Dynamic Theory of Electoral Competition and Redistribution: Evidence from Mexico*

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Abstract

This study is the first attempt to show that the new anti-poverty program, PROGRESA (*Programa de Educación, Salud, y Alimentación*, 1997-2000) in Mexico, is not free from political manipulation as well as the old anti-poverty program, PRONASOL, with highly disaggregated data. In contrast to PRONASOL (*Programa Nacional de Solidaridad*, 1988-1994), it does more explicitly benefit the poor following the stated objectives of alleviating poverty. On the other hand, PROGRESA was used to buy support from the PRI (*Partido Revolucionario Institucional*) core supporters, and buy “back” the votes from the traditional supporters who favored opposition parties in the past election. Furthermore, this study argues that it is reasonable to term party competition in the context of eroding hegemony of PRI as “bidirectional” two-party competition between three parties. This modified assumption is more relevant to the cases of new democracies, in which party systems are unconsolidated and two-party competition assumption is less tenable. In this context, to survive electoral competition, the PRI employed distinctive electoral strategies depending on whether the challenger is the right opposition PAN (*Partido Accionista Nacional*) or the left opposition PRD (*Partido Revolucionario Democrático*). A large cross-section analysis employed in this study uses the data on voting patterns, PROGRESA expenditures, and poverty level in 2000 covering 1615 municipalities in Mexico. By so doing, this study attempts to examine the micro-foundations of enduring clientelism in Mexico.
1. Introduction

Do politicians use government programs for clientelist motivation in order to win elections? The recent studies claim that the clientelism has become a dominant citizen-politician linkage in new democracies such as Latin America, which has experienced a simultaneous process of political democratization and neoliberal economic restructuring in the past two decades (Fox 1994, 1996, 1999; Kurtz 2002, 2004; Roberts 1995, 2002; Weyland 1998). More specifically, neoliberal economic reforms have dismantled state-dominated corporatist channels of interest representation, and thus eroded organizational bases for the mobilization of political support. Given this emerging social atomization and “unmediated leader-mass relationship” (Roberts 2002: 26), heightened electoral competition under democratic rule has made clientelism a more viable vote-mobilizing strategy. The empirical evidence from Latin American countries tends to support this claim. Particularly, the recent studies demonstrate that anti-poverty targeting is highly susceptible to electoral manipulation and thus allocated according to incumbent’s clientelist motivation to maximize their chance of winning elections rather than socioeconomic needs (Bruhn 1996; Graham 1992; Magaloni, Díaz-Cayeros, and Estévez, undated; Molinar and Weldon 1994; Rocha Menocal 2001; Schady 2000). Thus, there seems to be a scholarly consensus that heightening electoral competition explains the increasing importance and persistence of clientelism as a viable way of mobilizing political support.

As for a specific mobilizing strategy, however, there is considerable controversy. Abundant work has been presented to demonstrate that the National Solidarity Program (Programa Nacional de Solidaridad, PRONASOL), which was implemented by President Salinas in Mexico (1988-1994), was widely used for its political consideration to halt decline of hegemony of the Institutional Revolutionary Party (Partido Revolucionario Institucional, PRI) (Bruhn 1996; Kaufman and Trejo 1996; Magaloni, Díaz-Cayeros, and Estévez, undated; Molinar and Weldon 1994). On the one hand, most of the studies agree that rather than poverty level, political calculations underlie the benefits allocation by targeting to a specific group of voters. On the other hand, competing explanations are presented with regard to voting patterns and a specific strategy of geographical distribution of the PRONASOL expenditures. More specifically, some studies demonstrate that PRONASOL expenditures are directed in favor of PRI loyal voters to reward their support in the previous election (Bruhn 1996). Others claim that the expenditures were favorably allocated to buy back the supports from voters who recently favored the left opposition, the Democratic Revolutionary Party (Partido Revolucionario Democrático, PRD) (Ibid.) and/or to punish strongholds of the right

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1 Although these studies share an interest in political use of the poverty alleviation programs, their focus differs as follows. On the one hand, Bruhn (1996), Magaloni and her associates (undated), Molinar and Weldan (1994), Rocha Menocal (2001) and Schady (2000) examine how political motivations are taken into account in allocation decision of these programs. On the other hand, Kurtz (2002, 2004); Roberts (1995) and Weyland (1998) analyze how implementation of these targeted program led to political support for the incumbent governments.
opposition, the National Action Party (*Partido Nacional Accionista*, PAN) in the 1988 federal elections (Bruhn 1996; Molinar and Weldon 1994). The most recent study claims that the PRI diversified electoral investment by allocating private goods of the PRONASOL to core supports whereas targeting local public goods to swing voters (Magaloni, Díaz-Cayeros, and Estévez, undated). These mixed results would be due to their highly aggregated analysis at state level except Magaloni and her associates. Thus, it is still premature to reach a firm conclusion about the predicted association between electoral competition and clientelism before examining micro foundations (mechanism) by which the anti-poverty programs are manipulated for electoral consideration with more disaggregated or individual level data.

To fill this gap, this paper attempts to test these alternative hypotheses to confirm the causal relationship between electoral competition and manipulation of social programs with highly disaggregated data on electoral outcomes, expenditures, and socioeconomic variables. I conduct a cross-section analysis of geographic distribution of expenditures of the Program of Education, Health, and Nutrition (*Programa de Educación, Salud, y Alimentación*, PROGRESA), which was launched in 1997 under Zedillo administration after PRONASOL.

The contribution of this work is three fold. First, this study is the first attempt to analyze PROGRESA expenditures employing the data at municipal level (N=1614). This large number of cases enables us to identify specific type of electoral strategy used for the program expenditures. Second, in contrast to a large number of studies on PRONASOL spending, there is only a few works on the political determinants of PROGRESA. This scarcity of research on PROGRESA would be due to the fact that a strict means-tested measure was introduced to select the program beneficiaries, thus undermining politicization of the program from its program design. However, there is no satisfactory study on determinants of PROGRESA expenditures. Therefore, examining plausible clientelist motivation behind this new program would provide evidence of persistence or temporal change of clientelist behavior. Third, this study modified the core assumptions underlying theoretical models of electoral competition and redistribution. In other words, the assumption of two-party competition is less tenable for the cases of new democracies because party systems are still unconsolidated and thus the number of parties competing is still fluid. Particularly in Mexico, in the context of eroding hegemony of PRI, which coincided with the period of PROGRESA distribution, the party competing is characterized by a configuration shaped by three major parties: PRI, PAN and PRD. To survive electoral competition, the PRI employed distinctive electoral strategies depending on whether the challenger is PAN or PRD. This bidirectional two party competition would offer useful analytical framework for other cases of new democracies.

In this study, clientelism is defined as an investment strategy with which politicians

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2 One important study on political determinants of Progresa is Menocal (2001). However, her study relies on highly aggregated data on spending at state level, which prevents her from drawing an unambiguous association between elections and distribution of the expenditures.
distribute excludable, divisible private goods to individual voters in exchange for political
support through patron-client network in order to maximize probability of winning an election
(Magaloni, Diaz-Cayeros, and Estévez, undated: 2). In addition, clientelism should come
along with the developed support networks through which the party has to have ability to know
who their core constituents (clients) are in order to benefit them favorably (Dixit and
Londregan 1996: 1147). Importantly, clientelist redistribution is distinguished from pork
barreling in that the latter is characterized by a trade of local public goods for political support,
and politicians and voters are not connected through personal/particularistic networks because
it takes a form of specific geographic targeting. In short, the nature of goods provided differs
between these two kinds of tactical redistribution.

Based on these definitions, the rest of the paper is organized as follows. In the
second section, I briefly describe PROGRESA by comparing its predecessor anti-poverty
program, PRONASOL. In the third section, through critically examining the previous
theoretical modes of electoral competition and redistribution, I present theory of
“bidirectional” two-party competition, and draw testable hypotheses. In the fourth section, I
estimate the political effects on the distribution of PROGRESA expenditures in the year of
2000 federal elections. The final section concludes with future research agenda.

2. Is Clientelism Still Prevailing? Ten Years after PRONASOL
The cases of two nation-wide poverty alleviation programs in Mexico provide rich evidence to
see not only the influence of voting pattern on distribution of the social expenditures but also
change or persistence of clientelist redistribution over time. The old one is the National
Solidarity Program (Programa Nacional de Solidaridad, PRONASOL), which was created in
1988 at the initiative of President Carlos Salinas de Gortari in order to relieve wide-spread
poverty and the benefits extended to all 2417 municipalities, but criticized as a means of
halting the decline of the PRI’s electoral hegemony. The new one is the Program of
Education, Health, and Nutritition (Programa de Educación, Salud, y Alimentación,
PROGRESA), which was started in 1997 under Zedillo administration in an effort to break the
entangling web of poverty where malnutrition, morbidity, high infant mortality rates, high
fertility, school dropout rates and unhealthy living conditions prevail. The coverage reached
more than 2000 municipalities.3 Then, the current Fox administration has continued this
program under the new name of OPORTUNIDADES.

3 Progresa operated in almost 50,000 localities, in more than 2,000 municipalities and 31 states. The
Progresa’s budget of approximately $777 million in 1999 was equivalent to 0.2% of Mexico’s GDP. These
program descriptions draw on a webpage of IFPRI (the International Food Policy Research Institute).
(http://www.ifpri.org/themes/progresa.htm accessed on 10/25/2004). Researchers of the IFPRI in
collaboration with officials of the Ministry of Social Development and Mexican researchers primarily at the
CIDE (Centro de Investigación y Docencia Económicas) have been involved in program design, assessment,
and publication of reports of Progresa/Oportunidades.
As evidence to claim that clientelism is prevailing in new democracies in Latin America, great scholarly attention has been paid to the PRONASOL. Notably, the edited volume of Wayne Cornelius et al. compiles works explaining an extensive political use of this discretionary anti-poverty program for consolidating and buying back supports for the PRI after the contentious presidential election in 1988 (Cornelius, Craig, and Fox 1994). The most recent, sophisticated quantitative analysis claims that when PRI’s hegemony comes under threat as political competition gets tighter, it diversifies the portfolio between two types of transfers by discretionarily allocating private goods to the core constituency and at the same time public goods to swing and opposition voters (Magaloni, Díaz-Cayeros, and Estévez, undated: 6). In short, this line of work, either quantitative or qualitative, bases the persistence of clientelism on the budget allocation pattern of PRONASOL. Nevertheless, since the PRONASOL was widely criticized for its clientelist use by opposition parties and citizens, the political use of government program seems to have been apparently changed in the past ten years.

More specifically, allocation of subsequent anti-poverty program, PROGRESA (Programa de Educación Alimentación, y Salud) show a remarkable difference from that of PRONASOL in many aspects. In 1997, President Zedillo launched the PROGRESA as a renewed poverty alleviation targeting program with strictly means-tested screening. The primary difference in benefits between PRONASOL and PROGRESA is the nature of goods provided. On the one hand, the PRONASOL programs comprised private goods provision (support to social service, housing, children in solidarity, women in solidarity, infrastructure for productive support, solidarity for production, productive ecology and regional development program) and local public goods provision (drinking water and sewage, food and distribution, electricity, sports infrastructure, dignified school, urbanization, educational infrastructure, health support, regional hospitals, etc.). On the other hand, the PROGRESA programs were limited to private goods provision such as direct cash transfer and service provision to individual beneficiaries, and the programs for local public goods for poverty alleviation were incorporated into a newly established federal transfer to municipal governments, the Federal Fund for Municipal Social Infrastructure (Fondo de Aportaciones para la Infraestructura Social Municipal, FISM).

In fact, aggregated spending data at state level shows that the distribution is progressive. Because both PROGRESA and FISM spending aim at improving socioeconomic conditions of the beneficiaries, the budget allocation decision is supposed to follow poverty formula. Figure 1 presents geographical distribution of per-capita anti-poverty spending in 1999 (PROGRESA and FISM combined, pre-electoral year). The states are lined up according to deprivation index calculated by the CONAPO (Consejo Nacional de Población) (from the poorest on the left to the least poor on the right). It shows that the funds are

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4 Deprivation index is constructed by a factor analysis of census variables related to deprivation (illiteracy,
distributed in favor of poor states and also that the PROGRESA spending seems more progressive than FISM. Thus, this analysis at state level suggests that in contrast to PRONASOL, PROGRESA is redistributive and its expenditures favor the poorest regions.

**Figure 1. Geographic Distribution of PROGRESA/FISM in 1999**
(per capita of total population)


In order to examine whether PROGRESA expenditures are susceptible to clientelist motivation, it would be ideal to analyze further disaggregated data for each program at municipal level and then to examine the relationship between per capita spending, deprivation index, and electoral competitiveness. The next section presents theoretical arguments to draw testable hypotheses.

3. **Bidirectional Two-Party Competition and Redistribution**
How do incumbents respond to electoral competition when they are faced with multiple, equally qualified challengers? This question is relevant to the context in which the PRI is suffering from the erosion of hegemonic status and competing with two opposition parties...
characterized by distinctive ideology and constituency. In order to examine how electoral competition shapes budget allocation decision in emerging democracies, the recent studies on clientelism in Latin American cases draw testable propositions from competing models of tactical redistribution and test them with empirical data: the “core” voter hypothesis from Cox and McCubbins (1986), and the “swing” voter hypothesis from Lindbeck and Weibull (1987) and Dixit and Londregan (1996).

The gist of these competing models is as follows. On the one hand, the models of Dixit and Londregan (1996) and Lindbeck and Weibull (1987) draw the swing voter hypothesis. They assume a two-party electoral competition in which the two parties (L, R) are different from each other in the issue position and their tactical promises of redistribution to the voters (Dixit and Londregan 1996: 1136). In their model, voters are assumed to differ from each other in their ideological preferences (X) over the parties and to care for material benefits measured by consumption (C). In case of regional transfer, each region has a distribution of ideological preferences, and there is a critical value defined as “cutpoint” dividing voters for L and R, given a certain amount of regional transfer \( X_i = U_i (C_{iL}) - U_i (C_{iR}), i = \text{region} \) (Dahlberg and Johansson 2002: 29). By using regional transfers, these parties attempt to shift this cutpoint in order to increase their vote shares. Thus, the amount of transfers delivered to a region is supposed to be positively correlated with this cutpoint density (Ibid.: 30). Accordingly, the following testable hypotheses are drawn from this theoretical model in terms of regional transfers (Dixit and Londregan 1996: 1142-1143).

\[(H:1) A \text{ region whose voters are relatively numerous at the cutpoint gets favorable treatment.}\]

\[(H:2) A \text{ region that is less attached to political ideology and is more ready to switch its votes in response to promises of economic benefits is treated more favorably.}\]

Drawing insights from this swing voter hypothesis, the recent literature on clientelism provide evidence to claim that the anti-poverty program of FONCODES in Peru (Schady 2000) and of PRONASOL in Mexico (Magaloni, Diaz-Cayeros, and Estévez, undated) was partly targeted in favor of swing voters in order to broaden the incumbent’s support base.

On the other hand, the theoretical model of two-party competition proposed by Cox and McCubbins differs from the swing voter model in the following points. First, candidates are assumed to be risk-averse. Second, swing voters are those with the lowest rate of returns (Cox and McCubbins 1986). Then, they predict that politicians will invest “little (if at all) in opposition groups, somewhat more in swing groups, and more still in their support groups (Ibid.: 379). Hence, the following testable hypothesis is drawn from this theoretical model.

\[(H:3) A \text{ region which supports the incumbent government gets favorable transfer.}\]
Along this line, empirical analyses of Latin American cases demonstrate that the incumbent favorably benefits their core supporters in order to secure electoral victory by rewarding their support (Bruhn 1996; Magaloni, Díaz-Cayeros, and Estévez, undated).

These two competing models pay attention to level of political support which can be observed from voting patterns in the previous election. However, politicians also care about a recent change of voting behavior. More specifically, they are induced to buy “back” their traditional supporters who recently voted for opposition candidates. In addition, they might make an explicit effort to consolidate the new supporters who voted for them for the first time in the previous election (Schady 2000: 290). Thus, by comparing more than two past elections, politicians can identify who switched their votes (Ibid.). The hypotheses are drawn from this dynamic model.

(H:4) A region in which voters favored opposition candidates recently gets favorable transfer.
(H:5) A region in which voters supported the incumbent for the first time gets favorable transfer.

Taking this dynamic perspective into account, some empirical studies show that PRI attempted to buy back voters who favored PRD candidate in the previous election by intensively targeting PRONASOL to them (Bruhn 1996; Molinar and Weldon 1994).

As stated thus far, politicians are hypothesized to use social programs to cultivate support from (a) core voters, (b) swing voters, or to (c) buy “back” the support, or (d) consolidate new support. Despite these varied predictions, these competing models share two assumptions: two-party competition and ideological congruence between social cleavages and partisan lines. However, these implicit assumptions should be reconsidered in applying these models to the cases of new democracies. As argued below, problems of democratic representation specific to new democracies makes these assumptions less tenable for the following reasons. First, two-party competition is less realistic in Latin America primarily due to high electoral volatility. As Roberts and Wibbels argue, electoral volatility defined as “the change in vote shares obtained by individual parties in given political system across consecutive elections” is outstandingly high in Latin America (Roberts and Wibbels 1999: 576). This leads to the fact that the number of parties competing fluctuates election by election, which destabilizes the party system in the region. Given the unpredictability of how many, which parties are involved in each electoral race, there is no a priori reason to suppose that distribution of resources is competed between two parties for mobilizing political support.

Second, in Latin America, societal cleavages are not aligned with partisan lines as the advanced democracies. As briefly mentioned in the introduction, Latin American democracies have been experiencing drastic market-oriented reforms. These structural changes have deteriorated income inequality and economic security, but also escalated fragmentation of labor
market and concomitant erosion of organizational bases of party supports. In this context, societal interests have been increasingly represented through unmediated direct exchange of material benefits for political support, that is, clientelist linkage. This has caused the incongruence between social cleavage and their institutionalized form of interest representation in political arena because parties are “not cleaving the political arena along class line” (Roberts 2002: 3-4). This suggests that party competition occurs at elite-ideological and constituency levels separately. Thus, greater attention should be paid to such two-dimensional competition: on the one hand, how political parties are competing with regard to their ideology or programs; on the other hand, how these parties are competing to broaden support from the constituency.

These two modified assumptions are particularly relevant to the case of Mexico in the period of PROGRESA, when over ten years had passed since PRONASOL was initiated in 1988. As for the first modified assumption about the number of parties involved in competition, the current party competition in Mexico revolves around three major parties, PRI, PAN, and PRD. However, it would be reasonable to call the competition between these three parties “bidirectional” two-party competition rather than three-party competition for the following reason. In the context of eroding hegemony of the PRI, which dominated the country’s political system over seventy years, voters take two steps in making their vote choice (Domínguez and McCann 1995: 34). Mexican voters first decide whether they go for or against the ruling party (PRI). Then, their vote choice is determined by attitudes on policy issues, prospective economic evaluation, and attachments to social cleavages. This salience of the pro- or anti-regime (PRI before 2000) cleavage puts PRI in the center of competition. The PRI, then, compete against two opposition parties, PRD and PAN respectively, in taking distinctive electoral strategy. In this sense, the electoral race takes on “bidirectional” two-party feature with the PRI situated as a central force. Thus, party competition in Mexico is less close to three parties than to “bidirectional” two-party competition.

The next question which follows is how the second modified assumption about disjunction between social cleavage and partisan lines is relevant to electoral competition in Mexico. In ideological dimension, party competition is more intense between PRI and PAN whose programmatic proximity gives them a greater incentive to differentiate each other. Ideological distance between center-right PRI and right-PAN with regard to economic issues is smaller than that of PRI and leftist PRD. Table 1 shows candidates’ ratings on issue scales prior to the federal elections in 2000. Using the Mexico 2000 Panel Study, Magaloni and Poiré calculate location of presidential candidates from three parties on issue scales perceived

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5 Participants in the Mexico 2000 Panel Study (in alphabetical order): Miguel Basañes, Roderic Camp, Wayne Cornelius, Jorge Domínguez, Federico Estévez, Joseph Klesner, Chappell Lawson (Principal Investigator), Beatriz Magaloni, James McCunn, Alejandro Moreno, Pablo Parás, and Alejandro Poiré. Funding for the study was provided by the National Science Foundation (SES-9905703) and Reforma newspaper.
by forty percent best-educated sample respondents (Magaloni and Poiré 2004: 300). At both presidential candidates and their party level, PRD is located away from PRI and PAN, whereas PRI and PAN are very close. This ideological proximity between PRI and PAN makes PAN as a more threatening challenger to PRI at political arena. Thus, it is hypothesized as follows.

(H:6) The ideological/programmatic competition against PAN would give PRI incumbent a greater incentive to differentiate their policy advantage to survive election and to secure political support from their core supporters.

In the dimension of competition at constituency level, PRI would be more induced to compete against PRD because constituency of both PRI and PRD share similar social characteristics. Table 2 shows social characteristics of partisan groups in Mexico based on the aforementioned survey. Party identification is classified into strong, weak, and lean to PRI, PAN, and PRD respectively. Although strong partisans present significant difference, “Lean to PRI” voters and “Lean to PRD” voters, who are more likely to switch to other parties, belong to similar social categories with regard to education, locality, and income. By contrast, PAN voters are distinctive from both PRI and PRD voters. This suggests that voters are more likely to switch their choice between PRI and PRD. Thus, at the constituency level, PRD becomes a stronger challenger to PRI incumbents. Given this competition over similar constituency, it is hypothesized that

(H:7) PRI incumbent would be induced to redistribute more in favor of PRD voters in order to buy their support.

In short, bidirectional two-party competition in Mexico is summarized in Table 3. Based on this configuration, there are six alternative explanations for political calculations behind distributions of social program expenditures. Furthermore, it is emphasized that in the context of eroding hegemony of PRI, the assumptions should be modified by taking into account bidirectional two-party competition and incongruence between social cleavage and partisan lines. In order to test these hypotheses for the case of PROGRESA, next section presents empirical analysis to estimate the political effects on the distribution of PROGRESA expenditures in the year of 2000 federal elections.

4. Geographic Distribution of PROGRESA

Research Design and Model Specification

To test the above hypotheses, this study use cross-section data on PROGRESA spending in 2000, electoral results, and poverty level at municipal level to examine the effects of political motivation on geographic distribution of PROGRESA expenditures. The federal elections were conducted in 2000 in Mexico. In order to examine the clientelist distribution of the
expenditure, the spending data for pre-electoral year is ideal. Since the budget realized in 2000 was passed in the legislature in the previous year, this spending data for 2000 is appropriate to examine how political calculations to use the expenditure for electoral purpose were reflected in the budgetary decision prior to the election.

This analysis included observations for 1614 out of 2436 total municipalities for which the data was available. Specifically, while the data on poverty index and PROGRESA spending are available for all municipalities, the consistent electoral data for almost 500 municipalities in Oaxaca states and administrative units in Mexico, D.F. could not been obtained due to complicated restructuring of administrative bodies in these areas. Nevertheless, this data set includes a larger number of observations than the state level analysis conducted by the previous studies, thereby representing a good cross-section within a country. This allows me to more accurately estimate the political effects on the social program expenditures.

As for model specification, because I am using cross-section data for 1614 observations, the problem of heteroskedasticity becomes a concern. To deal with this problem, I use the weighted least square (WLS) estimator with robust standard errors. The base model I will estimate is presented as follows:

\[
\text{Exp}_i = \alpha + \beta_1 \text{PRI}_i + \beta_2 \text{Competitiveness}_i + \beta_3 \text{Change}_i + \beta_4 \text{Poverty}_i + \epsilon_i
\]

Where \(\text{Exp}_i\) stands for PROGRESA expenditures per capita in municipality \(i\), \(\text{PRI}_i\) for PRI strength measured by PRI vote share and \(\text{Competitiveness}_i\) for marginality measured by effective number of parties in the previous municipal elections, \(\text{Change}_i\) for change of vote share of PRI in the past two municipal elections, \(\text{Poverty}_i\) for poverty level, and \(\epsilon_i\) for the error term in municipality \(i\) respectively. To test the hypotheses, I estimate four models with different dependent variables. The first model estimates the effect of political calculations on PROGRESA per capita for all municipalities (N=1614). The second model estimates the political effects on PROGRESA per capita for municipalities governed by PRI, which means that the PRI candidate was the first contender in the past municipal election (N=1121). The third model estimates for PRI municipalities in which the first challenger (second strongest contender) in the past municipal election was PAN (N=497). Likewise, the fourth model is for PRI municipalities with the first challenger from PRD in the past municipal election (N=526). By comparing these models, I expect to see if PRI behaves differently depending on which opposition candidates is competing. The detailed variable description is presented below.

**Dependent Variable: The Expenditure of PROGRESA per Capita**

Since the data on the expenditure of PROGRESA per capita at municipal level was not available, I calculate the dependent variable \((\text{Exp})\) in the following way. First, the data on
PROGRESA recipients in 2000 in about 52,000 localities are aggregated by municipality (N=2436) in order to calculate the number of PROGRESA recipients at municipal level. Second, the total amount of PROGRESA expenditure is divided by the total number of PROGRESA beneficiaries so that the amount of PROGRESA expenditures per beneficiary can be obtained. Third, I multiply this by the number of recipients for each municipality in order to gauge the total PROGRESA expenditure per municipality. Finally, I divide this by the total population in each municipality to get the PROGRESA expenditure per capita.

**Independent Variables**

In order to see the clientelist use of the expenditures, the level of poverty should be controlled for because the anti-poverty program is supposed to target the poorer regions according to the original purpose of the program. For the Poverty variable, I use deprivation index calculated by the CONAPO (Consejo Nacional de Población). This deprivation index is constructed by a factor analysis of census variables related to deprivation (illiteracy, no elementary school education, housings, lack of access to drinking water, sewage and electricity, population density, quality of housing construction, population living in rural localities, and workers earning less than two minimum wages) (Magaloni, Díaz-Cayeros, and Estévez, undated: 28).

To control for other socioeconomic effects, I first included variables for GDP per capita, urbanization, and indigenous population ratio at municipal level. However, all of these variables are strongly correlated with deprivation index at statistically significant level. For this reason, I decided to remove them and exclusively to use deprivation index as a measure of poverty level. The positive sign of the coefficient means that the PROGRESA expenditures are targeted to the poor.

The PRI variable represents PRI strength measured by PRI vote share in the previous municipal election. Since municipal elections are not concurrent in Mexico, I employ the results of the elections conducted from 1997 to 1999. This variable represents a core support for the incumbent PRI. The positive sign of the coefficient suggests the PRI’s motivation to favor the core supporters in distributing the PROGRESA expenditures. If it is statistically significant, this confirms the core-voter hypothesis (H:3). The Competitiveness variable stands for marginality measured by effective number of parties in the previous municipal elections (Laakso and Taagepera 1979). The variable takes a positive value from one to three. One means no competition, whereas three represents a close race between three parties. This suggests that voters in competitive municipalities are more likely to be marginal because the probability that they supported PRI in the past election is the same as the probability that they supported PRD or PAN candidates (Schady 2000: 290). Thus, a positive sign of the coefficient, if it reaches statistically significant level, confirms hypothesis 1 and 2 (the swing-voter hypothesis). With regard to the PRI and Competitiveness variables, it should be noted that a correlation between these variables is negatively strong (r=0.763), meaning that the less competitive municipalities are dominated by PRI, not PAN or PRD. Thus, if the
coefficient is negative and statistically significant, it is also interpreted that municipalities in which PRI is strong get favorable benefit.

The Change variable stands for change of vote share of PRI in the past two municipal elections. For this variable, I compare the results of the municipal elections in 1994-1996 with those in 1997-1999. Some studies use a change of the absolute vote number instead of the share. However, in the inter-electoral period, the total population of eligible voters increased in most of the municipalities. In order to count this effect, I decide to employ the change of vote share. This variable is created by subtracting PRI vote share in elections conducted in the period between 1994-1996 from that in 1997-1999. If the coefficient is negative at a statistically significant level, this confirms the buy “back” hypothesis (H:4). By contrast, the positive coefficient at a statistically significant level supports the “new” voters hypothesis (H:5).

**Results and Discussion**

Table 4 presents the WLS regression results for Model 1-4. The first column of each model reports the estimation results of the core voter hypothesis (PRI strength) as level variable, and “new” voter or “buy back” hypotheses (PRI vote share change) as change variable. The second column of each model shows results of the swing voter hypothesis (effective number of parties) as level variable, and “new” voter or “buy back” hypotheses (PRI vote share change) as change variable. The main findings are summarized as follows.

First, the estimation for all four models shows that both PRI voters and the poor received a disproportionately large share of PROGRESA spending. More specifically, the coefficient on the measure of poverty is positive in all cases and is significant at 1% level. At the same time, the coefficient on the measure of PRI core support is always positive mostly at 1% level as well. Thus, PROGRESA expenditures are targeted in favor of both the poor and PRI core supporters (H: 3). Second, the coefficient on the measure of swing voter/competitiveness is negative and is significant at 1% level for Model 1, 2, and 4, but not significant for Model 3. This indicates that the effect of marginality on PROGRESA expenditures largely comes from the race competed between PRI and PRD. This suggests that PRI spent disproportionately less on marginal voters in the race against PRD in particular, which rejects the swing voter hypothesis (H:1 and 2). Third, the coefficient on PRI vote share change is negative and is significant for Model 1, 2, and 4, but not for Model 3. Here again, the effect of this variable is attributable to the race between PRI and PRD. It is interpreted that when PRI competes against PRD, it is more likely to distribute more to buy back the supports because PRD and PRI supporters share similar social traits and thus more easily sway between PRI and PRD (H:4 and 7). Finally, the results reported in Model 1 and 2 is similar in terms of sign and magnitude of the coefficients. This suggests that PRI municipal governors behave in accordance with PRI at federal level. Thus, it is interpreted that the municipal governors do not act as independent political brokers for clientelist exchange.
Nevertheless, the significant political effects in the competition between PRI and PRD in Model 4 should be interpreted with caution because PRI and PRD supporters and the poor could largely overlap. As observed in Table 2, income level of marginal PRD and PRI supporters is lower than not only that of loyal PRI and PRD supporters but also that of PAN supporters. This suggests the possibility that disproportionately large amount of PROGRESA expenditure was directed to PRI and PRD supporters just because a large part of them are poor. In order to examine this possible scenario, PROGRESA per capita expenditure is plotted against level of competitiveness by controlling for poverty level (Table 5). The level of competitiveness is categorized into “hegemonic” (the effective number of parties<1.5), “two party” (1.5≤N<2.5), and “three party” (2.5≤N). The poorest takes the largest value on x axis. Table 5 shows that a marginal rate of increase in PROGRESA per capita expenditure is greater in hegemonic municipalities when the level of poverty is moderate. Given most of the hegemonic municipalities are governed by PRI, it is interpreted that PRI has a greater incentive to manipulate the expenditures to target favorably non-poor voters. Furthermore, this trend is even more salient in PRI municipalities (Table 5-B). These remarks confirm the unambiguous effects of political calculations, rather than poverty concern, on PROGRESA expenditures where PRD is the primary challenger.

Taken together, these findings confirm that poverty level is an important determinant of per-capita expenditure. Thus, PROGRESA meets the original purpose of this anti-poverty program. At the same time, political calculations do affect the geographic distribution of PROGRESA expenditures although it is claimed that PROGRESA is apolitical in contrast to PRONASOL. Especially, the PRI core supporters are favorably targeted. What is noteworthy is that PROGRESA is used for electoral purpose when PRI is competing against PRD by attempting to buy back the traditional supporters who favored PRD in the previous election. By contrast, the effects of political variables are weak when PAN is the primary challenger to PRI. This confirms the theoretical prediction about bidirectional two-party competition: PRI differentiates electoral strategy between the races against PAN and PRD. More specifically, when PRI competes against PAN, the competition comes from ideological dimension. Their ideological proximity induces PRI incumbent to secure support from their core voters by investing disproportionately more of PROGRESA expenditures to them. On the other hand, when the primary challenger is PRD, they compete for the support from fickle voters with similar societal background, who are supposed to more easily sway between PRI and PRD. Thus, it would be reasonable to suppose that PROGRESA is not immune to political pressure although the degree is much lower than PRONASOL.

**Conclusion**

This paper shows that the new anti-poverty program, PROGRESA, is not free from political manipulation as well as the old anti-poverty program, PRONASOL. In contrast to PRONASOL, it does benefit the poor following the stated objectives of alleviating poverty.
On the other hand, PROGRESA was used to buy support from the PRI supporters, and buy “back” the votes from the traditional supporters who favored opposition parties, PRD in particular, in the past election. Furthermore, this study argues that party competition in the context of eroding hegemony of PRI, it is reasonable to term it as “bidirectional” two-party competition between three parties. This competition is two-dimensional: on the one hand, PRI competes against PAN with regard to their ideology or programs because of their ideological proximity; on the other hand, PRI competes against PRD to broaden support from the constituency because their supporters are similar. In this context, PRI incumbents have a greater incentive to favorably benefit their core supporters, PRD marginal voters, and to buy back the support from their traditional supporters who recently favored PRD.

Nevertheless, there are several remaining questions in order to fully explain how clientelism has been persistent or changed over time in new democracies. First, this study exclusively focuses on PROGRESA, which is private goods provision. As briefly mentioned earlier, there is another anti-poverty program delivering local public goods (FISM). Those local public goods are not divisible, which might provide the incumbent with a distinctive incentive to use the expenditure for political purpose. Second, since the notorious PRONASOL, what has been decentralized to subnational governments is responsibility to provide local public goods (FISM), but not private goods (PROGRESA/OPORTUNIDADES) despite an increasing demand at the national legislature. Thus, a question of the nature of goods is also relevant to explain incentives underlying political process of decentralization. Third, it would be important to further examine how two-party competition assumption is not relevant to the cases of new democracies. In Mexico, “bidirectional” two-party competition describes the current configuration of party politics. Exploring further alternative forms of competition would be a meaningful research agenda. Fourth, this study focuses on the distribution determined at central level. However, given clientelism comes along with dense distributive/informational network which facilitates delivery of divisible goods, further analysis is required to closely examine the mechanisms through which those goods actually reach the recipients. Fifth, this study draws inferences from a large cross-section data for one year observation. In order to generalize the findings and confirm hypotheses in a more rigorous way, incorporating a variation over time with further yearly data is desired.

Despite these shortcomings, this study is the first attempt to examine the determinants of distribution of PROGRESA expenditures at municipal level. In this sense, these findings will be an important contribution to deepen our understanding of electoral competition and persistent clientelist motivation behind income redistribution in new democracies.
### <Summary of Variables>

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
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<tbody>
<tr>
<td>Poverty</td>
<td>1866</td>
<td>2.1916</td>
<td>.9613</td>
<td>.0001</td>
<td>5.7489</td>
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<tr>
<td>PRI strength</td>
<td>1841</td>
<td>.4932</td>
<td>.1345</td>
<td>.164</td>
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<tr>
<td>Effective Number of Parties</td>
<td>1843</td>
<td>2.2851</td>
<td>.5186</td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td>PRI vote share change</td>
<td>1836</td>
<td>-.0440</td>
<td>.1638</td>
<td>-.66</td>
<td>.72</td>
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### Table 1. Candidates’ Ratings on Issue Scales

<table>
<thead>
<tr>
<th>Left-Right dimension</th>
<th>Cárdenas/PRD</th>
<th>Fox/PAN</th>
<th>Labastida/PRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>(candidate, February, 2000)</td>
<td>3.07</td>
<td>6.06</td>
<td>6.89</td>
</tr>
<tr>
<td>(party, Feb.,2000)</td>
<td>3.24</td>
<td>5.69</td>
<td>6.87</td>
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<tr>
<td>(candidate, June, 2000)</td>
<td>3.71</td>
<td>5.89</td>
<td>7.06</td>
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<tr>
<td>(party, June, 2000)</td>
<td>3.51</td>
<td>5.89</td>
<td>7.14</td>
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Table 2. Social Characteristics of Partisan Groups in Mexico

<table>
<thead>
<tr>
<th>Party Identification</th>
<th>Education</th>
<th>Urban</th>
<th>Income</th>
<th>Religiosity</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% with prep. or univ. education</td>
<td>% living in cities&gt;20,000</td>
<td>% earning 4000 pesos or less per month</td>
<td>% of attending services never or only occasionally</td>
<td>Mean</td>
</tr>
<tr>
<td>PRI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong PRI</td>
<td>24.9</td>
<td>48.1</td>
<td>66.2</td>
<td>22.7</td>
<td>40.3</td>
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<tr>
<td>Weak PRI</td>
<td>24.0</td>
<td>66.9</td>
<td>75.7</td>
<td>29.4</td>
<td>37.6</td>
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<tr>
<td>Lean to PRI</td>
<td>27.6</td>
<td>65.7</td>
<td>71.3</td>
<td>28.6</td>
<td>39.6</td>
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<td>PAN</td>
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<td></td>
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<td></td>
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<tr>
<td>Strong PAN</td>
<td>38.9</td>
<td>77.2</td>
<td>69.0</td>
<td>27.2</td>
<td>37.9</td>
</tr>
<tr>
<td>Weak PAN</td>
<td>41.9</td>
<td>82.0</td>
<td>66.2</td>
<td>24.7</td>
<td>35.4</td>
</tr>
<tr>
<td>Lean to PAN</td>
<td>46.9</td>
<td>80.6</td>
<td>65.4</td>
<td>28.2</td>
<td>36.5</td>
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<tr>
<td>PRD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong PRD</td>
<td>30.8</td>
<td>67.7</td>
<td>80.8</td>
<td>43.0</td>
<td>43.5</td>
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<tr>
<td>Weak PRD</td>
<td>27.0</td>
<td>68.5</td>
<td>76.2</td>
<td>28.5</td>
<td>42.3</td>
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<tr>
<td>Lean to PRD</td>
<td>33.3</td>
<td>68.8</td>
<td>82.1</td>
<td>34.4</td>
<td>39.6</td>
</tr>
</tbody>
</table>


Table 3. Two Dimensions of Bidirectional Two-Party Competition in Mexico

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<th>Ideology</th>
<th>Constituency</th>
<th>Different</th>
<th>Similar</th>
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<tr>
<td></td>
<td>Different (PRD vs. PAN)</td>
<td>PRI vs. PAN</td>
<td></td>
</tr>
<tr>
<td>Different</td>
<td>PRI vs. PRD</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>
Table 4. Determinants of Progresa per capita in 2000

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1 (Total)</th>
<th>Model 2 (PRI Municipalities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty level (Deprivation index)</td>
<td>125.0653** (5.1546)</td>
<td>125.8491** (5.2190)</td>
</tr>
<tr>
<td>(Total)</td>
<td>122.1294** (6.1868)</td>
<td>121.2277** (6.3165)</td>
</tr>
<tr>
<td>Model 3 (PRI vs. PAN)</td>
<td>140.1907** (9.9393)</td>
<td>141.1874** (9.8339)</td>
</tr>
<tr>
<td>(PRI vs. PAN)</td>
<td>109.6485** (8.8029)</td>
<td>108.0273** (9.0249)</td>
</tr>
<tr>
<td>Model 4 (PRI vs. PRD)</td>
<td>128.4291* (50.2303)</td>
<td>182.0601** (64.0464)</td>
</tr>
<tr>
<td>(PRI vs. PRD)</td>
<td>8.8743 (35.9131)</td>
<td>-123.1403** (41.5374)</td>
</tr>
<tr>
<td>Effective Number of Parties</td>
<td>-28.4586** (7.6175)</td>
<td>-35.0780** (8.5435)</td>
</tr>
<tr>
<td>PRI vote share change</td>
<td>-59.1442* (25.5077)</td>
<td>-44.6827 (24.5340)</td>
</tr>
<tr>
<td>Constant</td>
<td>-50.9022** (18.4499)</td>
<td>88.4334** (26.0379)</td>
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<tr>
<td></td>
<td>109.6485** (23.1386)</td>
<td>126.8277** (30.5543)</td>
</tr>
<tr>
<td>State dummy</td>
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<td>Yes</td>
</tr>
<tr>
<td>F</td>
<td>512.24**</td>
<td>513.44**</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.5298</td>
<td>0.5238</td>
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<tr>
<td>N</td>
<td>1614</td>
<td>1121</td>
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</tbody>
</table>

Note: Cell entries are regression coefficients with standard errors in parentheses. * p < .05, ** p < .01, two tailed test.
Table 5. PORGRESA per capita, Competitiveness, and Poverty Level

A. Total

![Graph A. Total]

B. PRI municipalities

![Graph B. PRI municipalities]
References
Laakso, Markku, and Rein Taagepera. 1979. "'Effective' Number of Parties: A Measure with