From Clientelism to Entitlements:
The politics of social transfers in Mexico, 1989-2006 [*]

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Draft, Comments Welcome

This book analyses the political economy of social assistance programs in Mexico from 1989 until 2006. This period has witnessed impressive transformations. On the one hand, the long-lasting rule of the *Partido Revolucionario Institucional* (PRI) came to an end in 2000 and Mexico went through a transition to democracy that entailed a fundamental change in the workings of the basic institutional apparatus. On the other hand, the three administrations during this period dramatically changed the existing social assistance programs designed to improve the well-being of the poor and mobilize their electoral support. There has been an important reduction of extreme poverty during the last decade. However, social programs continue to be criticized for their presumed manipulation by politicians seeking to obtain electoral support. This book analyses the effectiveness of the various social assistance programs in Mexico and the political logic driving each of them.

Chapter 3. The Welfare Effects of Social Transfers

1. Social assistance and public goods.

Social assistance programs are aimed at reducing poverty. Much has been learned

over the last decade regarding the evaluation of conditional cash transfer (CCT) programs

on individual welfare indicators. In particular, scholars have found creative ways to make

inferences based on the counterfactual of what would have happened with a

developmental outcome closely linked to well-being had a certain intervention not taken

place (Coady, 2000; Rawlings and Schady, 2002; Rawlings and Rubio, 2003; Duflo,

undated; Skoufias, 2001; de Janvry, 2004). Such work is based primarily on the

collection of carefully designed surveys that can allow a comparison between treated and

untreated groups in an experimental setup. Individual level welfare indicators in a panel

format or experimental settings such as those explicitly designed to evaluate

Progresa/Oportunidades (Wodon, 2001; IFPRI, 2000) are not available, however, to study

changes in local public good provision. As noted by Besley (2006), a general shortcoming in development research is that we know far less about local public good provision than about policy interventions aimed at income support, even though the former have equally important effects on well-being.

This chapter analyzes the aggregate effects of policy interventions that have externalities beyond their direct individual beneficiaries. We use municipal variance in the provision of local public goods, in order to compare the social effectiveness of social assistance programs over the medium term. Potable water, sewerage systems and electricity grids are provided in Mexico as public goods (i.e. they are non-excludable and non-rival in their consumption).[1] These public services make up the bulk of municipal public good spending. But these projects can have important leakages, in the sense that non-poor households can benefit from the projects financed by social transfers. The issue is whether one can measure the extent to which expenditure in these local public goods was effective.[2]

The Mexican experience allows us to compare programs characterized not only by radically different designs, in terms of targeting/universalism and the discretion/formula-driven dichotomies, but also regarding the political environment where the programs were implemented and the degree of decentralization in their operation. Our goal is to compare the effectiveness of various interventions, paying particular attention to the problems of selection bias that bedevil efforts at impact evaluation. Although we do not measure directly improvements in individual well-being,

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[1] These are not pure public goods though: water systems can be privatized, user charges and fees charged, and it is possible to have congestion.
[2] And the degree to which there was leakage, meaning that the non-poor obtained benefits.

we are able to measure the impact of social spending in the supply of aggregate local public goods.

More specifically, the chapter compares the aggregate effect of local public goods expenditure within Pronasol with the FDSM/FISM and the decentralized municipal public works expenditures on the improved provision of local public goods at the municipal level. Pronasol was characterized by high centralization and discretion, while FDSM/FISM is decentralized and formula based (see chapter 1). Our results suggest that the effect of the discretional fund, Pronasol, is negligible once correcting for endogeneity. By contrast, changes in the provision of potable water, electricity and sewerage in aggregate municipal populations do respond to decentralized and formula based public works appropriations. We estimate these effects, controlling for the impact of social cleavages, democracy, participation, demography and economic development on public service provision.

Scholars have addressed this question in the context of Mexico, providing important insights. Hiskey (2003) analyzes the impact of Pronasol spending in the provision of electricity, potable water, and sewerage at the municipal level in two Mexican states, Jalisco and Michoacan. He finds that the effect of public spending depended on the configuration of partisanship, in particular, the presence or absence of multi-party competition. When there was multiparty competition, his estimations suggest that Pronasol funds improved the access to public services, although the magnitude of the effect seems to be extremely small. The analysis is suggestive, although it is not as well

specified econometrically or as comprehensive as some of the later work, which means that it probably suffers from some omitted variable and selection biases.

Cleary (2002 and 2004) provides a much more nuanced and complete assessment of the performance in public good provision for the full set of Mexican municipalities. His econometric analysis uses log-odds ratios and a more comprehensive set of economic controls. In contrast to Hiskey (2003), Cleary's findings suggest that electoral competition in Mexico does not mediate the impact of public spending on the provision of public goods. In terms of public spending, he finds a strong effect of Pronasol funds in the provision of electricity, a weak effect in sewerage, and no effect in potable water. His study argues that forms of political participation, rather than partisan competition, are the main determinants of differences in performance in public good provision.

Neither of these studies control or is aware of the problem of selection bias, which has been central to the work on impact evaluation in development economics. In order to address the endogeneity problem we use geographic instrumental variables that provide predictions of the allocation of discretional funds that are not affected by the expectations of changes in the provision of public goods. We build on previous research efforts, providing what we believe is a more robust set of estimations of the effect of social spending in local public goods provision in Mexico. But departing from the work by Hiskey (2002) and Cleary (2002 and 2004), whose goal is primarily to address the effect of electoral democracy and political participation in public good provision, we focus primarily on the comparative assessment of various policy interventions.

The chapter is organized as follows. The next section provides an overview of the main theoretical hypothesis advanced in the comparative literature to explain differences

in the provision of local public goods and services. The third section discusses the empirical strategy of estimation used to assess the policy effectiveness of social spending in local public goods provision. Following recent advances in development economics, we estimate two stage least squares (TSLS) regressions, using geographic variables as instruments.[3] We follow this strategy in order to mitigate the endogeneity of public spending that plagues most of the existing work. The fourth section discusses the results. Our conclusions motivate the need for a political understanding of the allocation of resources for poverty relief, which is the task we undertake in the following chapters.

2. Heterogeneity, state capacity and democracy.

Well-being hinges not just on individual income, but on the access individuals and households can have to public goods and services in the locality where they live. Although public goods can sometimes be privately provided, in general, the provision of facilities such as potable water, sewerage, electricity, schools and health clinics are made by governments. What explains differences in the provision of those local public goods? The most influential hypothesis in the last few years has been one associated with Alesina, et. al. (1999), which proposes that greater social heterogeneity, as measured through an index of ethnolinguistic fractionalization (ELF), makes it harder for communities to provide public goods. Such failure is attributed to the idea that it is more

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[3] We also corrected the estimates for spatial autocorrelation using GeoDA. However, given that the results did not change, we report the models without the spatial lag.

difficult to engage in collective action when co-ethnic groups distrust outsiders, and that ethnic fragmentation might breed conflict.[4]

Studies linking ethnic diversity to public good provision generally take a statistical approach. The association between polarization as measured by ELF indexes, and failures to provide local public goods, as measured primarily by public expenditure patterns, seems to be a robust finding. However, there is considerable disagreement in this literature regarding the specific mechanisms through which heterogeneity influences public good provision. It is possible that there are substitutions among public goods, in the sense that some places might get less of some types of goods, but more of others (Banerjee and Somanthan, 2001). It is also possible that ethnically heterogeneous groups have a different profile of tastes for public goods than homogenous ones, so the result is driven by preferences, rather than polarization and conflict (Banerjee and Somanthan, 2006; Banerjee, 2002). And the literature fails to specify whether ethnic differences in fact become reflected into bureaucratic structures and the political system (Posner, 2004), which are the arenas where the provision of public goods is decided.[5] Nonetheless, this literature suggests that a key determinant of success in local public goods provision is the capacity of communities to work together with a common aim.

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[4] Studies finding evidence of the impact of social heterogeneity in public good provision across nations and within countries include Alesina and La Ferrara, 2000; Kwaja, 2002; Miguel, 2004; Miguel and Gugerty, 2005; Dayton-Johnson, 2000; and Baqir, 2000.

[5] Political scientists have engaged this literature quite extensively in their own work on ethnic conflict and civil war (Weinstein, forthcoming; Fearon and Laitin, 2003). The most promising research agenda, seems to be the move away from cross sectional variation to a focus in local experimental settings, in which scholars have tried to understand the conditions under which communities are more able to create networks of trust. Habyarimanna et. al., 2006, in particular, performed experiments in Kampala, Uganda, testing the willingness of co-ethnics and non co-ethnics to cooperate. Also in an experimental set up, Wantchekon (2002) tested the appeal of programmatic promises of public good delivery by presidential candidates according to ethnic differences in Benin.

While in this literature social structures are the main explanation of failures in public service provision, another alternative is to consider shortcomings in public administration. There is a long tradition of research, especially among political scientists, which has seen public good provision through the lens of state capacity (Kohli, 2000). The general thrust of that literature has been to suggest that failures in the provision of public goods reflect underlying problems arising from weak states that are incapable of taxing, running a bureaucracy, or in general, fulfilling basic public functions. Although there surely are variations in the administrative capacities of bureaucracies and service providers, state capacity tends to be a difficult explanation to put to test. Very often states are defined as incapable precisely because they do not provide public goods and services. Moreover, Tendler's (1997) work on Ceará in Brazil has shown that it is possible to create an autonomous bureaucracy that can provide public goods effectively even in conditions of what could be conducive to a weak state.[6] Furthermore, it is usually very hard to find a variable that measures state capacity which is not confounded with the general level of wealth or development. Nevertheless, it is important to acknowledge that public service provision might be better or worse due to differences in bureaucratic performance. In the Mexican context, there is a wide variation in the administrative apparatus of municipal governments. Around half of the municipalities can be thought of as lacking state capacity, due to their small size, precarious public finances and the deprivation of their inhabitants (Cabrero, 2004).

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[6] State capacity can be proxied through fiscal variables, in particular, the capacity of local governments to collect revenues and spend in public goods. Zhurakvskaya (2000) has found, for example, that public good provision in Russian cities did not respond to local tax collection efforts, because the center offset those increases through withholding revenue sharing.

Bureaucracies respond to the incentives of the public officials that run them and the politicians that oversee them (World Bank, 2004). Policy makers have increasingly paid more attention to local power structures and corruption as explanations for the difficulties governments face in providing public goods and services.[7] In a particularly poignant example, Reinikka and Svensson (2004) measured an astounding leakage of 87 percent in a program in Uganda meant to provide grants to schools for non-wage expenditures. Such leakage was successfully reduced through greater citizen involvement and information regarding the allocation of funds to the local schools (World Bank, 2006).[8] Olken (2006) similarly found that the leakages in a poverty relief program delivering rice in Indonesia were large enough that they offset the welfare gains from having the program in place at all.

To a large extent these studies get leverage from analyzing the distribution of funds across levels of government. The literature on decentralization is often premised on the notion that local governments are better at providing public services than centralized bureaucracies. In a study of Bolivian municipalities, for example, Faguet (2004) shows that decentralization made public spending decisions more effective for the provision of public goods. While decentralized public goods provision is often successful, the initial optimism regarding the virtues of decentralization has been tempered by greater

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[7] Bardhan and Mookherjee (2005) have shown, in a formal model, that centralized systems of public service delivery are more subject to corruption. However, they also note that local elites might capture governments making them less efficient than a centralized arrangement. Besley and Coate (2003) have provided a model in which the advantages of decentralization depend on legislative behavior and how jurisdictional spillovers and conflicts arising from the variance in preferences over public good provision across places are mediated by the political system. Despite these theoretical advances, we are only starting to understand the links between democratic accountability, local public good provision and decentralization.

[8] In an empirical evaluation of Sen's (1981) influential hypothesis that democracy prevents famines, Besley and Burgess (2002) have shown that Indian states with greater freedom of the press are more likely to deliver disaster relief. Besley and Prat (2001) have similar findings for a cross section of countries.

awareness that a crucial aspect that determines whether a local government is capable of providing public goods is the accountability of local politicians to citizens (World Bank, 2004; Bardhan, 2005).

As a general statement, democratic forms of government seem to be more effective at providing public goods. The general question of whether political regimes determine the provision of public goods has been tested across countries by Baum and Lake (2001). In particular, they found that access to health care, drinking water, and school enrollment improves with democracy. They also report findings on outcome variables such as infant mortality rates and life expectancy. The outcome variables could be attributed to many other causes, not just related to public policies, but to the general effect of democracy on economic growth and population dynamics (see Przeworski et. al., 2000; Navia and Treufel, 2003; Pritchard, 2000). However, the overall effects of democracy on public service provision such as health clinics, immunization and access to safe drinking water seem to be relatively robust.

At the local level, Chhibber and Noorudin (2004) found that Indian states where patterns of electoral competition are stiffer, in the sense that the incumbent faces strong contestation from one single challenger, are more likely to provide public goods. However, they also find that public good provision in multiparty competition decreases, because in fragmented races politicians do not need to provide as many public goods in order to build all encompassing coalitions. In the case of Mexico, Hiskey (2003) argues that in more competitive electoral environments, measured through the effective number of parties, public service provision is more sensitive to public spending. Cleary (2004) does not find this effect of electoral configurations on public service provision, although

he shows that variables related to political participation, such as literacy and turnout, improve public service delivery.[9] Closely related to the argument of participation, in the case of India, Chattopadhyay and Duflo (2001) have argued that female leadership in Village Councils led to greater investments in infrastructure related public goods (water, fuel and roads), while men tend to favor investments in education.[10] In a similar vein, Pande (undated) has shown that the representation of scheduled castes in the Indian states improved the provision of education and land reform, which are policies that the poor would presumably favor.[11] The general thrust of these empirical contributions has been to suggest the need to explore the effect of accountability processes (democracy arguably being the most important) and citizen participation in the provision of public goods.

The literature thus offers primarily four explanations for the differential provision of public goods. First, it is possible that more homogenous communities are more capable of providing public goods. Second, governments that in some measurable way are more capable might be better able to provide public goods. Third, local power structures and the relationship between local and national political and administrative actors might influence the opportunities for rent seeking and capture in the provision of public goods. Finally, democratic accountability in various guises (electoral or participatory) might also determine the success or failure in the provision of public goods. Keeping in mind the interaction between spending patterns and factors that measure these prevailing

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[9] Platteau (2004) criticizes, however, participatory models of local level development.
[10] Kearny and Lott (1999) find that across countries greater female representation leads to larger government.
[11] Foster and Rosensweig (2001) have shown that in India democracy means the empowerment of landless workers, which has led to land reform and higher public good provision, although not necessarily higher productivity. Bardhan and Mukherjee (2006), however, find no trade-off between land reform and increases in income.

explanations, in this chapter we compare the impact of different social spending

strategies in local public good provision.

3. The determinants of public goods provision

In the Mexican context, access to safe drinking water, electricity, and sewerage,

among other local public goods depends upon provision by municipal governments.

While education and health facilities are also crucial inputs impacting well-being, their

provision in Mexico has been primarily decided in a relatively centralized fashion. Even

after the decentralization of education in 1993 and the decentralization of federal health

systems a few years later, most of the financing of those two public goods remains

federal (Diaz-Cayeros and Courchene, 2003) and the decisions regarding the location and

support of schools and health clinics were primarily made by state and federal, not

municipal governments. In the empirical test that follows, we limit ourselves to municipal

services, not including education and health provision. This is due mostly to the difficulty

in finding appropriate quantitative indicators of school and health clinic coverage, and

that, as argued by Cleary (2004), municipal services are where one might expect the most

intense scrutiny on the part of citizens.[12]

The general econometric framework used in most of the studies of public good

provision estimate regressions of the following form:

Public Good $= \alpha_0 + \alpha_1 S + \beta_2 H + \gamma_j P + \delta_k E + \varepsilon$

Where S is some measure of public spending, H is a measure of heterogeneity or

diversity, such as an ELF index, P are political variables, such as mandated female

[12] While a more comprehensive analysis would ideally compare poverty rates, changes in malnutrition, infant mortality or morbidity, or the income effects generated by the provision of public goods on households.

participation or the effective number of parties; and E are economic controls that proxy for development levels and state capacity. The public good provision itself is usually measured as the relative coverage, in percentage terms, of a certain public service.

Following recent advances in development economics, we argue that the main problem with estimating the effects of a social assistance program spending in the provision of local public goods in this form is one of endogeneity: namely, while we seek to understand how much a given service, say potable water, improved as a consequence of public spending, the decisions regarding the allocation of discretional funds across municipalities are most certainly influenced by the conditions of the water infrastructure around the country and the likely impact policy makers and politicians believe spending in a particular place will have in the delivery of those social services. This endogeneity problem can be corrected, but if it is not, the estimations of the effects of policies may be seriously biased.

The same is true for other public services, such as electricity and sewerage. For example, if a politician wants to claim credit for a large improvement in the coverage of electricity in the few years of his short term in office, he might prefer to allocate funds to urban places that already have a relatively well developed grid, so that a large number of dwellings can improve very quickly. Sewerage could be more urgently needed in some regions where unsanitary conditions would produce a cholera outbreak or some other public health crisis. Policy makers in this case might actually be able to allocate resources with the highest priority to the places where no improvement has been observed in the past. The selection of where the locate electricity and sewerage projects might be determined precisely by the dependent variable we want to explain.

These examples suggest that the best estimation strategy is not to run an OLS regression, even with appropriate control variables. An additional problem in some of the literature is that there are omitted variable biases if one tries to estimate the *level* of public good provision. Attributing the level of provision, which is a stock accumulated through time, to the flow of public spending made in a specific time interval, would make a wrong inference in several ways.[13] The level of public service provision across municipalities might be determined by many decisions taken by households and individuals privately. A home might have access to safe drinking water because a rich household invests on a well, or because there is a public intervention that connects homes to the water system. Although electrification requires public initiative, the percentage of homes with access to electricity often depends on private provision through "theft" of electricity from the distribution grids. This is particularly noticeable in poor semi-urban areas. Moreover, water delivery has been successfully privatized in many municipalities, so that access to drinking water can be determined by a combination of private and public investment. Teasing out the public vs. private efforts in provisions of public goods measured as levels is extremely hard.

Public spending in the past surely accounts for most of the provision of local public goods, while current spending should only impact the level marginally. If we do not have data available measuring past spending and past private provision, there is a serious omitted variable bias in using levels as the dependent variable. The strategy suggested by Banerjee (2002) is to measure public service provision as a first difference,

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[13] For a creative use of the history of public spending, matching it to the provision of public goods in the Italian regions, through a perpetual inventories approach, see Golden and Picci (2006).

in order to ensure that we do not wrongly attribute the initial levels of provision to current spending.[14]

a) The dependent variable.

The dependent variable we use in the analysis is an index of the change in the provision of drinking water, electricity and sewerage in the Mexican municipalities.[15] We estimate changes in the logistic transformation of the index between 1990 and 2000 according to census data, so the dependent variable takes the form:

Index $= \log(I_{00}/(1-I_{00})) - \log(I_{90}/(1-I_{90}))$

Where: $I_{xx}=$ (% water coverage + % sewerage coverage + % electricity coverage)/3 for year xx. The appendix presents an explanation for why we did not use the mid census estimations (conteos) and it also provides a set of scatterplots that give a good idea of the distribution and patterns of this dependent variable from 1990 to 2005.

Instead of making individual estimations for each service, we averaged the provision of the three services in each municipality (although individual estimations for each service are available upon request).[16] Table 3.2 presents some of the descriptive feature of the index, comparing the data for 1990 and 2000, and the relative change in

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[14] We employed this strategy in Diaz-Cayeros and Magaloni (2003), and so does Hiskey (2003). The alternative is to do as Cleary (2004), who estimates levels of public service provision, but keeps the initial level in the right hand side. Such strategy produces a higher R2, without changing the substantive findings.
[15] We do not use the marginality or welfare indexes that have been calculated in Mexico by INEGI and CONAPO, because those factor analyses are not strictly comparable across years. More importantly, these indexes include too many census indicators, many of which are related to *private welfare*, rather than public good provision (for example, the population earning less than one minimum wage or the construction materials of their home). We do not use a Human Development Index (CONAPO, 2000; UNDP, 2005) because it measures individual welfare, rather than public services, and we do not have reliable estimations for the HDI at the municipal level for 1990. Our index is highly correlated with any of those conventional measures of development.
[16] We do not perform some factor analysis or other data reduction method because we believe it is far more transparent to simply average the three services weighting them equally. It is important to note, however, that it is much more expensive to provide sewerage than electricity; and that the demands among citizens are most intense for the case of potable water.

those census years. The mean value of local public good provision increased in the

decade, and the standard deviation was reduced. Perhaps more importantly, there is a

greater improvement among the lower end of the distribution than in the higher end.

Table 3.2 Descriptive statistics of Dependent variable

	index 1990	index 2000	change
mean	58.9%	69.7%	10.8%
standard deviation	20.5%	17.7%	-2.8%
d1 (10%)	30.0%	44.5%	14.5%
q1 (25%)	44.5%	57.4%	12.9%
median	60.4%	72.5%	12.1%
q3 (75%)	74.3%	84.4%	10.1%
d10 (90%)	85.1%	91.1%	5.9%

There are very large differences in the provision of public services between poor

and rich municipalities. For example, the first decile of the distribution (d1) had an

average coverage of 30 percent in local public goods, while the top decile (d10) had

almost three times greater coverage at 85 percent. However, the gap has somewhat

narrowed, since the improvements in local public goods have progressed more rapidly

among the lower half of the distribution. However, the median municipality, even in

2000, would fail to provide these essential public goods to around one fourth of its

inhabitants.

We make a transformation of these percentages into log-odds ratios. One of the

main problems with an OLS estimation using percentages is that we can predict

implausible values outside of the [0,1] interval. The transformation to log-odds ratio is

preferable to the extent that it is more sensitive to differences in the low and the high

ends of the variable (Cleary, 2004). However, a general problem with a logit formulation

is that it suffers from a well known aggregation problem. If there is heterogeneity in public service delivery in the localities that comprise the municipality, the model can be correct for the municipal level, but not for the lower levels of aggregation (Mukherjee et. al. 1998). This might be particularly problematic if the peripheral areas of a municipality have a much lower provision of public service than the urban centers (*cabeceras*). This aggregation problem is not an issue in the linear probability model, so there is a tradeoff in the choice of estimation form.

There is a great deal of variation in the dependent variable (see appendix graphs). Municipalities that show large improvements are not just limited to the poor areas of the country, but comprise also dynamically growing regions in the West and North of the country. Improvements in electricity and drinking water provision are dispersed throughout the country, with no specific area accounting for them in particular. Municipalities that exhibit little or no improvement are usually places where migration flows have outpaced the supply of public service delivery (a negative change would mean that the rate of creation of new households has outpaced the provision of the services). Thus, improvements in social conditions may be clustered in some areas. Moreover, there are geographic reasons why it is more difficult to provide public services in some territories than in others.

In order to ensure that our estimations do not suffer from spatially autocorrelated errors, we tested for spatial correlation. We calculated a (queen) proximity matrix of order 2, using GeoDA, in which both the contiguous and the next contiguous municipal values in the dependent variable were taken into account in order to perform a Moran I

test. We did not find evidence of diffusion effects or other neighbor influences, so we report models without a spatial lag.

b) Independent variables.

In terms of the independent variables, we include the initial level of local public goods provision, an endogenous and two exogenous components of social spending, two measures of fractionalization, two measures of political accountability, and a set of socio-economic controls.

Our estimations take the following form:

$$
\begin{aligned}
\Delta \text{ Public Good} = \quad &\alpha_0 + \\
&\alpha_1 \text{ Initial Level of Provision} + \\
&\alpha_2 \text{ Discretional Social Spending (Instrumented)} + \\
&\alpha_3 \text{ Formula-Based Social Spending} + \\
&\alpha_4 \text{ Local Public Works Budget} + \\
&\beta_1 \text{ Religious Fractionalization} + \\
&\beta_2 \text{ Indigenous Population} + \\
&\beta_3 \text{ Population} + \\
&\beta_4 \text{ Population growth} + \\
&\gamma_1 \text{ Alternation Before 1994} + \\
&\gamma_2 \text{ Alternation} + \\
&\gamma_3 \text{ Illiteracy} + \\
&+ \varepsilon
\end{aligned}
$$

We describe these independent variables below. Even though we are measuring improvements in local public goods as first differences, one must control for the *initial level of provision* (Diaz-Cayeros and Magaloni, 2003; Banerjee and Somanathan, 2006; Hiskey, 2003; Cleary, 2004). The reason for doing this is that it is often easier to improve public services in places where there is virtually no provision of public services than to expand to 100 percent coverage. We have estimated changes in access to public services as convergence equations: the level of public service provision in 1990 should determine

the pace at which those services are improved. If convergence exists, well endowed areas can increase access more slowly than less privileged ones. The coefficient for the initial level of public good provision, which we expect to be negative, would indicate that the municipalities lagging behind in public services are the ones that are showing the largest improvements.

This is the pattern suggested by figure 3.1, which shows the unconditional convergence of the index of public service provision across municipalities from 1990 to 2000. The horizontal axis depicts the average percentage of homes with access to drinking water, sewerage and electricity, while the vertical axis shows how much that percentage changed over the decade. The downward sloping trend of the data indicates that poor places are catching up. It is not easy to say whether this convergence process is sufficiently fast. One should note that there are municipalities with negative changes in the level of provision, which are worse off in 2000 than in 1990. Most of these are very small municipalities. The convergence seems to be clearer for the municipalities with more than 50 percent coverage in 1990 than those below. But there is clearly a greater density of observations aligned in a downward sloping pattern, which is not just an artifact of the fact that provision cannot go beyond 100 percent.
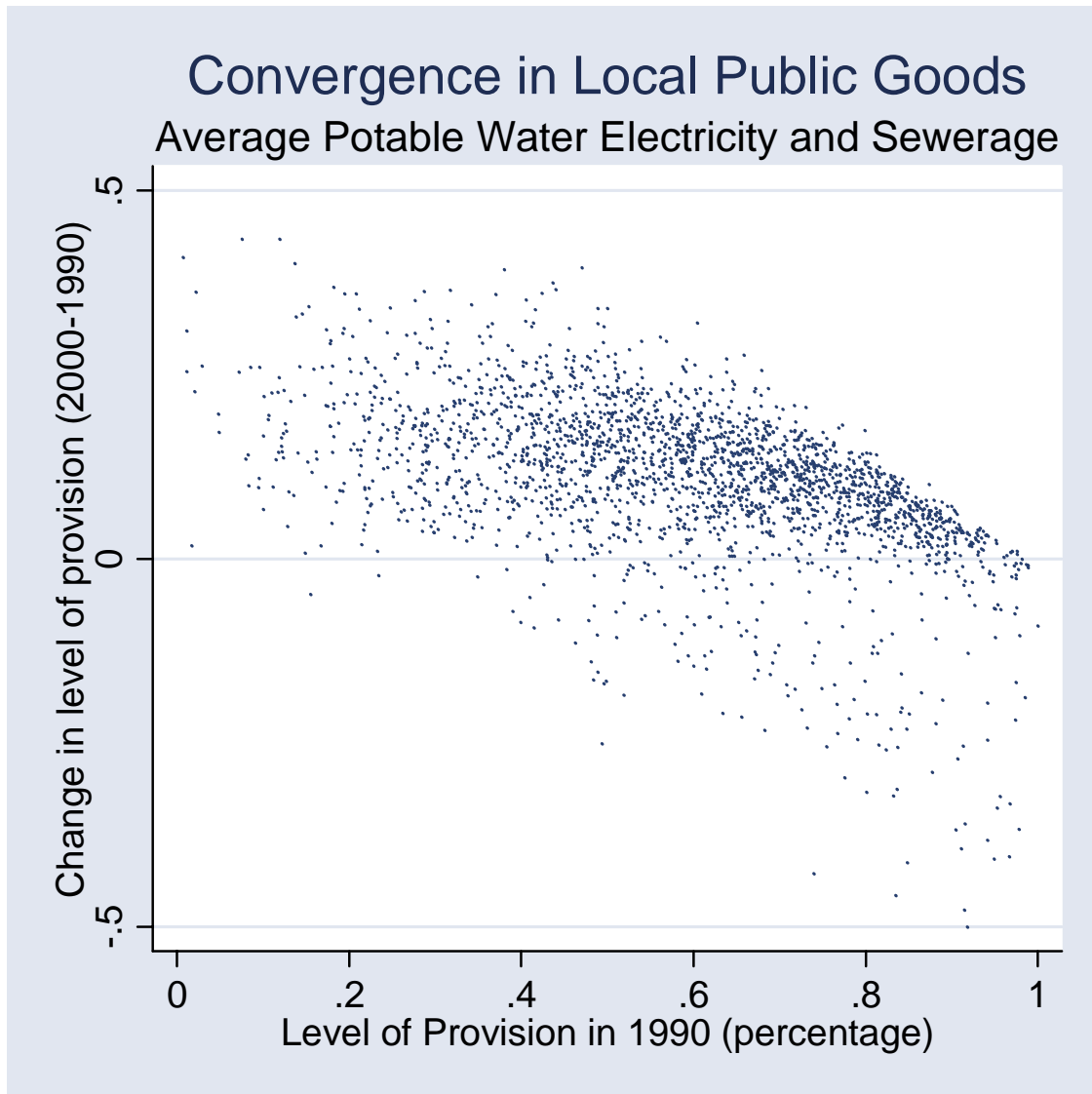
Convergence in Local Public Goods
Average Potable Water Electricity and Sewerage

Figure 3.1

A. SOCIAL TRANSFERS

Discretional social spending is the endogenous variable of social spending, which

we instrument through geographic variables. The discretional social spending is

measured as the log of average per capita Pronasol local public goods expenditure,

discussed in the previous chapter, measured in real terms (pesos of 1994). Notice that we

are not using the overall expenditure of the program, since we are well aware that private

good transfers should in principle have little if any effect on local public good

provision.[17] Figure 3.2 shows the distribution of this variable across the country. The map

suggests that virtually every municipality in the country received some funds, but that

there was significant variance in the amount of funds distributed to each place.

Figure 3.2
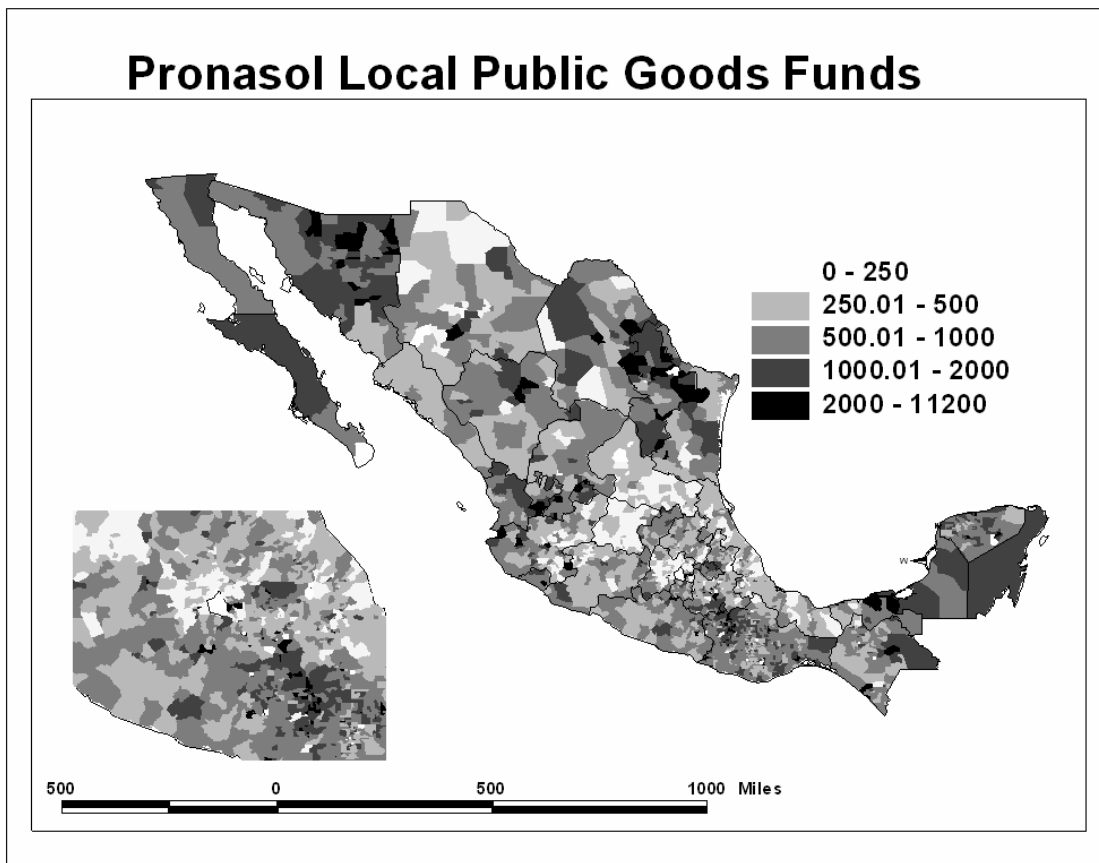
An important feature to note in the map, in contrast with the maps presented in the

previous chapter, is that there is a greater concentration of funds in relatively rich

municipalities, and that there is no clear clustering of funding in the South, where poverty

is widespread.

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[17] For the sake of comparability with a study like Cleary's (2004), the appendix provides a set of
estimations for total Pronasol expenditure.

The literature on impact evaluation has become increasingly more demanding in the use of instruments as a perquisite to obtain relatively solid inferences concerning the impact of public spending in public goods. Zhuravskaya (2000), for example, uses the Soviet legacy of industrial output over agricultural production as an instrument of spending, in order to assess its impact on public good provision. Banerjee and Ayer (2005) take advantage of the different political organizations and land tenure arrangements among Indian princely states during the colonial era in order to asses the effect of land distribution on economic performance. And Paxton and Schady (2002) use Fujimori vote as an instrument to predict Foncodes resource allocations in Peru.[18]

In the case of Mexico, several geographic variables turn out to be good predictors of expenditure allocations, but they are not correlated with improvements in public service delivery. Hence they provide us with excellent instruments. In the estimation reported in the next section, we kept the following four instruments:

1) Rainfall (average in the centroid, in millimeters)

2) Access to railroads (Euclidean distance of border of municipality to the closest railroad track, in kilometers)

3) Access to cities (Euclidean distance of border of municipality to the closest city of more than 100,000 inhabitants, in kilometers)

4) Rugged terrain (variance of altitude for the municipality as a whole in meters)

These instruments turn out to be good predictors of the spending variables because policy makers probably took into account the profile of poverty when deciding how to allocate funds. In some ways they all reflect the isolation of some communities

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[18] Instrumenting with vote results would be somewhat odd in out study, since our goal is to understand the interaction between social transfers and politics: we hence cannot claim electoral patterns are exogenous.

which are trapped in poverty. While the overall level of public service provision is highly

correlated with poverty, and the geographic instruments are also correlated with poverty,

this is not the case for changes in the provision of public services.

We use the log of the per capita average funds allocated to the FDSM/FISM

between 1996 and 2000 (in real terms) as a measure of *Formula Based Social Spending.*[19]

There is no endogeneity problem in the allocation of these funds. The formula for

allocation of FDSM created in 1997 was based on calculating gaps in public service

provision and poverty, similar to a Foster-Greer-Thorbecke poverty index (Mogollón,

2000; Levy, 2001). These gaps provided estimates of so called "Deprivation Densities"

(Masas Carenciales Estatales), which determined the amount of funds states would

receive. For the distribution from the states to the municipalities, governors could use the

same federal formula, or a simpler allocation formula based on very similar variables to

those in our index. 19 states used the simpler formula, while 12 states used the more

targeted federal formula. Nonetheless, there was no discretion in the allocation of these

funds to the municipalities. During the first years of the FDSM/FISM a third of the funds

were distributed to states in equal shares, regardless of population, but state governments

were bound to distribute the resources to their municipalities by formula.[20]

Public expenditure through federal programs is complemented with municipal

funds. In fact, local governments in Mexico are responsible for the provision of drinking

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[19] We have no breakdown of social spending data for 1995 at the municipal level, although there is anecdotal evidence suggesting a very large drop in federal allocations, as a consequence of the peso crisis. That year Pronasol was abandoned by the incoming Zedillo administration, to be substituted by a new fund for social infrastructure. A third of the formerly Pronasol money included in budgetary item 26 was decentralized in 1996; and the decentralized share became 2/3 in 1997 The FDSM, renamed FISM in 1999, became the most important federal transfer to municipalities.

[20] The formulas have not changed since, only the census indicators used to calculate them have been updated. The lump sum for each state was reduced to .5% of the funds, and eliminated after 2001.

water, sewerage and public lighting, among other local services (See Rodriguez, 1995).

Public works spending (*gasto en obras públicas y fomento*) by municipalities constitutes

the part of their budget they invest, as distinct from expenditure in debt service and

general administration (mostly comprised by payrolls). On average, municipalities during

this period spent about half of their budgets on public works. Their budgets were much

smaller than the overall Pronasol funds, and relatively similar to FDSM/FISM funds.[21]

We include the municipally allocated public works spending (*Local Public Works*

Budget), measured as the logged average per capita allocation from 1989 to 2000.[22] We

expect all the expenditure variables to have a positive sign, suggesting that when more

money is spent, the percentage of households without basic public services should be

reduced. We have no *a priori* expectations about whether discretional Pronasol funds,

formula based social infrastructure federal transfers, or municipal public works spending

should have a larger effect.

B. SOCIAL CLEAVAGES

In what regards the measures of social polarization, religious competition is the

most salient cleavage that drives conflict in Southern Mexico (Trejo, 2005). The

connection between religion and conflict is related to the church active construction of

social networks for pastoral purposes, spurred by the pressures of religious competition.

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[21] Public works expenditure by municipalities amounted to around 27 percent of Pronasol funds.

[22] Since Pronasol often involved matching funds from the municipality for the federally financed projects, in a previous version (Diaz-Cayeros and Magaloni, 2003) we included an interaction term of Pronasol funds multiplied by public works spending. That interactive term showed a statistically significant effect, but extremely small, so we decided not to include it in the current specification.

Trejo (2005) shows that as a reaction to Evangelical inroads in their dioceses, the

Catholic Church in Chiapas became more attentive to the needs and demands of poor

indigenous communities. This does not mean that religious affiliation becomes a source

of violence or contention, but rather that conflicts between citizens and state structures

might be more intense in places with more active religious competition. An indigenous

cleavage is less prevalent, since localities tend to be more homogeneous in this ethnic

dimension than in the religious one. We have hence calculated a measure of *religious*

fractionalization, which is an index of how divided religious belief in a municipality is.

We calculate the index defined as $RF = 1 - \Sigma\ p_i^2$, where p is the share of each of the

religious affiliations reported in the 1990 census (Protestantism, Catholicism, Judaism,

other religion and agnostic).[23]

The second indicator of social cleavages we use is the share of *Indigenous*

Population, defined as monolingual individuals according to the 1990 census. While

there is a very large correlation between poverty and being indian, the indigenous

character of a community might not reflect divisiveness, but in fact improve the provision

of public goods. This might be particularly so in places where social organization makes

collective endeavors less subject to shirking and opportunism. For example, the most

tightly knit communities in Oaxaca, use the *Tequio* as a mechanism for the provision of

public goods and services.[24] Those municipalities often use a system of rotation in public

offices, instead of having municipal presidents selected through elections (elecciones por

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[23] Perhaps reflecting the salience of this issue, the 2000 census includes a new category, breaking down Protestantism by Evangelical and non-Evangelical. The fractionalization index of 2000 increases compared to 1990 even without the finer categorization. However, it is likely that the largest increases in religious fractionalization occurred in the 1970s and 1980s.

[24] The *Tequio* is a form of communitarian cooperation for the provision of local public goods. It involves compulsion, in the sense that members of the community must devote some of their labor for a collective enterprise, but it is voluntary to the extent that it accords with the traditional values of most members in the community.

usos y costumbres). Such system has turned out to be a very effective governance device.[25]

Births and migration might exert pressure on the existing physical infrastructure, so that it should be more difficult for places where population growth is high to keep up with the provision of public services. We hence include a control for demographic growth (*Growth population*), measured as the rate of population change between 1990 and 2000, and the initial size of each municipality, as measured by its logged *Population* in 1990. We expect the demographic growth variable to have a negative sign, suggesting that it is more difficult to incorporate households without public services where demographic pressures are high. We have no expectation in the sign of population, given that it might be easier to provide public services in large cities; but it is also possible that there is far more room for improvement in small places. However, demographic features should be related to social complexity and a larger number of cross cutting cleavages (Cox, 1997).

C. DEMOCRACY

Accountability in public service delivery might be influenced by political participation and electoral competition (Hiskey, 2003; Cleary, 2002 and 2004). The main purpose of this chapter is not to evaluate these hypotheses, but to assess the overall effect of policy interventions. We control, however, for variables that reflect democracy and

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[25] It would be possible to use census data to construct an index of ethnic fractionalization going beyond the division between indian and non-indian. However, this would involve a rather laborious process, since the data is not in electronic form (the 2000 census does provide a breakdown of the two main indigenous ethnic groups in electronic form). While the lack of electronic data has not stopped us at other stages of this project, we judged that the ethnic hypothesis is somewhat peripheral to the project, and probably not true for ethnic affiliations, therefore not worth this extra effort. We leave it for other researchers to verify whether this is the case.

political change. The simplest measure of whether a municipality in Mexico can be accountable to citizens is alternation in power. If the PRI had lost office at the municipal level during the decade we analyze, following Przeworski et. al. (2000), we consider that a transition to democracy has actually occurred. We provide two measures of political alternation, one for municipalities that voted for a non-PRI mayor during the Salinas period, during the first half of the decade (*Alternation Before 1994*), and those that voted for some non-PRI mayor at any point in the decade (*Alternation*).[26]

The final independent variable we use is illiteracy rates. This variable can be thought of as a control for the political awareness and citizen demands for public services (Banerjee, 2004). But it might simply reflect overall levels of development. Cleary (2004) argues that although literacy is correlated with development, it can measure some of the participatory elements of democracy. We thus include *Illiteracy*, measured as the percent of population over 15 that could not read and write in the 1990 census, as an indicator of local empowerment.

4. Results and discussion

We now proceed to discuss the main findings. The estimations were all run in STATA with robust standard errors. The first regression reported in table 3.2 is a naïve OLS estimation, in which each of the spending variables is included without taking into account potential endogenity problems. The strong and significant sign of *Discretional*

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[26] Hiskey (2003) and Cleary (2004) test their hypotheses in an interactive way, showing that the effect of spending is mediated by the type of electoral competition. Our main concern is not this interactive effect, so we prefer to keep the simpler formulation of a direct control for the possible effect of democratic accountability on public goods provision.

Social Spending would suggest that Pronasol had positive welfare effects. The size of the effect cannot be interpreted directly, given that the dependent variable is measured as changes in the log-odds ratios, but it suggests that for the same amount of money, Pronasol spending was more effective than the funds channeled by local governments for public works. The *Municipal Public Works Budget* is also positive and significant, but the magnitude of its coefficient is half of that for Pronasol.

Hence one could tentatively conclude that a centralized discretional resource allocation was more effective than the decentralized choices made by municipal governments. The coefficient for the *Formula-Based Social Spending* comes out as significant, but negative! This coefficient would imply that places with larger spending end up with a worse provision of public services. As we discuss below, the coefficient is the result of the specific formulas that underlie the distribution of FISM.

Table 3.2 Determinants of the Change in Local Public Goods Coverage

	(1) OLS	(2) OLS	(3) TSLS
Initial Level of Provision	-0.474	-0.402	-0.403
	(0.014)**	(0.025)**	(0.025)**
Discretional Social Spending	0.108	0.063	0.028
	(0.014)**	(0.015)**	(0.073)
Formula-based Social Spending	-0.292		
	(0.031)**		
Residual Formula		0.269	0.276
		(0.116)*	(0.122)*
Local Public Works Budget	0.058	0.042	0.047
	(0.011)**	(0.013)**	(0.017)**
Religious Fractionalization	-0.141	-0.143	-0.12
	(0.071)*	(0.078)	(0.09)
Indigenous Population	0.739	0.824	0.846
	(0.154)**	(0.198)**	(0.206)**
Alternation Before 1994	0.128	0.12	0.119
	(0.033)**	(0.030)**	(0.030)**
Alternation	-0.038	0.003	-0.002
	(0.021)	(0.021)	(0.023)
Illiteracy	-1.543	-1.822	-1.839
	(0.123)**	(0.169)**	(0.176)**
Population	0.018	0.067	0.052
	(0.015)	(0.015)**	(0.034)
Population Growth	-0.161	-0.039	-0.04
	(0.047)**	(0.051)	(0.053)
Constant	1.396	-2.332	-2.16
	(0.242)**	(0.820)**	(0.943)*
Observations	2381	2365	2364
R-squared	0.39	0.38	0.37

Robust standard errors in parentheses
* significant at 5% level; ** significant at 1% level
TSLS run instrumenting Pronasol expenditure with
Rainfall, Distance to City, Distance to Railroad Track
and Rugged Terrain

The estimation shows that the improvement in public good provision in Mexican municipalities is powerfully influenced by the *Initial Levels of Provision*, suggesting that in the overall process of modernization, there has been convergence of public good provision across municipalities.[27] In what regards the other independent variables, the results are consistent with our expectations.

There is evidence suggesting that indian communities as proxied by monolinguism are better at providing public goods to themselves.[28] Religious fractionalization, instead, shows a negative effect on public good provision. It is likely that religious fractionalization plays an even larger role in polarizing communities if a subsample of the Southern Mexican municipalities is analyzed. As discussed above, this variable is positively correlated with violence, implying that more conflictive places are less effective at providing public goods. Demographic pressures seem to make it harder for municipalities to provide public goods, as reflected in the negative coefficient of the population growth variable.

Democracy has a peculiar effect: a positive impact in municipalities in the around 300 municipalities which made a transition to democracy before 1994, and no impact in the rest. This might be due to two different explanatory variables. The first is the "age" of democracy, leading to governments which are more effective at public good provision because they have more experience with democratic accountability. The other possibility is that types of municipalities that exhibited alternation before 1994 were different from

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[27] The speed of convergence for public service delivery in Mexico is relatively fast: we have estimated that the half-life of unconditional convergence (i.e. the time it takes for half of the initial gap to be eliminated) is of around 11 years for water and 9 years for electricity.

[28] This might be due to the community mechanisms that allow those municipalities to overcome collective action problems and generate a greater trust in their government. Of course those municipalities also happen to be relatively poor and deprived, which might be a factor that simply indicates their convergence speed is faster than that of the rest of the country.

the rest. For example, they might be the places where civil society was more organized to fight authoritarianism. By contrast, municipalities that experienced alternation after 1994 did so in this interpretation due to a tipping phenomenon triggered by the peso crisis and the splits within the PRI (Magaloni, 2006). In this interpretation, pre-1994 alternation municipalities did not only have a longer experience with democracy, but also stronger civil society and citizens embedded in social movements and other forms of civic engagement. The illiteracy coefficient is highly significant and negative, giving support to Cleary (2004) who suggests that places where citizens are more empowered through education they can exercise their voice more effectively, and hence improve their provision of public goods.

Before continuing with the estimation that controls for endogeneity, we must discuss an amendment to the variable measuring formula based allocations. The negative coefficient of the convergence effect gives a hint as to why we obtain the unexpected negative coefficient for this variable. The problem is that the formula of FISM is extremely correlated with the initial levels of public service provision – in fact, it is close to measuring the same variable, and hence its negative sign. Following Mogollón (2002), we can reconstruct the allocation of FDSM/FISM, by running a regression of the distribution of funds on the census indicators that are included in the so called "second", simplified formula.[29] This involves making a linear approximation which is not accurate for the states that distribute funds to their municipalities through the more targeted

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[29] The fact that the match is so large should provide more confidence in the notion that we can treat this spending as exogenous, although of course the formula itself might reflect considerations of benefiting some areas of places more than others.

federal formula, but still reflects the bulk of the allocations. [30] Such estimation is presented in the appendix. The residual of that estimation measures how much the allocations depart from a simplified formula, and hence it provides a proxy for the fraction of the FISM allocation that is generated by a highly targeted formula, using deprivation densities (i.e. a formula that takes into account the distribution of poverty, and gives greater weight to the poorest households), rather than just a linear combination of average census variables.

Going back to table 3.2, the second column provides the same naïve OLS regression, but now using the residual of FDSM/FISM obtained from the appendix regression, instead of the total funds, as the independent variable measuring formula based spending.[31] The effect of *Formula-Based Social Spending* is now positive, significant, and much larger than the one for Pronasol. The *Municipal Public Works Budget* retains its magnitude and significance, and so do most of the other coefficients. Now the general conclusion seems to be that centralized, but highly targeted programs might be the most effective to improve local public goods provision; while both a discretional program and the decentralized decisions of mayors might have similar effects.

But even the modest effect of Pronasol turns out to be an artifact of endogeneity. This is the issue that is addressed in the third column, which instruments Pronasol spending through the use of the four geographic variables, namely distance to the closest city of more than 100,000 inhabitants, distance to a railroad track, rugged terrain and

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[30] The states that use the more targeted formula are Aguascalientes, Coahuila, Chiapas, Guanajuato, Hidalgo, México, Michoacán, Nayarit, Puebla, San Luis Potosí, Sonora and Tamaulipas.
[31] In order to keep all the expenditure independent variables in the same logarithmic metric, we made a log transformation of the form: lresidual=log(1582+residual).

average rainfall. In the instrumental variables estimation the effect of Pronasol is now

very small and not statistically significant. That estimation retains most results for the

other independent variables. The coefficient for religious fragmentation, however, fails to

reach statistical significance at the 95 percent level.[32] There seems to be no effect of

demographic pressures in the failure to provide local public goods once discretional

spending was instrumented.

The analysis hence suggests that the impact of Pronasol was fairly limited. The

program's investments were not geographically targeted to the places with the greatest

needs, as we will see in the coming chapters of the book, but to places where the PRI saw

its electoral future most threatened, predominantly in cities. FISM performs much better

than the decentralized decisions made by mayors in their own budgets. This could be a

consequence of a "crowding out" phenomenon, in which mayors see little reason to

devote sizeable parts of their budget to public works when they know they have the

earmarked FISM funds available.[33]

Improvements in public goods and social conditions are also attributable to

economic and social convergence processes that, while perhaps connected with

government action, are not directly attributable to the specific distribution of social

spending spent across municipalities. The notion of convergence implies that the

municipalities with the worst provision of public goods are the ones that can improve it

more quickly. This "natural" process of convergence in development indicators is fastest

in Mexico for the provision of electricity and drinking water, and practically non-existent

for sewerage. Patterns of investment, which are spread across the country, can contribute

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[32] But it is quite close, in the 85 percent range.

[33] While FIS greatly improved targeting, its decentralized control by mayors might still have an urban bias. Such bias would limit its effectiveness in the improvement of public good provision.

to such convergence. A relatively small level of public investment might have a greater impact in poorer municipalities than in richer ones.[34] To sum up, we find that the highly decentralized and discretional program, Pronasol, was disappointing in its improvement of welfare through public good provision. The transition towards a formula based program, FISM, was welfare enhancing. A full fledged political economy explanation of the limited impact of Pronasol and its transformation into FISM is carried out in the next chapters of the book. It will come as no surprise that clientelism and pork barrel politics played a key role in the design and implementation of Pronasol.

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[34] The opposite effect is also theoretically possible: where there is a relatively good provision of public goods it might not be so expensive to extend the coverage; while in places with almost no public services the fixed costs might be very high.

Appendix to Chapter 3

A. Census vs. Conteo Indicators

We refrain from making comparisons between the census and the population count of 1995 (which we did in Diaz-Cayeros and Magaloni (2003)), because a careful examination of the data suggests that the *Conteos* overestimate the actual improvement in public service provision. The *Conteo de Población* is in fact based on two surveys, the *Ennumeración* that counts all the households in the country, and the *Encuesta* (n=80,000), which has detailed information on families and social services based on 2,500 questionnaires per state. The *Conteo* in this sense is not a full count of public service delivery at the municipal level. For example, the average improvement in potable water provision between 1990 and 1995 is calculated as 9.4 percent; and the increased coverage in electricity is 10 percent. If these figures were correct, there was virtually no change in the provision of those services between 1995 and 2000. Although there was an economic crisis in 1995, such conclusion is not plausible (an inspection of the graphs in the appendix suggests that a rather large number of municipalities would have a worse service provision than five years earlier). A more plausible explanation is that the techniques used to estimate public service provision in the *Conteos* at the municipal level are somewhat biased. We can compare the provisions between 1995 and 2005, assuming that the bias is systematic among *Conteos*. Preliminary analysis suggests that our main results remain unchanged, although in that estimation we are unable to incorporate an assessment of Pronasol spending, given that the program was ended by 1995.

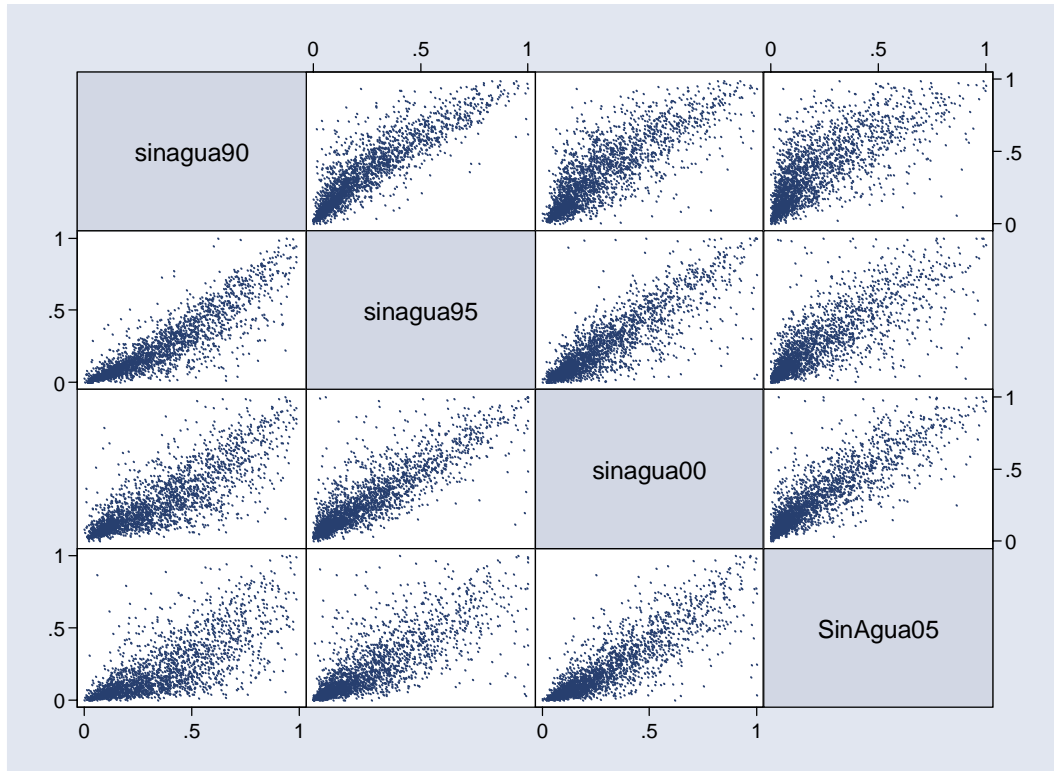Figure A1. Households Without Access to Potable Water 1990-2005

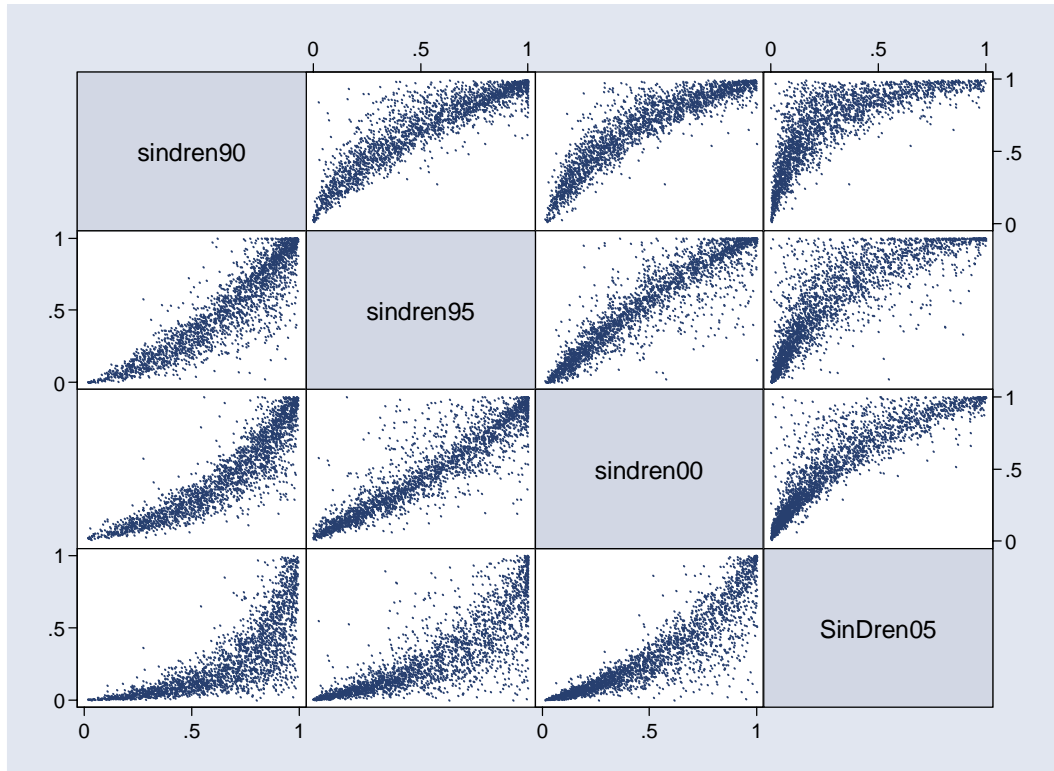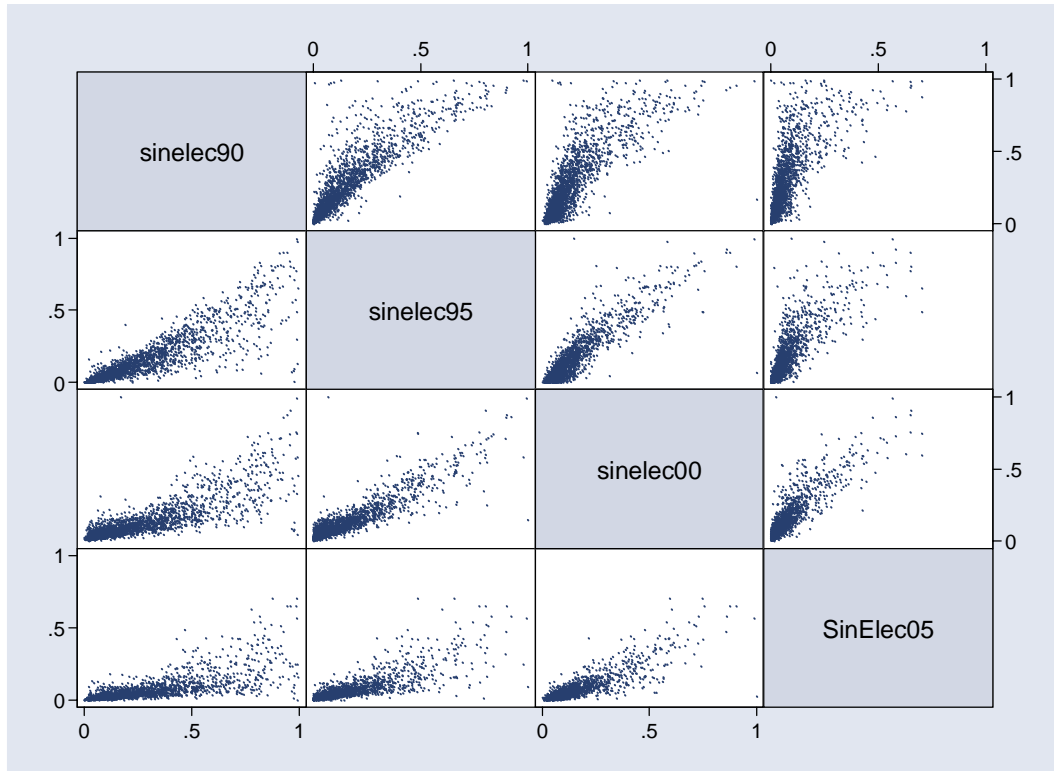Figure A2. Households Without Access to Sewerage 1990-2005

Figure A3. Households Without Access to Electricity 1990-2005

B. Breakdown by programs

Figure A4 shows the per capita allocation of Pronasol funds accumulated in real terms from 1989 to 1994 within the programs to improve sewage, drinking water and electricity. The graph highlights that these per capita allocations differed depending on the municipal level of development (in this case, ranked according to CONAPO's poverty level in 1990). These allocations are compared to the funds for education infrastructure and the "municipal funds" program, appropriations within Pronasol fully controlled by the municipal governments. *Fondos municipales* was initially small, but as pressures for decentralization and a desire for municipal government to have a greater say in the selection of projects mounted, these resources became increasingly more prominent. On average, *fondos municipales* were 20 percent of total Pronasol expenditure. The education figures include only the funds geared toward repairing and constructing schools, not the scholarships going to individuals (i.e. they include only the local public good component of this expenditures). While the specific allocations differed, according to the specific characteristics of the municipalities, overall around 17 percent of the total program (including private goods transfers) went for drinking water and sewage and 13 percent to electricity. Unfortunately, a breakup of sewage and drinking water expenditure separately was not available due to the way Pronasol reported its programs. Elsewhere (Diaz-Cayeros and Magaloni, 2003) we estimated the effect of each of the Pronasol expenditures separately: water and sewerage; electricity; municipal funds; and the remainder of the funds. The instrumental variable approach does not perform well with individual programs. We have no good instruments to explain the breakdown of allocations by program, while the instruments work quite well for the overall spending. Since it is quite likely that the developmental impact of the program did not just depend on the expenditure of specific projects in isolation, but on the overall package of investment in a given municipality, we prefer to make the analysis with total public goods funds.

Figure A4

Average Allocations by Programs (According to Poverty Level)
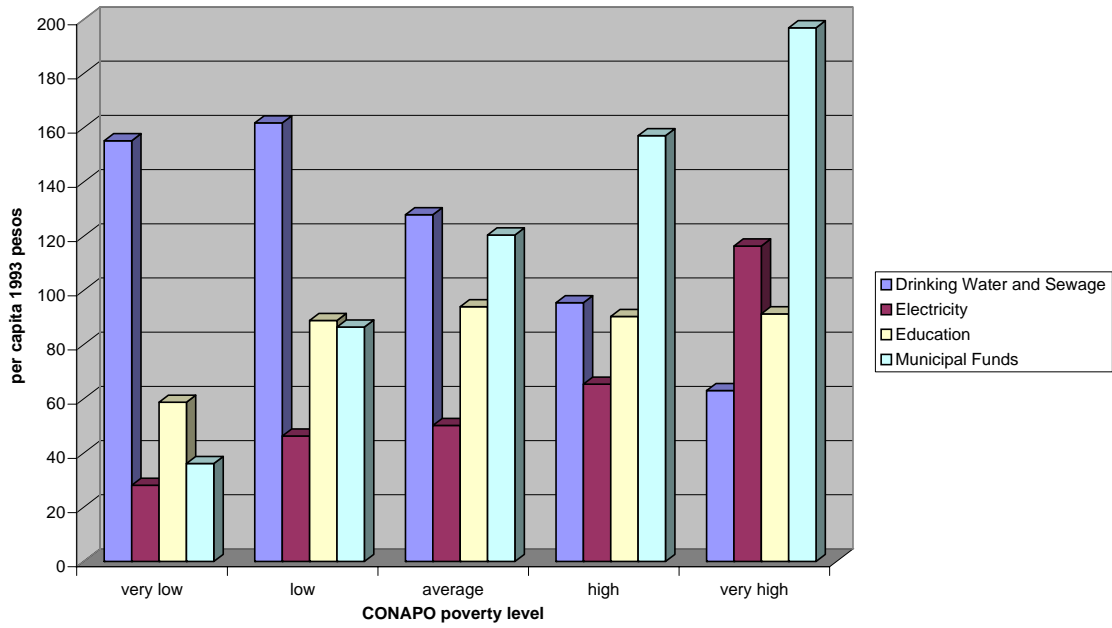
C. Reverse Engineering the FDSM/FISM formula.

Table A4 shows the results of regressing INEGI Conteo indicators of the percentage households without electricity and sewerage, the illiteracy rate, a poverty head count and the inverse of the population, on the per capita FDSM/FISM funds (not logged). The inverse of the population is included due to the transitional rule that gave states for several years a fixed lump sum share of FISM, regardless of their size. That coefficient measures the value of being a municipality, since it is the amount of funds each municipality gets in FISM regardless of its size or deprivation indicators. The results show higher coefficients for illiteracy and electricity than for poverty and sewerage.[35]

Table 3.3 Determinants of FDSM/FISM allocations (1996-2000)

	Population Weighted
No electricity 1995	445.33
	(3351.08)**
No sewerage 1995	224.731
	(3226.19)**
Illiteracy 1995	455.803
	(2348.50)**
Poverty 1995	185.062
	(1680.67)**
1/Population	373579.8
	(2687.78)**
Constant	18.263
	(941.51)**
Observations	8.06E+07
R-squared	0.81

Absolute value of t-statistics in parentheses
* significant at 5% level; ** significant at 1% level

The parenthesis in table 3.3 reports the t statistics, which are huge, given that we are "reverse engineering" how the formulas end up producing the allocations.

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[35] This is perhaps surprising, given that the federal formula gives almost half of the weight to poverty (.4616), followed by the characteristics in the dwellings (0.2386, which are not included in the simplified formula), next illiteracy (0.125), electricity (0.114), and sewerage last (0.0608). The simplified formula gives equal weight to all four deprivation factors included in the estimation.

C. Total Funds including private good provision
Table A1. Effects With Total Pronasol Expenditure

	(1) OLS	(2) OLS	(3) TSLS
Logindex90	-0.469	-0.402	-0.395
	(0.014)**	(0.025)**	(0.013)**
Pronasol	0.09	0.024	0.115
	(0.017)**	(0.016)	(0.08)
FISM	-0.282		
	(0.031)**		
Residual FIS		0.278	0.255
		(0.123)*	(0.045)**
Pub Works	0.069	0.049	0.041
	(0.011)**	(0.013)**	(0.014)**
Monolingual	0.774	0.848	0.815
	(0.155)**	(0.199)**	(0.165)**
Religious.Fractionalization	-0.129	-0.116	-0.171
	(0.071)	(0.077)	(0.087)*
Population	0.018	0.05	0.094
	(0.015)	(0.015)**	(0.038)*
Pop. Growth	0.000	-0.037	0.000
	(0.000)**	(0.052)	(0.000)*
Alternation 1994	0.124	0.119	0.117
	(0.033)**	(0.030)**	(0.033)**
Alternation 2000	-0.032	-0.003	0.014
	(0.021)	(0.021)	(0.025)
Illiteracy	-1.594	-1.84	-1.802
	(0.124)**	(0.170)**	(0.128)**
Constant	1.236	-2.175	-2.786
	(0.242)**	(0.865)*	(0.616)**
Observations	2381	2365	2364
R-squared	0.39	0.37	0.36

Standard errors in parentheses
* significant at 5% level; ** significant at 1% level