Strategies of Vote Buying: Democracy, Clientelism and Poverty Relief in Mexico

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Alberto Diaz-Cayeros albertod@ucsd.edu
Federico Estévez festevez@itam.mx
Beatriz Magaloni magaloni@stanford.edu
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# Table of Contents

Introduction 8

Chapter 1  
Aiding the Poor 39

Chapter 2  
The Geography of Poverty 73

Chapter 3  
Strategies of Vote Buying 98

Chapter 4  
Clientelism and the Political Manipulation of Poverty Relief 124

Chapter 5  
From Handouts to Entitlements 162

Chapter 6  
The Electoral Pay-off of Anti-Poverty Programs 193

Chapter 7  
Improving Living Conditions: Program Effects on Public Good Provision 228

Chapter 8  
Saving Lives: Social Programs and Infant Mortality Rates 265

Conclusion 287

Tables and Figures 308

Bibliography 354
Figures and Tables

Figure 1.1. Types of Anti-Poverty Programs
Table 1.1. Evolution of Poverty in Mexico
Figure 1.1. The Map of Policy Instruments
Table 1.2. Programs in the Programa Nacional de Solidaridad (Pronasol).
Table 1.3. Classification of Pronasol Expenditure by Type of Good
Figure 1.2. Beneficiary Families of Progresa / Oportunidades
Figure 1.3. Federal resource Transfers 1960-2006
Figure 2.1. Poverty and Social Program Spending
Figure 2.2. Percentage population living under nutritional poverty line
Table 2.1. Geographic Variables
Table 2.2. Geographic Correlates of Poverty and Development
Figure 2.3. The geography of poverty relief transfers in Mexico (1989-2005)
Figure 2.4. Electoral Geography
Figure 2.5. Municipal democracy as indicated by years since party alternation
Figure 4.1. Percentage of PRI core supporters (municipal elections 1970-1988)
Figure 4.2. Vote Decline and Core Support for the PRI
Figure 4.3. Empirical predictions of Core Size and Erosion
Figure 4.4. Clientelism and Development
Table 4.1. Centralist Logic of Pronasol: The Core Voter
Figure 4.5. Simulated Effects of Municipal Electoral History on Private Goods
Figure 4.6. Mean Core Size and Trends by Level of Competition
Table 4.2. Mean Municipal Party System Descriptives
Table 4.3. Peripheral Logic of Pronasol: Facing Elections
Figure 4.7. Clientelism and Competition
Figure 4.8. Clientelism and Effective Competition
Table 5.1. Timeline of Progresa and FDSM/FISM
Table 5.2. Formulas for revenue sharing in selected states.
Figure 5.1. Partisan Identity of Municipal Government and Poverty Alleviation Funds
Table 5.2. Determinants of Decentralized Allocations
Figure 6.1. Expansion of Coverage of Oportunidades 2000-2005
Table 6.1. IV Regression of PRI vote swings, 1988-1994
Table 6.2. IV Regression of vote swings, 1994-2000 and 2000-2006
Figure 6.2. Simulated Electoral Returns of Various Programs
Table 6.3. Percentage voting for major candidates and beneficiaries of programs
Table 6.4. First-Stage Probits for Propensity Score Estimation
Figures 6.3. Pre-Matched and Matched Propensity Distributions
Table 6.5. Effects of Progresa and Oportunidades on Vote Choice in 2000 and 2006
Figure 7.1. Change in Public Good Coverage (1990-2000)
Table 7.1. Improvements in Public Goods Coverage
Table 7.2. Effects of Alternative Measures of Electoral Democracy
Table 7.3. IV Quantile Regressions of Improvements in Public Goods Coverage, 1990-2000
Table 7.4. IV Quantile Regression: Improvements in Public Goods Coverage, 1990-2000
Figure 8.1. Geography of Infant Mortality Rate in 2000
Table 8.1. IV Regressions of Determinants of Changes in IMR in Mexico (1990-2000)
Table 8.2. IV Regressions of Determinants of Changes in IMR in Mexico (1990-2000)
Table 8.3. IV Quantile regression of Infant Mortality Change, 1990-2000
List of Acronyms

CCT – Conditional Cash Transfer
CETES – Certificados de la Tesorería
CONAPO – Consejo Nacional de Población
CONEVAL – Consejo Nacional de Evaluación de la Política de Desarrollo Social
DHS – Demographic and Health Surveys
ELF – ethno-linguistic fractionalization
ENADID – Encuesta Nacional de Dinámica Demográfica
FAISM – Fondo de Aportaciones para la Infraestructura Social Municipal
FDN – Frente Democrático Nacional
FDSM – Fondo de Desarrollo Social Municipal
FISM – Fondo de Infraestructura Social Municipal
Fortamun – Fondo para el Fortalecimiento de los Municipios y el Distrito Federal
HDI – Human Development Index
IFE – Instituto Federal Electoral
IMR – Infant Mortality Rate
IMSS – Instituto Mexicano del Seguro Social
INEGI – Instituto Nacional de Estadística y Geografía
INFONAVIT – Instituto Mexicano del Fondo de Vivienda para los Trabajadores
ISSSTE – Instituto de Seguridad y Servicio Social de los Trabajadores del Estado
IV – Instrumental Variable
LCF – Ley de Coordinación Fiscal
MUAP – Modifiable Unit Areal Problem
NAFTA – North American Free Trade Agreement
Oportunidades – Programa de Desarrollo Humano Oportunidades
PAN – Partido Acción Nacional
PASSPA – Programa de Atención de Servicios de Salud para la Población Abierta
PRI – Partido Revolucionario Institucional
Procampo – Programa de Apoyos Directos al Campo
Progresa – Programa de Educación, Salud y Alimentación
Pronasol – Programa Nacional de Solidaridad
SEDESOL – Secretaría de Desarrollo Social
SSA – Secretaría de Salud
UNDP – United Nations Development Program (in Spanish PNUD)
UNICEF – United Nations Fund for Children
WHO – World Health Organization
Introduction

Poverty relief requires active government involvement in the provision of public goods such as health, education, roads, water, and sanitation services, among others. Too often, these services fail the poor because of misaligned political incentives and poor governance, which is manifested in corruption, state abuse, rent seeking, and dysfunctional or weak institutions. Although there tends to be a consensus on the importance of good governance for poverty alleviation, not enough is known about the conditions under which it comes about and how it can be replicated.

This book is about the political economy of government transfers designated for poverty relief. The design and implementation of effective government programs aimed at improving the wellbeing of the poor have proved to be an elusive goal for policy makers the world over. Too often politicians take opportunistic advantage of poverty-alleviation funds, redirecting money, jobs and other benefits toward supporters and away from opponents, and diverting government resources for personal gain. Complaints of political manipulation, corruption, vote buying and “clientelism” typically plague the delivery of social benefits meant to help the poor. Ill designed social programs, or poorly implemented ones, are pervasive around the world because there are powerful vested interests of bureaucrats, politicians, and even voters in the middle classes, who wish those programs to remain defective.

Applying scientific knowledge and technical expertise is a fundamental first step to the design of successful poverty-alleviation policies. However, often the real challenge of poverty relief is not to figure out technical solutions – scientific knowledge exists, for example, to prevent infectious disease with simple interventions such as vaccines or
antibiotics, or to improve the safety of drinking water with chlorination. The problem is to sort out the political process such that incentives to aid the poor arise among politicians and bureaucrats, and corruption is effectively controlled by citizens.

A growing body of research in political science emphasizes that democratic political institutions are better at improving wellbeing than autocratic ones (Przeworski et al., 2000; Navia and Zweifel, 2001; Navia 2003; Stasavage, 2005; Besley and Kudamatsu, 2006; McGuire 2010; Baum and Lake, 2003; Gerring and Thacker 2008). Although empirical findings in this literature have been controversial (Ross 2006), there seems to be consensus that in democracies politicians tend to be more responsive to the needs of the poor. The basic logic behind this observation is one of electoral competition (Hotelling 1929; Duverger 1954; Downs 1957; Shepsle 1979). Democracies produce strong incentives for politicians to choose policies that reflect what the median voter of the population wants.

However, in developing countries poverty relief is often distorted by long-entrenched patron-client relations, or “clientelism,” in party politics. In a perverse twist, clientelism occurs when poor voters willingly support a corrupt system that encourages abuse among politicians and perpetuates poverty. Why clientelism is such a prevalent from of electoral exchange in developing societies, how it distorts policies aimed at aiding the poor, and when it can be superseded by more democratic and accountable forms of electoral exchange are some of the central questions that this book addresses. By studying the transformation of poverty relief in Mexico during the last two decades, we are also able to identify a set of political and institutional incentives that were necessary to tie politicians’ hands and limit their capacity to distort poverty relief programs for
electoral and personal gain. Although the econometric analyses and qualitative data come from Mexico, the methodology and lessons drawn from our work are broadly applicable to other developing countries whose social programs are hobbled by corruption. Our hope is that a detailed study of one country can provide lessons to reformers and development workers elsewhere.

We place electoral politics at the core of the study of poverty relief policies, which are here conceptualized as “strategies of vote buying.” The theoretical approach and empirical analyses systematically study three key facets of poverty relief strategies. First, our theory asks about distributive politics or whether political parties would possess incentives to ever target government transfers to the poor versus allocating them to benefit their “core” supporters. Second, we focus on the menu of strategies a political party may employ in its efforts to attract votes: when a party will choose to distribute divisible or particularistic benefits to the individuals who support it, or alternatively, if it will distribute public goods. Third, we provide a systematic measure of the electoral payoffs of the various strategies of vote buying and how poor voters respond to anti-poverty programs. We demonstrate that what we call “clientelistic transfers” (particularistic benefits that parties target in a discretionary way) not only produce the highest electoral returns, but also allow politicians to appropriate considerable rents from the public coffers. Unsurprisingly, clientelism is a prevalent form of political linkage in the developing world.

Finally, our study seeks to identify the welfare effects that result from various vote-buying strategies, including the practice of clientelism. Economists agree that clientelism slows down economic growth (Robinson and Verdier, 2002; Baland and
Robinson, 2007; Keefer, 2003), while political scientists confirm that clientelism corrupts democracy and electoral accountability (Stokes, 2005; Kitschelt and Wilkinson, 2007; Kitschelt et al. 2011). Yet the negative effects of clientelism on the poor’s welfare have not been systematically and comprehensively measured. Our approach in this book is to lay bare the political and strategic logic of poverty-reduction programs and study their effects on the poor’s wellbeing.

I.1. Trapped in poverty: the various reactions of government

Francisca, a Mayan woman, lived in a squatter village on a coffee plantation several hours’ walk from the nearest town. The village lacked potable water, a sewage system and electricity. Francisca walked more than one hour every day from her straw and adobe hut to the nearest well to collect water and to wash her family’s clothes. Only seven of Francisca’s 13 survived past their fifth birthdays. Her youngest child suffered a severe bout of dehydration at seven months old, and died before Francisca was able to reach the nearest clinic. All of Francisca’s daughters died, leaving her with seven sons and one adopted three-year-old girl who had been previously orphaned. The story of Francisca serves as a dramatic illustration of what it means to not only be trapped in poverty, but also the impact that well-targeted government action could potentially have in improving the lives of the poor.

Francisca’s story is similar to those throughout the developing world, where the rural poor have limited or no access to a safety net and where their children suffer or die from mostly preventable diseases. The leader of the 1995 Zapatista uprising in the
southern state of Chiapas, Mexico, Subcomandante Marcos, recognized the tragedy of this poverty trap:

> Or shall we ask pardon from the dead, our dead, who died “natural” deaths of “natural causes” like measles, whooping cough, breakbone fever, cholera, typhus, mononucleosis, tetanus, pneumonia, malaria an other lovely gastrointestinal and pulmonary diseases? Our dead, so very dead, so democratically dead from sorrow because no one did anything, because the dead, our dead, went just like that, with no one keeping count, with no one saying, “ENOUGH!” (Marcos, 2001. p.30).

In fact, the Zapatista rebellion erupted at the end of President Carlos Salinas’ presidential term (1988-1994), an administration that promised to put an end to poverty. Salinas initiated a major anti-poverty reduction campaign within the Programa Nacional de Solidaridad (Pronasol), which was in part a demand-driven program for poverty relief. Receiving a great deal of attention from the international community, the program relied on government transfers and programs based on proposals from community organizations and municipal governments. But, as the Zapatista rebellion attests, poverty remained unabated by the end of Salinas’ term despite an anti-poverty policy that constituted 1.18 percent of GDP, on average, per year. As we will show in this book, the program’s goal of eliminating poverty was distorted by diversion of its resources toward sustaining the electoral hegemony of the ruling Partido Revolucionario Institucional (PRI), rather than for the actual alleviation of poverty.

Much has changed in Mexico since 1995. In 1997 Mexico created one of the largest Conditional Cash Transfer (CCT) programs in the world with the Programa de Educación, Salud y Alimentación (Progresa), now widely acclaimed as one of the most successful poverty-alleviation strategies worldwide. An education, health and nutrition program, Progresa offered money to mothers within poor families in exchange for
attending basic courses on preventive health care and hygiene, making regular health clinic visits for their children and keeping children in school. Beneficiaries would become ineligible for the program only by failing to meet these requirements.

To insulate Progresa from political influences, beneficiaries were selected on the basis of established measurable conditions of social deprivation and poverty. Initially implemented mainly in rural areas, the creation of Progresa represented a turning point in the design of social policy (Levy, 2006; Levy and Rodríguez, 2004). After the Partido Acción Nacional (PAN) defeated the hegemonic PRI in 2000, the new administration, under President Vicente Fox, expanded the program to urban and semi-urban areas using similar criteria to select beneficiary families. Renamed Programa de Desarrollo Humano Oportunidades, the program eventually evolved into a demand-driven structure where applicants for benefits were self-selected, instead of the government identifying eligible recipients.

The scope of coverage for Progresa/Oportunidades is vast. At the end of 1999 Progresa covered approximately 2.6 million families or about 40 percent of all rural families. By 2005 more than half of Mexican families in extreme poverty, or 5.0 million, received benefits related to Oportunidades, of which 3.4 million were rural, 0.8 million were semi-urban and 0.67 million were urban.

Entitlements for the poor came about just as Progresa/Oportunidades survived the transition from PRI to PAN rule in 2000. Before Progresa/Oportunidades, most government transfers and services for the poor were the result of one-on-one interactions with local officials and party brokers that could be taken away at any time; typically, each new president cancelled his predecessor’s programs and launched his own. Owing largely
to the existence of *Progresa/Oportunidades*, the PAN, a center-right party with a weak base of support among the poor, was able to expand its electoral support to win the 2006 elections (Magaloni, et al, 2008). Standing in stark contrast to the past, where social programs in Mexico traditionally failed to outlive a single presidential term, *Oportunidades* gave poor Mexican women the confidence that government cash transfers would not be taken away if they voted for the opposing party.

The second most important transformation occurred in the late 1990s, following the Zapatista rebellion. During the Zedillo administration (1994-2000), social infrastructure funding underwent reform with the creation of the FISM (*Fondo de Aportaciónes para la Infraestructura Social Municipal*). FISM implemented a major reformulation of federal transfers for public works and social infrastructure projects that were then distributed according to a poverty-based formula to the more than 2,400 municipalities in Mexico. With the introduction of FISM, the PRI gave up a great deal of discretion to opportunistically manipulate social infrastructure programs, allowing municipal presidents to play an increasingly important role in the provision and distribution of local public goods such as roads, markets, public lighting, sewerage, street pavement, granaries and slaughter houses. Prior to the introduction of FISM, the president, as leader of the PRI, possessed broad discretion over the distribution of social infrastructure funds among subnational governments. Public expenditures and social programs were used with the overarching goal of sustaining the PRI’s electoral monopoly and benefitting the party’s cronies. The president targeted these funds to municipalities controlled by the PRI and punished municipalities controlled by the opposition (Magaloni, 2006; Diaz-Cayeros et al, 2001).
Prior to FISM, the government ostensibly spent considerable amounts of money on social infrastructure projects — road construction, street paving, electrification, expanded potable water systems, construction of new health clinics and schools. But there was substantial leakage. For example, in a personal interview with a high-ranking public official in charge of federal finance at the time, we were told that when the new administration tried to audit Pronasol, many of the public infrastructure projects that had been reported in the books were either “abandoned without completion or did not even exist.”

Fifteen years ago, poor communities all over Mexico had very limited or no access at all to public services. With a toothless smile, Francisca, a 40-year old mother, tells us that things have “much improved during the last years” and that her “children no longer die and seldom get sick.” Although clearly still impoverished, homes in her community now have access to water from a communal faucet (although available only a few hours per day, according to Francisca), proper sanitation, paved streets and electricity. New roads also make the local health clinic more easily accessible. When her youngest child was recently sick with diarrhea, they were able to reach the clinic before he became dehydrated. Francisca now receives regular cash transfers from Oportunidades. With the cash she is able to buy food, soap and shoes for her previously barefooted children, and if there is some extra, school supplies. This is the only cash Francisca has ever administered on her own, and she is delighted she can spend it on the children.¹

¹ In 2009, we asked beneficiaries of Oportunidades in 48 poor rural communities in Oaxaca how they evaluated the program: if they felt that they could lose their benefits depending on their partisan loyalties and electoral choices, and if they worried about the coming presidential elections. Our interviewees agreed that their benefits were secure. They told us that the money they receive from Oportunidades would
I.2. Institutional reform and the welfare of the poor

The profound transformation of social-assistance programs in Mexico in the 1990s provides a unique opportunity to study the political economy of poverty relief in developing societies. Mexico was infamous for the extreme forms of political manipulation of public funds and poverty-relief programs under the formerly hegemonic PRI ruling party. A study of Pronasol’s vast operations and programs allows us to systematically understand what political scientists refer to as clientelism, a form of political exchange between politicians and the poor that is very prevalent in the developing world. According to Kitschelt and Wilkinson (2006) a clientelistic exchange relation is characterized by:

[First], a contingent direct exchange that concerns goods from which non-participants in the exchange can be excluded. Second, such exchanges become viable from the perspective of politicians, if voter constituencies respond in predictable fashion to clientelistic inducements without excessive opportunism and free riding. Third, short of constituencies’ spontaneous and voluntary compliance with the clientelistic deal, politicians can invest in organizational structures to monitor and enforce clientelistic exchanges (p. 76).

Changing the rules for the allocation of local public goods and social infrastructure projects produced a major impact on poverty reduction. These institutional changes to the social-assistance regime resulted from elite bargaining between the president, his party and the opposition prior to the PRI losing power in the watershed
elections of 2000. Our approach highlights three elements in the transformation of social policies during this period. First, social programs became more progressive and better targeted to the poor. Since the early 1940s, Mexico began to put in place social insurance schemes tied to participation in the formal labor market. A common feature in Latin America and the Caribbean, the restriction of social insurance to formal sector workers led to the characterization of the region’s social protection systems as “truncated welfare states” because the majority of the population, especially the poor, did not receive these benefits (Ferranti et al., 2004; Fiszbein, 2004; Rawlings et al., 2004). Recent decades have witnessed the emergence of parallel social assistance schemes, including community-driven social investment funds such as Pronasol and, more recently conditional cash transfers, aimed at reaching the poor.²

Second, the new social programs also reduced government discretion in the administration of the funds. A central aspect of our inquiry is the possibility that substantial parts of anti-poverty public spending become leakages that do not generate welfare. This includes the possibility of mismanagement of public funds, as well as outright theft (corruption or rent seeking). The new social programs have reduced, although by no means eliminated, leakages. Professional bureaucracies were set up to administer the programs, with a new emphasis on transparency. The new focus on poverty formulas to govern the distribution of funds along with technical measures to identify beneficiaries according to need has also limited politicians’ inclination to respond to electoral and partisan imperatives rather than to the goal of poverty alleviation in crafting anti-poverty policies.

Third, subnational governments became increasingly involved in the provision of local public works, while funds for these projects came from redistributive federal transfers. Under PRI rule Mexico had a long history of centralized control over public spending. Decisions about social infrastructure projects were decided and funded in the nation's capital. This political equilibrium changed in the 1990s, as the opposition gained control of more subnational governments and the PRI lost majority control of the Chamber of Deputies in 1997, along with exclusive legislative control over the federal budget. A new fiscal federal pact was established in which decision-making power over the investment of social infrastructure projects was transferred to the states and the municipalities. Public works projects are now funded with augmented federal resources that are distributed according to a poverty formula.

Better targeting, less government discretion and redistributive decentralization have together had profound effects on the poor’s welfare. The clientelistic linkage between politicians and the poor that was prevalent during the authoritarian era has shifted to a new entitlement-based social assistance regime. By systematically comparing the effects of clientelistic versus programmatic social assistance policies (Kitschelt, 2000), we provide direct and comparable measures of the welfare effects produced by different forms of political linkage.

I.3. Clientelism and strategies of vote buying

In democratic settings social programs that help the poor do not emerge from benevolent rulers, but from competitive pressures that lead politicians to choose to design
social programs targeted at the poor. The temptation of clientelism, corruption and political manipulation of social programs is tempered by incentives provided by the electoral returns of well-designed social policies that truly reach the poor. While we believe that political actors and governments are motivated by selfish calculations, we view the political process with relative optimism. Poverty can be reduced by public policies designed and implemented through the democratic process, as a consequence of political processes where vote-seeking politicians pursue electoral support and use public budgets to attain that goal. Politics is not an impediment for good policies designed optimally by social engineers, but the process through which a concern for improving the life of those less fortunate can arise.

For analytical purposes, this book provides a theory of vote buying that distinguishes the logic of investing in private, excludable transfers from public, non-excludable transfers. Our approach highlights the critical importance of institutional design or government discretion. Formal government discretion is defined as flexibility to decide who benefits, when the transfers are given and when they are withdrawn. Discretionary programs are what Dixit and Londregan (1996) refer to as “tactical redistribution,” which should be distinguished from “programmatic redistribution” or welfare transfers that are embedded in laws written in abstract and general terms and administered by autonomous bureaucracies. Programs with little formal government discretion offer benefits that are assigned according to objective or programmatic eligibility criteria — for instance, people over 65, women with children, workers, the unemployed — and cannot be withdrawn unless a beneficiary fails to meet the defined criteria.
A second critical dimension of social programs that we emphasize is whether social programs provide private, excludable transfers to the poor, or public works that impact collective well-being. The political implications of excludability are that political parties and government officials can more effectively screen voters for criteria such as supporters versus opponents, rich versus poor, or along ethnic, religious or linguistic divides. Public goods, in contrast, are by definition indivisible and give political parties limited ways to target supporters and punish opponents. Some public goods, of course, exhibit elements of excludability, for example, on a territorial basis, which permits imperfect targeting of benefits.

The second fundamental political difference between these two instruments of electoral investment is their reversibility. Discretionary private transfers can be stopped at any point in time, if the political patron so desires, while public goods, once realized, cannot be easily withdrawn. Infrastructure projects such as roads and highways, bridges and dams, power plants and sewer systems, are fixed investments, meaning that they are more vulnerable to voter opportunism — that is, a party cannot withdraw the benefits should the benefited voter support its rival at the polls.

Figure I.1 classifies the social programs that will be analyzed in subsequent chapters according to the two dimensions highlighted above. The upper-left quadrant are discretionary programs targeted to individuals, or clientelistic transfers. The upper-right quadrant are non-discretionary excludable transfers, or entitlements, that are targeted to individuals based on formal and objective criteria such as age, poverty, gender and need. These constitute entitlements as long as the legal criteria for selecting beneficiaries is effectively enforced, and to the extent that politicians cannot deselect beneficiaries for
supporting a different political party. Entitlements require an independent or de-politicized bureaucratic agency to be effective.

In the lower-left quadrant are discretionary social transfers spent on infrastructure, electrification, street pavement, road construction, and so forth, which constitute what is often referred to in the literature as “pork.” Public goods programs can be discretionary, or, as in the lower-right quadrant, the allocation of funds can be designed through distribution formulas.

[Figure I.1 about here]

The following chapters will ask about why and when politicians choose one form of electoral investment strategy as opposed to the other, then we estimate their electoral pay-offs and identify their effects on the welfare of the poor. The motivation for moving from the discretionary to the non-discretionary electoral investments, we argue, must be found in the broader legislative process, inter-party bargaining and the establishment of bureaucratic insulation, which is necessary to reduce discretion and the manipulation of social programs for electoral and partisan purposes. If given the choice, politicians will prefer to stick to a discretionary social assistance regime, which will inevitably lead to the opportunistic use of social transfers for electoral and partisan advantage. But the political process itself can also lead to the creation of a non-discretionary social assistance regime.

To understand the logic of discretionary distributive politics, our theory builds on the core-versus-swing models in political science (Cox and McCubbins, 1986; Lindbeck
and Weibull, 1986; Dixit and Londregan, 1996; Stokes, 2005; Nichter, 2008; Zarazaga, 2011). We focus on the logic of electoral investment: Who gets what and when. But our approach departs from this literature in two fundamental ways. First, our model of vote buying takes party loyalty as conditional, or endogenous, rather than fixed. Second, rather than portraying investment in core-versus-swing as an all-or-nothing strategy, our approach stresses that machines have a portfolio of electoral investment strategies that allows them to target both core and swing voters with private and collective goods (Magaloni et al., 2007).

Prior core-versus-swing models of distributive politics rest on the assumption that a core voter’s ideological proximity to a party remains unaffected by the retrospective tally of the party’s past political behavior (Dixit and Londregan, 1996 Stokes, 2005). Given this assumption, the core voter is captive. Even when cut off from the stream of patronage benefits, the core voter is assumed to continue to vote for her party “no matter what” because her ideological proximity is understood to remain unaffected. This assumption is highly problematic, particularly for modeling the behavior of voters in the developing world. If the core voter is routinely ignored or disdained by her party, while other voter groups receive the party’s discretionary material benefits, she will begin to distrust the party, including its programmatic appeals, and will therefore become open to switching support to an alternative party.

Partisan loyalties cannot be modeled independently from welfare transfers. This is particularly the case in vast areas of the developing world where programmatic appeals lack credibility and consequently parties can sway voters through ideological appeals or

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3 There are a number of important contributions that empirically deal with the core-swing debate: Dahlberg and Johansson, 2002; Calvo and Murillo, 2004; Stokes, 2005, Brusco et al., 2004; Magaloni, 2006; Magaloni et al, 2007, among others.
policy issues (Keefer and Vlaicu, 2006). Poverty further reduces the saliency of ideology because the poor are more responsive to material incentives (Dixit and Londregan, 1996; Magaloni, 2006). In our approach, core voters are not likely to remain loyal “no matter what,” as the literature conventionally assumes. If swing voters are constantly targeted with benefits, core voters will no longer tolerate it, and will soon become open to mobilization by other political parties, behaving much like swing voters in future elections.

A key implication of our theory of “conditional party loyalty” is that politicians will funnel jobs, patronage and other benefits to their core voters in order to “hold what they’ve got” and “take care of their own.” Swing voter models will find this behavior irrational (Dixit and Londregan, 1996; Stokes, 2005). Our prediction parallels that of Cox and McCubbins (1986), but contrarily our model suggests that parties invest in core voters due to risk aversion and because voters’ loyalties are assumed to be conditional and constructed upon material inducements.

Given that voters are assumed to be highly responsive to material incentives, why do parties not simply buy votes on the spot? The dilemma parties face is that vote buying is highly vulnerable to voter opportunism problems; that is, a voter can take the transfer and still vote the other way (Stokes, 2005). This dilemma is clearly exemplified in PAN’s campaign slogan “agarra lo que te dan y vota por el PAN,” which roughly translates as “take the dough and vote for PAN” with PAN serving as a tongue-and-cheek reference to both the political party and the Spanish word for bread. We claim that a predominant way in which political parties in the developing world strive to mitigate the risks of the voter opportunism that vote buying entails is by paying off voters to become and to remain
Buying off voter loyalty requires establishing an ongoing relationship, which is often mediated through a partisan network of brokers and activists (Calvo and Murillo, 2011), in which parties give material incentives to a select group only. Voters become loyal to the party not only because they receive material benefits today, but because they expect to continue to receive benefits in the future. Partisan loyalty so constructed is the ticket for voters to access the party’s spoils system and is essentially conditional: if the machine fails to dispense favors, core voters will soon cease to feel obliged to reciprocate and will become open to political mobilization by other patrons. Although partisan loyalties might involve a moral sense of obligation (Green and Lawson, 2011; Finan, 2010), in our approach these loyalties are essentially conditional.

Most of the distributive politics literature focuses on vote buying on the spot — the distribution of transfers during an election in exchange of votes (Dixit and Londregan, 1996; Stokes, 2005) or turnout (Nichter, 2008; Cox, 2006). Our approach differs from these models by looking at voters and parties in their ongoing relationships. We ask how future-oriented political parties should allocate resources when they are unable to credibly commit to programmatic redistribution and instead need to buy off votes. The central empirical proposition emerging from our theoretical approach is that clientelistic parties will mostly strive to invest in their core base, here defined as voters who regularly support the party, are linked to the party’s network of brokers and get access to the system of spoils.

But what exactly are the benefits of investing in voters’ loyalties versus votes? Political parties can take advantage of voter loyalty to achieve multiple objectives,
including enticing voters to participate in acts of violence (Auyero, 2007; Wilkinson, 2004). Here we focus on the electoral benefits of voter loyalty. Our approach highlights two such uses. First and foremost, partisan loyalties tie party and voters together in an ongoing relationship, mitigating commitment problems on the part of voters. For example, loyal voters have no reason to support a different patron at the ballot box after receiving a transfer or favor provided they expect to be tied to the party into the future. A second reason to buy voter loyalty, rather than votes on the spot, is that it is significantly less expensive to entice a voter to support you when he or she is personally tied to you, trusts you and expects to interact with you into the future. Party brokers often know their core supporters by name, where they live, how many children they have, where they attend school and what their needs and desires are. This informational advantage allows brokers to be aware of voters’ “reservation value,” or opportunity cost, and accordingly pay core voters the minimal amount necessary (Zarazaga, 2011).

Partisan loyalties provide value for both the voter and the political party. For voters, partisan loyalties serve as the ticket to the party’s system of current and future spoils. For parties, investing in a base of loyal voters rather than buying votes on the spot with each election mitigates the problem of voter opportunism and reduces the price of vote buying. By buying off core voter loyalty, political parties will be able to win elections more efficiently, distributing fewer resources to the voters than if they simply bought votes on the spot. Our approach uncovers a clear connection between clientelism, the core voter strategy and corruption: party cadres and their brokers, we argue, will be able to appropriate more rents for personal gain by building a loyal base of support through the targeting of particularistic transfers.
Although clientelism involves a contractual ongoing relationship based on mutual obligations, it is fundamentally asymmetrical (Scott, 1979). The voter receives benefits from the political machine, yet becomes its captive. Because the machine inevitably punishes defection by withdrawing benefits to those who join the opposition, the voter remains loyal both because of the benefits and spoils expected today and into the future and because of fear of punishment. In societies that use clientelism as a predominant form of electoral exchange, it is assumed that only loyal voters receive benefits, and this “punishment regime” plays a key role in sustaining the system (Diaz-Cayeros, et al., 2001; Magaloni, 2006). In our view, this essentially distinguishes clientelism from more democratic forms of electoral exchange. If voters want to receive benefits, they need to be with the machine or otherwise be punished. The system encourages abuse on the part of the elites despite the fact that voters give their loyalties voluntarily and that the machine delivers benefits and favors.

To make effective use of the punishment regime, clientelistic parties must be able to differentiate between voters and their opponents. The literature has over-emphasized that violation of the secret ballot is a primary means of enforcing the patron-client relationship. Although direct observation of voting is advantageous, it is by no means necessary (Stokes, 2005; Magaloni, 2006; Nichter, 2008 and 2009). In our approach, machines distinguish allies from enemies by tracking voter loyalties ex ante rather than monitoring voting behavior the day of the elections, an effort that requires a complex organizational network. The PRI in Mexico did this through supporters deeply embedded in the communities — the party’s rural caciques, school teachers and union bosses, for example — who could help to differentiate between voters who belonged to the party,
whether they participated in party rallies and if they showed up at the polls (Magaloni, 2006).

In this book we demonstrate that PRI elites also employed long-term electoral returns from which they gained a great deal of information about who core voters were, how conditional their allegiances were and how effective the local party brokers were in buying off their loyalties. We argue that it is not sufficient to wear a party’s t-shirt or wave banners at election time to signal loyalty (Nichter et al., 2011); loyalty is established through an ongoing relationship that is often mediated by an organizational network, as in Calvo and Murillo (2010) — one that is constructed through reciprocal exchanges, past, present and future.

Our approach departs from the core-versus-swing voter models in a second fundamental way: that of portfolio diversification (Magaloni, et al, 2007). Distributive politics, as Table I.1 illustrates, inevitably entails the choice of a mixed basket of transfers that can be targeted to swing and core voter groups. Ex ante core-versus-swing models focus exclusively on particularistic transfers targeted to core or swing voters. But political machines also resort to pork-barreling politics — the construction of highways, roads, bridges, electrification and so forth — to buy off votes. Because public goods cannot be employed to selectively reward and punish voters according to their partisan loyalties, our approach argues that welfare-enhancing collective benefits will not be the preferred instruments machines employ to buy off and lock in a core voter’s base loyalty.

Our theory generates important predictions about the composition of electoral investment and whether politicians will choose a private or a public goods investment strategy. Our central prediction is that the overarching per capita investment of both
private and public goods will be used to sustain core support. Nevertheless, we expect machines to modify the portfolio of electoral investment, which we measure as share of private over public goods provision per district, according to two variables: the size of the core and its propensity to defect. First, our theory leads us to predict that parties will intensify their clientelistic practices, emphasizing particularism over welfare-enhancing public goods, under conditions of high electoral erosion by their core voter group. We expect machines to intensify private over public goods when core voters are more likely to drift because in our approach particularism is essentially used to lock in a party’s core base and deter loyal voter defection. In other words, the more conditional voter’s loyalties are, the more we expect machines to emphasize particularism over public goods provision.

Second, we expect machines to emphasize the provision of welfare-enhancing public benefits over private goods when their core base of support is insufficient and they need to cater to heterogeneous voter groups to win elections. Hence, we expect to observe more emphasis on public over private goods provision in marginal districts. Our approach asserts that machines solve the ongoing dilemma of catering to their core while simultaneously courting swing voters by, on the one hand, using private, excludable benefits to buy off partisan loyalties from a core base and, on the other, investing in public goods when they need to attract the support of swing voters. This idea parallels Bueno de Mesquita et al., (2003), who argue that “as the winning coalition increases in size, incumbents have more incentives to pour resources into public policy pursuits rather than private goods” (p. 66). Persson and Tabellini (1999) also provide a similar logic, stating that where politicians need to win elections by a majority, it is more likely that
they will provide public goods. Chhibber and Nooruddin (2004) apply these same insights in their study of India. Our approach is similar: politicians can choose from a basket of private and public goods. Core voters are targeted with private benefits to retain their loyalty, while other voter groups will be favored with public goods when the party’s loyal base is insufficient to win elections.

I.4. Restraining clientelism

The trifling impact of Pronasol’s funds on material improvements discussed in this book leads us to ask the following question: Why is it that politicians who claim to represent the poor choose this electoral investment strategy rather than a strategy that increases the well-being of the poor? Our approach emphasizes that politicians choose this form of electoral exchange because it allows them to lock voters in a relationship of material dependence and because it makes rent seeking possible. Party cadres, brokers, their thugs and interest groups all benefit from the lack of legal transparency that allows a party machine to politicize social programs and divert public funds for personal gain.

The dilemma is one of voter coordination. Each voter acting alone has compelling reasons to remain loyal to the machine and avoid being excluded from the spoils system. And if all voters reasons likewise, the machine can be sustained. In choosing to exit the system, the voter would needs to know that many others will likewise vote against and defeat the machine; otherwise the voter alone will bear the cost of defection. It is a perverse equilibrium because everyone becomes an accomplice to the system, even though it is collectively detrimental.
Exiting the system requires then the capacity of a voter to endure the costs of not having access to the spoils system. These costs are formidable for the poor, who often depend on the machine’s favors for survival. In contrast, the middle class can better afford to make ideological investments in democratization, which explains why the PRI’s bastion of support was among the poor (Magaloni, 2006). During most PRI rule, the opposition was weak and powerless in part because the overwhelming majority of voters remained poor and had a rational interest in supporting the system.

A collective voter rebellion ultimately brought the PRI down. Years of economic stagnation after the debt crisis of 1982 and dramatic budget cuts produced the first massive voter defection against the PRI, which was reflected in the 1988 presidential elections. During the Salinas presidency, the PRI was able to use Pronasol to sustain its electoral coalition, although Salinas’s popularity should also be attributed to macroeconomic adjustment and an ambitious package of economic reform. What finally convinced voters to defect en masse was the betrayed promise of prosperity that was felt after the 1994 peso devaluation. The 1995-96 economic recession, although short lived, was as severe as the great depression of 1929. From 1995 to 1997, in one local election after another, the PRI lost. Then the incumbent party lost the 1997 midterm parliamentary elections and was ultimately defeated in the 2000 presidential election, ending more than 70 years of uninterrupted rule.

Our story of how clientelism was replaced by a new social assistance regime stresses a voter rebellion against the spoils system, which led to inter-party elite negotiations to reformulate the rules for poverty alleviation. The local defeats of the PRI in 1995, 1996, and 1997 made it clear that voters were no longer willing to sustain the
system. The Zapatista rebellion and its demand for autonomy and dignity for the ancestrally excluded indigenous people also played an important role in exposing the corruption and ineffectiveness of Salinas’ poverty-reduction strategy. The rebellion made it clear that if poverty were not addressed, the country poor’s might choose a violent route for defeating the system.

The massive voter defection from the PRI during those years brought about a fundamental reshuffling in the working of the institutional apparatus, transforming presidential-legislative relations and the balance of power between the central government and the states. Equally important, voter defection triggered a rebellion within the PRI itself against the president. PRI governors and elected officials all over the country were infuriated with the “technocrats” and sought to regain control of government resources by restraining the overarching powers of the Mexican president to empower subnational politicians. FISM was the result of these negotiations.

There was an additional consideration that motivated the PRI to negotiate changes to the social assistance regime: economic recession made sustaining the patronage system extremely costly. Progresa’s mastermind, Santiago Levy, who served as Subsecretario de Egresos (Budget Deputy Minister) during the Zedillo administration, took advantage of the economic downturn to force governors to acquiesce to the new social assistance regime. Levy essentially offered to bail out bankrupt PRI governors on a case-by-case basis in exchange for their support to reform social assistance policies. Using his influence, he was able to gradually implement Progresa including a randomized controlled trial allowing for a full evaluation of the initial impacts of the initiative. The PRI lost the majority in the Chamber of Deputies in the 1997 midterm elections, which
meant that, for the first time in its history, the party needed to compromise with the opposition to pass legislation, including the federal budget. The opposition was also eager to limit the president’s ability to manipulate federal fund transfers for electoral and partisan purposes, which led to the creation of the formula based FISM and the permanence of Progresa.

Democracy was reborn in Mexico in 2000, with a new social assistance regime in place. Through the randomization of Progresa’s initial rollout from 1997-1999, Levy was able to present the incoming PAN administration with various scientific evaluations about the impact of the program on the welfare of the poor. The presidential administration of Vicente Fox became convinced that the program was effective; he decided to rename it and expand it into urban areas. We demonstrate in this book that beneficiaries of Progresa — and later Oportunidades — have generously rewarded incumbents at the polls.

Given how effective these programs are at generating electoral support, politicians will inevitably seek ways to manipulate them on the ground. As Nichter’s (2010) work on Brazil suggests, clientelist practices can be kept alive in poor localities despite the existence of CCTs, as long as access to services such as ambulances, medicines and even protection continues to be politicized or conditioned on party loyalty. Moreover, the conditionality of Progresa implies that a great deal of power has shifted to doctors, nurses and schoolteachers, although the mechanisms to hold these state employees accountable remain weak. In Mexico, numerous programs both at the federal and state level remain discretionary and, thus, highly clientelist. Despite these limitations, our findings document the benefits of the new social assistance regime for the well-being
of the poor.

I.5. Welfare of the poor

The final element of our inquiry focuses on the poor’s welfare, as measured by two tangible benefits: access to public services (water, sanitation and electricity) and reductions in infant mortality. The latter provides a rather compelling indicator of well-being linked to development policies. As noted by Wise (2003), the failure to save children from preventable deaths is usually seen as a tragedy and “shame” that forces us to examine our public and social responsibility. Although pathophysiologic factors, such as dehydration, may ultimately lead to a child’s death, it is social conditions that produce the circumstances in which mothers fail to nourish their children properly, protect them from water-borne infectious diseases or provide adequate medical interventions that could save their baby’s life — circumstances that attest to failures in government policies and the overall social environment in which poor children live.

The simple notion that societies cannot let children die from preventable causes resonates strongly with Amartya Sen’s (1999) view of “development as freedom”; and Partha Dasgupta’s assertion that development is ultimately about “the manner in which people are able to live and die” (Dasgupta, 1993). In fact, one of the greatest advancements in the human condition, as noted by Fogel (2004), was the possibility for ordinary people to escape hunger and high mortality — at least in Europe and North America. The achievements of long life expectancy and low infant mortality rates, however, have not been realized in vast areas of the developing world.
The book compares the effect of public goods expenditure under Pronasol in the improved coverage of water, sanitation systems and electricity at the municipal level with those resulting from the new strategy of FISM. Our results suggest that changes in the provision of public services to the poor strongly responded to the decentralized and formula-based public works appropriations within FISM. Our estimations indicate that in an average municipality the coverage of public services improved by around 4 percentage points due to FISM. Furthermore, the effectiveness of FISM was mediated by local power configurations: higher levels of local electoral democracy, as measured by places that had more electoral competition and alternation of political power in office at the municipal level, were associated with more effective uses of federal transfers, and hence greater increases in coverage. In contrast, the effect of the discretionary fund, Pronasol, on improvements in local public services for the poor was negligible.

Our book further provides evidence of the effects of the new social assistance regime on reductions in infant mortality. Progresa/Oportunidades, combined with the better access to public services mostly attributed to FISM, have played a significant role in reducing infant deaths across Mexico’s poorest municipalities. The social assistance regime chosen in Mexico in the late 1990s combined elements of decentralized empowerment for the municipalities with centralized control by the federal government over CCT programs. Even as the federal government appropriated fewer funds to fighting poverty, compared to the largesse witnessed in Pronasol, it shifted away from the expensive clientelistic strategies of vote buying in favor of an emphasis on public goods provision and the empowerment of the most vulnerable population through Progresa/Oportunidades.
Our data analysis provides a somewhat crude metric for measuring the costs of clientelism. Through the use of various simulations of our econometric models, we find that if Progresa had started earlier, increasing its coverage to say 20 percent more families in every municipality, approximately 8 thousand more children could have been saved.\(^4\) Mexico should have learned some lessons from its clientelistic past: thousands of children would have survived had the transformation of programs occurred a few years earlier.

Subcomandante Marcos was correct in pointing out that children died from curable diseases and no one took notice. The Chiapas uprising was a great surprise to many. In an era of massive efforts at poverty alleviation, why would the impoverished indigenous people of Chiapas choose violence? It is ironic that a hospital constructed in the town of Guadalupe Tepeyac with Pronasol money during those years became one of the headquarters of the Zapatista rebellion, and was the location where many hostages, including a former governor of Chiapas, were kept. According to most accounts, the state-of-the-art hospital facilities of Guadalupe Tepeyac never became functional because adequate staff and medicines were never sent to the town.

I.6. Roadmap

Having spelled out the main elements of our approach, a roadmap for what comes ahead is in order. The first chapter in the book describes public expenditure strategies in

\(^4\) Such effects could become stronger when selectively targeted to priority municipalities. For example, INEGI calculates that the 56 municipalities with the highest IMR in the country in 1990 were not particularly large, so they had a population at risk of only around 40,000 children. Hence, specific interventions in those specific municipalities could have very substantial impacts, with little additional spending.
Mexico, placing them in a conceptual map that characterizes strategies according to the degree of targeting and the degree of discretion public officials possess in the allocation of resources.

The second chapter advocates for a geographic approach in the study of poverty-relief strategies. It justifies our use of the municipal level as the politically relevant jurisdiction and unit of analysis. It outlines the basic spatial patterns of poverty, the mapping of political power across the territory and the geography of public expenditure.

The third chapter describes our theory of vote buying, from which hypotheses can be derived regarding the particular strategies politicians chose in order to enhance their survival when deciding discretionary public expenditure allocations. In particular, the chapter presents a model of conditional party loyalty and elucidates why machines should favor their core supporters. The chapter also presents the portfolio diversification approach in which politicians choose to invest in a mix of both private and public goods.

Chapter four puts to the test our predictions about the political logic driving the allocation of discretionary funds, focusing on *Pronasol* expenditures and using municipal-level data. The *Pronasol* program comprised more than 20 programs for the delivery of public works (roads, health clinics, schools, sanitation, electrification, potable water, etc.) and private, excludable benefits (scholarships for children, medicines, subsidized credit, cash transfers, construction materials, fertilizers, etc.). Our analysis reveals that the PRI disproportionately used *Pronasol’s* funds to target its loyal voters, thus distorting and abusing the program’s goal of combating poverty. As time went by, the program became increasingly clientelistic, allocating more and more resources to particularistic transfers rather than collective benefits. These transfers, we demonstrate,
were initially used to lock core voters into the clientelistic contract, with politicians disproportionately targeting municipalities where PRI voter loyalties were more rapidly eroding.

Chapter five then provides a qualitative analysis of the transformation of social policies in Mexico. Why did the PRI choose to give up on a highly clientelistic anti-poverty strategy? The interaction between a massive voter rebellion against the PRI, decentralization, the economic crucible and the introduction of checks and balances in the legislative arena led politicians in Mexico to abandon clientelism in favor of targeted social policies to increase welfare.

Chapter six explores the effects of those shifting strategies on the political survival of politicians, accounting for the electoral effects of social policies on the last three presidential elections in Mexico, in 1994, 2000, and 2006. Only by understanding the electoral consequences of various anti-poverty programs — that is, how the programs shape voting behavior and electoral alignments — will we be able to truly comprehend why politicians adopt the strategies they do. Do clientelistic anti-poverty programs generate more votes for incumbent parties than non-clientelistic ones? Do voters respond more favorably to transfers that are excludable and particularistic or to public goods and social infrastructure projects? Chapter six answers these questions by systematically comparing the electoral pay-offs of the various anti-poverty programs. These questions are highly relevant for theorizing about distributive politics. The chapter employs both aggregate municipal-level and individual-level data.

The seventh and eight chapters examine the welfare effects of the anti-poverty policies. Chapter seven focuses on social infrastructure or public services (water,
sanitation, electricity) to the poor. We provide answers to the question of whether
decentralization and democracy led to improvements in the delivery of social
infrastructure. Finally, chapter eight examines the impact of various outcomes of public
expenditure on the one indicator of welfare that can be unambiguously accepted as a
worthy goal: the reduction of infant mortality rates. The book concludes with a summary
of our findings and a prospective look into the future.
Chapter 1

Aiding the Poor

Mexico is the country of inequality. Nowhere does there exist such a fearful difference in the distribution of fortune, civilization, cultivation of the soil and population. [...] This immense inequality of fortune does not only exist among the caste of whites, it is even discoverable among the Indians.

Alexander von Humboldt, 1814

1.1. Introduction

One of the most unequal countries in the world, Mexico’s social disparities are reflected in its high incidence of poverty. The poor are concentrated in rural communities where social assistance programs often fail to reach them. The rural poor historically have lacked basic services such as electricity, drinking water, roads, health care, education and social insurance, and have suffered from hunger, malnutrition and preventable disease.

The poor did not benefit much during the so-called “Mexican economic miracle,” when the country consistently grew at an average annual rate of around 6 percent from the 1930s until the early 1980s (Hansen, 1971). Despite revolutionary and pro-poor rhetoric, the PRI-led governments of the time failed to implement successful poverty-alleviation programs. Although many development indicators improved as the decades progressed (Wilkie, 1978), the improvements tended to disproportionately benefit the
already wealthy regions, rather than the poorer areas, which were lagging behind (Medellin, 1980). Despite overall growth in Mexico, income distribution barely changed from 1958, when the first measurements were taken, to the 1980s, when the country was plunged into economic turmoil.

With Mexico’s debt crisis of 1982, prospects for the poor became even dimmer. Combating poverty with social programs in a low-growth economy was a challenge. Employment and other income-generating activities grew more sluggish, while public resources for helping the poor became scarce. Real government expenditure suffered a dramatic cutback during the post-1982 period. At the same time, Mexico underwent a major economic restructuring involving privatization, trade policy and fiscal restructuring. Income inequality is shown to have worsened during this period. Between 1984 and 1992 there was a “steep fall in the income of ninety percent of the population in favor of the wealthiest 10 percent” (Trejo and Jones, 1998). Despite prospects for recovery after the economic restructuring, the Peso Crisis of 1994-95 delivered a massive setback to social programs. Poverty reached alarming levels (Table 1.1).

The table shows the breakdown of Mexican poverty by urban and rural areas, according to estimates calculated by the National Council for the Evaluation of Social Policy (Consejo Nacional de Evaluación de la Política de Desarrollo Social, CONEVAL). The estimates use a common methodology to ensure comparable poverty

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5 It is important to note, however, that given high population growth, the per capita rates were somewhat modest in the period.
6 CONEVAL institutionalizes the work done by the Comité Técnico Para la Medición de la Pobreza (CTMP), an independent body created in 2002 for measuring the evolution of poverty. The technical committee was formed arguably by the foremost experts on poverty in Mexico, including Fernando Cortes (Colmex), Rodolfo de la Torre (UIA), Luis Felipe López Calva (ITESM), Graciela Teruel (UIA), Luis Rubalcava (CIDE), Enrique Hernández Laos (UAM) and John Scott (CIDE).
The methodology calculates three types of poverty lines: one for nutritional status (caloric intake); another for basic capacities (nutritional status plus health and education); and a final one for assets (possession of basic capacities plus other necessities, such as clothing, transportation and shelter). The table measures poverty using a headcount index: the percentage of persons falling below the poverty line. It also presents the standard errors of the estimates (in parenthesis) to better demonstrate how changes in the evolution of poverty through time are statistically significant.

[Insert Table 1.1 about here]

In Mexico poverty is overwhelmingly concentrated in rural localities, even while there are significant numbers of poor living in the cities. After the Peso Crisis of 1994 there was a dramatic increase in poverty (Table 1.1). According to these estimates — and depending on how poverty is measured — between 53 percent and 80 percent of rural dwellers were poor in 1996, compared with between 27 percent and 61 percent of the urban population. Poverty peaked in 1996, and has been steadily declining since then. In 1996 50.3 percent of rural inhabitants suffered from hunger or “nutritional poverty” (could not afford basic food or lacked a minimal caloric intake); this indicator dropped to 24.5 percent in 2006. This chapter recounts the history of how this poverty reduction came about.

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7 The Encuesta Nacional de Ingresos de los Hogares (ENIGH), periodically done by the Mexican statistical office, the Instituto Nacional de Estadística, Geografía e Informática (INEGI).
The chapter starts with a conceptual map that distinguishes social assistance programs along two dimensions. The first is the degree to which they target the poor; the second is the degree to which both the selection criteria and ability to withdraw benefits are discretionary. The general pattern we are observing in Mexico is a shift away from universal-type social programs, which fail to reach the poor, to ones that are more specifically targeted at poverty reduction. We also see the gradual abandonment of highly politicized, discretionary programs in favor of formula-based ones. The following sections discuss the evolution of various social assistance programs in Mexico according to this conceptual map.

The two succeeding sections (1.3 and 1.4) discuss the truncated welfare state and some of the major social assistance programs, especially land reform, that existed prior to the introduction of new programs in the 1990s. The debt crisis of the 1980s and subsequent market reforms changed political incentives for development of social programs. As electoral competition became stiffer, a greater incentive emerged for politicians to pay attention to the interests of the poor in a setting of stringent budget constraints. Section 1.5 describes the introduction of the Programa Nacional de Solidaridad (Pronasol), the social fund created by President Carlos Salinas de Gortari (1989-1994), while section 1.6 covers the launch of CCT programs during the administrations of President Ernesto Zedillo (1994-2000) and President Vicente Fox (2000-2006). Section 1.7 explains how Pronasol’s public works projects were decentralized and a municipal fund was created for the development of social infrastructure. These programs will be the focus of systematic inquiry in subsequent chapters of this book.
1.2. Dimensions of social assistance programs

Among the many distinguishing characteristics of social assistance programs aimed at poverty alleviation, it is useful to highlight two important dimensions. One is characterized by the degree to which program benefits are targeted to reach the poor. The more specifically a program is designed to meet the needs of the poor, the more targeted, or progressive, it is. By comparison, many universal-type social programs, such as food subsidies and price supports, experience significant leakage of benefits to income groups other than the poor. The other dimension is defined by the degree to which social assistance programs are “discretionary,” which is defined as the leeway of politicians have in deciding who receives benefits, when benefits are given and when they are withdrawn. Programs that allow a high degree of government discretion are vulnerable to political and electoral manipulation, and poverty-reduction efforts suffer as a result. Discretionary programs give politicians the ability to withdraw benefits on the basis of electoral criteria or for political motivations, such as when a beneficiary fails to vote for the incumbent or an election cycle is over. Programs providing benefits according to an established eligibility formula, and which cannot be withdrawn unless the beneficiary fails to meet criteria, are more effective at reducing poverty. Effective poverty reduction calls for social assistance programs that exhibit both characteristics simultaneously: they are targeted to the poor and they are not discretionary.

Still, formula-based programs are not immune to political biases. Political parties will invariably seek to benefit their supporters in the design of their social programs. For
example, a left-wing party with a strong base of support among workers, farmers, women and the unemployed will tend to implement social policies that disproportionately favor those voter groups. Yet when politicians and their brokers on the ground can neither disregard a social program’s eligibility criteria, redirect benefits to ineligible supporters nor exclude eligible beneficiaries who support an opposing political candidate, opportunistic manipulation of programs for short-term electoral gain is more difficult to achieve.

Based on these characteristics of social policy, welfare-state programs in Latin America are traditionally nondiscretionary — every formal worker is eligible — yet they remain ineffective at reaching the poor. Throughout much of the 20th century, the main redistributive efforts in the region went into building welfare states. Yet unlike their European counterparts, Latin American welfare states became highly “truncated,” meaning that universal coverage extended only to those with formal employment (De Ferranti et al., 2004; Fiszbein, 2004; Rawlings et al., 2004). With the size of informal economies varying from country to country across Latin America, available estimates suggest that, on average, more than half of all workers operate outside the formal sector. That figure goes up when poor workers alone are considered. Some social programs do not require formal employment, as with the universal education and health services benefits most countries seek to provide, or even constitutionally guarantee. But significant gaps remain, particularly in the dismal quality of education and health care to which the poor actually have access, which block the path to upward social mobility and reinforce existing inequalities.

Universal subsidies for food, medicine and transportation tend to be ineffective at
reaching the poor, on the one hand, and discretionary, on the other, since politicians are often free to start, stop or change benefits for such programs by decree. It is not uncommon to observe food, medical and transportation subsidies rise during campaigns and fall once the voting is over. Universal subsidies are expensive, easily manipulated and, because they are frequently regressive, have a mixed record in helping the poor.

“Clientelistic transfers,” defined as transfers targeted to specific individuals or small groups, are more discretionary than universal subsidies (which by definition do not exclude individuals), and they tend to be aimed at the poor. Politicians can use discretionary programs to reward beneficiaries according to their political loyalties, rather than employing objective criteria based on need. They can likewise withdraw benefits from beneficiaries for supporting an opposing political party. The literature refers to this phenomenon as political clientelism (Kitschelt and Wilkinson, 2007; Stokes, 2007).

For most of the 20th century in Latin America, universal social programs that failed to reach the poor coexisted with an informal system of clientelistic transfers that, while benefiting the poor, were provided at the government’s discretion and therefore unreliable. Clientelism has all too often been the only form of welfare available to the poor. It is therefore unsurprising to find that there seems to be more satisfaction with democracy in countries where clientelistic practices are more entrenched and widespread and (Diaz-Cayeros, Magaloni, 2007). In this book we set out to learn how this political linkage works, to measure its negative effects on welfare, and to understand how more democratic forms of electoral accountability that favor the poor can replace clientelism.

Between universal programs and particularistic transfers, there exists forms of social assistance that deliver local public goods that benefit inhabitants of a specific
territory. Social transfers for infrastructure, electrification, street paving, drinking water, road construction, schools, clinics and hospitals are non-excludable — they benefit everyone in a given locality, regardless of income. Public goods programs can either be discretionary or non-discretionary with distribution formulas. When politicians use discretionary public goods programs to favor their districts, it is referred to in the literature as “pork-barrel” politics. Examples include Mexico’s Pronasol and Peru’s Fujimori-era Foncodes (Fund for Social Compensation and Social Development) (Schady, 2000; Rawlings et al., 2004). Mexico’s replacement for Pronasol, FISM exemplifies a public goods program that is non-discretionary, tying a predetermined poverty formula to the distribution of resources across districts.

In the late 1990s, Latin America finally began to witness the introduction of a new form of social assistance: the CCT. CCTs resemble social insurance in that they are non-discretionary, but differ in that they are targeted to the poor (using a poverty formula that recipients must fit). Brazil was the first country to employ a poverty formula at the municipal level. Mexico’s program for education, health and nutrition, Progresa, was the first such program on a national scale. It was launched in 1997 with the goal of preventing the intergenerational transmission of poverty. Progresa, which was renamed Oportunidades in 2000, offers cash transfers to women who are selected using a sophisticated formula designed to measure poverty. The transfers are conditioned on recipients keeping their children in school and regularly taking them to a health clinic. Having piloted its own CCTs at the city level, Brazil scaled to the national level with the Bolsa Escola and Bolsa Familia programs in the early 2000s. The significance of CCTs as tools for fighting poverty is threefold. First, these programs consciously reach out to
the poor, marking an important shift away from the truncation of Latin American social policy. Second, CCTs seek to prevent the intergenerational transmission of poverty by giving heads of households incentives to invest in the health and education of their children. Third, these programs establish entitlements for the poor and limit opportunities for the political abuse of anti-poverty resources.

Figure 1.1 maps Mexico’s most prominent anti-poverty programs along the two dimensions, with the vertical axis representing the degree to which programs are targeted to the poor and the horizontal axis referring to the degree of government discretion in selection and reversibility criteria. We group social programs into four categories: 1) pork-barrel programs, characterized by benefits that are distributed territorially, according to either a formula-based approach (FISM) or a purely discretionary approach (Pronasol), and primarily consist of infrastructure projects; 2) clientelistic programs, characterized by benefits that are targeted to individuals or small groups and are discretionary (Pronasol and land reform); 3) CCTs, which also target individuals, but use a formula-based approach (Progresa/Oportunidades); and 4) programs belonging to the “truncated welfare state,” which are not discussed in this book.  

The following sections discuss various anti-poverty programs, their effects on poverty reduction, and their electoral pay-offs or impact on politicians’ electoral survival. We demonstrate that non-discretionary, targeted anti-poverty programs are more effective at helping the poor, while clientelistic programs are more effective at delivering electoral support. Successful poverty reduction can only take place when politicians relinquish their discretion to manipulate social programs aimed at aiding the poor. Mexico’s biggest social policy innovation in the last decade was the extension of benefits to those excluded

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8 For an analysis of the transformation of those institutions see Dion (2000).
from social insurance programs — the poor — while limiting government discretion that tends to distort social assistance for political reasons.

[Figure 1.1 about here]

1.3. Mexico’s truncated welfare state, 1940-1989

Since the early 1940s, Mexico began to introduce social insurance schemes tied to participation in the formal labor market. Created in 1943, the Instituto Mexicano del Seguro Social (IMSS) provides insurance to non-government workers, including individual retirement funds, disability and life insurance, health insurance, and health services. Similar benefits are provided to state employees through the Instituto de Seguridad y Seguro Social para Trabajadores del Estado (ISSSTE), which also gives housing finance assistance from FOVISSSTE (ISSSTE Housing Fund). The Instituto Nacional del Fondo de Vivienda para los Trabajadores (INFONAVIT) provides subsidized housing to private sector workers.

The restriction of social insurance to formal sector workers, a common feature of Latin American and Caribbean social policy, has led to the characterization of the region’s various social protection systems as “truncated welfare states” (De Ferranti et al., 2004; Fiszbein, 2004; Rawlings et al., 2004). Moreover, despite formal membership contributions, social insurance plans have run considerable deficits that are financed by tax revenue. We concur with Rawlings et al. (2004) that these programs should be

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9 The 1997 reforms transformed the pension fund in IMSS form a pay-as-you go system to a system where beneficiaries put their contributions into individualized accounts that are managed mostly by private companies (called AFORES, Associations for Retirement Funds).
conceived as “public transfers” rather than social insurance. In their comparative study the authors calculate that in Mexico the average net pension subsidies as a percentage of total benefits paid out of social insurance going to IMSS and ISSSTE was 84 percent, the second largest among the eight Latin American countries they studied.\textsuperscript{10}

Despite massive subsidies, much of the population in Mexico remains without access to the formal social insurance system. The share of households with at least one family member in the social security system is 43 percent (Secretaría de Salud, 2002). According to calculations by the World Bank based on income surveys, 75 percent of the non-poor, 39 percent of the moderately poor and \textit{zero percent of the extreme poor} are covered either by IMSS or ISSSTE (World Bank, 2004b: xliii), a clear illustration that the Mexican welfare state excludes the poor.

Large corporate unions affiliated with the PRI largely controlled the government institutions in charge of social protection under PRI’s rule (Trejo and Jones, 1998). This meant that the Mexican welfare state was not only limited to the formal work sector, but also that access to most government benefits and services could be rationed according to political criteria. For instance, to obtain housing from INFONAVIT, workers had to be affiliated with the official labor union sector, to be on good terms with union leaders, show up at party rallies and vote for the PRI.

Despite these limitations, there have been important attempts by the Mexican government to expand social assistance to more people. Public education is a good example. Mexico has achieved close to universal primary education and a major expansion of lower secondary education. Still, the quality of education and graduation

\textsuperscript{10} The countries were Argentina, Brazil, Chile, Colombia, Dominican Republic, Guatemala, Mexico, and Peru.
rates vary considerably by income. Since the 1930s, the Mexican government has also sought to provide health services to those outside of the formal social insurance system through hospitals administered by the SSA (*Secretaria de Salud*). To serve this population, particularly the rural poor, the government sub-contracted health services from the IMSS (*Instituto Mexicano del Seguro Social*), with programs such as IMSS-*Coplamar* and IMSS-*Solidaridad*.\(^{11}\) The recent creation of the *Seguro Popular*, a public health insurance program launched in 2004, represents a major attempt to expand health care access to the poor.

### 1.4. Clientelistic land reform

With the exception of public education, social programs in Mexico were either regressive (World Bank, 2004), or, when targeted to the poor, manipulated to trap recipients into a vicious cycle of material dependence of patronage rather than alleviate poverty. A clear example is land reform. The “permanent land reform” process originating at the end of the Mexican Revolution in 1917 and in place until 1991 distributed small, low-quality, unproductive parcels of land to the rural poor. A complete lack of infrastructure, including irrigation, transportation, and highways have further left the rural poor dependent on government subsidies (Diaz-Cayeros, Magaloni, and Weingast, 2006).

The 1917 Constitution, the political pact that marks the end of the Mexican Revolution, established that land “originally belonged to the state,” and the state would

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\(^{11}\) More recently, the Vicente Fox (2000-2006) administration of the Partido Accion Nacional (PAN) introduced the *Seguro Popular*, a form of means-tested insurance targeted to the non-covered population.
be in charge of distributing it. Land was granted to peasants in the form of communally owned land tenure arrangements called *ejidos*, which became a form of permanent social policy. Every president distributed large quantities of land, but the *quality* and *size* of the plots distributed dramatically decreased with the passing of time. Over the years, 60 percent of Mexico’s territory was distributed. In 1991 President Carlos Salinas (1988-1994) declared land reform to be over.¹²

Land reform became an exceedingly politicized subject. It was the main instrument employed by politicians to control peasants and to mobilize them to the polls.

Federal regulation of land tenure arrangements (including the promise/threat of land expropriation and distribution under the terms of post-revolutionary agrarian reform legislation), management of extensive credit and marketing facilities, and the hierarchical organization of rural producers (especially agrarian reform beneficiaries) through ‘official’ party-affiliated associations [...] all provided governing elites with strong political controls – and for several decades a reservoir of real popular support – in the countryside (Middlebrook, 2004: p. 32).

To get their land, peasants first needed to petition the governors of the states, whose decisions were then reviewed by the federal government, with the president presiding as the ultimate authority. The process on average lasted ten years (Walsh-Sanderson, 1984). A highly discretionary process, land reform closely followed the presidential cycle, with more land distributions systematically concentrated during presidential election years (Diaz-Cayeros, Magaloni, and Weingast, 2006).

An important aspect of the land tenure arrangement was that beneficiaries of land reform could not give land as collateral: *ejido* land was collectively owned and could not be sold. This left peasants fully dependent upon publicly subsidized and administered

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credit, which was also rationed according to political criteria. Most irrigation projects were geared toward large-size productive farms in the north and did not benefit the poorest landholders. These policies not only gave the PRI numerous instruments to control peasants, but also had negative effects on economic development and productivity. By the 1960s, Mexico had become a net importer of foodstuff with an agricultural sector that was stagnant.

To escape poverty, the rural poor began migrating *en masse* to cities or across the border to the *U.S*. By the late 1970s, Mexico had become predominantly urban, with extreme poverty spreading to the cities. Slums began to mushroom in unoccupied land at the edges of large urban areas. Prior to the 1990s, social policies to combat urban poverty were fragmentary and largely nonexistent, leaving a large proportion of the urban poor without access to basic services such as water, electricity, sanitation and health (Ward, 1986). The provision of such services and the regularization of land in the urban fringes were mediated by PRI politicians through a similar clientelistic brokerage system as the one in the countryside (Cornelius, 1975). The 1988 presidential elections made it evident that these urban networks had failed to deliver votes for the PRI.

1.5. Manipulating poverty reduction: *Pronasol*

There is consensus in the literature on Mexico that the PRI’s’s clientelistic system began to erode in the 1980s and 1990s, with the economic recession and the market-oriented reforms that followed. These polices implied a fundamental restructuring of the traditional alliance of interests. Indeed, as Dresser (1994a) argues, “the system of
resource allocation that evolved in Mexico during the era of Import Substitution Industrialization (ISI) created a broad-based ‘populist distributive coalition of organized interests [...] The coalition flourished on state business such as public credit, production subsidies, tariff protection, tax incentives and purchasing contacts” (p. 145). Since 1982, Mexico witnessed economic stagnation and serious volatility; two consecutive recessions (the 1982 debt crisis and the 1995-96 Peso crisis); and a brutal deterioration of real salaries during the worst years of these recessions.

In 1988, the hitherto stable hegemonic party regime experienced an electoral shock that led to a shift in social policy. The PRI’s electoral losses were widespread, and the party’s electoral returns were particularly scanty among the urban poor. There is no doubt that the Mexican PRI committed electoral fraud in the 1988 presidential elections. The official results gave the victory to the PRI’s presidential candidate, Carlos Salinas, with 50.7 percent of the vote over 32.5 percent given to former PRI politician, Cuauhtémoc Cárdenas, of the Frente Democrático Nacional (FDN), which eventually transformed into the Partido de la Revolución Democrática (PRD).

The electoral shock resulted from a combination of factors. A severe economic recession — low wages, high inflation, currency instability and underemployment in the cities — led voters to defect to the opposition. Market-oriented reforms also restricted the availability of state resources that were traditionally used to buy off party factions and electoral support. The 1988 elections made it clear that the PRI had failed to build solid clientelistic networks with the growing masses of the urban poor.

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13 There is considerable debate, however, as to whether the fraud was necessary for the PRI to retain the presidency or if it was rather employed to manufacture a 50 percent threshold for the PRI (Castañeda, 2002).
President Carlos Salinas (1988-1994) established the Programa Nacional de Solidaridad (Pronasol) with the stated intent to combat poverty. Instead, as we demonstrate in this book, Pronasol was designed as an instrument for reestablishing the electoral dominance of the PRI. Pronasol sought to establish alternative party-society relationships that would go around the failing corporatist mechanisms and state bureaucracies. As Dresser (1994a) explains, the economic crisis of the 1980s and the market-reforms that followed “affected most systems of representation and the economic functions associated with them; as a result, their traditional members were recast by the state elite essentially as consumers of Pronasol’s benefits—electricity, scholarships, paved streets—instead of beneficiaries of traditional state protection in the form of wage increases, subsides, and agrarian reform” (p. 147).

Pronasol was in part a demand-driven program for poverty relief. It targeted funds directly to municipalities based on proposals from community organizations and municipal governments. In order for a project to receive Pronasol funds, matching grants were always required from state and municipal governments, along with resources provided in-kind by the recipient community. In practice, however, Pronasol was a highly presidentialist program, by which the allocation of transfers to communities or individuals could be decided with almost absolute discretion of the president (Bailey, 1994). Pronasol soon became the cornerstone of the government’s social policy. Its resources represented, on average, 1.18 percent of GDP each year. Many of the pre-existing social assistance programs were reclassified into Pronasol.

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14 Salinas wrote his dissertation on the impact of government programs on political behavior in the state of Puebla (Salinas, 1982).
Table 1.2 provides a description of more than 20 Pronasol programs. The programs included investment in health (mostly the building of hospitals); education (schools, scholarships, and pensions for teachers); urban development programs (water, electrification, housing, sanitation, and land titles); roads and highways; and “social and productive programs” (most of these were discretionary cash transfers and credit to women, fisheries, and coffee growers, benefits to indigenous communities, and municipal funds, among others).

When Pronasol was implemented, it was highly regarded by policy analysts and the development community. Political analysts and opposition political parties criticized the program from the very beginning on two major fronts. First, there was a widespread perception that the program was not well targeted towards the poorest households or municipalities, so that it did not have a measurable impact on development indicators (Lustig, 1994). Second, there was a suspicion that the program had been used to centrally allocate resources on the basis of political criteria (Molinar and Weldon, 1994; Dresser, 1991).15

The failure of Pronasol spending to reach the poor was mostly attributed to the way in which projects were selected. Sedesol, the newly created federal bureaucratic agency in charge of allocating funds at the federal level, was perceived as a highly clientelistic organization, rather than an independent or technical body allocating funds

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15 Bailey (1994) and Dresser (1994b) criticized the program for its presidential control.
on the basis of needs.\textsuperscript{16} Moreover, since the selection of projects required popular participation through the organization of Solidaridad committees (Kaufman and Trejo, 1996), the rural and extremely poor were less likely to be selected as recipients for funds\textsuperscript{17} being less successful at collective action.

Despite the heightened debate and international attention it drew, Pronasol’s effectiveness as a mechanism for improving welfare has remained largely unmeasured. This study conducts a systematic evaluation of Pronasol using municipal-level data for the entire country during the five years of life of the program. We assess Pronasol’s policy effectiveness in two ways. First, we discuss its targeting efficiency or the extent to which Pronasol provided benefits to the poor. Our results demonstrate that although poor municipalities received higher shares of transfers, Pronasol was not well targeted to the poorest. Second, we evaluate how successful Pronasol was in improving public infrastructure and increasing welfare. Our results demonstrate that the social welfare effects of the program were disappointing.

\textsuperscript{16} Although Pronasol had an advisory council, this body did not decide allocations, nor did it provide for independent evaluations of the program. This contrasts quite starkly with Progresa, which was from the outset structured in a rather independent fashion and has pursued several independent evaluations.

\textsuperscript{17} In a survey explicitly designed to assess the public opinion regarding the Solidaridad program in six Mexican cities, carried out by the President’s office in 1993, 42 percent of those surveyed believed Pronasol was primarily about alleviating poverty. Almost a third (27 percent) believed the program was used to garner votes for the PRI while a fourth (24 percent) believed it was used for both purposes (Beltrán, 1994 p.532). Survey respondents recognized that Solidaridad was a highly centralized program, believing its credit was directly attributable to the president. In a 1992 poll, around one fifth (19 percent) of the respondents believed money came from the municipal or state governments; 39 percent said the money came from the federal government and 38 percent thought the money came from beneficiaries themselves. Since Pronasol funding required matching funds from the other levels of government and community participation in the provision of materials, money or labor, these responses are rather appropriate. However, state governments were clearly underappreciated since, according to Rojas (1994), state governments had contributed around a third of the funds. Around 10 percent of the respondents said they did not know where the money came from. According to this poll, an additional 16 percent believed the money came directly from the president and 7 percent believed it came from the PRI (numbers do not add to 100 because more than one response was possible). In the Valle de Chalco, the government’s most publicized showplace of the success of Solidaridad, a whopping 39 percent of the respondents believed the money came directly from the President (Beltrán, 1994; p.523).
Our study of Pronasol distinguishes between programs that delivered private goods to individuals or small groups and public infrastructure projects. In this respect, our approach is analogous to Chhibber and Nooruddin’s (2004) analysis of state-level budget allocations in India. They divide budget allocations into developmental public goods and private goods, which in their analysis includes mostly state employment. Our classification of private and public goods depends on whether the goods provided were targeted to individuals who could enjoy their consumption while excluding others or were targeted to communities at large. The distinguishing trait of public goods such as potable water systems, sewers or health clinics is that they generate positive externalities (Besley and Ghatak, 2006). Hence, while private goods might increase well-being by increasing incomes or consumption directly, public goods increase well-being through their effects not just among individuals who benefit from them, but also in the improvement of sanitation or the pool of human capital, which might reduce the incidence of diseases or enhance productivity.

We infer the public or private good character of the program interventions both from the name of the program and by examining the specific goods provided. Although there is no comprehensive information of exactly what each of the Pronasol projects involved, the individual records reported by the government include information on the unit of measurement involved in each project (Sedesol, 1994). We use those units of measurement and the name of the program to infer the type of good involved in each program. The classification of each program is provided in Table 1.3

We classified as private goods some “club goods,” such as construction materials for granaries, mills, warehouses and other income supports for small groups of producers,
since not all the inhabitants in a municipality share in the same productive activity. So-called “regional development programs,” despite their name, were in fact social assistance explicitly targeted to small indigenous communities, so we classified them as club goods. Programs for women (mostly microcredit), and children’s scholarship funds were not universally entitlement based, but rather allocated in a highly discretionary manner. These are naturally classified as private goods. The “food and distribution program” was in fact used to finance infrastructure, so we classified it as a public good. Funds given out to municipal governments were primarily used for urban improvement, so we classified them as public goods.

On average, in a given municipality, 71.4 percent of Pronasol’s funds were devoted to public goods and 28.6 percent to private goods. Hence, the Pronasol was largely a social infrastructure program. However, as the program became consolidated throughout the years, its program composition shifted toward private good provision and it became increasingly clientelistic: when Pronasol was initiated in 1989, 25 percent of the funds distributed to the average municipality constituted private transfers; by 1994 the share had increased to 35 percent.

[Table 1.3 about here]

A large proportion of Pronasol programs were investments in sewerage, pipe water, roads, and the construction of schools and health clinics. These transfers were non-excludable public goods from which everyone in the locality, including opposition backers, benefited. On the other hand, once public infrastructure investments were realized and the services were in place, it was harder for politicians to withdraw these
benefits from the voters if they failed to deliver their support. The PRI did punish municipalities that were governed by opposition political parties by withholding social infrastructure funds from them (Magaloni 2006), This punishment regime played an important role in sustaining the hegemony of the PRI (Diaz-Cayeros, Magaloni, and Weingast, 2001).

Programs that delivered scholarships for children, subsidized credit and provided cash handouts, to name a few, were even more effective at reinforcing clientelistic linkages between voters and politicians. Since these transfers were targeted to individuals rather than to localities at large, opposition voters within heterogeneous communities could in effect be excluded from the benefits of the program. Pronasol’s yearly allocations were discretionary and reversible, so the PRI could credibly threaten to withdraw benefits if voters failed to deliver support. “It is the contingency of targeted benefits, not the targeting of goods taken by itself, that constitutes the clientelistic exchange” (Kitschelt and Wilkinson, 2006: p. 24).

There is no doubt that political parties require a dense organizational network to be able to target benefits to supporters and punish opponents. The key challenge for a party is to minimize voter opportunism – that voters receive the transfer and vote for a different party (Stokes, 2007). This is the reason why clientelism works better when people’s votes can be observed.18 Yet even when the secrecy of the ballot began to be respected in the 1980s and 1990s, the PRI continued to employ its political machine and its numerous “patrons” — presidentes ejidales, school teachers, union and community leaders, heads of juntas de vecinos, municipal presidents, etc. — to get information about

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18 Historically the PRI resorted to violating the secrecy of the ballot to monitor voters and to enforce this form of clientelistic exchange. However, as the opposition grew stronger, placing party representatives in more precincts, the PRI’s leeway to violate the secrecy of the ballot diminished.
voters’ loyalties. By acquiring information about voters’ political predispositions and past electoral behavior, the PRI was able to target clientelistic transfers to its loyal supporters and to withdraw these transfers from the non-loyal. In doing so, the hegemonic party was able to lock in its base of support among the poor, who were most responsive to these transfers (Magaloni, 2006).

1.6. Programmatic redistribution: Progresa and Oportunidades

Despite its apparent success in generating electoral support for the PRI, President Ernesto Zedillo (1994-2000) abandoned Pronasol in 1995. The Salinas administration was severely discredited as a consequence of the 1994 Peso Crisis, which erupted just after the presidential succession. Pronasol became a symbol of his administration’s corruption and lack of transparency. Zedillo introduced a highly targeted program to combat poverty, with full transparency in the allocation of social transfers to the poor. Progresa (now called Oportunidades) was born in 1997 with the explicit objective of fighting poverty through investment in the health and education of the poorest households in the country.

The program consisted of three complementary elements: 1) a cash transfer, intended primarily for food consumption; 2) a scholarship to cover the opportunity cost of children’s labor so that they stay in school; and 3) nutritional supplements. From September 1997 to 2000 Progresa was implemented mainly in rural areas. After Vicente Fox’s victory in 2000, the program was expanded in the rural areas, and in 2001 it was extended to urban and semi-urban areas using parallel criteria to select beneficiary
families. For the last phase, the program was also transformed into a demand-type scheme where eligible people were not longer identified by the government, but they self-select to apply.

_Progresa/Oportunidades_ is an example of a CCT program in which the government provides money to poor families, conditional upon certain verifiable behaviors. These behaviors are intended to benefit children’s human capital and promote basic preventive health. There are various advantages of CCTs relative to other social transfer programs. First, they are highly effective at targeting the poor. Most CCT programs combine geographic and household targeting where areas are first selected based on marginality indexes and individual households are then chosen based on micro-census information (rural _Progresa_ and rural _Oportunidades_) or on demand (urban _Oportunidades_).

The second advantage of CCTs is that the cash transfer can have an immediate income effect for the beneficiary household, reducing poverty and inequality, while the behavioral condition can redress the intergenerational transmission of poverty by pushing poor families to invest in human capital formation and health. _Progresa_ originally required minimum daily school attendance and regular health care. _Oportunidades_ has added bonuses for school attendance and participation in health-awareness seminars.

The third advantage of CCTs is that they significantly reduce discretionary-type decisions for allocation of social benefits, leaving less room for political manipulation of the government resources. Funds are distributed according to a technical criteria that combines geographic targeting with a household assessment mechanism called proxy means testing (using multi-dimensional indicators that are correlated with poverty).
Transfers under this program cannot be withdrawn or changed at a politician’s discretion, setting the CCT apart from the clientelistic transfers of private goods that were common under Pronasol.

The scope of Progresa/Oportunidades is far-reaching. At the end of 1999, Progresa covered approximately 2.6 million families, and about 40 percent of all rural families. By 2005, Oportunidades covered 5 million families, of which 3.4 were rural, 0.8 semi-urban and 0.67 urban. This meant that in 2005, more than half of Mexican families in extreme poverty were receiving Oportunidades funds. The program’s budget has increased steadily since 1997, although transfers per beneficiary have decreased slightly. Figure 1.2 shows the number of beneficiaries incorporated into Progresa/Oportunidades each year since its creation. The program has a clear upward trend, although a noteworthy feature is its stepwise behavior. No new beneficiaries were incorporated into the program in the years of federal elections (2000, 2003, and 2006). This was meant to be part of a strategy of protecting social programs from criticism of being manipulated for electoral purposes (the so-called “shielding” of social programs).

[Figure 1.2 about here]

The results of Progresa/Oportunidades have been impressive. Experimental and quasi-experimental evaluations suggest important health and nutrition effects: increased total food expenditures and caloric intake; improved child growth; increased use of prenatal care and reduced child and maternal mortality; reduced incidences of smoking and alcohol consumption; and improved treatment of diabetes. These evaluations also
point to improvements in education, including improved secondary enrollment, reduced drop-out rates and reduced child labor.\textsuperscript{19}

Because of its progressive structure, \textit{Progresa/Oportunidades} is the most pro-poor of all major Mexican social assistance programs. The World Bank has calculated in its public expenditure review for Mexico in 2005 that most public programs are regressive, and that public expenditure in general is slightly regressive (World Bank, 2004a). The only other national programs that have been progressive are school spending (preschool, elementary and lower secondary), health clinics for the uninsured population through the ministry of health (SSA), and the Programa de Apoyos al Campo (\textit{Procampo})\textsuperscript{20} transfers to peasants. \textit{Procampo} replaced price supports for basic grains with direct cash payments. The most regressive programs have been those managed by the Public Employees Social Security Institute (ISSSTE) and support for public universities.

Despite enormous improvement in poverty alleviation under \textit{Oportunidades} compared to previous efforts, the program still suffers limitations. For example, many poor households are excluded from receiving transfers if there is no school and clinic in the community, which is the case in some of Mexico’s poorest localities. Also, there are insufficient funds to effectively eradicate poverty. Finally, \textit{Oportunidades} is not well integrated with other social assistance programs that seek to generate better quality services and to support income-generating activities (de Janvry, 2006).

\textsuperscript{19} See Maluccio, 2004; Olinto, 2004; Rawlings and Rubio, 2004; and Rawlings for summaries of the impacts of CCTs in Latin America. For Mexico in particular see Levy, 2006 and the references quoted there.

\textsuperscript{20} \textit{Procampo} was an unconditional cash transfer program that targeted peasants and provided subsidies proportional to the size of their land holdings.
Highly targeted programs suffer from various political limitations too, as Pritchett (2005) explains: “If the budget for redistribution is politically determined, the impact of targeting on the poor cannot be determined by a technocratic evaluation of the hypothetical impact of a given targeting design alone; it must account for the effect of changes in the degree of targeting on the size of the budget available for redistribution. It is possible that ‘more for the poor is less for the poor’ and that the less targeted program will deliver greater benefits for the poor” (p. 1).

The implications of this argument are that CCTs can go largely underfunded. In fact, social spending is relatively low in Mexico at 9.1 percent of GDP in 2000.²¹ Most of the spending goes to education and health (3.8 and 2.2 percent of GDP respectively). Social protection spending constitutes the remaining 3 percent of GDP. Around 72 percent of social protection spending is devoted to regressive programs (IMSS and ISSSTE), whereas only 27 percent (0.8 percent of GDP) goes to the better-targeted social assistance programs, including Oportunidades (Lindert et al., 2006). Among the social assistance programs, Oportunidades and Procampo comprise half of the funds (28 and 19.6 percent respectively). The other half is made up of education programs (13.7), food-based programs such as Liconsa, Diconsa, DIF/FAM, and tortilla (8.9), health programs (8.6), labor programs such as Temporary Employment Program (PET at 6.4), and other small programs. Hailed as the most successful poverty alleviation program in Mexico’s history, Oportunidades made up only 0.3 percent of GDP in 2000.

Rather than keeping CCT programs underfinanced, politicians might instead opt to expand the number of beneficiaries to include not only the extreme poor, but also the

²¹ Social spending in Mexico is much lower than in Argentina, Brazil, Chile, and Uruguay where in 2000 governments spent 21, 12, 17, and 24 percent respectively of their domestic products in social transfers (Lindert et al., 2006)
moderately poor, a change that would reduce the programs’ redistributive impact. Ernesto Zedillo followed the first model, keeping Progresa, the program he created for poverty alleviation, for a largely underfinanced social assistance program when he created. Vicente Fox from the PAN followed a combination of these two strategies after defeating the PRI in 2000, choosing to expand Oportunidades to the cities, where the PAN’s political clientele are disproportionately concentrated, while underfunding the program.

This book asks two fundamental questions about the politics of Progresa/Oportunidades. First, we seek to understand the nature of the transformation of poverty transfers from discretionary clientelistic-based programs to technocratic well-targeted ones. We show that the creation of Progresa grew out of a successful strategy by deeply committed technocrats who understood that their program could only be enacted if they kept a relatively limited budget, while at the same time conceding to the interests of PRI politicians in maintaining discretionary and highly politicized programs such as Pronasol. The strategy succeeded because the true successor of Pronasol was the FISM that we discuss in the next section.

President Zedillo gave PRI governors and mayors access to vast resources through his decentralization reforms. Progresa was a key strategy to prevent social turmoil and unrest, given that the most visible impact of the 1995-96 crisis was an alarming increase in poverty rates. In the midst of the macroeconomic problems of the Peso Crisis, the political exchange from the president to local governors was largely successful. Although the overall amount of funds devoted to social expenditure decreased, mayors and governors had more control over allocation of resources than ever before.
The second fundamental question we ask about *Progresa/Oportunidades* is related to its political consequences. Some analyses have claimed that *Progresa* was politically manipulated in its selection of beneficiaries. For example, Rocha Menocal (2001) produced one of the earliest analyses, reproducing a state-level analysis similar to the seminal analysis of *Pronasol* by Molinar and Weldon (1994), but with *Progresa* allocations. Using municipal-level data for 2000, Takahashi (2006) suggests that *Progresa* was disproportionately allocated to municipalities governed by the PRI, characterized by patterns of multiparty electoral competition (more than two effective number of parties). We find these arguments highly implausible.

In this book we do not make a statistical argument to show a relationship between *Progresa* allocations and political variables because we acknowledge that selection of rural beneficiaries in the first stage of the program was driven by locality poverty mapping and the accurate use of income surveys. The urban expansion of *Oportunidades* might reflect a slightly different story. The PAN had an interest in expanding the program to the cities, where it traditionally performs better. While the program is designed in rural areas in such way that there is little discretion in the selection of beneficiaries, in cities this process depends on self-selection, which might, in part, be susceptible to political mobilization. However, periodic independent evaluations of the program have over the years suggested that even in urban areas there have been relatively very few errors of

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22 Moreover, as Green (2005) has shown, the fact that the PRI has more support among poor voters means there is selection bias in any simple OLS statistical estimation. She uses a regression discontinuity method, which suggests there is no effect of the allocation of Progresa on turnout and voting behavior. De la O (2005) finds, in contrast, a positive effect of Progresa on turnout and electoral behavior. We deal with this debate in chapter 8.
exclusion or inclusion, in the sense that targeting based on poverty indicators seems to be the rule.\textsuperscript{23}

1.7. The decentralization of social infrastructure: FDSM/FISM

For most of the 20\textsuperscript{th} century in Mexico, the federal fiscal structure underwent significant centralization with the consolidation of the PRI (Diaz-Cayeros, 2006). The national government controlled most of the economic resources while state politicians had virtually no leeway to influence spending decisions. Governors depended on the central government to finance social development projects, infrastructure and public works, and administrative operations. Public investment was highly skewed in favor of some states and cities, most notably Mexico City.

The distribution of funds from the federal government to the states has been governed by formulas that were negotiated as part of a “federal fiscal pact,” the National System of Fiscal Coordination. The formulas, originally drafted in 1980, were intended to compensate rich states for the loss of revenue resulting from the introduction of a national value added tax (VAT). Gradually, the formulas evolved. Poorer states, where the PRI was stronger, received higher shares. After 1993, the federal government diverted education expenditure to the states, and a few years later funds for health and basic municipal infrastructure were decentralized. By 1998, the various subsidies granted by the federal government to finance the provision of public goods and services in the states were incorporated into the National System of Fiscal Coordination. Subsidies were

\textsuperscript{23} We prefer to remain agnostic as to whether this involved political manipulation where individual families in cities were being picked due to their partisan affiliation.
earmarked and conditioned in their use to federal priorities, although in practice the states had ample leeway to allocate them. Revenue sharing funds were the other category of major federal funds that states were able to spend with discretion.

The PRI employed fiscal centralization to its advantage. It undermined its opposition by systematically diverting fiscal resources away from states and municipalities that were controlled by other parties and toward its own constituents more (Rodríguez, 1989; Diaz-Cayeros, Magaloni and Weingast, 2001). Without access to federal transfers, opposition governments faced enormous challenges in building party organizations at the local level. But when the PRI lost the majority in the Chamber of Deputies in 1997, they were forced to form coalitions with other political parties to pass legislation. The PAN conditioned their support of the PRI-proposed budget on more transfers and programs to local governments.

Figure 1.3 shows the history of federal transfers to the states from 1960 until 2006. We report total federal transfers, federal public investment, revenue-sharing funds and subsidies as a percentage of the states’ average GDP. We also report the average real growth of transfers to the states in per capita terms. Except for the spike during the years of the oil boom in the late 1970s, significantly more resources went to the states in the post-1997 era. Most of the increase after 1997 comes from revenue-sharing funds and subsidies. This highlights a key difference between the use of funds in the 1970s and 1980s. Back then projects were primarily determined by federal priorities of central government investment. In the post-1997 era governors have had virtually free rein with the use they make of federal transferred resources. The increased fiscal decentralization took place in the context of burgeoning democratization at the local level, as
measured by alternating shifts in political power for office at the local level.

[Figure 1.3 about here]

In the mid 1990s, before the PRI lost its majority in the Chamber of Deputies, the federal government began to move toward greater transparency in the allocation of resources to state and local governments. In 1996 a third of Pronasol resources were decentralized, and the following year the proportion was increased to two-thirds with conversion to a formula-based, poverty-targeted system of transfers when the government created the Fondo de Desarrollo Social Municipal (FDSM). The new formula for the distribution of transfers was based on municipal-level poverty indicators and infrastructure needs. The fund was incorporated into the federal budgetary item 33 in 1998, just as the federal aportaciones were created. The name of the fund was then changed to the Fondo de Aportaciones para la Infraestructura Social Municipal (FISM). A new Law of Fiscal Coordination (LCF) established the criteria, distribution, and operations of item 33 funds to Mexican states and municipalities by determining the distribution of education, health and security funds among the states, as well as the distribution of municipal funds.\textsuperscript{24}

The program that replaced Pronasol was not Progresa, as is frequently thought, but rather FISM. Comparing the cumulative spending in local public goods allocated to municipalities through Pronasol, compared to the provision of FDSM/FISM during the Zedillo administration it turns out that the order of magnitude of the funds allocated to a

\textsuperscript{24} For a thorough examination of FISM see Diaz Cayeros and Silva, 2005.
typical municipality is not very different under each program.\textsuperscript{25} The distribution of funds within FISM is characterized by a much smaller variance (around a third), compared to Pronasol. This is primarily because the allocation of Pronasol funds was skewed, with some municipalities receiving much larger transfers than others receiving virtually nothing.\textsuperscript{26} Municipalities did experience important shifts in the distribution of funds they individually received under each program (the correlation between both distributions is quite low, at 0.3527). The shift into FDSM/FISM involved an important reallocation of shares (further analyzed in chapter 5) and, eventually, a more targeted distribution of funds towards poorer municipalities.\textsuperscript{27}

In contrast to the discretionary nature of Pronasol, the allocation of funds to municipalities under the FDSM was based on a sophisticated poverty formula using census indicators for unsatisfied basic needs (Mogollón, 2002; Levy, 1998; Boltvinik, 1999). The formula determined the allocation of funds across states, although it was developed using municipal-level indicators.\textsuperscript{28} The factors in this formula are the reason

\textsuperscript{25} The median Pronasol transfer for local public goods was almost 597 pesos, while the FDSM/FISM was 437 pesos.
\textsuperscript{26} This made the average transfer much larger in Pronasol than in FDSM/FISM, namely 791 vs. 475 constant (inflation adjusted) pesos of 1994 respectively.
\textsuperscript{27} Despite the fact that both FDSM/FISM and Progresa/Oportunidades had a built in design ensuring a close match in the geographic allocation of funds to poverty mapping criteria (a point we address in the next section), public opinion polls suggest that citizens kept on believing that funds were discretionarily/discretionarily allocated according to political criteria. In fact, Cornelius (2004) estimates that, controlling for the usual socioeconomic variables, Progresa beneficiaries were 9 percentage points more likely to vote for the PRI in the 2000 election than non-beneficiaries (p.24). Although the issue of whether social assistance funds were manipulated politically is not addressed until chapter 6, one can anticipate that one of the most hotly debated issues of the 2006 election still remains whether the incumbent government used social programs in order to buy votes or coerce voters (Alianza Cívica, 2006; Fundar, 2006).
\textsuperscript{28} States then had to allocate funds to their municipalities either according to the federal formula or a simplified version weighting indicators of municipal level illiteracy, lack of access to sewage, electricity, and the percent of earners with incomes below two minimum wages.
why, even though the spread is relatively similar, the allocation of funds among municipalities in FDSM/FISM was quite different from that of Pronasol.29

1.8. The way ahead

Mexico has witnessed important changes during the last decades. As the longstanding rule of the PRI came to an end, the country has undergone a protracted transition to democracy. Democratization altered the functions of the basic institutional apparatus and state-society relations. A major decentralization of fiscal authority accompanied this political transformation. Partly as a result of the democratization process, social assistance programs transformed dramatically during the 1990s. Mexico’s “truncated welfare state” gradually began to expand with the creation of new programs that explicitly targeted poor citizens not covered by social insurance programs. Prominent examples of programs aimed at the poor were Progresa/Oportunidades, and Seguro Popular. While earlier programs aimed to help the poor, the new programs were more successful in achieving these goals as a result of instituting formula-based criteria for allocating resources, rather than employing the discretionary model. It therefore became more difficult for politicians to manipulate welfare programs by creating clientelistic linkages with poor voters, then threatening to exclude those who fail to support them at the polls.

29 During the Zedillo administration there was also a transitional provision that gave a disproportionate share of funds to small states. That provision distributed 1 percent of the total fund to each state regardless of their population. Funds allocated after 2001 did not have this lump sum provision, hence mapping poverty more accurately.
One of this book’s goals is to understand the workings of *Pronasol*, by way of both its clientelistic behavior toward individuals and small groups of voters, and its pork-barrel infrastructure projects targeted to municipalities. We also seek to understand the politics that led to the abandonment of *Pronasol* and the creation of *Progresa/Oportunidades*, on the one hand, and the politics of decentralization in the establishment of the FISM, on the other. Overall, what we observe in Mexico is a movement away from discretionary, clientelistic types of social assistance programs, to formula-based programs that aim to depoliticize the allocation of resources for the poor. The decentralization of allocations of infrastructure projects, from one in which the main decisions were made by the president’s office to one which involves thousands of individuals and hundreds of politicians. The following chapters assess the effects of these dramatic changes in improving the welfare of the poor and examine how these changes came about.
Chapter 2

The Geography of Poverty

It is the variety of wants in different climates that first occasioned a difference in the manner of living, and this gave rise to a variety of laws.

Montesquieu (1914 [1752])
The Spirit of Laws, Book XIV, 10

2.1. A shift to the local level

San Juan Chamula, a Tzotzil town in the Chiapas highlands, is busy, filled with tourists coming to visit the colonial church of San Juan Bautista and beautifully illuminated by the dim, flickering light of hundreds of candles. Pine needles cover the floor, their aroma mixing with the sweet smell of copal incense. Men kneel on the bed of needles with their families seated around them, chanting and praying to both Christian and Mayan gods. Every so often the men engage in conversation with the figures of saints along the walls, sharing their grievances, hopes and requests. They drink from cola bottles while praying. City elders guard the entrance of the church to prevent visitors from taking pictures.

We have visited the town at least five times, the first more than 20 years ago. Back then, Chamula was isolated from the outside world; there were no major roads and few tourists visited the remote town. Although the church and local religious rituals have remained unchanged, Chamula is a very different place today. The marketplace is

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swarming with tourists bargaining with the market women and craftsmen who sell colorful textiles and leather goods. The town’s huge graveyard is littered with plastic bottles and garbage. Chamula is well endowed with infrastructure: it is close to major highways, just a few kilometers from the city of San Cristóbal de las Casas, and served by the national power grid and modern telecommunications (79 percent of the homes have electricity). As one drives to Chamula, evidence of new construction is everywhere: the highway is expanding; traditional adobe construction have been replaced by brick houses; buses and cars fill the roads. New construction of the kind seen in Chamula has been on the rise throughout Chiapas, the Yucatán and Oaxaca in recent years, chiefly a result of decentralization and the increase of federal transfers for social infrastructure through FISM.

Yet Chamula remains one of the poorest places in Mexico today. The United Nations Development Program (UNDP) ranks it as the 16th poorest municipality in Mexico.31 It is also small and very densely populated — barely 82 square kilometers with a population of over 67,000. In 2000, half of the dwellings had no access to safe drinking water, and only 40 percent of pipes even connected directly to the water system. Today more than 90 percent of the houses have no proper sewage system. 28 percent of the women are illiterate and 62 percent of adults speak only Tzotzil. Most people live in overcrowded houses with dirt floors. Despite proximity to health services and schools, infant mortality rates are extremely high, at 72 per 1,000, and the average level of formal schooling is barely above two years. According to Sedesol calculations, 94 percent of inhabitants live under the nutritional poverty line.

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31 According to its Human Development Index.
Ethnically, Chamula is a homogeneous community, where 99.3 percent of the inhabitants are Tzotzil Indians. A serious religious rift has taken place in recent years, particularly after 1992. According to the 2000 census, 74 percent of the inhabitants identified as Catholic, while the rest indicated no faith. And though Protestantism has made inroads in the state of Chiapas, virtually nobody claims to be Evangelical. This is because, by some estimates, approximately 35,000 Chamulas expressing Protestant faith have been expelled from the community with the complicity of the authorities. The residents in Chamula feel disempowered by their local leaders, (caciques) who, among other practices, monopolize the sale of soft drinks used in the religious rituals as a way of maintaining control over the local population. For decades, the caciques have delivered the solid support of 100 percent of votes for the PRI.

Understanding the persistence of poverty in places like San Juan Chamula — with its inadequate provision of public services and dismal development indicators — and the impact social programs like FISM and Progresa/Oportunidades have made on poor communities is a central goal of our analysis. We take a geographic approach to the study of poverty relief strategies, using the municipality as the politically relevant unit of analysis. In this chapter, we outline the basic spatial patterns of poverty, the distribution of political power across the territory and the geography of public expenditure. Analyzing data at the municipal level provides the leverage of a large $n$ and multivariate statistical methods, but it also introduces challenges related to selection effects and omitted variables biases. These challenges are addressed in subsequent chapters.

The territorial mapping of poverty became crucial to selecting households eligible for government support when the Mexican government began targeting cash transfers to
individuals. The federal social policies we study in this book are all geographic in nature. The provision of public goods is geographically bound because most services, such as sewage systems, schools and health clinics, are always located in fixed places. Although cash transfers could be evenly distributed across the country, in fact they tend to be concentrated in particular areas due to the geographic nature of poverty. Voting choices take on distinct geographic patterns as well because they are highly conditioned by characteristics of party competition and the socio-economic and demographic dynamics particular to each local context. Hence, in order to understand the political economy of social transfer programs, we must shift from a national level of analysis to studying the processes that occur in geographically heterogeneous local spaces.\(^{32}\)

Our approach involves disaggregating programs, policy interventions and outcomes at the municipal level. Even when performing analyses using individual-level data, we control for geographic location as measured by municipal characteristics. It is surprising that most analysis of social policy is done at the national or state level when the poor are often geographically trapped in poverty because they live in places with few opportunities. Although poverty-relief policies may help individuals migrate to places with more opportunities, most social policies address poverty in the places where the poor cluster. The success of social policies is usually predicated on local conditions allowing for the implementation of national programs. This is why a geographic approach is essential to the study of anti-poverty policies.

Despite a recent trend favoring experimental methods to study the determinants of individual-level choices in distributive politics, we focus instead on aggregate outcomes emerging from observational data. Too many important questions about development

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\(^{32}\) For a plea to turn space into a more prominent aspect of comparative politics see Tarrow, 2006.
cannot be studied through experimental approaches alone. Individual-level studies and experimental manipulations shed light on important questions, such as the mechanisms through which citizens believe their governments are doing a good job in improving the provision of public goods and services, but studying aggregate indicators allows us to analyze actual public spending patterns and provision of local public goods on the ground in relation to actual election outcomes, thereby linking the scope of coverage and the level of improvements in public good provision to public spending. Comparing municipalities with different political and socioeconomic characteristics allows us to infer how the political environment enables or impairs practices of clientelism.\footnote{Some of the best work using survey data to study the determinants of clientelism has been carried out in Argentina by Brusco, et al. (2004), Stokes (2005) and Brusco et al. (2011). Calvo and Murillo (2004) use individual level data from income distribution surveys, also in Argentina, to study the salaries of public employees. For work using experimental approaches see Wantchekon (2003 and 2007), Vicente and Wantchekon (2009), Gonzalez-Ocantes et al. (2010) and De la O (2010).}

This chapter lays the groundwork for using a geographical approach to study social assistance programs; the analysis takes place at the level of the politically relevant jurisdiction of the municipal government. Section 2.2 discusses the geographic correlates of the spatial distribution of poverty across Mexican municipalities, section 2.3 describes the overall strategies of public good provision and poverty alleviation in Mexico from a geographic perspective, and section 2.4 recounts the changing patterns of political contestation in Mexico, also using a geographic approach.

\section*{2.2. Municipal level analysis}

There is general agreement among scholars that social programs in Mexico have often been politically manipulated. Researchers have hypothesized that the allocation of
poverty alleviation funds does not accurately match the patterns of poverty distribution around the country, rather it tends to reflect the political priorities of the president and the ruling party (for some of the early analyses of Pronasol see Molinar and Weldon, 1994; Bruhn, 1996; Dion, 2000). But such conclusions are fraught with inferential problems, particularly when the analysis has been done at relatively high levels of data aggregation. For example, given that Pronasol was supposed to reach specific communities and organized groups within Mexican localities, national and state level analyses were not adequately informative about the degree to which a program benefited the poor.

[Figure 2.1 about here]

Figure 2.1 clearly shows scatterplots of the allocation of Pronasol funds compared to poverty profiles, contrasting them to FDSM/FISM funds. The graphs depict both state and municipal levels of aggregation of the same data. The horizontal axis of the graphs reports a poverty head count index using 1990 census figures, measured as the percentage of the economically active population that earned less than the minimum wage. The vertical axis measures the per capita allocation of Pronasol funds accumulated over the 1989-1994 period, measured in real 1994 pesos for the first pair of graphs. The second pair corresponds to the FDSM/FISM funds accumulated from 1995 to 2000, also in real 1994 pesos. The graphs on the left column show the relationship (or lack thereof) between poverty and allocated funds at the state level, while the graphs on

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34 At the time the program started there was not too much sophistication in the mapping of poverty in the country. There was substantial understanding of unmet basic needs through census data (Coplamar, 1982); but there was only incipient work on poverty line calculations and measurement (Levy, 1994).

35 Such threshold is indicative of extreme poverty, to the extent that it more or less corresponds with a nutritional poverty line –i.e. enough income to buy the necessary caloric intake to survive (Levy, 1994).
the right column show a tighter municipal-level relationship. The municipal level of analysis provides a very different insight from that of the state.

The municipal level data show a slightly positive (and statistically significant) relationship between Pronasol spending and poverty. If the poverty head count index was one percent higher, the municipal aggregation suggests that 50 additional pesos would be spent in that unit. However, in the state-level aggregation there is no relationship between poverty and Pronasol spending. In the state-level analysis, for instance, the two states with the greatest poverty in Mexico, Chiapas and Oaxaca, both receive intermediate levels of funding, approximately equivalent to the funding received by Sonora and Baja California, some of the richest states in the country.

The problem of state-level aggregation is even clearer in the case of FDSM/FISM. The state-level graph on the left side suggests that the decentralized funds for social infrastructure exhibit a pattern similar to the one observed in Pronasol: no clear correlation at the state level between spending and poverty indicators. However, when the data is disaggregated to the municipal level, it is evident that there is a very strong correlation to poverty, reflecting the much more targeted distribution of resources toward poor municipalities in FISM than in Pronasol as a result of FISM’s use of a poverty formula.

The difference in the scatterplots is known in geography as the modifiable areal unit problem (MAUP) (Openshaw, 1984). The MAUP occurs “if widely varying estimates result when most methods are applied to alternate re-aggregations of the same geographic (or “areal”) units” (King, 1997). There are two aspects to the MAUP: the scale (or unit of analysis) and zoning (or the way in which the data are grouped). In the
specific instance of Pronasol projects, the issue of scale is straightforward. If a project was undertaken in a relatively rich locality within a poor state, it is possible that the targeting did not benefit the poor, and thus targeting would be more easily observed at the municipal than the state level of analysis.

The zoning problem is more clearly understood in terms of the relevant units for aggregation. One could subdivide Mexico in any number of ways, depending on the type of concern driving the analysis. For example, one could create a regionalization based on hydrology, the way river basin planning commissions did in the 1960s; by climatic zones; by state jurisdictions; by the 300 single-member districts in the federal legislature; by the autonomous landholding organizations that structure rural life (ejidos); or by clustering urban localities into metropolitan areas. Whether one chooses one zoning criterion over another depends on the substantive question being asked. If members of Congress make decisions about the allocation of funds, the most relevant unit of analysis would be the federal district, not the municipality or state. If governors are the driving force for federal appropriations, then studying the state-level variance is important in understanding the allocation determinants. But for the time period we study, the critical arena for the formation and implementation of social policies turns out to be the municipality.

Both municipalities and states are the politically relevant jurisdictions for distributive politics in Mexico, at least during the period of study and for the social programs discussed in this book.36

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36 Electoral processes and the interaction among politicians in legislative assemblies and other arenas define the politically relevant jurisdiction. Political institutions aggregate voting choices. When rules of aggregation are structured according to territorial criteria, the decisions on public spending will be primarily driven by the place where voters live and work and politicians compete for their support. Territorial aggregations hence define political units (jurisdictions), within which citizens demand public action, political parties and candidates offer alternative policies, and politicians win or lose elective office.
Mexico’s federal system is divided into 32 states, each headed by a governor who serves a six-year term with no option of reelection. State legislatures are relatively weak, providing few checks and balances on their executives (Magar and Romero, 2006). Mexico has 2,438 municipalities (as of 2005), which usually include an urban center (cabecera) and a rural periphery. Mayors hold municipal office during three-year terms, with no reelection. Municipal councils (cabildos) are selected through electoral formulas that, in the overwhelming majority of states and municipalities, give a council majority to the mayor’s party, meaning that the municipal executive controls the cabildos. Given that Mexican federalism is highly centralized on the tax collection side, most local finances depend on conditional transfers and revenue sharing provided by the federal government (Diaz-Cayeros, 2006).

Through this system, the decision-making process on public spending at the local level (states and municipalities) is dominated by governors and mayors, and their interaction with federal bureaucratic agencies. Political processes at the local level take place with their decision makers, namely the local and state executives. This is not to deny the role of legislators, municipal councils, social movements, local participation, or brokerage systems such as classic clientelistic networks, in the mediation of public spending decisions, but those social and political interactions end up being channeled into demands primarily by mayors for public spending.

In recent years governors have played an increasingly salient role in local distributive politics. Not much is understood, however, about the degree of coordination and cooperation between governors and municipal authorities in the matter of

Thus, a politically relevant jurisdiction ties voters to government performance and thus to political survival in a particular place.
infrastructure investment. It is also not known to what degree of compliance is exercised by governors using federal norms of revenue sharing for municipalities. Nevertheless most social development funds continue to be transferred from the federal budget to the municipal governments to be allocated in a discretionary manner by local officials. According to the Mexican constitution, municipalities are responsible for local public goods provision, including sanitation, roads, water, public markets and electricity. Under the Pronasol program, municipalities were supposed to provide “matching funds” in order to be able to receive federal social infrastructure funding. FISM is explicitly distributed to municipalities, which have ample discretion to decide which projects to fund locally.\(^\text{37}\)

Although studying individual-level data can help researchers to avoid drawing inaccurate inferences about social programs, the high cost of gathering individual information at the municipal level means it is often only available for nationally representative samples. For purposes of strategic implementation, individual-level data was collected in Mexico for a randomized evaluation of Progresa (Rawlings and Rubio, 2003; Skoufias, Davis and Behrman, 1999; Skoufias, 2001),\(^\text{38}\) but for most social programs such data is unavailable.

Even if one has adequate survey data for a social program, there remains the problem of how to assess the provision of local infrastructure projects that may have collective and spillover effects. There are good reasons to be interested in the patterns observed in the municipal political jurisdiction as a whole. We want to assess actual

\(^{37}\) Progresa/Oportunidades is not targeted at the municipal level, but determined by a mapping of poverty at the household level.

\(^{38}\) Given the availability of individual level poverty data for Progresa/Oportunidades, state level analyses, like the one pursued by Rocha Menocal (2001), are most likely drawing faulty inferences.
spending patterns of public infrastructure projects. Except for individually targeted spending, most public programs in Mexico provide lumped goods for projects that span the entire municipal jurisdiction. Decision makers (both political and bureaucratic) rank the projects according to the municipalities that ought to be given priority, rather than the individual projects. The provision of a proper sewage disposal system, for example, impacts not only those directly targeted, but also may produce benefits for those who do not have direct access, such as reduced infectious diseases as a result of improved water sanitation in the targeted area.

Our study focuses on the assessment of outcomes in the provision of local public goods. The welfare effects of public good projects are derived not only through direct impact on individual income or well-being, but also through improved sanitation conditions, health services and infrastructure, and access to roads and transportation. In alternative data collection strategies, such as surveys, respondents might not report indirect benefits because they might not be aware of the spillover effects. In our study we seek to understand the extent to which various public spending projects or strategies lead politicians to win or lose elections, and how local party system configurations take shape.

The disadvantage of individual data for surveys on political questions is that they often fail to produce sincere responses from voters.\(^\text{39}\) For example, given that vote buying and selling is illegal, respondents have incentives to misrepresent their behavior and opinions when asked whether they have engaged in clientelistic exchange. To work around this credibility problem, surveys can ask about perceptions of clientelism, rather than about actual practices. Since we are interested in studying actual voting decisions,

\(^{39}\) However, innovative survey techniques, such as “list experiments,” have been shown to help researchers sidestep this problem.
the individual-level data we use is limited to exit polls, and our analysis is confined to an assessment of whether beneficiaries are likely to support the incumbent responsible for social policies. Thus, our analysis is mostly done at the municipal level; when available and appropriate, we complement our findings with individual-level data.40

2.3. Poverty and geography

Poverty in Mexico is highly correlated with specific topographic and climatic characteristics, such as those associated with San Juan Chamula The poverty profile of Chamula is similar to hundreds of municipalities in southern Mexico that are equally rural, indigenous and nestled in rough, mountainous terrain. A typical extremely poor locality is generally isolated from main cities, roads and highways, as Chamula was only a few years ago.

Figure 2.2 maps poverty across Mexico. The map uses the Consejo Nacional de Evaluación de la Política Social (CONEVAL) computation of nutritional poverty (i.e., a poverty line drawn at the minimum caloric intake necessary for survival) at the municipal level in 2000. It highlights the prevalence of extremely poor households across Mexico, with a spatial distribution showing that poverty is most concentrated in rural areas.

40 Mexican poverty is concentrated in localities smaller than the municipality (See World Bank, 2005). However, geographical differences across regions are as important as individual level characteristics in accounting for the poverty profile of the country (Wodon, 1999). That is, although poverty is an individual attribute, the localities where the poor live tend to cluster together in close neighborhoods. There is also a high degree of homogeneity inside poor municipalities—poverty tends to be equally distributed. If municipalities are internally homogeneous, the impact of social program measured at the municipal level most likely yields a good inference of the underlying locality level effects.
There is an undeniable statistical correlation between the patterns of poverty and destitution displayed by the map in figure 2.2 and a set of geographic variables. Gallup et al. (2001) and Sachs (2005) have plausibly argued that geography plays a key role in development. For example, landlocked countries tend to grow at a slower rate than those with coastal access and navigable rivers; and across the world, it is well known that latitude is correlated with per capita GDP levels (Sachs, 2001). We know that institutional and historical processes shape the evolution of well-being (Acemoglu and Robinson, 2004); we also know that geography is not destiny (Gallup, et al., 2003). Yet poverty profiles are inevitably linked to the geographical characteristics of the territories where poor people live. This geographic relationship presents a methodological opportunity. Since human agency can only change geographic attributes at the margin (roads, bridges and tunnels can be built, swamps can be drained and rivers dammed, but mountains cannot be moved), geographic attributes are extremely good predictors of the spatial distribution of poverty. The rural poor in particular tend to live in less accessible and hospitable places. Their settlement patterns usually reflect inherited and longstanding historical processes that have also generated the borders separating jurisdictions.

Table 2.1 provides a list and descriptive statistics of all the geographic variables we calculated. Latitude and longitude are used in the construction of the matrix of proximity weights to correct for spatial autocorrelation. North and east are the same variables as longitude and latitude, but expressed in a more intuitive form, as kilometers from the southernmost and westernmost points in the country. Temperature, rainfall and altitude define the basic climatic zones that cover the range from humid and tropical to
dry and temperate.

Mexico is a particularly mountainous country, so we calculated from the data on altitude the ruggedness of each municipality’s terrain (measured as the standard deviation of altitude). This measure indicates how physically inaccessible a place is. We calculated the number of major rivers crossing a municipality and whether there was a major lake. The coastline variable detects access to the sea. Given the peculiarities of Mexico’s highly permeable border with the U.S., we coded municipalities on the northern border also as coastline.

The land area of the municipality reflects a measure of size, while population indicates the relative importance of municipalities. Population density combines both of these indicators, reflecting to a large extent the degree of urbanization. Finally we calculated four indicators reflecting accessibility to markets: distance to major highways, railroad tracks, cities of more than 100,000 inhabitants and Mexico City. All the distance variables were calculated, using a Euclidean metric, to the closest point on the border of the jurisdiction.

[Table 2.1 about here]

The most striking aspect of Mexico’s natural geography is its extreme variation. And those variations are highly correlated with poverty. Mexico provides a contrast to the findings by Gallup et al. (2001) that most population and economic activity tend to be near coastlines or major waterways. The overwhelming majority of Mexican municipalities are landlocked and the population is not concentrated in coastal areas. The
development of Mexico’s transportation infrastructure since the 19th century has provided most municipalities with access to both railroads and major roads (within an average of 23 kilometers and five kilometers, respectively).

To understand the relationship between poverty and geography, Table 2.2 presents an ordinary least squares (OLS) regression of several indicators of poverty and development on a selection of geographic variables. The dependent variables are all normalized into z scores with a mean of 0 and a standard deviation of 1 to make it possible to compare the impact of various geographic features across regressions (although each of the indicators is constructed with different underlying data).

To measure poverty, we employ three alternative indicators. The first indicator we use is the nutritional poverty headcount index presented in figure 2.2. A second indicator measures the relative deprivation of municipalities in 1990. The index combines characteristics of households, including access to public services such as sewage systems, drinking water and electricity, access to housing construction materials, and individual traits such as literacy and earnings according to the 1990 census. The final dependent variable is the Human Development Index (HDI) calculated by UNDP on the basis of 2000 census data.

The table explicitly states in its headings that the coefficients should be read as suggestive of correlations to poverty, not of a causal relationship in which the geographic

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41 Previous efforts to study the geographical determinants of poverty include Esquivel (2000) and Blum and Diaz-Cayeros (2002). Those studies are carried out at the state level. For a municipal level analysis focusing on poverty and food security, see Bellon et al. 2004.

42 The poverty headcount index comes from CONEVAL; the relative deprivation index is a widely used indicator produced by the Mexican population council (CONAPO) and based on factor analysis of census data; the HDI is constructed with an internationally shared methodology that combines indicators of income (measured as the municipal per capita GDP), education (literacy and school attendance) and health (infant mortality rates).
variables “explain” or produce specific outcomes of poverty and development. Two estimations are reported for each index, one that includes only variables of natural or physical geography (latitude, longitude, temperature, rainfall, coastline, altitude and terrain ruggedness), and a second one that includes what we call “human geography,” indicating that the variables of distance, population and even land area are the product of demographic, socio-economic and political choices, accumulated over several decades and even centuries.

[Table 2.2. about here]

These results allow us to identify a distinctive geographic profile of poverty in Mexico. Estimations 1, 3 and 4 show that a third of the variance, as reflected by the $R^2$ statistic, is accounted for by including natural geography variables alone. There is a powerful north-south divide that is evident in the “northing” variable. The size of the effect is substantial. Using the coefficients from estimation 5, if we take municipalities with identical characteristics, except that one located a thousand kilometers farther to the north, that sole difference would yield a change of one standard deviation in the HDI $z$ score. The estimation also reveals an east-west cleavage. One thousand kilometers more to the east yields a poverty headcount index one-half a standard deviation larger.

Rainfall is statistically significant through all the estimations, including those with human geography variables, suggesting that places with more rainfall tend to be

43 For good discussions of the limits to geography “explaining” development and the fascinating debate regarding the role of geographic versus institutional determinants of development, see Gallup, et al. (2003); Acemoglu and Robinson (2002), Gallup, Sachs and Mellinger (1998), Przeworski (2004), and Escobal and Torero (2003).
characterized by greater deprivation. Rugged terrain is significant at the 95 percent level, implying the presence of geographic poverty traps in areas made remote and difficult to access due to topography (Jalan and Ravallion 2002; Bloom et al., 2003). The poor in Mexican municipalities with inaccessible terrain cannot migrate out of those places or readily move their accumulated human capital or assets beyond a threshold that allows them to increase their productivity.44

Temperature and altitude are only statistically significant when variables linked to human geography are not included in the estimation, which suggests that the correlation of these environmental conditions with poverty is less pronounced in the presence of human activities that facilitate the movement of goods and people across a territory.

The inclusion of the human geography variables increases the power of the regressions significantly. More than half of the variance in the distribution of poverty is accounted for when human geography is taken into account, as indicated by the $R^2$ statistic. The equivalent statistics for the marginality index and the HDI are similar. The human geography variables are all significant in the expected direction. When a municipality is far from a large city, has no nearby railroad line and is not linked to the rest of the country through the highway network, its population is significantly more poor. Larger municipalities in terms of land area tend to be poorer, but more population is associated with less poverty, which in the end means that places with greater population density (i.e. more urban concentrations) exhibit less poverty. When controlling for human

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44 Fearon and Laitin (2003) find that mountainous areas are likely to breed armed insurgency. In one of the few analyses using GIS to understand the determinants of social outcomes in Mexico, Villarreal (2002 and 2004) has shown that rugged terrain is an important determinant of crime rates across the country. Hence, rugged terrain is likely to be a reflection of a poverty trap in which destitution and violence are readily linked, although with the more recent eruption of drug-related violence, the geographic distribution of violence has changed, making Northern and less mountainous places the most dangerous.
geography, the variables related to the topography of the territory either cease to be statistically significant or reduce their association with poverty, which is consistent with the view that infrastructure and urbanization allow people to overcome poverty.

Among the human geography variables, the distance to railroads and the size of municipalities have been virtually fixed over the last century. Most railroads were built in the 19th century (Coatsworth, 1976), and the municipal subdivision has only changed marginally since 1917 (Blum and Diaz-Cayeros, 2002). Most cities with more than 100,000 inhabitants were established as large urban concentrations in colonial times. According to Tanck de Estrada (2005) there were around 20 Spanish cities and “villas” in 1800, as distinct from the so-called “Indian pueblos.” Spanish cities were the centers of power and wealth in the colonial period. Although much has changed since then, today’s large cities were established in the late colonial period, with the exception of cities on the northern border and some coastal ports that have blossomed as tourist centers in the last few decades.

On the other hand, other human geography variables have been changing rapidly during the last decades. Demographic patterns are not exogenous to the social, economic or political processes of both the recent and the distant past. These sociopolitical processes include dislocations produced by social upheaval at the beginning of the 20th century, massive urban migration since the 1960s and the large-scale emigration to the U.S. since the 1980s.

National highway construction in Mexico began in the 1920s, and the new construction often followed old colonial routes (Ortiz Hernán, 1994). But there has been a steady expansion of road networks since the 1960s, with a recent boom in highway
construction in the 1990s funded by joint private-public ventures. Among the geographical variables included in our estimations, highways are arguably the most reflective of recent government activity.

The location, climate and terrain of a municipality are important predictors of poverty levels. Our results suggest that poverty is determined by a combination of human agency and geographic conditions, but is driven more by the latter. The associations shown in these estimations are not necessarily causal. In fact, the social, economic and political processes captured by the geographic variables, particularly the ones shaped by human agency, are very likely the consequence of poverty as much as the cause. Teasing out the links of causality goes beyond the scope of this chapter.

2.3. Strategies for public good provision and poverty alleviation

The accumulated experience of two decades of poverty relief spending in Mexico affords a unique opportunity to compare and contrast poverty-alleviation efforts, particularly with regard to differences between discretionary and formula-based programs, targeted and universal approaches, and centralized and decentralized decision-making. It also provides insights into the ways in which local politics influences the implementation and allocation of funds across households and political jurisdictions. This book compares social spending strategies in all of Mexico’s municipalities that span three presidential terms.

Figure 2.3 shows the geographic distribution of the funds for Pronasol, FISM and Progresa/Oportunidades at the municipal level. The maps are organized into two
columns. The first shows funds targeted to individuals (in a clientelistic manner in the case of Pronasol and through entitlement-based transfers in the case of Oportunidades); the second one shows funds targeted to localities (public goods constituting pork-barrel appropriations for Pronasol and earmarked and block grants in the case of FISM). The first map shows the mean per capita allocation of Pronasol funds for private goods as classified by the criteria discussed in the last chapter, measured in 1994 pesos, for the 2,417 municipalities in Mexico at the time, during the six years of the program (1989-1994). Pronasol was made up of more than 20 programs, which we reclassified into projects providing private goods and projects providing public goods. The second map in the first row shows the public goods allocation of Pronasol for the same time period. The third map in the second row shows the mean per capita allocation of Oportunidades funds from 2001 to 2005. The final map in the figure shows the mean allocation of municipal social infrastructure funds (FDSM/FISM) from 1996 to 2000, also in real per capita terms.

[Figure 2.3. about here]

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45 The database on Pronasol spending was painstakingly compiled by Marcela Gómez and Sandra Pineda (1999). The allocation of funds shown in the map in figure 2.1 does not include contributions from beneficiaries and matching funds provided by state and municipal governments. The data does not report information for the boroughs of Mexico City.
46 Analysis of individual programs can be found in Gershberg (1994) for the Escuela Digna program; Fox (1994) for Indian community development programs; Hiskey (2000) for electricity and potable water; and Magaloni, Estévez and Diaz-Cayeros (2000) for potable water and sewage, road construction and the Fondos Municipales program.
47 These allocations differ from Progresa allocations in the 1997-2000 period in that they incorporate more urban beneficiaries, as well as expanding the rural reach of the program.
48 Although there were some small changes adjustments in FISM after 2000, the formulas used for the municipal distribution of these funds have remained fixed since then.
Despite their widely different levels of development, all municipalities in Mexico received at least some funds from each program. The different criteria for selecting beneficiaries are reflected in the different geographic patterns observed in the figure. The magnitude of the funds involved in each program varies widely. Pronasol public goods comprised the largest appropriations, followed by FISM. Oportunidades funding is substantially smaller than the private goods component of Pronasol, which was less than half of the public goods allocation. The programs were different from one another in several respects: Pronasol included funding geared towards large infrastructure investment in highways, sizeable transfers devoted to financing local public goods and transfers to individuals and organized groups. FISM had a narrower scope, providing direct municipal financing for local public goods selected and administered by local governments. Progresa provided CCTs to individual households in rural areas only, while Oportunidades expanded the rural coverage of Progresa to urban beneficiaries using the same basic design of the CCT program.

The most notable feature to emerge from a visual comparison of the maps is the marked difference in the geographical distribution of funds. An even shading of any map would mean that funds were distributed in an equal per capita amount across municipalities, rather than targeted to poorest localities. Maps with contrasting dark and light shades indicate more unequal allocations or, in this context, better targeted allocations. Areas of the country with greater concentrations of poor households should deservedly have more funds allocated to them than richer regions.

A comparison of the mapping of poverty and the distribution of social program outlays (figures 2.2 and 2.3) suggests that the program that most closely matched poverty
profiles across space was *Oportunidades*. FISM funds also show a similar distribution to the one found in a poverty headcount ratio. In contrast, private good provision in the *Pronasol* program was concentrated in Northern Mexico and the Yucatan peninsula, not necessarily the poorest areas of the country. Very low allocations of those funds were observed in the state of Veracruz on the Gulf coast, and in the western highlands, particularly in the state of Jalisco. The distribution of *Pronasol* public goods is somewhat distinct: large amounts of funds were allocated in some northern states, while smaller ones went to central areas, particularly the region north of Mexico City. An assessment of whether there is enough of a match between the territorial distribution of public funds and the mapping of poverty is developed in future chapters.

2.4. The political landscape

Our focus in this book is on how social programs are shaped by political and electoral considerations, and how these programs impact electoral outcomes and voting decisions. In much of the analysis of the book we take into account the partisan identity of incumbents at the municipal level and the degree of competition they face. The complexity of capturing the political landscape of a country is reduced, to some extent, by the existence of political parties. Through patterns of observed electoral support we are able to know something about the configuration of political preferences across the territory, which can be used as convenient shorthand for more complicated interactions between individual politicians, communities and voters.

The first map shown in figure 2.4 displays the support for the PRI in the 1994
federal elections, which yielded a PRI victory despite strong challenges from both the PAN and the PRD. The first thing to note is that, although the party no longer enjoyed the levels of electoral support it had grown accustomed to in the hegemonic era, it still commanded very large majorities in most municipalities in the country. Shaded in white are places where the PRI candidate Ernesto Zedillo received less than 42 percent of the vote; and in dark grey the municipalities where he got more than 50 percent of the vote. The municipal map visually exaggerates the importance of northern support due to the larger territorial size of municipalities in that region, but nevertheless it attests to widespread support for the PRI throughout the country, with the exception of greater Mexico City, the western highlands and parts of the south.

The second map shows the distribution of vote shares for the PAN in the 2000 elections, with the general shading indicating some regional contrasts in support. The highest vote shares for the PAN appear in the western highlands, the northern border and scattered municipalities in central Mexico. The party appears extremely weak, with vote shares below 10 percent, in the south. In contrast to the PRI map above it, the levels of support for the PAN across municipalities were much lower than those enjoyed by the PRI, even in elections that the ruling party lost.

The third map shows levels of electoral support of the PRD in the 2006 elections, which candidate Andrés Manuel López Obrador lost by a small margin based on officially sanctioned results. Notwithstanding PRD accusations of election fraud, there is no question about the electoral geography of support for that party in the third map. The party is very strong in poor southern states, but very weak in the north and the western highlands.
Although the three maps reflect different presidential elections spanning 12 years, taken together the maps tell an important story about the character of electoral competition in Mexico. From the mid-1990s onwards, partisan competition in federal elections has strengthened, but in clearly defined territorial patterns. The PRI is electorally competitive throughout the country, generally facing challenges from the PAN in the north and from the PRD in the south. The PAN and the PRD, however, rarely compete against each other in a particular municipality, state or region. Truly three-party elections are mostly observed in the central region of the country, especially in greater Mexico City, and in a few urban districts in the rest of the country. Thus, since 1994 the geography of electoral politics is not necessarily strictly aligned with the geography of poverty.

While the federal electoral results provide a good overview of the conditions that make Mexican electoral politics so vibrant and competitive, it is important to note that democratization did not just come about as a national process. Local level processes of alternation in political power, where the PRI had no other choice but to recognize its defeats in municipal and eventually state level electoral contests preceded the transition to democracy. Figure 2.5 provides an indicator of the process of democratization from a
local perspective, by showing the years since an alternation in mayoral races taking place in each of the municipalities. Alternation at the local level provides an unambiguous indicator that the PRI no longer held a monopoly of representation, even if voters may have decided to allow that party to return to political office in subsequent elections after its defeat. The general pattern displayed in the map shows, first, that virtually all municipalities have had some alternation by 2006. In this sense, despite the deep entrenchment of party bosses and machines in various regions, the democratization from below has been completed for the most part.

Second, democratization from below does not seem to obey a particular territorial logic or be simply driven by modernization processes. While in the early 1990s capital cities in each state and relatively richer municipalities were more likely to vote against the PRI, as democratization continued advancing electoral victories of the opposition parties, mainly PRD and PAN, were observed throughout the country.

It is perhaps not so surprising, in the context of these electoral challenges, that PRI governments tried to strategically use the distribution of poverty relief resources. The political imperative of the party was to remain in office, and prevent further erosion, in the face of vigorous competition by parties. The next chapter moves to the task of providing a theory of how politicians address electoral threats using the distribution of transfers to voters as a way to buy off political support; while the chapter after that assesses the strategy for the case of Mexico.
Chapter 3

Strategies of Vote-Buying

Core supporters will not long tolerate a party that delivers benefits to outsiders.

Dixit and Londregan (1996: 1140)

3.1. Introduction.

Poverty-stricken districts are seldom transformed by growth and welfare-enhancing policies fitfully applied to them by government actors. Instead, politicians opt to target the poor with private, excludable benefits such as cash transfers, medicines, food baskets, construction materials and livestock, which are often given around election time. Many developing countries fail to grant entitlements to the poor, often making clientelism the only safety net available to them. One of the purposes of this book is to understand why these patterns are so prevalent in the developing world. Our analysis focuses on Mexico, where the distribution of particularistic transfers in exchange for political support was the predominant mode of political exchange between the PRI and the poor.59

This chapter provides a formal model of vote buying. The theory allows us to understand, for example, why the Peronist party in Argentina funnels jobs and patronage to its own supporters, why the rules-of-thumb for political machines in the U.S. were to “hold what you’ve got” and “take care of your own” (Holder, 1975, cited in Cox and

59 Classic references on the politics of clientelism in Mexico are Cornelius (1973), Fox (1994), and Cornelius, Craig and Fox (1994).
McCubbins, 1986: 383), and why the PRI apparently over-invested by disproportionately delivering benefits to its loyal voters.

We build on existing theories of distributive politics, developed for understanding the determinants of discretionary welfare transfers. The chapter unfolds as follows. Section 3.2 discusses our analytic framework that highlights two dimensions of government transfers relevant for the study of vote buying. Section 3.3 places our theoretical approach within the core versus swing voter debate and the literature on tactical redistribution. Section 3.4 develops our theory answering the core voter puzzle: Why do parties insist on investing in voters that are already likely to support them? Section 3.5 argues that such parties under pressure from competition are caught in a dilemma: sustaining their electoral coalitions over time by taking care of their core constituencies, or maximizing their chances of reelection by catering to swing voters. The latter strategy can be advantageous in the short term, but is destabilizing over time. To solve this dilemma, we argue that parties diversify their portfolio of electoral investments by targeting discretionary private benefits to their core voters and public goods to the population at large.

3.2. Discretionary private and public goods

We classify what we call “instruments of electoral investment” according to two dimensions: whether the benefits are private or public goods and the degree to which there is formal government discretion, or leeway, to decide who benefits, when transfers are given, and when they are withdrawn. Private goods can be targeted to individuals and
exhibit excludability of consumption, whereas public goods can only be targeted to localities or districts and their consumption is generally non-excludable. The instruments of electoral investment are non-discretionary when the program defines *ex ante*, in legal and abstract terms, who ought to benefit and under what conditions. This programmatic redistribution differs from discretionary transfers or what Dixit and Londregan (1996) call “tactical redistribution,” which can take a variety of forms, including campaign handouts, subsidies, tariff protection and pork-barrel projects. The focus of this chapter is tactical redistribution — investments in discretionary private and public goods.

The literature on distributive politics has tended to overlook the fundamental differences between discretionary private and public goods produced by government. It also fails to underscore the critical role of government discretion and how this impacts electoral exchange or “political linkages” (Kitschelt, 2000). Private goods are excludable and reversible, while public goods are not. When combined with government discretion, excludability means that parties can potentially target benefits, rewarding and punishing voters according to their political loyalties. Many public goods exhibit some degree of excludability because they are targeted to certain districts. Magaloni (2006) shows, for example, that *Pronasol*’s social infrastructure projects generally did not take place in municipalities that were governed by opposition political parties. Nevertheless, when a bridge is built or a public clinic or school constructed, it is not possible to exclude opposition voters in that locality from consuming these benefits.

The second fundamental difference is their reversibility. Private goods are easily reversible if they are accompanied with government discretion. Discretionary private transfers can be made for any length of time and can be withdrawn when the politician so
desires. In contrast, public goods once in place cannot be withdrawn: infrastructure projects such as roads and highways, bridges and canals, sewage and irrigation systems, public service facilities and power plants are fixed investments. In some cases, however, politicians may intentionally choose to forego maintenance of these investments. For example, in their study of Peru, Paxton and Schady (2002) find that incumbents sometimes purposely neglect to maintain public infrastructure.

In the introduction, we classified discretionary private goods as clientelistic transfers. Discretionary public goods, transfers spent on infrastructure, electrification, street pavement, road construction and so forth, constitute what is often referred to in the literature as “pork-barrel” politics (Shepsle and Weingast, 1980; Ferejohn, 1974). Pork-barrel politics differ from clientelism in that its principal benefits cannot be targeted to the individual level. Public goods, therefore, are subject to a commitment problem, since the benefits are enjoyed widely, including by opposition backers. Private goods, on the other hand, are more effective at reaching a larger share of the population and, consequently, useful for building larger or more encompassing electoral coalitions (Magaloni et al, 2007; Bueno de Mesquita et al, 2003; Chhibber and Noorudding, 2004).

Non-discretionary, excludable transfers, commonly referred as entitlements, are targeted to individuals based on formal, legal and abstractly defined criteria such as age, employment status, disability, gender and income. Such transfers constitute entitlements inasmuch as the legal criteria for selecting beneficiaries is effectively enforced, and to the extent that politicians cannot deselect beneficiaries if they support a different political party. Entitlements typically require the backing of a state bureaucracy that enjoys autonomy or is insulated from political influence (Schefter, 1994). The literature
normally refers to this form of electoral investment as “programmatic redistribution” (Kitschelt, 2000). Non-discretionary public goods programs, such as FISM, are assigned across districts or political jurisdictions through distribution formulas. There is no distinguishing trait of party systems in programmatic and non-programmatic behavior; rather political parties use complementary strategies, and distributive incentives are intertwined.

In this chapter we provide an analytic framework and formal model that focuses on discretionary electoral investment strategies. The political machine is based on both clientelism and pork-barrel politics. Although political parties use both private and public goods to mobilize electoral support, we demonstrate in this book that different forms of electoral investment are driven by different motivations. Our theory posits that politicians use private goods to reward loyal supporters. The discretion to exclude or reverse transfers allows politicians to target benefits to supporters and, equally important, to withdraw benefits from opponents (or from those who defect from the party). We define clientelism as the voluntary exchange of discretionary private transfers for votes, whose continuation is contingent upon demonstrable political support.61 That transfers are discretionary is key to the definition of clientelism, making the allocation criteria clearly political.

Politicians also rely on public goods provision. Public infrastructure projects, we demonstrate, are employed for electoral purposes when the politician’s base of electoral support falls below a certain threshold and the votes of a larger and more heterogeneous

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61 Our definition of clientelism is akin to Stokes (2007), who defines it as “the proffering of material goods in return for electoral support, where the criterion of distribution that the patron uses is simply: did you (will you) support me?” (emphasis in the original, p. 605) and with Kitschelt and Wilkinson (2007), who argue that “clientelistic accountability represents a transaction, the direct exchange of a citizen’s vote in return for direct payments or continuing access to goods and services” (emphasis in the original, p. 2).
electorate are needed to win elections. Of course, there might be non-electoral uses for both private and public goods transfers. For example, Shepsle and Weingast (1980) stress the private consumption gains that business or contract patronage entails for firms, labor, suppliers and other interests, usually within the district but possibly outside of it as well. Local public goods are rarely if ever “pure” public goods. This book focuses instead on how politicians and parties derive electoral benefits from pork-barrel spending and how it is used as a strategy in the face of stiffer electoral competition.

Clientelism as a method of electoral mobilization is ideal for binding poor voters to a long-term relationship based on material dependence. Voters remain loyal to the party because they expect to receive benefits in exchange, and because they need these to survive. The party keeps delivering these benefits to its loyal voters and threatening to withdraw them from supporters of the opposing party. Classic studies of political clientelism emphasize that this form of exchange thrives where voters are poor. For example, James Scott (1972a) argued that patron-client links are based on poverty and inequality and the fact that the “patron is in a position to supply unilaterally goods and services which the potential client and his family need for their survival and well-being” (p. 125). Magaloni (2006) also suggests that the PRI had its most loyal base of support among the poor precisely because they were more dependent on state benefits for survival. As a monopolist with control over critical resources, the patron is in a position to exploit market power and demand compliance from those who want a share of the goods. If the client did not need these goods, if she had savings or alternative sources of income, or if she could incur the costs of a move to another jurisdiction in order to secure needed services, she might not succumb to the patron’s domination. Thus, patron-client
links are based on a perverse set of incentives in which the patron has an interest in keeping his clients poor and dependent on him for survival.

Such asymmetries notwithstanding, clientelism is also a form of reciprocal, almost contractual, exchange. As we argue in this chapter, politicians deliver goods to gain their client’s loyalty, which we claim is endogenous or conditional on the supply of benefits. Clientelistic linkages must necessarily be understood as embedded within an ongoing relationship. Through the repetition of reciprocal exchange the political machine can rely on a solid base of support whereby citizens respond to favors and transfers with votes.

Robinson and Verdier (2003) argue that clientelism involves a commitment problem: What prevents individuals from accepting rewards and then voting as they wish? As the authors explain, the commitment problem is solved by privileging the distribution of jobs, which ties the political machine to the voter in a long-term relationship of mutual convenience. Voters will support the machine to protect their jobs, while the party will create and sustain jobs to keep its power over clients. However, clientelism as a form of vote mobilization encompasses many more transferable goods than job patronage. Politicians in the developing world often resort to the distribution of credit and cash handouts, production subsidies, food baskets, grain and livestock, fertilizer and other farming inputs, construction materials, household appliances, medicines, access to health services and hospital beds, and so forth, because they are easy to distribute. As we discuss below, our explanation of how parties deal with the commitment problem is that they invest in buying political loyalty rather than votes on the spot.49

49 Parties of course can make use of this support base for non-electoral purposes, including the mobilization of violence (Auyero, 2011). In this book we focus on the electoral use of clientelism.
Our approach is compatible with Calvo and Murillo (2011), who forcefully argue that voter-party linkages are not spot exchanges of vote buying, but instead based on long-term interactions with political organizations and/or public officials. Clientelism is embedded in a dense organizational network where parties employ party brokers and local patrons, *caciques*, to acquire local knowledge about voters, such as their political predispositions, their peer groups and whether they attend party rallies to turn out to vote (see also Magaloni, 2006). Voters also develop distributive expectations as a result of their prior interactions with political networks and from retrospective assessments of policy implementation (Calvo and Murillo, 2011).

Below we present our theory of the logic of vote buying. We seek to answer the following fundamental questions: When and why do parties deliver discretionary private transfers to their core voters? When do politicians choose discretionary private goods or patronage over public goods provision to buy votes?

### 3.3. Core and swing voters

There are two opposite models of discretionary transfers that focus on what Dixit and Londregan (1996) call “tactical redistribution,” with a variety of forms, including transfers, subsidies, tariff protection and pork-barrel projects. The first model is the core-voter model, developed by Cox and McCubbins (1986), hereafter referred to as CM. Their theory begins by defining the conditions under which distributive politics will generate stable electoral coalitions. CM divides the electorate into three groups — core supporters, swing voters and opposition backers — and asks which of these voting groups
would reelection-minded politicians choose as the main beneficiaries of targeted transfers. These groups differ in what the authors call an “adherence dimension” — how responsive they are to transfers. In their model, core supporters are the most electorally responsive group because parties know their preferences and desires well, while swing voters and opposition backers are less reliable. CM predicts that risk-averse candidates trying to maximize electoral support will deliver redistributions first and foremost to their core voters.

The result of the CM model hinges on the assumption of risk-aversion on the part of politicians, on the one hand, and on the notion that core voters are less risky than other voters because politicians are in “frequent and intensive contact with them and have relatively precise and accurate ideas about how they will react” (p. 379). It has become standard in the literature to critique the core-voter model for the depiction of politicians investing scarce resources in a voter group that is likely to vote for them regardless. We will address this critique and its premises below.

A second set of models predicts that politicians should neglect loyal supporters and instead target swing voters, where swing voter support is decisive for district outcomes and the transfer can mean the difference between supporting or opposing the incumbent (Lindbeck and Weibull, 1987; Dixit and Londregan, 1996; Stokes, 2005 and 2006). The Dixit and Londregan (1996) model, hereafter DL, begins by asking who would politicians running for office target with discretionary transfers. Voters’ utility is a function of issue positions and private consumption; the parties’ issue positions are assumed to be fixed; and tactical reallocutions of the budget is relatively flexible. Under the assumption that politicians’ transfers are feasibly and equally targetable to all voters
(the “leaky bucket” is the same for each voter group), and that any incumbent will seek to maximize his probabilities of reelection, the premise presented by Lindbeck and Weibull (1987), the model predicts that politicians should favor swing voters, defined as those close to the point at which voters are ideologically indifferent to the alternatives.63

The literature has used various strategies to identify swing-voter groups. One is to employ surveys, as in Stokes (2005) and Dahlberg and Johanson (2002). The other is to use aggregate vote returns.64 “Under some assumptions about the distribution functions (i.e., symmetry and single peakedness) and parties’ objective functions, there will be a one-to-one correspondence between the density at the cutpoint and the closeness of the last election” (Dahlberg and Johanson, 2002: 30). It is the reason swing voters are often credited with the tightness of the victory margin at the district level.

Stokes (2005) critiques these models for not taking commitment problems into account. “Both assume by caveat that the party will not renege on its offer of particularistic rewards once it has won the election. And they don’t deal adequately with the fact that a voter once in the voting booth can also renege by voting his or her conscience or preference ignoring the reward he or she received” (p. 316). To deal with commitment problems, she proposes a repeated interaction game where parties can monitor voters’ actions and both sides foresee their interaction extending into the future. Her model builds on DL in that voters are presumed to be swayed both by the issue positions of the parties and the income and consumption transfers received from them. Stokes’ model generates predictions akin to the swing voter model. Loyal voters do not

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63 The DL model allows for a core voter result depending on the taxing technology. See also Londregan (2006).
extract private rewards because they cannot threaten to vote against the party. “Such a threat would lack credibility: the party knows that the loyal voter, even without rewards, is better off cooperating forever than defecting forever” (p. 320). Weakly opposed voters and indifferent voters are the target of vote buying because, in her approach, only they can credibly threaten to vote their conscience if they do not receive the transfer.

Nichter (2008) departs from these approaches in arguing that parties buy off turnout rather than votes. With the secret ballot, he asks, what prevents individuals from accepting rewards and then voting as they wish? He offers an alternative explanation, which he terms “turnout buying,” suggesting that parties who reward unmobilized supporters for showing up at the polls can activate their passive constituencies. Whereas Stokes’s vote-buying model predicts that parties target moderate opposers, Nichter’s model of turnout buying predicts that they target strong supporters.

The literature portrays the investment decision between core and swing voter as an either/or strategy. The empirical record is mixed at best (Londregan, 2007). There are empirical studies that support the swing-voter logic (Schady, 2000; Dahlberg and Johanson 2002; Stokes, 2005); others are consistent with the core-voter logic (Calvo and Murillo, 2004; Hiskey, 2003; Levitt and Snyder, 1995; Nichter, 2008). In Magaloni (2006), the hegemonic PRI followed an entry deterence logic, rewarding loyal PRI voters located in moderately competitive districts while punishing those who defected to the opposition.

Most of these studies tend to conflate private and public goods. If the crucial distinction between private and public goods is introduced into the studies, the empirical validation of the swing-voter model is largely based on the distribution of
overwhelmingly public goods (the Peruvian, Swedish and Mexican cases). The only examples of private goods provision that support the swing-voter model are the campaign handouts in Argentina (Stokes, 2005 and Nichter, 2008), episodic and negligible without the long time horizons and budgetary heft of most government programs, and the tariff protection of the U.S. textile industry (DL), a club good whose costs are largely invisible to consumers.

Our theory and empirical evidence support the notion that parties need to take care of their core constituencies by targeting the bulk of discretionary benefits to them, but especially by targeting private goods to them. At the margin, however, when their electoral fortunes are uncertain, these same parties can also court the swing voter, especially with public goods (see also Magaloni, 2006). Our approach is thus consistent with the analysis of Argentina, where the Peronist party distributes jobs and patronage mostly to its core voters (Calvo and Murillo, 2004).

Most of these models focus on what Nichter (2011) rightly calls short-term electoral clientelism. The bulk of a party’s electoral investment strategies, we claim, are embedded in ongoing relationships and programs that translate into investment decisions whose overarching benefits take place beyond election time (see also Calvo and Murillo, 2011). Our approach conceives of parties and voters as engaged in strategic interactions that extend indefinitely into the future, as in Stokes (2005). But we depart from existing theories of distributive politics in positing that partisan loyalties are conditional — a product of past political exchanges and a history of tactical redistributions.

Prior models of distributive politics rest on the assumption that a loyal voter’s ideological proximity to a party remains unaffected by the retrospective tally of the
party’s past political behavior. Given this assumption, the loyal voter is captive. Even when cut off from the stream of patronage benefits, she is assumed to continue to vote for her party because her ideological proximity is supposed to remain unaffected. This assumption is highly problematic. If the loyal voter is routinely ignored or disdained by her party, while other voter groups receive the party’s discretionary favors, she will begin to distrust the party and become open to switching support to an alternative.

The literature on core and swing voters ignores this strategic dilemma because it takes partisan loyalties as exogenous. A party that exclusively targets swing voters will not be viable in the long run. In their classic study on social democracy, Przeworski and Sprague (1986) emphasize this strategic dilemma. They argue that socialist parties that needed to mobilize the support of middle-class allies in order to win, alienated their working-class core, which became available for political mobilization by other political parties on the basis of different political identities (religious or ethnic) or more extremist appeals (communist). The problem we consider here is analogous the socialist party’s dilemma: parties risk losing their core supporters when they attempt to build broader coalitions by delivering transfers to voter groups outside the core.

Partisan loyalties cannot be modeled independently from welfare transfers without entertaining the peculiar notion that core voters are irrational. CM puts this idea succinctly: if a “politician’s core supporters are those who will stick with him through thick and thin (referring to promised benefits) … then core support groups will be totally unresponsive and will be given nothing (in pure redistributive terms)” (Cox and MCubbins, 1986: 380). However, as the authors note, “it seems irrational in the long-run for any group to be totally unresponsive to redistributions of welfare” (p.382). Hence,
swing-voter models generate the paradoxical result that only weakly opposed and indifferent voters are responsive to benefits — willing sellers of their votes.

Moreover, the assumption that core voters will support a party no matter what is difficult to sustain, especially if we are interested in understanding poor people’s votes and the behavior of political machines. Poor voters are typically more responsive to promises of pocketbook benefits. DL consider this possibility by positing a parameter that measures the relative importance of consumption benefits to the voter. The higher the parameter, the more voters focus on transfers over ideology, or the more “apolitical” they become (Stokes, 2005, and Magaloni, 2006, follow the same approach). Poor voters, in the consensus view, base their voting decision on transfers. Here we go one step further: poor voters’ partisan loyalties are likely to be generated and sustained by these material inducements rather than by symbolic appeals.

We model the strategic interaction between a core voter and her party as a dynamic game in which a voter’s ideological proximity to a party is a function of the history of political exchanges; partisan loyalties are anchored in that history. We call this “conditional party loyalty.” A corollary is that partisan loyalty is weakened if a party neglects its core constituencies, failing to reciprocate their support, and delivers benefits to outsiders. This form of conditional party loyalty is akin to Fiorina’s (1981) rational party identification — a running tally of accumulated retrospective evaluations.

3.4. Conditional party loyalty and vote buying

To model the logic of vote buying under the constraint of voters’ conditional
party loyalties, consider a voter who must decide between supporting the incumbent or the opposition, and the incumbent must in turn decide to reward the voter with a transfer, \( t > 0 \), or to punish her \( (t=0) \).

Stokes’ (2005) highlights the commitment problem in this interaction. She solves the dilemma by repeating the game infinitely and positing that the players follow a grim-trigger strategy: cooperate until the other player defects and then defect forever. However, in her approach, loyal voters do not get transfers at all because their ideological proximity remains unaffected by whether the incumbent reneged on his promises in the previous move, regardless of the number of times the game is repeated.

We propose a different formulation of the problem. In our view, partisan loyalties (and the relative weight a voter gives to the party’s programmatic appeals) are defined as a function of the history of interactions. Imagine that the incumbent party has to decide whether to buy out a particular voter through a monetary pay-off. This voter can be characterized either as a core or a swing voter. The core voter will vote for the incumbent party today, even if she does not get a transfer. But if her party shirks, she will become detached from her party and begin to act like a swing voter tomorrow. Hence, core vote support is unconditional today, but tomorrow it is conditioned by the changing history of tactical redistribution, or conditional party loyalty.

Swing voters are ideologically less proximate to the incumbent. However, a transfer to the swing voter may convince her to support the incumbent according to a random variable. The expected value of swing voter support (\( E[s] \)) is less than the certain value of the core voter (standardized at 1) because swing voters can behave opportunistically — take the transfer and vote their conscience.
Following CM, our model assumes that it is less costly to buy off core voters because they are more responsive to transfers given that the party knows their needs and desires better than those of voters not tied to the party’s organization. Moreover, there is low risk of opportunism when delivering transfers to core voters. Let the transfer for the core voter be denoted by $\square$. The transfer used in the effort to buy off the swing voter is set at $\square > \square$. This means that the core-voter strategy is less expensive, allowing party elites to capture some rents: $\square$. 65

The choice for the party is restricted to the allocation of funds to either the core or the swing voter. Given this formulation of the problem, the party is tempted to pursue the swing voters and simultaneously exploit the core voters whose support is guaranteed in the current election. However, note that the swing-voter strategy entails costs because it erodes core voters’ loyalty for future rounds and because it is more expensive.

Suppose the party’s utility function is simply the difference between a benefit measured in votes, minus the cost of the transfer used to induce the vote. The party cares about future elections, but at the discounted rate $0<\delta<1$:

\begin{equation}
\text{(1)}
\end{equation}

We can describe the value of catering to swing or core voters assuming that the decision in this election defines the stream of utility over time. To simplify, the party sticks to the same strategy — core or swing — in all subsequent rounds, and voters respond accordingly. This means that if the party chooses the swing-voter strategy, the

65 These “savings” can also be invested in voters, either core or swing. But since core constituency needs have already been attended to, these disposable funds are freer for catering to swing voters. In a later section we discuss what happens when the party can diversify its electoral investment in both core and swing voters, but for now the choice is binary in the sense that the money should be spent only on one type of voter or the other.
core voter supports it in this election, but becomes a swing voter in all subsequent elections. If the party chooses the core-voter strategy, the party continues to deliver transfers to this voter and this voter remains loyal forever as it continues to receive transfers. The party’s utility functions of following a swing strategy, $U_s$, and of following a core strategy, $U_c$, are given by:

$$
(2)
$$

and

$$
(3)
$$

The first utility function defines the benefits of betraying the core voter’s loyalty in this election by giving the transfer to the swing voter. The second one shows the steady support of the core voter that is obtained by delivering transfers to her. The party will follow the swing-voter strategy if its utility is higher than what it obtains from favoring its core. Solving the infinite temporal horizon and substituting the transfers expressed as rents for the incumbent yields the following condition:

$$
(4)
$$

This basically states that the party will shirk its commitment to the core voter when the expected value of the swing voter (the left-hand side of the expression) is larger than the present value of two different opportunity costs. The first is the gap between the certain support of the core voter and the uncertain support of the swing voter, who can always behave opportunistically by taking the transfer and voting her conscience. The
larger this gap (i.e., the greater the likelihood of swing-voter opportunism) the more likely the party will pursue the core-voter strategy. This gap is discounted from the second interaction, or move, onward.

The second opportunity cost, accruing over time, is the discounted value of the stream of rents that would be obtained from investing in buying the vote of the less expensive core voter. The larger the stream of rents, the stronger the party’s incentive to choose the core-voter strategy. The discounting terms imply that the relative benefits of catering to the core voter increases when the party does not discount the potential future effect of losing these voters. Our model thus uncovers five compelling reasons why parties continue to invest in core voters, even though they are already most likely to support them in any election:

1. Parties expect to interact with voters in an ongoing relationship.
2. Core voters’ loyalties are conditional on whether their party delivers material benefits and favors.
3. Buying votes from swing voters is more expensive because it takes more money to convince voters that are ideologically more distant.
4. The swing-voter strategy is subject to a strong voter opportunism problem in which the voter will receive the transfer and walk away.
5. Party elites will be able to capture more rents for personal gain when following a core-voter strategy.

The swing-voter strategy is driven by the desire to maximize the probabilities of
victory in the current election. If politicians succumb to this temptation by reneging on their commitments to the core, they erode trust in the party’s programmatic appeals and undermine existing partisan loyalties. Core voters cannot credibly threaten to vote against their conscience today if their party fails to reciprocate their loyalty, but they retain the power to become detached and behave much like swing voters in subsequent elections.

Thus, the swing-voter strategy responds to short-term imperatives but is destabilizing over time because it generates the signal that political parties do not appreciate core voters’ loyalties. Just how valuable those reserves of loyalty can be is clear when considering that the alternative is building more expensive, fickle and uncertain electoral coalitions for every election and encouraging growing voter opportunism.

The model highlights another key reason why political machines possess strong incentives to invest in their core: they can appropriate more rents. Once a party establishes a loyal base, it will better be able to sustain itself in power without having to transfer as many resources to the voters than if it follows a swing-voter strategy. Note that our account allows the political machine to capture rents without assuming that core voters are irrational. Core voters only remain “cheap” (or easily maintained), as long as they are consistently receiving the discretionary payouts that they have grown accustomed to. If core voters lose those payouts, they will begin to distrust the party, and buying them back will be much more costly than before. Clientelism thus understood is based on ongoing relationships and conditional voter reciprocity. Parties cannot assume voters’ allegiances to be automatic or permanent.

Our model allows us to generate predictions as to when parties are more likely to
follow a core- or swing-voter strategy. To summarize, *ceteris paribus*, a party is more likely to follow a core-voter strategy when it cares about its future or its lower discount rate. Party systems that are based on personalities or that exhibit a great deal of instability are less likely to behave as our model predicts. The more core voters’ loyalties are conditioned on past material inducements, the more we expect parties to follow a core-voter strategy. We expect to see parties intensifying clientelism focused on buying off partisan loyalties when their voters can more credibly threat to switch parties if their party ignores them. Political machines that are established in monopolistic electoral markets, as we discuss below, are less likely to engage in this behavior than parties that face competition. The higher the cost differential between buying swing versus core voters, the more we expect parties to follow a core-voter strategy that allows parties to appropriate more rents. Similarly, the higher the risks of swing-voter opportunism, the more we expect parties to follow the core-voter strategy. Finally, the temptation to buy swing votes on the spot necessarily increases in highly competitive elections when these votes represent the difference between a win and a loss.

3.5. Public versus private transfers and portfolio diversification

The core versus swing debate portrays the logic of electoral investment as an all-or-nothing strategy. As a consequence, parties are caught in a dilemma: cater to swing voters and alienate their core, or protect their core but risk losing the elections. Parties can, however, devise strategies that allow them to simultaneously lock in their core and seek to expand their electoral coalitions. Portfolio diversification, we contend, allows
parties to mitigate this dilemma (Magaloni, et al, 2007). Our approach is similar to Bueno de Mesquita et al. (2000) in that we argue that transfers for public goods can be used to expand the size of the coalition, while private goods can be employed to reward the core and punish the opposition.

Most of the core versus swing debate has been conducted without paying much attention to broader patterns of political competition. Party systems, electoral rules and levels of electoral competition shape incentives for engaging in vote buying. Some studies have begun to examine these issues. Medina and Stokes (2002) argue that clientelism thrives under political monopoly. Chhibber and Nooruddin (2004) investigate the impact of party system configurations on the propensity of politicians to invest in private or public good provision in their study of India. Drawing on Bueno de Mesquita et al. (2000), they predict that the relative importance of private versus public goods will be a function of the party system configuration. Using data from Indian states from 1967 to 1997, they show that public goods are more important in bipartisan configurations, where a larger size of the electorate is needed to win elections. On the other hand, private goods provision is more prevalent in multiparty systems because politicians can retain power by delivering benefits to a smaller group of supporters.

Chhibber and Nooruddin (2004) do not generate clear predictions as to which pattern should prevail in hegemonic or under-competitive electoral markets. Under-competitive electoral markets are not unique to Mexico; they have become pervasive in the developing world, with the introduction of multiparty elections almost everywhere since the end of the Cold War. In many countries, elections take place in under-competitive environments where electoral rules, government resources,
institutions and the media are often biased in favor of incumbents (Magaloni and Kricheli, 2010). Uncompetitive electoral markets were also the dominant pattern during the long era of machine politics in the U.S., where local parties held effective quasi-monopolies, as in the cases of Tammany Hall in New York and the Daley machine in Chicago, and in the one-party politics of the post-Reconstruction South.

The Mexican context is ideal for exploring the effects of party system configurations on electoral investment strategies because it presents greater variance than many other cases. During the 1990s a high percentage of municipalities were still monopolistic (where the PRI won with more than 90 percent of the vote or there was no opposition presence) and under-competitive (where the PRI won with more than 65 percent of the vote). These municipalities coexisted with bipartisan and multi-partisan configurations that were won or lost by narrow margins. Moreover, the 1980s and 1990s was an era of party dealignment, and the PRI consistently lost voters election after election. The dealignment process was in part the result of modernization, where places that became wealthier and more urbanized were more likely to defect from the PRI; and also a result of an economic recession and market volatility that alienated voters from the regime. Our approach argues that in making investment strategies, party elites should care not only about the coming elections but also allocate funds with an eye toward the longer-term patterns of electoral returns that reflect the strength of partisan loyalties.

To identify loyal voters our approach focuses on partisan configurations starting in the early 1970s, rather than on electoral returns in previous elections, as is conventional in the literature. Voter loyalty is a standing decision that is contingent on ongoing patterns of interaction with party brokers and elites. Each municipality in our
measure is characterized by a “voter loyalty” level and a “voter predisposition to switch,” both calculated using electoral returns since the 1970s. We believe these long-term measures better reflect our notion that partisan loyalty results from an ongoing relationship that is conditional.

The following chapter will demonstrate that for the six-year duration of the Pronasol program, the PRI invested the bulk of its resources — both private and public goods programs — in its “loyal voters,” according to our long-term measure of absolute electoral returns. We also will show that the PRI invested more in private transfers relative to public goods by targeting loyal places where voters had a credible threat of exit — where voter loyalties were deteriorating rapidly. Although by all accounts these places should still be considered hegemonic bastions, our results show that the PRI invested relatively fewer resources, particularly in private goods or clientelistic transfers, in monopolistic places than in under-competitive ones. Furthermore, in terms of the composition of the portfolio, our results suggest that the PRI invested more public relative to private transfers in highly competitive districts that were expected to be won or lost by small margins regardless of the number of parties.

3.6. Conclusion

This chapter provided our theory of vote buying. We uncover a strong rationale for political parties to invest in core supporters. These are not wasteful investments, as the swing-voter model claims; rather they ensure stable partisan loyalties. Partisan loyalties are useful because they solve commitment problems. A loyal voter has no incentive to
vote for a different option after receiving a transfer from the patron party. By contrast, swing voters can receive the transfer, but renege on their support. Partisan loyalties are also important because they reduce the economic costs of vote buying. It is less costly to maintain the loyalty of those you know best than to change the voting decisions of those you do not. Political machines can thus capture more rents and consume them in the form of corruption when they pursue a core-voter strategy.

Much of the extant literature has portrayed investments in core supporters as irrational because it does not regard partisan loyalty as conditional. However, we view partisan loyalties not as fixed, but instead shaped by the history of interactions between a party and its core constituencies. A party that consistently betrays its promises to deliver benefits to its most loyal supporters will be unable to sustain its electoral coalition over time. Its loyal voters will grow disenchanted, be more difficult to buy off, and become open to opposition appeals in the future. In sum, they will become opportunistic swing voters.

Our argument that parties must invest in loyal voters is consistent with CM, although we derive these results from a different formulation of the problem. In their approach, political parties invest in core supporters because they are risk-adverse. Our results are consistent with that assumption, but they do not exclusively rest on it. Instead, parties must invest in core supporters to avoid building ad hoc, expensive and risky coalitions every time elections are held.

By placing the theory of tactical redistribution within a story of party building and party maintenance, our model helps to make sense of various empirical regularities at odds with the swing-voter model. Across many countries, partisan loyalties tend to
exhibit stability and parties insist on sustaining relationships with a given set of voters. No doubt symbolic appeals and exogenous demographic variables such as voters’ ethnicity, religion and age play a role in accounting for voters’ loyalties, but not all stability is explained by these factors. Furthermore, voters’ preferences and the parties’ positions on the issues are not independent from redistributions of welfare. A party is considered left- or right-wing because of the policies it enacts and the groups of voters they benefit. Voters’ ideological commitments are inevitably shaped by the history of welfare benefit distribution.

Making partisan loyalties more or less static could produce extensions to the model. For example, one can conceive of committed voters persuaded by symbolic and ideological appeals who would not feel betrayed if their party ignored them in search of a winning coalition. In these circumstances, the incentive for opportunistic behavior by an incumbent party obviously increases. However, our contention is that voters’ partisan loyalties in many areas of the developing world are likely to be highly conditional on discretionary transfers for two reasons. On the one hand, in many developing countries voters do not find parties’ programmatic appeals credible (Keefer and Khemani, 2007). On the other, ideological appeals tend to be less important to the poor than income and consumption gains. The more conditional partisan loyalties, the more parties will need to cater to their core voters so as to sustain their electoral coalitions over time. Patronage and other private discretionary transfers can be employed to lock voters into long-term relationships and as such can be regarded as important party-building instruments where ideological and symbolic appeals fail.

Finally, our theory makes explicit why electoral machines, which prevail in
hegemonic and monopolistic political markets, invest heavily in their core supporters, a claim that the swing-voter model would find irrational. However, core constituencies are not always enough to win. When electoral competition is high, a party must cater to swing groups and, in extreme cases to opposition backers, to survive in office. This creates a dilemma for parties, caught between the need to deliver benefits to outsiders and the risk of alienating their core supporters. One solution to this quandary, we posit, is portfolio diversification. Politicians can keep their core voters loyal by delivering private benefits to them, while catering to broader voter groups with public goods. As district electorates grow wealthy or as competition grows in the electoral arena, the relative share of investments in public goods should rise. Conditions of pervasive and enduring poverty or of under-competition, however, should spur larger shares of private goods within an incumbent’s portfolio.
Chapter 4

Clientelism and the Political Manipulation of Poverty Relief

A political party may employ one of two basic strategies in its efforts to attract voters [...]. It may distribute divisible benefits – patronage of various sorts – to the individuals who support the party. Alternatively, it may distribute collective benefits or appeal to a collective interest.

Martin Shefter (1994: p. 21)

4.1. Introduction.

The Pronasol program originated in what today is known as Valle de Chalco Solidaridad, a municipality located in the State of Mexico, on the eastern outskirts of Mexico City. It split off from Chalco as a separate jurisdiction in 1994 and was renamed Chalco Solidaridad after Pronasol. At the end of the 1970s, Chalco became a rapidly growing shantytown, as people began migrating out of Mexico City in search of land. By the 1980s, the valley was occupied by nearly a quarter million people living without potable water, paved streets, medical services, schools or electricity. In the 1988 presidential elections, the people of Chalco voted two to one against the PRI. The PRI was so unpopular that the prospect of a visit from recently elected President Salinas filled officials with fear.

Salinas’ team masterfully planned a Disney-like spectacle for his visit to Chalco, where it was decided that he would announce his strategy to “put an end to poverty.” He invited more than 30 intellectuals and public opinion leaders to accompany him to Chalco
and spread publicity about the visit. They spent the night hosted in the humble homes of local families to could gain a perspective on the impact of Salinas’ new poverty-reduction strategies. For his first act, President Salinas walked down the dark, dirty streets, and the recently installed public lighting turned on for the first time, illuminating the faces of the still skeptical audience. Salinas then came to a tall podium where he opened a public faucet to release a great flow of potable water. As Chalco inhabitants shouted in unison “ciérrale, ciérrale” (“turn it off, turn it off” repeating a public campaign slogan not to waste water), Salinas told them that he wanted to make sure that they understood that this time the “government promises were for real,” the potable water and public services were here to stay. The hope was that after witnessing what some residents still remember as “a miracle,” Chalco voters would handsomely reward the PRI in the local and federal elections that would take place in 1991 and 1994.

Impressive as it sounds, over the long run the program did not do much to reduce the number of Mexicans living in poverty. Salinas devoted more than $15 billion of federal money to the program. State officials, governors, municipal presidents, local party brokers and community leaders were all branded with its symbolic ribbon: a red, white and green braid that represented Mexicans working in solidarity. The braid was placed at every project across the country. There was also continuous government propaganda, such as TV ads that showed touching scenes of women, children, peasants, old people and farm laborers, all being aided out of poverty by the program. In the aggregate, public infrastructure projects covered 72 percent of all expenditures. A great share of these resources was spent on the construction of interstate highways that were not particularly beneficial to poor citizens without automobiles. Particularistic transfers (construction
materials, credit to small businesses, tractors, scholarships, etc.) accounted for 28 percent of all Pronasol expenditures. Yet with the passing of time the program’s portfolio changed. By 1994, close to 40 percent of the funds were devoted to clientelistic transfers. Exactly how the government managed to reallocate funds such that vote buying took precedence over poverty relief is not clear in the existing literature.

In this chapter we perform a systematic analysis of the political logic of Pronasol’s vast operations. We seek to answer the following questions: Will party electoral machines target core or swing voters with particularistic transfers? What determines a party’s choice between private or public goods? Will the party distribute particularistic benefits to the individuals who support it (its core voters) or to other voter groups? In what ways do existing configurations of political competition influence the choice of collective goods over patronage?

The theory we developed about vote-buying strategies in the previous chapter provides answers to these questions. In this chapter we test our predictions about the political factors shaping politicians’ decisions to invest in core versus swing voters and to transfer private versus public goods to buy votes. We focus on Pronasol for three main reasons. First, our theory of vote buying is about discretionary transfers, and political and bureaucratic discretion was the touchstone of Pronasol. The program was characterized by the discretionary selection of projects and beneficiaries, with input from voluntary “solidarity committees” at the community level (Kaufman and Trejo, 1997). However, in virtually all cases, it was organized at the top and run initially from the Office of the President and later on from the Ministry of Social Development (Sedesol) (Bailey, 1994). Equally centralized was its system of financial control and coordination, with the Finance
Ministry directly routing federal transfers to localities as well as earmarking revenue-sharing grants for state governments.  

Second, we are interested in understanding the conditions that make poverty-alleviation programs effective or ineffective. *Pronasol* was ostensibly designed to alleviate poverty and the program became the cornerstone of government social policy. However, as we will demonstrate in later chapters, the program’s results were disappointing. Results in this chapter suggest that *Pronasol* failed to help the poor because the program was administered with the overarching goal of sustaining the PRI’s electoral hegemony by locking in voters through clientelism rather than seeking to reduce poverty.

Third, *Pronasol* distributed excludable private transfers as well as public goods, which allows us to assess our theory of portfolio diversification. As detailed in Chapter 1, *Pronasol* was a large umbrella, comprising 20 subsidiary programs that involved a wide range of benefits delivered over the six years to every municipality in the country. These included private goods, such as student scholarships, worker retraining grants and temporary employment schemes, and club goods for producer groups, especially cheap credit and financial and managerial support for a privileged network of small businesses (known as *empresas de solidaridad*) as well as rural infrastructure for *ejidos*, the semi-collective peasant farms still tied organizationally to one of the PRI’s corporatist pillars. *Pronasol* also included a broad list of small-scale social and economic infrastructure.

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71 The only exception to this pattern of centralized coordination was that presented by the state of Baja California. Governor Ernesto Ruffo, the first opposition member to win gubernatorial office, in 1989, refused to kowtow to the Salinas government on project selection and to sign the *Convenios Únicos de Desarrollo* through which the Ministry of Finance tied state funds to *Pronasol* projects (Flamand, 2004). Baja California’s resistance, however, was mostly symbolic, affecting the fortunes of only its five municipalities, out of a national total nearing 2400 at that time.
projects as well as a very large program of open-ended municipal grants for public works and maintenance, such as electricity, roads, clinics, street pavement, etc. Finally, there were two special programs that dedicated funds to the construction of regional hospitals and state and interstate highways, spanning numerous municipalities and states.

In order to discern the motives beneath Pronasol’s vast operations, we model the per capita allocations for each municipality over six years as total, private and public goods, as well as the share of particularistic transfers in the total sum of allocations to every municipality during the Salinas administration. We equate particularistic transfers, as explained in the introduction, with clientelism and public goods projects with pork-barrelling.

We proceed in two steps. The first is to model total municipal-level allocations from 1989 until 1994 without taking into account how municipal elections held between those dates might have changed yearly allocations. We call this the overarching logic of the program, designed with the long-term goal of sustaining the PRI’s electoral dominance at the national level. Although Pronasol was a highly centralist program largely engineered out of the office of the president, it was operated by a vast network of state governors, municipal presidents and local party brokers. The second step is to model the extent to which Pronasol’s allocations responded to the short-term dynamics of local elections, including the timing of municipal elections, their level of competitiveness,

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72 The Municipal Funds program is hard to justify in its entirety as transfers for exclusively collective goods. No doubt many maintenance projects were merely forms of job patronage and some public works were disguised corruption favoring local office-holders and their cronies. The impact on the statistical analysis of these misclassifications, almost impossible to disentangle from legitimate public goods provision in the official record of project funding for Pronasol, is that they bias estimates for clientelism downwards and those for pork upwards. As will be clear from the regression analysis in this chapter, these distortions in effect cut against the grain of our theoretical expectations rather than supporting them.
partisan divisions in the local electorate and the partisan identity of municipal government. We call this the “peripheral logic” of the program.

Our overriding hypothesis is that the bulk of Pronasol’s allocations, for both private and public goods, should favor the PRI’s core constituencies. Yet our conditional party loyalty model generates more nuanced predictions than simply claiming that more transfers are conferred upon hegemonic bastions. This is because not all loyal municipalities are alike. In some places, the PRI had a virtual electoral monopoly with no opposition presence, whereas elsewhere loyal voters had credible exit options. Our theory leads us to expect that the PRI would target more particularistic transfers to loyal municipalities whose vote is expected to disappear in future elections if the party fails to deliver benefits. We operationalize our notion of conditional party loyalty by looking at the dynamics of party loyalty over time. In particular, we expect the PRI to increase its clientelistic practices in loyal municipalities where voters’ partisan attachments are eroding.

On the other hand, our theoretical approach argues that party machines should diversify their portfolio of electoral investment: targeting the party’s core with particularistic benefits while delivering public goods where the party’s core is not strong enough to win elections. Our expectation is that politicians should emphasize public over private good provision when they need to cater to heterogeneous voter groups to win elections.

A substantial amount of research has already been accumulated on Pronasol, but we depart from this body of work in several respects. Many studies employ state-level data for specific years (Molinar and Weldon, 1994, and Bruhn, 1996) or, when looking at
municipalities, focus on limited samples (Hiskey, 2002). Only Magalon (2006) and the present study cover all Mexican municipalities over the lifespan of the program.73 We extrapolate from the story of Chalco, Molinar and Weldon (1994), who claim that Pronasol funds poured into the communities where the PRI had its poorest showing in the 1988 presidential elections. This is the so-called “buy the opposition back” strategy. Using municipal-level data for two states, Hiskeys (2002) claims that Pronasol money went to hegemonic bastions where the PRI won with the largest margins of victory. Critiquing these results for their strong endogeneity problems and using municipal-level data for the entire life of the program, Magaloni (2006) shows that the PRI followed an “entry-deterrence” strategy in which opposition-controlled municipalities were systematically punished with fewer programs and loyal municipalities that were more competitive were rewarded by the PRI. Our results here are consistent with Magaloni (2006) in that the bulk of Pronasol’s programs were targeted to hegemonic places where loyalties were eroding, as opposed to the secure bastions. But our analysis diverges when we dissect Pronasol’s allocations for targeted particularistic goods versus public goods. We build upon the theory of conditional party loyalty, which we believe better captures the PRI’s strategic decisions.

Whereas previous studies have mostly focused on one or two programs (see articles in Cornelius, Fox and Craig, 1994), our work encompasses all of Pronasol’s programs. In order to assess the welfare effects of Pronasol (discussed in chapters 7 and 8) as well as its political logic, we have classified its programs into the general categories of private and public goods provision, following the criterion outlined in Chapter 1.

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73 While using a full data set on Pronasol, Cleary (2004) and Kurz (2004) do not study the determinants of the allocation of Pronasol but use its financial transfers as an independent variable.
This chapter is organized as follows. Section 4.2 proposes a new approach to the measurement of core size and conditional loyalty. Section 4.3 is dedicated to the overarching logic that informs Pronasol by offering support for our claims that core municipalities receive disproportionately larger transfers and that long-term partisan decline is a spur for intensified clientelism. This section also discusses the relationship between economic development at the municipal level and the distribution of clientelism and pork within Pronasol, questioning the conventional view that clientelism is endemic to settings of poverty and largely absent from wealthier regions. Section 4.4 explores the peripheral logic of Pronasol, exploring the effects of local municipal elections and partisan configurations on program transfers.

4.2. How to measure core support

When focusing on aggregate electoral data, the conventional measure for core support of a party in Mexican electoral studies is the most recent vote share of the party. But core support cannot be measured using short-term indicators for two reasons. The first relates to problems of endogeneity that stem from the fact that vote shares at time $t$ are likely to be shaped by allocation decisions at time $t$ and $t-1$. “Since there may well be serial correlation and an effect of expenditures on elections, studies that disregard the possibility of simultaneity must be treated with caution” (Schady, 2000: 298).\(^74\)

But there is a second, theoretical reason why a party’s core support should not be inferred from vote returns of a single election: partisan loyalties are long-term

\(^{74}\) Hiskey’s (1999 and 2003) analysis of Pronasol suffers from this problem – he infers Pronasol’s expenditures in the period 1989-1994 from vote shares from the same period.
attachments (Fiorina, 1981). A party’s core backers are those voter groups that honor partisan loyalties beyond one election, a form of stable support not readily captured by myopic measures of election data. Indicators like vote shares or victory margins in the preceding electoral cycle do not reflect long-term attachments, and in fact might even be attributable to factors idiosyncratic to that election. Instead, underlying trends in the electoral history of local jurisdictions divulge more information about the dynamics of partisan loyalties than the vote returns of a single election.

Students of Mexican electoral politics have documented a clear modernization trend since the 1960s, in which the PRI gradually lost support across the country, especially in places exhibiting higher levels of development. Nevertheless, the PRI retained secure electorates in vast regions, often running uncontested for decades. After the devastating financial crisis of 1982, the process of de-alignment from the hegemonic party became more pronounced, progressing at varying paces throughout the country, with some hegemonic bastions holding steady, others slowly drifting away, and still others seeing a rapidly deteriorating support for the PRI. During this time of contested hegemony, short-term electoral indicators fail to give an accurate picture of voter loyalties. In particular, conventional measures of party support — vote shares, the closeness of electoral races as measured by the margin of victory, electoral competitiveness reflected in the effective number of parties and electoral volatility understood as inter-temporal vote swings — do not capture the deeply rooted partisan attachments that were crucial for building and sustaining hegemony over several decades.

75 Molinar and Weldon (1994) and Bruhn (1996), for example, focus exclusively on the PRI’s vote share in the 1988 presidential elections to study state-level allocations within the Solidarity program. Although Pronasol came in part as a response to the party’s deep split in 1987 and the consequent electoral debacle, the erosion of PRI support can also be traced to processes occurring over a much longer period of time.
Core support and trends in partisan attachments must be inferred from the long-term evolution in a party’s vote shares, thus we focus on long-term voting patterns in municipal elections. Long-term electoral returns summarize a great deal of information about the nature of partisan loyalties and about the capacity of local party brokers to deliver the vote for the PRI. Our theory leads us to predict that parties should target their core base for benefits, particularly when voters make their loyalty conditional on receiving those benefits.

In order to identify conditional party loyalty we calculate two variables that are distinct from vote shares, margins, competitiveness and volatility. The first one measures the size of the PRI’s core in each municipality. The second one captures the erosion of partisan attachments through time. This means that for each municipality our estimations describe not only the size of the PRI’s core, but also the extent to which loyalties are stable or conditional, as measured by a time-sensitive level of erosion of core support.

The size of the core and the rate of erosion of loyalty in each municipality are calculated using data from 1970 to 1987. The data is truncated on both ends because there is no available compilation of municipal-level electoral data prior to 1970. After 1988, municipal electoral data suffers from an endogeneity problem given that Pronasol was enacted in 1988. To measure the size of the core, we borrow from asset-pricing analysis in the finance literature and regress the PRI average vote shares in the country as a whole \((V_{Ni})\) on the vote share of each individual municipality \((V_{mi})\). Hence for every municipality we estimate, across time \(i\), the regression:

\[
V_{mi} = \alpha + \beta V_{Ni} + \varepsilon_i
\]
The *alpha* parameter measures core support, namely the predicted value of the PRI’s vote share in a given municipality in the hypothetical scenario that the party receives no votes at the national level. *Alpha* conveniently captures the way in which local electorates behave independently of national electoral patterns in that it isolates the level of voter loyalty, as mediated by the local party organization and its brokers who mobilize electoral support for the party as a whole in that municipality.

In order to ensure that vote shares are bound between 0 and 1 we estimate the regressions in log-odds ratios. To understand better how *alpha* reflects the differential safety of each municipality, from the perspective of the PRI, one can express it in terms of an ordinary least squares framework:

\[
\alpha = \bar{V}_m - \left( \frac{\text{Cov}[V_m, V_N]}{\text{Var}[V_m]} \right) \bar{V}_N
\]

Notice that *alpha* represents how much higher or lower the average vote share in a given municipality is with respect to the national average vote taking place in all municipal elections that same year, but corrected by risk (the term in brackets). In these calculations, the PRI’s national vote share (\(V_N\)) is not its support in federal elections, but rather its aggregate electoral support in all the municipal elections held in different states between 1970 and 1988. Alpha is thus the predicted value of every municipality’s PRI vote, controlling for its national vote share in any given year in that period. The expected value of national vote shares is adjusted with the covariance between national and
municipal electoral patterns divided by the variability of municipal elections.

By analogy with asset pricing, \textit{alpha} measures the degree to which a municipality outperforms or underperforms the national market in municipal votes. “Excess returns” in elections, then, signal the skill or capacity of a municipal party, its office-holders and cadres, party brokers and candidates, organizational linkages and campaign strategies in assuring relative support levels above the national trend. Chronic underperformance, in contrast, implies that municipal parties are unable to stem losses in any given election and are therefore vulnerable to takeover. The \textit{alpha} parameter, in short, tells us how many more or fewer votes the PRI receives in each municipality, according to its known behavior in the past.\footnote{This means that \textit{alpha} is similar in spirit to the calculation of electoral risk proposed by Wright (1975) in his seminal piece on the politics of social transfers during the New Deal in the United States, where he used the de-trended standard deviation of electoral support for the Democratic Party in each state. But \textit{alpha} incorporates more information, because it is related to both average levels of electoral support and to what is known in the capital-asset-pricing model as “beta risk,” the sensitivity of portfolio returns to market returns. In the diversification logic of financial investments, fund managers seek to include assets in their portfolios with high rates of return, while keeping overall exposure to risk low.}

A useful illustration of the geography of \textit{alpha} is provided in the municipal map below. The darker zones have the highest \textit{alpha} scores and include all municipalities in which the PRI held sway in uncontested elections or sustained its hegemony with at least 65 percent of the municipal vote since the onset of the series. The white zones are those with significant opposition presence, including several scores of municipalities won by opposition parties at least once between 1970 and 1988. The patent advantage of using log-odds ratios here is that they magnify opposition strength in a pattern spread throughout the country, when opposition presence was really marginal outside the big cities.
To measure the erosion of partisan attachments we propose the use of the linear trend in PRI municipal vote shares between 1970 and 1988. The trend is indicated by the slope of a time series regression for each municipality on a time trend of the form:

\[ V_{it} = a + \text{slope}T_t, \quad \text{where } T=1,2, \ldots t \]

Note that this is not a pooled time series estimation, but rather the calculation of separate regressions, one for each municipality, where \( T \) reflects every time an election is held. In federal elections, on average, the PRI suffered a yearly decline of 1.25 percent of its national vote from the peak year of hegemony in 1961, when it garnered 91 percent of the national total, to the national elections of 1994. In municipal elections, the decline averaged 1.5 percent per year since 1970 over aggregated three-year cycles. In the case of municipal trends, the variation across units is large, given that the accumulated impact of demographic change, modernization, political and economic events, and other election-relevant factors on the party’s electoral fortunes was highly differentiated across the country’s states and municipalities.

The slope of each of the regressions captures the erosion of the PRI’s core support. Given the overall trend of decline for the PRI, this corresponds to the rate of de-alignment from the party in every locality. As an analogy, the slope is the municipal trend
in volatility specific to one party.\footnote{On the decomposition of electoral risk see Morgenstern and Potthoff (2003), who draw on Stokes (1965).} We term this variable “erosion.” Higher negative numbers mean more erosion of support over the years.

There is some overlap between erosion and the commonly used concept of volatility — more volatile municipalities do show more negative slopes for the PRI. But erosion and volatility are very different indicators. The conventional standard for measuring volatility in a party system is the Pederson index; however, this index suffers from the same deficiency as vote share in $t-1$ or first differences in consecutive election returns. Short-term volatility may simply not reveal sufficient or sufficiently accurate information about the electoral dynamics of a jurisdiction. Instead, a long-term measure better reflects the cumulative effects of demographic change, geographical mobility, economic shocks and political events in the historical de-alignment from the PRI, as well as the slow but steady growth of opposition support in that period.

Figure 4.2 provides a scatter plot of erosion and \textit{alpha} for each municipality. Naturally, there is a positive association between both variables, whereby higher levels of PRI core support correlate with lower levels of erosion over the years. Yet the figure clearly shows that for any given level of core support on the horizontal axis, there are widely varying trends in electoral decline, on the vertical one. The average core value through 1988 was 0.47, while the average trend in de-alignment was -0.29.
Our approach is to characterize each municipality by both core support and core erosion. Municipalities with high core support (large \textit{alphas}) are loyal places. Loyal municipalities vote for the PRI in high numbers, and remain reliable supporters even when other municipalities defect in response to economic recession, budget cutbacks, lack of jobs, currency devaluations, inflation and so forth. Our theoretical expectations are that the PRI would invest the bulk of its transfers, both private and public, in loyal places. But loyal voters are not all alike. Our core-voter model dissects loyalty according to levels of conditional core support. Some loyal municipalities exhibit little or no erosion of core voter support, while others have experienced a rapid deterioration with the passing of time. If core voters are not taken care of, they will defect and become swing voters in subsequent elections. This theory leads us to expect that the PRI should concentrate its clientelistic practices in places where core voter loyalty is deteriorating in an attempt to lock in voters.

With respect to municipalities with low core support (small \textit{alpha}), our theory leads us to predict little attempt by the party to buy votes through particularistic transfers. These low-core-support municipalities are places where the local party organization and its brokers have consistently failed to mobilize vote support in favor of the PRI election after election. We do not expect the PRI to devote resources trying to buy off electoral support through clientelistic transfers in municipalities with a low core. It is possible that in those places the local party organization is too weak and disorganized to be able to effectively target benefits. Voters in these places are also likely to be ideologically distant from the PRI and wealthy enough to turn away from selling their votes to a corrupt party machine. Even when we do not expect the party to target low-core places with
particularistic transfers, our theoretical approach proposes that the party machine should increase public goods provision to cater to swing voters or even opposition backers.

Figure 4.3 summarizes our empirical predictions in a two-by-two table that divides municipalities according to high and low levels of core size and erosion, our two main independent variables. First, the bulk of Pronasol transfers for both private and public goods will favor settings of high core support, meaning that \( \alpha \) should be positively associated with allocations.

[Insert Figure 4.3 around here]

Second, consistent with our argument that partisan loyalties are conditional and that clientelism is used to lock in a party’s core backers, we expect private goods to be allocated preferentially to loyal municipalities where there is higher erosion relative to those where erosion is negligible. Higher negative numbers mean higher erosions of core support; the effect of this variable should therefore be negative.

Third, we expect the PRI to allocate more public goods relative to private goods in low-core municipalities where the party machine must cater to wider voter groups to win elections since it cannot count on reliable local brokers to target benefits. However, in line with the “punishment regime” approach, we expect the PRI to punish opposition-governed municipalities with fewer public goods programs (Magaloni, 2006; Diaz-Cayeros et al, 2001).

4.3. Modeling Pronasol’s overarching logic
Aside from controls for population size and levels of development, our statistical model uses only three political variables: the measure of core size, the measure of core erosion (both constructed with long-term municipal electoral data from 1970 to 1988) and the measure of electoral shock from the 1988 presidential elections.

The system shock in 1988 resulted from the split in the ruling party wrought by the defeat of presidential contender Cuauhtémoc Cárdenas in an election viewed as fraudulent. Cárdenas was the son of a former president, the charismatic Lázaro Cárdenas (president from 1934-1940), who distributed land widely. Cuauhtémoc split from the PRI, the party his father helped found, in 1985 to form the group Corriente Democratizadora. The PRI lost almost a quarter of the national vote, which created a strong and permanent opposition on the left. Following the bitter post-electoral conflict over legitimacy of the vote count, president-elect Carlos Salinas promised a dramatic shift in social policy, aimed at poverty relief and social development after six years of a roller-coaster economy and stringent austerity in public finances. Pronasol mushroomed into being shortly thereafter. Apart from the effort to mitigate protest, stifle discontent, shore up legitimacy for the new government and marshal support for other parts of its reform agenda, Pronasol was an attempt to revive a ruling party reeling from the split and the electoral meltdown (Dresser, 1994; Cornelius, Craig and Cook, 1994). Numerous studies of spending patterns have stressed the specter of the 1988 elections in the new government’s effort to showcase its solidarity program, Pronasol. Specifically, this research highlights the apparent attempt to buy back both the voters and the machines that defected to Cárdenas (Molinar and Weldon, 1994; Bruhn, 1996), finding evidence for a
disproportional flow of transfers to states where support for Cárdenas was high.\textsuperscript{79}

In order to gauge the accuracy of the buy-back claim, we include the controversial measure of the PRI’s vote margins at the municipal level in the 1988 presidential race \textit{(1988 margin)}. This measure is controversial because the electoral data are incomplete. The electoral authorities at the time released the voting tallies for 29,999 precincts nationwide, out of a total of nearly 54,994, but never revealed the remainder’s vote counts. Once these partial data are aggregated into municipal-level figures, precinct coverage ranges from almost 100 percent (in big cities) to just under 10 percent (in more outlying rural municipalities). While the bias of underreporting might be distributed along an expected continuum of high to low opposition support, as the precinct moves away from the cities, it is nonetheless the case that the geography of the Cárdenas vote in 1988 — cutting a swathe from east to west across the middle and heavily populated part of the country — does not seem to fit the conjecture. The 1988 vote margins only reach a correlation of .20 with the \textit{alpha} measure of core support for the PRI, and one of .07 with the measure of core erosion. This dissociation between federal and local voting patterns should allow for a clean test of the impact on allocation decisions of the electoral shock from 1988.

The control variables in the model are straightforward. The creators of \textit{Pronasol} announced it as a program for poverty relief and social development. It is a reasonable assumption that the census-based measure of poverty or social marginality, known as the

\textsuperscript{79} Magaloni (2006) demonstrates, instead, that the bulk of total \textit{Pronasol}’s transfers went to municipalities where the PRI had been strong in 1988 and Cárdenas weak. It is only in the local elections taking place between 1988 and 1994, that the PRI adjusted investments strategically by simultaneously punishing municipalities controlled by the PRD and the PAN and increasing transfers to places where Cárdenas had been strong in 1988. As we will discuss further, her results are consistent with our findings here in that the PRI punished opposition voters while rewarding disproportionately its own core supporters whose support was deteriorating or could more credibly threaten to exit.
CONAPO index, guided the allocations made within the program over the course of its existence. Developed by the Mexican government, the CONAPO index reflects the level of social marginality per municipality, calculated using a set of indicators that include the percentage of the employed population living below the minimum wage, illiteracy, housing with access to sewage, electricity, drinking water, and population living in rural localities.

In addition to the CONAPO index, we include its square value (CONAPO²). In earlier work (Magaloni, Diaz-Cayeros and Estévez, 2007), we found a curvilinear relationship between private goods provision and development levels, with more per capita funds going to municipalities at medium levels of development. Here, the reason for including the quadratic expression is to test for its impact on other categories of Pronasol expenditures that we use as dependent variables. Figure 4.4 shows the per capita allocation of private goods according to development levels as measured by the poverty index. Clientelism (measured by particularistic transfers) exhibits an inverted J-shape relationship with development, even without controlling for other variables, which is striking from the modernization point of view. As we will demonstrate, this relationship does not depend on political configurations as reflected by the measures of core support and core erosion (nor other conventional measures of political competition, such as the number of parties).

[Insert Figure 4.3 around here]

The finding that clientelism tends to decrease at the highest levels of development
is consistent with the socioeconomic theory of linkage building, which states that richer voters’ preference for public goods provision over private transfers makes it too expensive for a party to attempt to buy voters off through particularism (Kitschelt, 2000). Thus, clientelism tends to be greatly reduced, albeit never fully eradicated, at the highest level of development. Contrary to this theory, the Mexican case documents that clientelism is greatest at middle levels of development, not in the poorest localities.

The question arises as to whether core support, core erosion and political variables in general respond to economic development. Our dataset allows us to separate the socioeconomic from the political processes that influence clientelism. In cross-national comparisons, development is correlated with political competition, and in Mexican studies, development levels usually show a strong inverse relation with PRI support (Klesner, 2000). Our long-term measures of municipal electoral behavior, on the other hand, are distinctly political. There is no correlation between the poverty index and the erosion of electoral support, as measured by our variable erosion ($\rho=.05$). Although poor localities tend to have larger shares of core voters, as one might expect, the correlation between the poverty index and alpha is moderate at best ($\rho=.24$).

We also control for municipal size in the models, employing the natural log of population (logpop). To some extent, one should expect that large and more heterogeneous populations would be associated with higher development level, but the Pearson’s correlation between logpop and CONAPO is 0.40, indicating that these variables measure different municipal-level traits. In another order of calculation, in the event large cities are favored with per capita expenditures, one could surmise a political interest in those jurisdictions with large raw voting power.
The dependent variables for the overarching models of *Pronasol* are mean municipal-level expenditures from 1989 to 1994. We run four cross-sectional models. Model 1 considers total per capita expenditures. Models 2 and 3 look at per capita private and public goods, respectively. These three are all expressed in logarithmic terms. Model 4 tests the shares of private goods within total *Pronasol* transfers to each municipality. In order to ensure that the estimations do not suffer from spatially auto-correlated errors, a spatial lag is included. We have calculated a (queen) proximity matrix of order 2 in which both the contiguous and the contiguous-at-one-remove values in the dependent variable are taken into account. The spatial weights and the regressions including the spatial lag were all run on GeoDA. Results are provided in Table 4.1.

[Insert Table 4.1 around here]

The initial result to highlight is that the total per capita transfers averaged over six years show an extremely weak relationship to municipal welfare levels as measured by the CONAPO index (column 1). This is partially mitigated by a strongly negative relationship with municipal size, which rules out a big-district strategy for capturing large voter blocs. Thus, *Pronasol* funds, which were presumably intended to help the poor, were, in reality, spent with political priorities in mind.

The strictly electoral variables are unambiguous in their impact. First, larger overall transfers are strongly associated with the PRI’s traditional strongholds in municipal elections. The larger the core size for the party, as measured by *alpha*, the greater the total flow of per capita transfers. Second, the rate of vote loss over the long
term affects allocations in the expected direction. Third, consistent with our conditional party loyalty theory, the PRI tries to halt the erosion of its core base through the intensification of clientelistic transfers rather than through the provision of public goods. Lastly, those localities staunchly loyal to the PRI in 1988 were favored with more transfers, while those that backed the opposition were punished, in relative terms. With respect to the overarching logic of Pronasol, a buy-back strategy aimed at defected voters does not appear to have been a systematic criterion in the geographical distribution of funds. Nor could it have been, since to bribe municipalities back into the fold would have established the wrong incentive, namely rewarding defection (Magaloni, 2006; and Diaz-Cayeros, Magaloni, and Weingast, 2001). In sum, the core-voter model based on the notion of conditional party loyalty is strongly buttressed by these results.

A nuanced core-voter strategy story is told through the distinction made between the two basic types of electoral investment contained within Pronasol (columns 2 and 3). Our expectations would be that core supporters should be preferentially targeted for benefits, both private and public. However, the objectives sought by the provision of private versus public goods will separate according to how threatening the core’s defection is in any given municipality. Our conditional party loyalty theory claims that locking in the core (halting core defection) is a key motive of clientelism. Public goods are not the favored instruments for keeping the core loyal. These claims are strongly supported by the empirical evidence. The variable erosion is strongly significant and of the expected sign in Models 1, 2, and 4 and not in model 3, suggesting it is particularism and not public goods that the PRI used to halt the erosion of core voter loyalties. These results provide support to our claim that clientelism as an investment strategy is intended
to preserve pre-existing core constituencies that might defect otherwise.

From columns 2 and 3 it is clear that small municipalities as measured by population size (logpop) fare better than large ones for both categories of electoral investment. However, the poverty index and its squared value assume radically opposed associations with the two types of benefit outlays. With respect to clientelism, one observes an inverted J-shaped relationship with development level. Intermediate levels of development (or poverty) attract higher levels of private goods provision, while the polar opposites on the scale are less favored by particularistic transfers. In the case of public goods provision, the opposite relationship holds. It is the poorest and richest ends of the development continuum that receive larger transfers for collective goods, while the intermediate levels obtain fewer of these benefits. At the same time, the coefficients for the quadratic expression are much larger in the case of clientelism, indicating a pronounced differential in distribution. The curve for public goods is flatter and seems to indicate a buckshot strategy, if not quite a universalistic one, for the distribution of collective goods at all levels of development. In any case, the important result that Pronasol did not particularly favor the poorest municipalities continues to hold.

The last model tests for the determinants of the share of clientelism within the complete basket of Pronasol transfers to each municipality. A critical difference in our view with respect to the debate regarding core versus swing voters is that investment diversification entails obvious advantages for incumbent politicians with discretionary funds available. It is probably the case that the larger overall share of public goods provision within Pronasol (an average 72 percent over six years) and the intense media campaign that accompanied its expansion served to protect the clientelism that lay within
the program and increased in proportion over time from public scrutiny. The specific combination of these investments for each municipality, we posit, reflected to some degree the risk assessment the PRI devised for each locality and balanced the imperatives of catering to its long-term core constituencies and claiming credit for public welfare benefits.

The results of the diversification model are presented in the last column of Table 4.1. The poverty index shows an inverted J-shaped curve, much like that of per capita private goods transfers. Municipalities at intermediate levels of development obtain the highest shares of private goods, but the poorest municipalities still receive almost double the share going to the richest. Population size is positively associated with the composition of the portfolio, with higher shares of clientelism going to larger municipalities, but this result reflects lower relative transfers for collective goods than for private ones.

The \textit{alpha} parameter reflecting core size is positively related to shares of clientelism, as it was (more strongly) for private transfer amounts. These results are an indication that, per our predictions, the relative share of public goods in the portfolio increases where the PRI’s core is smaller and the party faces stronger competitive pressures, a point that will become even more transparent when analyzing the peripheral logic of \textit{Pronasol} with respect to local elections and local partisan configurations. Public goods provision is not as effective an instrument for the retention of partisan loyalties, but should be used in places with low core support as a means of attracting heterogeneous voter groups. The measure for long-term electoral de-alignment follows its earlier pattern, with intensified clientelism for those municipalities with higher rates of erosion.
of PRI support.

Finally, the shock waves from 1988 skewed the distribution of total Pronasol funds in favor of districts loyal to the PRI in that watershed election. These results run counter to the notion of Pronasol as being used to buy back voters. The results reveal a differential impact of the 1988 electoral shock with respect to public and private goods provision. Column 4 suggests that the PRI increased the rate of private goods provision in places that were more narrowly won, but punished opposition victories with fewer public works projects.

To have a sense of the range of effects for our main explanatory variables alpha and core erosion, figure 4.4 simulates the predicted values of per capita private goods provision or clientelistic transfers, according to varying electoral variables but with the socioeconomic controls and 1988 margin set at their means. Shown are three scenarios for alpha: a stronghold municipality at one standard deviation above the mean; another municipality at the mean; and a third one at one standard deviation below the mean. The graph then plots the per capita transfers for private goods according to the rate of decline in party loyalty over time. The simulated effects for both variables are substantively important: a stronghold with stable support for the PRI receives a bonus of 8 to 10 pesos per capita over one with few core supporters; an unstable bastion obtains 20 pesos more per inhabitant than the amount going to the PRI’s weakest districts. Moreover, when the PRI’s rate of decline increases from the mean rate (-0.299) by one additional standard deviation (-0.682), per capita allocations grow by about 10 pesos; when it jumps two standard deviations (-1.164), the benefits almost double in value per head over those for municipalities at the average rate of de-alignment.
Based on these general models of Pronasol allocations, the conclusion is inescapable. Pronasol was a program designed and operated on behalf of the PRI’s core-voter groups throughout the country and expenditures markedly benefited municipalities that exhibited long-term partisan loyalty toward the ruling party. There is scant evidence in these models of behavior approximating the party opportunism of the swing-voter model. We also uncover strategic behavior by the PRI that resulted in more clientelistic transfers disproportionately targeted to municipalities where core support was eroding more rapidly over time due to a multifaceted process of development. Consistent with our theory of conditional party loyalty, the PRI used clientelism primarily as an attempt to lock in its core base. Lastly, there is no evidence of a buy-back logic. Disloyal municipalities, and especially those that supported Cárdenas in 1988, were punished with fewer per capita transfers. Overall, Pronasol’s total per capita expenditures were not disproportionately targeted to benefit the poor, but to sustain the PRI’s electoral hegemony, to block, if not destroy, the embryonic party formation that resulted from the Cárdenas split, and to lock in ruling party voters through intensified clientelism.

4.4. The peripheral logic of Pronasol

Thus far we have focused on Pronasol’s political motives as though they were centrally devised, driven with presidential electoral imperatives in mind, including
holding the machine together and maximizing electoral support across the board. But as we have also emphasized, Pronasol’s operations on the ground were run through a vast network of politicians and state officials, including state governors, municipal presidents, local party brokers and local community leaders. In this section we assess the extent to which local politicians from the PRI were able to shape Pronasol’s investment strategies to attend their local electoral needs. We ask in particular if Pronasol’s programs responded to municipal election schedules, local party system configurations, and the party label of local incumbents.

Our expectations are that the investment strategy that was adjusted to every municipality’s political conditions on the ground will continue to reflect a core-voter orientation. A core-voter strategy reflects the dependence of the national incumbent on the party machines and operators who reliably turn out the vote and govern localities in alliance with party higher-ups. However, we expect to observe some tinkering of Pronasol according to local election calendars and expectations about the expected competitiveness of coming municipal elections.

There is a wide range of electoral competitiveness and party system configurations in Mexican municipalities. Low core support in one set of localities translates into lower vote shares, tighter election margins and a larger number of effective competitors within the municipal party system. In such places, it is unlikely that mere cultivation of the core constituency will produce victory in any upcoming election. Electoral competition, then, obliges incumbent politicians to appeal to segmented electorates beyond their normal constituencies through policies and promises that entail a broadly cast net of welfare benefits generated by public goods provision — thus the
imperative of diversification in choosing of electoral investments.

In addition to previously used socioeconomic controls and the lagging values of the dependent variables, the peripheral models re-specify the political and electoral variables used earlier. In the peripheral logic models we are dealing with pool-time series, where our dependent variables vary from year to year, rather than cross-sectional models. Here we include dummy indicators for election year, one for federal elections held in 1991 and 1994 (national election), and another for election years in the staggered municipal calendar (local election). It should be noted that in Mexico’s busy election calendar, municipal elections take place on staggered three-year cycles meaning that every year there are municipal elections taking place in different states. If national and local politicians took electoral dynamics into account in their allocation decisions, we expect both variables to be positively associated with our dependent variables.

Also included are electoral variables strongly related to the political measures specified for the previous models but which highlight more telltale features of partisan control and competition during the years of the Salinas administration. We propose a typology of competitiveness from the perspective of the PRI, which incorporates the influence of the electoral legacy of the 1970s and 1980s and dissects its strength in the 1990s. The typology comprises four exclusive categories of municipal competition: 1) “Monopoly” in this case is defined by a one-party municipality in which the PRI had a string of victories of at least 65 percent of the vote in every election since 1970, and ran uncontested (100 percent of votes) during the Salinas administration. 2) “Hegemony” is defined by a municipality in which the PRI had vote shares between 65 and 100 percent from the 1970s to the Salinas years. All other municipalities governed by the PRI are
classified as 3) “marginals,” though they are not, strictly speaking, marginal districts, but rather competitive ones, in which an opposition party has sufficient strength to count as a viable contender in any local election, or in which high rates of electoral change are exhibited. 4) The “opposition“ category refers to municipalities governed by any opposition party.

[Insert Figure 4.6 around here]

This simple typology of competitive challenges faced by the PRI at the municipal level is defined in terms of mean alpha and decline scores (figure 4.6). Predictably, the categories of monopoly and hegemony have much larger mean cores than the competitive municipalities. But only monopoly provides a stable electoral trend over time. The municipalities corresponding to opposition and marginals are practically indistinguishable in terms of their electoral legacies.

Our results from the models in Table 4.1 suggest that the highest per capital funds would go to hegemonic municipalities where alpha is large, but in contrast to monopolistic electoral markets, there is high erosion of PRI support over time. Although PRI marginals and opposition municipalities possess very similar electoral legacies, they should receive very different treatments, the latter being unambiguously out of favor, consistent with the notion of a punishment regime (Magaloni, 2006; Diaz-Cayeros, Magaloni, and Weingast, 2001). The punishment strategy is inconceivable from a swing-voter logic.

More conventional indicators of competitiveness also differentiate these
categories in predictable ways. Table 4.2 describes the Laakso-Taagepera index of effective number of parties \( (N) \), as well as the mean absolute margin of victory in municipal elections held from 1989 to 1994 for the four categories. While the PRI’s monopolistic and hegemonic municipalities could endure the loss of one standard deviation in votes, or the entry of .5 competitors as measured by the Laakso-Taagepera index, without facing high odds of losing the municipality, the same was not true for competitive municipalities. If the ruling party had staked its interests in winning competitive municipalities, logically it should be expected to invest more heavily in them, following the imperatives of the swing-voter model. Our theory holds, instead, that core constituencies should continue to reap the benefits of electoral investment.

There are two strategic exceptions to this general expectation. First, monopolistic or non-competitive elections in which the ruling party runs uncontested do not require a high ratio of clientelism-to-pork-barrel spending because core supporters have no credible exit option. Second, we claim that the PRI should diversify its spending by investing in higher shares of public goods in competitive or high-\( N \) municipalities, which coincidentally are the municipalities with small PRI electoral victories.

To explore this facet of investment diversification further, we include municipal-level \( N \) in the peripheral model, in line with Chhibber and Nooruddin (2004). However, since the local structure of competition during the period 1988-1994 is clearly affected by Pronasol expenditures, we instrument the effective number of municipal parties with its
value in $t-1$.\textsuperscript{80} This instrumented measure of $\hat{N}$ then, captures the effect of an expected competition structure in any municipality.

The results for the peripheral models are presented in Table 4.3. The first two models test for per capita allocations in private and public benefits, respectively, and the third for the relative share of private goods within the total basket of municipal funds. Since we explore the effects of local electoral politics on transfers over time, yearly observations are pooled, controlling for the time trend (year) and the lagged value of each dependent variable.

The behavior of the control variables are very similar to that observed in the earlier models. Clientelism is strongly curvilinear with development levels, while pork shows no relationship to the poverty index. Per capita transfers for private goods increase and for public goods decrease with municipal size. Importantly, recourse to clientelism increases strongly over the lifespan of the program.

Electoral cycles are quite clearly present during the Salinas government’s term, but specifically for federal elections in 1991 and 1994. Indeed, a national election always trumps local ones, indicating the dominance of the centralist strategy in the year-by-year implementation of Pronasol. There is weak evidence that Pronasol’s particularistic transfers increased prior to municipal elections, but transfers for public goods paradoxically decrease quite dramatically. In other words, the local election calendar did not dictate disbursements within Pronasol’s social infrastructure projects. Credit-claiming by its municipal parties perhaps rested on the record of accumulated pork-barrel

\textsuperscript{80} In earlier research (2006) we have included an instrumented margin in order to capture the impact of expected vote returns in municipal elections. So does Magaloni (2006), who finds that more of Pronasol’s transfers went to municipalities that were expected to be won by smaller margins. \textit{N} and \textit{margin} are in any case strongly correlated.
transfers, but was not based on opportunistic infusions of funds for public works and infrastructure projects. However, we find evidence that local politicians modified the portfolio of electoral investment, increasing clientelistic practices over public goods provision prior to municipal elections, as suggested by the positive and statistically significant result for local elections in the model in column 3 in Table 4.3.

[Insert Table 4.3 around here]

The municipal competition types perform as expected. Clientelistic per capita private transfers are highest in hegemonic municipalities, while monopolies and marginals receive almost equal treatment. Opposition municipalities, as mentioned, are punished with the lowest amounts of particularistic transfers. In the case of per capita public goods transfers, one-party and hegemonic districts enjoy the highest allocations, while opposition districts and PRI marginals receive very similar treatment.

The full measure of the core-centered logic of Pronasol can be appreciated in Figure 4.7, which maps clientelism for each category of competition against the poverty index. Particularistic per capita transfers to hegemonic municipalities were double those received by opposition-held municipalities, at any level of development. Particularistic transfers destined for monopolies and marginals were about 50 percent higher than what opposition-held municipalities received. The largest breach in absolute terms comes at intermediate levels on the poverty index, as before, yet the poorest localities enjoy at least three times the resources delivered to the richest. At the same time, one-party municipalities and competitive municipalities controlled by the PRI are assigned similar
amounts of clientelism at all development levels.

[Insert Figure 4.7 around here]

From the perspective of the swing-voter model, this distribution of particularistic transfers would seem perverse; from that of the core-voter model, it reflects the centrality of partisan expectations and commitments to both voters and local party brokers. That is, private benefits that are selectively targeted should not be given to outsiders because they generate the wrong type of incentives, namely rewarding defection. Larger core constituencies take the greater slice of the pie, mitigated only by the lower incidence of private transfers in situations of monopoly. This last finding is in accordance with Medina and Stokes (2006) in that monopolies suffer benign neglect by incumbents with respect to handouts. In competitive municipalities, with smaller cores, the party label of municipal government is decisive for allocation. Again, the swing-voter model would argue for similar treatment of all marginals: a weak marginal municipality controlled by the opposition entails the same vote-buying potential as a weak marginal governed by the PRI. However, that claim devalues the comparative advantage of partisan organizations and the control of government in local politics. Hence, our results indicate that opposition municipalities, even if lost by small margins, invariably get punished. These results parallel Magaloni (2006) and Diaz-Cayeros et al. (2001).

What the swing-voter model fails to find in the patterns of private transfers in the Mexican case can be found in the distribution of transfers for pork across municipalities. The results reveal that more public goods are assigned to districts where the coming
elections are expected to be competitive. This is measured by the predicted effective number of parties, which has a positive and statistically significant sign for public goods allocations and a negative and statistically significant sign for private goods allocations and for the share of private goods within the municipal portfolio. The same results hold if we run the regressions with expected margin of victory, with higher public goods provision happening when the coming municipal elections are expected to be close. These results support our claim that incumbent parties will diversify their portfolios by investing more in collective goods in competitive districts. We should emphasize that is the expected or instrumented competitiveness in the coming election. This instrumented variable of competitiveness, unlike our party configuration typology, is constructed with short-term election results or competitiveness data from the previous municipal race. Thus, the effect of conveniently captures the way in which politicians adjust investment decisions according to shorter-term municipal election imperatives.

In figure 4.8 we simulate the effects of on the disbursement of collective benefits in local election years, holding other variables at their mean. The patent result is that per capita expenditures for collective goods increase rapidly as the expected effective number of parties grows. For the bipartisan and multi-partisan competition mushrooming in Mexico in the 1990s, this corresponds to about double the per capita investment in pork assigned to low-\(N\) municipalities in an election year. As a result of the skew in the allocation of private transfers, the share of public goods within the Pronasol basket increases markedly for \(N\) in the competitive range.\(^5\) The cost is hefty, since per capita

\(^5\) Chhibber and Nooruddin (2004) find evidence in Indian states for the greater incidence of private benefits (government salaries) and of lower public goods expenditures in multiparty environments than in two-party ones. Our findings for Mexico are exactly reversed and, in addition, extend to under-competitive
transfers for pork are routinely two to three times the amount distributed as private transfers.

[Insert Figure 4.8 around here]

4.5. Conclusion

The Pronasol projects in Chalco Solidaridad had a lasting impact on improving the lives of the poor in that municipality. Many other Pronasol projects also contributed to improving welfare by bringing health clinics, schools, water systems, sewage systems, electrification and more to previously impoverished localities. Unfortunately, this was not the overarching logic behind Pronasol’s vast operations. One of the central political motivations behind its public infrastructure projects, as our results suggest, was that the PRI could no longer count on a core base of support to win elections and needed to legitimize itself through projects for which it could claim credit. But for the most part the poor were not actually targeted because they did not happen to live in low core-voting localities. What the poor got was mostly old-time clientelism or particularistic transfers, which were distributed on the eve of elections. Our results in this chapter compellingly demonstrate that clientelism was used to lock in the PRI’s core base of support and, as we will demonstrate in subsequent chapters, made no lasting difference on improving the welfare of the poor. Although our results demonstrate that it paid to be a PRI loyal voter,

environments, which take the lion’s share of clientelistic transfers and a more modest amount of pork outlays. Of course, the Mexican case is one of centralized control over Pronasol disbursements and of only one national incumbent party until the year 2000.
the logic of political linkages in fact left the poor trapped in a long-term relationship based on material dependence.

This chapter presents empirical evidence for our theory of *conditional party loyalty*. Our theory departs from the core versus swing voter debate in viewing partisan loyalties as endogenous, shaped by the history of interactions and tactical redistributions. Voters’ loyalties cannot be taken for granted, we argue, and this is especially true where poor voters respond weakly to ideological and other symbolic appeals, as is the case across the developing world.

We see politicians as motivated by both by short- and long-term considerations — they seek to construct partisan coalitions that are stable over time and they want to win the current election. These goals often place parties in a strategic dilemma: if they appeal to swing voters to win the current election by delivering discretionary transfers to them, they risk alienating their core voters in future elections. Alienating the core is a seriously destructive strategy. Core voters are more reliable that swing voters, who can always take the transfer and vote otherwise. Core votes are also less expensive to buy off because local party organizations and local party brokers understand the core voters’ needs and desires and can more effectively mobilize them to the polls. One solution to this dilemma, we have argued, is to diversify the portfolio of electoral investment, targeting particularistic transfers to sustain the support of the core, and delivering collective benefits to other voter groups.

The strategy we uncover has a strong core-voter bias: parties should primarily target particularistic benefits to voters who have consistently supported them in the past. These voters are not only better known by local party brokers, but are also less risky as
investments. Not all loyal voters are alike, however. The more the core is predisposed to drift, the more we expect a party to rely on clientelistic practices to lock loyal voters in. We animate this concept of conditional party loyalty through the notion of core erosion. Our theory argues that discretionary private transfers are preferable to collective goods in constructing electoral coalitions that are stable over time. Since particularistic transfers can be targeted, a party can more credibly threaten to withdraw them from those who defect to the opposition. This form of political exchange is what we, and others, have characterized as clientelism. Our theory is also one of portfolio diversification. Parties can choose from a basket of discretionary goods or transfers, which we have broadly separated into clientelism and pork. Public goods should be preferred where a party needs to attract a broad coalition to win elections.

The results in this chapter provide robust empirical support for our theoretical claims. Pronasol’s strong bias in favor of core constituencies and districts under firm PRI control is undeniable with regard to discretionary transfers of private benefits. Clientelism was consistently used to reward core-voter groups, with politicians strongly intensifying this in municipalities that were experiencing higher core-voter erosion over time. The strategy employed in the allocation of pork-barrel projects is less straightforward. Our results reveal that within Pronasol’s overarching strategy, public goods provision also emphatically favored core districts and punished opposition-controlled ones. However, our empirical results suggest that local politicians modified their portfolios of electoral investment to increase the share of public goods over private goods in low core municipalities. Intended to attract support from broader and more heterogeneous coalitions, pork appears to be a second-best, though necessary, choice for
party machines.

Finally, the models about the peripheral logic of *Pronasol* strongly suggest that politicians intensified clientelistic practices prior to national and municipal elections alike. Local party organizations and brokers were able to adjust investment decisions to take into account their own shorter-term electoral needs. Overall, our empirical results demonstrate that poverty alleviation was, at best, a secondary objective for *Pronasol*. Expenditures did not systematically privilege the poorest municipalities. The entire program with its vast operations was administered with the overarching goal of sustaining the PRI’s electoral hegemony. The program, as we will demonstrate in later chapters, was highly successful at buying votes for the PRI — and extremely ineffective at combating poverty.
Chapter 5

From Handouts to Entitlements

We remind you that your participation in Oportunidades and receipt of benefits are in no way subject to affiliation with any specific political party or to voting for any specific candidate running for public office. No candidate is authorized to grant or withhold benefits under the program. Eligible beneficiary families will receive support if they show up for their doctor’s visits and health education talks and if their children attend school regularly.

Notice printed in all Progresa and Oportunidades documents and communications

5.1. Introduction.

Nearly everything Salinas accomplished during his term, including Pronasol, was rejected after he left office. In a hopeless attempt to vindicate his name, Salinas took refuge in the house of the president of a local Solidaridad committee in Monterrey and went on a hunger strike, causing the nation to think that the former president had gone insane. So intense was the country’s fury that Salinas chose to live the life of an outcast for years after his term ended. He spent five years in secretive exile in Dublin, Ireland, and Havana, Cuba, and did not return to Mexico until after the PRI was ousted from office in 2000. The country’s outrage against Salinas would have seemed unthinkable at the time of the 1991 and 1994 elections, which his party was able to win comfortably, largely thanks to Pronasol. Salinas and his allies could not imagine how quickly everything his presidency stood for would crumble.
First came the Zapatista rebellion in the southern state of Chiapas, where on New Years Eve, 1993, hundreds of Mayan peasants marched into four towns. The rebellion made it clear that despite the *Pronasol* program, poverty in Mexico remained seriously unattended. As a result, there was a credible threat of uprising from citizens. Then came the assassination of the PRI’s presidential candidate, Luis Donaldo Colosio in 1994, and the murder of the party's secretary general, Jose Francisco Ruiz Masseiu, in Mexico City six months later. But the 1995-1996 Peso Crisis was what ultimately caused the public fury against Salinas and his party’s corrupt practices.

The PRI lost almost every state and municipal election that took place after the Peso Crisis. It also lost its majority in the Lower Chamber of Deputies in the 1997 mid-term elections. For the first time, the president and his party were forced to negotiate with the opposition to pass legislation, including the federal budget. Although the economy began to recover, Mexican voters remained unforgiving, and in the 2000 presidential elections they finally ousted the PRI, putting an end to 70 years of uninterrupted rule.

President Ernesto Zedillo campaigned for the 1994 election with the slogan “welfare for Mexican families.” Yet, a serious economic recession and necessary budgetary cutbacks in the mid-1990s gave him very little budget to deliver on his promise. This chapter recounts the politics of how clientelism, as the predominant means of political exchange between the PRI and the poor, begun to be dismantled, and how the new social assistance programs *Progresa* and FISM came about during the Zedillo administration (1994-2000).

As should be already apparent, this dramatic transformation and the phasing out of *Pronasol* would not have occurred had Mexican voters not rebelled *en masse* against
the system. Clientelism requires voters’ complicity to survive as a form of electoral
exchange. Poor voters willingly became loyal to the PRI because their loyalty served to
facilitate access to government transfers and a future stream of benefits. The patron-client
relationship was based on reciprocity. The party delivered access to the system of
benefits to keep its clients loyal; in exchange, clients reciprocated with their loyalty and
support, including turning up for rallies and political campaigns and showing up at the
polls.

The perverse nature of clientelism is that voters willingly sustain a system that is
corrupt and keeps them poor. The dilemma is one of coordination. Each voter acting
alone has powerful reasons to remain loyal. If the voter defects in isolation, she will be
punished or cut off from benefits of the system. And if everyone reasons likewise, the
machine can be sustained in equilibrium. To exit the system, the voter needs to know that
many others will vote against the machine; otherwise the lone defector will bear the costs
of exiting. The equilibrium is perverse because everyone becomes an accomplice of the
system even when it is collectively suboptimal.

The 1995-1996 Peso Crisis in Mexico served as a critical turning point in finally
convinced voters to defect from the PRI (Magaloni, 2006). Voter defection, as we will
see in this chapter, brought about a reshuffle in the workings of the institutional
apparatus, fundamentally transforming presidential-legislative relations and the balance
of power between the central government and the states. Equally important, mass voter
defection triggered a rebellion within the PRI itself against the president. Governors and
elected officials all over the country sought to restrain the overarching powers of the
Mexican president, who had traditionally served as the leader of the PRI.
*Progresa* and FISM were born in the heat of these political battles. With poverty rising sharply as a result of the economic recession and a mounting threat of social rebellion, the new social assistance regime, with its focus on fighting extreme poverty, represented a convenient compromise in a time of serious fiscal restraint. The new social assistance regime represented a compromise between the PRI (its president and the party’s subnational politicians) and the opposition, to tie the hands of the institution of the presidency. Since the creation of the PRI, the president played a critical role in the clientelistic apparatus. Fiscal resources were highly centralized and the president had huge leeway to decide who got what and when. The system was purposefully designed so that when subnational politicians delegated fiscal powers to the president, the president in turn took care to discipline and unite the heterogeneous PRI behind the common cause of hegemonic party survival (Diaz-Cayeros, 2006). With the FISM, resources would now be distributed among subnational governments according to previously specified formulas negotiated within the legislative arena. States and local communities would now decide what projects to fund, not the president and the federal government.

The creation of these programs represented a radical shift in social policy in terms of the targeting/universalism and discretionary/formula-driven schemes discussed in chapter 1. The new poverty-relief strategy dramatically reduced the federal government’s discretionary capacity to use social transfers in alignment with the ruling party’s electoral imperatives. This chapter analyzes the political transformation that led to the partial dismantling of clientelism as the predominant form of political exchange between the PRI and the poor. Why was *Pronasol* phased out? Why did the government replace it with a

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52 The dismantling was “partial” because many other programs that still exist provide transfers to the poor (particularly in the areas of agricultural subsidies and housing programs) through traditional clientelistic
non-discretionary poverty relief strategy? What accounts for resource decentralization in the provision of local public goods? These questions are puzzling, especially considering that, as critics have noted from the outset, Pronasol was aimed at buying votes for the PRI and had proven effective at meeting its objective.

Although we would like to provide answers to these questions that are general enough to inform the debate on clientelism, our interviews and analysis of documents and quantitative data suggest that many of the processes that led to the transformation of social policy were serendipitous.\(^{53}\) There was no single inevitable occurrence that brought about the abandonment of clientelism in Mexico. Recognizing the role of contingency in the way social and political events unfold, the chapter is organized as follows. Section 5.2 discusses the changes in the social assistance regime in light of theories of bureaucratic agency. Section 5.3 presents a narrative of the political events that led to the creation of poverty relief policies based on entitlements rather than handouts. It explores some of the distributive tensions emerging in those years, providing evidence of the way in which a formula-based decentralization strategy enabled the Mexican president to forge a more channels. For example, Reveles (2006) provides a well researched, journalistic account of PAN legislators using social policies and funds for political gain. Moreover, many of the old clientelistic practices have shifted to the subnational arena.

\(^{53}\) A note on the source of information for this chapter is in order. In the process of writing we interviewed the key architect of Progresa, Santiago Levy, as well as two Deputy Ministers in the Social Development Ministry, and the Head of the Unit of Social Programs Evaluation (Coneval). We also interviewed academics and policy-makers in the area of social development. The co-authors spent the years 1995-1999 closely engaged in the public policy debates covered in this chapter. One of them spent a sabbatical leave at the President’s Office during 1995 (Estévez). The other two (Díaz-Cayeros and Magaloni) were engaged in research projects on federalism and decentralization and the emergence of rule of law, within a think tank in Mexico City (CIDAC). We followed closely the parliamentary debates and public opinion processes of 1997. Díaz-Cayeros participated in meetings at the Committee for Social Development in both the Chamber of Deputies and the Senate in 1997; he was part of the steering committee organizing the Forum on federalism in 1997; and he interviewed state finance ministers, governors, deputies and senators from all political parties. Hence our informants include several dozen if not close to a hundred individuals who were the key players in the process; we had access to internal documents from the ministries, state governments and the legislature, and were able to use these materials to interpret published data and reports.
viable ruling coalition. Section 5.4 places our account within the comparative politics literature, contrasting it with some theories of policy change. We end with a conclusion.

5.2. Presidential discretion and models of bureaucratic agency

Models of bureaucratic agency may shed some light on the reasons why politicians circumscribed the federal government’s scope for discretion in social policy (Huber and Shiban, 2002; Epstein and O’Halloran, 1999). In the face of informational shortcomings, agency models show that it is best for legislators to allow for some bureaucratic drift in the trade-off between the informational advantages of bureaucrats and the policy benefits of direct control. The optimal delegation consists of allowing policies to drift in a policy space within well-defined parameters. Political control by legislators is only exercised ex post if bureaucrats move outside those parameters. Such an arrangement retains politicians’ control over bureaucrats, while allowing agencies to do their job better, giving them the power to decide policy implementation in the face of uncertainty. For politicians, the cost of bureaucratic discretion is that they cannot get exactly the policies they would like. Bureaucratic discretion will be greatest in those policy arenas where the preferred positions of both politicians and their agents converge.

The PRI hegemonic system was premised on extreme delegation to the president and the federal bureaucracy. These actors enjoyed a virtual free hand to decide policy and resource allocation; legislators and party leaders seldom exercised any control or oversight over the executive branch, but expected political rents in return. The reshuffling
of bureaucratic staff every presidential term allowed the president to name top bureaucrats and agency heads with similar policy positions to his own, even when these differed from the policy preferences of party rank and file. This was particularly clear during the years of neoliberal reform, in which the policies pursued by the federal government were easily to the right of the average PRI politician. Politicians accepted this arrangement because they had few incentives to invest in information or policy expertise of their own. Also, the overwhelming majority of PRI politicians were more interested in sharing the spoils of office than in shaping the policy agenda. In short, their policy positions were not very salient. The overriding objective of PRI members was to advance their political careers within the party, which depended upon discipline, loyalty and deference to the president.

The late 1990s witnessed a change in the relationship between PRI politicians and the president. The party of the president lost control of the lower chamber of Congress in 1997. This shift in power, unprecedented since the late 1920s, led to the incipient development of expertise in committees within the legislature. Although individual legislators continued to face weak incentives to make large investments in policy expertise, party and caucus leaders became effective veto players in the context of non-unified government and no longer rubberstamped presidential bills. Given the fiercely competitive local environment triggered by the economic crisis of late 1994 and the wholesale concessions to the opposition in the election reform of 1996, PRI politicians quickly realized that their political careers would depend increasingly upon their connection to governors and their capacity to defend the policy preferences of diverse local constituencies. They shifted their focus from the federal executive towards their
local political arenas. Legislators began to exercise their prerogatives on policy, strengthen their oversight capabilities and reduce presidential discretion.\textsuperscript{54}

There is a clear association between greater legislative power and a reduction in bureaucratic discretion. Yet models of bureaucratic agency provide only a limited understanding of the shift in social policy in Mexico because they exaggerate the notion that congressional committees and the floor were key arenas in which politicians struck policy deals. In the 1990s the legislature was still mostly peripheral to policy decisions. The decisive bargaining over policy did not involve deputies and senators, but rather party and caucus leaders, governors and cabinet ministers.

Nevertheless, the logic behind agency models of discretion enables us to distill a plausible hypothesis regarding the shift in social policy. We propose that the political process that led to the reduction in bureaucratic discretion should be traced to the relationship between the president and the ruling party. The PRI was a highly heterogeneous coalition of office-seeking politicians whose policy preferences, which ranged across the ideological spectrum, were subordinated to their interest in staying in power. Ideological differences turned relevant during the debt crisis of the 1980s, which led to the party split in 1988 that threatened the ruling party’s grip on power, and emerged again in the mid-1990s, when the multiple crises of 1994 provoked more turbulence within party ranks with potentially ruinous effects on the PRI’s electoral prospects.

\textsuperscript{54} An alternative model to understand the reduction in discretion is proposed by Tommasi, Spiller and Stein (2005) who argue that adaptability in institutions is often necessary in order to deal with unforeseen contingencies, but stringent limits to discretion are usually imposed to avoid political manipulation and arbitrariness on the part of bureaucratic agencies. Manipulation is avoided through the creation of stiff rules and regulations, because other forms of ex-post oversight are less effective.
Politicians in the party were better off reducing presidential discretion in order to prevent a destabilizing dynamic of redistributive conflict from emerging among the rank and file. The PRI coalition encompassed politicians from regions lagging far behind in terms of social development, together with politicians from regions with the most vibrant market-led economies benefiting from the North American Free Trade Agreement (NAFTA) and globalization (Magaloni, Diaz-Cayeros and Estévez, 2009). The economic crisis at the end of the Salinas administration made it clear that the grand coalition of the PRI would not hold together if all players demanded resources from a declining pool and the president were forced to choose between ideological or regional factions. Ideological coherence in the PRI could not be the organizing principle to generate incentives for politicians from rich and poor regions, left- and right-wing factions, to follow the party line.

Decentralization solved this ideological rift, allowing regionalization to accommodate the party’s diverse economic and political interests. Through decentralization, local politicians were empowered to advance their political ambitions with resources under their direct control, rather than to depend upon the largesse of the federal bureaucracy. Discretion at the federal level was reduced because control was shifted to the subnational level. An impossible redistributive game turned into a debate over the definition of fixed formulas for the allocation of resources.

Simultaneously looming behind this process, a real threat of social unrest made politicians more tolerant of technocratic solutions that sought to redress poverty through new policy innovations. Progresa was one such experiment. It was a very inexpensive intervention that turned out to be remarkably effective. It was not just welfare enhancing,
but also successful at buying votes.

5.3. Political processes leading to the establishment of Progresa and FISM

The process of transformation of Pronasol into its successor programs has only been told in bits and pieces. Scholars recount the creation of the Fondo de Desarrollo Social Municipal (FDSM) in 1996 (which would become the Fondo de Aportaciones para la Infraestructura Social Municipal (FISM) in 1998) as a separate story from that of the creation of Progresa in 1997. Although each of these programs had its own champions and opponents, the impetus for the revamping of social policy must be understood as the consequence of a political tsunami triggered by an exogenous event: the financial crisis that started in December 1994 immediately impacted the budgetary process and the strategies of poverty alleviation and investment decentralization.

a) Economic and political crisis

The incoming administration of Ernesto Zedillo found itself mired in a crisis of huge proportions in 1995. The macroeconomic strategy of the previous government hinged on the credibility of the government’s promise to keep the exchange rate within a narrow band (Aspe, 1993). That credibility was undermined during the course of 1994 by the gradual substitution of federal debt from peso-denominated treasury bills (CETES) to

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55 For the most authoritative account of the creation of Progresa, as recounted by its main author, see Levy (2006) and Levy and Rodriguez (2005). On the decentralization of social spending, and in particular the creation of the FDSM, see Mogollón (1999, 2002), Rodriguez (1997), and Comisión de Desarrollo Social (1998), especially the essays by John Scott and Santiago Levy.
dollar-denominated instruments (*Tesobonos*).\(^{56}\) The federal government’s signal to investors was understood as a clear commitment to a stable exchange rate policy. By making itself hostage to its domestic debt denominated in dollars, not pesos, any sharp or unexpected devaluation would be ruinous for the national economy.

There is debate among economists and policy makers as to whether the “tequila crisis” or, as Mexicans dubbed it, the “error of December,” was generated by misguided policies accumulated in the last year of the Salinas administration or by some basic misunderstanding of the underlying exchange rate regime and a bungled devaluation by the incoming government.\(^{57}\) Regardless of whether the crisis was inherited or produced by the Zedillo government, the fact is that what was intended as an adjustment of the exchange rate turned into a major devaluation overnight and the Mexican financial system went into meltdown. Two deep crises ensued — one economic, the other political.

The Zedillo administration was overwhelmed by economic disorder, having to manage the bankruptcy of the banking sector, bail out insolvent state governments, design a program for debtor relief and pursue macroeconomic stability all at the same time. Things were no better on the political front. Instead of enjoying a honeymoon in his first year in office (buttressed by the perception that the PRI had won a clean democratic election, albeit on an unlevel playing field in the areas of campaign finance and media access), Zedillo inherited renewed guerilla unrest, most notably in Chiapas and Guerrero,

\(^{56}\) See Werner (1995).
\(^{57}\) Perhaps the clearest and obviously controversial argument, placing responsibility on mistakes made by the Zedillo administration, can be found in the memoirs of Carlos Salinas (2000). Some of the most thoughtful accounts and analyses are those by Sachs, Tornell and Velasco (1996) and Gil-Diaz and Carstens (1996). On the overall logic of the exchange rate regime see Dornbusch and Werner (1994).
and elite-level instability and violence within the PRI, as reflected by the two high-level political assassinations in 1994.\textsuperscript{58}

The murder of the original PRI candidate made Zedillo’s ascent to office possible since, as Colosio’s campaign manager, he became a natural contender for the empty ballot slot.\textsuperscript{59} But Zedillo faced political challenges from within his party, where many did not see him as a leader committed to the carefully constructed agreements and coalitions Colosio had negotiated. Once in office, moreover, Zedillo gave the highest priority to the economic front, seeking to contain an inflationary spiral, an upsurge in unemployment, a collapsing financial system and a potential default on sovereign debt.

The initial year of the new administration was primarily dedicated to finding a solution to the debt overhang of Mexican banks (by means of an enormous financial bailout worth over 20 percent of GDP) and construction companies (who were over-invested in consortia for private highway construction), stimulating an increase in domestic savings rates, slashing social spending and finding additional sources of revenue. Undoubtedly, the most unpopular measure in the aftermath of the crisis was the hike in the value added tax rate from 10 to 15 percent on March 18, 1995. To our knowledge there is no academic work that has studied the effect of this controversial legislative vote on public perceptions, but there is wide agreement among pundits and politicians that fiscal reform and tax increases became extremely difficult after this

\textsuperscript{58} The literature on the political crisis is vast. For work published in English see Oppenheimer, 1996; Levy and Bruhn, 2001; and Camp, 2007.

\textsuperscript{59} The Mexican Constitution restricts public officials, whether elected or appointed, from seeking electoral office without separation from their positions at least six months before election day. This rule eliminated cabinet members and legislators from being considered. Still, there emerged a clear division within the PRI over the substitute nomination, with some factions backing traditional party cadres for the candidacy (the so-called “dinosaurs”). In the end Salinas prevailed by placing a “modernizer” at the top of the ticket, although Zedillo was in many respects an accidental candidate.
An immediate sequel to this tax measure was the steady defeat of the PRI in gubernatorial and other local elections, leading to its loss of majority power in the lower chamber of Congress in 1997.

Fortunately for the Zedillo government, there was a quick turnaround after the financial crisis, fueled to a large extent by an upsurge in export activity. The upsurge was made possible under the new trade environment created by NAFTA and the maturation of direct foreign investment (FDI) projects from previous years. On the public opinion front, the new administration was able to successfully shift much of the blame for the economic and political crises onto the previous administration, amid scandals involving murderous intrigue and corruption in the Salinas family while in power.

Voters, however, reacted bitterly to the PRI. Salinas had convinced the public that the austerity and liberalization policies his government pursued would pave the way to sustained economic recovery. Instead, some ten years of economic reform, often painful, culminated in an economic recession of shocking proportions. Voters felt betrayed and began to defect to the opposition. In almost every important local election between 1995 and 1997, the PAN won large city mayoralties and several governorships. The PRD, for its part, found massive voter support in Mexico City and profited from local schisms in the hegemonic party in different parts of the country.

b) Unintentional decentralization

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60 For an analysis of fiscal policy preferences among legislators, in the context of the budget battle of 1997, and their correspondence to public attitudes, see Estévez and Magaloni (1998).
61 See Esquivel and Larraín, 2002; Tamayo, 2001; Middlebrook and Zepeda, 2003. For a view that attributes the recovery to democratic competition, see Hiskey (2003).
Having public opinion blame the former president was not enough to create a coalition within the party that would allow President Zedillo to weather the storm. According to Rodriguez (1997: 141-5), Zedillo pursued an agenda of “New Federalism” because decentralization was necessary for his political survival. Zedillo’s paradox was that he was willing to give power away, at a time when Mexico most needed strong central leadership. With decentralization, he wrangled the support of politicians from both the ruling and the opposition parties for painful adjustment measures.\(^{62}\)

We argue that decentralization emerged as a reactive strategy of governance that grew and deepened as events unfolded. Zedillo’s most important agenda for institutional change was not about decentralization. While he seems to have been truly committed to the idea of greater checks and balances to contain presidential power, both through legislative oversight and through the reform of the federal judiciary, which he spearheaded in his first month in office, Zedillo’s most important reforms took place in the economic sphere, where he overhauled social security and created individualized pension accounts.

The agenda on decentralization evolved slowly.\(^{63}\) Zedillo had inherited from Colosio’s election platform a commitment to a New Federalism, a proposal to reconfigure the relationship between the states and the federal government. In his first year in office, Zedillo made some striking statements regarding the drawbacks of

\(^{62}\) Rodriguez (1997) has shown that the origins of decentralization can be traced back at least to the 1980s. She is also correct in suggesting that decentralization was a political response to an economic crisis that had started in 1982. Nonetheless, the greatest thrust towards decentralization in Mexico occurred in the years between 1995 and 1997. Beer (2003) also stresses the pressures applied by PAN governors and legislators to faster decentralization.

\(^{63}\) In the Salinas cabinet, Zedillo had been in charge of the decentralization of public education (through the *Acuerdo Nacional para la Modernización de la Educación Básica*, in 1992). This experience in administrative devolution paved the way to decentralization in health but bears little resemblance to the full-scale decentralization he would oversee in public investment.
centralization. Most telling was a speech he made in the spring of 1995, at a meeting with governors from both the PAN and the PRI, calling for the establishment of a new federal pact:

Centralization seeds vertical and haughty authoritarianism in contradiction to the display of democracy and social participation; centralism hinders the balanced development of the regions in the country by concentrating resources and wealth, opportunities and initiatives, decisions and incentives. Centralization in Mexico today is oppressive and backward, socially insensitive and inefficient.  

After appointing Estéban Moctezuma as Special Advisor for the Advancement of Federalism in the summer of 1995, it took the federal government another two years to announce an official plan for the New Federalism. But much had changed regarding federalism and decentralization in a few short years (Ward and Rodriguez, 1999).

The document, “Plan for the New Federalism,” is unusual in two ways. The plan was announced in the aftermath of the midterm elections of 1997. Half of the president’s term was already gone, and the PRI had lost its majority in the lower chamber, which meant that any ambitious reforms on federalism would require hard bargaining with opposition parties. The second peculiarity was that this plan was not a prospective exercise at all. Half the document is an appendix describing the changes already accomplished, rather than priorities for reform to the future. Proposals for change were tame. Greater devolution of financial resources to states and municipalities and

65 Arguably Zedillo’s closest aide, Moctezuma managed the presidential campaign in 1994, served as Interior Minister (Gobernación) for seven months, and then as special advisor on federalism. In 1997, he ran and won a Senate seat, only to return to the cabinet in 1998, as head of the Social Development ministry (SEDESOL).
67 The odd timing is quite obvious on the title page of the published plan, with the subtitle featuring the period 1995-2000, followed by the date of release, August 1997.
some tinkering with municipal institutions were proposed.\textsuperscript{68} Over the remainder of the Zedillo term, however, the pace of change in fiscal federalism was dictated by annual bargaining over budgetary allocations rather than the government’s master plan.

It is important to recall that relations between the president and the governors were extremely tense in those years. Governors blamed the president for the economic crisis and suffered the dire consequences of fiscal austerity in their state budgets, which depended heavily on federal transfers. Their demands for budgetary and debt relief were loud and ceaseless.

The political relationships at the top were no calmer. Zedillo had announced since the transition that he would stay a healthy distance from the PRI, in terms of relinquishing presidential control over the party’s gubernatorial nominations. In return, he demanded open processes of party selection, competitive party conventions early on and open primaries later in his term. For its part, the party, commandeered by a governors’ faction, approved statutory reforms to its nomination procedures in September 1996 that barred individuals with purely technocratic careers — like president Zedillo — from nomination to higher executive office (Langston, 2001). Between these two sets of reforms, career paths for politicians within the PRI were turned upside-down (Langston, 2001; Diaz-Cayeros and Langston, 2005; Poiré, 2001).

The biggest jolt to the PRI from these changes had to do with expectations concerning the next presidential succession. Instead of the traditional \textit{dedazo} (“finger tapping”) by which the president chose the successor from among his closest collaborators in the cabinet (Castañeda, 2000), the presidential nomination for the PRI in

\textsuperscript{68} The proposals for local political reform were especially unambitious. Gone were the calls for reelection of municipal authorities, replaced by longer terms in local office and revamped municipal councils. In the end, no institutional changes in local politics were introduced.
2000 would be open to a wider set of presidential contenders, including sitting and former governors. Since 1970 candidates nominated from the cabinet by the PRI had emerged lacking any electoral experience whatsoever (Smith, 1979; Camp, 2007). In 2000, the top three contenders for the nomination shared prior experience as governors.

The clearest manifestation of how much the relationship between the president and the party, including the governors, had changed was the high-profile post-electoral conflict in Tabasco that erupted only weeks into the new sexenio (six-year presidential term). To calm the swelling protest, which involved the takeover of the seat of state government, the federal government negotiated with the PRD to have the new governor, Roberto Madrazo, resign. Madrazo, however, refusing to obey the president, returned to Tabasco and retook control over public buildings in the state capital. This was the first time in more than 70 years that a sitting governor had openly defied presidential authority and survived in office.69

Concessions to state governments in those years were substantial. In January, 1996, the general revenue-sharing rate was increased from 18.51 to 20 percent, which together with some minor changes in special taxes and exemptions meant a 10 percent increase in block grant transfers to the states.70 Funds for the construction of schools, adult literacy programs and rural highways were decentralized to the states. But the most substantial decentralization to the states occurred in health, with the management of almost 7,000 clinics and 120,000 health workers transferred to state governments, together with the financial resources to pay for them.

69 Madrazo, of course, would go on to compete and lose in the PRI’s presidential primary in 1999, finish his gubernatorial term in Tabasco, win a national contest for the party presidency in 2002 and contend as a losing candidate again in the 2006 presidential elections.

70 These measures can be seen as a side payment by the president for his party’s support in congress of the highly unpopular hike in the VAT rate.
Concessions to municipal governments were just as important. In his state-of-the-union address in September 1995, Zedillo announced that two-thirds of the resources previously allocated through *Pronasol* would now be decentralized directly to the municipalities as earmarked or conditional transfers to strengthen Mexican federalism. In unprecedented executive decrees, the federal executive provided explicit formulas for the allocation of funds among the states (Mogollón 2002), specifying amounts assigned to each state for redistribution to the municipalities and using sophisticated formulas based on poverty gap indicators from the census.

c) The humble origins of *Progresa*

Along with the process of decentralization, a more subtle transformation was taking place with the way in which poverty-alleviation efforts would be pursued. The president delegated authority to make budgetary adjustments to the deputy minister for expenditures, Santiago Levy, in order to achieve fiscal balance. Levy was also the main actor in the negotiation of bailouts for bankrupt state governments. Macroeconomic stability was Levy’s overriding imperative, and to that end he resisted pressures from within the party to increase spending. But Levy was also profoundly committed to a vision of creating a poverty-alleviation program based on conditional cash transfers — a vision he spelled out as a scholar researching poverty before he returned to Mexico to join the government.

In an essay written in 1991, Levy (1994) outlined the logic and design of *Progresa*. A very small program in place called the PASSPA (*Programa de Atención de...*)
Servicios de Salud para la Población Abierta) could, with some minor modifications, become the most important program for alleviation of extreme poverty. The proposed centralized program would include: 1) targeting places with the highest poverty indices; 2) providing nutritional supplements; 3) supplying preventive health care and education; and 4) creating temporal sustainability in order to reach a goal of breaking the intergenerational transmission of poverty.

Levy proposed that the program make transfers through a system of vouchers; arguing against generalized price supports. He was quite emphatic that the purpose of the vouchers was not to transfer purchasing power, but rather to condition households to behavioral changes in family nutrition, health and education. Moreover, Levy noted from the outset that program success would be judged in terms of reduced “infant mortality and morbidity rates, improvements in primary health and […] hygiene” (1991: p.83). In his view, the program should have no other objectives. This outline is virtually identical to the design of Progresa that the government adopted six years later, including geographic targeting, complementary interventions in nutrition, health and education, and program continuation across political cycles. The one element that was abandoned was the use of vouchers, which instead were replaced by direct cash transfers.

In pursuit of an alternative means for social expenditures with greater impact in poverty alleviation, particularly among the poor households hardest hit by the economic crisis, Levy started an experimental program in the state of Campeche, in August 1995. (The timeline toward Progresa is provided in Table 5.1.) The pilot program provided direct cash transfers of 70 pesos to households whose children regularly attended health

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71 Levy (1994: p.82) insists that a proper poverty index should take into account the intensity of poverty (i.e. the size of family income gaps that measure absolute distance from the poverty line), rather than the more standard poverty headcounts.
clinics, replacing the vouchers for tortillas and milk used by the older programs of Tortibonos (Fidelist) and Liconsa.

[Insert Table 5.1 around here]

The program was received with scorn from its detractors, who centered the public debate on a relatively unimportant aspect of the program. Levy’s proposal of using a smart card as the mechanism for control and transfer of funds, tapping into technological advances in financial services, was derided by his opponents as the “pobremático.” Underlying that trivial debate was a much more profound difference between two strategies for poverty alleviation, which was the source of prolonged political and bureaucratic tensions between Santiago Levy and Carlos Rojas.

One of the closest collaborators of Carlos Salinas, Rojas had been the mastermind of Pronasol and was the only cabinet member to repeat in his post under the new administration, heading the social development ministry (SEDESOL) until 1998. In that position Rojas progressively lost budgetary and political clout, first due to the economic crisis, then to Levy’s transfers to states and municipalities of investment funds previously funneled through Pronasol, with portents for future budget and program cutbacks were the Campeche project to succeed.

At that point, Levy took advantage of his position as guardian of the purse to fund yet another small program, later called PASE (Programa de Alimentación, Salud y Educación), with a pilot study in the state of Hidalgo. This program expanded the

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72 The term was a play of words combining pobre (poor) and invermático, an ATM card offered by the bank Banamex for clients with small savings accounts. For a fairly typical critique in those months, see the column of Carlos Ramírez in El Financiero, 2-08-1995.
conditionality of the Campeche pilot study to include an education component. Levy might have lost some early skirmishes to Rojas, but he was preparing to win the war.

The economic crisis ironically helped. Progresa was purposely designed to construct a safety net that would allow the poorest to survive the recession while using the budget in a more effective way (Levy and Rodriguez, 2005). This was of major concern to bureaucrats and politicians alike. After all, the crisis had produced a devastating recession of similar proportions to the Great Depression. GDP fell 6 percent, unemployment increased to its highest recorded rate, inflation and interest rates soared as did the poverty headcount numbers. Progresa’s instrumental premise was that delivering food in kind was very inefficient, particularly in rural areas, where it lent itself to corruption and usually failed to reach the poor. To pay for the new program, generalized food subsidies for tortilla and bread that had largely been captured by urban areas were canceled (Levy and Rodriguez, 2005).

The program began in earnest in the summer of 1997, again on a small scale. Legislators from all parties denounced it as asistencialista, a hand-to-mouth welfare program for poor families that would only create chronic dependency on the cash stipends. But program coverage of families in extreme poverty grew, slowly, and in carefully sequenced stages, from the original 300,000 households to 5 million by 2006. After the PRI lost power in 2000, Vicente Fox chose not only to keep the program but to expand it into the cities, in keeping with Levy’s long-term plan, and change its name to Oportunidades. In a country were few programs survive from one presidential term to the next, the continuity of Progresa/Oportunidades is responsible for the containment and reduction of extreme poverty during the last 10 years.
5.4. Allocation of decentralized funds through formulas

The other major transformation in social assistance during the late 1990s was the decentralization of funds for the provision of local public goods through the Fondo de Infraestructura Social Municipal (FISM). Federal funds that used to be distributed under the umbrella of Pronasol would now be administered directly by municipal governments, with the only restriction that these funds be earmarked for capital expenditure projects on poverty alleviation. 22.7 percent of total Pronasol funds were decentralized from the start through a program called Fondos Municipales. These bloc grants allowed mayors to spend money on public works of their own choice. In this sense, the creation of the predecessor of FISM, the Fondo de Desarrollo Social Municipal (FDSM), in 1996, was an expansion of the municipal funds component of Pronasol. This expansion culminated in 1998 when the bulk of the resources for regional development (Budgetary item 26) came under municipal control via FISM.

Federal funds for public works would now be distributed according to poverty formulas rather than discretionarily. The formula-based approach was a radical departure in the design of social transfers. Aside from revenue-sharing, which was determined by formulas in the Fiscal Coordination Law,73 all other federal transfers to subnational

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73 Created in 1978, the Ley de Coordinación Fiscal (LCF) had established a highly centralized fiscal institutional arrangement for the country. The pillar of the fiscal pact was the system of revenue-sharing (Diaz-Cayeros, 2006). States and municipalities sacrificed the collection of local taxes in their jurisdictions in exchange for a share of total federal revenues. Labeled participaciones, revenue-sharing funds have been the main source of finance for states and municipalities – local taxes are an insignificant share in subnational budgets. Participaciones are distributed to states on the basis of a formula established in the LCF and states legislatures determine how these are distributed to the municipalities, leaving substantial leeway for political manipulation, as governors can use revenue-sharing to reward municipalities with the
governments in Mexico had been determined through *ad hoc* agreements (*convenios*) between federal agencies and state governments (Levy, 2005). Most *Pronasol* spending was administered within the rules and regulations of these agreements, which established, among other things, matching contributions for each level of government in federally financed projects. Prior to the creation of FISM, each federal agency (in health, education, agriculture, transportation, and the like) would engage in independent bilateral negotiations with states to build a school, a hospital, a bridge, a dam or a highway, making it virtually impossible to establish a coherent program for social development at either the national or the local level. There was little accountability as to which authority — federal, state or municipal — was responsible for the various infrastructure projects. The choice of authority was thus subject to much instability from one presidential term to the next (Levy, 2006). As we demonstrated in the previous chapter, *Pronasol’s* allocations were often driven by the PRI’s political survival imperatives rather than by the goal of poverty relief. The matching funds established in *convenios* also meant that governors and mayors often had to contribute to projects that were dictated by the federal sphere of government and failed to reflect local priorities.  

In 1996 only one third of the *Pronasol* funding was decentralized, but by 1997 two thirds were being allocated to municipalities through an unprecedented published formula. The allocation of FDSM was based on a formula inspired by the Foster-Greer-

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*same partisan affiliation and to punish their opponents with fewer funds (Magaloni, Diaz-Cayeros and Weingast, 2007).

74 An additional problem with *Pronasol* was its lack of accountability — it was not clear which authority, federal or local, was responsible for the project and for maintenance over time. In fact, in the first year of the Zedillo administration, given the stringency of the federal budget, numerous *Pronasol* projects were abandoned or left untended because federal agencies, states and municipalities would not claim authority over them, refusing to invest any funds of their own to maintain them.*
Thorbecke poverty index.\textsuperscript{75} This formula used census indicators on the share of households without electricity and sewerage, housing characteristics related to overcrowding and quality of construction materials, illiteracy rates, and wage earnings at the municipal level to generate deprivation gaps (\textit{masas carenciales}), which indicated how far any municipality was from a minimally acceptable level of public service provision. These deprivation gaps are analogous to poverty gaps, a metric that measures how far household income is below a poverty line. The federal formula gives almost half the weight to the income component gap, measured by wage earnings, followed by the gaps in housing materials (about a quarter), illiteracy and electricity (10 percent each), and the last remnant to the sewerage coverage gap. These weights were assigned to reflect the relative budgetary cost of closing the gaps.

The distribution of funds in the FDSM included one additional but odd criterion, against the grain of its multidimensional and nuanced poverty formula. One percent of the total available funds was to be allocated to each state (32 percent in all), regardless of poverty levels, “on the grounds of equity.” This meant that although poverty formulas determined the allocation of funds among municipalities within states, the overall pool of resources would be much larger for small states. Mogollón (2002) shows that this provision implicitly benefited municipalities where the PRI had a stronger electoral presence.\textsuperscript{76}

\textsuperscript{75} This index takes into account, depending on a parameter $\alpha$, not just the proportion of population living under a poverty line, but the intensity of poverty. The critical idea is that by using a Foster-Greer-Thorbecke poverty index with $\alpha=2$ to measure poverty, a budget constraint of limited resources implies an allocation rule whereby households are included when they have the highest poverty gap ($\alpha=1$). Poverty headcounts, in contrast, would assign resources to places with the largest number of poor households, as in a headcount index where $\alpha=0$. Beyond the case of \textit{Progresa}, the poverty gap rationale is what underlies the calculation of the so called “\textit{masas carenciales}” in the formulas for FISM discussed below.

\textsuperscript{76} This criterion of equal state shares was reduced to 0.5 percent per state in 2000 and eliminated altogether in 2002.
The formulas in FDSM were published in executive decrees without the participation of Congress. In the first two years of this decentralization of public works funding, governors negotiated with the Social Development Ministry the formulas they would use for the allocation of funds among their municipalities. The law only mandated that the state formulas had to be “similar” to those used by the federal government.

But the budget battle at the end of 1997 became the watershed that signaled the final break with discretionary allocation of funds for public works. In the budget negotiated for the following year, earmarked transfers and special funds were all gathered under the umbrella of a new budgetary item (Ramo 33). Decentralized transfers for education, health, social infrastructure and other programs were bundled into the Fiscal Coordination Law and denominated aportaciones.\(^\text{77}\) The Fiscal Coordination Law mandated that FISM be budgeted at 2.197 percent of the tax collection target used to determine revenue sharing (with an additional 0.303 percent to be allocated to the states).

An often overlooked aspect of the budgetary process that year was the creation of a new fund, the Fondo para el Fortalecimiento de los Municipios y el Distrito Federal (Fortamun). Fortamun was created to elicit support from opposition parties for the approval of the budget. The Finance Ministry had originally considered keeping in the budget a small fund to help states reduce their debt overhang. After legislative bargaining with the PAN, this fund became permanent, its size tied to the evolution of federal revenues; its distribution fixed in terms of strict population equity for all municipalities and the Federal District; and its specific use determined by local government, although

\(^{77}\) See Giugale and Webb (2000) and the references therein. Although these aportaciones are commonly thought of as formula-driven, the fact is that the distribution of the largest transfers – those for health and education – obey the supply-driven historical distribution of social expenditures in the federal budget rather than an explicit territorial compensatory rationale or a need-based subsidy formula.
the law recommended the original purpose to be debt reduction. *Fortamun* is almost as large as FISM, and has in recent years become the most important source of federal finance for current expenditures in law enforcement in large municipalities.

Besides the negotiations over *Fortamun*, the PAN introduced an amendment to FISM in the last minutes before the approval of the budget that specified an alternative formula for the allocation of funds from the states to their municipalities. The law permitted that, in case of technical difficulties in applying the federal formula, states could choose to apply a second formula (article 35 of the LCF). The simplified formula gave equal weight to the percentages of homes lacking electricity and sewerage, illiteracy rates and the proportion of wage earners below one minimum salary, in determining how to allocate funds among municipalities. Around two thirds of the states opted for this second formula. Mogollón (2002) shows that the effect of using it, instead of the original one, was to give greater weight to the population size of the municipality. Urban municipalities could get more funds when using the population formula over that of the poverty gap.

In January 1998, as the decentralized resources started to flow within this new institutional framework, the governor of Puebla, Manuel Bartlett, challenged the formula approved by Congress through a bill he sent to his local legislature. Bartlett’s bill proposed an allocation of federal funding to municipalities according to a highly redistributive formula. Both revenue-sharing funds and the funds of FISM and *Fortamun* would be reassigned with this new formula. While states have the authority to establish

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78 Bartlett was a close collaborator of President Miguel de la Madrid (1982-1988); as Secretary of the Interior he presumably oversaw electoral fraud in the 1988 presidential elections; he was rewarded under Salinas with a post as Minister of Public Education and governor of the state of Puebla; he ran and lost in the PRI’s presidential primary in 1999 and went on to serve in the Senate until 2006.
formulas for the allocation of revenue sharing to their municipalities, *aportaciones* are considered federal monies and should be allocated according to federal law. The PAN’s state party challenged the law in court on these grounds. In the end, the Supreme Court ruled against Bartlett and invalidated the state law on the issue of municipal autonomy over revenue-sharing resources, without addressing the question about federal conditional transfers. In her well-researched review of this conflict, Flamand (2004) attributes Bartlett’s defiance of federal law to his presidential ambitions. Consistent with our earlier discussion, the president could no longer control his co-partisans.

As analyzed in the last chapter, *Pronasol* discriminated against PAN and PRD municipalities. This can be seen in figure 5.1, which shows the evolution of social development funds over time, first within the *Pronasol* program, and after 1996 within FDSM and FISM. The graph breaks down the per capita allocation of funds according to the partisan affiliation of the municipal government. *Pronasol* shows a relatively large gap between PRI municipalities and those governed by PAN and PRD (although the gap with the PRD disappears toward the end). Funding for the program, of course, falls precipitously in 1995.79

The most important political feature in the graph is the narrowing of the partisan gaps. In fact, from a statistical standpoint, after 1995 it was no longer possible to claim that the PRI was receiving more funds than municipalities controlled by the PRD. The

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79 The finances of the federal government were in such disarray that year that the fact is we do not really know how much money was allocated to municipalities through the remaining *Pronasol* programs in 1995. But public documents suggest that the amount decentralized in 1996 was 2/3 of the funds, while 1/3 had been decentralized the prior year. Hence the figure simply shows half of the allocation in the previous year as our best estimate of what the funds of that year may have looked like.

The other odd element reflected in the graph concerns the dip in conditional transfers in 1998 and their recovery in 1999. To gain the PRD’s support of the budget bill in 1997, the Federal District was included in the fund, lowering resources available for all other local governments. But the left did not support the president’s legislative agenda nor was its support crucial to the Zedillo administration. In consequence, the Federal District was dropped from FISM the following year.
distribution of funds through FISM had arrived at a partisan-blind solution through formulas that, while benefiting PRI municipalities, could eventually benefit other parties as well, were they to enjoy success in more underdeveloped municipalities.

[Insert Figure 5.1 around here]

This partisan-blind character of the formula was possibly an unintended consequence of the heterogeneous nature of the PRI coalition. With a formula designed to favor only poor municipalities, the PAN would have experienced a larger gap in funding, but some of the powerful PRI-controlled states in the north and center of the country would also have suffered. With population equity as the criterion for their allocation, the funds would have resembled revenue sharing and abandoned poverty alleviation goals altogether. The compromises reached through FISM’s alternative formula, the equal state shares provision, and the creation of Fortamun, mostly in concessions to the opposition, allowed the federal government to surmount the regional differences represented within the party. With each successive year, both rich and poor municipalities received more resources from the federal budget, while the biases inherited from Pronasol allocations and from sheer population size slowly but steadily decreased their impact over distribution. The poverty formula provided a focal point that allowed the government to negotiate regional distributive conflicts at the margins, but not over the funds as a whole.

5.5. Conclusion
*Pronasol* embodied an autocratic political equilibrium that had prevailed during the hegemonic era of the PRI. This equilibrium was characterized by extreme delegation by politicians of fiscal power to the president and the federal bureaucracy. The new social assistance and development programs of the mid-1990s slashed the discretionary powers of the federal executive, reduced the pool of resources at his disposal, increased the available resources to subnational office-holders and established binding rules for the redistribution of transfers to poor families and to local governments.

Our account traces the evolutions of events that led to the dismantling of *Pronasol* and its replacement by *Progresa* and FISM. The chapter suggests that there was no single inevitable process that produced the abandonment of clientelism in Mexico. Recognizing the role of contingency in the way social and political events unfolded, the chapter has highlighted the following factors that contributed to the dismantling of *Pronasol* and the creation of a formula-based and well-targeted social assistance regime:

1) An exogenous shock: The 1995-1996 Peso Crisis produced a clamorous shock in the political system. The financial crisis, austerity measures and the urgent need for fiscal reform severely constrained the government’s fiscal capacity to sustain *Pronasol*, among myriad social assistance and subsidy programs. Not the least of the effects engendered by a bankrupt government was the PRI’s electoral debacle in those years. Policy changes in public investment and poverty relief were clearly driven by efficiency considerations, including the desire to combat poverty in a cost-effective manner. Electoral imperatives took a back seat.

2) A voter rebellion against clientelism: Clientelism requires voters’ complicity to survive as a form of electoral exchange. The perverse nature of clientelism is that
voters willingly sustain a system that is corrupt, abuses power and keeps them poor. The dilemma is one of coordination. Each voter acting alone has powerful reasons to remain loyal. The equilibrium is perverse because everyone becomes an accomplice of the system even when it is collectively suboptimal. The Peso Crisis in Mexico served as the critical turning point that finally convinced voters to defect the PRI en masse. Voter defection brought about a fundamental reshuffle in the workings of the institutional apparatus and introduction of checks and balances.

3) A programmatic vision: A policy-motivated team of technocrats in the finance ministry envisioned the new poverty-relief strategy as an attempt to provide a safety net for the extreme poor and to break the intergenerational transmission of poverty. The finance ministry retained the upper hand with PRI governors through a divide-and-conquer strategy in the bilateral negotiation of bailouts for bankrupt states. This opened up opportunities for experimentation. Information about the program was transparent and publicly accessible through the Internet to researchers around the world. There was incredibly detailed information about household beneficiaries and the evolution of health, nutritional and educational indicators overtime. Most impressively, as we discuss in the next chapter, the program was designed with random assignments to create experimental comparisons between “treated” and “untreated” populations. The vast academic publications stemming from the randomization of Progresa all indicate profound effects of the program in terms of its social goals.

4) The risk of violence due to poverty: The clever articulation of the Zapatistas’ demands by Subcomandante Marcos made it transparent that poverty was linked to political corruption, government abuse and lack of democratic accountability.
5) Divided government: After the PRI lost the majority in the Chamber of Deputies in 1997, a new role of budgetary control was played by the federal Congress. The PAN became an effective veto player in a federal Congress that no longer served as a rubber stamp for the president’s legislative proposals. Decentralization policies were negotiated, including with the opposition, which implied that all parties came to benefit from a more universalistic distribution of resources instead of an allocation benefiting the former ruling party only.

6) Need to break zero-sum distributive dilemmas within the PRI: The former equilibrium where the president decided from the top how resources were to be distributed within the ruling coalition broke down. Fiscal decentralization in Mexico resulted not only from pressures from the opposition but also from a power struggle within the ruling party itself. The locus of power within the PRI was transferred from the center to the governors and other subnational politicians, who wanted control of resources.
Chapter 6

The Electoral Payoff of Antipoverty Programs

[Those of the PRI] “are giving [away] the construction material because of the governors’ campaign. That doesn’t matter, we need it, and when the candidate comes we will put banners to show our support and that we are thankful. He promised the material and here it is”, says Petra. “By contrast, those of the PAN gave very little, just 15 bags of cement; with that one can’t do anything. And those of the PRD, poor devils, they give nothing”

Quoted in Masiosare supplement of La Jornada, February 12 2006

6.1. Introduction.

The PRI governor of Yucatán handed out tens of thousands of portable washing machines to poor women prior to the 2000 presidential elections. He personally distributed 1,003 machines at a rally in Umán’s Central Plaza. PRI supporters were called to the Municipal Presidency’s Hall to turn over their voter identification cards to a local PRI leader and sign up to receive the washing machines at an incoming rally. The governor's convoy arrived early in the morning, and governor Cervera Pacheco himself handed out the machines, to chants of "Long Live the PRI!" (New York Times, June 18, 2000). Similar reports of overt vote buying came from all over the country. As in previous elections, the PRI handed out groceries and building supplies, and threatening to cut off subsidized milk rations to nursing mothers if they failed to show up to the rallies and vote for the PRI’s candidate, Francisco Labastida. Party leaders gave poor
housewives boxes of rice, beans and other foodstuffs purchased by a government charity headed by President Zedillo's wife. As they handed out these goodies, party brokers took the names of the people and made copies of their electoral identification cards. These were the typical vote-buying tactics that the PRI’s electoral machine employed and continues to employ around elections.

However, more important than campaign handouts was to persuade officials who administered government social programs to use them to benefit the PRI. High-ranking officials from the PRI openly revealed their intention to continue to use this strategy in the 2000 elections. "The federal government's social programs are PRI programs, and we're going to use them to win the presidency," said Manuel Bartlett, a former interior minister who at the time was working in the PRI’s presidential campaign (New York Times, June 18, 2000). Nonetheless, the then recently instituted social assistance program, Progresa, would prove more difficult to manipulate than Pronasol because party officials no longer had full control over the program.

PRI brokers and some of the program’s village organizers made every effort to frighten beneficiaries by telling them they would be cut off from Progresa if they did not pledge for the PRI’s candidate. In an attempt to lessen Progresa’s beneficiaries’ fears, Carlos Jarque, the secretary of social development, distributed a letter reminding them that the program did not obligate them to vote for any candidate. Back in 2000 the letter might not have been sufficient to reassure Progresa recipients that they were entitled to their benefits regardless of whether they voted for the PRI or not. In those elections, poor voters whose livelihoods had been largely improved thanks to Progresa went to the polls burdened with fear. On the one hand, they feared that party brokers would cut them off if
they failed to signal their allegiances to the PRI in a sufficiently forceful manner. On the other hand, they feared that if the PRI lost the elections, the program would not continue and the incoming administration would punish them for being PRIístas.

After the PRI lost power in 2000, it has gradually become clearer to Progresa/Oportunidades beneficiaries that the program is more insulated from political manipulation than any other social program before. “One can be PANísta, PRIísta or PRDísta and still receive benefits from Oportunidades,” a Oaxacan woman mother of five told us in an interview in 2009 and then continued: “before you had to be with the PRI to get anything from the government. They normally arrived with presents before the campaigns and then forgot about us.” Another woman told us: “the governor controls everything in Oaxaca. However, here you can be PANísta, be with the governor [back then from the PRI], and still get benefits from Oportunidades.” “Although sometimes people who do not really need it get Oportunidades, it is less corrupt because benefits arrive regardless of which party you like,” a Zapotec young man father of two told us. In our interviews in villages in Oaxaca, it became clear that the poor perceive big differences between Oportunidades and other social programs, and that they are generally most satisfied with the former because they perceive it as an entitlement rather than a political favor that comes and goes according to the waves of elections.

This chapter attempts to evaluate in a systematic way voters’ responses to the different strategies of vote buying. Do clientelistic antipoverty programs generate more votes for incumbent parties than non-clientelistic ones? Do voters respond more favorably to transfers that are excludable and particularistic or to public goods and social infrastructure projects? There are not many studies that answer these fundamental
questions in a systematic way. Most empirical studies of distributive politics have focused on the logic of electoral investment—who gets what and when (Ferejohn, 1974; Schady, 2000; Dahlberg and Johansson, 2002; Calvo and Murillo, 2004; Stokes, 2005, Brusco et al., 2004; Magaloni, 2006; Magaloni et al, 2007, are some examples), disregarding the critical issue of how voters respond to vote buying.

We build on Wantchekon’s (2004) fascinating experimental study in Benin that finds that respondents were more responsive to campaign statements phrased in terms of particularistic pay-offs rather than universalistic ones. Unlike that study we are in a position to assess how voters respond to actual policies, not just campaign promises. In our study, candidates to the presidency were assigned to two types of campaign promises (particularistic vis-à-vis universalistic) in a random set of selected districts. But these campaign promises might not have been credible. A key question to ask is if voters would continue to disdain public goods over private transfers even after they see politicians actually delivering them. Furthermore, we are better prepared to measure the vote-buying potential of various forms of government transfers – public versus private goods, delivered through clientelistic versus non-clientelistic forms of exchange.

Our study employs both aggregate municipal-level electoral returns and individual-level survey evidence to empirically assess the electoral consequences of the various antipoverty programs during almost twenty years in Mexico. Some recent scholarship has begun to explore in more systematic ways the electoral pay-offs of government transfers and programs (Magaloni, 2006; Magaloni et al, 2008; De la O, 2011; Miguel 2009; Zucco, 2011). These studies all show that voters respond positively

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80 Although we do not have an experimental setup, we are able to use techniques for observational data that mitigate selection bias effects.
to government transfers, a finding that is not that surprising. Our approach moves beyond this kind of work because we systematically compare the electoral pay-offs of various types of government programs – how many more votes clientelistic transfers buy off relative to entitlements and by how much voters prefer private over public goods. These questions are highly relevant for theorizing about distributive politics. Only by understanding the electoral consequences of various vote-buying strategies – how these shape voting behavior and electoral alignments – will we be able to truly comprehend why politicians behave the way the do.

6.2. Electoral Pay-offs and Types of Government Transfers

Recall from the introduction and chapter 3 that we categorized Mexican social programs according to whether there is government discretion or not and whether they deliver private or collective benefits (figure 0.1). *Discretionary* private goods are what we have called “clientelistic transfers.” About a third of Pronasol from 1989 to 1994 falls in this category. *Discretionary* transfers of public goods, when delimited by geographical targeting, are commonly classified as pork or pork-barreling, the larger remainder of Pronasol. Formula-based distribution of private goods or entitlements is the third combination, which includes Progresa/Oportunidades, starting in 1997. The last mix is formula-based distribution of public goods, which is represented by the FISM program enacted in 1995.

This section employs aggregate vote returns and surveys to study the electoral pay-offs of these antipoverty programs. The PRI’s clientelistic practices, as the narratives and
quotes at the beginning of the chapter suggest, demanded a clear choice from a loyal voter: either you stick with the machine or you will not get transfers. Our conditional party loyalty theory argues that machines target *discretionary* particularistic transfers to buy the loyalty of a core base. The machine targets these benefits to loyal supporters that are identified *ex ante*, according to their past political behavior and ongoing interactions with party brokers and activists, because if it does not, its core voters are likely to become detached and behave much like swing voters. Although the contractual relationship is voluntary, an implicit threat of punishment sustains it: voters stay loyal to the machine in part because they receive these benefits and in part because they know that if they joined the opposition, they would be punished.

Hence, our expectation is that clientelistic transfers should exhibit the highest electoral return. Not only are these discretionary particularistic transfers better targeted to the machine’s core voters, and hence not subject to the problem of voter opportunism, but the logic of this form of political linkage implies a form of “arm twisting.” Voters are likely to respond to these particularistic transfers not only because of the benefits these entail but because they need to *signal to the machine that they remain loyal so that they can continue to access benefits tomorrow*. The perverse nature of this relationship is that voters can be bought off with feeble favors rather than welfare-enhancing benefits.

Discretionary public goods or pork-barreling projects are riskier investments because, according to our theory, they are targeted to places where the core base of support is low and thus recipients are among heterogeneous voters groups, including opposition backers. These benefits thus entail a higher voter opportunism problem. We hence expect clientelistic transfers of discretionary private goods to exhibit higher electoral
returns than discretional public goods, which cannot be targeted to loyal voters.

With respect to the electoral pay-offs of non-discretional private and public goods, our vote-buying theory does not generate a priori expectations. Nonetheless, it makes intuitive sense to expect that voters will reward parties that deliver benefits to them, particularly when these benefits generate large improvements in their material wellbeing. We hence expect voters to respond to Progresa/Oportunidades and reward incumbent parties for their welfare-enhancing benefits regardless of whether the incumbent party is the PRI or the PAN (see also Magaloni, et al, 2009).

Since we are interested in understanding the actual electoral yields of these programs, we employ exit polls for the 2000 and 2006 presidential elections. For our purposes, exit polls are better than post-electoral surveys, which in Mexico are normally characterized by huge overreporting in favor of the winning candidate, as well as implausible turnout. Pre-electoral surveys, for their part, tend to underrepresent the winner, because they do not capture last-moment electoral shifts. We supplement our survey research with the systematic analysis of aggregate vote swings in the 1994, 2000 and 2006 presidential elections. Aggregate electoral data becomes necessary to study the electoral payoff of public goods, whose benefits are diffused and often not well captured in conventional surveys.

Surveys are well suited to study Progresa and Oportunidades but not Pronasol and FISM. On the one hand, public good benefits are not necessarily well captured by polls. Some individuals might classify themselves as beneficiaries of Pronasol, for example, only when they or their close family members received a private transfer.

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81 We did not locate any exit poll including questions about program benefits for 1994. We analyzed the Los Angeles Times post-electoral poll for the 1991 congressional election and a Gallup poll for 1993 (results are available upon request).
failing to account for public good provision taking place in the locality where they live. Others might respond they are beneficiaries of public goods only when they directly use them—e.g., when they go to the health clinic. But most respondents are likely to fail to report benefiting from public goods because the benefits are diffused. A survey instrument can be designed seeking to distinguish private and public good benefits, but it is hard to do this in an exit poll like the ones we use in this chapter.\textsuperscript{82}

A second reason why is hard to study distributive politics only with surveys is that it is practically impossible to obtain some \textit{reliable measure of quantities}—that is, to rank-order beneficiaries according to the pesos per capita they received. We are interested in measuring the electoral yield of pesos per capita investments in public and private goods and this task is difficult when using surveys.

Finally, it is often difficult to study clientelistic practices through survey research only because individuals might fail to report that they did receive benefits, when these benefits are perceived to be illegal or to result from corrupt practices from both sides of the contract. Specifically for the comparison of programs we seek to make, individuals in surveys might be more willing to respond that they benefited from \textit{Progresa} and \textit{Oportunidades} than from \textit{Pronasol}, creating a problem of underreporting for the latter program. Although new survey techniques such as list experiments can deal with these problems, at the time the \textit{Pronasol} program was implemented pollsters were not collecting data with these problems in mind.

\textsuperscript{82} The President’s office during the Pronasol years tried to design surveys asking respondents whether they knew that projects were being provided in their community, whether they or their friends had actually witnessed the projects being built and whether they had directly benefited from them. Unfortunately, the overriding concern in the design of those surveys was to measure the image of the president and the effectiveness of the publicity campaigns on the success of the program. Those long questionnaires were not carried out at times of electoral activity, but during the so-called Solidarity Weeks. These surveys are deposited at the Roper Center (MXOTAP1992-SOL10992 and MXOTAP1993-SOL10993).
In a survey explicitly designed to assess public opinion regarding the Solidaridad program in 1992 (MXOTAP1992-SOL10992), 60 percent of respondents who knew about the program reported having seen Pronasol projects. 47 percent said Pronasol projects were carried out in their own neighborhood. However, only 10.3 percent of the respondents reported direct participation in the Solidaridad committees. According to a Los Angeles Times poll carried out by Belden-Rusonello in 1991, 32 percent of the respondents claimed to have benefited from Pronasol (MXLAT1991-258). A Gallup-IMPO poll that same year (MXUSIA1993-193057) had 19.4 percent of people reporting having received benefits. In short, it is very unlikely that one can reconstruct the extent of Pronasol benefits through survey data.\textsuperscript{83}

6.3. The 1994, 2000, and 2006 Presidential Elections

The three elections we analyze in this chapter were all dramatic events. The 1994 election was a relatively clean election where the hegemonic party was able to retain power in spite of deep political trouble. The 2000 election marked the watershed of the Mexican transition to democracy with the defeat of the PRI by Vicente Fox. The controversial 2006 election was the closest race in the country’s history, pitting the two parties that had contested PRI hegemony since 1988.

The 1994 Mexican presidential elections took place in a year of significant political turmoil, marked by both the Zapatista uprising in the Southern state of Chiapas that erupted in December of 1993, and the assassination of the PRI’s presidential

\textsuperscript{83} The President’s Office surveys filtered respondents: we do not know the attitude behavior of respondents who reported not knowing about the program.
candidate, Luis Donaldo Colosio, in March of 1994. After the assassination, the president was compelled to improvise in the selection of his successor. He chose Ernesto Zedillo, a technocrat trained in economics.

Initially, analysts thought that these events would jeopardize the peaceful transfer of presidential power, which had routinely taken place in Mexico for over 60 years, since the creation of the PRI. For the purpose of this book the Zapatista uprising is particularly noteworthy, since it happened despite Pronasol, which was largely publicized throughout the Salinas’ years as the definitive antipoverty strategy that would eradicate poverty in Mexico during one sexenio. The Zapatistas made it clear that poverty relief had not reached vast segments of the destitute.

The 1994 presidential election was also special in that it took place after six years of profound structural transformation. Mexico had joined the North American Free Trade Agreement and the country was more fully integrated into international capital markets. Some political commentators and analysts interpreted these elections as a referendum on economic performance. At the time, it seemed that macroeconomic stabilization had been successful, and domestic consumption was booming. The economy, however, was barely growing. Despite the Chiapas uprising, the Colosio assassination, and the prevailing discontent with the national economy, the electorate reelected the PRI in 1994 by a large margin – the party won 50 percent of the national vote over 27 percent for PAN’s candidate, Diego Fernández de Ceballos. This chapter uncovers the contribution of Pronasol to the PRI’s victory in 1994.

Ernesto Zedillo initiated his presidency with the Tequila Crisis, which sent Mexico into a deep albeit short recession. Poverty reached unprecedented and alarming
levels in the first two years of his presidency – according to estimates shown in chapter 1, 81 percent of rural citizens and 62 percent of urban dwellers could not meet “basic capacities” (fulfill a minimal nutrition requirement plus health and education for their children). To a large extent as a result of the economic recession, the PRI began to lose in one local election after another and it also lost the majority in the Chamber of Deputies in the 1997 mid-term elections. Legislative politics were transformed in that for the first time in its history, the PRI was forced to compromise with the opposition to pass legislation. The establishment in 1997 of Progresa, as we discussed in the previous chapter, represented a turning point in the design of social policy (Levy, 2006; Levy and Rodríguez, 2005). With Progresa, Mexico witnessed the advent of social entitlements for its poorest citizens. During the Zedillo administration social infrastructure funds were also decentralized and distribution of these funds was made through a poverty-based formula. By the 2000 presidential elections, the PRI had given up most of its discretion in the manipulation of poverty programs.

The 2000 presidential elections were a watershed in Mexico’s history because the PRI lost the presidency after more than 70 years in power. The winner was PAN’s candidate, Vicente Fox, who obtained 38 percent of the vote over 28 percent given to PRI’s Francisco Labastida. The PRD again came in third, far behind the top parties. Despite outstanding economic growth rates prior to the presidential elections and high approval rates, the PRI could not win the elections because voters were fed up – they had completely lost confidence in the PRI and perceived that, if reelected, the party would escort the country into another post-electoral recession (Magaloni and Poiré, 2004; Magaloni, 2006). The elections were administered by a highly sophisticated and
independent Federal Electoral Institute (IFE), which made electoral fraud practically impossible for the PRI. The average Mexican voter was euphoric for unseating the PRI. However, the mood must have been different for the poor, and especially for those benefiting from the various government programs such as Procampo and Progresa. The main question for the poor was whether the incoming administration of the right-wing PAN would preserve these programs.

After numerous international policy evaluations supporting the effectiveness of Progresa in reducing extreme poverty, the Fox administration decided to continue with the program, but re-baptized it with a new name, Oportunidades, and greatly expanded its rural coverage while extending it to the cities as well. As we showed in chapter 1, coverage is impressive. At the end of 1999 Progresa reached approximately 2.6 million families, about 40 percent of all rural households. By the end of 2005, coverage under Oportunidades had doubled to almost 5 million families, two thirds of which are rural households, with the remainder comprising urban and semi-urban households. Thus, by 2006 more than half of all families living under the poverty line in Mexico were recipients of these transfers.

Figure 6.1 maps the expansion of the programs’ coverage between 2000 and 2006 in each municipality. The map also provides the Ministry of Social Development’s imputation of nutritional poverty (i.e. a poverty line drawn at the minimum caloric intake necessary for survival) at the municipal level. The size of each dot represents the absolute number of poor households calculated for each municipality. The program’s expansion incorporated poor urban areas. It also engaged in a so-called “densification” in the rural areas (i.e., covering in full very poor communities where only a fraction of inhabitants
were included in the program).

In addition, the Fox administration introduced a new social insurance program to remedy the truncated nature of health care delivery in the country, which grants access only to those working in the formal sector of the economy. According to the 2000 census, some 58 percent of the population was not covered by the social security system. *Seguro Popular* was an ambitious program created to extend health coverage to this large part of the population that was uninsured. The program began in five states in 2001 and by 2005 it had been implemented in all 31 states and the Federal District, covering almost 3 million families. In contrast to *Oportunidades*, which is centrally administered by the federal government, *Seguro Popular* is decentralized and more subject to political manipulation. Coverage and spending vary widely among states and some doubts remain concerning the criteria for affiliation. Despite these shortcomings, Scott (2006) calculates the incidence of benefit distribution and concludes that affiliation in the new insurance program is more pro-poor than any other healthcare service except for *Oportunidades* and IMSS-*Oportunidades.*

Thus, the innovations in welfare policy engineered by the Fox government clearly involve an important extension of tangible and needed benefits to the poor.

Following Fox’s administration, the 2006 presidential election was the most contested election in Mexico’s post-revolutionary history. The front-runners were Felipe

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84 He further argues that the piggy-backing of *Seguro Popular* onto the poverty relief program, allowing for automatic affiliation of families already registered in *Oportunidades*, can only improve its targeting efficiency for the poor.
Calderón from the PAN and Andrés Manuel López Obrador, from the PRD. The margin of victory, after a recount of around a tenth of the votes, was slightly more than half a percentage point. Many interpret the close contest as the outcome of an ideological battle between two radically different visions that divided left from right, rich from poor and North from South. From this perspective, the 2006 election was a prospective exercise, with a clear choice between right-wing continuity and left-wing populism. This chapter will show that the PAN’s triumph would not have materialized without the support of ample sectors of the poor that voted for the right-wing party retrospectively as a result of Oportunidades.85

The PRD did not recognize its defeat, claiming that the election had been rigged. López Obrador based his accusations of electoral fraud on two main arguments. The first was that the computer system had been rigged: the preliminary vote count (PREP) had inconsistencies; and in the night of the definitive count, the system showed him with a solid lead, until the results turned around in the last hours. He demanded that each and every vote be recounted (according to the law, the electoral boxes where his own party representatives testified the fairness of the election, by signing the legal documents, should not be opened for a recount). His second accusation was that, throughout the campaign, the PAN had manipulated social transfers to the poor in order to buy their electoral support.86

The accusation that the PAN orchestrated fraud in an electronic form by subtracting a few votes from the PRD in each voting booth (casilla) is hard to document,

85 The Seguro Popular also played a decisive role, as we show elsewhere (Díaz-Cayeros, Estévez, and Magaloni, 2006).
86 A third accusation was related to the IFE being too lenient on the PAN, allowing it to broadcast nasty negative advertising.
a task that goes beyond the scope of this chapter. But the accusation that the PAN used its access to patronage, pork and clientelism to buy off electoral support, particularly from the poor, is worth addressing. It is conceivable that from its position in power, the PAN used the vast resources available to the party, following the old practices of the PRI, in order to coerce or bribe poor voters. In particular, Alianza Cívica, one of the most important NGOs carrying out electoral observation, had been warning for months that the PAN was using federal social programs as a currency to buy votes (Alianza Cívica, 2006). This perception was seconded by Fundar, an NGO for citizen oversight in budgetary matters (Fundar, 2006). The accusations could not be taken lightly, to the extent that they came from credible sources. Alianza Cívica must be credited for having created the most important network of electoral observers in Mexico, so vital for the transition to democracy. And Fundar played a key role in improving the transparency and accountability in the federal budgetary process.

President Vicente Fox and the Social Development Ministry (Sedesol) had anticipated these types of accusations, and as a result engaged in a strategy of what was called “Blindaje Electoral”, namely providing safeguards to shield the federal social programs from electoral manipulation (Sedesol, 2005). Some of these safeguards included the prohibition to expand the program’s coverage during a federal election year. Furthermore, Sedesol came to an agreement with the United Nations Development Program (UNDP) to make a thorough study of the way in which social programs worked during the election year, including a survey of beneficiaries and non-beneficiaries of
social programs, in order to assess whether coercion or vote buying through social programs occurred (PNUD, 2007).  

Our position on this debate is that Oportunidades made the PAN’s victory in 2006 possible, but that voters responded to the program freely. Vote buying and credit claiming are complementary facets of democratic politics. However, their scope is quite wide, ranging from voters responding freely to programmatic appeals and the benefits that derive from welfare programs and entitlements, to voters supporting a party out of fear of losing their benefits, as in clientelistic manipulation. The key difference between these two modes of electoral exchange lies in the implicit threats involved in clientelism, to a large extent made possible, we claim, by the institutional design of a given program.

Oportunidades made an explicit effort at publicizing the principle that benefits could not be made contingent on voting behavior. Every single transaction resulting from the program had the legend quoted at the beginning of chapter 5, which explicitly said that participation in Oportunidades and receipt of benefits were not subject to affiliation with any party and that no candidate running for office could withhold the benefits. Beneficiaries also were reminded that they would receive transfers if they showed up at their doctor’s visits and kept their children in school. However, in a country with such a long tradition of clientelism, we cannot know whether beneficiaries actually believed these statements. Our intuition is that it will take some learning on the part of poor voters in Mexico to feel truly secure of their entitlements. The fact that Vicente Fox did not reverse Progresa after the PRI’s defeat in 2000 must have worked to assure the poor that their welfare benefits were no longer subject to the short-term whims of politicians.

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87 One of the authors was commissioned to carry out part of the evaluation.
6.4. An Instrumental Variable Approach to the Study of Aggregate Vote Swings

To model the electoral payoffs of antipoverty programs, this section studies vote swings between presidential elections (1988-1994 and 1994-2000 for the PRI and 2000-2006 for the PAN). The method of using vote swings between elections takes care of one of the most serious potential problems arising from omitted variable bias. To the extent that an independent variable remains constant between the elections, its omission should not bias the results. Following Tucker (2006), we calculate all the electoral data in log-odds ratios, in order to keep estimates between the plausible range of 0 and 1 and to ensure normality in the distributions.

The main methodological problem we need to address in our study of the electoral payoffs of antipoverty programs is one of endogeneity or reverse causation. When politicians discretionally assign money to municipalities, they do so in anticipation of how voters will respond. This means that our explanatory variables are likely to be correlated with the error terms of the regressions. Due to this endogeneity problem, ordinary linear regression is likely to produce biased and inconsistent estimates.

We can address this problem by using an *instrument* (Angrist and Pischke, 2008). Two relevant factors must be obtained for an instrument to produce consistent estimates: 1) It must be a good predictor of the endogenous explanatory variable, and 2) It must be exogenous or uncorrelated with the dependent variable. That is, we need to find an instrument that predicts per capita municipal level allocations (the endogenous explanatory variable) but that is uncorrelated with vote swings (our dependent variable).

In the last decade, scholars have been consistently relying on geographic variables
as instruments. The advantage of geographic variables is that it is generally plausible to justify their being exogenous because they are for the most part not the product of human agency. Our challenges are first to justify a plausible causal correlation between geography and the endogenous explanatory variable, and second, demonstrate that they are uncorrelated with the dependent variable.

To model vote swings for 1988-1994 as the product of *Pronasol’s* per capita investments in private and public goods, we use two geographic instruments: rugged terrain and rainfall. Both of these variables are likely to influence investment decisions. The nature of the terrain, its roughness, is a natural factor one must take into account for building public infrastructure projects. It is harder to build roads, pave streets, dig ditches and wells, construct health clinics and schools, and the like, when the terrain is rough and mountainous, and when it rains in excess. In tropical areas, projects have to be planned according to the rainy season, and it is also often the case that emergency relief is needed more often when it rains the hardest. Our models hence employ both of these instruments to predict logged per capita private and public good allocations (*Private PC* and *Public PC*).

Our claim is that these two instruments are exogenous or uncorrelated with vote swings. That is, the rain does not fall more or less depending on whether the PRI is expected to perform better in the elections. The terrain does not vary according to how voters are expected to behave. These variables are good predictors of *Pronasol* investments but are uncorrelated with vote swings. Voting behavior is not shaped by whether the terrain is rough or by whether it rains. Our diagnostic tests suggest that

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88 We also use the CONAPO poverty index and its square and population in addition to rainfall and rugged terrain.
turnout is uncorrelated with these variables, suggesting that rain or mountains do not discourage voters. To make sure that these variables are truly exogenous, we run over-identification tests wherein we test whether the residuals of the regression are correlated with the instruments, and reject any significance in the F test (see Deaton, 1997).

Our expectation is that the electoral return of private goods should be significantly higher than the return of public goods. The regression controls for the PRI’s vote share in 1988 (PRI 88) and the alpha and erosion parameters fully discussed in chapter 4. We expect higher vote swings in favor of the PRI in places with higher alphas and lower erosions. The signs of these coefficients should thus be positive and negative, respectively. We also expect lower vote swings in places where the PRI performed exceedingly well in 1988, and hence a negative sign of this variable. The regressions use state fixed effects to control for state-level patterns of vote swings stemming from, for example, the partisan label of the incumbent governor, a state’s vote mobilization capacity, the concurrency of gubernatorial races, or types of local party organizations. Results are reported in table 6.1.89

All the coefficients perform as expected and all reach reasonable levels of statistical significance. Pronasol was a decisive factor in accounting for the PRI’s vote swing in the 1994 presidential elections even after controlling for state-fixed effects and

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89 We examined swings data of all the elections for spatial autocorrelation in GeoDA, failing to find a significant concern. Hence we do not include a spatial lag in the estimations.
municipalities’ divergent electoral histories since the 1970s, as measured by alpha and erosion.

Our results reveal a powerful effect of clientelistic transfers over public goods. The vote-buying effect of private goods almost doubles that of public goods. These results compellingly demonstrate the electoral payoffs of clientelism. In terms of pesos per capita it was significantly more effective for the PRI to spend in clientelistic transfers such as scholarships, credit, granaries, life stock, mills, or cash transfers targeted to individuals or small groups of producers, than in social infrastructure projects or public good provision for communities at large.

Our results thus cast doubt on most of the existing empirical analyses on Pronasol. Although the literature has given a great deal of attention to this program as a key instrument in the PRI’s electoral recovery and the PRD’s debacle, most empirical analyses have concluded that Pronasol’s electoral effectiveness was disappointing. Bruhn (1996: 162) finds no evidence that Pronasol expenditure helped the PRI and undermined the left. Hiskey (1999) concludes that “the political impact of Pronasol funds is noteworthy for its insignificance” (128). Although Molinar and Weldon (1994) claim to find positive effects for this program, their results are counterintuitive because they generate vote gains only in states where gubernatorial elections were held in 1991. “In states where elections for governor were not scheduled in 1991, the PRI did somewhat worse in the federal elections for every extra peso spent on Pronasol (Molinar and Weldon, 1994: 137). Magaloni (2006) finds that Pronasol bought votes for the PRI, but she fails to pay attention to selection bias problems.

Table 6.2 presents analogous results for the election that led to the transition to
democracy. The 1994-2000 vote swings are a function of the instrumented municipal level coverage of Progresa in 2000 (Progresa^) and the instrumented per capita expenditure in FISM (FISM^).90 The table also presents the analysis of 2000-2006 vote swings, this time for the PAN candidate since that party became the incumbent, as a function of the instrumented change in the coverage of Oportunidades (Oportunidades^) from 2000 to 2006 and the predicted per capita expenditures in FISM (FISM^).91 These regressions also use state fixed effects to control for state-level patterns of vote swings.

Although we have recognized that transfers within each of these programs were determined by objective formulas that could not be easily manipulated, it is plausible that the phase-in of Progresa and Oportunidades were politically determined. That is, the formulas constrained the politicians to target the poor individually but politicians and policymakers were not constrained in terms of deciding the order of expansion of the programs across states and municipalities.92 This leeway to decide the phase-in compels us to instrument change of coverage in Progresa and Oportunidades to eliminate potential problems of endogeneity –that is, that higher increments of coverage might be in part driven by expectations of electoral swings. For the case of FISM, as discussed in the previous chapter, the fact that funding was determined by formulas does not rule out the possibility that the choice of the specific elements included in the formula, and hence the distribution resulting from them was the product of political calculations by the incumbent party.

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90 As instruments for the first of these regressions we employ the CONAPO index; total per capita expenditures in private goods in Pronasol; population; temperature; rivers; distance to rails; municipal size (km2).
91 Our instruments for the second regression were the Human Development Index; temperature; coast/boarder; rugged terrain; distance to rails; distance to roads; municipal size (km2); and Easting kms.
92 It is important to note that the randomization trial was only done at the early phase of the program in 1997. Subsequent expansions did not involve random assignment.
This time we employ temperature and distance to rails as instrumental variables, while controlling for municipal size (km²) and for poverty, which we know shapes Progresa/Oportunidades and FISM. As shown in chapter 2, the poor are disproportionately located in municipalities with higher temperatures and farther away from railroads. These variables are hence good predictors of Progresa/Oportunidades and FISM but are uncorrelated with vote swings. That is, voting behavior is not shaped by whether railroads are nearby or whether it is warmer at the time of the elections. On the one hand, railroads in Mexico were put in place in the late nineteenth century at the time of the Porfiriato and since then, there has been no further investment or expansion of railway lines. Mexicans barely use railways to move from one place to the other, and in this sense, it is highly unlikely that individuals will jump on a train to arrive to the voting booths. They would most likely walk or take a bus, car, or taxi. On the other hand, our diagnostic tests suggest that turnout is also uncorrelated with temperature, suggesting that warm weather does not discourage voters. Hence, these two instruments passed the over-identification tests and are good predictors of per capita allocations of Progresa/Oportunidades and FISM.

The results perform as expected. Progresa and Oportunidades both have positive effects on the incumbent parties’ vote swing in the 2000 and 2006 elections. FISM also impacts vote swings in the expected direction: more per capita expenditure in social infrastructure at the local level translates into higher vote swings for the incumbent party’s candidate in both elections even after controlling for state-fixed effects. This means that regardless of the partisan label of the incumbent governor or the municipal president, the incumbent party’s presidential candidate can profit from more expenditures.
in social infrastructure projects.

To have a sense of the range of effects, figure 6.2 simulates the vote buying effects of the various programs distinguishing between private and public goods. The graph on the left simulates the effects of the discrecional program (Pronasol) and the graph on the right the formula-based ones (Oportunidades and FISM).

[Figure 6.2 about here]

We first discuss findings from Pronasol. Our results compellingly demonstrate the larger electoral payoffs of private over public goods. Relative to pork barreling or discrecional public good allocations, particularistic transfers are superior in buying votes. For example, if the PRI spends 100 pesos in private goods the simulation predicts a swing of around one point, while the same expense in public goods would not generate a positive vote swing. That does not mean that the electoral investments in public goods are useless, since any money spent prevents adverse negative swings. However, there is no question that clientelistic transfers were more effective at producing electoral support for the PRI throughout the whole range of spending. Public goods also brought swings of considerable magnitude for this party at high enough levels of expenditure, but always below private goods.

The graph on the right simulates the effects of non-discrecional private and public goods. The electoral payoffs of non-discrecional private goods or entitlements are very different from the payoffs of discrecional particularistic transfers. The electoral swings for entitlements are not always higher than the payoffs of public goods. In our estimates,
only once more than half of the municipality is receiving *Oportunidades* it is predicted to show a positive swing in favor of the PAN, hence Fox’s interest in expanding *Oportunidades*. At a coverage of more than 60 percent the electoral payoff of a policy of entitlements is very high, in fact, higher than the equivalent in benefits of public good provision.

### 6.5. Do Entitlements Pay?

This section supplements our findings with survey research. The study of antipoverty programs with individual level data presents challenges of selection bias too. Thinking in terms of medical research and experiments helps conceptualize some of the problems involved in studying these types of policy interventions. To estimate the effects of a drug or medical treatment, ideally one would like to have two individuals that are identical in all respects (age, diet, gender, lifestyle, ethnicity, etc.) but the “treatment” (e.g., the drug). Medical research solves this issue through experimental design wherein a group of individuals of similar characteristics are randomly selected and divided into two groups, the “treated” one receiving the drug and the other “control” group receiving a placebo.

Envisioned by a former academic well trained in economics, *Progresa* was originally designed to allow for experimental evaluations. Communities with similar characteristics were identified at the onset of the program, but only a randomly selected group began to receive benefits immediately, while the others were incorporated 15 months later. Green (2005) and De la O (2005) take advantage of the program’s
randomization or the delay in incorporation to assess the effects of Progresa on turnout and voting choices. These studies arrive to opposite conclusions. Green (2005) finds that Progresa had no effect on voting choices, while De la O (2005) obtains an effect on turnout of 5 percentage points and 4 percentage points for the incumbent’s vote share. One of the difficulties with reconciling these results is that in order to get leverage from the experimental design these studies end up comparing localities with very specific characteristics, raising issues of external validity. Green’s (2005) highly nuanced study first identifies 3,739 out of 105,749 localities for which electoral polling stations coincide with the boundaries of the locality. Within this sample, she then compares treated localities incorporated into Progresa with untreated ones. Her selection strategy yields highly atypical localities, where the PAN receives very low levels of support (around 20 percent). In her carefully designed study, De la O (2005) takes 505 localities selected by Progresa into the randomized experimental setup, where 300 of them received benefits 21 months before the election while the rest had only received benefits for 6 months. Given this design, before the presidential election of 2000 both groups were receiving transfers. So the inference she obtains is about the effects of length of time of the treatment on voting decisions rather than effects of the treatment itself.

But the greatest problem for our purposes is that there is no experimental setting for Pronasol, FISM, and Oportunidades. This means that if we want to compare the political effects of all the various social assistance programs we must rely on observational data. However, we can use statistical methods to deal with potential selection problems. That is, we contrast treated and untreated individuals by matching

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93The different findings might also be related to econometric strategies: Green (2005) uses a regression discontinuity framework, while De la O (2005) estimates a first difference regression model.
comparable persons in terms of the non-random set of characteristics that make them subject of being chosen in the policy intervention, yet one receiving the treatment and the other not. Specifically we use a non-parametric technique, Propensity Score Matching, to compare individuals along these lines (Imai, 2003; Rosenbaum and Rubin, 1983). The treatment variable in this quasi-experiment is being a Progresa or Oportunidades recipient.

In matching, the most common impact indicator of interest is the mean impact of the treatment on the treated. This indicator is also known as the average treatment effect on the treated (ATET)” (Essama-Nssah, 2006). In this case, the comparison of the mean probability of voting for a given party between a treated group and its matched non-treated group is what we are interested in. The method is based on an assumption of unit homogeneity (Holland, 1986). This means that the outcome of the non-participant can be taken as an indication of what would have happened holding all other relevant variables constant. In this sense, the hypotheses tests do not control for covariates, since they are already incorporated into the choice of observations to be compared.

Propensity score matching is relatively simple to perform. The first-stage involves a probit (or logit) estimation of every individual’s probability of receiving the treatment, i.e., the propensity for being selected as a Progresa/Oportunidades beneficiary. The second stage is a simple test of means, where treated observations sharing similar propensity scores are compared to untreated ones. The estimations reported in table 6.3

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94 In this technique, assumptions of linearity are not necessary, because matching is done non-parametrically. In the propensity score the challenge is to find a scale (i.e. the propensity score) under which the assumption of non-confoundedness holds (Imbens, 2003). There is no direct test that can assure this assumption holds. We follow the common practice that is to make sure that the propensity score of the treated and the control groups have a similar distribution (what is known as the balancing test).
were carried out using the PSCORE routine for STATA developed by Becker and Ichino (2002). We use a nearest neighbor match with bootstrapped standard errors.

To study the electoral payoffs of *Progresa* and *Oportunidades*, we use two exit polls performed by the *Reforma* newspaper. The *Reforma* research department is credited with having some of the best electoral surveys in Mexico. Their questionnaires are rather comprehensive, including self-reporting of participation in *Progresa* and *Oportunidades*. Their 2000 exit poll sampled 3380 voters in 119 municipalities (including delegaciones in Mexico City); while the 2006 poll included 5807 voters spread around 122 municipalities or delegaciones throughout the country.

The 2000 poll shows a relatively even distribution of votes for the PRI’s candidate, Francisco Labastida, in rural and urban localities. By contrast, the 2006 poll shows that support for Felipe Calderón varied considerably according to whether voters lived in rural or urban areas. The urban-rural gap in Calderón’s support is clear from both the survey and the official vote tally: according to the PREP, in rural areas his vote share was 29.7 percent, while in urban areas he reached 38.3 percent of the vote.

The descriptive statistics of the survey (table 6.3) show that *Progresa* recipients voted more frequently for the incumbent’s party candidate, Francisco Labastida – there is a 24 percentage point gap in his favor between recipients and non-recipients. Vicente Fox from the PAN seems to be particularly affected by *Progresa*, producing a 21 percent gap against him. Similarly, the 2006 poll shows that the PAN’s candidate received more support among beneficiaries of Opportunities – 37 percent of beneficiaries voted for Calderón vs. 32 percent of non-beneficiaries, a gap of 5 points. If one were to view only the average vote shares for the three main presidential candidates in the 2006 elections

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95 We thank Alejandro Moreno for making the polls available to us.
among non-beneficiaries of either program, a fierce tie between Calderón and López Obrador emerges, with Roberto Madrazo from the PRI in a distant third place overall. Among beneficiaries of the programs, however, Calderón outpaces López Obrador by double digits. Any one of these spreads is enough to tilt the national election in Calderón’s direction.

[Table 6.3 about here]

But the crucial inference that one wants to know is whether voters in 2000 supported the PRI because they received benefits from Progresa, or because some of the correlates of Francisco Labastida’s vote are also related to the selection criteria of beneficiaries into the social program. The same question arises with respect to the effects of Oportunidades on support for the PAN in 2006.

[Table 6.4 about here]

Table 6.4 shows first-stage probit estimations of our PSM for Progresa and Oportunidades. In estimating the propensity score, we use individual data from the survey merged with municipal-level data. The merge is important in our case because we know that selection into Progresa/Oportunidades was shaped both by income measured at the individual level from household surveys and by locality-level development
The merger follows the electoral precinct identification at the polling points in the exit poll.\footnote{We also employ a municipal-level variable for coverage of the program because this shapes an individual’s probability to be chosen, as program managers decided to increase the coverage in rural places where the program was already working (the so-called densification process).}

The combination of variables used to calculate the propensity score was inductive: we included variables with predictive power, while satisfying a balancing property among blocks of observations.\footnote{The balancing property checks whether the propensity score within a range produces random treated and non-treated groups for the independent variables. It formally does not constitute a test of non-confoundedness, but can allow one to reject a propensity score that most likely does not satisfy it.} We did not include variables that measure vote choice or are closely related to it in a voting model, such as party ID or left-right scales, since those are the outcomes we are interested in studying. We use a rather exhaustive specification for predicting beneficiaries: we follow the practice of trying to include variables that are statistically significant predictors of selection into the program and that meet the balancing property. Thus, these models are similar to each other but not identical.

To highlight the issue of balance in the dataset, a common practice is to produce a histogram of the distribution of values of the matched dataset as compared to the unmatched original data.\footnote{Propensity score matching produces a dataset in which observations falling under a common support (i.e., observations with similar probabilities of being treated, but with some in the treatment group and others not) should satisfy what is known as the “balancing property”. If a matched dataset is balanced, there should be minimal differences in the distributions of the covariates that are used to calculate propensity scores between the treated and control groups (Ho et al., 2007). In the estimations, we have checked for balancing by testing whether the means of the covariates are the same across various blocks of observations (Becker and Ichino, 2002). In all estimations the balancing property was satisfied.} The four panels in figure 6.3 make those comparisons by showing the kernel density graphs of the distribution of propensity scores for both social programs. On the left side of each pair of graphs one can see that the propensity score of
the untreated group is highly unbalanced, since there are very low probabilities predicted for the treatment, while the propensity score of the treated observations tends to be dispersed along the whole range of the propensity score. The panels on the right show the matched observations. Although their kernel densities are not perfectly identical, it is visually clear that the control observations used for matching are quite similar to the distribution of the treated.\footnote{As discussed by Ho et al. (2007), the multidimensional nature of the covariates means that these graphs does not ensure that balancing is fulfilled, but at least it provides an indication of situations in which the datasets are clearly not balanced. A definitive test of the balancing property does not exist, at least in the current state of the literature. However, the various ways in which we have explored the dataset all suggest that the data are comparable. In addition to propensity score matching, we performed exact matching complemented with the nearest neighbor technique, which generates very similar results.} We turn to exploring the political effects of these social assistance programs below.

[Figure 6.3 around here]

In table 6.5 we present differences-of-means tests between treated and untreated respondents, which is the program’s impact indicator or the ATET. In our case it corresponds to the comparison of the mean probability of voting for a given party between a treated group and its matched non-treated group. The mean probability of the non-participant can be taken as an indication of how electoral behavior or other political attitudes would have changed holding all other relevant variables constant. For our purposes, the implication is that it is not necessary to include all relevant controls normally employed in vote models to be able to infer the political effects of a given policy intervention.

[Table 6.5 about here]
The first thing to highlight is that both programs produced significant vote returns for the incumbent parties that implemented them. In 2000, beneficiaries of Progresa had a 17 percent higher probability of supporting the PRI’s candidate. This probability increases to 29 percent for rural beneficiaries, which are the target population. Our results also demonstrate that Progresa hurt the PAN, not the PRD. In fact, Vicente Fox received scant electoral support from rural voters, who remained loyal to the PRI in 2000 to a large extent because of the benefits they received. Thus, our results contrast Cornelius (2004), who finds positive but rather marginal effects of Progresa in favor of the PRI (around 7 percent, just a bit more than in De la O, 2005). Cornelius’ (2004) is agnostic of selection bias problems, however.

In the case of Oportunidades, beneficiaries were 11 percent more likely to vote for PAN’s Calderón than non-beneficiaries with very similar propensity scores – that is, individuals with the same socio-demographic and community-level characteristics. Program beneficiaries were, at the same time, 7 percent less likely to vote for López Obrador from the PRD and were indistinguishable from non-beneficiaries in support levels for Madrazo from the PRI. Thus, our results demonstrate that López Obrador’s concerns about Oportunidades were well-founded but not in that individuals were being manipulated to vote for the PAN. Oportunidades worked to create an electoral constituency for the right-wing party among poor voters, who otherwise most probably would have voted for the left. These results contrast to Poiré and Estrada (2007), who report no effect of Oportunidades in favor of the PAN, nor do they find a negative impact of the program on support for the left-wing candidate. These authors ignore problems of selection bias.
The last rows of table 6.5 report the effects of the program on approval, pocketbook evaluations, and partisan identification. Consistently, the effect of the program on the treated versus untreated electorate is to increase presidential approval, pocketbook evaluations, and partisan identification in favor of the incumbent party.

We highlight three issues about these results. First, our results indicate that Progresa and Oportunidades produced high electoral payoffs for incumbent parties. Although at first sight Progresa seems to have helped the PRI more than Oportunidades the PAN, the later seems to have been decisive in this party’s razor-thin victory. The program enabled the PAN’s victory both by giving votes to this party’s candidate among the poor and by taking votes away from the PRD –thus the negative impact of Oportunidades for a vote for López Obrador (see also Magaloni, et al, 2009).

Second, these results suggest that partisan loyalties are conditional, as suggested in chapter 3. If one compares two almost identical individuals in terms of the sociodemographic and municipal-level traits used for selection into the program, one treated and the other not, their partisan identities are likely to be different as a result of these benefits. Welfare benefits seem to re-create or create partisan identifications. In the Mexican case, Progresa reinforced the rural poor’s loyalties to the former ruling party, and Oportunidades helped the PAN generate new partisan sympathies among this voter group. It is noteworthy that the program works to decrease partisan identification in favor of the PRI, but does not affect identification with the PRD. These results suggest that the new social policies introduced by the Fox administration could possibly be credited one day with a dealignment by the poor from the former ruling party. Yet despite these programs, preexisting political loyalties to the left among the poor might remain
unchanged.

Third, a crucial way in which *Progresa* and *Oportunidades* shaped voting decisions is by causing higher voter satisfaction with the way the president is handling things (approval) and higher satisfaction with their material well-being (pocketbook evaluations). The effects of *Progresa* and *Oportunidades* on voters’ self-reported improvements in material well-being are impressive. For example, a rural *Progresa* beneficiary was 60 percent more likely to report that her material well-being had improved than a rural non-beneficiary. Similarly, both programs cause a significant increase in presidential approval. For instance, rural recipients of *Oportunidades* were 50 percent more likely to approve of Vicente Fox than rural non-recipients.

These patterns of preference beg the question of credit-claiming for *Oportunidades*, since it is an outgrowth of *Progresa*, introduced by a rival political party in 1997 and credibly claimed by the PRI as its own. Of course, the inherited program was almost entirely rural in its community coverage in 2000 and more narrowly distributed. The program’s expansion proceeded in two waves. The first occurred in rural municipalities between 2001 and 2004. The second wave began in 2002, in a rapid extension of the program to urban contexts with modified selection procedures (including self-selection by potential beneficiaries with agency review of their applications).

The relative impact of this program’s expansions could possibly be inferred by contrasting the columns of the table that separate rural from urban voters when matching propensity scores for voters in and out of the program. If rural voters credited the PRI for *Oportunidades*, they would show higher levels of electoral support for this party and not the PAN. However, in the rural electorate, *Oportunidades* spurs higher levels of support
for the PAN and incredibly high levels of presidential approval, suggesting that these beneficiaries credited this party and not the PRI.

### 6.6. Conclusions

We began this chapter asking about voters’ responses to the various strategies of vote buying. We classified these according to whether they deliver private vs. public goods and according to the level of government discretion. Our results provide a clear measure of the electoral benefits of clientelism relative to other vote-buying instruments, and unveil one powerful reason why politicians in the developing world have a strong preference for this form of political linkage. Clientelism has high electoral yields at low costs. Politicians manage to mobilize electoral support with low-cost selective material rewards. Voters respond positively to these favors, we have suggested, not only because of their value, but because in keeping loyal to the machine, they assure access to a future stream of benefits. Clientelism implies a credible threat to those who defect because only voters loyal to the machine are given a ticket to access its spoils systems and future rewards. This credible threat of punishment relative to a promise to remain a member of the machine’s spoils system in the future plays a central role in keeping voters loyal, and to a large extent accounts for the high electoral yield of clientelism.

A second reason why clientelism exhibits high electoral returns, we have suggested, is because machines can screen voters *ex ante* and target benefits to those who are most likely to vote for them, namely loyal voters. In targeting to their core voters, machines minimize the risk of voter opportunism. Our results also demonstrate that
discretionary private goods have higher electoral returns per peso per capita spent than public goods projects. One possibility is that voters prefer exclusive benefits over public goods that everyone can enjoy, as in Wantchekon’s (2004). However, it does not seem plausible that voters would not value public infrastructure projects that can improve their welfare, sometimes even more than particularistic favors.

Another possibility explaining the lower electoral return of public goods projects, as suggested by our theoretical approach, is that they entail higher risk of voter opportunism. The PRI targeted public goods projects, as our results in chapter 4 demonstrated, disproportionately to low-core places in an attempt to buy off swing voters and even opposition backers. The electoral returns of these investments are hence lower because it takes more to buy off non-loyal voters and because the machine cannot twist their arms not to behave opportunistically.

Despite the fact that we have unveiled a significant electoral efficiency in clientelism, we should emphasize that our results leave room for optimism. Poor voters handsomely rewarded incumbents that were credited for establishing or expanding the CCTs. The delivery of welfare-enhancing benefits through entitlements and sustained policy innovation matters for a governing party’s electoral prospects. In 2006, crucial votes that represented the margin of triumph at the national level for the PAN’s candidate came from the beneficiaries of the Fox government’s two major social programs, Oportunidades and Seguro Popular (Magaloni et al, 2009). The influence on voting decisions exerted by these programs, singly and in combined form, is logically tied to a retrospective calculation that partially neutralized prospective ones in 2006. What is ironic in 2006 is the partisan identity of the two sides of vote buying, with the right
delivering policies unassociated with its historical reputation against the left credibly promising changes in distributive policies in the future. In the end, the average beneficiary reasoned in line with the saying, “Better a bird in the hand than two in the bush”. The Spanish version exaggerates the discount rate of the future: Más vale pájaro en mano que cientos volando. Effective vote buying, in line with this folk wisdom, is usually based on tangible exchanges from the past rather than welcome promises to the future. Vote buying of this sort is fully consistent with democracy and, as the chapters that follow demonstrate, it is welfare-enhancing where clientelism is not.
Chapter 7

Improving Living Conditions:

The Effects of Social Transfers on Public Good Provision

Too often, services fail poor people—in access, in quantity, in quality. But the fact that there are strong examples where services do work means governments and citizens can do better. How? By putting poor people at the center of service provision: by enabling them to monitor and discipline service providers, by amplifying their voice in policymaking, and by strengthening the incentives for providers to serve the poor.

World Bank, World Development Report 2004

7.1. Introduction

This chapter asks about the political conditions and governance structures that facilitate or hinder public service delivery to the poor. Our research contributes to a growing literature on public goods provision in developing countries. Poverty relief requires the active involvement of governments in the provision of public goods such as health, education, roads, water and sanitation services, among others. Too often these services fail the poor because of misaligned political incentives and poor governance, which is manifested in corruption, state abuse, rent seeking and dysfunctional or weak institutions. Although there tends to be consensus on the importance of good governance in poverty alleviation, not enough is known about the conditions under which it comes
about and how it can be replicated. Answers to these questions are more often found in politics and political processes that shape politicians’ incentives in responding to the poor, rather than on technical solutions imposed from the top down.

With a focus on subnational variation across Mexico’s more than 2,400 municipalities during the last two decades, this and the next chapters take an ambitious approach to systematically study how the different poverty relief strategies have impacted the poor’s welfare. This chapter studies improvements in access to basic services (water, sanitation, electricity), while the following chapter focuses on health improvements analyzed through the lens of infant mortality.

The story of Francisca told in the introduction to this book illustrates the difference basic services can make in improving the poor’s welfare. Before Francisca’s family had access to such services, her children were very vulnerable: six out of 13 died of preventable health conditions, most notably dehydration. Proper toilets and hand washing could have dramatically reduced the risks for Francisca’s children and for many other children like hers. But basic sanitation and health services were inaccessible. Her children defecated on the dirt around the house and never washed their hands. Every day, Francisca had to walk to a well to retrieve water, and when her children were sick, it took hours to reach the nearest health clinic. In the case of her youngest daughter, the distance to the hospital proved too great, and the girl died before she could receive any medical attention.

Francisca’s story is by no means unique. Dehydration caused by diarrhea is the second greatest killer of children in developing countries. The World Health Organization (WHO) and the United Nations Fund for Children (UNICEF) calculate that in 2015 there
will be 2.4 billion people without basic sanitation, and children will continue to pay the price in lost lives, disease, malnutrition and poverty. Poor sanitation also has negative implications for education. When schools lack safe water for drinking or washing hands and toilets are nonexistent or unsanitary, diarrhea and other stomach-related illnesses become common among children. Stomach-related illnesses not only prevent children from attending school regularly, but also have a negative impact on schoolchildren’s cognitive skills.

Life for the poor in Mexico has witnessed significant improvement in the last 15 years. In 1990 the average municipal-level household coverage of water and sanitation was 65 and 35 percent, respectively. By 2000, water and sanitation coverage increased to 72 and 50 percent, respectively. Despite these advances, a large proportion of the extreme poor still live without basic sanitation and other public services. In Guerrero, for example, the majority of the population lived without sewerage in 2000. Only 58 percent had access to drinking water. The coverage in Chiapas was slightly better, but still almost half of the population lacked access to a sanitation system and close to 34 percent did not have potable water. Similar average figures were found in Veracruz, San Luis Potosí, Puebla and Oaxaca. And even within these states, inequalities are huge. In rural villages, only a handful of houses have running water and proper sanitation, while in richer cities and towns, the overwhelming majority are covered. Higher rates of infant mortality, as we will see in the following chapter, are associated with the lack of access to basic services.

What accounts for variation in public service delivery? The failure of public service provision in developing countries can be attributed to both supply-side and
demand-side problems. Corrupt political institutions or unaccountable governments can be credited with poor provision of services, while badly informed, distrustful or ethnically divided citizens are the cause of free-riding and coordination obstacles or an insufficient demand for public goods.

In this chapter we focus on the supply-side, asking how variation in the governance of public service delivery, clientelism and electoral accountability affect the delivery of collective benefits and services. The Mexican constitution gives the municipality responsibility for a wide range of public infrastructure projects, including roads, street pavement, sewers, running water, public markets and lighting, granaries, slaughterhouses, parks, garbage collection and public restrooms. Potable water, sewage systems and electricity grids make up the bulk of municipal public goods spending. Although municipalities also collect their own taxes and can spend their own tax revenue on social infrastructure projects, the overwhelming majority of localities in Mexico depend on federal transfers and programs such as Pronasol or FISM to fund these projects.

Infrastructure projects can have major leakages. For example, successful projects sometimes benefit the non-targeted populations; also, unsuccessful projects are often the result of rent-seeking behavior or corruption on the part of politicians and service providers. Our goal is to identify which of the major social infrastructure programs, Pronasol or FISM, had fewer leakages, as reflected in their differential effect in expanding the provision of public services. These programs were characterized by dramatically different modes of governance: Pronasol was a centralized program administered from the president’s office and FISM is a decentralized program.
administered by municipal presidents. *Pronasol* was characterized by a high degree of governmental discretion in the targeting of programs and projects, while FISM targets funds to municipalities according to a non-discretionary formula. *Pronasol* was predominantly a clientelistic program operated from the center to satisfy the PRI’s political electoral clientele and vast patronage networks. By contrast, within FISM the distribution of federal transfers among municipalities is based on a redistributive formula, which means that marginalized localities are favored regardless of which political party their voters elect. The governance of FISM thus works to restrain the clientelistic manipulation of resource distribution among municipalities, although it does allow local governments discretion to decide how these resources get allocated within their municipalities.

These last two chapters also assess the extent to which variation in levels of the municipal government’s electoral accountability shape public service delivery and improvements of wellbeing. A crucial aspect of accountability depends on voters’ capacity to sanction poor government performance (Ferejohn, 1986). Given the constitutional rule of non-reelection at all levels of government in Mexico, municipal government electoral accountability is necessarily limited. Because of limited time horizons, the temptation for mayors to behave as “roving bandits” (Olson, 2002), governing for three years and stealing as much as possible, is huge.

The ban on reelection implies that voters cannot directly sanction or reward mayors for their retrospective performance in office, but they can do so indirectly, by punishing or rewarding political parties. Political incentives to serve voters largely hinge upon top-down intra-party formal and informal mechanisms available to discipline
elected officials. If parties promote local elected officials and party cadres regardless of their governance records, accountability will be seriously jeopardized. However, electoral accountability without reelection is possible if political parties reward competent elected officials for improved service to their localities with promotions to higher office.

Performance in local office and public service delivery is hardly relevant for a party’s capacity to win the next municipal election where it faces no serious political competition. As chapters 3 and 4 discussed, voters in these types of settings are forced to support the incumbent party even when it fails to deliver any collective benefits, because they are likely to be punished and removed from the government’s spoils system if they defect to the opposition (Magaloni, 2006). The problem is one of coordination: since each individual voter acting alone cannot defeat the ruling party, individuals are better off remaining loyal to the system, no matter how corrupt it is, so as to continue to receive particularistic benefits. Our expectation is that in monopolistic and hegemonic local electoral markets there should be little provision of collective benefits.

Incentives are likely to be different where there is serious electoral competition and alternation of political power is possible or has taken place. In competitive races, voters are likely to be less afraid to sanction corrupt incumbents because they can reasonably expect to defeat them at the polls. Confronting a more demanding electorate, a party’s leadership will necessarily need to pay more attention to local electoral markets if it wants its politicians to be able to win elections. One way to do so is by nominating popular local candidates for highly competitive races rather than introducing unknown or unpopular moderate candidates (Langston, 2007). Another strategy parties can use to induce good behavior is to sanction bad performance by refusing to nominate unpopular
local officials to higher office. Our expectation is that higher levels of political
competition should increase a municipal government’s electoral accountability and
translate into better public service delivery.

We measure local “electoral democracy” in various ways: following Przeworski
*et al.* (2000) municipalities are defined as democratic where alternation of political power
in office has taken place. We also create an index that measures the variety of factors
normally associated with electoral democracy, including levels of electoral
competitiveness and small margins of victory. Additionally we analyze the effect of the
cumulative number of years since a municipality first experienced alternation of political
power in office.

Correcting for potential endogeneity between spending, electoral democracy and
coverage of public goods (and potential sources of unobserved heterogeneity),
our findings suggest that despite massive investments, the effect of the discretionary and
centralized fund, *Pronasol*, was negligible on improving the poor’s access to basic
services. By contrast, changes in the provision of potable water, electricity and sewerage
in aggregate municipal populations responded strongly to the FISM, a decentralized,
formula-based public works appropriations financing local projects controlled by mayors.
Furthermore, our results demonstrate that electoral democracy has a strong impact on
improvements in public goods, providing a rather optimistic view of the impact of local
electoral democracy on public service delivery to the poorest citizens in Mexico. The

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101 As we discuss in the next section, unmeasured municipal characteristics might jointly determine the
coverage of public goods, the spending allocated to it, and its democratic character. We employ an
identification strategy that focuses on the changes of public good provision over time, rather than the
absolute level of provision in the cross section; while employing an instrumental variables approach to
address endogeneity concerns.
results are robust in various specifications of the statistical model. We estimate these effects on social programs and local electoral democracy while controlling for the confounding impacts of municipal heterogeneity as captured by shifts in social participation, demography and economic development.

In contrast, the effects of anti-poverty programs and local electoral democracy on public service delivery, this chapter systematically evaluates which governance mode is more effective at reaching the poor: centralized/discretionary or decentralized/non-discretionary — as well as the benefits of electoral democracy. Together with the next chapter, the discussion provides a clear measure of the leakages entailed in delivering collective benefits primarily through a party’s clientelistic networks relative to less politicized modes of resource distribution. In a nutshell, the last two chapters of the book will provide measures of the negative welfare effects of clientelism and the extent to which this form of political linkage constitutes a major barrier to accountability in governance, poverty reduction and improved public goods provision.

This chapter is organized as follows. Section 7.2 provides an overview of some of the main theoretical hypotheses advanced in the comparative literature to explain differences in the provision of local public goods and services. We draw from that literature to justify the control variables we use in the estimation. Section 7.3 discusses the empirical strategy used to assess the policy effectiveness of social spending in local public goods provision. We create two types of instruments for the identification of spending effects: one using geographic variables; the other one taking advantage of the mismatch between federal and state formulas in the allocation of social infrastructure funds. Section 7.4 discusses our results.
7.2. Heterogeneity, state capacity and democratic accountability.

Wellbeing hinges not just on individual income, but also on the access households may have to public goods and services in the localities where people live. Although public goods can sometimes be privately provided, in general the provision of facilities such as potable water, sewage systems, electricity, schools and health clinics comes from the government. What explains differences in the provision of local public goods?

The literature offers four primary explanations for the differential provision of public goods. First, more ethnically homogenous communities seem more capable of providing public goods. Greater social heterogeneity, as measured for example through an index of ethno-linguistic fractionalization (ELF), makes it harder for communities to provide public goods (Alesina, et al., 1999). Such failure is attributed to the idea that it is more difficult to engage in collective action when co-ethnic groups distrust outsiders, and that ethnic fragmentation might breed conflict.\(^{102}\)

Studies linking ethnic diversity to public goods provision generally adopt 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 the literature regarding the specific mechanisms through which heterogeneity influences public goods provision. It is possible that there are substitutions among public goods, in the sense that some places might get less of certain types of goods, but more of others

\(^{102}\) Studies finding evidence of the impact of social heterogeneity in public good provision across nations and within countries include Alesina and La Ferrara, 2000; Khwaja, 2007; Miguel, 2004; Miguel and Gugerty, 2005; Dayton-Johnson, 2000; and Baqir, 2000.
(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, 2007; Banerjee, 2002). The literature fails to specify how ethnic differences are reflected in bureaucratic structures and the political system (Posner, 2005), those arenas where the provision of public goods is decided. Nonetheless, this literature suggests that a key determinant of success in local public goods provision is the capacity of communities to work together towards a common goal. In the Mexican context, religious divisions have emerged very strongly during the last decades, becoming an important source of community tensions, particularly in the South; while linguistic differences remain prominent, particularly in areas with a strong presence of indigenous communities.

Second, states that in some measurable way are more “capable” might be better able to provide public goods (Kohli, 2001). Failures in the provision of public goods reflect underlying problems arising from weak states that are incapable of taxing, running a bureaucracy or fulfilling basic public functions. Although there are variations in the administrative capacities of bureaucracies and service providers, state capacity tends to be a difficult to measure. 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 regarded as a

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103 Political scientists have engaged this literature quite extensively in their own work on ethnic conflict and civil war (Weinstein, 2006; 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 members of different ethnic groups to cooperate. Also in an experimental set up, Wantchekon (2004) tested the appeal of programmatic promises of public good delivery by presidential candidates according to ethnic differences in Benin.
weak state. It is usually very hard to find a variable to measure state capacity that 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 poverty levels of their inhabitants (Cabrero, 1998).

Third, while some cross-country studies show that democracy has a positive effect on the provision of such public goods as education and health (Stasavage, 2005; Besley and Kudamatsu, 2006; Baum and Lake, 2003), others find either no effect in developing countries (Boix, 2001) or no significant effect of regime types at all (Ross, 2006). In a fascinating study on public service provision in an authoritarian regime, Tsai (2007) finds that even when formal mechanisms of electoral accountability are not present, the existence of village solidarity groups in some villages in China made local officials more responsive to their communities, and also more likely to have better local governmental public goods provisions than villages without these solidarity groups. The uneven process of local democratization in Mexico provides an opportunity to test regime differences from a subnational perspective.

Fourth, a growing set of studies focuses on moral hazard and electoral control, trying to identify the conditions under which politicians’ interests align with voters. The general conclusion emerging from the literature is that the institution of electoral

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104 State capacity can be proxied through fiscal variables, in particular, the capacity of local governments to collect revenues and spend in public goods. Zhuravskaya (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.
competition is not sufficient for good governance. We discuss this last strand of literature in some more detail, given its relevance for our empirical results.

Some papers study how improving information among voters works at reducing moral hazard and elite capture, which in turn improves the provision of public goods (Gottlieb, 2011; Khemani and Keefer, 2011). Policy makers have increasingly paid more attention to corruption as explanations for the difficulties governments face in providing public goods and services.\(^\text{105}\) 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.\(^\text{106}\) 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. In a fascinating study, Ferraz and Finan (2008) show that providing information to voters about corruption makes voters more likely to sanction bad politicians.\(^\text{107}\)

\(^{105}\) Bardhan and Mookherjee (2006) 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.

\(^{106}\) In an empirical evaluation of Sen’s (1981) influential hypothesis that democracy prevents famines, Besley and Burgess (2002) show 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.

\(^{107}\) They exploit a unique natural experiment provided by Brazil’s anti-corruption program: in 2003 the Brazilian government began to randomly audit the municipal expenditure of federally transferred funds. To promote transparency and accountability, the resulting audit reports were disseminated to the mass media. Exploiting this randomized audit, they found that in municipalities where radio stations were present and higher levels of corruption were revealed, the program significantly reduced reelection.
Others studies focus on participatory democracy and citizen engagement in collective decision making. In an important contribution to this literature, Olken (2010) shows that direct participation in political decision-making can substantially increase satisfaction and legitimacy. The link between electoral competition and public service delivery has also received some attention. Chhibber and Nooruddin (2004) found that Indian states where patterns of electoral competition are stiffer (that the incumbent faces a strong contest from a single challenger) are more likely to increase expenditure on public goods. They also find that public goods 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. In contrast, Cleary (2004) does not find an effect of electoral configurations on public service provision, although he does show that variables related to political participation, such as literacy and turnout, improve public service delivery. A serious limitation of both of these studies in Mexico is that they fail to address the problem of endogeneity or the fact that changes in public good coverage are likely to be the product of electoral competitiveness, which in turn is likely shaped by public goods. Our results in chapter 6 demonstrate that voters respond to public goods provided

108 The conclusions are drawn from an experiment in which 49 Indonesian villages were randomly assigned to choose development projects through direct election-based plebiscites or representative-based meetings. The study shows that direct democracy resulted in higher satisfaction among villagers, increased knowledge about the project, greater perceived benefits and higher reported willingness to contribute. One of the most intriguing results of the experiment is that changing the political mechanism of allocation — direct democracy versus representative democracy — had much smaller effects on the actual projects selected.

109 The study focuses on spending rather than on actual provision of public goods, but the results parallel our findings in chapter 4.

110 Platteau (2004) criticizes, however, participatory models of local level development.
expenditures, which means that they are more likely to turn against incumbents when public goods and services fail, and to support governments that deliver better services.\textsuperscript{111}

Other studies focus on the effects of particular political institutions on public service delivery. Elective public offices reserved for women leaders in India make local governments more representative by increasing the distribution of public goods preferred by women (Chattopadhyay and Duflo, 2004).\textsuperscript{112} In a similar vein, Pande (2000) has shown that better representation of the scheduled caste in the Indian states improved the provision of education and land reform, which are policies that the poor would presumably favor.\textsuperscript{113} In poor indigenous communities in Mexico, traditional participatory institutions, referred as \textit{usos y costumbres}, distribute services in a more egalitarian manner than local representative institutions, where political parties tend to distribute services along clientelistic lines (Diaz-Cayeros \textit{et al.}, 2011).

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 a greater awareness that a crucial aspect that determines whether a local government is capable of

\textsuperscript{111} Without addressing endogeneity, the empirical tests of those studies are likely to produce biased estimations.
\textsuperscript{112} Kearny and Lott (1999) find that across countries greater female representation leads to larger government.
\textsuperscript{113} Foster and Rosenzweig (2004) 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.
providing public goods is the accountability of local politicians to citizens (World Bank, 2004a; Bardhan, 2005).

To sum up, the general thrust of many of these empirical contributions has been to suggest the need to explore failures of electoral accountability and ways to enhance governance. Our approach in this chapter and the following chapter builds on this work. We explore how clientelism distorts the delivery of collective benefits, including basic services and health. There is consensus in the scholarly literature that clientelism corrupts democracy and electoral accountability (Stokes, 2005; Kitschelt and Wilkinson, 2007; Kitschelt et al. 2011). Yet to our knowledge the negative effects of clientelism on government delivery of public goods and voters’ welfare have not been systematically measured. These last two chapters provide an estimate of the magnitude of such consequences.

7.3. Modeling 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 that impact wellbeing, their provision in Mexico has been decided primarily in a centralized manner. Even after the decentralization of education in 1993 and the decentralization of federal health systems a few years later, most of the financing for those two public goods remains federal (Courchene and Diaz-Cayeros, 2000), and the decisions regarding the location and support of schools and health clinics is primarily made by state and federal, not municipal
governments. In the empirical test that follows, we limit the analysis to municipal services, not including education and health provision. Beyond the difficulty in finding appropriate quantitative indicators of school and health clinic coverage, Cleary (2004) has argued that municipal services like water and sewerage are where one might expect the most intense scrutiny from citizens.\footnote{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.}

Public spending in the past must account for most of the existing provision of local public goods, while current spending should only impact that level marginally, by investing in the maintenance and expansion of the existing public assets and their expansion over time. If we do not have data available measuring past spending and the stock of past provision efforts, using as a dependent variable the level of public good provision observed at a given point in time, may involve a serious omitted variable bias. We may falsely attribute very large effects to current spending, only because of its inertial correlation with spending done in the past. To solve this problem, the strategy suggested by Banerjee (2002) is to measure public service provision as a first difference. That way we avoid wrongly attributing levels of provision of the past to current spending.\footnote{We employed this strategy in Diaz-Cayeros and Magaloni (2003), and so did Hiskey (2003). The alternative is to do as Cleary (2004), who estimates levels of public service provision, but keeps the initial level of provision in the right hand side. Such alternative strategy produces a higher R2, without changing the substantive findings.}

Furthermore, independent variables should also be measured as first differences. That is, changes in public goods provision should be generated by changes in conditions in the municipalities, including the spending strategies. If some unobserved variables are omitted in the estimation, even when they may account for
some of the cross-sectional heterogeneity, their omission does not bias the estimation, provided that these variables do not change through time.

The dependent variable in the analysis is the change in the coverage of public provision of drinking water, electricity and sanitation services in Mexican municipalities according to census data.\textsuperscript{116} Rather than estimating determinants for each service, we averaged the provision in the three public goods to generate a simple index.\textsuperscript{117} The index is expressed as the log odds ratio of the average coverage for the years 1990 and 2000.

The dependent variable hence takes the form of this first difference:

\[
\Delta \text{Index} = \log\left[\frac{p_t}{1-p_t}\right]_{2000} - \log\left[\frac{p_t}{1-p_t}\right]_{1990}
\]

Measuring each decade as:

\[
\text{Index}_t = \log\left[\frac{p_t}{1-p_t}\right]
\]

Where \( p_t = \Sigma r_i/3 \) and \( r_i \) is the share of municipal households covered by a service \( i \), namely, water, electricity and sewerage in each census decade. We chose not to use the

\begin{footnotesize}
\textsuperscript{116} 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 conventionally used measures of municipal development in Mexico.

\textsuperscript{117} 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 Enumeración 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 are 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 a conclusion is not plausible. 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 could have compared 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 had ended by 1995.
\end{footnotesize}
mid-census estimations (conteos), due to issues of data reliability, which means that we are estimating a single cross section.\footnote{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 sewers than electricity; and that the demands among citizens are most intense for potable water.}

We transformed the raw percentages into log-odds ratios because an OLS estimation using percentages yields predicted values that are implausible, falling outside the [0,1] interval (see Tucker, 2006). The transformation to log-odds ratio is also preferable because it fits more closely a normal distribution, and is more sensitive to differences in the low and 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 will be correct for the municipal level, but not for lower levels of aggregation (Mukherjee et. al. 1998).\footnote{This Modifiable Unit Areal Problem (MUAP) might be particularly serious if the peripheral areas of a municipality have a much lower provision of public service than the urban centers (cabeceras). This aggregation problem would not be an issue in a linear OLS of direct coverage ratios.}

The public goods index coverage of the average municipality in Mexico was 58.9 percent in 1990, increasing to almost 69.7 percent by 2000. The average change in provision was 10.8 percent. There were large differences in the provision of public services between poor and rich municipalities (the standard deviation of the index was 0.205 and 0.177 in 1990 and 2000 respectively). For example, in 1990 the first decile of the distribution of municipalities had an average coverage of 30.0 percent, while the top decile had almost three times greater coverage, at 85.1 percent. By 2010, the poorest municipalities increased to 44.5 percent of coverage and the richest municipalities to 91.1 percent. This means that the gap between the rich and poor has somewhat narrowed.
Improvements in local public goods progressed more rapidly among the lower half of the distribution (provision improved on average by 14.5 percent in the lowest decile, and only by 5.9% in the highest one). However, even in 2000, the median municipality would fail to provide these essential public goods to around one-fourth of its inhabitants, and the poorest municipalities still left almost half of their inhabitants without services.

b) Independent variables

The work by Cleary (2002 and 2004) and Hiskey (2003) provides important insights into variations in public service delivery in Mexico. However, both studies suffer from a serious methodological shortcoming in that they fail to address endogeneity concerns, which have been central to the work on impact evaluation in development economics (Rawlings and Schady, 2002). The problems at hand are twofold: first, budget appropriations are probably endogenous to investment outcomes. The allocations of funding to pay for social infrastructure projects in water, sanitation and electricity are not independent from the perceptions policy makers have of where they believed they would get a larger return on their investments. 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 discretionary 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 on the delivery of those social services. If this problem is not addressed, the estimations of the effects of policies may be seriously biased.

The same is true for other public services, such as electricity and sanitation. 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 arguably 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. Or politicians might allocate spending in sanitation were it is more urgently needed, for instance, in some regions where the lack of a proper sewage system could 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. These examples suggest that the selection of where to allocate electricity and sewage projects might be determined precisely by the dependent variable we want to explain. The challenge is to find an exogenous variation in spending or at least to isolate its exogenous component.

Second, municipal electoral democracy also exhibits identification challenges. The omitted correlates that account for levels of democracy (including higher electoral competitiveness, the presence of more political parties and alternation of political power in office) are also likely to be related to changes in public goods provision. Results in chapter 6 suggest, in fact, that changes in public goods provision are likely to influence electoral behavior preferences, and variables measuring levels of democracy and competition are therefore likely to be endogenous., at least in part, a consequence of the success or failure of governments delivering services.

To address such endogeneity these concerns, the literature on impact evaluations has become increasingly more demanding in how to suggests the use of instrumental variable approaches in order to obtain relatively solid inferences concerning the impact of
public spending in public goods provision.\textsuperscript{120} 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 goods provision in Russia. Banerjee and Iyer (2005) take advantage of the different political organizations and land tenure arrangements among Indian princely states during the colonial era in India in order to assess the effect of land distribution on economic performance. Paxson and Schady (2002) use the percentage vote for President Fujimori as an instrument to predict Foncodes resource allocations in Peru. Below we explain the strategy that we employ to instrument for the federal spending programs of Pronasol and FISM as well as democracy.

i) Instrumented Pronasol transfers

As discussed above, expenditure in Pronasol was more concentrated in relatively rich municipalities. Despite widespread poverty in the South of the country, a visual inspection of the map in Figure 2.3 shows how little of those funds were allocated to those areas. In the models we estimate Pronasol spending is measured as the log of average per capita Pronasol local public goods expenditure, discussed in the previous chapter, measured in real terms (1994 pesos).\textsuperscript{121}

To instrument Pronasol’s expenditures in public goods we employ alpha, which is our measure of PRI core support (see chapter 4). The previous chapter demonstrated that alpha played an important role in shaping expenditures within Pronasol and in this

\textsuperscript{120} Two conditions must hold for an instrument to produce consistent estimates: 1) It must be a good predictor of the endogenous explanatory variable (in this case public expenditures and levels of democracy); and 2) it must be uncorrelated with the dependent variable (changes in public goods provision).

\textsuperscript{121} Estimations for total Pronasol expenditure were also run, yielding very similar results.
sense satisfies the first requirement for a good instrument, namely being a strong predictor of our endogenous independent variable. The exclusion restriction — that the instrument be uncorrelated with the explanatory variable — is also satisfied. Recall that \( \alpha \) is calculated using data from 1970 until 1988. The variable is unaffected by changes in public goods coverage between 1990 and 2000. The share of core voters in a given municipality cannot be causally correlated with changes in public goods coverage, other than through the way it shapes expenditures.

We also include an additional instrument for public goods expenditure, namely, how far municipalities are from the railroad network (measured as the Euclidean distance of the border of a municipality to the closest railroad track). This geographic variable is exogenous to changes in public goods coverage, yet a remarkably good predictor of Pronasol expenditures. Railroads in Mexico were built fundamentally during the late 19\(^{th}\) and early 20\(^{th}\) centuries. By 1990 no investment in railroad tracks had been made for almost a century. Proximity to railroads does not directly influence improvements in public goods, because railroads have become mostly irrelevant for local market activity or passenger transportation. This means that a municipality’s proximity to a railroad is orthogonal to improvements in public infrastructure. Transportation of construction materials and workers for public works are done through trucks, buses and cars using the road network.

But although distance to railroads is uncorrelated to improvements in public goods provision, it is a good predictor of Pronasol’s expenditures on public goods. This is because these types of expenditures were disproportionately assigned to urban and
semi-urban localities, which happened to be closer to railroad tracks.\textsuperscript{122} Railroads were originally built to connect the main cities and mining towns with ports on the coast and the U.S.-Mexico border towns. Municipalities that were closer to the railroads were better integrated along trading routes, towns and major cities, and they developed into more urbanized places. These types of localities happened to also benefit from higher levels of public infrastructure expenditures within \textit{Pronasol}.

\textbf{ii) Simulated instrumental FISM transfers}

The second program we evaluate is FISM. The allocation of these funds was in principle determined by a federal formula, but the actual implementation of this program gave room for states to choose how they would apply the formula. FISM allocations raise a problem of identification because unobserved variables may have caused certain states to distribute funding to their municipalities according to how they wanted to impact the changes in public goods provision (precisely the variable we are trying to estimate). Fortunately, we can exploit some details regarding the implementation of the federal formula that generates exogenous variation in the funds municipalities receive, captured by the use of a simulated instrumental variable.

The federal formula for allocation of FDSM created in 1997 was based on calculating gaps in public service provision and poverty, similar to a Foster-Greer-

\footnotesize{\textsuperscript{122} Around 17 percent of the total \textit{Pronasol} funds were allocated to drinking water and sewage projects and 13 percent to electricity. A separate breakdown of sewage and drinking water expenditure was not available due to the way \textit{Pronasol} reported its programs. Elsewhere (Diaz-Cayeros and Magaloni, 2003) we tried to estimate the effect of each of the \textit{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. Our instruments are not able to explain the breakdown of allocations by program, even when they work quite well for overall spending. 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. Hence we believe the analysis with overall public goods funds is warranted.}
Thorbecke poverty index (Mogollón, 1999; Levy, 2001). These gaps provided estimates of so-called “deprivation densities” (Masas Carenciales Estatales), which determined the amount of funds states would receive. For However, for the distribution from the states to the municipalities, governors could either use the same exact federal formula, or chose a much simpler allocation formula based on similar variables (usually referred to those as “formula 2”) incorporating precisely the variables we use in our public goods coverage index (percentage of households with water, electricity, access to sewage system and the share of residents below the poverty line). Nineteen states used the simpler formula, while 12 used the federal formula, which. Since the federal formula was calculated as a gap rather than just a headcount, it was better targeted to the poor. Once a the specific formula was chosen, there was governors had no discretion in the allocation of these funds to the municipalities. In addition to this choice of formula, during the first years of the FDSM/FISM, one-third of the funds were distributed to states in equal shares, regardless of their population, but state . State governments, in turn, were bound to distribute the total pool of state resources to their municipalities by their chosen formula.

Our simulated instrumental variable approach captures how much allocations deviated from a counterfactual allocation that would have prevailed had states strictly followed the federal formula, giving greater weight to poverty gaps in the allocation of

123 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, related to overcrowding and construction materials), then illiteracy (0.125), electricity (0.114), and sewerage last (0.0608). The simplified formula gives equal weight to all four factors included in the estimation.
124 The states that use the more targeted formula are Aguascalientes, Coahuila, Chiapas, Guanajuato, Hidalgo, México, Michoacán, Nayarit, Puebla, San Luis Potosí, Sonora and Tamaulipas.
125 The formulas have not changed since then; only the census indicators used to calculate them have been updated. The lump sum for each state was reduced to .5 percent of the funds, and eliminated altogether after 2001.
funds, instead of the “simpler” formula that most states actually used, which was heavily driven by population and prior public service coverage. Specifically, in an estimation similar to Mogollón’s (2002) reverse engineering of the FISM formulas, we regress INEGI Conteo indicators of the percentage households without electricity and sewerage, the illiteracy rate, the poverty headcount of population earning less than one minimum wage and the inverse of the population in 1995, on the per capita FDSM/FISM funds between 1996 and 2000 (in real terms). The results show much higher coefficients for illiteracy and electricity than for poverty and sewerage. Our simulated instrumental variable is the residual of that this estimation, measuring how much FISM allocations per municipality depart from the simplified formula. The simulated instrument hence captures an exogenous variation in federal appropriations generated by the federal law, but excluding variation due to the states’ own choices.

We expect both expenditure variables, Pronasol and FISM, to have a positive sign, suggesting that when more money is spent, the percentage of households with access to basic public services should increase.

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126 This strategy is similar to Kosec’s (2010) simulated instrumental variables estimation, in which she parses out endogenous changes in municipal fiscal effort by recalculating the potential allocation of funds to Brazilian municipalities in a pre-primary program using a federal algorithm that simulates the budget allocation, instead of using the actual funds distributed to the municipalities.

127 The inverse of the population is also included due to a 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.

128 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 former 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.

129 In order to keep all the expenditure independent variables in the same logarithmic metric, we made a log transformation of the form: \( \text{log} \cdot \text{residual} = \log(1582 + \text{residual}) \).
ii) Democracy

To estimate the impact of electoral accountability on public service delivery, we rely on several alternative measures. We use our first measure focuses exclusively on the impact of alternation of political power in office (a dummy variable where 1 indicates that the PRI lost power in a given municipality in the period between 1990 and 2000, and 0 otherwise). The second measures electoral competitiveness, a dummy variable that takes the value of 1 for municipalities that are won or lost by a small margin of victory (10 percent or less) regardless of which party won, and zero otherwise. This measure might be thought of as an indicator that allows for the PRI to be democratically elected, even when there has not been any alternation, provided there is some contestability in electoral markets. Our third measure looks at the number of years since a municipality first experienced alternation of political power in office. This can be thought of as a measure of democratic consolidation. Finally we use an index of “local democratic practice” that reflects the variance in political competition and political change across Mexican municipalities (see chapter 2); the index goes from 1 to 7, where 7 reflects highly competitive municipalities in both federal and local elections that have also experienced alternation of political power in office. This index is akin to measures of democracy that attempt to capture a graduation in democratic quality, such as the Freedom House or the Polity indexes, rather than a sharp categorical distinction between regimes.

Since levels of democracy, alternation of political power and small margins of

\[130\] 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. For a similar strategy pursuing an interactive effect of democracy on public good provision see Baum and Lake (2003).
victory are likely to be endogenous, we also require an identification strategy. for this variable. We instrument democracy relying on the \( \alpha \) parameter, that measures PRI core support. There is compelling evidence that democracy was more likely to take root in Mexico where the PRI was less entrenched. But areas of core support for the PRI were the consequence of deep-rooted historical processes (including organizational linkages forged between peasant and worker confederations in the aftermath of the Mexican Revolution), which are unlikely to be associated with the change in the provision of public goods in the 1990s, for reasons other than the influence core supporters had on the assignment of public expenditures.

We also rely on two geographic instruments. First we use the Euclidean distance to railroad tracks mentioned above. This variable is clearly exogenous, because investments in railroads took place almost exclusively in the late 19\textsuperscript{th} and early 20\textsuperscript{th} centuries. A municipality’s proximity to a railroad determined its early chances of development, indicating whether a town was integrated into the main trading routes or stagnated in isolation. Municipalities that were connected to the railroads were thus better able to accumulate capital, connect to the flows of information and culture, and to grow into larger towns. A municipality’s location with respect to railroads shaped its long-term economic and institutional development, including its urbanization and propensity to democratize.

We employ the East-West gradient (longitude) of a municipality’s centroid as an additional instrument. The geography of settlements in Mexico is not determined by the easehow easy or difficulty their location may involve init was to provide public good provisiongoods, making this clearly an exogenous variable. A well-known North-South
gradient of development persists in Mexico, where the core areas of densely settled indigenous communities of Central and Southern Mexico are poorer than the rich town and cities emerging from mining and cattle raising activities in the North. But latitude does not constitute a good instrument for the effect of democracy on the changes in public good provision, because it is correlated with virtually every modernization indicator. A less acknowledged geographic feature of Mexico is that a longitude gradient of settlement patterns, in which the pre-Hispanic civilizations of the Colhua-Mexica, the Maya, and particularly the Olmec, emerged in from the southern Gulf of Mexico towards the central highlands, rather than towards the North or the West. The East of the country has is characterized by a long tradition of hierarchical social orders, while the West is characterized bywas a frontier-like relatively recent settlement condition. sparsely populated frontier of nomadic groups. As Spaniards conquered the Indian civilizations, highly inegalitarian “extractive” institutions (Acemoglu, Robinson and Johnson, 2003), including the Encomienda and the Repartimiento, were set in place, starting in the East and moving towards the Center of the country. The inheritance of these institutions persists, making it harder for democracy to take hold in these municipalities.

iv) Socio-demographic and other controls

As controls we use independent variables that are consonant with the debates in the literature. First, we control for changes in literacy. This variable can be thought of as a control for the political awareness and citizen demands for public services (Banerjee, 2002). It might also 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 include the change in illiteracy, measured as the difference in the percent of population over 15 that could not read and write between the 2000 and 1990 censuses, as an indicator of lack of local empowerment.

For 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 religious organizations’ active construction of social networks for pastoral purposes, spurred by the pressures of religious competition. 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 became 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. A gap within indigenous groups is less prevalent, since localities tend to be more homogeneous in this ethnic dimension than in the religious one. We have thus calculated a measure of religious fractionalization, which is an index of how divided religious beliefs are in a municipality. We calculate the index defined as $F=1-\sum p_i^2$, where $p$ is the share of each of the religious affiliations reported in the 1990 census (Protestantism, Catholicism, Judaism, other religion and agnostic).\textsuperscript{131}

A second indicator of social cleavages we use is the share of “bilingual indigenous population,” according to the 1990 census. While there is a very large correlation between poverty and native identity, the indigenous character of a community

\textsuperscript{131} 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.
might not reflect divisiveness, but in fact improve the provision of public goods. This
might be particularly true 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
(Diaz-Cayeros, Magaloni, and Ruiz, 2011).\footnote{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.} Those municipalities often use a system of
rotation in public offices, instead of having municipal presidents selected through
elections (\textit{usos y costumbres}). Such systems have turned out to be a very effective
governance device.\footnote{It would be possible to use census data to construct an index of ethnic fractionalization going beyond the division between Indigenous and non-Indigenous. 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 justified in this study. We leave it for other
researchers to verify whether this is the case.} Hence we do not expect a specific direction in the effect of this
control variable.

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 therefore include a control for demographic
growth (“growth population”), measured as the rate of population change between 1990
and 2000. 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 also include a measure of the changes in
poverty rates. The measure is “moderate poverty headcount,” defined as those earning
less than twice the minimum wage according to the 2000 and 1990 censuses. This variable should control for the distribution of poverty in the municipality.

Finally, public expenditure through federal programs is complemented by municipal funds. In fact, local governments in Mexico are responsible for the provision of drinking water, sewerage and public lighting, among other local services (Rodriguez, 1997). Public works spending by municipalities constitutes the part of their budget they invest, as distinct from expenditure in debt service and general administration (mostly composed of payrolls). On average, municipalities during this period spent about half of their budgets on public works. These budgets were much smaller than the overall Pronasol funds, and relatively similar to FDSM/FISM funds.\textsuperscript{134} We include the municipally allocated public works spending (Local Public Works Budget or \textit{lworks}), measured as the logged average per-capita allocation from 1989 to 2000.\textsuperscript{135}

Hence, the reduced form of our estimations have the following specification:

\[
\Delta \text{Index}_{1990-2000} = \alpha_1 \text{Pronasol (Instrumented)}_{1989-1994} + \\
\alpha_2 \text{FISM (Simulated Instrumented)}_{1996-2000} + \\
\beta_1 \text{Local democracy (Instrumented)}_{2000} + \\
\gamma_1 \Delta \text{Religious Fractionalization}_{1990-2000} + \\
\gamma_2 \Delta \text{Indigenous Population}_{1990-2000} + \\
\gamma_3 \Delta \text{Bilingual Population}_{1990-2000} + \\
\gamma_4 \Delta \text{Population}_{1990-2000} + \\
\gamma_5 \Delta \text{Poverty Headcount}_{1990-2000} + \\
\gamma_6 \Delta \text{Illiteracy}_{1990-2000} + \\
\gamma_7 \Delta \text{Local Public Works Budget}_{1989-2000} + \varepsilon
\]

\textbf{7.4. Results}

\textsuperscript{134} Public works expenditure by municipalities amounted to around 27 percent of Pronasol funds.\textsuperscript{135} 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 an extremely small but statistically significant effect, so we decided not to include it in the current specification.
We now proceed to discuss the main findings. The results of the instrumental variable (IV) regressions are presented in Table 7.1. All models have robust standard errors. The first column is a naïve regression without instrumenting for the endogenous explanatory variables, namely Pronasol and alternation of political power at the municipal level. Both variables show positive and statistically significant effects. Our simulated instrumental variable for FISM and local public works budget also impacts the provision of public goods in positive and statistically significant ways. Once we instrument for Pronasol, however (column 2), the effect of the clientelistic program becomes negative, although the coefficient is not statistically significant. In columns 3 and 4 we instrument for alternation of political power in office without instrumenting for Pronasol. The effect of alternation of political power is positive and statistically significant in both of these models. Note that the magnitude of the effect for alternation of political power increases when we instrument for this variable. The last column instruments Pronasol and alternation of political power in office simultaneously. The results of this last model can be summarized as follows: FISM has a positive and strong effect on improvements in public goods coverage, whereas Pronasol has positive but statistically insignificant effects on a municipality’s delivery of public goods. Alternation of political power in office is a strong predictor of improvements in public goods.

[Insert figure 7.1 around here]

A potential objection that may be raised to this findings is that our measure of democracy is too minimalist, in the sense that it takes alternation in office as a litmus test of democratic practice, without incorporating much of the nuance and qualifications that emerge from richer definitions of democracy. In order to assess the robustness of this
finding, table 7.2 presents models using our alternative specifications of local electoral democracy. As in the last column of Table 7.1, we instrument for Pronasol and electoral democracy simultaneously. The table shows that both the index of democracy and number of years since the first alternation of political power in office exhibit positive and statistically significant effects on public goods coverage. Hence democracy seems to be an important determinant of public goods provision when we measure it as a graduated variable that incorporates several indicators, or when we measure its consolidation. Our dummy variable for margin of victory of less than 10 percent shows a positive, although statistically insignificant effect. This may be due to the fact that the margin of victory, while probably reflecting contestability in electoral markets, may be driven by election or candidate specific conditions that are not truly reflective of the overall quality of democracy. Pronasol has no significant effects on the first two models, while FISM shows robust positive effects in all models. Overall, our results thus suggest that the decentralized, formula-based program, FISM, had strong and robust positive effects on municipal-level public service delivery. Local electoral democracy also exhibits consistently strong effects on our dependent variable. By contrast, the centralized/discretionary program, Pronasol, exhibits mixed effects at best.

[Insert figure 7.2 around here]

7.4 Quantile IV regressions

The challenges of providing public goods, such as water, sanitation and
electricity, in highly marginalized municipalities are likely to be very different than expanding coverage in rich municipalities. Highly marginalized municipalities tend to exhibit faster improvements in public good coverage than rich municipalities. The notion of convergence implies that it is easier to improve public services in places where there is virtually no provision than to expand to 100 percent coverage. Furthermore, the process through which poor municipalities improve public goods coverage might be quite different from that in richer municipalities.

To explore the presence of this heterogeneity in our data, below we perform quantile regressions. Quantile regression allows us to parse the range in the distribution of the dependent variable in which the effects of the independent variables are present. OLS remains more the most efficient unbiased estimator when the conditional distribution is normal. But when there is strong heteroskedasticity and we suspect some non-linear effects, the versatility of the quantile regression is that allows us to estimate not just the median, but the effects of spending on the various quantiles of the full distribution of municipalities (q20, q40, q60 and q80). Instead of minimizing the sum of squared terms as in OLS, we find the Least Absolute Deviations with respect to any cutoff point. The quantile regression is also more resistant to outliers. Deaton (1997) explains the advantage of quantile regressions:

Quantile regressions are not just useful for discovering heteroskedasticity. By calculating regressions for different quantiles, it is possible to explore the shape of the conditional distribution, something that is often of interest in its own right (p.82).

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136 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 around 11 years for water and 9 years for electricity.
Although quantile regression provides a more complete picture than OLS regression, we have to be careful in its interpretation. As noted by Angrist and Pischke (2009), we are able to learn about the characteristics of the distribution, not necessarily individuals. Although we may find that a certain treatment (for example, democracy) may have an positive effect in the provision of public goods for the lowest quintile of the distribution, that does not mean that the least municipalities least provided are necessarily better provided when they have democracy. The estimation only tells us that a regime with democracy yields improvements at that end of the distribution. Quantile regression will allow us to estimate differential effects for our covariates in municipalities that exhibit large improvement (normally the poorest) and in municipalities that exhibit smaller improvements (which tend to be richer).\textsuperscript{137}

Table 7.3 studies the differential effect of the two anti-poverty programs and democracy on public goods provision. Our two endogenous variables are instrumented as in the previous models.\textsuperscript{138} The results of the quantile regressions provide interesting insights. FISM shows positive and strong effects on improvements in local public goods provision in all but the highest quantile (q.8). FISM’s impact increases for lower quantiles, suggesting that federal transfers for social infrastructure are better able to shape improvements in public goods provision at the lower end of the distribution. Interestingly, the opposite is true for Pronasol. There, the quantile regression shows that the discretionary poverty-relief program was able to impact large improvements in public

\textsuperscript{137} 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.

\textsuperscript{138} This instrumentation means that our IV quantile regression is analogous to the QTE estimator discussed in Angrist and Pischke, 2009.
goods coverage, yet had no effect on improvements in public goods in the lowest quantiles.

[Table 7.3 about here]

FISM performs much better than the decentralized decisions of mayors with respect to their own budgets. This could be the 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.\(^{139}\)

With respect to the index of electoral democracy, the results of the quantile regression show that democracy makes a larger positive impact on the highest quantiles (.6 and .8). We also run the quantile regression instrumenting for alternation of political party, employing alpha, rainfall and longitude. The results confirm the positive and strong effects of democracy on improvements in public goods coverage in the highest quantile (q.8).

To sum up, we find that the highly decentralized and discretionary Pronasol program was mixed in its improvement of public goods provision. With the exception of the largest quantile (q.8) where Pronasol is almost as strong as FISM, the effect of the decentralized, formula-based program is always significantly stronger than the effect of the discretionary, centralized one. Hence, the transition toward a formula-based program seems to have been welfare enhancing. The emergence of electoral democracy at the municipal level is also a significant factor accounting for improvements in public goods

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\(^{139}\) 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.
during that decade. The next chapter turns its attention to whether the effects observed in public good provision actually impacted wellbeing, based on an analysis of infant mortality rates.
Chapter 8

Saving Lives: Social Programs and Infant Mortality Rates

Whether the citizen lives or dies is not a concern of the state. What matters to the state and its records is whether the citizen is alive or dead.

J.M. Coetzee

8.1. Introduction

At the onset of the Zapatista rebellion in 1994, Subcomandante Marcos denounced the tragic fate of indigenous women and men who powerlessly witnessed their children dying from basic diarrhea and parasites due to a lack of clean water and antibiotics. The Chiapas uprising was a great surprise to many because it took place in the era of massive efforts at poverty alleviation under Pronasol. It is ironic to note that the hospital constructed with Pronasol money during those years in the town of Guadalupe Tepeyac became one of the headquarters of the Zapatista rebellion, and served as a hostage prison for such high-level abductees as the former governor of Chiapas. According to most accounts, the state-of-the-art facilities in the hospital never became functional for lack of staff and medicine.

More than 15 years after the Zapatista rebellion, infant mortality rates among indigenous people in Chiapas today are as high as 75 per 1,000. According to the Health Ministry, in 2007 there was less than one doctor per 1,000 inhabitants in Chiapas, the lowest rate in the country, and nearly 25 percent of the population, mostly indigenous, had no access to any health service. In Guerrero the situation is no less depressing. Most
of the indigenous population in that state lives in a mountainous region, which has only one hospital to service more than 300,000 people spread across 17 municipalities. There are only six community clinics offering basic services, and around 166 health units — primitive health centers with no doctors, medicine or, often, even nurses. The infant morality in the area is more than 80 per 1,000 live births, while the national average is 28.

Even when the rural poor can get to a clinic, doctors and nurses are often absent, and basic medication is unavailable. Located within Guerrero’s municipality of Metlatónoc, Mini Numa is the first community to ever sue the Mexican authorities before a federal court for denying basic health and to win an amparo injunction (similar to habeas corpus in the U.S.). The court’s ruling was unprecedented in Mexico as it affirmed that basic health is a fundamental right and that the state has an obligation to deliver it. The heroic judicial battle of the Mixtec community in Mini Numa began after six preventable deaths occurred in 2007, which a resulted from clinics being either too far away or non-operational. People living in the small village had to walk as far as two hours to get services; and upon arrival, they often found the clinic closed. The community asked the governor of Guerrero to build a health clinic, but this request was denied. The inhabitants of Mini Numa then built a health clinic themselves, only to have the authorities refuse to staff it. In 2008 the judge of one of the region’s district courts, Luis Almazán Barrera, ruled in favor of the community and three months later a doctor was finally sent to the community with medicines to begin providing basics health care. The judge’s sentence, however, has only been partially fulfilled, the Guerrero government has yet to build a new court-prescribed hospital in Metlatónoc.

Mini Numa’s battle is a sad illustration of the tragic consequences of extreme
Poverty is a multifaceted condition going beyond a lack of income. It can encompass precarious living standards, deficient health, malnutrition and lack of access to public services, such as drinking water, electricity, sewerage, roads, education and health care. The children of the extreme poor often die of curable diseases, such as diarrhea, respiratory infections and other contagious diseases that barely affect the children of the non-poor. In this last chapter we ask about the welfare consequence of the Mexico’s anti-poverty measures by how they affect the life and death prospects of the most vulnerable population, namely infants. As in the previous chapter, our goal is to compare two radically different forms of anti-poverty policies — the clientelistic program Pronasol and the entitlement-based program Progresa/Oportunidades — in their efficacy at preventing infant deaths in Mexico’s poorest communities. We also seek to assess whether democracy and electoral accountability plays a role in reducing infant mortality.

Despite the dismal statistics still present among indigenous people in Mexico, infant mortality rates have been declining for the last three decades after the country embraced UNICEF's GOBI initiative (Growth monitoring, Oral rehydration, Breastfeeding and Immunization), and the child-survival revolution. Although mortality remains unacceptably high, there have been substantial improvements between 1990 and 2000, particularly in the poorest states. Our goal in this chapter is to assess the extent to which the various anti-poverty policies contributed to this decline.

We seek to contribute to a vibrant debate within the political science literature on the effects of political regimes on infant mortality rates (IMR). Existing comparative literature focuses on the effect of democracy on saving lives (Przeworski, et al., 2000;
Navia and Zweifel, 2000; Zweifel and Navia, 2003; Ross, 2007; Gerring et al., 2006, Lake and Baum, 2001; Baum and Lake, 2003). The chapter departs from this literature in two main respects. First, rather than using cross-national data, we focus on subnational variation in IMR in a single country as it democratizes. Second, the chapter studies the effects of the design of public policies in the reduction of IMR. A general assumption among public health practitioners and scholars is that well-designed policy interventions contribute to the reduction of IMR (Sepulveda et al., 2006). There is some evidence in the literature, albeit contested, suggesting that democracies may be better at reducing IMR than autocracies. But few studies have been able to specify the channels and mechanisms through which political regime or democratic change may affect public health.

Our work compares the effects of three types of interventions that may save children lives: 1) improved provision of public goods, such as drinking water, sewerage and electricity; 2) conditional cash transfers (CCTs) targeted exclusively to women in poor households; and 3) discretionary transfers to individuals based on patron-client networks.

Anti-poverty polices can affect infant mortality directly or indirectly. Governments can provide public works that impact collective well-being through the provision of public goods. Social infrastructure programs such as FISM or Pronasol’s public goods programs might have an indirect effect on infant mortality through their impact on sanitation, the construction of health clinics and roads. Clientelistic programs such as Pronasol’s crédito a la palabra (a subsidized credit program) might have an indirect effect on infant mortality by increasing household’s income, allowing parents to
access otherwise unaffordable emergency transportation, health services and medicines. CCTs, for their part, might have both direct and indirect effects on infant health through three channels. The first is an indirect income channel going through households’ increase in cash availability that facilitates access to health services and medicines. The second is the indirect channel of female empowerment in the household. The third is a more direct effect related to how the program conditions the cash transfer on taking infants and children to regular health visits and how it targets women with health education programs.

The chapter proceeds as follows. Section 8.2 briefly discusses the existing comparative literature on IMR and how this paper departs from the conventional approach in focusing on policy interventions rather than exclusively on regime type. Section 8.3 introduces the national trends of IMR in Mexico, discussing data-quality issues that emerge from shifting the focus from national indicators to measurement of IMR at the local level. The section calls for a better understanding of the processes of data collection and reporting in the use of off-the-shelf datasets, which characterize most cross-national research strategies. In particular, the section discusses problems of underreporting and excessive reliance on forecasting models in available IMR data in Mexico. Sections 8.4 and 8.5 estimate statistical models of changes in municipal IMR, exploring the effects of various poverty-relief interventions and local democratization, controlling for social, economic and demographic variables.

8.2. Comparative studies of IMR
There is an important debate within political science regarding the effect of political regimes on IMR. In their path-breaking study of democracy and development, Przeworski et al. (2000) found that democratic regimes generate a host of effects on the demographic behavior, fertility rates, spacing of children and their chances of survival. Controlling for regime-selection effects, democracies lead to lower population growth, higher life expectancies, fewer child deaths, and thus enhanced well-being. A crucial element in these findings is that the mechanism for improvement in human development is not simply a higher level of health spending by democracies. What democracies seem to do better than autocracies is empower women to make free choices about their own fertility and to enjoy higher relative wages.

Lake and Baum (2001) explore the effect of regime type on public health outcomes and public goods provision, finding that democracies are more likely to reduce IMR. Zweifel and Navia (2000, 2003) find similar effects, controlling for regime-selection bias. In their most recent work, they show that, beyond a direct positive effect of democracy in reducing IMR by around 5 percent, policy interventions purportedly aimed at reducing IMR, such as immunization rates, only generate positive effects in democracies. They argue that these findings are consistent with democracy being more likely to provide the public services that citizens actually want.\textsuperscript{140} All of these studies are based on cross-national comparisons using readily available official statistics.

\textsuperscript{140} Gerring, et al. (2006a) argue that, within democracies, there are some institutional characteristics (which they call centripetalism) that lead to greater improvements in human well-being. In particular, their statistical analysis suggests that centralized versus decentralized political systems; closed list proportional representation versus single member district electoral rules; and parliamentarism versus presidentialism, all lead to greater reductions in IMR.
Kudamatsu (2006) shows that democracy in Africa decreased IMR by an astonishing 18 deaths per 1,000.\textsuperscript{141} His analysis differs from previous work in that he uses individual-level data from the Demographic and Health Surveys (DHS). Individual-level data allow for an identification of the effect of democracy by comparing children born to the same mother under different political environments. The mechanisms underlying the findings are related to the improvement of health interventions leading to more medical attention at birth, breastfeeding and, in general, better health services.

Using historical data from the U.S., Miller (2007) found an effect of female enfranchisement upon the survival of children (an improvement ranging between 8 and 15 percent). This analysis is based on a careful reconstruction of IMR across the U.S., taking advantage of the differential timing of enfranchisement. In this account, the mechanism that explains the outcome is a shift in legislative behavior once women were given the right to vote, which is followed by sudden increases in local public health spending. This is one of the few studies providing an explicit link between IMR and political arrangements mediated by budgetary priorities and legislative behavior.

Ross (2007) has cast doubt on cross-national analyses of IMR, calling for a greater awareness of the problems of validity in available datasets. In particular, he shows that if the problem of missing data in autocracies with relatively good development performance is taken into account, the main findings in the literature tend to disappear. The econometric estimations he proposes include country fixed effects, to control for

\textsuperscript{141} This analysis uses the most reliable data, since it is based on the direct reconstruction of IMR at the individual level, based on the Demographic and Health Surveys (DHS). On data quality issues see the discussion in section 3 below.
likely omitted variable biases incurred in the prevailing work. Democracy seems to have no effect in reducing infant deaths.\textsuperscript{142}

Our working assumption is that all the anti-poverty programs we have analyzed should have indirect and direct effects on IMR. First, social infrastructure projects from \textit{Pronasol} and FISM affect IMR indirectly by improving access to drinking water, sanitation, electricity, roads and health clinics. The previous chapter modeled how each of these programs shaped improvements in public goods and showed that formula-based public goods transfers within FISM were more effective at targeting the poor than clientelistic pork-barreling projects within \textit{Pronasol}. Here we focus on understanding how improvements in public goods provision shaped reductions in the IMR at the municipal level. Second, we model the direct effect of \textit{Progresa} transfers and \textit{Pronasol}'s clientelistic allocations on IMR. Our assumption is that private transfers within each of these programs should shape IMR by increasing a family’s disposable income.

There is general agreement among the public health community that public policy interventions have contributed to the reduction of IMR. The trends in IMR in Mexico are temporarily preceded by important policy initiatives, including the widespread distribution of oral rehydration salts since 1984, efforts to extend universal vaccinations since the 1990s and the improvement of water quality within the chlorination program in 1992 (Sepúlveda \textit{et al.} 2006). But studies have failed to specify the channels and mechanisms through which policies affect outcomes: the link is plausibly posited, but untested. Statistical analyses of the determinants of IMR based on health surveys, which are prominent in the public health community, have failed to determine how important

\textsuperscript{142} However, Gerring \textit{et al.} (2006b) retort that democracy’s most important effect on IMR is cumulative, rather than immediate: the effect of democratic transitions in a given country is rather small, while the accumulated years of democracy seem to empower citizens and preserve lives.
the influence of specific policy interventions or political conditions might be relative to socioeconomic and physiological factors, because individual level databases often do not include many political, policy or social variables.

The only analysis explicitly exploring these issues in Mexico is the work by Tania Barham (2006) evaluating the impact of *Progresa* on IMR. In her carefully designed study, she shows that *Progresa* diminished infant deaths in rural areas, as reported in vital registration statistics, by around 11 percent (two deaths per 1,000 live births). This effect is found in the municipalities where the program was implemented at an early date, as compared to a control group of municipalities chosen for inclusion, but not treated. The statistical approach she uses takes advantage of the experimental setting of the temporal waves in the introduction of *Progresa*, in order to isolate the effect of treatment on otherwise identical rural communities.143

Barham (2006) finds a clear link between one poverty-relief program and the decline of child mortality. But what about the previous programs implemented under the umbrella of *Pronasol* from 1989 to 1994? Or the far reaching decentralized strategy for municipal provision of drinking water and sanitation since 1996? How have these strategies contributed to the reduction in IMR, compared to *Progresa/Oportunidades*? We answer these questions below.

**8.3. Issues in measuring IMR**

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143 The control group of localities was chosen by the program as deserving to become recipients, but their incorporation into the program was delayed. Localities were incorporated in each phase through random assignment.
Infant deaths provide an undeniable indicator of well-being linked to development policy. Despite the deprivation of poor regions like Oaxaca, Guerrero, Hidalgo and Chiapas, IMR in Mexico overall have declined substantially in the last 25 years. These reductions coincided with important innovations in public health and the implementation of some of the poverty-relief strategies. Although statistical sources vary in their estimates, it is fair to say that IMR in Mexico went from around 50 deaths per 1,000 in 1980, to levels slightly above those found in developed countries (19 per 1,000 in 2005). The same trend is observed in under-five mortality (Sepúlveda et. al, 2007).

Still, failures in government policies and the overall social environment in which poor children live are a key determinants of IMR. One of the early studies on poverty in Mexico concluded that 43 percent of deaths in 1974 were preventable (Coplamar, 1981), in the sense that timely health interventions would have provided the care needed to save their lives. Despite great strides in public health in the intervening years, the percentage of preventable deaths has barely changed. The Health Ministry estimated preventable deaths to be at around 38 percent during 2000-2004 (Secretaría de Salud, 2006). For the specific case of infants, the Health Ministry calculates the percentage of preventable deaths in the recent years at around 80 percent. Most infant mortality is related to common infectious diseases, which are preventable with simple medical interventions if appropriate care is available.

The reduction in IMR in Mexico is part of a worldwide phenomenon, and a clear continuation of downward trends observed throughout the century (Roberts, 1973; Bobadilla and Langer, 1990). Mexico is usually considered a success story because it is one of only seven developing countries on track to meeting Millennium Development
Goal number 4: reduce the under-five mortality rate by two-thirds by 2015 (Bryce, et. al. 2006).\textsuperscript{144} Notwithstanding the national trend of declining IMR during the last decades, there is significant regional variation, which we further explore. Within Mexico, some regions have witnessed much sharper reductions in IMR than others.

To study the regional variation of IMR in Mexico, we first need to tackle an important problem related to the availability of data at the municipal level, which is our unit of analysis. The tragedy of child deaths often goes unnoticed — and therefore uncounted — by both government officials and the public at large. The main thrust of the Ross (2007) critique is that many countries without democracy have better outcomes in IMR, but are frequently not included in international health data due to inadequate reporting. Statistical analysis based on publicly available datasets lead to case-wise deletion of missing values, which can lead to dubious conclusions. Furthermore, with the exception of Kudamatsu’s (2006) use of individual-level survey data, the cross-sectional literature has often not been very conscious of the measurement issues that plague demographic studies of infant mortality. Specifically, the most widely used datasets on IMR from the World Health Organization (WHO), the United Nations Children’s Fund (UNICEF) and the World Bank involve a mix of official country data based on vital registration statistics, census information and survey data. We discuss the generic problems of measurement of IMR in cross-sectional data, and then proceed to illustrate those problems in the Mexican data.

The problem with using IMR data without understanding their provenance is that IMR estimates can differ according to the methods used to generate them. In particular, IMR statistics are plagued with two problems that determine their quality, namely the

\textsuperscript{144} Mexico is expected to reach 15 deaths per thousand by 2015 (comparable to US rates in the 1970s).
way in which they deal with underreporting and the technical choices made in forecasting models. Researchers need to be careful when understanding the advantages and disadvantages of the different methods employed to measure IMR and to be explicit about their reasons for choosing one data source over another.

The most comprehensive effort to deal with the issues of data quality and comparability in IMR across countries has arguably been done by UNICEF. Figure 1 shows the evolution of IMR in Mexico, according to UNICEF data. This estimation is the best fit of a combination of direct and indirect survey and census data. (In the case of Mexico, UNICEF does not use the official vital registration statistics in its estimations.) The graph also shows direct estimations of IMR using the reconstruction of birth cohorts reported in the two most widely used health surveys in the country: the internationally sponsored Demographic and Health Survey (DHS) performed in 1987 and the Encuesta Nacional de Dinámica Demográfica (ENADID) from 1997. The graph finally includes the evolution of infant deaths, according to the official vital statistics collected from the civil registry, as reported by the statistical office, Instituto Nacional de Estadística y Geografía (INEGI).

The first thing to note from the graph is that both UNICEF and the direct estimations in the surveys show much higher IMR than the vital registration data. The

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145 The methodology developed by Hill et al. (1996) to fit the best curves to the available information has become the standard for official estimations of international IMR made by the Inter Agency Group for Mortality Estimation, which includes the World Bank, UNICEF, WHO and the UN Population Division. UNSD. Those estimates are calculated for the purpose of benchmarking progress towards the Millennium Development Goals.
gap between the sources is in the range of around 20 deaths per 1,000. This means that, given the general decline of IMR over the years in Mexico, underreported deaths in vital statistics are increasingly a more important problem as a percentage of the actual infant deaths, defying the downward trend. Increases in IMR calculated through vital statistics could represent efforts by public officials to improve the registration of children. But they might also signal periods in which the reduction of infant deaths in fact stagnated (in the early 1970s and late 1980s).

There is an obvious challenge in using vital statistics data as an indicator of IMR, particularly since the poorest localities are the least likely to register births or deaths. Furthermore, according to INEGI, around 40 percent of births in Mexico are registered after a child is more than one year old. Hence, calculating infant deaths from vital registries is not very reliable. One of the limitations of the Barham (2006) study on the effects of Progresa on IMR is that it employs vital statistics.  

INEGI has generated IMR calculations based on demographic indirect estimation models, in which the difference in the age structure between censuses is used to infer the missing individuals in various age cohorts. This is probably the best data available because it is available at a low level of disaggregation, is based on relatively reliable census data reporting deaths and births by mother cohort, has no interpolation or extrapolation, and each year was calculated through independent models of fertility patterns. The IMR calculated by INEGI at the municipal level has an average value of

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146 To use vital statistics we need to assume that the quality of the records remained constant over time or that it varies in the same manner in all places under study. This might be reasonable in a short time frame, but is clearly not a tenable position for longer periods.
47.5 in 1990 and 34.6 in 2000.\textsuperscript{147} The level of those indicators and the decline over the
decade are consistent with the calculations of IMR obtained from health surveys, such as
the ENADID. If we accept the INEGI estimations, the municipal vital registration data
are largely underreported. In the average municipality only 39.8 percent of the infant
death ratios are registered; and in the bottom quartile of the municipalities only one
quarter of the ratios between deaths and births are ever registered.\textsuperscript{148}

8.4. The determinants of IMR decline

In order to explore the determinants of the performance of municipalities in
children’s health, and in particular, the role of anti-poverty policies in the reduction of
IMR, we estimate a statistical model in first differences. The dependent variable is the
change in municipal IMR between 1990 and 2000. The estimates use the indirect
estimation based on the retrospective reconstruction of births and deaths according to
census data, as calculated by INEGI. The model includes improvements in public goods,
a set of variables measuring anti-poverty policies, the municipal change of political
regime, changes in female illiteracy as a proxy of the capabilities of mothers, changes in
the availability of doctors delivering babies, shifts in the quality of birth registration,
demographic change and shifts in poverty profiles as independent variables.

\[ \Delta \text{IMR}_{1990-2000} = \alpha_1 \text{Pronasol Spending}_{1989-1994} + \]

\textsuperscript{147} The change in IMR across Mexican municipalities over the 10-year census interval does not exhibit a
simple pattern of North-South divide, but rather that there is substantial variation across municipalities
within any given state. This suggests that state level analyses are probably not particularly reliable for
understanding the determinants of IMR (for a statistical analysis at the state level using survey data see
Lozano et al, 2006).

\textsuperscript{148} The underreporting is correlated negatively with the level of development, but the correlation is not
strong enough that we can use the level of development as a proxy for the correction factor that should be
used to adjust vital registration.
\[ \alpha_2 \text{ Progresa Coverage} \quad 1997-2000 + \\
\beta_1 \text{ Democracy (Instrumented)} \quad 1990-2000 + \\
\gamma_1 \Delta \text{ Public Goods} \quad 1990-2000 + \\
\gamma_2 \Delta \text{ Female illiteracy Rates} \quad 1990-2000 + \\
\gamma_3 \Delta \text{ Doctor Deliveries} \quad 19990-2000 + \\
\gamma_4 \Delta \text{ Delay in Registration} \quad 1990-2000 + \\
\gamma_5 \Delta \text{ Population} \quad 1990-2000 + \\
\gamma_6 \Delta \text{ Poverty} \quad 1990-2000 + \varepsilon \\
\]

It is important to note that municipalities with large improvements are scattered throughout the country. The places that have improved infant well-being the most seem to cluster around the Huasteca region, the Sierra of Puebla and Chiapas. The coastal municipalities and most of the municipalities in the north have witnessed only small improvements over the decade. A Moran test for spatial autocorrelation found no systematic spatial patterns in the declines of IMR being diffused across neighboring municipalities, so no spatial correction is made in the estimations.

The independent variables are operationalized in the following way. Three variables measure anti-poverty policies. The first one is the coverage of Progresa by the end of 2000. Since Progresa transferred cash and nutritional supplements while requiring medical checkups for children, IMR should decline as a consequence of greater coverage, which would be indicated by a negative sign. Mothers benefiting from Progresa take their children in for regular physical exams and vaccinations, where they also receive information on breastfeeding, oral re-hydration therapy and basic hygiene.

Given that Progresa was allocated according to a system of targeting at locality and household levels, it is important to control for the poverty profile of municipalities so that this indicator reflects the effect of the intensity of Progresa participation, given a certain poverty level, rather than the correlation between the geographic spread of
We also include the prevalence of clientelism in each municipality, as measured by the per-capita private goods provision targeted to individuals in a patron-client relationship and allocated through Pronasol. This variable might have an effect on IMR (a negative sign) if clientelism produced an income effect among poor households. Given that these transfers were not conditional on health interventions, but rather on political behavior, the relative effect should be smaller than the one observed for conditional cash transfers. Because omitted variables that are likely to drive clientelism might also be correlated with infant mortality, we instrument expenditures using the two main political variables that strongly influenced allocations (alpha and erosion). The data used to calculate alpha (a measure of PRI core support) and erosion (a measure of PRI de-alignment) are electoral returns from 1970 until 1988. Electoral behavior during these decades is orthogonal to changes in IMR between 1990 and 2000.

The third policy variable is the change in the index of public goods provision of water, sewerage and electricity used in chapter 7, as an indicator of the improvements in local public goods. This variable reflects infrastructural investments under Pronasol and later, through the decentralization of funds in FISM after 1996. As demonstrated in the previous chapter, local public goods provision only improved slightly through Pronasol expenditure, whereas decentralized funds in FISM were much more effective in their goal of service delivery. We expect this variable to show a negative sign, since greater coverage of public goods should be associated with better sanitation, and, consequently, lower IMR.  

We also ran regressions disaggregating the components of the index — changes in water, sanitation and electricity. We also tested for the inclusion of a variable measuring the per-capita expenditures in regional...
To measure democratic practices at the municipal level, we follow an approach similar to the previous chapter, where we used alternative specifications for electoral democracy. The analysis poses a problem of econometric identification, which we address following the approach used in chapter 7.

As an indicator of capabilities and the empowerment of women, we include the change in the share of illiteracy according to the 1990 and 2000 censuses. We expect this variable to impact IMR because more literate parents means greater empowerment (especially among mothers) and increases a household’s ability to intervene to save a child’s life.

We include two indicators of state capacity from vital statistics. The first is the change in the share of babies delivered by doctors in each municipality.\footnote{We have information on the availability of nurses in the public health system, the location of the 11,551 hospitals and clinics previously run by the Health Ministry, now decentralized to the states, and the population with no access to the social security system (IMSS and ISSSTE). We also collected data on doctors and the number of beds and doctor’s offices. Unfortunately we only have this information at the end of the period of study, which precludes their use in first differences. We were unable to obtain municipal level information of the expansion of IMSS-Solidaridad (called IMSS-Coplamar in the 1980s, and now IMSS-Oportunidades), which used the infrastructure and funds of the social security institute to cover population in some of the poorest areas of the country. Specific public health interventions, such as the introduction of rehydration therapy or the water chlorination program of 1992 might have contributed to reducing children deaths at low costs during those years. Unfortunately we could not locate a data source for any of these interventions. Of all these variables, nurses and social security access turned out to be correlated with IMR declines, but this is probably only a reflection of their underlying correlation with poverty profiles.} The second is the change in the average delay of registering children after they are born. The lower the state capacity, the more we expect families to delay registering their children. These state capacity indicators should show a positive sign.
As a measure of poverty, we include changes in the percentage of the population living below two minimum wages (using one minimum wages makes no difference in the results). Widespread poverty limits the choices and capabilities of mothers and families, so we expect a positive sign in this level variable, indicating a greater difficulty in reducing IMR where poverty is more prevalent.

[Insert Table 8.1 around here]

Table 8.1 shows the results of our IV-regressions. The first column reports the results of a simple regression that does not instrument for clientelism and electoral democracy. Model 2 instruments for clientelism, model 3 for electoral democracy and model 4 for both variables simultaneously.

The main findings can be summarized as follows: the conditional cash transfer program of Progresa always keeps a strong and statistical significant effect. Clientelism appears to increase IMR when it is not instrumented in the first model; however, once we instrument for clientelism, the coefficient loses statistical significance and changes sign, suggesting that it had no discernible effects on reducing IMR. Improvements in local public goods (water, sanitation and electricity) have consistent negative effects, indicating that expansion in sanitation produces strong reductions in IMR. Democracy as reflected in municipal alternation shows a similar effect to that one found in the previous chapter. There seems to be some effect of greater accountability in health outcomes brought about by electoral contestation.151

151 Our variable of lack of state capacity measured as delay in registration has strong positive effects, suggesting that IMR is higher where the state has little reach. Surprisingly, health infrastructure as reflected in doctors delivering babies has no effect on reducing IMR. The sociodemographic variables all have predictable effects on IMR. Illiteracy strongly impacts IMR, while parental education seems to consistently
Table 8.2 estimates similar models using various specifications for electoral democracy. As in the last column of Table 8.1, the models in Table 8.2 instruments for clientelism and electoral democracy simultaneously. A clear pattern emerges from the data suggesting that only alternation of political power at the municipal level makes a difference in health outcomes for the poor, rather than overall levels of electoral competitiveness. The number of years since a municipality first experienced alternation of political power and alternation in the period 1990-2000 (reported in the previous table) have both negative and statistically significant effects on IMR. The index of democracy and close margins of victory do not seem to impact health, however.

[Insert table 8.2 around here]

8.5 Quantile regressions

The challenge of improving infant health in highly marginalized municipalities is likely to be different from reducing deaths in wealthier places. Because of convergence, highly marginalized municipalities tend to exhibit faster improvements in health than rich municipalities. To explore this heterogeneity in our data, we perform quantile regressions to estimate differential effects for our covariates in municipalities that exhibit large improvements (normally the poorest) and in municipalities that exhibit smaller improvements (which tend to be wealthier). Because of the way the data is coded, municipalities that exhibit the largest reductions in IMR are in the lowest quantiles.
Table 8.3 studies the differential effects of our main variables of interest on infant mortality. Our two endogenous variables are instrumented in the same manner as the previous models. The results of the quantile regressions provide interesting insights. *Progresa* shows a negative and consistent effect on IMR in all quantiles. Similarly, public goods coverage works to reduce IMR across the board. Clientelism impacts reductions in IMR only in the lowest quantile (q.2), suggesting that under some conditions the poor benefited form this form of political linkage. It should be emphasized that the effect of clientelism pales in comparison to *Progresa* and to actual improvements in public goods. *Pronasol*’s investments in hospitals also show some effects on reducing IMR but only in one quantile (q.6). And alternation is important, except in the lowest quintile.

8.6. Final remarks

When transferring funds to individuals based on their political loyalty becomes the overriding consideration in the design of social policies, the developmental goal of using social programs to help the poor is distorted. That does not necessarily mean that social policies are irrational or always wasteful. Public administrators tend to think that better management of personnel, better planning and oversight and improved mechanisms for controlling corruption are the best way to make sure that public policies can help the poor. Our analysis suggests, instead, that democracy and the empowerment of women are more promising solutions than seeking to reform governance by
administrative design.

Results in this chapter demonstrate that the creation of better-designed social policies targeted to poor women has had a decisive impact on development by saving the lives of children. New social programs such as FISM and Progresa that came as a result of stronger checks and balances, increased electoral competition and decentralization improved the provision of municipal public goods and allowed poor families greater access to health services.

Our results also demonstrate that there were some direct effects of local democracy on the reduction of IMR. Municipalities that experienced an alternation of power between political parties are better at preserving infants’ lives than municipalities that remained under the exclusive hegemonic control of the PRI.

Democracy does not necessarily lead to increases in funding for social programs or a greater budgetary priority for social expenditures, nor does it induce a normative consensus in society to address the plight of the poor. But the introduction of checks and balances brought about by democracy generated the possibility for a compromise among politicians, which led to a better architecture of social policies. The social policies chosen in Mexico combined elements of decentralized decision making for the municipalities, with centralized control by the federal government over the conditional cash transfer program. As the federal government allocated fewer funds to the goal of fighting poverty, compared to the largesse witnessed under Pronasol, it also shifted away from the expensive clientelistic strategies of vote buying in favor of a greater orientation

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152 This shift in strategies was not driven by an ideological change in the population at large demanding greater social solidarity or by the arrival of a leftist government with a redistributive policy agenda.
towards public goods provision and the empowerment of the most vulnerable citizens through *Progresa*.

There are some painful lessons for Mexico and its clientelistic past: thousands of children likely would have remained alive had the transformation of programs occurred a few years earlier. As mentioned in the introduction, Subcomandante Marcos was right in pointing out that children died from curable diseases and no one took notice. *Pronasol’s* claims about “putting an end to poverty” are assessed against a clearly defined metric: Was the program able to save the lives of the most vulnerable? Our results suggest that its effects were at best marginal; some poverty alleviation took place, but it was marginal compared to what better-designed poverty-relief policies achieved. You need only look to the mothers who lost their babies to preventable causes to see the cost of the PRI’s clientelistic approach to poverty relief.
Conclusion

C.1. A political transformation

Much has changed for the poor in Mexico during the last two decades. Not only have millions of families been lifted from extreme poverty, but despite serious lags in some of the most remote areas of the country, the poor unquestionably enjoy better sanitation and other public services. Resources and government action have been properly targeted to ensure that children remain in school -- although the dismal quality of basic education is still a cause of major concern -- and that they have access to regular visits to health clinics to monitor their growth and nutrition.

Although much still needs to happen to eradicate extreme poverty, the progress is real. According to official measures, more than fifty percent of Mexicans were extremely poor and could not even meet their basic nutritional and health needs in 1996. This percentage has dropped to under thirty percent, which although still unacceptable in a country that had the first social revolution of the 20th century, it represents a large improvement, particularly considering it took place in just over a decade.

This book has argued that what lies behind this progress in poverty reduction is a monumental political transformation. The country transited to democracy, which unquestionably empowered poor citizens. Winning votes became more important for the fate of politicians facing elections. But perhaps most crucially, by introducing veto players in the policy-making arena, the transition to democracy further contributed to better policy design: social policies have been purposefully designed to limit the ability of political parties to manipulate social transfers for electoral reasons, and have pushed bureaucrats to better target social transfers. Thanks to targeted anti-poverty programs,
an important reduction of government discretion and the consequent curbing of political clientelism, Mexico seems to be on a better track to become a deserving member of the OECD.

Since the founding of the Institutional Revolutionary Party (PRI) in the aftermath of the Mexican Revolution, many poverty reduction programs came and went, doing little to truly help the poor. The official party designed and implemented social programs with the overarching goal of sustaining its electoral hegemony. Anti-poverty transfers were deviated before they reached the poor, and when government resources did reach them, it was mostly around election time with little or no continuity from one presidential term to the next. The PRI targeted particularistic benefits —e.g., cash, food, medicines, construction materials, land titles, credit, washing machines, fertilizers -- to bring its core voters to the voting booths and keep them dependent on the state until the next elections.

Our book recounts how it was that Mexico began to combat poverty in an effective way and what it took for the political parties —the PRI and the new incumbent party, the National Action Party (PAN)— to tie their hands limiting their capacity to distort anti-poverty programs for political and electoral purposes. The book traces the major political transformation that was necessary for elected government officials and bureaucrats to serve the poor in Mexico’s emerging democracy.

Our research contributes to a growing literature on governance and the provision of public goods in the developing world. We demonstrated why, when and how clientelism distorts electoral incentives to provide public services that reach the poor. We also explicated how it is that societies can transit from this type of suboptimal equilibrium to one in which politicians deliver public goods and become more
accountable to the poor. In this conclusion we recapitulate our main theoretical contributions, summarize our main empirical results, and highlight avenues for future research.

C. 2. Clientelism and the distortion of poverty reduction

The preceding chapters offered a theory of clientelism and empirical evidence to support it through the analysis of original data on *Pronasol*, one of the largest and better-funded contemporary poverty alleviation programs in Latin America. Unlike much of the previous literature that generalizes conclusions about whether parties primordially target discretionary government benefits to core or swing voters, based on the study of programs that represent a small percentage of government investment, or from looking at campaign handouts through surveys, the program we study represented a huge percentage of the budget, encompassing most anti-poverty discretionary government action. The majority of the discretionary poverty relief programs at the time were brought under the *Pronasol* umbrella, which represented around 5 percent of GDP.

Our theory of clientelism departs from the assumption that the poor have weak ideological attachments, either because parties in developing countries have a hard time attracting voters through programmatic promises because of their inability to credibly commit to these, or because when voters are poor they do not value ideology as much as material inducements. Under these conditions, it is difficult for political parties to mobilize electoral support from the poor by taking positions on policy issues and instead need to buy off their votes.

When attempting to buy votes from the poor, political parties run a huge risk of
voter opportunism—that is, that the poor would take the money and walk away without delivering their votes. To solve this dilemma, political parties resort to the establishment of clientelistic relationships with their core base of support. A clientelistic relationship entails a personal and ongoing linkage between the party and its voters mediated through its network of brokers and activists. Party brokers employ their personal connections with voters to screen supporters from opponents so that access to the party’s spoils system is only given to those who are deserving due to their loyalty. The tragic brilliance of clientelism is that voters remain loyal to the party machine in part because of the benefits it distributes, and in part because of the threat of punishment. Clientelism entails a form of perverse accountability (Stokes, 2005).

Party brokers can tell who is who—who voted for the party in the past, who showed up for rallies, with whom do voters hang out, who wears the party’s t-shirts and caps, who paints party banners, etc. The thicker and better embedded the partisan networks, the more effective clientelism is as a form of electoral exchange because parties can target benefits to those who are loyal and punish those who are not.  

In terms of its distributive consequences, clientelism in our approach is fundamentally about delivering private benefits and favors to core voters, a behavior that swing voter models would find irrational. We emphasized various reasons why party machines follow a “core voter strategy.” First and foremost, in our view the poor’s partisan loyalties are fundamentally conditional, constructed through material inducements and favors. Conditional partisan loyalty means that if the machine fails to deliver on its commitment to give particularistic benefits to its core supporters, their

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153. Information about who is who in the communities can be inferred from past behavior and word-of-mouth without the need to necessarily violate the secrecy of the ballot.
loyalty to the party will erode. We hence depart from prior models of distributive politics, which rest on the assumption that a core voter’s ideological proximity to a party is exogenous and hence remains unaffected by the retrospective tally of the party’s past political behavior. We argue that core voters’ partisan loyalties cannot be modeled independently from welfare transfers without entertaining the peculiar notion that their votes are irrational and purely non-instrumental. This common assumption in the literature that a voter’s ideological commitment to a party is exogenous or unaffected by the history of redistribution, portrays the core voter as captive and willing to support its party, “no matter what.”

A second reason why machines follow a core voter strategy is to mitigate commitment problems, which inevitably arise when people’s votes need to be bought off. We argue that the party solves voter commitment problems by choosing to invest resources and giving favors to create voter loyalty rather than buying swing voters on the spot market. If a party honors this loyalty, the voter has no rational reason to behave opportunistically. Voter loyalty so constructed might also be accompanied by a moral sense of obligation, although notice that in our approach loyalty is essentially conditional: if the party fails to deliver benefits, loyalties will erode and core voters will begin to behave opportunistically - the way swing voters do.

A third reason why machines follow a core voter strategy rather than buying swing voters on the spot is that it is significantly cheaper to buy support of voters whom the brokers know well, than to buy the support of strangers. In following a core voter strategy, party elites will hence be able to capture more rents for themselves, which is another way of saying that machines can win elections without having to distribute as
many resources to the electorate as when they follow a swing voter strategy. Core strategies release party or government resources that can simply be appropriated in the form of corruption.

Hence, we view clientelism as a conditional and on-going relationship, often mediated through partisan brokers, wherein party elites deliver particularistic benefits to buy off core voter loyalty. The alternative --buying of votes on the spot market -- is subject to strong voter opportunism problems, is more costly, and risky.

Core constituencies do not always suffice to win elections, however. When electoral competition is vigorous, a party must cater to swing groups and, in the extreme, to opposition backers if it hopes to survive in office. This creates a dilemma for parties, caught between the need to construct and recreate core voter loyalty, on the one hand, and to deliver benefits to outsiders, which might alienate their core supporters, on the other. Our theoretical approach posits that one solution to this quandary is portfolio diversification. Politicians can maintain their core voters loyal by delivering particularistic transfers to them, while also mobilizing support from broader voter groups through the provision of public goods.

Our theory generated predictions that were put empirically to test with a systematic analysis of Pronasol’s vast operations. Our empirical models demonstrated that the poor, and particularly the extreme poor, did not benefit significantly from the anti-poverty program. First and foremost, we demonstrated that the PRI targeted disproportionately with particularistic benefits municipalities with a strong core base of support. This demonstrates that, at least in Mexico during the 1990s, clientelism favored a core voter strategy.
Second, our results demonstrate that there are different types of core voters and that politicians do not treat them all alike. The PRI targeted disproportionately core voters whose loyalty was eroding more rapidly with the passing of time. These voters had a credible exit option, and the PRI prevented their defection by favoring them over voters in more monopolistic places. Third, consistent with our theoretical claims, we demonstrated that the PRI diversified its portfolio of electoral investment, allocating more public goods relative to private transfers in municipalities where its core base was not enough to win elections. Hence, our results demonstrate that the highest investments of particularistic transfers happened in middle income and moderately competitive places, where the PRI perceived higher risks of losing the support of its core base. Public goods investments, for their part, went to highly competitive places where the PRI’s core base had already vanished below a threshold necessary to win elections. None of these investments reached the extreme poor.

*Pronasol* left poverty seriously unattended. Our theory emphasizes government discretion as a key explanatory variable accounting for the distortion of anti-poverty programs. As long as the PRI controlled the federal bureaucracies -- which meant that there was no real separation between party and state--, and as long as there remained ample formal discretion for government officials to operate social programs through the party’s clientelistic networks, poverty reduction would prove elusive.

There was a great deal of corruption in the implementation of *Pronasol*. Government officials at all levels of government —federal, state and municipal—deviated resources for personal gain because there was virtually no scrutiny as to how these resources were spent. Given the lack of transparency and accountability in *Pronasol’s*
operations, it is not at all surprising that such a massive amount of government resources meant to alleviate poverty ended in the wrong hands.

C.3. Restraining clientelism

To be self-sustaining, clientelistic linkages require voters’ complicity. Poor voters willingly become loyal to a clientelistic party machine because it gives them access to a stream of benefits and favors. The perverse nature of clientelism, we have emphasized, is that voters willingly sustain a system that is corrupt and that keeps them poor. The dilemma is one of coordination. Each voter acting alone has powerful reasons to remain loyal because, whoever defects will be excluded from the spoils system. Voters remain loyal in part because of the benefits and favors they receive, and in part because of the expectation of continuing to receive access to them into the future. If everyone reasons likewise, the party machine can be sustained in equilibrium.

To exit the system, the voter needs to know that many others like him will vote against the clientelistic machine, for otherwise she alone will bear the costs of defection. The equilibrium is perverse because everyone becomes an accomplice of the system even when it is collectively suboptimal.

This book argued that the impetus to restrain clientelism in Mexico first came from a voter rebellion against the system. The 1995-1996 Peso Crisis in Mexico served as a critical turning point that finally convinced voters to defect from the PRI. Massive voter defection, in turn, brought about a reshuffling in the workings of the institutional apparatus, fundamentally transforming presidential-legislative relations, the balance of power between the president and the PRI, and between the federal subnational
governments.

The dismantling of Pronasol and establishment of Progresa and FISM took place after the PRI suffered a major electoral debacle, losing for the first time its majority in the federal Chamber of Deputies in the mid-term elections of 1997. The creation of these programs represented a radical shift in social policy in terms of the targeting/universalism and discretionary/formula-driven scheme discussed in this book. The new poverty relief strategy dramatically reduced the federal government’s discretionary capacity to use social transfers in alignment with the ruling party’s electoral imperatives. For the first time, government resources would be distributed according to poverty formulas rather than the desires of the president and the PRI.

The Progresa - Oportunidades program became an example throughout the world of a Conditional Cash Transfer (CCT) program successfully operated at a large scale. It took advantage of the pre-existing infrastructure for the delivery of health and education services, that allowed almost every poor Mexican family to be at least a potential recipient of the transfer. The program was aimed at breaking the intergenerational transmission of poverty through the building up of basic capabilities. By carefully mapping poverty profiles, targeting only families that truly needed the transfer, enhancing the credibility and reputation of the policy design in the public arena through independent evaluations, and shielding its operation from electoral pressures, the program became not only the centerpiece of the federal government’s poverty alleviation strategy, but also a hugely popular social entitlement, preserved almost entirely intact, notwithstanding a transition to democracy in 2000 and turnover in the federal government in 2006. The conditionality element of the program empowered women to demand more
accountability from the nurses, doctors and teachers that were in charge of providing services and of verifying their compliance with the program requirements. And the monetary transfer itself, through its income effect, became an essential part of the story of how millions were lifted out of poverty.

On the other hand, the decentralization of federal programs for the construction of basic social infrastructure in favor of the municipalities led to the creation of a poverty formula transfer that has transformed the way municipalities carry out basic public works projects. The Fondo de Infraestructura Social Municipal (FISM) became a reliable source of federal money that was not conditioned by partisan alignments or political favors. By decentralizing the control over the selection and execution of water, sewerage and other local public goods projects the federal government gave the right incentives for mayors to be more attentive of citizen demands and a more effective use of these transfers. Corruption in public works, or at least some of the leakage in the flow of resources among levels of government, was also probably reduced. The distribution of funds favoring the poorest municipalities in each state could not be modified by governors, so resources flowed away from the capital cities to municipalities in the peripheries, where a higher social impact of spending could be achieved.

C.4. Why Conditional Cash Transfer (CCT) programs work

*Oportunidades* puts women at the center stage of poverty reduction. Making sure that the money arrives and stays in their hands, and that these resources are destined to improve children’s health, nutrition and education requires monumental organizational
and state capacity. *Oportunidades* funds are often a major source of monetary income for the extreme poor, and these resources are in constant threat of expropriation by those who interact on a regular basis with the women that receive them. Essential for the proper implementation of the CCT state officials on the ground must keep the program insulated from illegitimate capture by local caciques, power brokers, and political parties. State officials also need to be proximate to the everyday lives of poor women at the same time that they are restrained from abusing their power by proper oversight mechanisms.

Enrique Bentzul generously shared with one of us valuable insights about what it takes to operate *Oportunidades* on the ground and to keep the program independent from illegitimate political influence. Enrique was rightly described to us as an “icon of *Oportunidades* in Los Altos de Chiapas.” He was born in San Juan Chamula and is fluent in Tzotzil and Spanish. He began working for the program as enumerator in 1998 just after *Progresa* was created. In one of his first visits to a village in the municipality of San Juan Chamula, the community could not understand what the program’s officials were saying and Enrique decided to step forward to translate. Since then, he became more and more essential to facilitate the access of *Oportunidades* to the indigenous communities in Chiapas and the delivery of the program to the women and children.

The first state official with his ethnic background to ever have so much political authority in Chiapas, Enrique is now the Coordinator of Regional Support of *Oportunidades* in Los Altos de Chiapas. He is in charge of administering the program in 18 municipalities covering more than 100,000 families, mostly indigenous. Our conversations with him, and numerous visits to villages in Oaxaca and Chiapas have led us to understand that *Oportunidades* has become much more than a cash-transfer. It is a
A program that is fundamentally transforming the social structure in poor communities in Mexico.

“A program that puts women at the center stage necessarily causes a lot of trouble”, Enrique explains. “Take for example San Juan Chamula, where men have for years excluded, disrespected, and oppressed women and where powerful caciques have always ruled unchecked. Only if you are a man, a PRIista and a catholic you have some voice in Chamula, where everything is controlled by the caciques.” In such settings, Oportunidades has empowered women not only by putting cash in their hands. It further has played a fundamental role in transforming the social structure.

The program has created a female organizational network within each community. The women elect four spokespersons (“vocales”) amongst themselves that coordinate committees, one for education, health, nutrition, and security. The vocales are not paid to do this job and normally rotate every 2 to 3 years, which works to reduce incentives to be corrupted and perpetuated in their posts. Thanks in part to this organizational structure, women in these male-dominated communities can get together to discuss and participate in community activities. As part of the program’s conditionality, women are required to attend regular health and nutrition courses, which are valuable not only because of the information they provide but also because the courses give poor women the opportunity to socialize and gather to speak about their problems with other women in the community. Additionally, Oportunidades vocales also collect monetary contributions, which serve as a safety net for multiple purposes, including to help families when someone gets ill or to pay for transportation to the health clinic.
These women’s networks, we believe, can sometimes be used as a base for political action to confront abuses of power: husbands who might want to take the money from their wives to go drinking to the cantina; health providers and school teachers who might seek to extort mothers; or local caciques and power brokers who might want to capture Oportunidades for their own political benefit. To effectively implement Oportunidades state officials need to constantly negotiate on behalf of women. “This is a very complicated region”, Enrique tells us. “My job basically consists of solving conflicts.”

The following generic forms of conflicts are fairly commonly. First are intra-family conflicts—most commonly husbands taking the money from their wives and/or physically abusing them. Because battered women normally are afraid to denounce, often the only way to spot intra-family violence is through word of mouth. This is one way in which the women’s networks described above can often play a critical role. When it becomes common knowledge that a husband is abusing his wife and diverting the program’s money away from the children, Oportunidades officials can intervene. They normally threaten to remove the benefits from the family if the husband continues to abuse and take the money from the wife and, in extreme cases, to take the conflict to the Courts.

A second form of conflict involves extortion by teachers and health providers. Oportunidades has transferred a great deal of power to health providers and teachers. These individuals are in charge of certifying whether beneficiaries meet the program’s behavioral conditions and hence have a lot of power, that of determining who stays in the program and who is withdrawn. The most typical abuses involve extortion, although
other more serious crimes such as sexual violence are not uncommon. These common abuses by health providers and teachers are difficult to detect because women are often reluctant to openly denounce them due to fear of retaliation. But Enrique tells us that many abuses eventually get detected, either thanks to the “complaints box” (buzón the quejas) or anonymous telephone lines or through word of mouth.

A third generic type of conflict we identified involves political parties, their local brokers, or the local caciques trying to politicize the program, and this is particularly pronounced when national or local elections take place. As part as what is known as the “blindaje de programas sociales,” Oportunidades officials are not allowed to go to the field or enroll new beneficiaries three months prior to the elections, and this certainly helps. Preventing parties to politicize the program on the ground requires an optimal institutional design, and constant political oversight. Central to Oportunidades’ optimal implementation are that local operators are appointed, paid and promoted by the federal bureaucracy rather than local party brokers or governors; that they are under their constant superiors’ oversight; and that they do not directly control the money that is distributed in the communities.

As our results in this book demonstrate, the bureaucratic apparatus of Oportunidades works most of the time. Traveling through Southern Mexico has led us to understand that effective poverty relief requires state capacity. Oportunidades is present

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154 In one community in the municipality of Zinacantan, for example, the health provider was asking for bribes from women who were afraid of performing their Pap smear because they thought it could “sterilize” them. The health provider extorted women to give him money in exchange of falsely reporting that they had performed their Pap smear. Women who refused to give him money, he threatened, were going to get reported.

155 For example, in the municipality of Zinacantán, where the community is deeply divided along partisan line and there is “even a Church for each political party,” these have attempted to politicize the program by imposing parties onto Oportunidades’ structure – e.g., establishing four vocals per each party and having separate meetings and health clinics for beneficiaries according to which party they belong to.
in almost every village in Mexico. This state presence has made a huge difference for the lives of millions of women and children. Paradoxically, the PRI’s clientelistic apparatus also extended deep into rural Mexico but, in contrast to the bureaucratic structure of Oportunidades, it did not relieve poverty because it was designed to trap the poor in a web of dependence on the state, rather than to empower them.

C.5. When and how public goods reach the poor

The improvements witnessed in the coverage of local public goods are a critical part of the story of how municipal government in Mexico works today. By their nature of being public, these goods and services are less exclusive than clientelist transfers. Programs for the construction of infrastructure used to be highly centralized and subject to the discretion of the President or each state governor. Mayors gratefully accepted any funds or projects that would drip down to the municipal level, with the lion's share of attention going to the capital cities and other metropolitan areas. Centralization, that in the case of Oportunidades was a major virtue, became a major handicap for local governments that could not select their local priorities and engage in public investment projects that were attuned to the demands of poor citizens.

A major step in the right direction was the creation of the Fondo de Infraestructura Social Municipal (FISM) which combined targeting designed from the federal level to ensure that funds were made available to the poorest municipalities in steady flows that had never been witnessed before, while also giving mayors the capacity to decide for themselves how to use those resources. Released from the partisan considerations that characterized the allocation of investment funds in what may be
thought of as a typical dynamic of pork-barrel politics (although dominated by the president, the federal bureaucracies, and the governors, no the legislators), the investment in public works was translated into the delivery of water, sewerage, electricity and other services in a more efficient and inclusive manner.

Although the introduction of FISM has led to improvements, much remains to be done. More democratic places are probably more accountable, but the linkages between citizens and politicians in municipal governments in Mexico are still very imperfect. In particular, the institutional anomaly of the rule of non-reelection perverts accountability, because local politicians cannot be punished or rewarded for their performance in office. The municipal three year terms is so short that a typical complaint is that the first year a mayor devotes to learn how to do his or her job, the second year actually doing it, and the third year looking for their next appointment. Without reelection there are few incentives for building up programmatic reputations, and many observers have noted that corruption is more likely when there is complete certainty that one cannot continue in the job, even if performing well. The administrations of municipal government also have a dramatic turnaround every three years, even when mayors are elected from the same party.

The governance of municipal institutions does not lend itself to much citizen involvement either. Although in principle citizens may engage in planning exercises and participate and voice their views in town council meetings, in practice there is very little voter information regarding public decisions making and processes at the local level and very little oversight of municipal public servants.

Hence, although mayors have more money than ever they can autonomously use to provide public services and expand coverage of basic infrastructure, they do not have
the right incentives to think about the long-term impacts of investments in public goods on the wellbeing of their citizens. For example, even though expanding the provision of water is one of the main priorities of almost every mayor in poor Mexican municipalities, there are no incentives for their administrations to be very concerned regarding the long-term impact of clean water in public health. The mayor may be interested in generating a contract for a firm to expand the existing network of pipes around the town, but has little incentives to provide water systems to villages in the periphery or to ensure that existing systems are maintained and the quality of water is strictly enforced through the oversight of chlorination and frequent testing of the water supply.

In fact, our findings regarding the impact of social programs on Infant Mortality Rates (IMR) suggest that there is little that mayor can do to improve health outcomes. They may increase coverage of local public goods, but have no authority on the quality of federal and state health interventions; no budgetary or oversight authority over health clinics; and are explicitly excluded from the functioning of Oportunidades (in order to ensure the protection of the program from political manipulation, it is important to note). Our estimations suggest that the single most powerful intervention to save the lives of children was the incorporation of families into the conditional cash transfer program Progresa/Oportunidades, followed by the democratic quality of governance as reflected in the alternation in office.

C. 6. The future

What future awaits the millions of poor Mexicans that witnessed the transformation of social programs we study in this book? The question is not just about
whether we can expect sustained improvements in well-being for poor families in the coming years, but more fundamentally, about whether Mexican citizens have become empowered by the democratic process to demand high quality local public goods and social programs delivered as entitlements emerging from an underlying social pact, that seeks to promote a more equitable distribution of capabilities and life chances. Or is it possible that the country will revert to a system of political representation with weak accountability, in which voters are captured in a web of dependence, where they passively wait to receive transfers and benefits from corrupt governments that provide as little services as they can?

A critical element for the transformation of social policies to be permanent regards the role of women (and men) that have become used to expect better performance from state institutions. The conditionality of Oportunidades means that communities throughout the country have learned to demand teachers to show up at school, nurses and doctors to keep health clinics open during regular hours. The decentralization of social infrastructure funds to municipalities has empowered mayors to choose projects that resonate more clearly with the preferences of local dwellers, and many communities have learned to create mechanisms for the oversight of how transfers for public works are spent.

The success of CCT programs depends on the pre-existence of a large state apparatus that can provide the services that citizens demand. While Mexico can boast that virtually every corner of the country has a health clinic or a school available even for the poorest families, the public goods are of such low quality that drinking water provided in the new pipes is often not chlorinated or properly treated, and therefore produces diarrhea.
in young children. Doctor and nurse absenteeism makes poor patients think twice before venturing towards a remote health clinic if they believe that after spending precious pesos in transportation the personnel will not keep regular hours or have the stocks of medicine available.

In perhaps no other public service is the dismal performance of the Mexican social services more evident than in education. Even as public spending has been increased substantially, standardized testing suggests that children staying in school are not learning much that prepares them for the challenges of a globalized world where their skills will be critical to compete effectively. It is not clear whether improving the terminal efficiency of the schooling system, or increasing the overall years of education attainment has impacted the quality of the Mexican labor force. And in the particular case of the poorest households in isolated indigenous communities, their enjoyment of cash transfers, access to health services, and more schooling for their children has not broken the poverty trap they seem to be caught in. Poor rural municipalities in Mexico do not offer sufficient life chances to remain living in them, which explains the exodus of thousands of hard working men and women, who try to find a better future in the large cities or, if they are lucky, abroad. Thousands of those localities have become dependent on remittances as the basis of their local economies.

A critical question regarding the transformation of social policies in Mexico is then whether they are breaking the transmission of poverty across generations. We have shown that children were more likely to survive and therefore have greater chances to enjoy a more productive adult age thanks to the programs that the political transformation we have studied brought about. But are the children of Oportunidades, who have enjoyed
better public services, likely to have better life chances and wellbeing than their parents? The prospect for social mobility and improved livelihoods must be at the core of the final verdict of the success of these programs.

Unfortunately there is little evidence suggesting a significant change in social mobility. The evaluation of the long term effects of the social programs that have been in place over more than a decade is elusive, in part due to the inherent difficulties of scientific inference in which there are many confounding variables that may explain the changes in wellbeing, but also because, to be perfectly honest, the Mexican economy has underperformed, both compared to its historical record before the debt crisis, and in comparison with peer countries in Latin America.

In the last few years Mexico has been plagued by violence and a frontal challenge to the capacity of the state to provide basic public safety and liberty. Drug trafficking and other criminal organizations have terrorized vast areas of the country, while the federal, state and municipal police forces appear to be unable to counteract them. In the context of limited social mobility, ambitious and daring young men and women join the ranks of the criminal organizations and the business of producing, transporting and selling drugs aimed to the markets to the North. Other entrepreneurial Mexicans migrate to the US, given the scarce alternatives the country has afforded them.

Social policy might not be the golden pill that can cure all the ills of violence, displacement and a general decomposition of the social fabric. But there is no question that without an effective set of policies to eradicate poverty, once and for all, the temptation of engaging in illicit activities, or at least covering up for the criminal organizations is huge. The greatest hope for a better future has to come from social
programs that strengthen democratic accountability through the empowerment of poor citizens, that may be able to demand the quality of public services and entitlements they deserve.
### Figures and Tables

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<td>Progresa</td>
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Figure I.1 Types of Anti-Poverty Programs
Table 1.1 Evolution of Poverty in Mexico (Percent individuals below poverty line)

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<td>(2.0)</td>
<td>(1.8)</td>
<td>(1.3)</td>
<td>(1.5)</td>
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<td>10.7</td>
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<td>(1.0)</td>
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Figure 1.1 The Map of Policy Instruments
Table 1.2: Programs in the Programa Nacional de Solidaridad (Pronasol).

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<th>1. Programs for social family welfare (beneficio social familiar)</th>
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<td>1.1 Health</td>
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<td>1.1.1 Programa IMSS-Solidaridad</td>
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<td>1.1.3 Hospital digno</td>
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<td>1.2 Education Infrastructure</td>
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<td>1.2.1 Escuela digna</td>
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<td>1.2.2 Niños en solidaridad</td>
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<td>1.2.3 Escuela en solidaridad</td>
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<td>1.2.4 Maestros jubilados</td>
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<td>1.2.5 Apoyo al servicio social</td>
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<tr>
<td>2.1 Urban development</td>
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<td>2.1.1 Agua potable y alcantarillado</td>
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<tr>
<td>2.1.2 Electrificación</td>
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<td>2.1.3 Urbanización</td>
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<td>2.1.4 Espacios deportivos</td>
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<td>2.1.5 Proyectos ecológicos</td>
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<td>2.1.6 Vivienda</td>
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<td>2.1.7 Regularización de la tenencia del suelo</td>
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<td>2.1.8 Alimento y abasto</td>
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<td>2.2 Road construction.</td>
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<td>Programa nacional de solidaridad en la infraestructura carretera y de caminos rurales</td>
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<td>3.1.1 Correos y telégrafos</td>
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<td>3.1.4 Jornaleros agrícolas migrantes</td>
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<td>3.1.5 Mujeres en solidaridad</td>
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<th>4. Productive programs (productivos)</th>
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<th>5. Program with territorial reach (de alcance territorial)</th>
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<td>5.1 Fondos municipales</td>
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<td>5.2 Programas de desarrollo regional</td>
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Table 1.3 Classification of Pronasol Expenditure by Type of Good, According to the Unit of Measure Reported for Each Project.

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<tr>
<th>Program Name</th>
<th>Private or Club Good</th>
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<td>Milk, Market, Slaughterhouse, Work</td>
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<td>Community Hospital</td>
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<tr>
<td>PRODUCTIVE ECOLOGY ECOLOGIA PRODUCTIVA)</td>
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<td>Colony, Work, Well, System</td>
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<td>PRODUCTION FUNDS (FONDOS DE SOLIDARIDAD PARA LA PRODUCCION)</td>
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<td>Hospital</td>
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<td>Clinic</td>
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<td>Group, Apiary, Wood mill, Warehouse, Dam (Bordo), Cattle, Cattle/year, Canal, Center, Collector, Hatchlings, Packing, Equipment, Establishment, Stable, Pond, Factory, Hectare, Vegetable Garden, Research, Kilometers, Lot, Luminaries, Meters2, Meters3, Mine, Mill, Work, Plant, Plant/year, Well, Processor, Terrace, Ton, Ton/year, Ton/catch, Unit, Vehicle, Nursery</td>
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<td>Team</td>
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<td>URBANIZATION (URBANIZACION)</td>
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<td>HOUSING (VIVIENDA)</td>
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<td>DRINKING WATER (AGUA POTABLE)</td>
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Number of beneficiary families of OPORTUNIDADES

Figure 1.2 Beneficiary Families of Progresa / Oportunidades
Figure 1.3. Federal resource Transfers 1960-2006

Source: Diaz-Cayeros, Estevez and Magaloni (2006)
Figure 2.1 Poverty and Social Program Spending
Figure 2.2

Percentage population living under nutritional poverty line (CONEVAL) 2002
Table 2.1 Geographic Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Reference</th>
<th>Mean</th>
<th>S.D.</th>
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<th>Max</th>
<th>Source</th>
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<td>North (km)</td>
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<td>Rivers (number)</td>
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<td>Land Area (km$^2$)</td>
<td>Municipality</td>
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<td>Population (Log)</td>
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<td>1.41</td>
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<td>Density (Inhabitants / km$^2$)</td>
<td>Municipality</td>
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<td>639.9</td>
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<td>Distance to Mexico City (km)</td>
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<td>Access to Main Road (km)</td>
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<td>Poverty Headcount w/ Natural Geography</td>
<td>Poverty Headcount w/ Human Geography</td>
<td>Marginality Index w/ Natural Geography</td>
<td>Marginality Index w/ Human Geography</td>
<td>HDI w/ Natural Geography</td>
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<td>0.174</td>
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<td></td>
<td>(0.054)**</td>
<td>(0.043)**</td>
<td>(0.057)**</td>
<td>(0.048)*</td>
<td>(0.062)*</td>
<td>(0.054)</td>
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<td>North</td>
<td>-0.963</td>
<td>-0.706</td>
<td>-0.97</td>
<td>-0.755</td>
<td>1.001</td>
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<td>(Km/1000)</td>
<td>(0.069)**</td>
<td>(0.070)**</td>
<td>(0.069)**</td>
<td>(0.071)**</td>
<td>(0.071)**</td>
<td>(0.072)**</td>
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<td>East</td>
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<td>0.444</td>
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<td>(Km/1000)</td>
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<td>(0.051)**</td>
<td>(0.055)**</td>
<td>(0.053)**</td>
<td>(0.054)**</td>
<td>(0.054)**</td>
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<td>Temperature</td>
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<td>0.005</td>
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<td>(°C)</td>
<td>(0.003)**</td>
<td>(0.002)</td>
<td>(0.003)**</td>
<td>(0.003)*</td>
<td>(0.003)**</td>
<td>(0.003)</td>
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<td>0.963</td>
<td>0.997</td>
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<td>-0.851</td>
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<td>(Meters)</td>
<td>(0.100)**</td>
<td>(0.081)**</td>
<td>(0.099)**</td>
<td>(0.085)**</td>
<td>(0.099)**</td>
<td>(0.084)**</td>
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<td>Coastline</td>
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<td>-0.643</td>
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<td>(1= coast/border)</td>
<td>(0.073)**</td>
<td>(0.070)**</td>
<td>(0.074)**</td>
<td>(0.071)**</td>
<td>(0.070)**</td>
<td>(0.070)**</td>
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<td>Rugged Terrain</td>
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<td>0.998</td>
<td>0.642</td>
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<td>(st. dev. Km)</td>
<td>(0.377)*</td>
<td>(0.292)*</td>
<td>(0.390)*</td>
<td>(0.291)*</td>
<td>(0.323)*</td>
<td>(0.249)</td>
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<td>(km)</td>
<td>(0.375)*</td>
<td>(0.291)</td>
<td>(0.388)**</td>
<td>(0.291)*</td>
<td>(0.322)*</td>
<td>(0.249)</td>
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<td>0.002</td>
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<tr>
<td>(Km)</td>
<td>(0.000)**</td>
<td>(0.001)**</td>
<td>(0.001)**</td>
<td>(0.001)**</td>
<td>(0.000)**</td>
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<td>Distance Rail</td>
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<td>0.004</td>
<td>0.004</td>
<td>-0.005</td>
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<tr>
<td>(km)</td>
<td>(0.001)**</td>
<td>(0.001)**</td>
<td>(0.001)**</td>
<td>(0.001)**</td>
<td>(0.000)**</td>
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<td>Distance Road</td>
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<tr>
<td>(km)</td>
<td>(0.001)**</td>
<td>(0.002)**</td>
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<td>Population</td>
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<td>0.159</td>
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<tr>
<td>(Log)</td>
<td>(0.012)**</td>
<td>(0.014)**</td>
<td></td>
<td></td>
<td>(0.014)**</td>
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<td>Area</td>
<td>0.044</td>
<td>0.038</td>
<td></td>
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<td>(Km²/1000)</td>
<td>(0.010)**</td>
<td>(0.011)**</td>
<td></td>
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<td>(0.009)**</td>
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<td>Constant</td>
<td>-0.432</td>
<td>0.736</td>
<td>-0.041</td>
<td>0.405</td>
<td>-0.003</td>
<td>-0.504</td>
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<td></td>
<td>(0.160)**</td>
<td>(0.192)**</td>
<td>(0.163)</td>
<td>(0.215)</td>
<td>(0.163)</td>
<td>(0.221)*</td>
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<td>Observations</td>
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<td>2375</td>
<td>2425</td>
<td>2375</td>
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<td>R-squared</td>
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<td>0.57</td>
<td>0.3</td>
<td>0.48</td>
<td>0.27</td>
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Robust standard errors in parenthesis.
* Significant at the 5% level; ** significant at the 1% level.
Figure 2.3. The geography of poverty relief transfers in Mexico (1989-2005)

Figure 2.4 Electoral Geography

PRI VOTE 1994

PAN VOTE 2000

PRD VOTE 2006
Figure 2.5 Municipal democracy as indicated by years since party alternation
Figure 4.1

Core Support of the PRI over Time (α)
1970–1988

- 0.00 – 0.04
- 0.04 – 0.17
- 0.17 – 0.38
- 0.38 – 0.64
- 0.64 – 0.98
- 0.98 – 1.00
Figure 4.2

Vote Decline and Core Support for the PRI
Figure 4.3 Empirical predictions of Core Size and Erosion

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<th>CORE (Alpha)</th>
<th>High</th>
<th>Low</th>
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<td>High</td>
<td>BULK OF MACHINE’S TRANSFERS</td>
<td>Highest Emphasis on Clientelism or particularistic transfers</td>
</tr>
<tr>
<td>Low</td>
<td>Emphasis of Public Good over Private Good Provision (Although Opposition-controlled municipalities should be invariably punished)</td>
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</table>
Figure 4.4

Clientelism and Development

CONAPO deprivation index (5 is poorest)

Per Capita Private Goods (log scale)

lnprivadopc

90% CI

predicted lnprivadopc

Inprivadopc

90% CI

predicted Inprivadopc
### Table 4.1 Centralist Logic of Pronasol: The Core Voter

<table>
<thead>
<tr>
<th>Spatial lag</th>
<th>Total PC Expenditures</th>
<th>Private Goods PC</th>
<th>Public Goods PC</th>
<th>Share (Private/Total)</th>
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<tr>
<td></td>
<td>0.031 (0.037)</td>
<td>-0.032 (0.055)</td>
<td>0.051 (0.041)</td>
<td>0.060 (0.058)</td>
</tr>
<tr>
<td>Constant</td>
<td>7.305 (0.257)**</td>
<td>3.866 (0.356)**</td>
<td>7.065 (0.274)**</td>
<td>-0.057 (0.052)</td>
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<tr>
<td>Logpop</td>
<td>-0.272 (0.012)**</td>
<td>-0.168 (0.020)**</td>
<td>-0.251 (0.013)**</td>
<td>0.011 (0.003)**</td>
</tr>
<tr>
<td>Conapo</td>
<td>0.014 (0.062)</td>
<td>0.804 (0.108)**</td>
<td>-0.249 (0.069)**</td>
<td>0.160 (0.017)**</td>
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<tr>
<td>Conapo²</td>
<td>-0.008 (0.012)</td>
<td>-0.132 (0.020)**</td>
<td>0.037 (0.013)**</td>
<td>-0.028 (0.003)**</td>
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<tr>
<td>Alpha</td>
<td>0.319 (0.076)**</td>
<td>0.395 (0.130)**</td>
<td>0.162 (0.083)*</td>
<td>0.035 (0.021)*</td>
</tr>
<tr>
<td>Decline</td>
<td>-0.233 (0.068)**</td>
<td>-0.628 (0.119)**</td>
<td>-0.048 (0.076)</td>
<td>-0.103 (0.018)**</td>
</tr>
<tr>
<td>1988 Margin</td>
<td>0.192 (0.038)**</td>
<td>0.033 (0.066)</td>
<td>0.250 (0.042)**</td>
<td>-0.028 (0.012)*</td>
</tr>
</tbody>
</table>

| N          | 2422                  | 2422             | 2422           | 2422                 |
| R²         | 0.310                 | 0.125            | 0.220          | 0.073                |

Coefficients from OLS cross-sectional regressions of municipal-level allocations (in) from 1989 until 1994. Robust standard errors in parentheses. * significant at 5% level; ** significant at 1% level
Figure 4.5

Simulated Effects of Municipal Electoral History on Private Goods Transfers

Rate of Decline in PRI Vote, 1970-1988

Mean Private Benefits (pesos per capita)

- 2sd
- 1sd
Mean
+ 1sd
+ 2sd

\[ \alpha = 0.09 \]
\[ \alpha = 0.47 \]
\[ \alpha = 0.85 \]
Figure 4.6

Mean Core Size and Trends by Level of Competition

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<th>Opposition N=1278</th>
<th>PRI Marginals N=5191</th>
<th>Hegemony N=2957</th>
<th>Monopoly N=4289</th>
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<tr>
<td>Alpha</td>
<td>0.283</td>
<td>0.288</td>
<td>0.418</td>
<td>0.779</td>
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<tr>
<td>Slope</td>
<td>-0.388</td>
<td>-0.415</td>
<td>-0.371</td>
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### Table 4.2  Mean Municipal Party System Descriptives

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<th>Effective N</th>
<th>Margin of Victory</th>
<th>(sd)</th>
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<tr>
<td>Monopoly</td>
<td>1.224 (.401)</td>
<td>0.807 (.308)</td>
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<tr>
<td>Hegemony</td>
<td>1.585 (.516)</td>
<td>0.518 (.264)</td>
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<tr>
<td>PRI Marginals</td>
<td>1.825 (.785)</td>
<td>0.276 (.242)</td>
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<tr>
<td>Opposition</td>
<td>1.437 (.980)</td>
<td>0.288 (.266)</td>
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Table 4.3  Peripheral Logic of Pronasol: Facing Elections

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<th>3</th>
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<td></td>
<td>Private Goods pc</td>
<td>Public Goods pc</td>
<td>Share (Private/Total)</td>
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<tr>
<td>( \hat{N} )</td>
<td>0.122</td>
<td>0.363</td>
<td>-0.057</td>
</tr>
<tr>
<td></td>
<td>(0.064)*</td>
<td>(0.070)**</td>
<td>(0.009)**</td>
</tr>
<tr>
<td>Monopoly</td>
<td>0.403</td>
<td>0.269</td>
<td>-0.015</td>
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<tr>
<td></td>
<td>(0.096)**</td>
<td>(0.047)**</td>
<td>(0.007)*</td>
</tr>
<tr>
<td>Hegemony</td>
<td>0.720</td>
<td>0.262</td>
<td>0.028</td>
</tr>
<tr>
<td></td>
<td>(0.089)**</td>
<td>(0.042)**</td>
<td>(0.008)**</td>
</tr>
<tr>
<td>Marginal</td>
<td>0.444</td>
<td>-0.051</td>
<td>0.030</td>
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<td></td>
<td>(0.077)**</td>
<td>(0.039)</td>
<td>(0.007)**</td>
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<td>-0.737</td>
<td>0.097</td>
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<td>(0.102)</td>
<td>(0.113)**</td>
<td>(0.014)**</td>
</tr>
<tr>
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<td>0.285</td>
<td>0.061</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(0.048)**</td>
<td>(0.024)**</td>
<td>(0.004)</td>
</tr>
<tr>
<td>Logpop</td>
<td>0.154</td>
<td>-0.175</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>(0.023)**</td>
<td>(0.013)**</td>
<td>(0.002)**</td>
</tr>
<tr>
<td>Conapo</td>
<td>1.226</td>
<td>-0.091</td>
<td>0.123</td>
</tr>
<tr>
<td></td>
<td>(0.112)**</td>
<td>(0.062)</td>
<td>(0.010)**</td>
</tr>
<tr>
<td>Conapo(^2)</td>
<td>-0.194</td>
<td>0.016</td>
<td>-0.021</td>
</tr>
<tr>
<td></td>
<td>(0.022)**</td>
<td>(0.011)</td>
<td>(0.002)**</td>
</tr>
<tr>
<td>Year</td>
<td>0.421</td>
<td>-0.005</td>
<td>0.034</td>
</tr>
<tr>
<td></td>
<td>(0.021)**</td>
<td>(0.011)</td>
<td>(0.002)**</td>
</tr>
<tr>
<td>Private Goods (_{t-1})</td>
<td>0.377</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.010)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Goods (_{t-1})</td>
<td></td>
<td>0.190</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.009)**</td>
<td></td>
</tr>
<tr>
<td>Private Share (_{t-1})</td>
<td></td>
<td></td>
<td>0.319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.010)**</td>
</tr>
<tr>
<td>Constant</td>
<td>-40.363</td>
<td>5.883</td>
<td>-3.162</td>
</tr>
<tr>
<td></td>
<td>(2.058)**</td>
<td>(1.044)**</td>
<td>(0.164)**</td>
</tr>
<tr>
<td>N</td>
<td>11008</td>
<td>10995</td>
<td>10991</td>
</tr>
<tr>
<td>R²</td>
<td>0.35</td>
<td>0.15</td>
<td>0.19</td>
</tr>
</tbody>
</table>

Coefficients from OLS pooled time series regressions of municipal-
level per capita allocations (ln) and shares. Robust standard errors in parentheses.  * significant at 5% level;  ** significant at 1% level

Figure 4.7
Public Goods and Effective Competition

Figure 4.8
<table>
<thead>
<tr>
<th>Year</th>
<th>Political and Financial Environment</th>
<th>Progresa</th>
<th>FDSM / FISM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994 (December)</td>
<td>Inauguration and Tequila Crisis</td>
<td>Pilot program in Campeche under label PISA</td>
<td>1/3 of budgetary item 26 funds decentralized to the states and municipalities (no formula)</td>
</tr>
<tr>
<td>1995</td>
<td>Financial disarray in state and federal finances. Interior minister resigns. Electoral defeats in local elections.</td>
<td>Pilot program in Campeche is evaluated as failure by SECODAM because there was no noticeable increase in consumption, despite transfer of $70 pesos. Intelligent card for cash transfers is scorned by opponents as the “Pobrematico”</td>
<td>2/3 of item 26 funds decentralized in the FDSM according to a formula including rural inhabitants, electricity and sewerage infrastructure and illiteracy. States should transfer funds to municipalities with “similar” formulas.</td>
</tr>
<tr>
<td>1996</td>
<td>Electoral defeats continue.</td>
<td>Pilot program of PROGRESA started in the state of Hidalgo PROGRESA officially announced in the summer, after the elections</td>
<td>FDSM is created with formula based on sewerage, electricity, education, income and overcrowding</td>
</tr>
<tr>
<td>1997</td>
<td>Midterm federal election. PRI loses majority in the lower chamber.</td>
<td>Deputies from all parties denounce Progresa</td>
<td>FDSM changed into FISM, incorporating the Federal District. Creation of complementary FOFAMUN</td>
</tr>
<tr>
<td>November-December</td>
<td>Divided government Budgetary bargain struck in last minutes before statutory deadline.</td>
<td>Deputies of PAN and PRI support Progresa</td>
<td>Ley Bartlett in Puebla controversy Federal District removed from FISM</td>
</tr>
<tr>
<td>1998</td>
<td>Carlos Rojas resigns from SEDESOL to be replaced by Estéban Moctezuma.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.2 Formulas for revenue sharing in selected states.

<table>
<thead>
<tr>
<th>State</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guerrero</td>
<td>0.33134 x Population share of municipalities ranked as very high marginality index 0.11368 x Population share (High Marginality) 0.11957 x Population share (Medium Marginality) 0.10331 x Population share (Low marginality) 0.33210 x Population share (very low marginality)</td>
</tr>
<tr>
<td>Morelos</td>
<td>0.5 x Marginality index + 0.25 x Share of agricultural producers + 0.25 x (1/(Increase in funds in last year compared to previous))</td>
</tr>
<tr>
<td>Querétaro</td>
<td>0.4 x Population share + 0.3 x Own Revenue + 0.2 x Land Area + 0.1 x Economic Zone</td>
</tr>
<tr>
<td>Jalisco</td>
<td>Revenue sharing in pesos (t-1) + (0.45 x Population share + .2 x federal transfers + 0.1 x (Number of localities / land area) + 0.05 x Marginality index) x Remaining Funds</td>
</tr>
<tr>
<td>México</td>
<td>Revenue sharing in pesos (t-1) + (0.4 x Population share + 0.4 x Own Revenue + 0.2 x (Inverse of assignment given by first two elements in formula)) x Remaining funds.</td>
</tr>
<tr>
<td>Puebla</td>
<td>0.5 Population share + 0.5 x (0.25 Equal shares + 0.75 (Marginality Funds in pesos (t-1) + (0.55 x Income + 0.15 Education Lag + 0.075 Housing Space + 0.15 Electricity + 0.075 Sewerage) x Remainder funds)</td>
</tr>
<tr>
<td>Sonora</td>
<td>0.4517 x Population + 0.4517 x Revenue collection effort + 0.966 x (Inverse of assignment given by first two elements in the formula). [This is the federal formula for allocation to states]</td>
</tr>
</tbody>
</table>
Partisan Identity of Municipal Government and Poverty Alleviation Funds

Figure 5.1
Table 5.2 Determinants of Decentralized Allocations

<table>
<thead>
<tr>
<th></th>
<th>(1) FDSM</th>
<th>(2) FDSM</th>
<th>(3) FISM 1998</th>
<th>(4) FISM 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronasol (log)</td>
<td>0.236</td>
<td>0.122</td>
<td>0.024</td>
<td>0.019</td>
</tr>
<tr>
<td>(FDSM 1996)</td>
<td>(0.018)**</td>
<td>(0.014)**</td>
<td>(0.011)*</td>
<td>(0.011)</td>
</tr>
<tr>
<td>No Electricity</td>
<td>0.414</td>
<td>0.448</td>
<td>0.840</td>
<td>0.833</td>
</tr>
<tr>
<td>(FDSM 1997)</td>
<td>(0.067)**</td>
<td>(0.048)**</td>
<td>(0.041)**</td>
<td>(0.042)**</td>
</tr>
<tr>
<td>No Sewerage</td>
<td>0.298</td>
<td>0.491</td>
<td>0.867</td>
<td>0.866</td>
</tr>
<tr>
<td>(FISM 1998)</td>
<td>(0.061)**</td>
<td>(0.048)**</td>
<td>(0.045)**</td>
<td>(0.044)**</td>
</tr>
<tr>
<td>Wage Poverty</td>
<td>0.469</td>
<td>0.264</td>
<td>0.388</td>
<td>0.402</td>
</tr>
<tr>
<td>(FISM 2000)</td>
<td>(0.077)**</td>
<td>(0.061)**</td>
<td>(0.051)**</td>
<td>(0.052)**</td>
</tr>
<tr>
<td>Illiteracy</td>
<td>0.309</td>
<td>0.384</td>
<td>0.728</td>
<td>0.757</td>
</tr>
<tr>
<td>(log) Population</td>
<td>-0.362</td>
<td>-0.38</td>
<td>-0.013</td>
<td>-0.016</td>
</tr>
<tr>
<td>(FDSM 1996)</td>
<td>(0.121)*</td>
<td>(0.081)**</td>
<td>(0.065)**</td>
<td>(0.066)**</td>
</tr>
<tr>
<td>Constant</td>
<td>5.654</td>
<td>6.685</td>
<td>3.773</td>
<td>4.451</td>
</tr>
<tr>
<td>(FDSM 1997)</td>
<td>(0.189)**</td>
<td>(0.155)**</td>
<td>(0.130)**</td>
<td>(0.130)**</td>
</tr>
<tr>
<td>State Fixed Effects</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Observations</td>
<td>2208</td>
<td>2208</td>
<td>2208</td>
<td>2208</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.78</td>
<td>0.79</td>
<td>0.81</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
* significant at 5% level; ** significant at 1% level
Figure 6.1 Expansion of Coverage of Oportunidades 2000-2005
Table 6.1 IV Regression of PRI vote swings, 1988-1994

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>S.E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private PC</td>
<td>0.052</td>
<td>0.008**</td>
</tr>
<tr>
<td>Public PC</td>
<td>0.034</td>
<td>0.011*</td>
</tr>
<tr>
<td>PRI 88</td>
<td>-0.890</td>
<td>0.024**</td>
</tr>
<tr>
<td>Alpha</td>
<td>0.043</td>
<td>0.014**</td>
</tr>
<tr>
<td>Decline</td>
<td>-0.022</td>
<td>0.034</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.755</td>
<td>0.034**</td>
</tr>
</tbody>
</table>

N = 2338
F(35,2302) 141.22
Pr-F 0.000
R2 0.619

As instruments we employ the CONAPO index and its square; population; rainfall; and rugged terrain. Regressions are run with robust standard errors and state fixed effects. We tested for overdetermination. ** significant at the 99 percent level. * significant at the 95 percent level.
Table 6.2 IV Regression of vote swings, 1994-2000 and 2000-2006

<table>
<thead>
<tr>
<th></th>
<th>PRI vote swing</th>
<th></th>
<th>PAN vote swing</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Coef.</td>
<td>S.E</td>
<td>Coef.</td>
<td>S.E</td>
<td></td>
</tr>
<tr>
<td>Progresa^</td>
<td>1.886</td>
<td>0.389**</td>
<td>Oportunidades^</td>
<td>0.607</td>
</tr>
<tr>
<td>FISM^</td>
<td>0.070</td>
<td>0.037*</td>
<td>FISM^</td>
<td>0.069</td>
</tr>
<tr>
<td>PRI 94</td>
<td>-0.605</td>
<td>0.028**</td>
<td>PAN 00</td>
<td>-0.237</td>
</tr>
<tr>
<td>Aplha</td>
<td>0.076</td>
<td>0.031*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-1.158</td>
<td>0.252**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As instruments for the first of these regressions we employ the CONAPO index; total per capita expenditures in private goods in Pronasol; population; temperature; rivers; distance to rails; municipal size (km2). Our instruments for the second regression were the Human Development Index; temperature; coast/boarder; rugged terrain; distance to rails; distance to roads; municipal size (km2); and Easting kms. Regressions are run with robust standard errors and state fixed effects. We tested for overdetermination.  
** significant at the 99 percent level. * significant at the 95 percent level.
Figure 6.2: Simulated Electoral Returns of Various Programs
Table 6.3 Percentage voting for three major candidates and beneficiaries of antipoverty programs

<table>
<thead>
<tr>
<th></th>
<th>2000 Elections Progresa</th>
<th>2006 Elections Oportunidades</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beneficiary</td>
<td>Non-Benef.</td>
</tr>
<tr>
<td>Vote for PAN</td>
<td>25.4%</td>
<td>46.9%</td>
</tr>
<tr>
<td>Vote for PRD</td>
<td>16.4%</td>
<td>17.0%</td>
</tr>
<tr>
<td>Vote for PRI</td>
<td>57.7%</td>
<td>33.5%</td>
</tr>
</tbody>
</table>
Table 6.4 First-Stage Probits for Propensity Score Estimation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.023 (0.016)</td>
<td>-0.046 (0.011)**</td>
</tr>
<tr>
<td>Education</td>
<td>-0.123 (0.035)**</td>
<td>-0.183 (0.025)**</td>
</tr>
<tr>
<td>Income</td>
<td>-0.090 (0.026)**</td>
<td>-0.041 (0.011)**</td>
</tr>
<tr>
<td>Woman</td>
<td>0.146 (0.075) *</td>
<td>0.115 (0.050) *</td>
</tr>
<tr>
<td>Peasant farmer</td>
<td>0.099 (0.119)</td>
<td>0.158 (0.087)</td>
</tr>
<tr>
<td>Family size</td>
<td>0.072 (0.039)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aggregate Socio-Economic Indicators</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural precinct</td>
<td>0.519 (0.098)**</td>
<td>0.577 (0.056)**</td>
</tr>
<tr>
<td>Usos y costumbres</td>
<td>0.213 (0.143)</td>
<td>Indians (municipal share) 0.298 (0.189)</td>
</tr>
<tr>
<td>No water supply (%)</td>
<td>0.850 (0.372) *</td>
<td>No water supply (%) 0.166 (0.215)</td>
</tr>
<tr>
<td>No electricity (%)</td>
<td>-4.062 (0.721)**</td>
<td>No electricity (%) -0.487 (0.477)</td>
</tr>
<tr>
<td>No sewerage (%)</td>
<td>0.708 (0.329) *</td>
<td>No sewerage (%) -0.847 (0.243)**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographical Correlates</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Northing</td>
<td>0.001 (0.000)**</td>
<td>Rainfall 0.0003 (0.000)**</td>
</tr>
<tr>
<td>Easting</td>
<td>0.0002 (0.000)</td>
<td>Easting 0.0001 (0.000)</td>
</tr>
<tr>
<td>Population density</td>
<td>0.0000 (0.000)**</td>
<td>Temperatura 0.0001 (0.000)</td>
</tr>
<tr>
<td>Distance to roads</td>
<td>0.028 (0.007)**</td>
<td>Distance to roads 0.010 (0.005)*</td>
</tr>
<tr>
<td>Distance to rails</td>
<td>0.007 (0.002)**</td>
<td></td>
</tr>
<tr>
<td>Distance to city</td>
<td>0.002 (0.001)</td>
<td></td>
</tr>
<tr>
<td>Landlocked</td>
<td>-0.301 (0.117)**</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy-Related Variables</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Progresa coverage, 2000</td>
<td>4.743 (2.556) *</td>
<td>Seguro Popular holder 1.236 (0.058)**</td>
</tr>
<tr>
<td>Private goods % of funds in Pronasol, 1989-94</td>
<td>-0.347 (0.331)</td>
<td>Change in Oportunidades coverage, 2000-06 1.403 (0.272)**</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.857 (0.351)**</td>
<td>Constant -1.430 (0.716) *</td>
</tr>
</tbody>
</table>

| Observations                                  | 2379                                          | Observations 5019                              |
| LR (20)                                       | 328.88                                        | LR (17) 1205.68                                |
| Prob>LR                                       | 0.0000                                        | Prob>LR 0.0000                                 |
| Pseudo R²                                     | 0.168                                         | Pseudo R² 0.246                                |

Robust standard errors in parentheses. * Significant at the 95% level; ** at the 99% level.
Figures 6.3 Pre-Matched and Matched Propensity Distributions
Table 6.5: Effects of *Progresa* and Oportunidades on Vote Choice and Related Attitudes in 2000 and 2006

<table>
<thead>
<tr>
<th></th>
<th>Vote in 2000 Effect of Progresa</th>
<th>Vote in 2006 Effect of Oportunidades</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>National</td>
<td>Rural</td>
</tr>
<tr>
<td>Vote for PRI candidate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote for PAN candidate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote for PRD candidate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pocketbook</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PID PRI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PID PAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PID PRD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nearest Neighbor Matching Method with bootstrapped standard errors in parentheses.
** Significant at the 99 percent level; * at the 95 percent level; a at the 90 percent level.
Figure 7.1 Change in Public Good Coverage 1990-2000
Table 7.1 IV Regressions of Improvements in Public Goods Coverage, 1990-2000

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>lPronasol</td>
<td>0.05</td>
<td>-0.19</td>
<td>-0.093</td>
<td>0.08</td>
<td>0.105</td>
<td>0.131</td>
</tr>
<tr>
<td></td>
<td>(2.69)**</td>
<td>(1.84)*</td>
<td>(1.25)</td>
<td>(3.44)**</td>
<td>(4.03)**</td>
<td>(1.52)</td>
</tr>
<tr>
<td>Alt. Power</td>
<td>0.064</td>
<td>0.011</td>
<td>0.031</td>
<td>0.49</td>
<td>0.87</td>
<td>0.662</td>
</tr>
<tr>
<td></td>
<td>(3.01)**</td>
<td>(-0.36)</td>
<td>(-1.21)</td>
<td>(2.68)**</td>
<td>(9.74)**</td>
<td>(4.17)**</td>
</tr>
<tr>
<td>lresfis</td>
<td>0.432</td>
<td>0.481</td>
<td>0.46</td>
<td>0.409</td>
<td>0.387</td>
<td>0.387</td>
</tr>
<tr>
<td></td>
<td>(1.95)**</td>
<td>(1.82)*</td>
<td>(1.87)*</td>
<td>(1.94)*</td>
<td>(1.95)*</td>
<td>(2.00)**</td>
</tr>
<tr>
<td>Observations</td>
<td>2399</td>
<td>2375</td>
<td>2375</td>
<td>2375</td>
<td>2388</td>
<td>2369</td>
</tr>
<tr>
<td>Endogenous Variable</td>
<td>None</td>
<td>Pronasol</td>
<td>Pronasol</td>
<td>Alt. Power</td>
<td>Alt. Power</td>
<td>Pronasol</td>
</tr>
<tr>
<td>Instruments</td>
<td>None</td>
<td>Alpha</td>
<td>Railroads</td>
<td>Alpha</td>
<td>Railroads</td>
<td>Railroads</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Alpha</td>
<td></td>
<td>Longitude</td>
<td></td>
</tr>
</tbody>
</table>

* t statistics in parentheses ***significant at the 1% level **significant at 5% level * significant at the 10% level

Note: All models include a constant term and control variables in first differences: population growth, illiteracy, bilingualism, indigenous population, poverty, and religious fractionalization index changes. All models use robust standard errors. All expenditure variables are logged. All instruments pass the Sargan and Basmann tests of overidentification. Full specification available upon request.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronasol</td>
<td>0.094</td>
<td>-0.029</td>
<td>0.207</td>
</tr>
<tr>
<td>Dem. Index</td>
<td>0.111</td>
<td>(2.72)***</td>
<td></td>
</tr>
<tr>
<td>Margin &lt; 10%</td>
<td>0.237</td>
<td>(1.27)</td>
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<tr>
<td>Alt. Power Years</td>
<td>0.109</td>
<td></td>
<td></td>
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<tr>
<td>Lresfis</td>
<td>0.451</td>
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<td>longitude</td>
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</tbody>
</table>

*t statistics in parentheses *** significant at the 1% level ** significant at 5% level * significant at the 10% level

Note: All models include a constant term and control variables in first differences: population growth, illiteracy, bilingualism, indigenous population, poverty, and religious fractionalization index changes. All models use robust standard errors. All expenditure variables are logged. All instruments pass the Sargan and Basmann tests of overidentification. Full specification available upon request.
Table 7.3 IV Quantile Regression: Improvements in Public Goods Coverage, 1990-2000

<table>
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<tr>
<th></th>
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<th>q.8</th>
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<tr>
<td><img src="%5E" alt="Alternation" /></td>
<td>-0.176</td>
<td>-0.027</td>
<td>0.036</td>
<td>0.331</td>
</tr>
<tr>
<td></td>
<td>(0.93)</td>
<td>(0.23)</td>
<td>(0.36)</td>
<td>(1.95)*</td>
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<tr>
<td><img src="%5E" alt="Pronasol" /></td>
<td>-0.26</td>
<td>-0.098</td>
<td>0.102</td>
<td>0.415</td>
</tr>
<tr>
<td></td>
<td>(1.81)</td>
<td>(1.13)</td>
<td>(1.5 )</td>
<td>(4.24)***</td>
</tr>
<tr>
<td>lresfis</td>
<td>1.136</td>
<td>1.046</td>
<td>0.686</td>
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<tr>
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<td>(5.36)***</td>
<td>(5.23)***</td>
<td>(2.28)**</td>
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Note: All models include a constant term and control variables in first differences: population growth, illiteracy, bilingualism, indigenous population, poverty, and religious fractionalization index changes. All models use robust standard errors. All expenditure variables are logged. All instruments pass the Sargan and Basmann tests of overidentification. Full specification available upon request.
Table 7.4 IV Quantile Regression: Improvements in Public Goods Coverage, 1990-2000

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>^Pronasol</td>
<td>-0.026</td>
<td>0.082</td>
<td>0.102</td>
<td>0.255</td>
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<tr>
<td></td>
<td>(0.24)</td>
<td>(0.75)</td>
<td>(2.44)**</td>
<td>(3.31)***</td>
</tr>
<tr>
<td>^Dem. Index</td>
<td>0.118</td>
<td>0.105</td>
<td>0.259</td>
<td>0.823</td>
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<tr>
<td></td>
<td>(2.67)***</td>
<td>(1.69)*</td>
<td>(2.84)***</td>
<td>(5.58)***</td>
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<tr>
<td>Lresfis</td>
<td>1.235</td>
<td>1.007</td>
<td>0.661</td>
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<tr>
<td></td>
<td>(5.67)***</td>
<td>(5.08)***</td>
<td>(2.78)***</td>
<td>(1.43)</td>
</tr>
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<td>2369</td>
<td>2369</td>
<td>2369</td>
</tr>
</tbody>
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t statistics in parentheses
* significant at 10%;
** significant at 5%;
*** significant at 1%

Note: we instrument for democracy and Pronasol with alpha, longitude, and distance to railroads. All models include a constant term and control variables in first differences: population growth, illiteracy, bilingualism, indigenous population, poverty, and religious fractionalization index changes. All models use robust standard errors. All expenditure variables are logged. All instruments pass the Sargan and Basmann tests of overidentification. Full specification available upon request.
Figure 8.1 Geography of Infant Mortality Rate in 2000
Table 8.1. IV Regressions of Determinants of Changes in IMR in Mexico (1990-2000)

<table>
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<td>chgpubgoods</td>
<td>-2.521</td>
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<td>-2.531</td>
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<td></td>
<td>(2.64)***</td>
<td>(2.57)**</td>
<td>(2.42)**</td>
<td>(2.72)***</td>
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<tr>
<td>alternation</td>
<td>-0.317</td>
<td>-0.062</td>
<td>-19.301</td>
<td>-6.362</td>
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<tr>
<td></td>
<td>(0.56)</td>
<td>(0.09)</td>
<td>(1.92)*</td>
<td>(1.82)*</td>
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<tr>
<td>clientelism</td>
<td>0.494</td>
<td>1.359</td>
<td>-0.585</td>
<td>-1.125</td>
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<tr>
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<td>(2.20)*</td>
<td>(1.03)</td>
<td>(0.94)</td>
<td>(0.81)</td>
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<tr>
<td>CCT</td>
<td>-58.779</td>
<td>-64.782</td>
<td>-101.024</td>
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</tr>
<tr>
<td></td>
<td>(6.55)***</td>
<td>(4.82)***</td>
<td>(4.15)***</td>
<td>(4.47)***</td>
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<tr>
<td>Observations</td>
<td>1817</td>
<td>1817</td>
<td>1814</td>
<td>1814</td>
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<tr>
<td>R-squared</td>
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<td>0.17</td>
<td>0.16</td>
<td>0.12</td>
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<td>Railroads</td>
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<td>Alpha</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Erosion</td>
</tr>
</tbody>
</table>

Note: All models include a constant term and control variables in first differences: population growth, illiteracy, poverty, and doctor delivery and delay in registration changes. All models use robust standard errors. All instruments pass the Sargan and Basmann tests of overidentification. Full specification available upon request.
Table 8.2. IV Regressions of Determinants of Changes in IMR in Mexico (1990-2000)

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<th></th>
<th>Column 1</th>
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<tr>
<td>Demoindex</td>
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</tr>
<tr>
<td>(0.97)</td>
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<td></td>
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<tr>
<td>Margin</td>
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<tr>
<td>(0.16)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Years</td>
<td></td>
<td>-0.598</td>
<td></td>
</tr>
<tr>
<td>Alternation</td>
<td></td>
<td>(1.77)*</td>
<td></td>
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<tr>
<td>lprivm</td>
<td>-0.451</td>
<td>0.567</td>
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<tr>
<td>(0.92)</td>
<td>(0.42)</td>
<td>(0.65)</td>
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<tr>
<td>chlogindex</td>
<td>-2.503</td>
<td>-2.496</td>
<td>-2.552</td>
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<tr>
<td></td>
<td>(2.62)***</td>
<td>(2.56)***</td>
<td>(2.76)***</td>
</tr>
<tr>
<td>oport00</td>
<td>-63.086</td>
<td>-55.831</td>
<td>-57.908</td>
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<tr>
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<td>(4.21)***</td>
<td>(3.60)***</td>
<td>(4.35)***</td>
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<tr>
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<td>Longitude</td>
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<td>Alpha</td>
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<td></td>
<td>Erosion</td>
<td>Erosion</td>
<td>Erosion</td>
</tr>
</tbody>
</table>

Note: All models include a constant term and control variables in first differences: population growth, illiteracy, poverty, and doctor delivery and delay in registration changes. All models use robust standard errors. All instruments pass the Sargan and Basmann tests of overidentification. Full specification available upon request.
Table 8.3 IV Quantile regression of Infant Mortality Change, 1990-2000

<table>
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<tr>
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<td>Change in IMR</td>
<td>Change in IMR</td>
<td>Change in IMR</td>
<td>Change in IMR</td>
</tr>
<tr>
<td>chpubgoods</td>
<td>-1.632</td>
<td>-2.627</td>
<td>-2.572</td>
<td>-1.934</td>
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<tr>
<td></td>
<td>(2.96)**</td>
<td>(2.68)**</td>
<td>(2.10)**</td>
<td>(1.45)</td>
</tr>
<tr>
<td>^Alternation</td>
<td>-0.219</td>
<td>-5.038</td>
<td>-6.103</td>
<td>-6.967</td>
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<td></td>
<td>(0.08)</td>
<td>(2.62)**</td>
<td>(2.03)**</td>
<td>(2.73)**</td>
</tr>
<tr>
<td>^clientelism</td>
<td>-4.297</td>
<td>-1.978</td>
<td>0.481</td>
<td>1.411</td>
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<td>(2.17)**</td>
<td>(0.9)</td>
<td>(0.19)</td>
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<td>-61.956</td>
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<td></td>
<td>(3.58)**</td>
<td>(3.88)**</td>
<td>(3.58)**</td>
<td>(3.25)**</td>
</tr>
<tr>
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<td>1814</td>
<td>1814</td>
<td>1814</td>
<td>1814</td>
</tr>
</tbody>
</table>

T statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Note: Alternation and clientelism are instrumented with alpha, erosion, distance to railroads, and longitude. All models include a constant term and control variables in first differences: Pronasol hospitals and clinics, population growth, illiteracy, indigenous, poverty, doctor delivery and delay in registration changes. All models use robust standard errors. All instruments pass the Sargan and Basmann tests of overidentification. Full specification available upon request.
References


Bardhan, Pranab and Mookherjee, Dilip (typescript), “Decentralizing Anti-Poverty Program Delivery in Developing Countries”

Bardhan, Pranab and Mookherjee, Dilip. 2000. “Corruption and Decentralization of Infrastructure Delivery in Developing Countries”, (typescript).

Bardhan, Pranab and Mukherjee. 2006.


Mexico”.

México D.F.: International Maize and Wheat Improvement Center (CIMMYT).


Brass, William. 1975. Methods for Estimating Fertility and Mortality from Limited and


Brusco, Valeria, Nazareno, Marcelo and Stokes, Susan. “Clientelism and Democracy. An Analysis of Ecological Data for Argentina”


Association (Boston, August 29-Sept 1).


Cox, Gary, McCubbins, Mathew D. and Sullivan, Terry. 1984. “Policy Choice as an


Duflo, Esther (undated)


Finan, Frederic and Laura Schechter 2010 “Vote-buying and Reciprocity”, Typescript


Green, Kenneth and Chapel Lawson 2011 “Self-Enforcing Clientelism” Typescript


Habyarimana, James; Humphreys, Macarthan, Posner, Daniel and Weinstein, Jeremy “Group Preferences or Group Strategies? Untangling the Determinants of Successful Collective Action Among Gender and Ethnic Groups.”


Heckman, James. 2000


Kitschelt et al. 2011


mexicana (Mexico City: Editorial Océano).
Medeane. 2006.
Paper prepared delivered at the 2002 Annual Meeting of the American Political Science Association, Boston, August 29-September 1.

Medellín, 1980. ???


PNUD. 2007. Informe sobre la Encuesta Nacional sobre la Protección de los Programas


Vote Buying. Lynne Rienner.
Scott, James. 1972a. “Patron-Client politics and Political Change in Southeast Asia” American Political Science Review 66(1)
Sedesol. 2006. “Comentarios al Estudio “Monitoreo de Programas Sociales en Contextos Electorales” por lo que se refiere al Fondo de Aportaciones para la Infraestructura Social (FAIS)” (Sedesol, typescript).


Index:

Acemoglu, 86, 89, 265, 297
Aguaascalientes, 262, 307
Alesina, 245, 297
Alianza Cívica, 214, 297
ANMEB, 180
, 68, 93, 175, 192, 194
, 86
Argentina, 46, 63, 77, 99, 110, 111, 298, 300, 317, 318
Banerjee, 246, 254, 255, 266, 298, 299
Bartlett, 193, 201
Baum, 247, 264, 277, 279, 298, 309
Becker, 227, 229, 298
, 208
Bellon et al, 88
Besley, 55, 247, 248, 299
Blindaje Electoral, 215
Blum and Diaz-Cayeros, 88, 91
Brazil, 30, 43, 46, 63, 246, 248, 297, 316
Bruhn, 78, 132, 134, 143, 177, 220, 300, 310
Bruhn, Kathleen, 220, 300, 310
Bueno de Mesquita, 26, 102, 120, 300
bureaucracy, 52, 307, 312
cabildos, 82
Calderón, 213, 227, 228, 231
Calvo, 19, 21, 24, 77, 106, 108, 110, 111, 203, 300
Campeche, 186, 187
Cárdenas, Cuauhtémoc, 51
Carlos Salinas, 8, 39, 49, 51, 52, 93, 143, 177, 179, 187, 193
Ceará, 246
CETES, 176
Chamber of Deputies, 15, 29, 67, 68, 167, 170, 198, 210
Chamuelas, 75
Chhibber, 26, 55, 102, 120, 157, 161, 249, 301
Chhibber and Nooruddin, 26, 55, 102, 120, 157, 161, 249
Chiapas, 8, 33, 73, 74, 75, 79, 167, 177, 209, 210, 239, 262, 266, 274, 283, 289
Cleary, 132, 250, 252, 255, 257, 258, 264, 266, 301, 318
Colosio, 167, 177, 180, 209, 210
, 88, 145, 218, 221, 256
, 32, 39, 93
CONEVAL, 37, 85, 88
Cornelius, 50, 69, 99, 133, 143, 231, 298, 301, 304, 311, 313
Cox, 19, 20, 21, 100, 107, 112, 268, 302
Dahlberg, 19, 108, 110, 203, 302
De la O, 65, 77, 204, 224, 225, 231, 303
Deprivation Densities
Masas Carenciales Estatales, 261
Diaz-Cayeros, 48, 49, 66, 67, 82, 170, 174, 182, 189, 214, 252, 255, 256, 260, 263
Diaz-Cayeros, Alberto, 299, 302, 303, 304, 311
Dion, 45, 78, 303
Dixit, 16, 19, 20, 21, 99, 101, 107, 108, 303
Dresser, Denise, 50, 52, 304
economic crisis, 52
ejidos, 48
Emmerich Davis, 2, 86
Escobar and Torero, 89
Escuível, 88, 179, 304
, 86
Estrada, 91, 232, 314, 318
ethnolinguistic fractionalization
ELF, 245
Faguet, 251, 305
FAIS, 68, 196, 317
FDI, 179
FDSM, 66, 68, 69, 70, 79, 80, 93, 94, 175, 189, 190, 191, 194, 261, 262, 263, 273
Fearon and Laitin, 90, 246
Federal District, 192, 194, 213
Federal Electoral Institute
IFE, 211
Federal Electoral Institute (IFE), 211
Flamand, 129, 194, 305
Fondo de Inversión Social 
FIS, 272
Fondos Municipales, 94, 189
Fortamun, 192, 193, 195
Fox, 93, 211, 212, 224, 233, 236
Fox, Vicente, 211
fraud, 51, 97, 193, 211, 214
Fundar, 70, 215, 306
Gallup, 85, 87, 89, 206, 208, 306
Gallup, Sachs and Mellinger, 89
Gershberg, 93, 306
GIS, 7, 90
Green, 21, 65, 224, 225, 307
Guerrero, 177, 239, 274, 275, 283
Hamilton Ulmer, 2, 86
Hidalgo, 187, 262, 283
Hiskey, 93, 108, 110, 132, 134, 179, 220, 250, 252, 255, 264, 308
Hiskey, Jonathan, 220, 308
Ho et al., 229, 230
Human Development Index, 74, 88, 221, 256
Ichino, 227, 229, 298
Import Substitution Industrialization (ISI), 51
IMR, 32, 276, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295
IMSS, 45, 46, 47, 63, 213, 291, 292
INEGI, 32, 38, 86, 256, 273, 286, 287, 288, 308
INFONAVIT, 46, 47
ISSSTE, 46, 47, 62, 63, 292
Johansson, 19, 203, 302
Kaufman, 54, 128, 307, 308, 309, 318
Labastida, 200, 211, 227, 228
Lake, 247, 264, 277, 279, 298, 309
, 46, 61
Levy, 9, 29, 61, 70, 78, 79, 170, 175, 177, 184, 185, 186, 187, 188, 189, 198, 210, 224, 261, 310
Liconsna, 63, 186
Lindert, 63, 310
Londregan, 16, 19, 20, 99, 101, 107, 108, 110, 303, 310
Madrazo, 183, 228, 231
Magaloni, Estévez and Diaz-Cayeros, 94
Marcela Gómez, 2, 93
Masas Carenciales Estatales, 261
MAUP, 80
McCubbins, 19, 20, 100, 107, 302, 312
McCubbins, 19, 20, 100, 107, 302, 312
, 45
Ministry of Social Development, 129, 212
Mogollón, 70, 175, 184, 191, 193, 261, 262, 303, 312
Molinar and Weldon, 54, 65, 78, 132, 134, 143, 220
Montesquieu, 73, 313
Mukherjee, 251, 258, 298, 313
Municipal Fund for Social Development. See FDSM
municipalities, 7, 11, 15, 32, 34, 52, 53, 55, 57, 65, 67, 68, 69, 70, 71, 77, 78, 80, 81, 82, 83, 84, 85, 87, 88, 89, 90,
NAFTA, 174, 179
National System of Fiscal Coordination, 66
Noorudin, 249

Oaxaca, 12, 74, 79, 202, 239, 267, 283
Obrador, 97, 213, 214, 228, 231, 232
of Import Substitution Industrialization
ISI, 50
Olken, 248, 249, 313
Oportunidades, 9, 10, 12, 30, 32, 44, 45, 58, 59, 60, 61, 62, 63, 64, 65, 69, 71, 75, 83, 93, 94, 95, 166, 188, 202, 205, 206, 207, 208, 212, 213, 214, 215, 216, 221, 222, 223, 225, 226, 227, 228, 231, 232, 233, 234, 236, 276, 283

pacted transition, 50
PAN, 9, 10, 21, 29, 47, 63, 64, 65, 67, 96, 97, 98, 141, 144, 170, 179, 180, 192, 193, 194, 195, 198, 200, 206, 209, 210, 211, 213, 214, 215, 216, 221, 222, 223, 225, 228, 231, 232, 233, 234, 236, 58, 211
Pande, 250, 308, 314
PASSPA, 185
Peso Crisis, 37, 38, 59, 64, 167, 168, 197
Petra, 200
Poiré, 182, 211, 232, 304, 311, 314
populist, 51
poverty, 4, 5, 7, 8, 9, 10, 13, 14, 15, 17, 28, 32, 33, 34, 36, 37, 38, 39, 40, 43, 45, 48, 50, 52, 54, 59, 60, 62, 63, 64,
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PRD, 51, 96, 97, 98, 143, 179, 183, 194, 195, 200, 211, 213, 214, 220, 231, 232, 233
FDN, 51
PRD - Partido de la Revolución
Democrática, 51, 211, 220
Pritchett, 62, 314
Procampo, 62, 311
Pronasol, 8, 11, 13, 14, 26, 27, 31, 32, 33, 34, 39, 43, 44, 50, 52, 53, 54, 55,
Zedillo, 10, 29, 39, 58, 63, 64, 69, 70, 93, 96, 167, 176, 177, 178, 179, 180, 181, 182, 184, 190, 195, 201, 209, 210, 262, 315, 318
Zhuravskaya, 254