

Rodríguez-Chamussy, Lourdes

**Working Paper**

## Local Electoral Rewards from Centralized Social Programs: Are Mayors Getting the Credit?

IDB Working Paper Series, No. IDB-WP-550

**Provided in Cooperation with:**

Inter-American Development Bank (IDB), Washington, DC

*Suggested Citation:* Rodríguez-Chamussy, Lourdes (2015) : Local Electoral Rewards from Centralized Social Programs: Are Mayors Getting the Credit?, IDB Working Paper Series, No. IDB-WP-550, Inter-American Development Bank (IDB), Washington, DC, <https://hdl.handle.net/11319/6802>

This Version is available at:

<https://hdl.handle.net/10419/115502>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<http://creativecommons.org/licenses/by-nc-nd/3.0/igo/legalcode>



**IDB WORKING PAPER SERIES No. IDB-WP-550**

# **Local Electoral Rewards from Centralized Social Programs:**

## **Are Mayors Getting the Credit?**

Lourdes Rodríguez-Chamussy

January 2015

**Inter-American Development Bank**  
Department of Research and Chief Economist

# **Local Electoral Rewards from Centralized Social Programs:**

## **Are Mayors Getting the Credit?**

Lourdes Rodríguez-Chamussy

Inter-American Development Bank



Inter-American Development Bank

2015

Cataloging-in-Publication data provided by the  
Inter-American Development Bank  
Felipe Herrera Library

Rodríguez-Chamussy, Lourdes.

Local electoral rewards from centralized social programs: are mayors getting the credit? / Lourdes Rodríguez-Chamussy.

p. cm. — (IDB Working Paper Series ; 550)

Includes bibliographic references.

1. Local elections—Mexico. 2. Voting—Mexico. 3. Municipal government—Mexico. I. Inter-American Development Bank. Department of Research and Chief Economist. II. Title. III. Series.

IDB-WP-550

<http://www.iadb.org>

Copyright © 2015 Inter-American Development Bank. This work is licensed under a Creative Commons IGO 3.0 Attribution-NonCommercial-NoDerivatives (CC-IGO BY-NC-ND 3.0 IGO) license (<http://creativecommons.org/licenses/by-nc-nd/3.0/igo/legalcode>) and may be reproduced with attribution to the IDB and for any non-commercial purpose. No derivative work is allowed.

Any dispute related to the use of the works of the IDB that cannot be settled amicably shall be submitted to arbitration pursuant to the UNCITRAL rules. The use of the IDB's name for any purpose other than for attribution, and the use of IDB's logo shall be subject to a separate written license agreement between the IDB and the user and is not authorized as part of this CC-IGO license.

Following a peer review process, and with previous written consent by the Inter-American Development Bank (IDB), a revised version of this work may also be reproduced in any academic journal, including those indexed by the American Economic Association's EconLit, provided that the IDB is credited and that the author(s) receive no income from the publication. Therefore, the restriction to receive income from such publication shall only extend to the publication's author(s). With regard to such restriction, in case of any inconsistency between the Creative Commons IGO 3.0 Attribution-NonCommercial-NoDerivatives license and these statements, the latter shall prevail.

Note that link provided above includes additional terms and conditions of the license.

The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.



## Abstract\*

This paper uses variation in the timing of the Mexican antipoverty program's introduction across municipalities to identify its impact on the share of votes for the local incumbent party. Evidence is found that voters reward the mayor's party for the central benefit to their constituencies, accounting on average for 2.8 additional percentage points in the share of votes for the mayor's party. The analysis of party alignment shows that this electoral effect cannot be explained as a reward for the federal incumbent in local elections. Alternative explanations are examined, and it is shown that the effect for the local incumbent is heterogeneous for the different political parties and varies with characteristics of the municipalities, being stronger where the mayor faced more contestable elections, in capital cities of the states and in predominantly urban, more educated and relatively wealthier municipalities. Findings are consistent with the hypothesis that politicians have incentives to engage in signaling strategies to link themselves to the transfer program.

**Keywords:** Municipal elections, Voting, Government transfers

**JEL classifications:** D72, H53, I38, O15, H70

---

\* I am very grateful for comments and suggestions to Elisabeth Sadoulet, Alain de Janvry, Jere Behrman, Peter Berck, Raymundo Campos, Fred Finan, Paul Gertler, Ethan Ligon, Jeremy Magruder, Ted Miguel, Ken Teshima, Sarah Dobson, Koichiro Itto, and participants at the LACEA-LAMES 2008 Annual Meeting, the Pacific Development Conference 2010, the UC Berkeley ARE Development workshop, and the Economics Development Lunch for their valuable suggestions. All errors remain my own. The findings, interpretations, and conclusions expressed in this paper do not represent the views of the Inter-American Development Bank.

## 1. Introduction

Who gets credit for government spending on social programs? The retrospective voting theory suggests that, unable to directly observe the politician's effort and ability, voters rely on simple retrospective evaluations of observed performance while in power.<sup>1</sup> An implication of the asymmetric information problem is that voters will credit politicians whom they perceive as responsible for good outcomes. Anticipating this voting behavior, politicians may have incentives not only to take credit for their own good actions but also to take credit for favorable outcomes resulting from others' actions.

The objective of this paper is to provide an empirical assessment of the extent to which local incumbents are rewarded for welfare programs under the control and operation of a central government. I study the case of the well-known Conditional Cash Transfer (CCT) program PROGRESA (Programa de Educación, Salud y Alimentación), later renamed Oportunidades, and explore whether there exists evidence of an effect of the centralized transfer on the vote share for the municipal incumbent party and its probability of winning the election.

Empirical evidence on the extent to which voters reward favorable outcomes but mistakenly attribute the responsibility is scarce. The most closely related work by Boulding (2010) examines the electoral impact of NGOs in Bolivia. He finds that local politicians get credit for actions financed and carried out by international NGOs and argues that the effect depends on the size of the towns, which determines the level of information flows among voters.

Due to electoral campaigns incentives and short memory in retrospective voting, an important consideration, when analyzing electoral rewards, is that voters may be particularly influenced by enrollment in the program *during the election year*. There is a large body of experimental evidence suggesting that, in retrospective evaluation, individuals tend to weigh heavily the peak and the end of a sequence of events.<sup>2</sup> Therefore, I use enrollment in the program during the election year as the main explanatory variable.

To my knowledge, this paper is the first study to analyze and identify the potential effect of a centrally operated targeted social program in local electoral outcomes. Using variation in the timing of the Mexican antipoverty program introduction across municipalities, I identify the

---

<sup>1</sup> For seminal work, see Fiorina (1981).

<sup>2</sup> One example is Langer, Sarin, and Weber (2005).

impact of enrollment in the transfer program on the share of votes for the Mayor's party. The main empirical finding from an instrumental variables regression suggests a 0.6 percentage points increase in the share of votes for the local incumbent for each additional percentage point of families enrolled in the program during the year previous to the election for Mayor. This represents an average effect of 2.8 percentage points for the Mayor's party from a federal government transfer to its constituency.

Heterogeneity in the effect is analyzed to explore potential explanations for the main finding. No significant difference is found in the effect when the local incumbent party is aligned with the President's, ruling out the explanation that voters reward the federal incumbent party at local elections. Additionally, I find that political parties are differentially rewarded and that the effect varies with characteristics of the municipalities, being stronger where the Mayor faced more contestable elections, in capital cities of the States and in predominantly urban, more educated and relatively wealthier municipalities. I argue that results provide evidence in support of credit-claiming strategies by Mayors as the driving mechanism rather than this effect being the product of a warm feeling among beneficiaries or caused by differences in voters' exposure to information and awareness of the operation of the government program.

These findings contribute to the redistributive politics literature that explores the political economy of government spending. The widely adopted CCT programs have been viewed as efficient both in terms of cost-effectiveness and because they reduce politicians' opportunistic behavior by implementing more objective selection mechanisms for beneficiaries (Levy, 2006; Magaloni, Díaz-Cayeros, and Estévez, 2007). In Latin America, the transition to a more democratic electoral environment in the last 10 years, combined with a comprehensive economic reform, has changed the extent and nature of social programs design and implementation, as well as the political dynamics associated with them. Moreover, CCT programs have coexisted with traditional forms of canvassing and exchange of goods and favors for votes and political support.

The economic literature has long focused on the study of distributive politics in developing countries from the perspective of corruption and clientelism. Only recently has this literature incorporated systematic empirical work exploring the existence of legitimate electoral rewards to political parties and candidates as an effect of welfare-enhancing programs. Zucco (2013) argues that the 2006 shift in Lula's electoral base away from the more developed regions

of Brazil and into its poorest areas can be explained in part by the government's massive cash transfer program, Bolsa Família. Manacorda, Miguel, and Vigorito (2011) estimate the effect of government transfers on political support for the incumbent party using data from Uruguay's conditional cash transfer program PANES. They find that beneficiaries were between 25 and 33 percentage points more likely than non-beneficiaries to favor current government and the effect was significantly larger among poorer households, and among those less attached to extreme political ideologies.

Evidence of an electoral payoff from the Mexican poverty alleviation program is mixed. Using the program's randomized experiment, De la O Torres (2007, 2013) found that the implementation of the transfer increased turnout in presidential elections of 2000 by five percentage points and increased the share of votes for the incumbent party by four percentage points. Green (2006) found no effect of PROGRESA on community-level voter participation in the 2000 federal elections and no change in vote shares for the federal legislative elections between 1997 and 2000. In addition to using different empirical strategies to look at the effect of the government transfer and have results that may seem contradictory, these two studies do not look at the same elections: De la O Torres (2007) uses data on presidential elections while Green (2006) looks into electoral outcomes for Congress (Senators and Deputies). The results may be interpreted as evidence of heterogeneity in the ability of different levels of government to "claim credit" for the benefit.

In the Mexican context, political aspirations respond to party dynamics and local politicians have strong incentives to win the election for their party. Despite the constitutional ban on reelection of office-holders, career concerns create incentives for local politicians to exert effort and seek party reelection. Persico, Rodríguez-Pueblita, and Silverman (2011) develop a model of political competition with party factions and test its implications with a case study of political budget cycles in Mexico. Their analysis shows a strong association between the political cycle and the "incumbent" governor's later success in the party. The fact that local politicians may seek electoral rewards from the enrollment of their constituencies to the federal program appears to be a valid hypothesis: by winning the election for their parties, outgoing municipal officers shape their career paths as future nominees or become part of the party bureaucracy.



On the voters' side, attribution errors are plausible. In 2006 a survey carried out by the United Nations Development Program showed that 20 percent of Oportunidades' beneficiaries did not know which level of government is responsible for the transfer. About 7 percent answered that the transfer came from the state government, and 5 percent said that it came from the municipal government.<sup>3</sup> It is worth noting that, even if beneficiaries recognize that the transfer comes from the federal government, there are informational events that send the voters signals linking the local politician to the program so that he may be partially credited for it. On the other hand, local governments can claim to be negotiating incorporation into the program on behalf of their constituencies.

Rewarding incumbents who are "able" to claim credit but otherwise incompetent may have important effects in terms of political accountability. Without reliable and efficient accountability mechanisms for each level of government, claiming credit for social programs could turn into a race-to-the-bottom situation.

This work also contributes to a growing economics literature on the relationship between politician behavior, exogenous shocks and electoral outcomes.<sup>4</sup> Notably, Afzal (2007) examines the relationship between exogenous shocks and electoral outcomes in South Asia and argues that good exogenous shocks may change the politician's incentives.

The remainder of the paper is structured as follows. Section 2 presents background on PROGRESA-Oportunidades and the electoral context in Mexico. Section 3 describes the construction of the data. Section 4 discusses the identification strategy and the empirical results. Section 5 analyzes alternative explanations to the successful credit claiming interpretation and looks at possible mechanisms driving the results. Section 6 concludes.

## **2. Background: PROGRESA-Oportunidades and the Mexican Context**

In 1997, the Mexican government launched PROGRESA. In the first year of implementation approximately 140,000 rural households were incorporated. By the year 2000, PROGRESA included 2.6 million families in 31 Mexican states. Renamed "Oportunidades," the program was maintained and expanded to urban areas by the government of President Fox after 2001. In 2007,

---

<sup>3</sup> UNDP (2007).

<sup>4</sup> Afzal (2007), Wolfers (2007), and Achen and Bartels (2004).

5.1 million families—more than 20 million people—were receiving transfers that amounted to 0.6 percent of Mexican GDP.

PROGRESA-Oportunidades is a poverty alleviation program that provides cash transfers to beneficiary families conditional on children attending school and family members visiting health clinics for vaccination, preventive health care and nutritional supplements distribution. The average transfer represents about 20 percent of the pre-intervention monthly consumption of a beneficiary family (Skoufias, 2005). Two important features of the program represent a twist from the traditional style of social policy interventions in Mexico: the direct distribution of the transfer from the federal government to the pockets of poor people and the use of technical criteria to select beneficiaries.

Centralized design and operation are key elements of the program: a federal agency in charge of the program gathers all the necessary data, determines eligibility, coordinates implementation with other federal ministries and directly delivers the transfer to the beneficiary households. While state governments are in charge of providing health and education services, state and municipal governments play no role in the program's operation.

Selection into PROGRESA involved a two-stage process. First, it involved the identification of localities.<sup>5</sup> In 1995, the average number of localities within a municipality was 96. Localities became eligible based on a number of characteristics (Skoufias, Davis, and de la Vega, 2001), namely: i) marginality condition: localities were classified using a marginality index based on data from the national census and only those considered to be of high marginality were included in the program; ii) rural localities—defined as localities with less than 2,500 inhabitants—were selected; iii) geographical isolation: localities with fewer than 50 inhabitants were excluded from the program as they were considered geographically isolated; and iv) access to health and education services: only localities considered to have access to a health clinic as well as to primary and secondary schools were incorporated into the program. Second, within the selected localities, the poverty status of the households was determined by a score derived from a discriminant-analysis formula using socioeconomic and demographic data collected by the program in the household census ENCASEH.

---

<sup>5</sup> “Locality” refers to an inhabited house or group of houses with a commonly recognized name. It generally corresponds to villages or towns.

The expansion of the program over time has been mainly determined by budget allocations and followed the criteria described in Coady (2000) and Skoufias, Davis, and Behrman (1999): in 1998, the requirement on access to a health service clinic was dropped; by 1999, localities previously excluded by the geographical isolation criterion were incorporated into the program; and in 2001, urban localities became eligible. Figure 1 shows that the most intensive phases of enrollment in the program took place in 1998 and 2002. There is evidence that PROGRESA-Oportunidades has expanded in line with the geographical distribution of poverty, going from the smallest and poorest rural localities into relatively less poor and larger localities (Levy, 2006; Levy and Rodríguez, 2004).

To assess the causal effect of enrollment in the transfer program on the municipal electoral outcomes I use PROGRESA-Oportunidades' sequential expansion across municipalities, exploiting variation in the intensity of treatment both within and between municipalities. It is important to mention that the variables relevant for the program expansion described above were measured as in 1995. This gives us confidence that the phasing-in rules are not correlated with subsequent electoral results. One potential concern though, is the possibility that some of the relevant characteristics guiding the program's expansion changed, with enrollment responding to such change. This possibility becomes more plausible as the period of analysis extends beyond 2001. As explained in Subsection 4.2, an instrumental variables approach will be followed in order to deal with the potential bias.

The municipality is the smallest administrative unit in the Mexican political system. Municipalities largely vary in population and territory size. Municipal elections are held every three years, with all municipalities within a state having their election on the same date, but states have different calendars for municipal elections. Table 1 describes the calendar of municipal elections considered for the analysis.

As mentioned above there is no possibility of reelection. Mayors can run for a second term in a non-consecutive election, though they rarely do. The typical career path after being Mayor consists of seeking a post in either the local or the Federal Congress. Throughout this paper I will therefore refer of incumbency and reelection of the political parties. The number of parties and the coalitions they may form vary from one state to the other and within the same state from one election to the other; however there are three main parties—Partido Acción

Nacional (PAN), Partido Revolucionario Institucional (PRI), and Partido de la Revolución Democrática (PRD)—which govern more than 95 percent of municipalities.

### **3. Data**

Data on the outcomes of elections for Mayors throughout the period 1994 to 2007 were compiled from the Electoral Institutes in each state. The share of votes for the incumbent party in the municipality is the key dependent variable; it is calculated as the number of votes obtained by the incumbent party relative to the total number of valid votes cast in the municipality. Figure 2 plots the average share of votes for the local and federal incumbent parties in elections for Mayors over time. Votes for the federal incumbent refers to the share of votes in the local elections for the President's party, which is for PRI before the year 2000 and for PAN afterward. The graph shows a marked decline in the share of votes for the incumbent over time, which can be interpreted as a result of democratization and the strengthening of political competition. It is important to notice that voting for the local and federal incumbent parties move together before 2000—the PRI era—however, between 2000 and 2006 the average share of votes for the federal incumbent party—PAN—is significantly lower than the average share of votes for the local incumbent party.

For the analysis in this paper, a dummy variable indicating whether the incumbent party was reelected is constructed, and the margin of victory is calculated as the difference in percentage points between the share of votes obtained by the winner and the incumbent. The number of candidates participating in each election and dummy variables encoding the specific parties are used as a control variables.

Figure 3 shows the average share of votes for the local incumbent by party. Although the share of votes when the incumbent is PRI remains the highest throughout the period of analysis, it decreases significantly. Figure 4 presents the pattern of reelection for incumbent parties throughout the period of analysis, which showed a substantial drop-off mainly after the year 2000. This is in part a result of the progressive lessening of PRI's hegemony in recent decades.

I combine the electoral data with the municipality-level measure of families receiving the PROGRESA-Oportunidades transfer and construct a panel data set of 1,863 municipalities including four elections for Mayors; one election before the implementation of the program and

three afterward. There are 2,438 municipalities in Mexico; however, the Federal District's 16 "delegaciones" are not included in the analysis. Municipalities in the State of San Luis Potosí were not included since this State is the only one that has implemented a second-round system for local elections. Municipalities in the State of Oaxaca, whose local leaders are selected via traditional practices—legally recognized as "Usos y Costumbres" (rather than parties and secret ballots)—are not included in the analysis either. Of the remaining 29 states, only municipalities for which data on electoral outcomes are available for the four elections are part of the panel.

Administrative data on the number of households registered for the program each two months period are available from the central office of Oportunidades for each locality from the introduction of the program in 1997 to 2007. I aggregate these data at the municipality level.

The percent enrollment to the program during the election year is used as the main explanatory variable. It represents the percentage of families in the municipality that were enrolled in the program during the 12 months prior to the election date. As the summary statistics presented in Table 2 show, the average total enrollment in a municipality throughout the period is approximately 22 percent, and the average enrollment during the election year is 4.7 percent.<sup>6</sup>

Municipality characteristics used in the analysis are constructed from the 1995 and 2005 Conteo data as well as Census information for 1990 and 2000, available on the Mexican Institute of Statistics (INEGI) website.<sup>7</sup> The marginality index is publicly available on the Mexican Population Council (CONAPO) website. Information on average household income for each municipality comes from the 2005 National Human Development Report published by UNDP in Mexico.

A first approximation to the argument is shown in Figure 5. Municipalities in the dataset are classified as "high enrollment" when 14 percent of the households or more were enrolled in the program within the period of twelve months previous to the election year, and "low PROGRESA" otherwise. The cutoff of 14 percent represents the average enrollment during the election year for the whole sample of municipalities plus one standard deviation.

Figure 5 is revealing: except for 2000, municipalities where more than 14 percent of the households were enrolled into the program during the election year presented a higher share of

---

<sup>6</sup> Values of the total percent enrollment greater than 100 were set to missing. These represented approximately 0.5 percent of municipalities.

<sup>7</sup> The Conteo is a shorter census.

votes for the incumbent in comparison to municipalities with lower enrollment during the election year. The content of this figure motivates the analysis. The aim of this work is to identify econometrically how much, if any, of the effect shown in the figure is due to PROGRESA-Oportunidades, and whether this can be interpreted as Mayors getting credit for the benefit.

## 4. Identification and Empirical Strategy

### 4.1 Basic Empirical Framework

Identifying the causal effect of the cash transfer benefit on electoral outcomes is not straightforward due to the potential bias caused by correlation of the enrollment in the program with unobserved characteristics of individuals or municipalities. To address these difficulties, I follow a non-experimental research design using the phasing-in of the program over time in Mexico. The empirical strategy exploits variation in the intensity of treatment indicator—the percentage of households enrolled in the government transfer program—both within and between municipalities.

The basic framework for the analysis is a fixed effects regression. Consider the share of votes for the incumbent in municipality  $m$  at time  $t$ ,  $Vote_{mt}$ , to depend on a) municipality characteristics, such as distance to the State capital or geographical extension, that will be absorbed in a municipality fixed effect; b) municipality-specific characteristics at the time of the election involving, for example, party-alignment (whether the municipal incumbent is of the same party as the federal government) and the number of candidates participating in the election; and c) the percentage of families enrolled in the program,  $C_{mt}$ . I assume a linear model and exploiting the availability of panel data I can write equation (1):

$$Vote_{mt} = \delta_m + \beta_t + \alpha C_{mt} + \pi \mathbf{Z}_{mt} + \epsilon_{mt} \quad (1)$$

where municipality fixed effects  $\delta_m$ , absorb for time-invariant unobservables and the inclusion of time fixed effects  $\beta_t$  control for time trends.  $\mathbf{Z}_{mt}$  represents a series of municipality-specific time-varying controls, and  $\epsilon_{mt}$  is a random shock.  $\alpha$  captures the effect of PROGRESA coverage on the share of votes for the incumbent across municipalities.

The identification assumption behind the empirical strategy is that changes in the share of votes for the local incumbent would be the same in municipalities with no enrollment in PROGRESA-Oportunidades and municipalities with some enrollment had the latter not joined the program. Although this assumption cannot be tested, to evaluate its validity Equation (2) tests whether the share of votes that the Mayor obtained when elected is not correlated with different enrollment levels in the subsequent election year, after controlling for time and municipality fixed effects:

$$C_{mt} = \delta_m + \beta_t + \lambda \text{Vote}_{m,t-3} + \Phi \mathbf{Z}_{mt} + u_{mt} \quad (2)$$

$C_{mt}$  is, as before, the percentage of families enrolled into the program at time  $t$ ,  $\delta_m$  and  $\beta_t$  are municipality and time fixed effects respectively.  $\text{Vote}_{m,t-3}$  is the share of votes obtained by the Mayor at the time of her election ( $t - 3$ ).

Table 3 reports the results of estimating the validity check described in Equation (2). We observe in column 2 that, once municipality and time effects are introduced,  $\lambda$  is not significantly different from zero. As shown in column (3), this result is robust to the inclusion of control variables. If enrollment in the program responded to previous electoral outcomes, I might find  $\lambda$  to be statistically significant; however, I fail to find evidence of endogenous program assignment.

I now proceed to estimate the basic fixed effects model described in Equation (1). Table 4 provides the results of estimating three different specifications of equation (1). First, I regress the share of votes for the Mayor’s party on the percentage of families enrolled in PROGRESA-Oportunidades during the election year. Results presented in column (1) suggest a positive and statistically significant effect on the share of votes for the local incumbent party. Column (2) shows the estimates of the same equation when including a set of context-specific variables such as the number of candidates participating in the election and dummy variables indicating whether or not the local incumbent is of the same party as the federal incumbent (i.e., the President’s party) as well as variables for the specific incumbent party. The estimate for the main explanatory variable decreases in magnitude but remains positive and statistically significant.<sup>8</sup>

---

<sup>8</sup> When using “total enrollment during the Mayor’s 3-year period in office” as independent variable in the analysis—instead of enrollment on the election year—the coefficient is not statistically different from zero. This reinforces the idea of the “peak and end” argument of short memory in retrospective voting.

An alternative specification, a stronger version of successful credit claiming, consists of the following linear probability model:

$$Prob(reelec_{mt}) = \delta_m + \beta_t + \mu C_{mt} + \pi \mathbf{Z}_{mt} + e_{mt} \quad (3)$$

where  $reelec_{mt}$  is equal to one when the incumbent party was reelected and equal to zero when it was not reelected in municipality  $m$  at the election-year  $t$ . Despite the existing literature on dynamic binary probit or logit response models (Chay and Hyslop, 2000), I use a linear probability model because of the flexibility it provides when handling unobserved heterogeneity. Column (3) in Table 4 shows a positive and significant effect of the additional enrollment in PROGRESA-Oportunidades on the probability that the Mayor's party is reelected.

Finally, I use the basic fixed effects model outlined in Equation (1) to estimate the effect of enrollment in the transfer program on electoral turnout for municipal elections. I find no evidence of such an effect. Column (4) in Table 4 shows that the coefficient for the percentage enrollment in the year previous to election is negative but not statistically significant. In the next section, I investigate the robustness of this result and elaborate on its implications.

In terms of the estimations of the effect on the share of votes for the local incumbent, results presented in the three first columns of Table 4, although positive and significant, are not large in magnitude. The average effect of enrollment into PROGRESA-Oportunidades during the election year is about a half percent point increase in the share of votes for the incumbent party. In Section 5.1, I develop in detail the analysis on the magnitude of the enrollment effect and its possible variation with municipality characteristics. For the rest of this section I concentrate on the validity of the results.

## 4.2 IV Analysis

The analysis presented up to now rests on the assumption that changes in incorporation into PROGRESA-Oportunidades are due to the phasing-in scheme set by the federal government and changes in the eligibility rules. However, since our analysis extends over a long period of time—13 years—it is likely that some municipality characteristics changed. The estimates would be biased if changes in the enrollment in the program are correlated with changes in the population eligibility levels over time (i.e., population falling into poverty).



To address the potential endogeneity, an instrumental variable approach is suggested. The enrollment of families into the program is instrumented using the changes in the rules of eligibility that guided its expansion. The first stage of the estimation is described by equation (4):

$$\hat{C}_{mt} = \delta_m + \beta_t + \theta_1 PopHigMarginality * I(t \leq 2000) + \theta_2 UrbanPop * I(t \geq 2001) + \theta_3 PopIsolated * I(t \geq 1998) + \pi Z_{mt} + \epsilon_{mt} \quad (4)$$

The percentage of families in municipality  $m$  that started receiving the transfer at time  $t$  is instrumented by a) the percentage of population living in localities classified with High and Very High Marginality Index, a criterion used to target sequentially high marginalized areas in the earliest phase of the program and less marginalized areas in later stages; b) the percentage of urban population; and c) the percentage of population living in isolated localities. These variables are interacted with indicator functions for the years when they have been relevant as eligibility rules. Table 5 shows the first stage of the IV estimation.

When discussing supportive arguments for the validity of these instruments, two comments are in order. First, as shown in Table 5, the interactions of the eligibility rules with the indicator functions are good predictors of the actual enrollment into the program. Second, there are arguments for the exclusion restriction to hold:

1. Potential source of endogenous determination of the rules of eligibility or the time threshold to apply them would have to be at the central PROGRESA office. Therefore according to the political interest of the central government.
2. Rules were created for all localities, in all municipalities—2,437 in 2000—governed by different parties.
3. Changes to the rules of operation had to be approved by the Federal Congress.
4. Relevant indicators are measured in 1995 so it seems implausible that those were affected by voting behavior in subsequent years.
5. The Marginality Index was not created by the PROGRESA office, nor was it created with the specific objective of serving as eligibility indicator.

Table 6 reports the coefficients on PROGRESA-Oportunidades enrollment from a set of IV regressions. Column (1) shows that a one-point increase in the percent of families enrolled during the election year increases by 0.6 point the share of votes for the incumbent. This result

implies an average effect of about 2.8 percent points. For 15 percent of the elections studied, the margin of victory was less than the average effect of 2.8 percent points. This means that, for 15 percent of the observations, the average enrollment in the program during the election year would have been enough to change the outcome of the election for Mayor.

From column (2) in Table 6 it can be seen that the probability of the Mayor's party being reelected increases by about one percent point for an additional percent point increase in the families registered in the program. This represents for the average enrollment an increase in the probability of reelection for the Mayor's party from 58 percent to 62 percent. The coefficient for program enrollment shown in Column (3) suggests that an additional percentage point of families entering PROGRESA-Oportunidades reduces the gap between the winner in the election and the incumbent party by about a sixth of a percentage point. This implies that the average enrollment would reduce the gap from 5.37 to 4.67 percentage points.

In addition to the impact of the program, results for the alignment variable are interesting: conditional on the covariates, being of the same party as the President's increases the share of votes for the Mayor's party by 3.2 percentage points and increases the probability of being reelected by almost 10 percentage points.

Finally, consistent with the results obtained when using OLS, I do not find evidence of an effect of the government program on turnout for local elections. As Column (4) in Table 6 shows, the coefficient is not statistically different from zero. The question of how beneficial policies affect turnout, if they do at all, has no clear answer in the empirical literature. For the specific case of PROGRESA-Oportunidades, De la O Torres (2007) finds an effect of 4 percent on turnout in elections for President in the randomized localities receiving the transfer for 21 months prior to the election in comparison with the control localities receiving the transfer only for four months. Green (2006) finds no effect of enrollment in the program on turnout in elections for Federal Congress.

The results from the IV approach presented in Table 6 provide further evidence that the estimates represent a causal effect of PROGRESA-Oportunidades. Overall, the findings suggest an electoral reward for the Mayor's party in municipalities with higher enrollment in the federal program during the year prior to the election. Since this enrollment does not appear to increase

participation, the reward for the Mayor's party can be interpreted as result of a change in vote intention towards the incumbent party.

## **5. Credit Claiming and Alternative Explanations**

In the introduction I argue that local politicians have incentives to claim credit for good outcomes and try to win the election for their party. I am not able to examine politicians' characteristics or behavior to link the findings to the credit claiming mechanism. However, the analysis of heterogeneity in the electoral effect provides evidence that successful credit claiming for the benefit by Mayors is a plausible explanation. In this section, I evaluate a range of alternative explanations and present a series of results consistent with the initial hypothesis.

### ***5.1 The Potential Effect of Party Alignment***

The first and more direct explanation of a local electoral reward from the centralized transfer program is party alignment. Under this explanation, voters would recognize PROGRESA-Oportunidades as a federal program credit the President's party for the benefit and reward it in local elections. To investigate whether there is evidence for this mechanism, I estimate the basic IV regression including an interaction term between the alignment variable and the percentage of families entering the program during the election year. Results are shown in column (1) of Table 7. The coefficient on the interaction is -0.091 and is not statistically significant. This estimate, along with the estimate of the enrollment variable itself, suggest that there is no significant difference in the effect of PROGRESA-Oportunidades for municipalities with and without alignment of the Mayor's and the President's party.

In order to rule out the possibility that the alignment explanation would be valid when the local incumbent party is the same as the State Governor's party or when the executives of the three levels of government in Mexico—Mayor, Governor and President—belong to the same party, a regression that includes interaction terms with the alignment variables is estimated. As can be seen in column (2), none of the coefficients of the interaction terms are significant. Although it is not significant, the sign and magnitude of the coefficient for alignment of the three levels of government could indicate some role of party alignment; however, the results in Table 7 do not support the interpretation of voters rewarding the federal incumbent at the local elections

as the mechanism through which the Mayor party is getting some credit for the antipoverty program.

## ***5.2 “Warm Feeling” and Vote for the Incumbent***

Another potential explanation to the electoral response caused by beneficial policies is what has been called in the Political Economy literature a “warm feeling.” There is evidence that winners and recipients of benefits are more likely to credit the governing party with having good intentions and reward it with their vote as a consequence of the “warm, fuzzy feeling” of receiving a good outcome. For example, Pop-Eleches and Pop-Eleches (2009) find evidence that “winners” of a voucher program in Romania were more likely to switch their political allegiances from the opposition to the current incumbents.

Under this explanation, voter response is not motivated by a change in politicians’ attitude or behavior; the political party of the Mayor would obtain higher share of votes from the transfer program only as a consequence of being the incumbent. Receiving the PROGRESA-Oportunidades transfer would make voters happy and they would have a warm, fuzzy feeling about the state of the world and credit the current government.

The analysis of heterogeneity shown in Table 8 does not support the “warm feeling” interpretation. If this were the explanation for the electoral reward for the Mayor’s party, we should not expect a difference in the effect among political parties or among municipalities with different political context. I interact the main explanatory variable, enrollment in the program during the election year, with dummy variables for each political party and examine whether some political parties are more successful than others at getting electoral rewards from the targeted conditional transfer. I also analyze whether the effect varies with political characteristics, namely the strength of the incumbency.

Column (1) in Table 8 shows negative coefficients for the interaction terms with PAN and other parties, while a positive and significant coefficient is found for the interaction with PRD. These results suggest that PRD is relatively more able than PRI—the omitted category—at getting rewards for the enrollment of households into the central program, while PAN is less successful and other political parties are not different from PRI.

The results from a regression exploring the possibility of a differentiated effect attributed to the political context are shown in column (2). The margin of victory in the previous election is interacted with the enrollment variable in order to measure the marginal effect of the PROGRESA-Oportunidades enrollment in municipalities with incumbency advantage. The coefficient for this interaction suggests higher electoral rewards for Mayors that faced a more contestable election.

Together the estimations in both columns indicate that at least some part of the local electoral response to PROGRESA-Oportunidades is not driven by the pure bliss of receiving an economic benefit during the incumbent's administration. So far, the results are consistent with the hypothesis that Mayors engage in credit claiming and potentially do so with higher probability whenever there is higher competition or clearer danger of losing the election for their party; however, the evidence shown up to now is also consistent with other interpretations. For instance, differences in characteristics of the population may have an important role in determining voter response to government spending. Following the literature, I explore in Section 5.3 how the electoral effect varies with socio-demographic characteristics.

### ***5.3 Information Flows and Attribution Error***

Examining the potential heterogeneity in the impact of program enrollment is crucial to analyze whether it can be explained by attribution errors. As discussed in the introduction, it has been documented in additional sources of data that beneficiaries of PROGRESA-Oportunidades believe the local government is in charge of the program.<sup>9</sup> The existing literature on the political impact of government spending suggests that the electoral impact for the incumbent mistakenly attributed a benefit would depend on population size, population dispersion, information flows among voters and geographical conditions.<sup>10</sup>

Table 9 presents the estimates of a regression that allows for heterogeneous effect of PROGRESA-Oportunidades depending on the municipal socio-demographic characteristics available from census data and the 2005 Mexican Human Development Report. These results suggest that the electoral reward for the incumbent party from family enrollment in the transfer

---

<sup>9</sup> The UNDP's ENAPP survey of PROGRESA-Oportunidades beneficiaries in 2006 reports that 5 percent of respondents said that the cash transfer came from the municipal government.

<sup>10</sup> Boulding (2010) and Ebeid and Rodden (2006).

program is larger in municipalities with less poverty, lower share of rural population and higher rates of literacy, and in those municipalities where the state capital is located. Column (1) shows that municipalities where 75 percent of the population or more live in urban localities double the electoral effect with respect to its magnitude in the less urban municipalities. Column (2) shows that enrollment in the transfer program has a much greater effect in municipalities where the household income is above the median income for all municipalities, corresponding to 797 pesos in 2000—approximately 80 dollars. In the same way, column (3) suggests a much larger effect for municipalities with literacy rates above 88 percent—the median literacy rate of municipalities in the dataset. Finally, column (4) shows a more than proportional impact of PROGRESA-Oportunidades in municipalities where the capitals of states are located.

These results seem hard to interpret in light of the mechanism under which better education and access to communication and media enhance voters' awareness about the level of government actually responsible for the benefit and thus diminish the probability of mistakenly attributing credit to the local government for a federal policy. However, voters crediting the Mayor's party with higher probability in urban, less poor, more educated areas, is consistent with three relevant elements. First, information flows between beneficiaries and non-beneficiaries tend to dilute in predominantly urban municipalities. Second, it is recurrent in the political science literature that wealthier voters are more likely to participate in politics than low-income groups. Politicians, as a result, have more incentives to react to the ideological preferences of wealthier constituencies.<sup>11</sup> Third, the characteristics of the Mexican political system suggest that political career concerns may be significantly different for Mayors governing the State capital and important cities in comparison with Mayors in small, mostly rural municipalities.

The results provide evidence that informational events and signals linking the local politician to the program may be the element explaining the Mayor getting the credit for the benefit of the federal transfer program.

---

<sup>11</sup> See, for example, Gilens (2005).

## 6. Conclusions

With the objective of limiting the opportunities for political manipulation, PROGRESA-Oportunidades, the wide-known Mexican CCT program, was designed so that there were no intermediaries between the federal government and the beneficiaries. This paper investigates whether there is evidence of voters rewarding the local incumbent party for the nationally-administered transfer program.

A fixed effects model is used as basic analytical framework and enrollment of families into the program is instrumented using the plausibly exogenous changes in the rules of eligibility that guided its expansion. The evidence presented in this work tells a consistent story. There is a positive and significant effect of enrollment in the program during the election year on the share of votes for the local incumbent party. The estimated effect accounts for approximately 2.8 percentage points on average, meaning that Mayors in municipalities where approximately 4.7 percent of the households were enrolled in PROGRESA-Oportunidades within the 12 months prior to the local election date were rewarded with almost 3 percentage points of additional share of votes for their party. The reward for the Mayor's party can be interpreted as the result of a change in vote intention towards the incumbent party given that no evidence of an effect on electoral turnout is found.

Estimates suggest that there is no significant difference in the effect of PROGRESA-Oportunidades in municipalities where the Mayor is from the same party as the President's party. This result suggests that the effect cannot be interpreted as a reward for the federal incumbent in the local elections.

A range of alternative explanations is explored through the analysis of heterogeneity in the effect. Findings show little evidence in favor of a "warm feeling" effect and are rather consistent with the hypothesis that Mayors will engage in credit claiming with higher probability whenever they face more contestable elections. Estimates suggest that the electoral reward for the incumbent party is larger in municipalities with less poverty, lower share of rural population and higher rates of literacy, and in those municipalities where the state capital is located. I am not able to examine politicians' characteristics or behavior to link the findings to the credit claiming mechanism, but I argue that results provide evidence of a dominant effect of the political career concerns factor motivating credit claiming by Mayors.

This paper contributes to the literature on retrospective voting and political accountability by providing empirical evidence on the extent to which local politicians get credit from actions financed and carried out by the central government. The results highlight the importance of reliable and efficient accountability mechanisms for each level of government to prevent credit claiming of social programs turning into a race-to-the-bottom situation.



## References

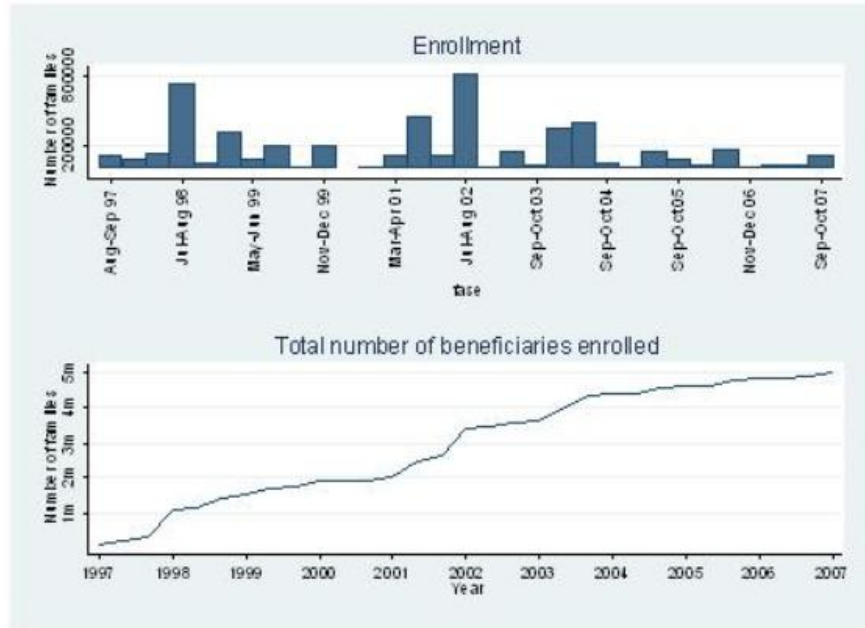
- Achen, C., and L. Bartels. 2004. "Musical Chairs, Pocketbook Voting and the Limits of Democratic Accountability." Paper presented at the Annual Meeting of the American Political Science Association, September 1–5, Chicago, IL, United States.
- Afzal, M. 2007. "Voter Rationality and Politician Incentives: Exploiting Luck in Indian and Pakistani Elections." New Haven, United States: Yale University. Unpublished.
- Barham, T. 2010. "Providing a Healthier Start to Life: The Impact of Conditional Cash Transfers on Infant Mortality." *Journal of Development Economics* 94(1): 74–85.
- Behrman, J.R., and E. Skoufias. 2006. "Mitigating Myths about Policy Effectiveness: Evaluation of Mexico's Anti-Poverty and Human Resource Investment Program." *Annals of the American Academy of Political and Social Science* 206(1): 244–75.
- Besley, T. 2006. *Principled Agents? The Political Economy of Good Government*. New York, United States: Oxford University Press.
- Boulding, C.E. 2010. "NGOs and Political Participation in Weak Democracies: Subnational Evidence on Protest and Voter Turnout from Bolivia." *Journal of Politics* 72(2): 456–68.
- Brusco, V., M. Nazareno, and S.C. Stokes. 2002. "Clientelism and Democracy: Evidence from Argentina." Yale University Conference on Political Parties and Legislative Organization in Parliamentary and Presidential Regimes, March, New Haven, United States.
- Chay, K., and D. Hyslop. 2000. "Identification and Estimation of Dynamic Binary Response Panel Data Models: Empirical Evidence Using Alternative Approaches." Berkeley, United States: University of California, Economics Department. Manuscript.
- Coady, D.P. 2000. "The Application of Social Cost-Benefit Analysis to the Evaluation of PROGRESA." Final report. Washington, DC, United States: IFPRI.
- De la O Torres, A.L. 2007. "Effects of Anti-Poverty Programs on Electoral Behavior: Evidence from the Mexican Education, Health, and Nutrition Program." Cambridge, United States: Massachusetts Institute of Technology (MIT). Ph.D. dissertation.
- . 2013. "Do Conditional Cash Transfers Affect Electoral Behavior? Evidence from a Randomized Experiment in Mexico." *American Journal of Political Science* 57(1): 1–14.
- Ebeid, M., and J. Rodden. 2006. "Economic Geography and Economic Voting: Evidence from the US States." *British Journal of Political Science* 36(3): 527–47.

- Fiorina, M.P. 1978. "Economic Retrospective Voting in American National Elections: A Micro-Analysis." *American Journal of Political Science* 22(2): 426–43.
- . 1981. *Retrospective Voting in American National Elections*. New Haven, United States: Yale University Press.
- Gilens, M. 2005. "Inequality and Democratic Responsiveness." *Public Opinion Quarterly* 69(5): 778–96.
- Glazer, A., and B. Segendorff. 2005. "Credit Claiming." *Economics of Governance* 6(2): 125–37.
- Green, T. 2006. "The Political Economy of a Social Transfer Program: Evidence on the Distribution of PROGRESA in Mexico, 1997–2000." Berkeley, United States: University of California. Ph.D. dissertation.
- Langer, T., R. Sarin, and M. Weber. 2005. "The Retrospective Evaluation of Payment Sequences: Duration Neglect and Peak-and-End Effects." *Journal of Economic Behavior and Organization* 58(1): 157–75.
- Levy, S. 2006. *Progress against Poverty: Sustaining Mexico's Progres-Oportunidades Program*. Washington, DC, United States: Brookings Institution Press.
- Levy, S., and E. Rodríguez. 2004. *Economic Crisis, Political Transition, and Poverty Policy Reform: Mexico's Progres-Oportunidades Program*. Policy Dialogue Series. Washington, DC, United States: Inter-American Development Bank.
- Magaloni, B., A. Díaz-Cayeros, and F. Estévez. 2007. "Clientelism and Portfolio Diversification: A Model of Electoral Investment with Applications to Mexico." In: H. Kitschelt and S.I. Wilkinson, editors. *Patrons, Clients, and Policies: Patterns of Democratic Accountability and Political Competition*. New York, United States: Cambridge University Press.
- Manacorda, M., E. Miguel, and A. Vigorito. 2011. "Government Transfers and Political Support." *American Economic Journal: Applied Economics* 3(3): 1–28.
- Persico, N., J.C. Rodríguez-Pueblita, and D. Silverman. 2011. "Factions and Political Competition." *Journal of Political Economy* 119(2): 242–88.
- Pop-Eleches, C., and G. Pop-Eleches. 2009. "Government Spending and Pocketbook Voting: Quasi-Experimental Evidence from Romania." New York, United States: Columbia University and Princeton, NJ, United States: Princeton University. Unpublished.

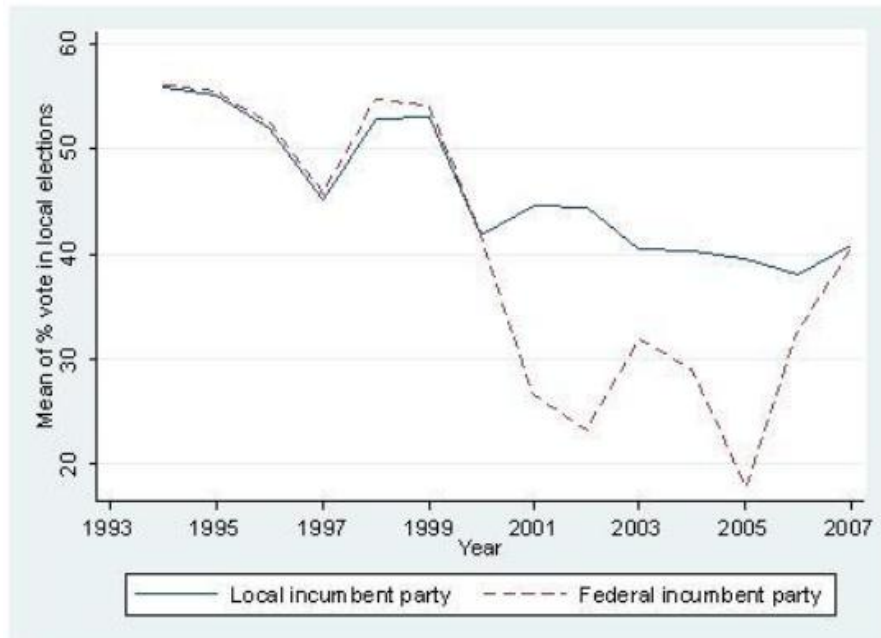
- Samuels, D.J. 2005. "Pork-Barreling Is Not Credit-Claiming or Advertising: Campaign Finance and the Sources of the Personal Vote in Brazil." *Journal of Politics* 64(3): 845–63.
- Skoufias, E. 2005. "PROGRESA and Its Impacts on the Welfare of Rural Households in Mexico." Research Report 139. Washington, DC, United States: International Food Policy Research Institute
- Skoufias, E., B. Davis, and J.R. Behrman. 1999. "An Evaluation of the Selection of Beneficiary Households in the Education, Health, and Nutrition Program (PROGRESA) of Mexico." Final report. Washington, DC, United States: International Food Policy Research Institute.
- Skoufias, E., B. Davis, and S. de la Vega. 2001. "Targeting the Poor in Mexico: An Evaluation of the Selection of Households for PROGRESA." FCND Discussion Paper 103. Washington, DC, United States: International Food Policy Research Institute.
- UNDP (United Nations Development Programme). 2007. *Encuesta Nacional sobre la Protección de los Programas Sociales (ENAPP) 2006*. Mexico City, Mexico: UNDP. Available at: [http://www.programassociales.org.mx/biblioteca/ENAPP\\_2006.pdf](http://www.programassociales.org.mx/biblioteca/ENAPP_2006.pdf). Accessed November 2014.
- Wolfers, J. 2007. "Are Voters Rational? Evidence from Gubernatorial Elections." Philadelphia, PA, United States: Wharton School, University of Pennsylvania. Unpublished.
- Wooldridge, J.M. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA, United States: MIT Press.
- Zucco, Jr., C. 2013. "When Payouts Pay Off: Conditional Cash Transfers and Voting Behavior in Brazil 2002–10." *American Journal of Political Science* 57(4): 810–22.

## Tables and Figures

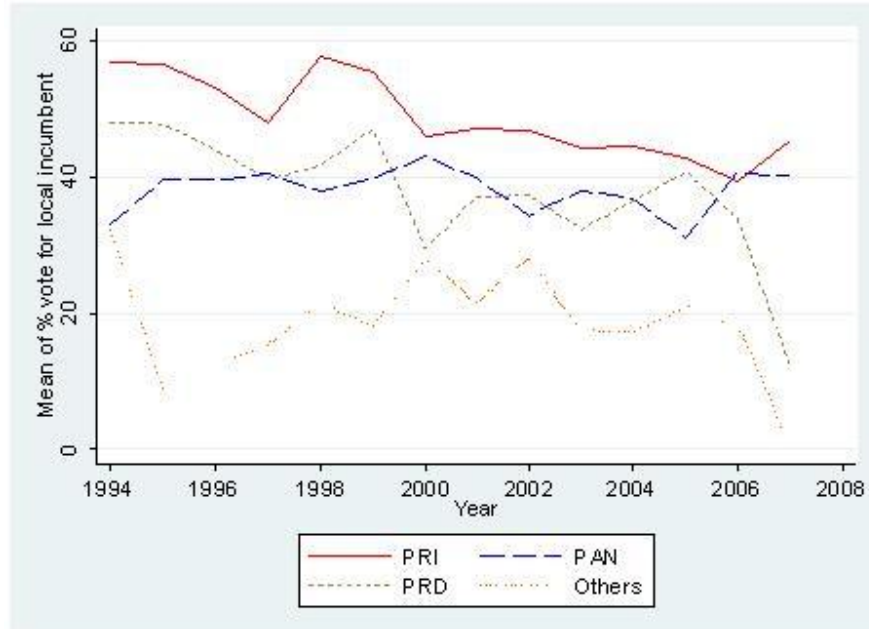
**Figure 1. Enrollment in PROGRESA-Oportunidades**



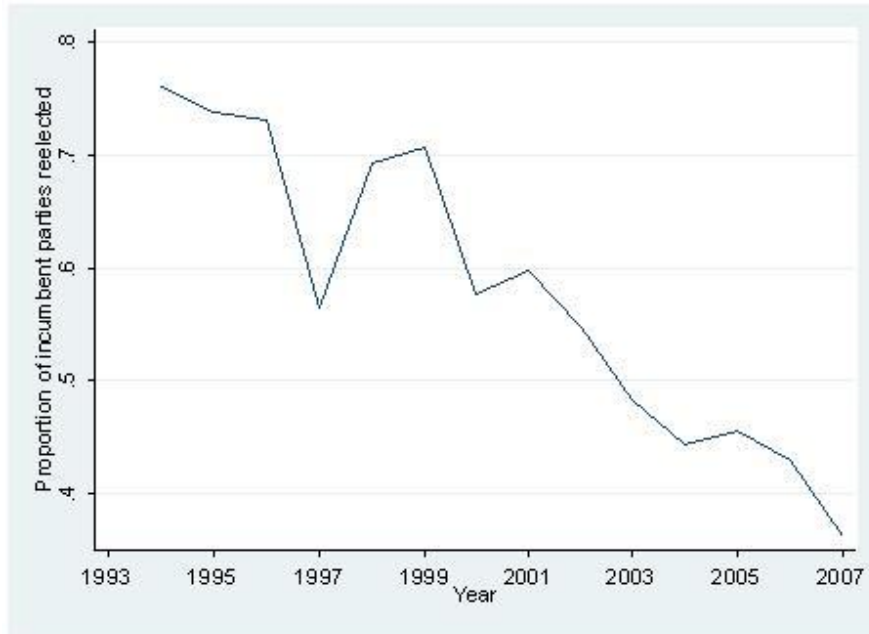
**Figure 2. Average Share of Votes for Incumbent in Local Elections**



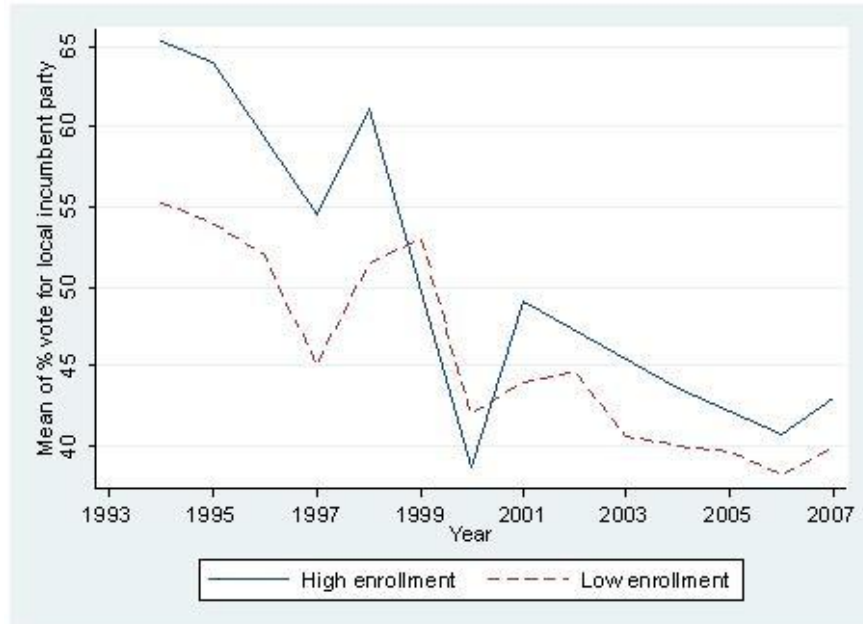
**Figure 3. Average Share of Votes by Incumbent Party**



**Figure 4. Proportion of Reelected Incumbent Parties**



**Figure 5. Share of Votes in Local Elections by “High” and “Low” Enrollment during the Year Prior to the Election**



*Notes:* “High enrollment” refers to municipalities with more than 14 percent of families enrolled during the election year; “Low enrollment” refers to municipalities with less than 14 percent. This cutoff represents the average enrollment during the election year for the whole sample of municipalities plus one standard deviation.

**Table 1. Municipal Elections Considered in the Analysis**

	Elections for Mayor
<i>State:</i>	
Aguascalientes	1998, 2001, 2004, 2007
Baja California	1998, 2001, 2004, 2007
Baja California Sur	1996, 1999, 2002, 2005
Campeche	1997, 2000, 2003, 2006
Coahuila	1996, 1999, 2002, 2005
Colima	1997, 2000, 2003, 2006
Chiapas	1995, 1998, 2001, 2004
Chihuahua	1995, 1998, 2001, 2004
Durango	1998, 2001, 2004, 2007
Guanajuato	1997, 2000, 2003, 2006
Guerrero	1996, 1999, 2002, 2005
Hidalgo	1996, 1999, 2002, 2005
Jalisco	1997, 2000, 2003, 2006
Estado de México	1996, 2000, 2003, 2006
Michoacán	1995, 1998, 2001, 2004
Morelos	1997, 2000, 2003, 2006
Nayarit	1996, 1999, 2002, 2005
Nuevo León	1997, 2000, 2003, 2006
Oaxaca	1995, 1998, 2001, 2004
Puebla	1995, 1998, 2001, 2004
Querétaro	1997, 2000, 2003, 2006
Quintana Roo	1996, 1999, 2002, 2005
Sinaloa	1995, 1998, 2001, 2004
Sonora	1997, 2000, 2003, 2006
Tabasco	1997, 2000, 2003, 2006
Tamaulipas	1995, 1998, 2001, 2004
Tlaxcala	1994, 1998, 2001, 2004
Veracruz	1994, 1997, 2000, 2004
Yucatán	1998, 2001, 2004, 2007
Zacatecas	1995, 1998, 2001, 2004

**Table 2. Summary Statistics**

	Mean	St. dev.	Min	Max
<i>Program beneficiaries:</i>				
total % of families in PROGRESA-Oportunidades	21.94	24.70	0	100
% of families enrolled in the year prior to election	4.71	9.86	0	100
% of families enrolled during Mayor's period in office	10.46	13.27	0	100
<i>Political characteristics:</i>				
Share of votes for Mayor's party	45.87	16.00	0	100
Alignment with President's party	0.46	0.50	0	1
Share of votes in local elections for President's party	39.99	19.84	0	100
Incumbent is PRI	0.70	0.46	0	1
Incumbent is PAN	0.16	0.36	0	1
Incumbent is PRD	0.11	0.31	0	1
Incumbent is other party	0.03	0.16	0	1
Voter turnout <sup>/a</sup>	66.08	17.72	0.83	396.04
Number of candidates	4.97	2.36	0	12
Mayor's party is reelected	0.58	0.49	0	1
Margin of victory	15.69	15.75	0	98.40
Difference in vote share for winner and incumbent (% points)	5.37	9.71	0	98.54
Margin of victory in past election	20.40	19.99	0	99.67
Same party in local government over last 4 periods	0.32	0.47	0	1
Share of votes Mayor obtained when elected	55.43	14.59	20.49	100
<i>Socio-demographic characteristics:</i>				
Total population	41,499.43	110,173.70	306	1,633,216
Urban population (%)	43.09	34.40	0	100
Rural population (%)	56.90	34.40	0	100
Localities per municipality	96.35	148.04	1	1,894
Rural localities per municipality	94.95	147.45	0	1,878
Urban localities per municipality	1.40	1.85	0	26
Marginality Index	-0.17	0.96	-2.20	3.16
Pop. in localities with <i>High</i> and <i>Very High</i> Marginality Index (%)	34.69	34.50	0	100
Pop. in isolated localities (%)	2.64	4.39	0	40.65
<i>Socio-demographic characteristics, 2000:</i>				
FGT0	0.35	0.19	0.01	0.83
Theil Index	0.23	0.55	0.13	0.54

*Notes:*

<sup>/a</sup> Voter turnout has been constructed using the number of votes cast in the election divided by the total population aged 18 and older in each municipality. The total population aged 18 and older each year is estimated from the 1990 Census, the 2000 Census and the "Conteos" of 1995 and 2005. Some 156 observations fall outside the 0-100 percent range, estimations using voter turnout remain unchanged when outliers are not considered for the analysis.



**Table 3. Validity Check: Effect of the Share of Votes Obtained by the Mayor When Elected on Subsequent Enrollment in the Program**

	<i>Dependent variable:</i>		
	% of families enrolled in the program		
	(1)	(2)	(3)
Share of votes that Mayor obtained when elected	0.025 (0.009)***	-0.019 (0.013)	-0.027 (0.026)
<i>Control variables:</i>			
Alignment with President's party			1.605 (0.775)*
Incumbent is PAN			-1.418 (0.825)*
Incumbent is PRD			0.173 (0.380)
Incumbent is other party			0.393 (0.724)
Number of candidates			0.038 (0.192)
Obs.	7,321	7,321	7,321
$R^2$	0.001	0.259	0.258
<i>F statistic</i>	7.391	83.711	32.640
Mean of dependent variable	4.71	4.71	4.71
Municipality fixed effects	No	Yes	Yes
Time fixed effects	No	Yes	Yes

*Notes:*

(a) Standard errors clustered at the State level.

**Table 4. Effect of the Percent of Enrollment in PROGRESA on Local Electoral Outcomes, OLS**

	<i>Dependent variables:</i>			
	Share of votes for Mayor's party		Mayor's party reelected (1/0)	Turnout
	(1)	(2)	(3)	(4)
% of families enrolled in the year prior to election	0.146 (0.042)***	0.119 (0.036)***	0.002 (0.0007)***	-0.057 (0.085)
<i>Control variables:</i>				
Alignment with President's party		3.683 (0.847)***	0.109 (0.033)***	-0.354 (1.562)
Incumbent is PAN		-5.312 (1.311)***	-0.053 (0.048)	-1.147 (2.165)
Incumbent is PRD		-2.813 (1.058)***	0.026 (0.028)	-1.609 (1.095)
Incumbent is other party		-15.795 (1.428)***	-0.155 (0.044)***	0.265 (0.967)
Number of candidates		-1.102 (0.173)***	-0.003 (0.004)	1.433 (0.696)**
Const.	64.144 (2.386)***	67.206 (1.754)***	0.797 (0.039)***	51.636 (5.498)***
Obs.	7,437	7,437	7,441	7,436
$R^2$	0.264	0.334	0.092	0.017
<i>F statistic</i>	114.041	120.745	143.482	44.598
Mean of dependent variable	45.87	45.87	0.58	66.08
Municipality fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes

*Notes:*

- (a) Dependent variable in column (3) is a dummy equal to one if incumbent party is reelected, zero otherwise.  
(b) Standard errors clustered at the State level.

**Table 5. Instrumenting the Percent of Enrollment in PROGRESA, First Stage**

	% families enrolled in previous year
	(1)
<i>Instruments:</i>	
Pop. with <i>High</i> and <i>Very High</i> Marginality Index (%) * I( <i>year</i> ≤ 2000)	0.117 (0.007)***
Urban population (%) * I( <i>year</i> ≥ 2001)	-0.048 (0.006)***
Pop. in isolated localities (%) * I( <i>year</i> ≥ 1998)	0.001 (0.0003)***
<i>Control variables:</i>	
Alignment with President's party	1.387 (0.327)***
Incumbent is PAN	-1.133 (0.372)***
Incumbent is PRD	0.326 (0.404)
Incumbent is other party	0.514 (0.720)
Number of candidates	-0.204 (0.068)***
Const.	-4.500 (0.803)***
Obs.	7,441
$R^2$	0.318
<i>F</i> statistic	123.528
Municipality fixed effects	Yes
Time fixed effects	Yes

**Table 6. Effect of the Percent of Enrollment in PROGRESA on Local Electoral Outcomes, IV Estimations**

	<i>Dependent variables:</i>			
	Share of votes for Mayor's party	Mayor's party reelected (1/0)	Diff. with the winner	Turnout
	(1)	(2)	(3)	(4)
<i>Instrumented variable:</i>				
% of families enrolled in the year prior to election	0.601 (0.083)***	0.010 (0.003)***	-0.147 (0.064)**	-0.031 (0.335)
<i>Control variables:</i>				
Alignment with President's party	3.288 (0.510)***	0.101 (0.019)***	-1.802 (0.386)***	-0.531 (1.985)
Incumbent is PAN	-4.882 (0.566)***	-0.045 (0.021)**	3.352 (0.428)***	-1.053 (2.199)
Incumbent is PRD	-2.804 (0.607)***	0.025 (0.023)	2.768 (0.459)***	-1.678 (2.316)
Incumbent is other party	-15.773 (1.084)***	-0.156 (0.041)***	13.917 (0.819)***	0.139 (4.137)
Number of candidates	-1.026 (0.103)***	-0.001 (0.004)	0.024 (0.079)	1.446 (0.390)***
Const.	67.358 (1.163)***	0.800 (0.044)***	2.551 (0.886)***	51.721 (4.396)***
Obs.	7,437	7,441	7,437	7,436
Mean of dependent variable	45.87	0.58	5.37	66.08
Municipality fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes

*Notes:*

(a) Dependent variable in column (2) is a dummy equal to one if incumbent party is reelected, zero otherwise.

(b) Dependent variable in column (3) is the difference in share of votes between the winner and the Mayor's party.

**Table 7. Differential Effect of Percent of Enrollment in PROGRESA by Party Alignment, IV Estimations**

	<i>Dependent variable:</i>	
	Share of votes for Mayor's party	
	(1)	(2)
% of families enrolled in the year prior to election	0.673 (0.137)***	0.487 (0.135)***
<i>Interactions with:</i>		
Alignment with President's Party	-0.091 (0.088)	-0.219 (0.168)
Alignment with Governor's Party		-0.202 (0.134)
Alignment with both President and Governor's Parties		0.436 (0.257)
<i>Control variables:</i>		
Alignment with President's Party	3.736 (0.621)***	2.662 (0.924)***
Alignment with Governor's Party		2.953 (0.723)***
Alignment with both President and Governor's Parties		0.080 (1.138)
Incumbent is PAN	-5.018 (0.573)***	-3.805 (0.602)***
Incumbent is PRD	-2.826 (0.612)***	-1.900 (0.634)***
Incumbent is other party	-15.781 (1.091)***	-13.153 (1.125)***
Number of candidates	-1.030 (0.104)***	-1.025 (0.104)***
Const.	66.939 (1.226)***	65.012 (1.245)***
Obs.	7,437	7,437
Mean of dependent variable	45.87	45.87
Municipality fixed effects	Yes	Yes
Time fixed effects	Yes	Yes

**Table 8. Heterogeneity in the Effect of the Percent Enrollment to PROGRESA by Political Characteristics, IV Estimations**

	<i>Dependent variable:</i> Share of votes for Mayor's party	
	(1)	(2)
% of families enrolled in the year previous to election	0.602 (0.082)***	0.584 (0.083)***
<i>Interactions with:</i>		
Incumbent is PAN	-0.235 (0.122)*	
Incumbent is PRD	0.228 (0.098)**	
Incumbent is other party	-0.158 (0.215)	
High competition in previous election		0.210 (0.123)*
<i>Control variables:</i>		
High competition in previous election		-2.125 (0.782)***
Alignment with President's party	3.229 (0.514)***	3.344 (0.509)***
Incumbent is PAN	-4.058 (0.729)***	-4.832 (0.569)***
Incumbent is PRD	-3.920 (0.764)***	-2.723 (0.612)***
Incumbent is other party	-15.222 (1.432)***	-15.644 (1.093)***
Number of candidates	-1.033 (0.103)***	-1.029 (0.103)***
Const.	67.394 (1.164)***	67.401 (1.166)***
Obs.	7,437	7,437
Mean of dependent variable	45.87	45.87
Municipality fixed effects	Yes	Yes
Time fixed effects	Yes	Yes

*Notes:*

(a) Municipalities are defined as having “High electoral competition” when they are in the decile with more contestable elections for Mayor; this corresponds to municipalities where the difference between the share of votes for the Mayor and the next competitor with more votes was less than 2.41 percentage points.

(b) Estimations remain stable and statistically significant if the definition of “High competition” is modified to include the top 25 percent of municipalities with more contestable elections.

**Table 9. Heterogeneity in the Effect of Percent of Enrollment in PROGRESA by Socio-Demographic Characteristics, IV Estimations**

	<i>Dependent variable:</i>			
	Share of votes for Mayor's party			
	(1)	(2)	(3)	(4)
% of families enrolled in the year prior to election	0.368 (0.065)***	1.497 (0.205)***	1.490 (0.223)***	0.609 (0.083)***
<i>Interactions with:</i>				
Municipality is predominantly urban	0.387 (0.080)***			
Poorer than municipality with median income		-1.133 (0.173)***		
Less literate pop than municipality with median literacy rate			-1.037 (0.180)***	
Capital of State				6.647 (2.088)***
<i>Control variables:</i>				
Alignment with President's party	3.534 (0.495)***	3.599 (0.501)***	3.436 (0.520)***	3.265 (0.513)***
Incumbent is PAN	-5.040 (0.553)***	-5.290 (0.562)***	-5.106 (0.581)***	-4.930 (0.570)***
Incumbent is PRD	-2.866 (0.596)***	-2.528 (0.610)***	-2.728 (0.628)***	-2.853 (0.612)***
Incumbent is other party	-15.943 (1.065)***	-15.979 (1.092)***	-16.131 (1.127)***	-16.030 (1.097)***
Number of candidates	-1.014 (0.102)***	-1.042 (0.103)***	-1.053 (0.106)***	-1.022 (0.104)***
Const.	66.867 (1.139)***	66.531 (1.170)***	67.269 (1.204)***	67.306 (1.173)***
Obs.	7,437	7,437	7,437	7,437
Mean of dependent variable	45.87	45.87	45.87	45.87
Municipality fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes

*Notes:*

(a) Municipalities are classified as "predominantly urban" when 75 percent of the population or more lives in urban localities.

(b) The measure of income used is the average household income by municipality in 2000. The median of this variable for the municipalities is 797 pesos (approximately 80 US dollars in 2000).

(c) The median literacy rate in 2000 for the sample of municipalities used for the analysis is 82 percent.