DETERMINANTS AND CONSEQUENCES OF BAILING OUT STATES IN MEXICO

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INTRODUCTION

Subnational government debt bailouts appear from time to time in countries in which local governments have autonomy in the amount they want to borrow. When a local or state government is unable to meet its debt payment obligations without drastically cutting its expenditure it must choose, as do other sovereign borrowers, whether to not repay its creditors and compromomise its future access to borrowing, or to reduce the level of services that it provides to its constituency, or to increase local taxes. The difference in the case of a subnational government and a country is that the former affects other levels of government, such as the federal government, that could also be responsible for the well-being of the constituency. Thus, even if it did not create the conditions for the crisis, it has to face the consequences of cutting local services, or increasing taxes, or if it chooses to default on the loan, of affecting the financial system or access to the credit market of that or other local governments. That is, the typical dilemma of a sovereign borrower is passed on from the local authority that took the debt to the higher authority [Eichengreen and Von Hagen, 1996; and Goldstein and Woglom, 1992]. A typical response of the higher level of government that has more access to financial sources is to bail out the indebted entity. The problem with this behavior is that it provides incentives for the local governments to acquire unsustainable levels of debt in the future.

Mexico is no exception. One such episodes emerged in the aftermath of the so-called Tequila crisis. The 1995 financial crisis in Mexico came after a period of reckless credit expansion and with a sharp increase in interest rates. This combination left many subnational governments with heavy debt loads and huge payment obligations that the federal government eased through extraordinary transfers and debt rescheduling programs. This was certainly not the first local government bailout by

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the federal government, but this episode provides us with the only direct evidence of financial transfers by the federal government to rescue local ones. Previous bailouts took place without leaving actual data that could be analyzed in a systematic way.

In this paper, we use the available data of the generalized Tequila crisis bailout to evaluate several questions of the logic behind bailouts in an effort to extract lessons to prevent future ones. The results of this paper suggest that the size of the constituency is important in explaining bailouts. This is in accordance with the too-big-to-fail hypothesis. On the other hand, the total dependence of the subnational governments on federal transfers (vertical fiscal imbalance) is also an important determinant of a financial rescue. It is also shown that fiscal indiscipline may pay off (that is, the local deficit is associated with a larger transfer). Surprisingly, political variables do not appear to determine whether a state is bailed out.

It is also shown that the excessive indebtedness of many states may have equity implications as well: bailouts tend to be highly regressive, because the poorer (less indebted) states received less extraordinary resources.

In addition, we argue that the explicit generalized bailout carried out by the federal government in Mexico in 1995 may have created a moral hazard problem. 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.

DEFINITION OF BAILOUT

A bailout occurs when a higher level government assumes obligations of a lower level one in the face of the latter's inability or unwillingness to meet these obligations. But this definition is not restricted to financial obligations. In our study we attempt to identify hidden bailouts. One can think of a lower-level government under-providing a service with important externalities, which is then provided by the central government, even though the responsibility for the provision lies in the lower level of government.

We also recognize an element of time inconsistency in bailout processes. Even if the higher-level government knows perfectly well that the lower-level government caused its own financial distress by irresponsible behavior, it may be willing to provide a bailout for many reasons: for example, because the central government cares about the welfare of the citizens of the jurisdiction in question, or because it benefits politically from extending the bailout, or because without a bailout the rest of the country would be adversely affected.

In this sense it is important to identify the potential determinants of a bailout decision. We use the well-known lender-of-last-resort literature to identify these because it is a helpful analogy [Bordo, 1990, and Goodhart, 1987]. However, before doing this for Mexico, we briefly review Mexican fiscal intergovernmental relations.

MEXICAN INTERGOVERNMENTAL FISCAL RELATIONS

Mexico is a federal republic made up of three levels of government: the central government, 32 local entities (which include 31 states and one federal district) and 2,477 municipalities. The country is characterized by strong regional disparities. While the Federal District and the two largest states produce about 40 percent of total GDP (their GDP per capita is around US$4,000 a year), the poorest four account for only 7 percent of total GDP (with US$1,100 of GDP per capita). Fiscal intergovernmental relations in Mexico have been regulated through the National System of Fiscal Coordination (NSFC) since 1980, and it is a *revenue-sharing* system, where states share the revenues coming from the federal government (main taxes).

Table 1 shows that the federal government collects the main taxes: the value-added, corporate, and personal income taxes. The main direct sources of revenues of the lower levels of government are property taxes, payroll taxes, and fees, together represent less than 4 percent of the country's total tax revenues.

Federal sources of revenue (including oil-related income) accounted for an average of 96 percent of public sector's income between 1992 and 1995. Even after the 1995-1998 process of decentralization, the fiscal assignment remained unbalanced because decentralization did not give back any tax powers; it only included matching and conditional transfers [Hernández, 1998]. The result is a high level of vertical imbalance.

Although the National System of Fiscal Coordination is its best-known feature, Mexican intergovernmental fiscal relations are more complex than that. It may seem that fiscal intergovernmental relations are documented and regulated solely by the National System. In fact, most authors [Arellano [1994] suggest this. When these relations are analyzed one has to keep in mind that Mexico has a long history of centralization. Direct federal expenditures carried out in the states and the municipalities are an important part of the overall picture.

The current distribution of responsibilities among the three levels of government, including those that are shared, is shown in Table 1. The number of shared responsibilities (financed by the federal government but provided by local government) has increased since 1995 when the federal government began, during the Zedillo administration, a significant decentralization effort.

The federal government funds most of these shared activities through conditional transfers. The way in which these transfers are distributed has been the subject of intense debate. Until recently, much discretion by the federal government determined the assignment of transfers. Direct federal public investments in the states, and extraordinary transfers, were mainly assigned in a discretionary way.

To provide an example of the degree of discretion in the allocation of federal funds (other than the revenue-sharing formula) during the years previous to the decentralization process, we estimate the average coefficient of variation of the per capita federal public investment in the states.[1] This turned out to be 1.13, which suggests that the dispersion was quite high, compared to the mean. That is, per capita federal investment has been unequally distributed among states.

TABLE 1
Responsibility and Tax Assignment

SOURCES OF REVENUES	RESPONSIBILITIES
Federal Government Taxes	**Federal expenditures**
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 tax	Health
Value added tax	Education
Excises	Specific purpose grant program
Oil export duties[a]	*Solidaridad*
Import duties	Single development agreements
Tax on ownership of vehicles[b]	Special police
Tax on new cars[b]	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 estate 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, cemeteries, and parks

Source: Gamboa [1997]. a. Oil-producing states get a markup. b. Tax rate is set by the federal government.

This structure of intergovernmental fiscal relations leaves the states with little flexibility for responding to external shocks [Díaz Cayeros and McLure, 2000; and Courchene and Díaz Cayeros, 2000]. Here is where sunbnational debt enters the picture. Subnational government borrowing is regulated mainly by the National Consti-

tution, which states that subnationals can borrow only for productive investments. In accordance with the benefit principle of public finance, the extent to which benefits from local public investment projects accrue over a number of years into the future (which is the case with productive projects, such as infrastructure), 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.

However, debt has a special way of being guaranteed: states can use their block transfers (coming from the revenue-sharing system). The mechanism is as follows. In case of arrears or a threat of default, on behalf of creditors, the federal government deducted debt service payments (on registered debt) from revenue sharing transfers before the funds were transferred to states. This amount, in turn, was handed out to the creditor bank.

Evolution of State Debt

To understand the 1994-95 bailout carried out in Mexico, it is worth examining the evolution of the local government debt in the 1990s. In contrast to other Latin American countries like Argentina and Brazil, Mexico's local government debt has not yet affected its macroeconomic performance. Total state debt (excluding the Federal District) reached US$4.5 billion by 1994 or 1.8 percent of GDP and about 6 percent of total public sector debt. However, it is important to note that the accumulation of state debt from 1988 to 1993 rose at an annual rate of 62 percent [Gamboa, 1996]. This debt grew an additional 8 percent in real terms from 1994 to 1995, mainly due to the increase in interest rates caused by the financial crisis.

By 1995, local government debt burden represented a fiscal problem for the majority of the Mexico's states, in part because they had so little disposable income with which to service it. The average ratio of total debt to disposable income was around 80 percent,[2] which show an important degree of financial vulnerability. In addition, this vulnerability was enhanced by the limited ability of states to raise additional revenues, because of the centralization of the tax system, and by the high degree of unadjustable expenditure.

DETERMINANTS OF BAILOUTS

In this section we attempt to determine the *ex ante* reasons for the bailouts. We consider two different types of bailouts. The first one is the *open bailout* that took place as a result of the *tequila* crisis, when the federal government had to rescue virtually all states. Secondly, we attempt to identify other possible forms of bailouts, which will be denominated as *hidden bailouts*, which we associate with discrepancies between decreases in levels of debt and fiscal balances. These figures may reflect a hidden bailout; for example, how else can one explain a situation where a state with a primary fiscal deficit also reports a reduction in its debt level?

The Open Generalized Bailout

As noted previously, by 1994 many states were highly indebted. On average total debt represented 80 percent of the total disposable annual income of the states. When the financial crisis of December 1994 erupted, interest rates multiplied by more than five, from 13.8 to 74.8 percent, and state governments simply could not keep servicing their debts. At the same time, commercial banks were experiencing liquidity and capitalization problems [Hernández y Villagómez, 2000].

For these reasons, the federal government came under pressure from the states and commercial banks to provide a major bailout. Even though the bailout was generalized to almost all states, the size of the transfer, and the year in which it was provided to each provides relevant information on the motivation of the federal government to provide its discretionary help. This variation is shown in Figure 1, using official government data. We proceed to study the causes of these differences.

Possible Explanations of the Generalized Bailout

Several potential determinants of a bailout decision can be identified. These include the following.

Vertical Fiscal Imbalance. As discussed earlier, the federal government collects the richer tax bases: the value-added and the corporate and personal income taxes. The main source of revenue for states and municipalities is net block transfers. Thus, local authorities have little flexibility to absorb a macroeconomic shock because these transfers are highly pro-cyclical. We may conclude that the vertical imbalance determinant is potentially important in explaining the generalized bailout of 1995, because states cannot levy taxes to absorb shocks. The econometric analysis will attempt to verify this hypothesis.

The Institutional-Legal Design. Having the block transfers as collateral, in an environment where states have to tighten their responsibilities, has two implications. First, banks had incentives to make loans to local governments, as the federal government indirectly guaranteed repayment. Second, states also had incentives to borrow because, under the above conditions, with a high probability the federal government would bail them out.

A bailout was more likely under this institutional framework because state and local governments spent nearly 75 percent of their total budgets on current expenditures such as the salaries of teachers, state police, doctors, and so on, which are difficult to adjust. This reduces the flexibility to manage the budget adequately.

Thus if their net block transfers had been seized to pay their debts, they would not have been able to meet their current expenditures obligations, since on average net block transfers account for nearly 80 percent of total revenue. A failure of the local governments to meet such obligations has high political costs both for themselves and the federal government.[3] Consequently, the federal government has no alternative but to bail them out.

FIGURE 1
Accumulated Extraordinary Transfers Per Capita (1995-1997)
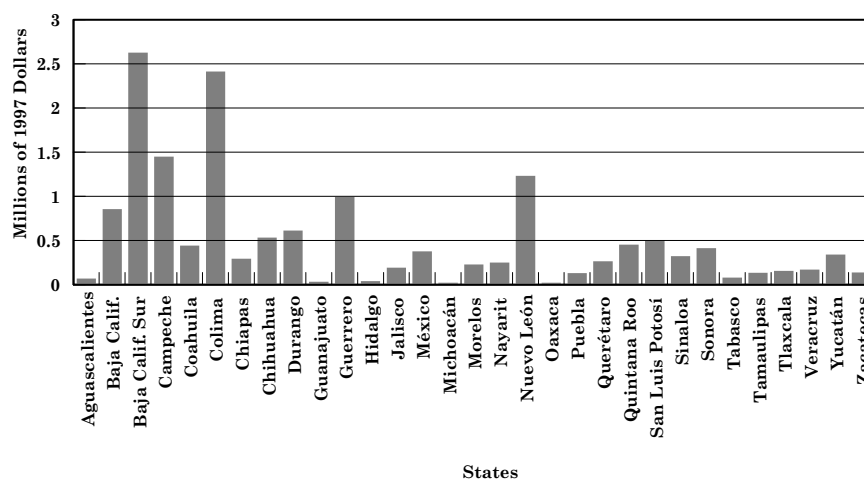
The two points above could account for at least part of the over-borrowing behavior in subnational credit markets, as well as the lack of explicit local regulations for borrowing and of any obligation to present and/or publish financial statements. This obviously would make project evaluation very difficult for lending institutions. These institutions rarely made the evaluation, as the risk they face was passed on to the federal government.

The Too-Big-to-Fail Hypothesis. There is ample evidence in the banking literature that size matters when it comes to bailing out an entity. Following this reasoning the size of the state could also be important in explaining the bailout. This is known as the too-big-to-fail hypothesis. When bailing out a particular state, this hypothesis may be present for several reasons. For example, a very populated state may be important because of the impact it may have on national elections. Second, from an economic point of view, a strong state (with a high GDP) may also be important because a reduction in its growth rate may affect the national rate of growth. In addition, a financial crisis in an important state may lead to a loss of confidence among foreign investors in the country.

Political Factor. Along with the too-big-to-fail factor there may be a political element. This factor can be of importance especially in Mexico given its existing political system. Mexico's political structure has been going through a transformation during the last years. 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 In-

stitutional Revolutionary Party (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 in the presidential race of 2000 were all governors, 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 relationship between the federal and state governments, weakening local fiscal discipline and increasing the likelihood of federal bailouts [Kraemer, 1997]. For this reason electoral variables are included in the analysis.

EMPIRICAL ANALYSIS

The Data and Variable Definitions

The Instituto de Estadística publishes all states' annual financial statements in *Geografía e Informática.* In addition, this publication contains all federal investment that each state receives every year. Unfortunately, sometimes these data are inconsistent across years and states for two reasons. First, until 1995, each state had different methodologies to collect data. Second, this information was provided by the states, who had incentives to provide the wrong information in order to pressure the federal government for extraordinary grants. Instead we use the information that the states provide to the federal government. Thus, our source is the Secretaría de Hacienda (Finance Ministry).

As a first measure of bailout we use extraordinary transfers as a proportion of total revenues documented between 1994 and 1998. The hidden forms of bailouts will be defined later in the paper.

For the independent variables, we include the proportion of own revenues to total revenues as a measure for the fiscal vertical imbalance; and proxies for the size of the state, the too-big-to-fail hypothesis and political factors, as well as some other control variables. In our econometric test, we include several indicators that proxy the size of the bailout as a function of the importance of the state, the political situation of the state, and its fiscal flexibility. Because the fiscal rules that determine state government access to credit are basically the same for each state, *ex-ante* circumstances that allow for bailouts are not included.

Thus we include the ratio of "own revenues" to total revenues for vertical fiscal imbalance, net of municipal transfers. The lower this variable is, the more dependent the state is on federal transfers, which may suggest that states have low tax capabilities for collecting revenues. The primary deficit is included as a proxy for fiscal imbalance.

The importance of the state is not an observable variable either. We use the number of formal workers in the state as proxies. We consider this a good proxy because they can exert political pressure in different forms such as strikes. We also include population because a highly populated state has a greater impact on federal elections. The higher this variable is, the greater are the chances for the big states to be financially rescued.

TABLE 2
Fixed Effects

Variable	Coefficient	Standard Error	t-ratio
Dependent Variable: Extraordinary transfers			
Ratio of own revenues to total revenues	177931.5	85703.35	2.08
Population	0.016560	0.003946	4.20
Primary deficit	0.143260	0.030691	4.67
GDP per capita	0.000006	2.17E-06	2.97
Current expenditures	109155.400	56619.2	1.93
Governor elections in year of bailout	1405.193	21918.18	0.06
Municipal elections in year of bailout	−7980.297	14879.13	−0.54
R^2	.41		
Durbin-Watson statistic	2.243713		
Dependent Variable: Extraordinary transfers			
Ratio of own revenues to total revenues	26809.0	7472.71	3.59
Number of formal workers in state	0.252027	0.045973	5.48
Primary deficit	0.180147	0.038902	4.63
GDP per capita	0.186529	6.99E-01	0.27
Current expenditures	27746.110	1676.54	16.55
Governor elections in year of bailout	943.865	19867.34	0.05
Municipal elections in year of bailout	−4390.462	7167.52782	−0.61
R^2	.40		
Durbin-Watson statistic	2.035954		

Finally, two variables are used to represent political pressures in bailing out local governments. The first variable is a dummy that equals one when municipal elections are held in the state in the year of the bailout. The second is a dummy that takes the value of one when an election for governor is held in that year.

Results

Table 2 presents the results of the regression when the dependent variable is the generalized bailout measured as extraordinary transfers from the federal government to the state (this was run considering fixed effects by year)[4] as proportion of its total revenue.[5] The period of this exercise is 1994-1998.

Results suggest that the too-big-to-fail hypothesis is valid for the generalized bailout carried out in Mexico in the aftermath of the Tequila crisis. As can be seen in Table 2, the sign of the coefficient of number of workers in the formal sector is positive and statistically significant at the standard significance levels. When the number of formal workers is substituted for population the coefficient remains positive and statistically significant. This means that the size measured in these terms matters when deciding by how much to bail out a state.

The coefficient of the level of fiscal vertical imbalance is also positive and statistically significant. However, our hypothesis was that it would be negative, since the more the state depends on its own sources of income, the fewer extraordinary transfers the state needs. Thus, vertical fiscal imbalance does not appear to be associated with larger, generalized, bailouts.

The sign of the coefficient of the variable representing the size of fiscal deficit excluding extraordinary transfers is also positive and significant. This coefficient has to be interpreted cautiously because, on the one hand, it may suggest that lack of fiscal discipline pays. On the other hand, it may suggest that states incur deficits because they do not have enough sources of income to meet their expenditure obligations or, alternatively, it may be an indication of the existing inflexibility in recurring to additional revenue sources. It is worth warning that a problem of endogeneity may be present since it is not clear whether extraordinary transfers cause the primary deficit, or the converse. From our earlier discussion, it seems that the former is the case.

The political variables (existence of election for either governor or municipal president) turned out to be statistically insignificant.

The GDP per capita was also included for each regression as a control variable. The coefficient was positive and statistically significant. This can be interpreted as evidence that the bailouts have a regressive distributional effect, that is, the richer the state, the larger the bailout. The next section deals with this effect.

CONSEQUENCES OF THE GENERALIZED BAILOUT

This section identifies two important consequences of the generalized bailout, namely, its distributional effects and the moral hazard problem.

### *Distributional Effects of the Generalized Bailout*

The econometric results above suggest that bailouts may present distributional effects. It was shown that higher per capita extraordinary transfers were given to states with higher per capita GDP.

As can be seen in Figure 1, per capita extraordinary transfers show a high degree of variation, with a coefficient of variation reaching 1.1522. Furthermore, bailouts of local governments may have equity implications. The most indebted states are those with a high per capita GDP. That is, rich states have higher revenues per capita, thus higher debt per capita, because they are perceived as being more creditworthy. Because states with more debt and importance receive bailouts, the bailouts tend to be highly regressive; the poorer (less indebted) states receive less in extraordinary transfers. This can be appreciated by looking at Figure 2, which shows the relationship between GDP per capita (horizontal axis) and extraordinary transfers per capita (vertical axis). This relation clearly is positive and significant with a correlation coefficient of 0.4732.

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 do poorer states borrow little? Even though the results suggest that the size of the state matters, the answer to this question is out of the scope of this study. For our purposes, it is important to note that it has some degree of regressiveness because most of the benefited states present high GDP per capita.

Further information of inequality and dispersion can be obtained by looking at the Gini and Theil coefficients. The Gini coefficient of the distribution of federal funds

FIGURE 2
Relationship between Extraordinary Transfers and GDP
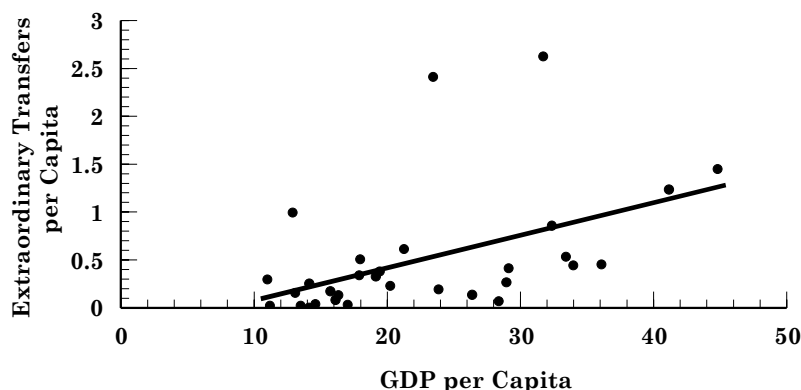
is extremely high at 0.5131, which reveals high dispersion; and a similarly high level of dispersion is found for the GDP-weighted Gini coefficient, which equals 0.4665. Similar results are obtained for subsequent years. In 1996 and 1997 the allocation of extraordinary transfers became even more disperse, exhibiting population-weighted Gini coefficients of 0.5581 and 0.6523, respectively. The Theil entropy index of 1.2779 shows the unequal distribution of extraordinary resources better.

Has the Bailout Created a Moral Hazard Problem?

The stock of debt and the degree of indebtedness examined above are not enough to reveal the full extent of the financial weaknesses of Mexican states. In fact, the outstanding local government debt in Mexico is rather small compared to what it would be if their past fiscal deficits were capitalized. The reason for this discrepancy is that a substantial part of their fiscal deficits has been repeatedly shouldered by the federal government through extraordinary, discretionary transfers (to cover non-anticipated wage increases, investment expansion etc.) and other forms of bailouts (for example, the 1995 *ad hoc* transfers).

Figure 3 shows the evolution of states' primary balance and its financing. It can be observed that states' fiscal stance seriously deteriorated until 1993 (when the aggregate primary deficit reached 0.4 percent of national GDP). Since 1994 the situation apparently changed, and the statistics even show a primary surplus as of 1995. However, a closer look into the data reveals that: (a) the apparent surplus between 1995 and 1997 was because extraordinary transfers were treated as revenues. (They should have been treated as a financing item and should have been recorded below the line); (b) the primary *deficit* continued deteriorating after 1995, because debt restructuring did not lead, in most cases, to any effective adjustment in states' budget *flows*.

The financial deal involved basically a debt *stock* relief and did not resolve the structural fiscal imbalances. As a consequence, the current fiscal stance of the states, is possible *not sustainable*, and without serious fiscal adjustment states will soon be

FIGURE 3
Evolution of Primary Balance and Financing
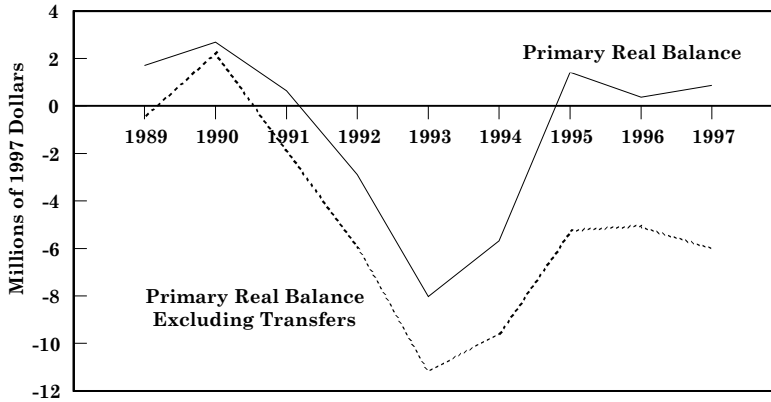
Source: SHCP

calling for another bailout to make them solvent again. The difference between the real primary balance and real primary balance excluding extraordinary transfers shows the *size* of the 1995-1998 bailout. The figure also suggests the persistence of the moral hazard problem. Even though states and municipalities have received greater federal transfers (both block and conditional), they keep incurring deficits because they anticipate that they will be bailed out.

HIDDEN BAILOUTS

Other forms of bailouts may exist that are less explicit than the extraordinary transfers. We use two alternative approaches to detect possible hidden forms of bailout in this section. Based on the hypothesis that some federal bailouts took the form of secret transfers, which were not registered as state revenues, we analyze reductions in debt stocks that are unmatched by 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 a bailout occurred.

The interviews carried out with former state finance secretaries and development bank authorities left us with the impression that most hidden bailouts were the result of debt renegotiations with development banks. These renegotiations softened lending conditions including lower interest rates and debt forgiveness, which, given the absence of official information, validates our approach through debt reductions. For this section, the information on debt stocks and public finances comes from different sources—the first one from the banking system and the second from the state governments;[6] therefore cross checking this information seems like a good way of finding hidden practices for the period 1995-97.

We define two dependent variables, each one representing a possible definition of a hidden bailout. The first one uses the definition of debt reductions that are unmatched by fiscal state government surpluses. That is, a hidden bailout might be indicated when a local government presents a fiscal deficit and still reduces the level of outstanding debt. The second one uses the variation in interest rates, which reflects the differences in interest rates before and after debt renegotiations.[7] We included the independent variables of the previous analysis for the generalized bailout. Results are presented in Tables 3 and 4 respectively. In the estimation process we use fixed effects by year.

As can be observed in Table 3, the too-big-to-fail hypothesis holds for the first definition of hidden bailout: the sign of the coefficient is positive and statistically significant. The coefficient of the ratio of own revenues to total revenue, which represent vertical fiscal imbalance, is negative and statistically significant, suggesting that the higher the vertical imbalance, the higher the hidden bailout. The coefficient of the primary deficit and the GDP per capita is negative and not statistically significant.

In Table 4 we present the results of the alternative definition of hidden bailout, namely, the variation in interest rates. In this case, the too-big-to-fail hypothesis still holds. The GDP per capita is also positive and significant, suggesting that this type of bailout is regressive. Finally, in this regression, the political variable is not important in explaining this type of hidden bailout.

A Potential Form of Hidden Bailout: Development Bank Debt

Allowing SNGs to borrow to cover current expenditures contradicts the existing rules and can be interpreted as a formal bailout. This section examines this issue. The gearing effect of borrowing allows local governments to achieve a higher level of investment than that which could be supported by their current resources, thus helping the acceleration of the pace of local development. This hypothesis (that the debt should be invested in projects) will be tested for Mexico in this section. This is important for the Mexican case, because it can help to identify channels of hidden bailouts since 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.

We ran a cross-section regression for the 1994-1998 period. The dependent variable is the change in investment with the rate of change of debt contracted with both commercial and development banks as independent variables. Results are presented in Table 5. They are striking. On the one hand, the coefficient of commercial bank debt is positive and statistically significant related to investment, while the coefficient of development bank debt is negative and statistically significant.

This result is especially important because it could reflect that the federal government indirectly bails out states through development banks and suggests possible hidden bailouts.

TABLE 3

Dependent Variable: Debt reductions not matched by fiscal state government surpluses

Variable	Coefficient	Standard Error	t-ratio
Intercept	−61176.6	43021	−1.42
Number of formal workers in the state	769432.2	347572.7	2.21
Primary deficit	1.237218	0.202981	6.10
GDP per capita	−992588.200	734218.5	−1.35
Fiscal deficit less extraordinary transfers	−560.917	545.0617	−1.03
Ratio of own revenues to total revenues	−341348.900	130887.6	−2.61
R^2	.60		
Durbin-Watson Statistic	2.142152		

TABLE 4

Dependent Variable: Variation in interest rates

Variable	Coefficient	Standard Error	t-ratio
Intercept	1.56E-07	7.71E-08	2.02
Number of formal workers in the state	2.48E-13	7.82E-14	3.17
Primary deficit	−3.21E-15	2.52E-14	−0.13
PRI	−1.14E-09	6.01E-10	−1.90
Ratio of own revenues to total revenues	−2.56E-07	1.86E-07	−1.38
GDP per capita	6.43E-06	2.17E-06	2.97
R^2	0.06		
Durbin-Watson Statistic	2.171915		

CONCLUSIONS

This paper has documented and analyzed bailouts by the Mexican federal government. In particular, we studied the generalized bailout carried out by the federal government as a result of the Tequila crisis. Our study suggests that this bailout took two forms: an explicit bailout and a hidden one. We then proceeded to test several hypotheses.

First, the too-big-to-fail hypothesis turned out to be important in explaining bailouts, regardless of the definition we used. Second, vertical fiscal imbalance was not important in explaining the bailouts. The other important variable was fiscal indiscipline, that is, when the state government is incapable of adjusting its expenditure, the extraordinary transfer followed. Also, bailouts proceeded after high fiscal deficits. That is, it pays to misbehave. Political variables were not important in explaining bailouts. These results also hold for hidden bailouts. We also found evidence that development bank has lent for poor projects.

We also show that the generalized bailout 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 provides incentives for states to borrow and banks to lend without evaluating the risk of the project.

TABLE 5
Regression between Investment and Stock of State Debt

Pooled LS//Dependent Variable: Change in Investment

Variable	Coefficient	Standard Error	t-ratio
Rate of change of debt contracted with development banks	−0.164259	0.072336	−2.27
Rate of change of debt contracted with commercial banks	0.129623	0.053009	2.45
R^2	.84		
Durbin-Watson Statistic	2.019115		

Sample: 1994, 1998; Included observations: 5;Total panel observations 154.

Furthermore, the excessive indebtedness of local entities may have equity implications: bailouts tend to be highly regressive, as the poorer (less indebted) states receive much less in extraordinary resources.

Looking at how the money borrowed has been spent, our results suggest that, during the period under study, the debt acquired by the local governments with development banks has not been used to finance investment projects.

In terms of policy lessons, we suggest that the rules-based approach for the case of Mexico is adequate at least in the short to medium term, but additional actions should be taken to try to replicate more closely the conditions of market discipline. The great advantage of using the rules-based system to check excessive local government indebtedness is that it is transparent and impartial, qualities that help minimize political bargains and discretion. A possible disadvantage is that the inflexibility inherent in such a system tends to limit productive financing and to encourage local entities to try all possible devices to circumvent the rules. Another disadvantage is that such a system does not automatically adapt to changing circumstances [Ter-Minassian, 1996].

NOTES

1. Data source is the Treasury Department (Secretaria de Hacienda). We compute this figure using real federal public investment in each state. We use the *state GDP deflator* to deflate, which is provided by INEGI (National Institute of Statistics). It is useful to point out that we first obtain the average of the per capita federal investment in each state and then compute the coefficient of variation.
2. Net disposable income is defined as total revenue, less municipal transfers and educational transfers.
3. It is very common to see state workers, such as teachers, demonstrating in both the State capital and in the federal district.
4. Coefficients for each year are not reported in the table.

5. The regression was run with this dependent variable because it provides the best measure of the importance of the bailout for the state government. The two variables that measure state government fiscal flexibility are presented as a fraction of total expenditure.

6. Source: Banco de México. We use an alternative source (with respect to the generalized bailout analysis) to cross information and detect possible hidden bailouts.

7. This may be important as an indication of a hidden bailout since interest rates negotiated after the crisis varied among states. This may suggest discrimination among states. Our data source for this is Banco de México public finance statistics.

8. Bayoumi et .al. (1995) study this issue for the U.S. case.

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