Poverty, Clientelism and Democratic Accountability in Mexico

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Updated on April 26, 2020.

Abstract

Many works claim that elected officials in less developed countries manipulate social spending for their political survival. However, little has been studied on the effects of institutional constraints, which are expected to restrain the practice of allocating social spending based on self-serving political criteria rather than on need. To fill this gap, this study attempts to examine the effects of institutional constraints on the political manipulation of social spending using an original dataset on the geographic distribution of anti-poverty programs implemented in 2,456 Mexican municipalities between 1989 and 2017. It also developed a novel measurement of institutional reform aimed at protecting social policy making from political meddling. The fine-grained, longitudinal analyses reveal the dynamics of political manipulation. The results indicate that the development of institutional constraints made Mexico's anti-poverty programs less politicized and increasingly pro-poor until 2006. In the subsequent years, however, institutional backsliding fueled the resurgence of political manipulation.

INTRODUCTION

Improving the social welfare of citizens is a politically salient issue in less developed countries. A growing scholarly literature presents evidence that social spending in emerging democracies is often used to mobilize electoral support, which makes social policy less accountable and underprovided to impoverished citizens (Diaz-Cayeros, Estévez, and Magaloni 2016; Holland 2017; Nichter 2018; Szwarcberg 2015). Particularly, in new democracies, in which the tradition of delegative democracies tends to prevails (O'Donnell 1994), presidents and their parties' legislators have wielded discretion in distributing public resources in favor of specific constituencies. They tend to seek private interests at the expense of the interests of the poor, who constitute a large part of the population in the region.[1] Targeted social programs have been widely used for this clientelist electoral strategy, because selective benefits are expected to provide a powerful inducement for political support (Roberts 1995).[2]

Evidence abounds in the cases of Latin America, which has been plagued with chronic poverty. For instance, Schady (2000) shows that under the presidency of Alberto Fujimori, the expenditures of Peru's Social Development and Compensation Fund Project (*Fondo Nacional de Compensación y Desarrollo Social*, Foncodes) increased substantially prior to national elections, and also distributed resources in favor of

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[1] Recent works highlight the initiative of citizens in solving the commitment problem stemming from clientelist exchanges (Nichter 2018) or choosing brokers with whom to request benefits (Auerbach and Thachil 2018) in local contexts. Since this study focuses on the political manipulation of nation-wise social programs, it assumes that public officials are in an advantageous position in deciding how to distribute the resources.

[2] The prevailing use of social policy for electoral motives in developing countries is extensively discussed in the edited volume by Abente Brun and Diamond (2014).

provinces where the marginal political payoff of targeting was expected to be the largest.[3] In addition to Peru's Foncodes, many studies demonstrate that under the administration of Carlos Salinas (1988-1994), Mexico's National Solidarity Program (*Programa Nacional de Solidaridad*, Pronasol) was arbitrarily targeted in order to halt the decline of the hegemony of the Institutional Revolutionary Party (*Partido Revolucionario Institucional*, PRI).[4] Magaloni, Diaz-Cayeros, and Estévez (2007, 2016) argue that the PRI diversified the transfer of Pronasol funds: distributing private goods to municipalities where it was losing the core constituencies' support, and public goods to more competitive municipalities in order to mobilize more heterogeneous voters.

In contrast to this critical perspective, recent works shed light on a rise in political movements towards strengthening institutional constraints which tie the hands of politicians (Avis, Ferraz, and Finan 2018; Berliner and Erlich 2015; Hidalgo, Canello, and Lima-de-Oliveira 2016; Zamboni and Litschig 2018). Two types of institutional constraints, which indicates the establishment of rule-based policies such as conditional cash transfer programs (CCTs) and monitoring and oversight mechanisms, are expected to turn social programs less clientelist, and thus make poverty alleviation measures more accountable to impoverished constituencies. However, the effect of these strengthened

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[3] In addition, Roberts (1995) and Roberts and Arce (1998) provide evidence that the expenditures of Foncodes were used for Fujimori's populist strategy of targeting lower class voters.

[4] In addition to the cases of Peru and Mexico, there have been an increasing number of studies that demonstrate that public resources were vulnerable to electoral incentives and partisan interests in Argentina (Brusco, Nazareno, and Stokes 2004; Calvo Murillo 2004; Giraudy 2007; Nichter 2008; Stokes 2005; Szwarcberg 2015; Weitz-Shapiro 2014), and even in authoritarian regimes such as Mubarak's Egypt (Blaydes 2011).

constraints on clientelist redistribution has still not been researched much.[5]

First, recent reforms of social protection – the introduction of CCTs – is expected to lessen politically motivated redistribution in Latin America. CCTs are targeted social programs which directly transfer monetary support for basic services, such as health care, education, and nutrition, to selected beneficiaries. CCTs use objective criteria, such as means testing, in identifying eligible beneficiaries. Receipt of benefits is conditional on whether the selected beneficiaries assume co-responsibility, such as sending children to school and taking regular medical checks. Since Mexico's Progresa (*Programa de Educación, Salud y Alimentación*) and Brazil's *Bolsa Escola* were initiated in the late 1990s, other countries in the region have followed suit and introduced some kind of CCTs by 2007 (Fiszbein and Schady 2009). The direct nature of benefit provision and the objective methods of beneficiary selection are understood to effectively use limited resources to alleviate poverty; they could also prevent political calculation from intervening in program operation, which may distort the optimal allocation of funds on paper (De La O 2013).[6]

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[5] De La O (2015) and Sugiyama and Hunter (2013) are important exceptions. De La O (2015) explains how distinctive political conditions led to the adoption of CCTs with a varying strictness of operation rules among Latin American countries.

[6] More precisely, although De La O (2013, 2015) follows this assumption, the primary focus is on the electoral "return" of Progresa, rather than on the electoral "determinants" of the program. By conducting a randomized experiment, she demonstrates that the pro-incumbent votes of program beneficiaries are not as consequences of persuasion but of mobilization on a programmatic ground (De La O 2013, 2015). However, Imai, King, and Velasco Rivera (forthcoming) reanalyze the data and show that Progresa did not have effects on the incumbent's electoral return.

Second, institutional reforms have been implemented to establish mechanisms of monitoring and oversight of government program operation. These mechanisms of horizontal accountability not only enforce beneficiaries' compliance with conditionality, but also ensure that incumbents properly use the budget for the stated purpose of alleviating poverty. The mechanisms include legal provisions regulating the operation of social programs, legislative oversight (Beer 2003), independent audits (Avis, Ferraz, and Finan 2018; Chong et al.; Hidalgo, Canello, and Lima-de-Oliveira 2016; Zamboni and Litschig 2018), Freedom of Information Acts (FOIAs) (Berliner and Erlich 2015; Lagunes and Pocasangre 2018), external evaluations of the programs, and legislations to ensure citizens' participation in monitoring government programs (Rodríguez Cardozo 2017). These institutional constraints are also expected to depoliticize pro-poor spending by overseeing the distribution of the resources, but this possibility has not been systematically tested.[7]

Do these aforementioned reforms of strengthening institutional constraints really reduce the political manipulation of targeted anti-poverty spending? This study demonstrates that institutional reforms have created institutional constraints on electorally motivated discretionary spending, and thus made anti-poverty programs pro-

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[7] The effect of information about corrupt politicians on electoral accountability has been studied (Arias et al. 2019; Chong et al. 2015; Dunning et al. 2019). However, the effect of such enhanced electoral sanctioning on the political decisions of allocating public spending has not been tested with empirical analysis. Zamboni and Litschig (2018) is an exception. They conducted a policy experiment to test the effects of audits by Brazil's auditing agency (*Controladoria-Geral da União*, CGU) on fraud in Bolsa Família, and concluded that the fraud "is almost negligible even without increased monitoring" (Zamboni and Litschig 2018, 148).

poor and less clientelist. In other words, the likelihood of political manipulation is influenced by the strength of constraints imposed on self-serving behavior of public officials. This suggests that once these institutional constraints erodes, the room for of electorally motivated distribution reemerges. Mexico provides an ideal case to examine such effect of institutional constraints on the political manipulation of social spending. The country reveals the variation in the program design, operation rules, and oversight mechanisms across different development stages of anti-poverty programs, which allows us to examine the causal effects of institutional constraints on the patterns of distributing those programs holding other country-specific variables constant.

In Mexico, between 1988 and 2018, four targeted anti-poverty programs were introduced by four different administrations. The timing of program changes almost coincided with the change of administrations: Pronasol under the Salinas administration (1988-1994), Progresa (1997-2002) under the Zedillo administration (1994-2000), and Oportunidades (2002-2014) under the Fox administration (2000-2006),[8] the Calderón administration (2006-2012), and the Peña Nieto administration (2012-2018), which renamed the program as Prospera (2014-2018) in 2014. Although all of them were targeted programs, Pronasol was a demand-driven, geographic targeting program, and Progresa, Oportunidades, and Prospera were CCTs. Furthermore, institutional arrangements of monitoring and oversight of social programs varied considerably across these administrations.

Using the original datasets compiling data on spending and electoral results at the municipal level, this paper compares the geographic distribution of Pronasol, Progresa, Oportunidades, and Prospera, and examines the causal effect of institutional constraints

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[8] More precisely, Progresa was renamed as Oportunidades in 2002 under the Fox administration.

on the pattern of allocation of the program spending. More specifically, I estimated the effect of institutional constraints on spending patterns separately for Pronasol (1988-1994) and three CCTs (Progresa-Oportunidades-Prospera, POP hereafter, 1997-2017) because the program operation was interrupted between 1994 and 1997 due to the change in governments and the types of available data used to operationalize dependent variables differs between Pronasol and POP models. Specifically, for Pronasol, I employed an instrumental variable approach to estimate the effects of covariates on the distribution of Pronasol. As for POP, I ran a fixed effect regression. This study found that the development of institutional constraints made Mexico's anti-poverty programs less politicized and increasingly pro-poor until 2006 and that the subsequent years, however, institutional backsliding fueled the resurgence of political manipulation.

The remainder of this paper is organized as follows. In the next section, I briefly describe the trajectory of anti-poverty programs and institutional reforms throughout the five administrations in Mexico. Then, I will examine theories of distributive politics and draw hypotheses on the political manipulation of anti-poverty programs. After describing the data and methodology, I compare the patterns of geographic distribution of anti-poverty spending between 1998 and 2017 and estimate the effects of institutional constraints on the distribution of Pronasol and POP expenditures, respectively. The final section concludes by presenting future research agenda.

DEVELOPMENT OF ANTI-POVERTY PROGRAMS AND INSTITUTIONAL CONSTRAINTS IN MEXICO, 1988-2018

Since Mexico has been faced with widespread poverty,[9] poverty alleviation has been

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[9] According to the World Development Indicators, 41.9 percent of the population in Mexico were impoverished, which was calculated as a head count ratio at the national

treated as a high priority issue and the past administrations have implemented a variety of policy instruments to effectively ameliorate poverty under budgetary constraints. The evolution of poverty alleviation programs has reflected the structural and institutional changes in Mexico's economy and politics which initiated in the 1980s: they are neoliberal economic reforms and political democratization. The debt crisis and subsequent neoliberal economic reform severely hit the poor people such as the loss of employment opportunities and reduction in wage and income. Citizens' discontent with the deteriorating socioeconomic situations and lack of governments' responsiveness exerted a mounting pressure for democratize the country, which culminated in the demise of the one-party dominance of the PRI, which ruled the country over seventy years. Throughout these changes of economic and political landscapes, poverty alleviation programs have been an important policy instrument to respond to these rising demands from those who were adversely affected by the political economic changes.

It has been widely claimed that public officials have manipulated anti-poverty programs for their own political survival because catering to the interests of poor people is expected to bring electoral gain. Under the presidential system with a traditionally centralized decision making, the Secretary of Social Development (*Secretaría de Desarrollo Social*, Sedesol) has served as presidents' political machine. Abundant evidence indicates that the resources of Pronasol under the Salinas administration were used to halt the decline of the dominance of PRI (Bruhn 1996; Greene 2007; Magaloni 2006; Dresser 1991; Magaloni, Diaz-Cayeros, and Estévez 2016: Molinar and Weldon 1994). Furthermore, as Table 1 shows, the politicization of Sedesol is also suggested by the fact that at the end of their term of office, former secretaries of Sedesol were appointed for politically important positions, primarily for presidential candidates, which occurred

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poverty line.

for all the five administrations under study.[10] For instance, Luis Donaldo Colosio served as the Secretary of Sedesol during the Salinas administration. At the end of his term, he was selected for a presidential candidate in the 1994 election, but assassinated during the election campaign in Tijuana, a Norther city in Mexico. Furthermore, during the Fox administration, Josefina Váquez Mota, a politician from PAN, was appointed the secretary of Sedesol. As the 2006 elections approached, she was appointed a chief campaign strategist to support PAN's presidential candidate, Felipe Calderón. Her term of office was the period of institutionalizing POP by expanding the coverage of beneficiaries and regulations of POP operations. Nevertheless, during the 2006 election campaign, she was accused of using the list of POP beneficiaries to mobilize votes from the impoverished for Calderón (González Amador, Muñoz, and Aviles 2006). In addition, in the 2012 election, she herself ran for the presidency.

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[10] POP has been managed by the national coordination office (*coordinación nacional*) within Sedesol. The office has been bestowed "administrative, technical, and managerial autonomy" from the headquarters of Sedesol (Dávila Lárraga 2016).

TABLE 1. Secretaries of Sedesol and Political Career

Administration	Secretary	Political Career
Carlos Salinas (PRI) (1988-1994)	Luis Donaldo Colosio (1992-93)	Selected for PRI's residential candidate for the 1994 election, but assassinated during the election campaign.
Ernesto Zedillo (PRI) (1994-2000)	Carlos Rojas (1993-1998)	Nominated as the general secretary of PRI in 1998
Vicente Fox (PAN) (2000-2006)	Josefina Váquez Mota (2000-2006)	Nominated PAN's chief campaign strategist in 2006, selected for PAN's presidential candidate for the 2012 election
Felipe Calderón (PAN) (2006-2012)	Ernesto Cordero (2008-2009)	Ran for the internal election to select PAN's presidential candidate in 2011, but not win the primary in 2012
Enrique Peña Nieto (PRI) (2012-2018)	Rosario Robles (2012-2015)	Served as PRD's president (2002-2003) and the substitute mayor of Mexico City (1999-2000). Prosecuted for diversion of Sedesol's fund in 2017.
	José Antonio Meade (2015-2016)	Selected for PRI's presidential candidate for the 2018 election

Notes: Author's own evaluation.

Despite the politicization of social welfare bureaucracy, however, there have also been attempts to constrain such politicization and improve transparency and accountability in social policy making.[11] The institutional reforms include a shift to rule-based social programs such as CCTs and establishing mechanisms of monitoring and overseeing these programs. One of the important characteristics of CCTs is selecting beneficiaries based on rigorous calculation methods to target resources to those who really need assistance. Mechanisms of monitoring and oversight are expected to assure compliance with those rules which prevents public officials from exerting discretion in selectin beneficiaries and distributing the resources disproportionately in favor of specific beneficiaries. They include legislations and regulations over the program operation, oversight between state actors, program evaluation by external specialists, and monitoring by individual and collective societal actors. In short, various institutional constraints on the political manipulation of social programs were introduced in the past five administrations. How these institutional constraints including program designs, operation rules, and oversight mechanisms evolved across different development stages of anti-poverty programs are explained below.

In the 1980s, the economic crisis and subsequent neoliberal economic reform adversely affected lower-income citizens, which led to the decline of PRI's long-lasting rule over seventy years in Mexico. Carlos Salinas was elected president in the allegedly fraudulent election in 1998.[12] Right after he took the office, President Salinas launched Pronasol, which was his flag-ship program and deliberately aimed at compensating the

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[11] More detailed analysis of the institutional constraints for the periods of the Salinas, Zedillo, and Fox administrations is provided in Takahashi (2010).

[12] Cantú (2019) provides evidence of altered vote tallies by collecting the images of sheets and analyzing them with Convolutional Neural Networks.

poor and halt the decline of PRI's dominance. Pronasol was a demand-driven program using the method of geographic targeting. The requests for projects were presented by community organizations.[13] During the Salinas administration, almost 18 billion US dollars were invested to Pronasol projects, which corresponded to 67 percent of federal budgets for social programs. By the end of his term, social expenditure had exceeded 10 percent of GDP. Under the highly centralized decision-making authorities, weak technical constraints of this geographic targeting and a lack of oversight mechanisms, the president was allowed to exercise extensive discretion in allocating the funds (Bruhn 1996; Fox 1994; Greene 2007; Magaloni 2006; Magaloni, Diaz-Cayeros, and Estévez 2007; Molinar and Weldon 1994). To survive intensified electoral competition, President Salinas attempted to buy back support from popular sectors by distributing the resources of Pronasol in favor of targeted constituencies (Dresser 1991).

The change of administrations put an end to the highly politicized Pronasol, which was replaced by Progresa. In response to widespread criticism of the political manipulation of Pronasol, which discredited PRI,[14] President Zedillo and his technocrats' team launched Progresa by introducing technical constraints to undermine the political

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[13] During the period between 1989 and 1994, approximately 250,000 "Solidarity Committees" were organized, which undertook 523,000 projects in the areas of social infrastructure, social welfare, and production with a broad participation of those communities (Sedesol and Secogef 1994, 58).

[14] The political instability at the end of Salinas' term of office was partly attributable to the assassination of Colosio during the election campaign in March, 1994. The political economic contexts behind the introduction of Progresa is extensively described in Dávila Lárraga (2016), De La O (2015), Diaz-Cayeros, Magaloni, and Estévez (2016), and Levy (2006).

manipulation and properly use the resources for poverty alleviation (Escobar Latapí 2002, 220; Pardinas 2004, 67). Subsequently, Progresa was renamed as Oportunidades in 2002 under the Fox administration and Prospera in 2014 under the Peña Nieto administration. Progresa, Oportunidades, and Prospera share the basic characteristics as CCTs, thus being considered a continuation of the same program and called POP altogether. Unlike Pronasol, POP has taken a narrower focus on the building of human capital of children in poor households to "break the vicious cycle of poverty" (Levy 2006, 21; Trejo and Jones 1998, 90). For this purpose, POP integrates interventions in education, health, and nutrition.[15] Mothers of the beneficiary households are responsible for regular attendance to school and medical check-up of their children (Levy 2006, 21-2). Receiving benefits of POP is conditional on assuming this co-responsibility by mothers (Levy 2006, 21-2). In 1997, POP reached 300,000 families in 12 states, and expanded the coverage to over 6,700,000 families in all 32 states in 2018 with a budget of about 4.2 billion US dollars.[16]

In particular, during the Zedillo administration, highly recognized technocratic teams designed the following rules underling the program designs of POP, which are expected to constrain the political manipulation. First, the clearly and rigorously stipulated calculation methods of selecting eligible beneficiaries are expected to eliminate

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[15] In later years, additional components were added to these three areas of interventions such as food support, cash transfer for elderly people in beneficiary households, scholarship for higher education, support for productive activities to generate income, labor market insertion, and financial inclusion. The trajectory and operational procedures of POP is explained in detail by Dávila Lárraga (2016).

[16] The figures draw on the database on non-contributory social protection programs created by the Economic Commission of Latin America and the Caribbean (ECLAC). Retrieved April 1, 2020 (https://dds.cepal.org/bpsnc/programa?id=92).

the intervention to this process based on political criteria. POP started to target eligible households in rural areas by using proxy means testing combining geographic targeting and household survey.[17] The performance of targeting is evaluated by external experts as well. Second, the payment scheme linking the receipts of benefits with conditionality may also prevent the opportunities for public officials to exercise discretion in diverting expenditures. The national coordination office of POP was created as an autonomy agency within Sedesol and was headed by the aforementioned technocrats. This office undertook the operation of POP strictly following these established rules.

In addition to these technical constraints, mechanisms of monitoring and oversight had been established in the course of the evolution of POP across administrations. A more pluralistic legislature and a more active civil society promoted reforms to strengthen institutional constraints on discretionary spending. [18] As discussed earlier, these institutional reforms include legislations and regulations over the program operation, oversight between state actors, program evaluation by external specialists, and monitoring by civil society. During the Zedillo administration, the Committees of Social

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[17] Progresa started to incorporate poor rural localities first because poverty was more severe than among the urban poor, and the rural poor were not receiving great attention in the previous anti-poverty program. After 2002, the program started to incorporate the urban poor with a distinct method of targeting. The detailed description of POP's targeting methods is given by Skoufias, Davis, and De La Vega (2001, 1769, 1771) and Dávila Lárraga (2016).

[18] Previous studies argue that electoral competition increases the cost of patronage by making a credible threat to the ruling party's political survival, and induces office-seeking politicians to support self-restraining reform (Beer 2003; Berliner and Elich 2015; Geddes 1994; Grzymała-Busse 2006).

Development in both chambers, which were headed by PRI's main opposition leaders, activated legislative oversight of the executive's use of social spending in election years. In addition, in 1999, constitutional reform was passed to give the Supreme Federal Auditor (*Auditoría Superior de la Federación*, ASF) greater investigative authority over public finances.

These institutional constraints were further developed during the administration Fox, which was the first PAN government after the historical alternation of power from PRI's long-term dominance. As the head of the national coordination office of POP, Rogelio Gómez-Hermosillo, a former leader of influential NGO, was appointed.[19] He has been widely acknowledged to greatly enhance transparency and accountability of POP by strengthening compliance with the aforementioned rules of operations. Furthermore, active debates in in the democratic legislature resulted in the passage of three pieces of legislation to provide legal assurance for citizens' monitoring of social program operations. First, the General Law of Social Development (*Ley General de Desarrollo Social*, LGDS) in 2004 set a clear standard for evaluating and coordinating and coordinate public policies for social development. Second, the Federal Law of Transparency and Free Access to Public Information (*Ley Federal de Transparencia y Acceso a la Informació Pública Gubernamental*, LFTAIPG) in 2002 facilitated activities for monitoring and auditing policy implementation and its performances. Third, the Federal Law of Promotion of Activities by Civil Society Organizations (*Ley Federal de*

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[19] For other important positions of the national coordination office, active members of civil society organizations were appointed, which influenced the social policy making of the bureaucracy. This "civic current (*corriente cívica*)" within the social welfare bureaucracy during the Fox administration is extensively explained in Hevia de la Jara (2011).

Fomento a las Actividades Realizadas por Organizaciones de la Sociedad Civil, LFFAROSC) in 2004 provided a legal basis for citizens' initiative at watching government's activities.

In particular, the LGDS triggered the following important progress in improving transparency and accountability in POP. First, the National Council of Evaluation of Social Development Policy (*Consejo Nacional de Evaluación de la Política de Desarrollo Social*, CONEVAL), which was created in 2005 following the passage of the LGDS, took the initiative in establishing a unified system of external evaluation of all social policies implemented across different ministries. CONEVAL is composed of six experts who are selected from the public and expected to be independent of those government agents in charge of policy making and implementation. Second, Sedesol actively launched the campaign (*blindaje electoral*) to prevent the political manipulation of POP during election campaigns, for which the provision of POP benefits was suspended 30 days before national and local elections (Dávila Lárraga 2016, 60).

The subsequent Calderón administration changed the course of these movements. President Calderón won the presidential election with a narrow margin of victory with the losing candidate, López Obrador. During the electoral campaign, opposition parties accused of the PAN's use of POP beneficiary list to mobilize their votes, supposedly involving the former secretary of Sedesol, Váquez Mota, who led the campaign for Calderón (González Amador, Muñoz, and Aviles 2006). Furthermore, López Obrador attributed his defeat with a narrow margin to the electoral fraud. Although the electoral court judged the legitimacy the election, the credibility of the election remained questioned for the following years. For POP, the administration basically institutionalized the innovations brought about during the Fox administration. However, although POP was administrated by the autonomous national coordination office, PAN's militant members were appointed to the national coordinator of POP and the state-level delegates,

which allegedly influenced the selection of POP beneficiaries (Boltvinik, Damián, and Jaramillo Molina 2019). The administration added new components to POP such as subsidy for energy and launched anti-poverty measures to create a new scheme of social programs similar to Pronasol (Jiménez 2008). Explicit efforts to introduce institutional constraints and protect these new programs from electoral pressures were not in parallel to these new developments of programs, which may have given rise to a concern about the political manipulation of anti-poverty programs in general.

After the revival of the PRI government headed by Enrique Peña Nieto in 2012, the outcomes of institutional reform showed mixed results. In 2015, the General Law of Transparency and Access to Public Information (*Ley General de Transparencia y Acceso a la Informació Pública*, LGTAIP) was approved, which generalized the freedom of information law to all government entities. In 2016, the National System of Anti-Corruption (*Sistema Nacional de Anti-Corrupción*, SNAC) was established, which was considered a consequence of the government's serious commitment to eradicate corruption (Rios 2016). On the other hand, there were political movements which contradicted these advances of institutional reforms. First, there occurred a massive corruption scandal in which Rosario Robles as the Secretary of Sedesol was involved (see Table 1). In 2015, ASF declared that Sedesol diverted the funds for Prospera to private companies (Barragán 2017). This gave a clear sign of the resurgence of political manipulation of Sedesol and the resources it managed. Second, in 2017, the federal legislature made two decisions which had decisive impacts on eroding the autonomy of the monitoring and oversight mechanisms. The Senate removed the head of the then federal prosecutor office specialized in electoral crime (*Fiscalía Especializada para la Atención de los Delitos Electorales*, Fepade), who was investigating suspicious payments used for the electoral campaign for the president. In addition, the legislature decided not to reappoint the head of ASF, who actively charged federal bureaucracies with diversion

of public funds, including POP funds (Oropeza Eng 2017). Taken together, while new reforms were made on paper, the effects of institutional constrains were limited in practice.

Table 2 summarizes the evolution of different anti-poverty programs and mechanisms of monitoring and oversight over the five administrations discussed thus far. This suggests that reforms to strengthen institutional constraints had gradually advanced on paper. However, evidence shows that the autonomy of monitoring and oversight institutions, which is essential to assure the compliance of public officials to the established rules, recently eroded. In fact, newspapers, international organizations, have local NGOs have constantly shown a concern and evidence of the political manipulation of poverty alleviation programs in the times of elections conducted during the periods under study.[20] In addition, the fact that Sedesol had launched the *blindaje electoral*

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[20] Evidence of the political manipulation of POP abounds. For instance, Alianza Cívica, which is a prominent local NGO and played a crucial role in coordinating democratization movements in the 1990s, has conducted various surveys to investigate on vote-buying using social programs since the 1990s. For 2006 election, Mexico's office of the UNDP organized the National Survey about the Protection of Social Programs (*Encuesta Nacional sobre la Protección de Programas Sociales*) targeting the 2006 federal elections. These surveys provide evidence that POP were used to influence vote choice of lower-income citizens, although the likelihood of political manipulation of POP was lower than that of other social programs. Furthermore, Serra (2016) provides evidence that prior to the local election in 2013, the secretary of treasury of the state of Veracruz stated that benefits of Oportunidades were delivered by PRI's candidates running for the local elections, although it is managed by the central government. More incidences of the political manipulation of POP has been reported in numerous newspaper articles such as Barragán (2017).

measures during election campaigns suggests that the administration itself was aware of the political intentions to manipulate POP.[21] Thus, whether these institutional reforms had constraining effects on the distribution of targeted social programs merits close scrutiny. Before we estimate the causal effects of the evolved constraints on the political manipulation of anti-poverty programs, the next section will examine theories of distributive politics and draw hypotheses to be tested.

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[21] An internal document on the performance of the *blindaje electoral* published by Fepade and Sedesol in 2016 reports that since its establishment in 1994, by January 31 in 2016, Fepade had filed 1939 requests for investigation on the political use of social programs managed by Sedesol. They include cases of conditioning the receipt of benefits on their votes for suggested candidates, vote-buying using social programs, and so on. Nevertheless, it does not specify that those social programs indicated POP or other programs by Sedesol.

TABLE 2. Anti-Poverty Programs and Institutional Constraints

Administrations	Programs	Institutional Constraints
Carlos Salinas (PRI) (1988-1994)	Pronasol - Demand-driven - Geographic targeting - Community participation	- Weak mechanisms of monitoring and oversight under the centralized decision making
Ernesto Zedillo (PRI) (1994-2000)	POP - CCTs - Selecting beneficiary households with proxy means testing with household surveys	- 1999: Constitutional amendment to confer greater investigative authorities on ASF. - 1997: Progresa introduced external evaluation systems.
Vicente Fox (PAN) (2000-2006)		- 2002: LFTAIPG - 2004: LGDS - 2005: LFFAROSC, CONEVAL
Felipe Calderón (PAN) (2006-2012)		- Institutionalization of LGDS and CONEVAL
Enrique Peña Nieto (PRI) (2012-2018)		- 2015: LGTAIP - 2016: SNAC

Notes: Author's own elaboration based on various sources. The information partially draws on Takahashi (2010).

POVERTY, POLITICAL MANIPULATION, AND INSTITUTIONAL REFORM

The distribution of social programs has been widely used to gain electoral support in less developed countries for the following reasons. First, in less developed countries, a large part of population is plagued with unfavorable socioeconomic conditions and the need for the provision of benefits is high. Second, due to diminishing marginal utility of income (Calvo and Murillo 2004; Dixit and Londregan 1996; Schady 2000; Stokes 2005), impoverished voters attach a higher value to a small amount of benefits and thus more susceptible to electoral strategies. Third, under budgetary constraints, public officials are unable to provide social programs to all in need, which creates a room for discretionary decision to intervene to the process of selecting beneficiaries. Finally, in those countries, mechanisms of check-and-balances against public officials' misuse of public resources are weak (O'Donnell 1994). These conditions allow public officials to favor specific groups of impoverished citizens against others and thus may distort an equitable distribution of social spending.

What types of poor voters are more likely targeted? The debate has revolved around two competing hypotheses of distributive politics drawn from theoretical models on two-party competition: the core voter hypothesis (Cox and McCubbins 1986) and swing voter hypothesis (Lindbeck and Weibull 1987). Cox and McCubbins (1986) assume that electoral pressure makes parties risk-averse and argue that those parties more likely target core voters because those loyal voters' return is more credible than swing voters. In the model postulated by Lindbeck and Weibull (1987), parties are assumed to be risk-taking and investing in favor of swing voters in close races, which may determine the result of elections, is a more cost-effective strategy because parties assure that their supporters will vote for them without additional investment.

Building on these influential works, recent studies on clientelism and machine politics further classifies the types of electoral strategies. Depending on the inclination to

vote and political preference regarding parties distributing benefits of the recipients of these benefits, those strategies are categorized as "turnout buying" which mobilize voters' participation in elections, "vote buying" and "abstention buying" which attempts to influence voters' preference, "double persuasion" intended to change both turnout and preference of voters, and "rewarding loyalists" aimed at perpetuating ongoing clientelist relationship (Nichter 2008; Gans-Morse, Mazzuca, and Nichter 2014; Nichter 2018).[22] Among these strategies, vote buying targets weakly opposed voters (Stokes 2015), turnout buying is employed to attract core voters (Nichter 2008), and rewarding loyalists is for core voters (Diaz-Cayeros, Estévez, and Magaloni 2016). Parties also combine different strategies as well (Gans-Morse, Mazzuca, and Nichter 2014).

Under the secret ballot, turnout buying is a more viable electoral strategy because parties are unable to directly monitor voters' compliance with the transaction of benefits in exchange of support and influence their vote choice. However, if allowed, parties prefer resorting to vote-buying because it directly influences electoral outcomes. The political manipulation of anti-poverty programs may circumvent the restrictions imposed by the secret ballot and thus allow for vote-buying to proliferate. First, beneficiaries of anti-poverty programs typically reside in small villages in rural area and densely populated communities in urban area. This constructs a dense network of residents which allows machines to closely monitor and influence voters' behavior (Stokes 2005; Cruz 2019). Second, representatives elected among POP beneficiaries (*vocales* in Spanish) serves as intermediaries linking social welfare bureaucracy and program beneficiaries at local

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[22] The "rewarding loyalist" category is called "relational clientelism" which aims to maintain the ongoing nature of clientelism and distinguished from "electoral clientelism" (turnout buying, vote buying, abstention buying, and double persuasion) which is employed to maximize short-term benefits (Nichter 2018).

levels (Hevia de la Jara 2010).[23] Third, Sedesol has a list of POP beneficiary households specifying the names, address, types and amounts of benefits, which may be utilized to credibly induce the transaction between votes and benefits under the secret ballot.[24] Thus, the present study tests the following competing hypotheses to examine what types of voters are targeted to change their vote   choice.

> *Core Voter Hypothesis: The incumbents will distribute POP benefits in favor of core*
> *voters.*
> *Opposed Voter Hypothesis: The incumbents will spend more resources of POP for*
> *opposed voters.*

In addition, Schady (2000) proposes a dynamic model, which incorporated "two-time" elections. Looking at recent changes of voting patterns in the past two elections, incumbents may take electoral strategies to "buy back" support from their traditional supporters who recently favored opposition or consolidate support from new supporters who switched their vote from other parties' candidates to the incumbents in the past election (Bruhn 1996; Schady 2000). The following hypotheses are also tested in this study.

> *Buy Back Hypothesis: The incumbents will allocate more resources to voters who*

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[23] POP has a committee of community promotion (*Comité de Promoción Comunitaria*, CPC) composed of representatives of beneficiaries to assist in connecting POP beneficiary households with education and healthcare providers and the central bureaucracy (Dávila Lárraga 2016, 17, fn.39).

[24] The cases of vote-buying with POP are filed by Fepade. See a footnote 23.

supported opposition candidates in the past election.

Recruitment Hypothesis: The incumbents will spend in favor of voters who supported   them in the past election.

The recent works emphasize the role of broker in effectively obtaining electoral returns from the transaction of benefits for votes (Auerbach and Thachil 2018; Larreguy, Marshall, and Querubín 2016; Núñez 2018; Stokes et al. 2013; Szwarcberg 2015). Although the central government makes the allocation decision of POP benefits, the broad coverage of POP does not allow the incumbent to monitor political preferences of beneficiaries. Thus, the incumbents may have to rely on their local partisan allies and their local networks to identify their supporters. Mayors are expected to serve as intermediary to facilitated the political manipulation of anti-poverty spending and assure the efficiency of political manipulation.

Mayor-Brokerage Hypothesis: The incumbents allocate a larger amount of benefits to municipalities ruled by the same party as the incumbents.

I have discussed thus far alternative hypotheses about the manipulation of anti-poverty spending. As I argued in the previous section, the evolution of anti-poverty programs went in tandem with the development of institutional reform which strengthen check and balance system against discretionary spending and thus improve accountability in social programs. Across different anti-poverty programs implemented by the past five administration in Mexico, there has been a significant variation in the design and rules of anti-poverty programs and the mechanisms of monitoring and oversight such as legislation, autonomous audit institutions, external evaluation systems, and monitoring by civil society actors. These institutional reforms are supposed to tie hands of public

officials and thus influence the likelihood of political manipulation of anti-poverty programs. Thus, it is expected that the constraining effect of accountability institutions will erode the manipulation of anti-poverty spending and the distributive patterns of spending follows the poverty level.

Accountability Hypothesis: The strong institutional constraints may reduce the political manipulation of POP and make POP pro-poor.

Taken together, we can expect that if institutional reforms had the expected constraining effect on discretionary spending, the distribution of anti-poverty programs followed the level of poverty. Otherwise, rather than the poverty level, any of the aforementioned electoral strategies may influence the distribution of POP.

DATA AND METHODOLOGY

The following analysis examines the effect of institutional constraints and other variables on spending patterns during the period between 1989 and 2017 in Mexico. While the focus of the existent quantitative studies on the strategic use of public resources for electoral gain are limited to the state level analysis or shorter period of time (Bruhn 1996; Molinar and Weldon 1994), the present study uses a newly created, more fine-grained dataset including a greater number of observations covering 2,456 municipalities of Mexico for the period of almost thirty years.[25] This allows us to examine the varying

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[25] Magaloni, Diaz-Cayeros, and Estévez (2007) and Diaz-Cayeros, Magaloni, and Estévez (2016) are exceptions. To my knowledge, the influential work of Magaloni, Diaz-Cayeros, and Estévez (2007) is the first to examine the clientelist distribution of the per-capita expenditures of Pronasol at the municipal level. Takahashi (2007) also analyzes the

degrees with which institutional reforms have constrained the political manipulation of anti-poverty programs over time.

It would be ideal to test the aforementioned hypotheses formulating a single model with a time-series cross-sectional dataset which pools observations for the entire periods under study. However, constructing such a dataset is impossible and thus I estimate models separately for Pronasol (1989-1994) and POP (1998 and 2017) for the following reasons. First, the program operation was interrupted between 1994 and 1997 due to the change of governments. Second, the program designs and types of data available to construct dependent variables differs between these programs. More specifically, data on the expenditures of Pronasol and the number of beneficiary households of POP are used here to calculate the benefit level of anti-poverty programs.[26] In addition, the original dataset includes electoral results, poverty levels, and institutional reform.[27] The detailed data generation process is explained in the Appendix 1.

To study the political manipulation of anti-poverty programs, the municipality is treated as the unit of analysis. It would be ideal to use data on voting behavior and receipt of benefits collected at the individual level to accurately estimate the true level of

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possibility of political manipulation of Progresa focusing on the 2000 federal election using the municipal-level data.

[26] The data on the expenditures of Pronasol draw on *Hechos en solidaridad* (1994), CD-ROM. The data on the number of beneficiary households of Progresa and Oportunidades are directly provided by the National Coordination Office of Oportunidades of the Ministry of Social Development and the website of the Mexican government.

[27] The data on the electoral results draw on official electoral results published by the Federal Electoral Institute (*Institute Federal Electoral*, IFE) and the National Electoral Institute (*Instituto Nacional Electoral*, INE), and Banamex (2001).

incidence. However, Pronasol distributed the benefits on a community basis. The data which enables us to directly associate the experience of political manipulation of each community members with the benefits do not exist. As for POP, the official data allows us to identify individual beneficiary households, whereas time-series data on their political preferences are not available. Alternatively, I infer voters' preferences by using the geographic data on the past election outcomes aggregated at the municipal level. Currently, Mexico has 2,456 municipalities. However, the number of municipalities varied in earlier years due to amalgamation and abolishment. By using the list of municipalities at the year of 2012 as a baseline, I compiled data for 2,456 municipalities for the years from 1989 to 2017 for which the data were available. The data set for Pronasol covers the period between 1989 and 1994 and does not include Mexico City because Pronasol was not allocated to the capital. As for POP, it started on August 1997, but the data for beneficiary households in 1997 was not available. Thus, I used the POP data for the periods between 1998 and 2017.

To estimate the Pronasol model, I used an instrumental approach in order to deal with a problem of endogeneity caused by a simultaneity bias.[28] I ran a regression with a 2-stage least square (2SLS). For an instrument, I use the average of PRI vote shares in the past municipal elections after 1970. For POP, I estimate models using municipality fixed effects. The detailed description of variable used in this analysis is as follows. The summary of all the variables used and statistics are provided in the Appendix 3 and 4.

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[28] More specifically, the levels of Pronasol spending and PRI vote shares are more likely to affect each other. The identification strategy for the 2 SLS regression models is detailed in the Appendix 2.

Anti-Poverty Programs

For the Pronasol model, the dependent variables are the average per capita values of Pronasol expenditures which were distributed to the municipalities for the years of the 1991 (the average between 1989 and 1991) and 1994 federal elections (the average between 1992 and 1994). For the POP model, the number of beneficiary households by municipality for each year was used for the dependent variable. To control for the size of municipalities, the numbers of beneficiary households were divided by the population of each municipality, which are used as a dependent variable. The detailed operationalization of these variables is provided in the Appendix 1.

Poverty

To estimate the political manipulation of Pronasol and POP, we need to control for the level of poverty at the municipal level because the stated objective of those programs is benefiting the poor. The marginality index calculated by the National Population Council (*Consejo Nacional de Población*, CONAPO) is used to construct the *Poverty* variable. Additionally, a quadratic term (*Poverty Sq.*) for analyses of Pronasol and POP were also used to capture the nonlinear relationship between the levels of poverty and benefits which are identified in Figures 1 and 2.[29]

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[29] The inclusion of a quadratic term follows Magaloni, Diaz-Cayeros, and Estévez (2007). The marginality index is calculated every five years based on the population census in Mexico. Retrieved on September 10, 2017

(http://www.conapo.gob.mx/es/CONAPO/Indices_de_Marginacion_Publicaciones).

Electoral Strategies

Core and Opposed Voter Strategies. The results of past municipal elections prior to the years of 1991 and 1994 elections for the analysis of Pronasol and the results of past federal elections for the analysis of POP are consulted for the purpose of measuring the strength of political parties. In Mexico, both elections are scheduled every three years. To compare the varying degrees of political manipulation of Pronasol and POP, using the data on the federal elections at the municipal level for both analyses would be ideal.[30] Nevertheless, the data on the 1988 elections, which were claimed to be fraudulent (Cantú 2019), were not available disaggregated into the municipal level. Alternatively, I used the results of municipal elections for the analysis of Pronasol.[31]

Pronasol was implemented under the strong leadership of President Salinas coupled with a single-party dominance of PRI. Previous studies claim that PRI not only targeted more benefits disproportionately in favor of PRI's core supporters, but also made fewer transfers against voters supporting opposition parties (Bruhn 1996; Molinar and Weldon 1994). Since the leftist coalition threatened PRI's victory in the 1988 federal election, it is claimed that PRI punished voters who supported leftist oppositions in

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[30] In Mexico, state and mayoral elections are not concurrent with federal elections. Because this study is interested in the political manipulation of anti-poverty programs which are managed by the bureaucracy at the level of central government, the incentive for public officials to manipulate those programs are more sensitive to the results of federal elections than subnational elections.

[31] The results of municipal elections conducted up to 2012 draw on the dataset compiled by CIDAC. Retrieved on August 18, 2017 (http://cidac.org/base-de-datos-electoral/). For the elections conducted after 2012, the data on electoral results published by state electoral commissions were consulted.

particular. Thus, to test the core voter hypothesis, the variable *PRI* was created to measure the vote share of PRI at the municipal elections. For the opposed vote hypothesis, the vote shares of two major opposition parties, PAN and PRD, were calculated and denominated as the variables *PAN* and *PRD* respectively.

For the analyses of POP, the period between 1998 and 2017 were ruled by presidents belonging to different parties. To measure the vote share of the incumbents, the variable *Vote Share* is created. During this period, there was no consistent patterns of opposition strength and the strength of opposition parties is simply considered as an inverse of the incumbent. Thus, we can interpret that the opposed voter hypothesis is supported if the coefficient of the *Vote share* is negative and statistically significant.

Recruitment and Buy-Back Strategies. Following Schady (2000), changes of vote shares of incumbent parties are calculated by comparing the results of the past two elections. More specifically, For Pronasol, the *PRI Change* variable measures the difference of PRI's vote shares between the past two municipal elections. For the analysis of POP, the *Vote share change* variable refers to changes in the vote share of the incumbent parties comparting the past two federal elections. The coefficient which is positive and statistically significant supports the recruitment hypothesis. The reverse sign confirms the validity of the buy-back hypothesis.

Mayor-Brokerage Strategy. The Pronasol model incorporates the variable *PRI mayor*, which is a dummy variable coded as 1 if the mayor belongs to PRI and otherwise coded as 0. The POP model also includes the variable *Mayor*. It is coded as 1 if the party affiliation of presidents and mayors are the same, and coded as 0 if mayors belong to opposition parties.

Election Timings. In Mexico, presidential elections are conducted every six years, whereas the elections of the federal legislatures are every three years. Both elections are typically scheduled on the first Sunday of July. Especially prior to the presidential elections, the political manipulation of social programs is supposed to increase to influence votes' preferences. Pronasol model allows for estimating the political manipulation because two cross-section analyses specifically focus on the years of 1991 and 1994 elections. On the other hand, POP model uses time-series cross-sectional data including yearly observations for the period between 1998 and 2017. In order to estimate the political manipulation, the model incorporated a year dummy for the period between 1998 and 2017, and interact the dummies for 1999, 2005, 2011, and 2017, which correspond to one-year staggered from the presidential election years (2000, 2006, 2012, and 2018), with electoral strategy variables.

Staggering one year is attributable to the *blindaje electoral*, which is a measure to protect social programs from electoral pressure as discussed earlier. Specifically, the incorporation of new beneficiaries into POP was suspended and the delivery of cash transfers were suspended forty-five days before the dates of elections in the election years. However, the electoral process officially starts in fall of the previous year. This restrictive measure may induce politicians to manipulate POP before this suspension period. For this reason, I used the number of beneficiary households at the end of the previous year in order to examine the possible effects of pre-electoral manipulation.

Institutional Reform

The strength of institutional constraints is operationalized as follows. At the level of federal governments, the institutional reform had gradually advanced since the Zedillo administration started. Thus, this analysis will examine the size of coefficients for the year-dummy variables included in the POP model to capture such yearly changes. In

addition, the *Accountability* variable is created as an additive measure of the institutional reforms at the state levels. Although POP is the program managed by the central government, evidence suggests that subnational political interests attempt to manipulate POP for electoral gain, as discussed earlier (Serra 2016). Thus, the institutional reforms, which have developed in parallel with those at the central level, are expected to constrain the political manipulation at the subnational levels.

This variable is created by using data on the state-level legislation on transparency, accountability, anti-corruption, auditing, legislative oversight, citizen participation, fiscal responsibility, and operation rules for public programs for 32 states and for the period between 1998 and 2017, because those data for all the municipalities were not available at the time of this analysis. As previous studies indicate, there is a significant variation in the pattens of the development of institutional reform across states and years (Berliner and Erlich 2015; Serra 2015, 2016). Thus, it allows us to examine how the institutional constraints at subnational levels may prevents the intervention of subnational political interests from intervening in the program operation and thus erode the political manipulation of anti-poverty programs.

If the state promulgated any of these legislations for specific years, it is coded as 1; otherwise it is coded as 0. Then, total numbers of legislations are added up by year and state. If the coefficient is statistically significant and has a positive sign, the institutional reform has a constraining effect on the political manipulation of social spending. The *Accountability* variable is also interacted with the *Poverty* variable to see if the institutional reform may eliminate the political calculation from POP and make the program pro-poor as the stated objective denotes. In other words, if the interaction term is significant, the distribution of POP follows the level of poverty induced by the institutional constraints. How the data were collected and the variable was created is explained in detail in the Appendix 1.

EMPIRICAL ANALYSES

To examine the political manipulation of anti-poverty programs and the constraining effects of institutional reform, the geographic distributions of Pronasol and POP are presented in association with the poverty level. This depicts temporal changes of the patterns of distribution, which shows a varying degree of political manipulation over time as well as implies varying degree of constraining effects of institutional reform. Then, more rigorous econometric analyses follow to estimate the effects of institutional constraints on the political manipulation.

Geographic Distribution of Anti-Poverty Programs

Figures 1 and 2 present scatter plots with nonparametric regression lines to show the associations between the levels of distributed expenditures and poverty for Pronasol and POP respectively. Figure 1 show the association between per-capita expenditures of Pronasol and the level of poverty in municipalities for the election years of 1991 (Figure 1 (a)) and 1994 (Figure 1 (b)) under study. Figure 2 shows changing patterns of the association between the ratio of POP beneficiary households to total population of municipalities and the poverty levels.[32] For both analyses, a larger value on the horizontal axis means the higher levels of poverty. If anti-poverty programs were distributed following the stated objective of alleviating poverty, the non-parametric line is expected to rise upward to the right, which implies a positive relationship between these two variables. Comparison of these figures provides the following findings.

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[32] The outliers which significantly deviated from the hypothesized values were examined one by one manually. If they were considered to be simply typing mistakes, those data were removed from the dataset to draw the scatter plots because the small number of such cases did not affect the results.

Fist, Figures 1 (a) and (b) provide strong evidence that that the hypothetical relationship between the level of Pronasol benefits and level of poverty was not noticed. The non-parametric line is almost flat with a slight increase of benefit level at the middle of poverty. This suggests that the distribution of Pronasol expenditures was not based on the needs and motivations other than polity alleviation underlay the distribution of Pronasol expenditures under the Salinas administration. Second, Figure 2 shows that compared to Pronasol, the relationship between levels of poverty and benefits of POP improved. The benefit level became more and more proportional to the poverty level over time. However, this patten seemed to change in 2006. At the high level of poverty, the variance got greater after 2006. After 201, the curve turned downward and the relationship got closer to an inverse U-shaped, which suggests that POP included those who were not eligible to receive the benefits.[33]

Comparing the distributive patterns of Pronasol and POP, anti-poverty programs in Mexico became pro-poor over time. This is especially because Pronasol was not bound with a strict rule of operation nor the mechanisms of monitoring and oversight under the

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[33] In 2015, the program for food support (*Programa de Apoyo Alimentario*, PAL) was interegrated into Prospera as a component without conditionality. This program was originally directed to area where schools and public health centers did not exist and thus CCTs were not applicable (Dávila Lárraga 2016). Thus, the poverty level of the former PAL beneficiaries was supposed to be higher than those of POP. This integration may explain the increase in the number of beneficiary households which reside in municipalities with a higher level of poverty in Figure 2, which is expected to make the curve further upward to the right. However, the association between the levels of benefits and poverty at the high level of poverty started to weaken especially after 2015, which suggests the distribution patterns of POP might have deviated from the stated objective.

one-party dominance led by PRI. Although the introduction of stringent technical criteria into POP and the concomitant institutional reform significantly improved the association between the levels of poverty and benefits after 1998, it started to weakened after 2010 again. Nevertheless, these figures show a rough depiction of the associations of these two variables. The following econometric analyses will estimate the effect of political calculation on this apparent deviation from the objective of alleviating poverty and institutional constraints on the political manipulation by controlling for a battery of variables.

FIGURE 1. Geographic Distribution of Pronasol by Municipality (Transfer per Capita in Mexican Pesos)
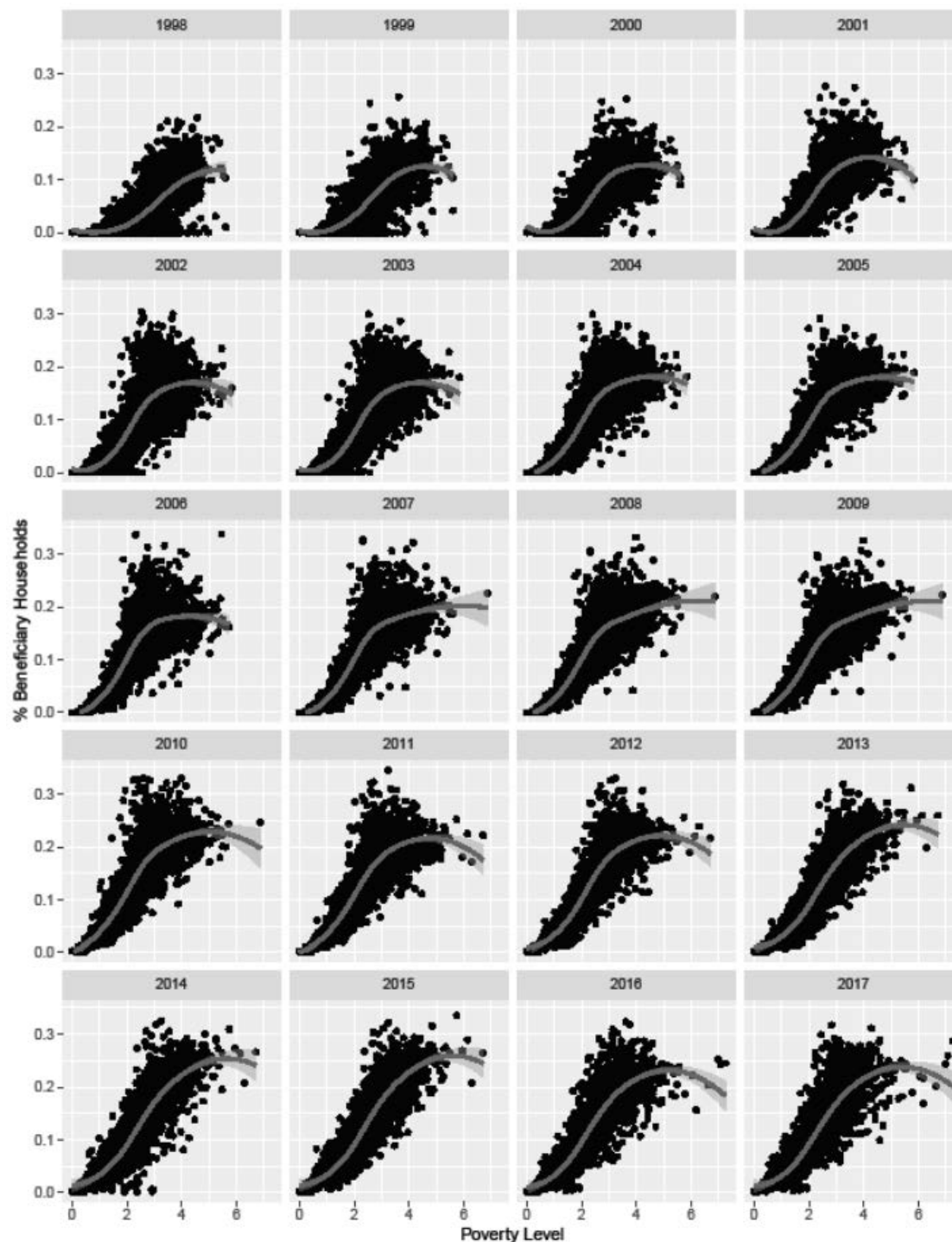
(a) 1989-1991
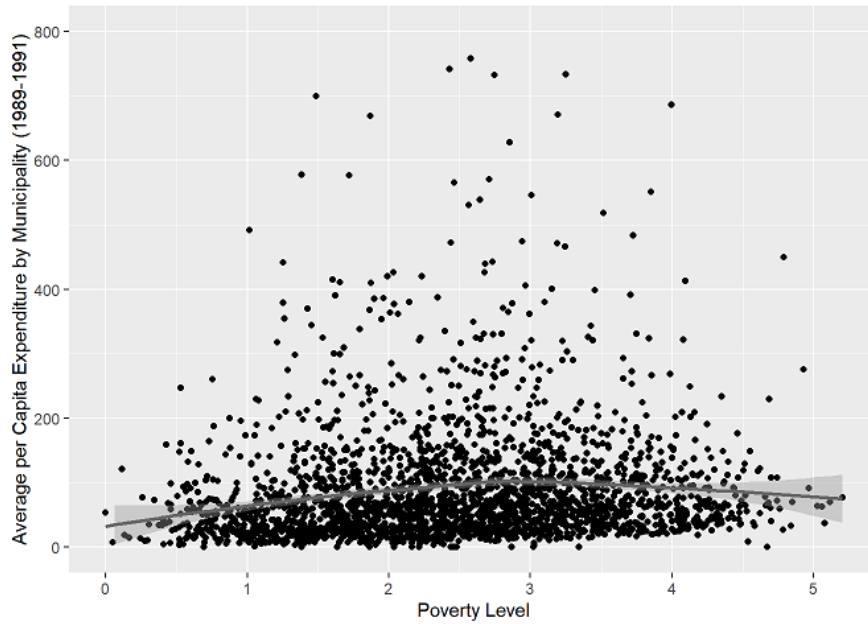
(b) 1992-1994
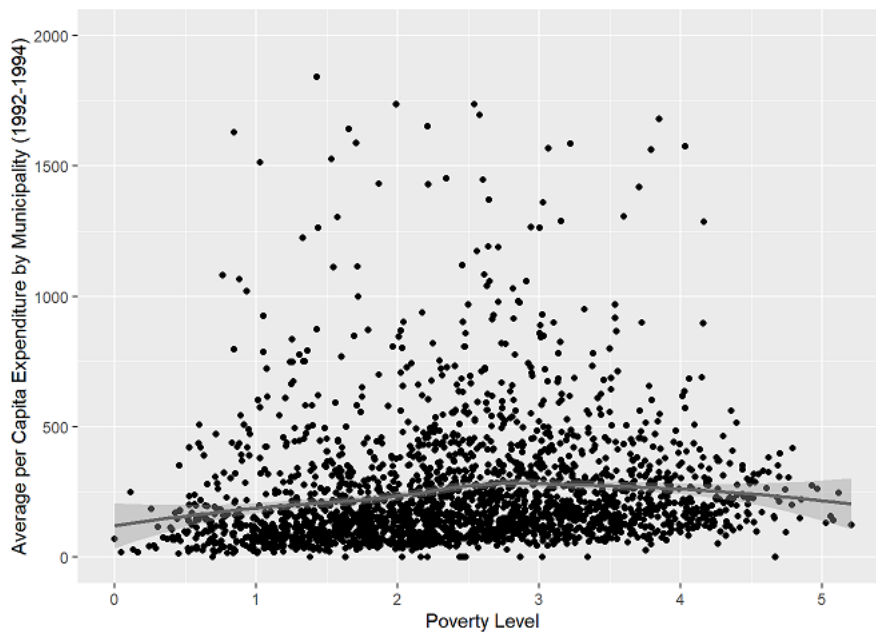
FIGURE 2. Geographic Distribution of POP by Municipality (Percentages of Beneficiary Households)

Econometric Estimation: Pronasol

Table 3 presents the results of the 2 SLS regression on the effects of electoral strategies on the Pronasol spending in 1991 and 1994.[34] For both years, being poor and PRI's core supporters is associated with a greater amount of Pronasol expenditures. For the analysis of 1991, the coefficient of *Poverty* is positive and statistically significant, and that of *PRI* vote share is positive and statistically significant. In addition, the *PAN* and *PRD* vote are also positive, although the level of statistical significance is smaller at the 5% level. As for the *PRI* vote share change, the sign of the coefficient is negative and statistically significant. Finally, the coefficient of *PRI mayor* is also negative and statistically significant. Taken together, while PRI targeted the Pronasol expenditures to the poor, it also distributed disproportionately in favor of core and opposed voters as well as attempted to buy back support which PRI lost in the previous election. The negative effect of *PRI mayor* suggests that President Salinas may have bypassed their municipal brokerage and monopolized the decision making in the resource allocation at his own hand. Thus, PRI undertook a mixture of different electoral strategies in the 1991 election.

The analysis of the 1994 election shows the similar results. All the coefficients

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[34] Magaloni, Diaz-Cayeros, and Estévez (2007) classify all the program components of Pronasol into private and public goods, and then demonstrate that PRI more likely targeted private goods to localities with the medium level of socioeconomic development and if the level of development is controlled, localities with higher risk in which "its core voters were defecting at a faster rate than the national trend" to reduce the risk (Magaloni, Diaz-Cayeros, and Estévez 2007, 202). Unlike this fine-grained analysis, the present study does not distinguish the types of goods of Pronasol programs because the primary purpose of this study is examining the long-term trend of distributive patterns of anti-poverty spending rather than focusing on a single program.

reveal the same direction of effects as those of the analysis of the 1991 elections, but the levels of statistical significance are different. First, the coefficient of *Poverty* is positive and statistically significant. Second, the coefficient of *PRI* vote share is positive and statistically significant, but the level of significance is lower than the result of the 1991 analysis. Third, the *PRI* vote share change shows a negative sign of coefficient which reaches the statistical significance. The coefficients of *PAN*, *PRD*, and *PRI Mayor* are not statistically significant. These findings indicate that overall, in the 1994 election, PRI was more risk-averse than 1991, catering to their current supporters and regaining old supporters which reneged in the past election.

TABLE 3. The Effects of Electoral Strategies on Pronasol Spending in 1991 and 1994

Variables	1991	1994
Poverty	**53.191***	**127.239***
	(11.681)	(35.426)
Poverty Sq.	**-9.074***	**-22.838***
	(2.092)	(6.212)
PRI	**251.282**	**620.594***
	(81.283)	(265.864)
PAN	**129.607***	108.510
	(56.809)	(162.666)
PRD	**104.618***	264.017
	(51.835)	(179.558)
PRI Change	**-47.414***	**-159.953***
	(21.180)	(38.328)
PRI Mayor	**-42.152***	-60.020
	(15.862)	(43.182)
Constant	**-109.487***	**-427.358***
	(55.147)	(180.847)
Instrumented	PRI	PRI
Observations	2,180	2,325
R^2	0.144	0.181
Adj. R^2	0.129	0.168
Wald test	11.19***	14.32***

*Note*s: State dummy variables for Mexico's 31 states (except Mexico City) were included in the model, but the coefficients are not reported here. Standard errors are reported in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 3 presents standardized estimates of the 2 SLS regression results in Table 3. In order to compare the effects of each variables on the Pronasol expenditures, the standardized estimates are calculated by dividing the coefficients by one standard deviation. For both of the 1991 election (Figure 1 (a)) and 1994 election (Figure 1 (b)), the magnitudes of effects of *PRI* vote share and *Poverty* are the greatest. More specifically, the standardized estimates of *PRI* vote share are 0.50 for 1991 and 0.38 for 1994. For instance, it means that holding other variables constant, if PRI vote share increases by one standard deviation, the per-capita expenditure of PRI will increase at 0.5%. Similarly, those of *Poverty* are 0.48 for 1991 and 0.37 for 1991. These findings imply that the levels

of poverty and the strength of PRI influenced the distribution decision of Pronasol expenditures for the 1991 and 1994 elections to the great extent.

Finally, the effect of *Poverty Sq.* merits special attention. Figure 4 shows the predicted values of poverty on the per-capita expenditure of Pronasol by the level of PRI's vote share: (a) is for the analysis of 1991 election and (b) is for the 1994 election.[35] The solid curve represents the value of *PRI* at the 1st quantile, the dotted line for that of the median, and the dashed line for the 3rd quantile.[36] Two findings are noteworthy. First, for both the 1991 and 1994 elections, Pronasol was distributed disproportionately in favor of municipalities at the medium level of poverty.[37] Second, if the level of poverty is controlled, the municipalities where PRI vote share is larger receive a greater amount of Pronasol expenditure. It suggests that PRI undertook the core voter strategy for the 1991 and 1994 elections, but the likelihood was conditional on the level of poverty.

Taken together, the above analyses present strong evidence that Pronasol was manipulated primarily to benefit core voters of PRI. Although the level of poverty also matters, it is limited up to the medium-level of poverty and conditional on the support for PRI. These results are consistent with those of previous works, which report ample evidence of the political manipulation of Pronasol under the scarce technical and institutional constraints.

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[35] In practice, the substantive values of Pronasol expenditures do not become negative. The negative values of this table indicate theoretical predictions.

[36] Confidence intervals for the three curves are not shown in the table because they overlap each other, which makes it difficult to distinguish between them.

[37] This finding is consistent with Magaloni, Diaz-Cayeros, and Estévez (2007).

FIGURE 3. Standardized Estimates of the Pronasol Model

(a) 1991
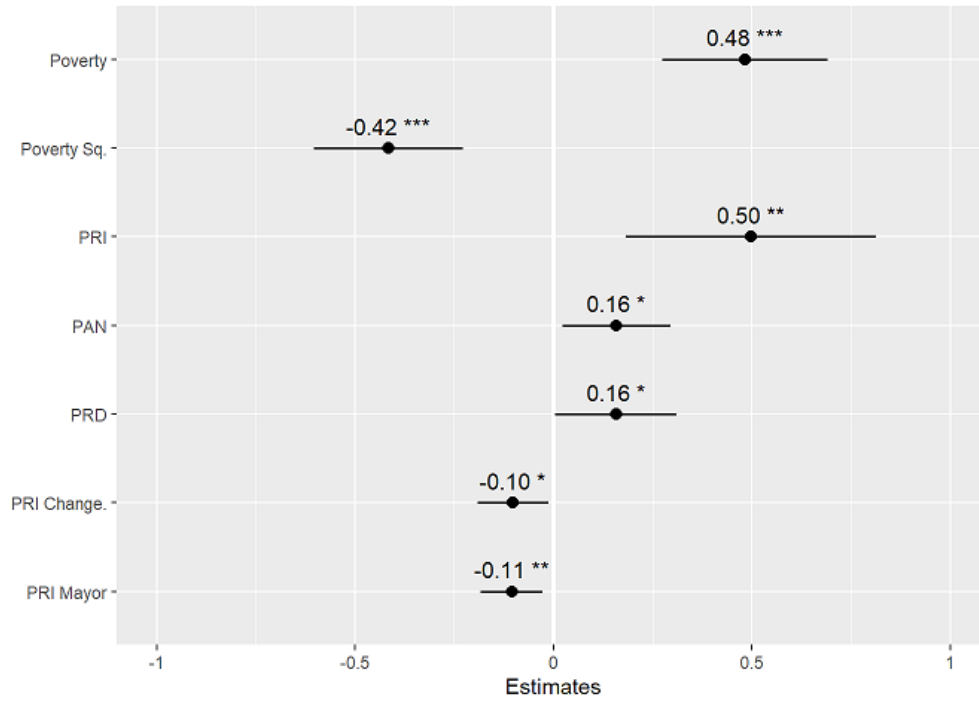
(b) 1994

FIGURE 4. Predicted Values of Poverty on Pronasol Expenditures by PRI Vote Share (the 1st Quantile, Median, the 3rd Quantile)

(a) 1991

(b) 1994
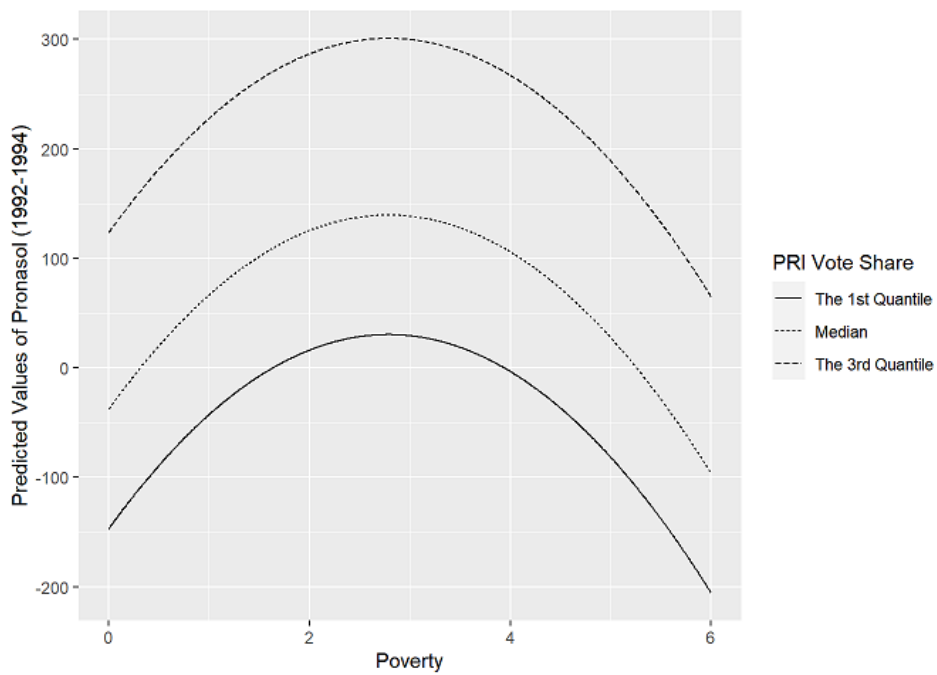
Econometric Estimation: POP

Table 4 reports the results of the fixed-effect regression of the determinants of POP for the period between 1998 and 2017. To deal with the problems of heteroskedasti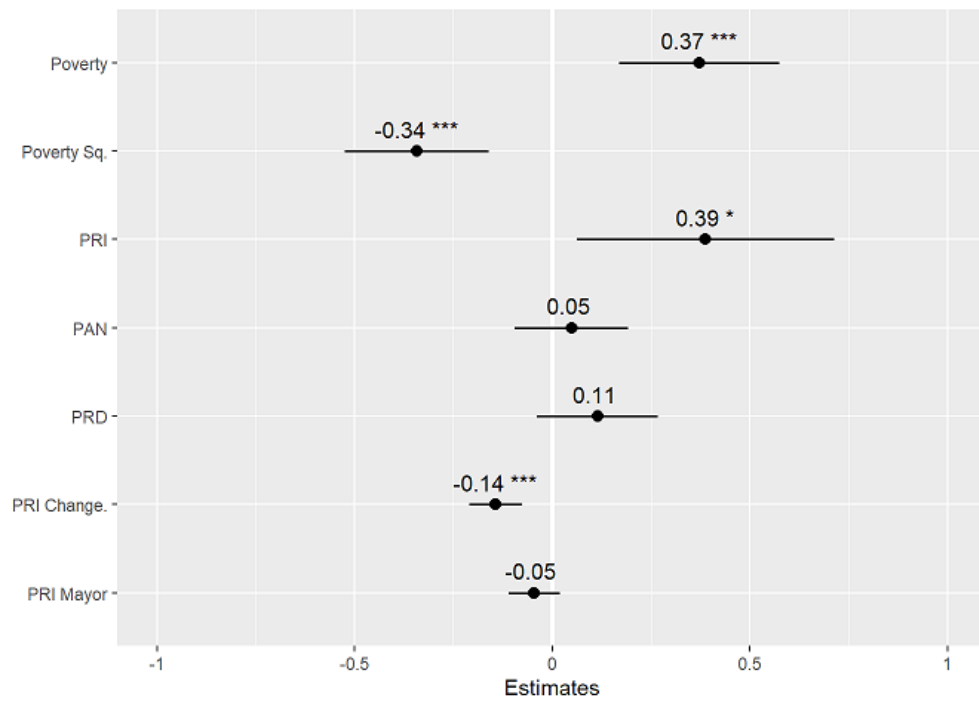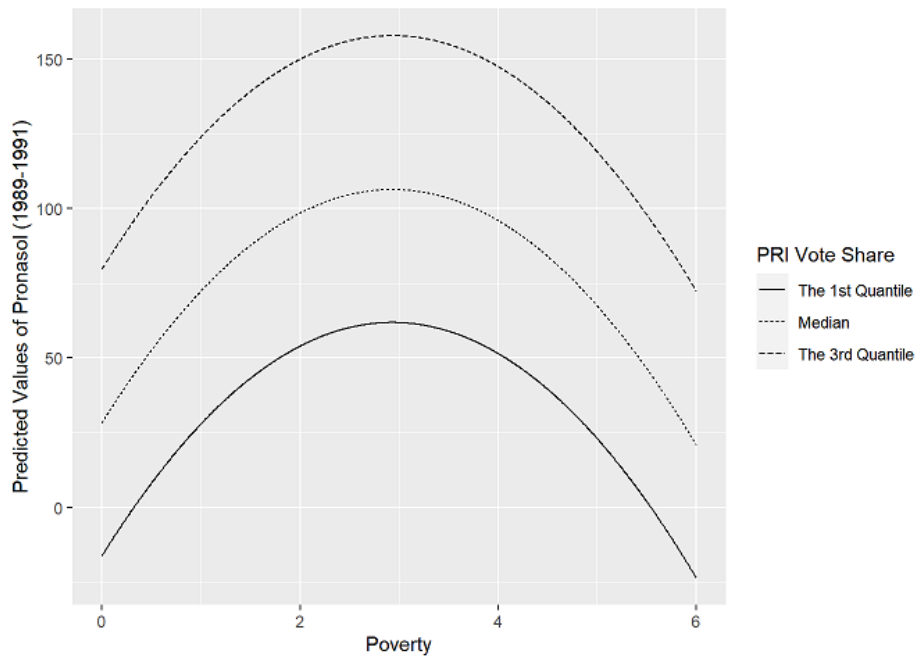city and autocorrelation, clustered standard errors are used. Model 1 is a base model, Model 2 includes the interaction between *Accountability* and *Poverty*, Models 3 adds the interaction of the incumbent *Vote share* with the dummy variables for previous years of presidential elections, and Model 4 includes the incumbent *Vote share* and *Vote share change* respectively. Note that the presidential elections were conducted in 2000, 2006, 2012, and 2018. As explained earlier, however, Sedesol suspended the incorporation of new beneficiaries in the years of federal elections. Thus, public officials may have tried to manipulate the POP spending before the suspension period. Thus, the year dummies interacted with *Vote share* and *Vote* share change are 1999, 2005, 2011, and 2017, which are one year before the respective presidential elections.

TABLE 4. The Determinants of POP Spending, 1998-2017

Variables	Model 1	Model 2	Model 3	Model 4
Poverty	0.039***	0.026***	0.026***	0.026***
	(0.007)	(0.004)	(0.004)	(0.004)
Poverty Sq.	-0.004**	-0.002**	-0.002**	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Vote share	-0.009***	-0.017***	-0.018***	-0.018***
	(0.002)	(0.002)	(0.002)	(0.007)
Vote share change	0.003	0.008***	0.008***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)
Mayor	-0.001**	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Accountability	0.001*	-0.005***	-0.006***	-0.006***
	(0.000)	(0.000)	(0.000)	(0.000)
Accountability*Poverty		0.003***	0.003***	0.003***
		(0.000)	(0.000)	(0.000)
Vote share*1999			-0.002	0.011.
			(0.005)	(0.006)
Vote share*2005			0.005*	0.001
			(0.002)	(0.002)
Vote share*2011			0.017***	0.012***
			(0.003)	(0.003)
Vote share*2017			-0.004	-0.011.
			(0.004)	(0.006)
Vote share change*1999				-0.031***
				(0.007)
Vote share change*2005				0.015***
				(0.003)
Vote share change*2011				0.013***
				(0.004)
Vote share change*2017				0.013
				(0.008)
Observations	39,997	39,997	39,997	39,997
R^2	0.529	0.554	0.554	0.555
Adj.R^2	0.503	0.530	0.530	0.531
F-Statistic	1,701.5***	1,810.3***	1,571.0***	1,390.7***

Notes: Year dummy variables were included in the model, but the coefficients are not reported here. Clustered standard errors are in parenthesis.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The most important finding is that while the poverty level was an important determinant of the distribution of POP for Models 1, 2, 3 and 4, the electoral strategies did matter in different ways. First, the coefficients for *Poverty* was statistically significant for all models. As for the *Poverty Sq.*, all models show a coefficient which is statistically significant and negative, suggesting a curvilinear relationship between the levels of *Poverty* and POP. Second, the *Vote share* has a negative and statistically significant effect on POP expenditures for the four models, which suggest that unlike Pronasol, the incumbents targeted POP against their own supporters and benefited opposition voters, which supports the *opposed voter hypothesis*. We can interpret that the incumbents became more risk-taking and intentionally diverted the resources from their supporters to opponents in order to survive an increasingly competitive electoral race. Third, only Model 1 shows that the *Mayor* has a negative effect at the statistically significant level, which also implies the possibility of the risk-taking strategy. However, Model 1 does not control for other variables. Thus, this result is not reliable. Fourth, in Models 2, 3, and 4, the *Vote share change* has a positive effect at a statistically significant level, which supports the *recruitment* hypothesis stating that the incumbents attempt to consolidate new supporters. Finally, the *Accountability* has a positive and statistically significant effect in Model 1, whereas it becomes a negative and statistically significant effect in Models 2, 3, and 4. This refutes the constraining effect of institutional reform on the political manipulation of POP. However, the interaction effects of *Poverty* and *Accountability* reveal intriguing results in Models 2, 3, and 4. The coefficients become positive and statistically significant. This means that the distribution of POP is determined by the level of poverty if it is bound by the strict operation rules and oversight mechanisms.

Furthermore, the interaction of *Vote share* with election years displays interesting findings. For Model 3, while no significant effect is found for 1999 and 2017, it has a positive, significant effect for the years of 2005 and 2011. As for the interaction of *Vote*

share change of election years, the effect is statistically significant with a negative sign for 1999, but positively significant in 2005 and 2011. We could interpret these results as follows: The PRI government sought to buy back their traditional supporters prior to the 2000 election, but did not win the race. After taking power in 2002, the PAN government attempted to consolidate new supporters in the subsequent elections conducted in 2006 and 2012. In addition, the PAN government targeted POP resources disproportionately in favor of their supporters in 2012. Thus, the PAN governments took more risk-averse electoral strategies to use anti-poverty programs, although they were subject to institutional constraints, which had developed by then.

Last but not least, figure 5 presents the size of coefficients for the year dummies, which captures year-specific effects, including the varying degrees of institutional reforms at the federal level. For all the models, it increases until 2003 and remained consistent with an exceptional spike in 2009. This trajectory implies that institutional reform advanced and the effort to reform sustained until 2003. However, the effect of institutional reform was stagnated afterwards with the exception of 2009. The stagnation or truncated progress of institutional reform over years suggest the limited effects of institutional constraints and resurgence of political manipulation after the elections in 2006 and 2012.

In short, we can conclude that the geographical distribution of targeted anti-poverty programs has become steadily pro-poor and less clientelist overtime, but that limited effects of institutional reform did not eliminate the political manipulation from the explicit efforts to fight against poverty.

FIGURE 3. The Size of Coefficients for Year Dummies
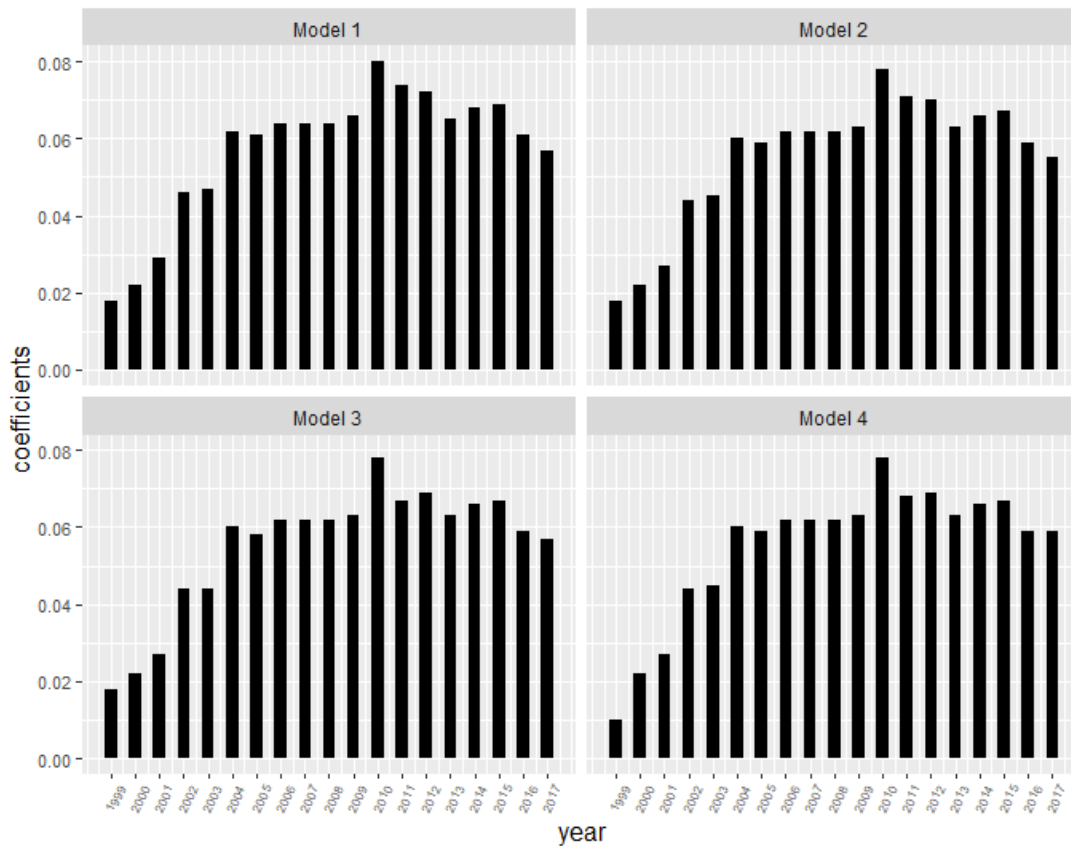
CONCLUSION

This study demonstrated that Mexico's targeted anti-poverty programs became gradually less clientelist and pro-poor as a consequence of policy and institutional reforms. Especially, the findings clearly show that POP was more depoliticized than Pronasol as a consequence of strengthened institutional constraints. However, POP became susceptible to political manipulation after 2006. In other words, although the effect of institutional reform had a constraining effect on the political manipulation of anti-poverty spending in Mexico, the effect was not everlasting. Once the institutional reform stagnated, the practice of political manipulation came back to the decision in allocating social spending.

The contribution of this study is three-fold. First, the temporal changes of these tactical behavior have not been studied over time. The present study enhances our

understanding of the dynamics by showing how the development of institutional constraints influenced the political manipulation of anti-poverty spending across different administrations for almost thirty years. Second, this study broadens the scope of institutions which are supposed to constrain political manipulation of social spending. The institutions include both rue-based policy schemes and monitoring and oversight institutions. While the existing literature widely assume that the introduction of CCTs leads to dampen the political motivation from social policy programming, this study shows that not only technical rules of CCTs but also the mechanisms of monitoring and oversight institutions constrain affects the likelihood of political manipulation of social programs. Third, the institutional constraints do not develop in a linear way. Once they stagnate, it creates room for the political calculation to resurge in the distribution of those resources. Through analyzing the case of Mexico, this shows a non-linear trajectory of institutional constraints and the varying effects on the political manipulation of anti-poverty programs.

Despite these contributions, further effort is required to more accurately estimate the effect of institutional reform on political manipulation of social spending by employing a better strategy of identifying causality for time-series cross-sectional analysis. Furthermore, crafting a measure of institutional reform at the municipal levels would allow for more precisely capturing the effect of institutional constraints on the behavior of local political actors. These are important future research agendas, which should serve to find an effective solution to shield anti-poverty measures from electoral pressures in countries where the political manipulation of social programs has traditionally prevailed.

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Appendix:

1. Description of Data

1.1. Pronasol

The data on Pronasol spending draw on *Hechos en solidaridad* (1994), which was published by Sedesol. Pronasol consisted of more than 23 programs, which included local infrastructure such as school and highway construction, drainage, support for productive activities, social services, health care, and many others. The political manipulation of Pronasol were estimated for years of 1991 and 1994, in which federal elections were conducted. For this purpose, the expenditures by municipality were obtained in the following manner: First, the aforementioned dataset includes data collected on 561,733 projects, which were implemented between 1989 and 1994, by program, year, amount, and locality. Using these data, for each of the 23 programs, I calculated how much money was spent for each municipality per capita in 1989, 1990, 1991, 1992, 1993, and 1994. Second, I took an average of the per capita expenditures between 1989, 1990, and 1991 by municipality in order to gauge the level of expenditures before the year of the 1991 election. Likewise, the average per capita expenditures of 1992, 1993, and 1994 were created for the election year of 1994. For this, I used the population census data in 1990 published by CONAPO. Third, using them, I calculated the average per capita values by municipality for the years of the 1991 and 1994 federal elections.

1.2. POP

For the POP model, the number of beneficiary households by municipality for each year was used for the dependent variable, which was calculated in the following order. The official data on the number of beneficiary households were available at the levels of either locality or individual. The data is available at the official website of Mexican government (https://datos.gob.mx/). It is possible to identify individual households because the data

contains the names of the person who receive the POP benefits representing each household and of the localities in which they live. After aggregating those data at the level of municipality (N=2,456) in order to create my dataset, I deleted such private information for the purpose of protecting their privacy. This procedure was screened and approved by the Ethics Review Committee on Research on Human Subjects of Waseda University on July 13, 2018 (No. 2018-016).

The primary objective of POP was targeting the extreme poor and achieving human capital development. For this purpose, the assistance of health, education and nutrition were directly provided to beneficiary households in an integrating manner. In later years, additional components such as support for higher education and elderly members of households were added to POP. In other words, the components of benefits differ depending on the family composition of each beneficiary households. However, we can assume that the amount received by each household is proportional to the needs aggregated at the household levels. Thus, I used the number of households as the level of benefit instead of the amount of per-capita transfers to municipalities. In addition, the data of POP expenditures at the municipal levels were not available. Then, to control for the size of municipalities, the numbers of beneficiary households were divided by the population of each municipality, which are used as a dependent variable for this analysis. It would be ideal to divide them by the numbers of total households aggregated at the municipal level, but such data for the period under study was not easily available. Alternatively, I used the number of population to control for the size of municipality.

1.3.Institutional Reform

Data collection for the *Accountability* variable was conducted by a local research assistant between May and September 2019. The information on the state-level legislations which were passed between 1998 and 2017 draws on official webpages state-level authorities of

32 states in Mexico and, if necessary, phone inquiries were made. The area of legislations covered included access to public information (*acceso a la información pública*) or transparency (*transparencia*), accountability (*rendición de cuenta*), anti-corruption (*anti-corrupción*), auditing (*auditoría*), legislative oversight (*vigilancia legislativa*), citizen participation (*participación ciudadana*), fiscal responsibility, (*responsabilidad fiscal*) and operation rules (*regulas de operación*) for public programs.

After collecting all these data, the dataset was created based on the contents of legislations collected. For each of the 32 states, I created a dummy variable for legislation regarding each of those areas. In other words, a state passed the law for each area of legislation, it is coded as 1 for the year of passage. Before that year, the cell is coded 0. For instance, the state legislature of Guanajuato passed the fiscal responsibility law in 2015. This variable is coded as 1 for 2015, 2016, and 2017, but as 0 for the years before 2015. The same procedures were repeated for other legislations for Guanajuato. When the values for all the variables for the period between 1998 and 2017 were computed, they were summed up to calculate the total number of legislations passed for each year. By doing so, the development of institutional constraints for each state was measured.

2. Identification Strategy for the 2 SLS Regression for Pronasol Model

The literature on distributive politics raises concern on the problem of endogeneity caused by simultaneity bias in estimating the effect of electoral results on the levels of distribution (e.g., Magaloni, Diaz-Cayeros, and Estévez 2007; Schady 2000). In the Pronasol model, it is highly likely that the levels of Pronasol spending and PRI vote shares influence each other. To deal with the problem of endogeneity for the both 1991 and 1994 models, I used the average of *PRI* vote shares in the past municipal elections conducted after 1970 as an instrument (*iv*), because this is supposed to be correlated with *PRI* vote

share but not the levels of Pronasol per capita expenditures. First, I regressed *iv* and other variables on *PRI* vote share and conducted a *F*-test to confirm that there is a correlation between the endogenous variable (*PRI* vote share) and instrumental variable (*iv*). The results are presented in Table 1 below. Then, I performed 2 SLS regressions to obtain consistent estimates.

TABLE 1. The Correlation between PRI Vote Share and IV in 1991 and 1994

Variables	*1991*	*1994*
IV	0.266***	0.238***
	(0.020)	(0.022)
Poverty	0.031**	0.033***
	(0.010)	(0.012)
Poverty Sq.	-0.001	-0.003
	(0.002)	(0.002)
PAN	-0.578***	-0.521***
	(0.020)	(0.022)
PRD	-0.542***	-0.612***
	(0.019)	(0.021)
PRI Change	-0.244***	-0.113***
	(0.011)	(0.009)
PRI Mayor	0.155****	0.120***
	(0.009)	(0.010)
Constant	0.393***	0.423***
	(0.027)	(0.031)
Observations	2,180	2,325
R^2	0.810	0.742
Adj. R^2	0.801	0.0.737
F-Statistic	246.95***	177.49***

*Note*s: State dummy variables for Mexico's 31 states (except Mexico City) were included in the model, but the coefficients are not reported here. Standard errors are reported in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

3. Description of Variables

3.1. Pronasol Model

Variable Name	Definition	Source
Pronasol (ben89_91, beb92_94)	The 1991 Model: the average per-capita expenditure of Pronasol for municipalities between 1989 and 1991 The 1994 Model: the average per-capita expenditure of Pronasol for municipalities between 1992 and 1994	Sedesol, CONAPO
Poverty (poverty)	Poverty levels taking the value from 0 to 6 measured in the census conducted in 1990	The marginality index (*indice de marginación*) by CONAPO.
Poverty Sq. (povsq)	A quadratic term of *Poverty*	CONAPO
PRI (pri_90, pri_93)	The 1991 Model: PRI vote share of municipal elections before the 1991 federal election The 1994 Model: PRI vote share of municipal election before the 1994 federal election	CIDAC
PAN (pan_90, pan_93)	The 1991 Model: PAN vote share of municipal elections before the 1991 federal election The 1994 Model: PAN vote share of municipal election before the 1994 federal election	CIDAC

PRD (prd_90, prd_93)	The 1991 Model: PRD vote share of municipal elections before the 1991 federal election The 1994 Model: PRD vote share of municipal election before the 1994 federal election	CIDAC
PRI Change (change_90, change_93)	The 1991 and 1994 Models: the difference of PRI's vote shares between the past two municipal elections.	CIDAC
PRI Mayor	The 1991 Model: a dummy variable for mayors affiliated with PRI The 1994 Model: a dummy variable for mayors affiliated with PRI	CIDAC
IV (iv)	Instrumental variable calculated by taking the average of PRI vote shares of municipal elections conducted since 1970.	CIDAC

Notes: The code names used for computation with *R* (Version 3.6.3) is indicated in parenthesis.

3.2 POP Model

Variable Name	Definition	Source
POP (ben_ratio)	The number of POP beneficiary households in each municipality divided by the municipal population	Sedesol, CONAPO
Poverty (poverty)	Poverty levels taking the value from 0 to 6 measured in the census conducted in 1995, 2000, 2005, 2010, and 2015	The marginality index (*indice de marginación*) by CONAPO.
Poverty Sq. (povsq)	A quadratic term of *Poverty*	CONAPO
Vote share (voteshare)	The incumbent's vote share in the federal election prior to the year of the POP distribution	IFE, INE, Banamex
Vote share change (votesharechange)	The difference of the incumbent's vote shares in the past two federal elections	IFE, INE, Banamex
Mayor (mayor)	A dummy variable for mayors affiliated with the same party of the president	CIDAC, State electoral commissions
Accountability (accountability)	The development of stat-level institutional reform	State-level legislations

Notes: The code names used for computation with *R* (Version 3.6.3) is indicated in parenthesis.

4.   Summary of Variables

5.1. Pronasol Model

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
Pronasol (1989-1991)	2,385	89.654	104.293	0	2506.27
Pronasol (1992-1994)	2,385	360.562	334.444	0	6842.66
Poverty	2,389	2.453	0.988	0	5.205
PRI (1990)	2,201	0.773	0.211	0	1
PRI (1993)	2,361	0.739	0.211	0	1
PAN (1990)	2,201	0.064	0.131	0	1
PAN (1993)	2,361	0.095	0.152	0	0.702
PRD (1990)	2,201	0.095	0.160	0	0.943
PRD (1993)	2,361	0.090	0.146	0	0.872
PRI Change (1990)	2,207	-0.094	0.231	-1	1
PRI Change (1993)	2,351	0.015	0.302	-0.756	1
PRI Mayor (1990)	2,206	0.922	0.269	0	0
PRI Mayor (1993)	2,361	0.928	0.258	0	1

5.2. POP Model

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
POP	48,793	0.104	0.069	0	0.361
Poverty	48,941	2.379	1.002	0	7.255
Vote share	48,652	0.312	0.166	0	0.997
Vote share change	48,406	-0.009	0.128	-0.762	0.738
Mayor	40,457	0.382	0.486	0	1
Accountability	48,986	1.360	1.685	0	8