
(in thousands of 1997)

States	1994	1995	1996	1997
Average	*0.7752663*	*0.7535201*	*0.7777732*	*0.7198012*
Aguascalientes	0.8170813	0.9554803	0.9002558	0.888956
Baja Calif.	0.6782212	0.7157236	0.6607952	0.7213054
Baja Calif. Sur	1.0105278	0.7393327	0.6789844	0.7478685
Campeche	0.9759697	0.9205299	0.8082306	0.7903725
Coahuila	0.6907659	0.6039361	0.6435241	0.7387211
Colima	0.8807625	0.8234235	0.8806299	0.7070938
Chiapas	0.4605261	0.6499643	0.7660229	0.6686446
Chihuahua	0.6734989	0.6771044	0.7081302	0.6434722
Durango	0.9343417	0.9053093	0.9084378	0.7201811
Guanajuato	0.8912233	0.4315322	0.7805831	0.7521142
Guerrero	0.8545891	0.8190183	0.5335305	0.4799567
Hidalgo	0.9562016	0.9243884	0.6817443	0.6470815
Jalisco	0.9627612	0.7053964	0.7703621	0.6932331
México	0.8052219	0.7749013	0.7588102	0.7373927
Michoacán	0.5983287	0.5601391	0.6750526	0.6272826
Morelos	0.5713282	0.6052327	0.7153199	0.7259332
Nayarit	0.8532861	0.9203321	0.9457981	0.6789268
Nuevo León	0.4774819	0.5096492	0.6540183	0.523315
Oaxaca	0.5868289	0.5290743	0.7006459	0.5879113
Puebla	0.6550652	0.6640812	0.7217707	0.7430184
Querétaro	0.5870836	0.6184338	0.6911804	0.6176714
Quintana Roo	0.8171297	0.8032445	0.8104418	0.7331302
San Luis Potosí	0.9603633	0.9202773	0.9263735	1.0094559
Sinaloa	0.7411694	0.8521327	0.812683	0.717049
Sonora	0.594189	0.6325256	0.721358	0.6135289
Tabasco	0.8499092	0.9044676	0.9241082	0.7825446
Tamaulipas	0.8369	0.6984959	0.7583624	0.68279
Tlaxcala	0.8585484	0.8733073	0.9187805	1.0020039
Veracruz	0.7734992	0.8002151	0.8034169	0.7482301
Yucatán	0.7425879	0.8908957	0.8862832	0.8962503
Zacatecas	0.9378648	0.930578	0.965334	0.6884034

Source: SHCP

Table 3.6

Current Exp./Net Part.
(1997 in thousand pesos)

	1994	1995	1996	1997
Average	0.77343963	0.77953715	0.69145766	0.70856101
Aguascalientes	0.35460997	0.33746144	0.38402406	0.47113208
Baja Calif.	1.0484819	0.93560232	0.97324563	1.09150431
Baja Calif. Sur	0.71243284	0.79824891	0.69772927	0.55597277
Campeche	0.59122179	0.52683689	0.4652652	0.44564679
Coahuila	0.71222388	0.96955798	0.85920956	0.83998653
Colima	0.61904508	0.64788289	0.5425207	0.5352408
Chiapas	0.91256559	1.25849215	0.82219257	0.83018309
Chihuahua	0.9425977	0.91911277	0.83854112	0.85312798
Durango	0.81974878	0.73209342	0.69007852	0.69973999
Guanajuato	0.81810515	1.8077255	1.63884944	1.88755405
Guerrero	0.71539255	0.78546815	0.67882693	0.6523348
Hidalgo	0.43117312	0.43769748	0.36088464	0.34926978
Jalisco	0.69797287	0.72624924	0.81943213	0.66926245
México	0.90458002	0.93907231	0.80636185	0.84948106
Michoacán	2.02937622	0.60128593	0.59510804	0.51560807
Morelos	0.69776593	0.88414713	0.69432325	0.59296943
Nayarit	0.7256491	0.66100452	0.59326768	0.52877282
Nuevo León	1.27232423	1.16646276	0.84570112	1.11983533
Oaxaca	0.83372339	0.6179438	0.48808279	0.57664348
Puebla	0.68199787	0.81500454	0.69294588	0.68271309
Querétaro	0.54900788	0.53901319	0.4354837	0.53214294
Quintana Roo	0.65465794	0.65344322	0.51493854	0.448563
San Luis Potos	0.67917279	0.80735661	0.70097211	0.67138706
Sinaloa	0.75772317	0.70794892	0.62923219	0.67409534
Sonora	0.97365801	0.7802411	0.76227505	0.77214664
Tabasco	0.54875382	0.66599187	0.63737134	0.74082641
Tamaulipas	0.49504374	0.55910581	0.50140668	0.56527335
Tlaxcala	0.63147044	0.64648987	0.61192129	0.65808809
Veracruz	0.78388138	0.76447254	0.68183806	0.71730765
Yucatán	0.84491321	0.81708776	0.7621025	0.74125034
Zacatecas	0.53735802	0.6571505	0.71105569	0.6973318

Source: SHCP

TABLE 4.1

POOL REGRESSION LEAST SQUARES
Sample: 1995 - 1997

Dependent Variable	Independent Variables								Statistics	
	C	BTF	PIBC	GC	GE	MP	M	G	R2	DW
RE	-0.037	-0.169	0	0.216	-	-	-	0.005	0.299	1.286
	-2.474	-1.155	2.28	5.637	-	-	-	0.309		
RE	-0.022	0.103	-	0.194	-	-	-	0.007	0.257	1.106
	-1.604	1.189	-	5.112	-	-	-	0.447		
RE	-	-	-	-	-	-	-	-	0.115	0.816
	-	-	-	-	-	-	-	-		
RESH	-0.049	-0.089	0	0.252	-	-	-	-0.003	0.351	1.084
	-3.12	-0.571	2.25	6.158	-	-	-	-0.167		
RESH	0.039	0.314	-	-	-0.052	-	-0.01	-	0.144	0.57
	1.766	3.279	-	-	-1.236	-	-0.51	-		
RO	-0.051	0.012	0	0.243	-	-	-	-0.011	0.376	1.076
	-3.248	0.077	2.34	5.939	-	-	-	-0.66		
RO	0.044	0.414	-	-	-0.068	0	-	-	0.237	0.619
	2.033	4.416	-	-	-1.64	-1.16	-	-		
R	50022.5	470000	-	118357	-	-	-	195149.1	0.108	1.73
	0.828	1.228	-	-0.711	-	-	-	2.811		
R2	42104.4	213910	-	-	28521.6	-	-	164451.3	0.074	1.75
	0.502	0.565	-	-	-0.177	-	-	2.304		

t-statistics appear under the coefficients.

TABLE 4.2

Dependent Variable: RESH

Variable	Coefficient	Std.Error	t-Statistic	Prob.
BTF	-0.677	0.361	-1.874	0.06
GC	0.209	0.073	2.883	0.01
G	-0.037	0.015	-2.439	0.02

Fixed Effects	
AGS--C	0.078
BC--C	0.16
BCSUR--C	0.172
CAMP--C	0.159
COAH--C	0.104
COL--C	0.025
CHAPS--C	-0.004
CHIH--C	0.091
DGO..C	0.061
GTO--C	0.049
GRO--C	0.043
HGO--C	0.013
JAL--C	0.114
MEX--C	0.046
MICH--C	0.013
MOR--C	0.012
NAY--C	0.039
NL--C	0.157
OAX--C	-0.006
PUE--C	0.019
QRO--C	0.084
QROO--C	0.108
SLP--C	0.01
SIN--C	0.066
SON--C	0.101
TAB--C	-0.038
TAMP--C	0.079
TLAX--C	-0.008
VER--C	0.006
YUC--C	0.122
ZAC--C	-0.014
R2	0.755
DW	2.452

Table 4.3

Regression rate of growth of own revenues and changes in stock of state debt
Pooled LS // Dependent Variable is CIP?
Sample(adjusted): 1993 1996
Included observations: 4 after adjusting endpoints
Total panel observations 122

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDN?	8.20E-08	2.45E-07	0.33517	0.738
DCN?	5.53E-08	1.13E-07	0.49143	0.6238
Fixed Effects				
AGS--C	-0.057834			
BC--C	0.0116			
BCS--C	-0.061103			
CAM--C	0.154539			
COAH--C	0.081989			
COL--C	-0.124221			
CHIS--C	0.170785			
CHIH--C	-0.035415			
DGO--C	0.058037			
GTO--C	1.360165			
GRO--C	-0.147712			
HGO--C	0.049858			
JAL--C	-0.144213			
MEX--C	-0.095957			
MICH--C	0.258967			
MOR--C	-0.079474			
NAY--C	-0.107324			
NL--C	-0.067501			
OAX--C	-0.004346			
PUE--C	0.039901			
QRO--C	0.112883			
QROO--C	-0.01051			
SL--C	0.101473			
SIN--C	-0.182039			
SON--C	-0.195363			
TAB--C	0.727754			
TAM--C	-0.062837			
TLA--C	0.034532			
VER--C	-0.111347			
YUC--C	-0.197455			
ZAC--C	-0.134545			
R-squared	0.163941	Mean dependent var		0.0462
Adjusted R-square	-0.136664	S.D. dependent var		0.74673
S.E. of regression	0.796123	Sum squared resid		56.4092
F-statistic	17.45185	Durbin-Watson stat		3.08808
Prob(F-statistic)	0.000069			

Table 4.4

Regression between rate of growth of own revenues and State investment
Pooled LS // Dependent Variable is CIP?
Sample(adjusted): 1993 1996
Included observations: 4 after adjusting endpoints
Total panel observations 122

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INV?(-1)	4.94E-07	2.99E-07	1.64964	0.1011
Fixed Effects				
AGS--C	-0.264369			
BC--C	-0.23857			
BCS--C	-0.103812			
CAM--C	0.022117			
COAH--C	-0.371403			
COL--C	-0.175059			
CHIS--C	-0.393505			
CHIH--C	-0.274028			
DGO--C	-0.046443			
GTO--C	0.86906			
GRO--C	-0.478502			
HGO--C	-0.158536			
JAL--C	-0.625614			
MEX--C	-1.316537			
MICH--C	-0.557334			
MOR--C	-0.435623			
NAY--C	-0.185908			
NL--C	-0.704022			
OAX--C	-0.284734			
PUE--C	-0.79366			
QRO--C	0.11093			
QROO--C	-0.091052			
SL--C	-0.091704			
SIN--C	-0.954277			
SON--C	-0.699433			
TAB--C	0.292323			
TAM--C	-0.527137			
TLA--C	-0.010527			
VER--C	-0.866766			
YUC--C	-0.28388			
ZAC--C	-0.268898			
R-squared	0.185823	Mean dependent var		0.0462
Adjusted R-square	-0.094616	S.D. dependent var		0.74673
S.E. of regression	0.781259	Sum squared resid		54.9329
Durbin-Watson sta	3.116007			

Table 4.5

Regression between investment and stock of State Debt
Pooled LS // Dependent Variable is INV?
Sample: 1992 1996
Included observations: 5
Total panel observations 154

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DD?	-0.164259	0.072336	-2.27077	0.0243
DC?	0.129623	0.053009	2.44532	0.0154
Fixed Effects				
AGS--C	424,453.5			
BC--C	479,616.2			
BCS--C	73,945.9			
CAM--C	250,915.5			
COAH--C	740,643.9			
COL--C	95,946.7			
CHIS--C	1,136,815.0			
CHIH--C	402,428.2			
DGO--C	183,408.8			
GTO--C	900,789.1			
GRO--C	565,228.9			
HGO--C	557,375.7			
JAL--C	890,585.5			
MEX--C	1,778,371.0			
MICH--C	1,581,753.0			
MOR--C	642,161.3			
NAY--C	153,143.4			
NL--C	1,187,402.0			
OAX--C	692,705.9			
PUE--C	1,713,979.0			
QRO--C	40,919.7			
QROO--C	145,104.3			
SL--C	373,208.6			
SIN--C	1,508,924.0			
SON--C	771,592.4			
TAB--C	825,179.0			
TAM--C	884,618.5			
TLA--C	83,609.3			
VER--C	1,479,893.0			
YUC--C	149,220.3			
ZAC--C	249,456.5			
R-squared	0.839965	Mean dependent var		705169.9
Adjusted R-square	0.797642	S.D. dependent var		629038.5
S.E. of regression	282968.1	Sum squared resid		9.69E+12
F-statistic	635.0852	Durbin-Watson stat		2.019115
Prob(F-statistic)	0			

CUADRO 4.6

Regression between investment and new state debt
Pooled LS // Dependent Variable is INV?
Sample(adjusted): 1994 1996
Included observations: 3 after adjusting endpoints
Total panel observations 92

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDN?(-1)	-0.187851	0.102561	-1.83159	0.0695
DCN?(-1)	0.084537	0.050289	1.681017	0.0953
Fixed Effects				
AGS--C	343,160.3			
BC--C	424,567.3			
BCS--C	47,712.8			
CAM--C	205,888.0			
COAH--C	791,089.7			
COL--C	96,550.6			
CHIS--C	1,254,391.0			
CHIH--C	484,403.6			
DGO--C	128,411.0			
GTO--C	788,331.2			
GRO--C	763,404.4			
HGO--C	672,571.0			
JAL--C	1,007,261.0			
MEX--C	2,088,283.0			
MICH--C	1,514,976.0			
MOR--C	575,017.7			
NAY--C	146,903.6			
NL--C	1,155,015.0			
OAX--C	933,369.1			
PUE--C	1,749,923.0			
QRO--C	36,249.0			
QROO--C	115,534.8			
SL--C	280,714.5			
SIN--C	1,592,913.0			
SON--C	545,597.0			
TAB--C	634,373.6			
TAM--C	746,461.4			
TLA--C	75,848.5			
VER--C	1,410,652.0			
YUC--C	148,721.4			
ZAC--C	199,011.7			
R-squared	0.831677	Mean dependent var		675471.9
Adjusted R-square	0.740383	S.D. dependent var		629810.7
S.E. of regression	320905	Sum squared resid		6.08E+12
F-statistic	291.5165	Durbin-Watson stat		2.905149
Prob(F-statistic)	0			

TABLE 4.1b

POOL REGRESSION LEAST SQUARES
Sample: 1982 - 1992

Dependent Variable	Independent Variables							Statis
	C	EM	EG	GC	IP	PIBC	BTF	R2
R / IT	13.447	-0.029		-0.005	-0.242	-90.712		0.037
	2.579	*-0.040*		*-0.193*	*-2.718*	*-2.354*		
R / IT	13.551		0.786	-0.005	-0.246	-91.876		0.039
	2.606		*0.814*	*-0.200*	*-2.760*	*-2.385*		
R / IT	11.410	-0.017		0.003	-0.243		0.058	0.023
	2.175	*-0.023*		*0.133*	*-2.714*		*0.771*	
R / IT	11.493		0.690	0.003	-0.246		0.057	0.024
	2.196		*0.710*	*0.131*	*-2.749*		*0.762*	
Fixed Effects								
R / IT		-0.031		0.019	-0.398	256.569		0.153
		-0.044		*0.513*	*-3.853*	*2.461*		
R / IT			0.513	0.019	-0.400	252.741		0.154
			0.535	*0.508*	*-3.875*	*2.421*		
R / IT		-0.125		0.019	-0.286		0.524	0.152
		-0.173		*0.502*	*-2.573*		*2.348*	
R / IT			0.455	0.019	-0.290		0.512	0.152
			0.473	*0.500*	*-2.604*		*2.286*	

stics
DW
1.475
1.484
1.426
1.433
1.610
1.616
1.633
1.640

Table 5.2

Distributional Effects of Bailout

Bailout Definitions	Gini	Theil
(1): Extraordinary Transfers	0.5131	0.3428
(2): Education and Hacienda + (1)	0.558	0.489
(3): Other + (2)	0.5549	0.4847
(4): Reduction in Debt w/ deficit	0.7546	1.2779
(5): Reduction in Debt w/ half surplus	0.7991	1.5323
Accumulated Funds		
(6): Revenue Sharing	0.3507	0.1722
(7): Own Revenue	0.3466	0.1829
(8): Total Revenue= (6) + (7)	0.3398	0.1626
(9): Revenue + Transfers= (8) + (3)	0.3409	0.1641

Source: Own estimates from SHCP data.

Table 5.1

Determinants of Payroll Tax
Regression with robust standard errors

	Coeff.	Std. Error	t-Statist.
gdp	0.004695	0.0006851	6.853
rate	22674.89	12772.64	1.775
share	-0.074625	0.0309182	-2.414
formal	-56.47964	118.6386	-0.476
cons	-56174.32	48633.28	-1.155

F(4, 27) = 102.76
Prob > F = 0.0000
R-squared = 0.9636
Root MSE = 71350
Number of obs = 32

Table 5.3

Mexico - Contingent Debt, 1997
(million of pesos)

State	Actuarial Deficit	Reservas year of sufficiency	number of pensioners	number of workers	OBS.
Aguascalientes	1,019.0	2,010.0	868.0	11,032.0	
Baja Cal. Norte	11,987.0	1,999.0	1,158.0	10,912.0	
Baja Cal. Sul	no plan	no plan	no plan	no plan	
Campeche	1,320.0	NA	NA	NA	
Coahuila	5,695.0	2,001.0	2,838.0	17,173.0	teachers
Coahuila	1,051.0	2,022.0	700.0	7,895.0	bureaucr.
Colima	NA	in deficit	668.0	4,125.0	
Chiapas	9,837.0	2,011.0	1,406.0	19,777.0	
Chihuahua	18,602.0	2,000.0	6,348.0	27,546.0	
Durango	NA	1,999.0	1,741.0	12,046.0	
Guanajuato	NA	in deficit	2,917.0	33,889.0	
Guerrero	NA	2,000.0	1,191.0	13,148.0	
Hidalgo	NA	NA	998.0	7,610.0	
Jalisco	39,814.0	2,011.0	4,432.0	85,219.0	
Mexico	NA	2,009.0	11,248.0	185,739.0	
Michoacan	60.0	2,006.0	1,347.0	21,747.0	
Morelos	NA	NA	1,424.0	10,457.0	
Nayarit	NA	2,050.0	904.0	6,878.0	
Nuevo Leon	NA	NA	7,075.0	34,911.0	
Oaxaca	NA	2,002.0	919.0	9,279.0	
Puebla	NA	2005-2008	2,483.0	36,806.0	
Queretaro	NA	NA	353.0	8,597.0	
Quintana Roo	no plan	no plan	no plan	no plan	
San Luis Potosi	6,140.0	2,006.0	1,140.0	13,871.0	
Sinaloa	NA	NA	1,013.0	8,905.0	bureaucr.
Sinaloa	5,483.0	in deficit	2,212.0	10,959.0	teachers
Sonora	3,035.0	in deficit	4,202.0	34,226.0	
Tabasco	NA	2,009.0	1,155.0	52,001.0	
Tamaulipas	2,471.0	2,018.0	2,085.0	18,159.0	
Tlaxcala	1,426.0	2,013.0	495.0	7,503.0	
Veracruz	45,805.0	1,999.0	10,893.0	58,431.0	
Yucatan	NA	2,015.0	2,549.0	17,690.0	
Zacatecas	1,320.0	2,020.0	2,375.0	45,421.0	
SUB TOTAL	155,065.0		79,137.0	831,952.0	
Fed. District	11,663.0	in deficit	11,732.0	57,891.0	raya list
Fed. District	NA	NA	NA	NA	police
TOTAL	**166,728.0**		**90,869.0**	**889,843.0**	

Source: Farell & Associates

Table 6.1

Debt Covered by the federal government

		Principal	Interest Accrued
Mexico City	5% sterling loan of 1889	13,525.80	9,478.10
Veracruz	5% bonds due April 1, 1927	831.2	594.2
Veracruz	5% bonds dated January 1, 1907	664	480.2
Tamaulipas	5% bonds dated July 1, 1903	741.5	522.1
Tamaulipas	5% bonds dated January 1, 1907	796.6	560.5
Sinaloa	5% bonds dated January 1, 1907	466.7	328.8

Source: Sterrett and Davis, 1928.

Table A1 (cont.)

Number of obs	=	30
chi2(6)	=	28.91
Prob > chi2	=	0.0000
Pseudo R2	=	0.0406
Log Likelihood	=	-353.16747

trano97	Coef.	Std. Err.	t	P>| t |
trab97	0.4740847	0.5703595	0.831	0.414
corr97	1159511	591137.7	1.961	0.062
lngt97	0.0568001	0.0300544	1.89	0.071
elem97	-176947	125396.8	-1.411	0.171
vimb97	467088.7	1259809	0.0371	0.714
ppc97	7745.204	6987.188	1.108	0.279
_cons	-1057081	1236450	-0.855	0.401
_se	287257.1	41022.73	(Ancillary Parameter)	

Obs. summary:	5	left-censored observations at
	25	uncensored observations

Table A1

First Set of Tobit Estimates

Number of obs	=	31
chi2 (6)	=	33.10
Prob > chi2	=	0.0000
Pseudo R2	=	0.0430
Log Likelihood	=	-368.45086

trano95	Coef.	Std. Err.	t	P>| t |
trab95	-0.2408536	0.2459575	-0.979	0.337
corr95	755346.1	201498.4	3.749	0.001
ingt95	0.0763808	0.0221814	3.443	0.002
elem95	-53102.35	45897.71	-1.157	0.258
vimb95	-628021.8	486725	-1.29	0.209
ppc95	8516.912	4366.573	1.95	0.062
_cons	189552.5	483456.6	0.392	0.698
_se	116952.1	15666.7	(Ancillary Parameter)	

Obs. summary:	3	left-censored observations at
	28	uncensored observations

Number of obs	=	31
chi2 (6)	=	51.34
Prob > chi2	=	0.0000
Pseudo R2	=	0.0669
Log Likelihood	=	-35818746

trano96	Coef.	Std. Err.	t	P>| t |
trab96	0.0007153	0.2467107	0.003	0.998
corr96	8228810.9	229945.5	3.578	0.001
ingt96	0.0858312	0.01159259	5.389	0
elem96	96496.29	55783.24	1.73	0.096
vimb96	-112089.7	501146.9	-0.224	0.825
ppc96	11361.13	3336.729	3.405	0.002
_cons	-565252.3	470645.2	-1.201	0.241
_se	122741.3	17044.45	(Ancillary Parameter)	

Obs. summary:	4	left-censored observations at
	27	uncensored observations

Table A7

Second Set of Tobit Estimates

Number of obs	=	28
chi2 (6)	=	10.55
Prob > chi2	=	0.1032
Pseudo R2	=	0.0479
Log Likelihood	=	-104.79575

res197	Coef.	Std. Err.	t	P>| t |
trab97	-1.32459	1.271957	-1.041	0.309
corr97	822390.1	1078213	0.763	0.454
ingt97	0.0236224	0.0567127	0.417	0.681
elem97	-475078.4	256659.1	-1.851	0.078
vimb97	5721971	2713731	2.109	0.047
ppc97	24737.64	13139.18	1.883	0.073
_cons	-5712229	2774046	-2.059	0.052
_se	288768.7	88577.79	(Ancillary Parameter)	

Obs. summary:	21	left-censored observations at
	7	uncensored observations

Number of obs	=	28
chi2 (6)	=	9.64
Prob > chi2	=	0.1407
Pseudo R2	=	0.0723
Log Likelihood	=	-61.874134

res297	Coef.	Std. Err.	t	P>| t |
trab97	-1.745485	2.620214	-0.666	0.512
corr97	1934252	2377388	0.814	0.425
ingt97	0.0165042	0.1163202	0.142	0.888
elem97	-762903.6	479412.7	-1.591	0.126
vimb97	1.03E+07	5884433	1.745	0.095
ppc97	46921.7	29687.57	1.581	0.128
_cons	-1.07E+07	6315328	-1.692	0.105
_se	400821.7	170517.4	(Ancillary Parameter)	

Obs. summary:	24	left-censored observations at
	4	uncensored observations