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**SOCIAL PROGRAMS AND ELECTORAL COMPETITION:
THE POLITICAL ECONOMY OF THE MEXICAN NATIONAL
FUND FOR SOCIAL ENTERPRISES (1992-2000)**

Abstract

This paper examines the relation between the distribution of federal outlays for social programs and increased electoral competition in Mexico. The scholarly literature on the topic argues that in an electoral competitive environment politicians will attempt to manipulate policy instruments at their disposal in order to increase the probability of holding or maintaining their power positions.

The majority of studies on the determinants of resource allocation for social programs in Mexico rely on anecdotic or limited evidence to show that political manipulation has been important criteria for distribution. This paper contributes to this topic with an empirical analysis of a small-scale poverty alleviation program with a rich and disaggregated panel data set to show the extent of political interests in the distribution of resources. Using diverse econometric specifications I test the propositions on the time and geographical allocation of resources. I find that more resources were available prior to the 1994 and 1997 federal election, but found no evidence that in the 2000 elections resources were above average. On the geographical distribution of resources the estimated model shows that the federal incumbent rewarded loyal supporters at the state and municipal levels, and punished the opposition.

Resumen

Este documento examina la relación que existe entre la distribución del gasto social federal y el incremento en la competencia electoral en México. La literatura académica en el tema sostiene que en un ambiente electoralmente competitivo los políticos en el poder tratarán de manipular los instrumentos de política pública a su alcance para aumentar la probabilidad de obtener o mantener posiciones de poder.

La mayoría de los estudios sobre los determinantes de la distribución del gasto de programas sociales en México tiene como base la anécdota, estudios de caso o información limitada a determinadas áreas geográficas para demostrar que la manipulación política ha sido un criterio importante en la distribución de recursos sociales. Esta investigación contribuye a este tema con un análisis empírico de un programa de combate a la pobreza con una base de datos rica en información y altamente desagregada, con la que se muestra la magnitud que tienen los intereses políticos en la distribución de recursos. En este documento se estiman diversas especificaciones econométricas para probar las hipótesis sobre el calendario y la distribución geográfica en la distribución de recursos. Los resultados muestran que más recursos de este programa se hicieron disponibles antes de las elecciones federales de 1994 y 1997, pero no existe evidencia de que en las elecciones del 2000 hubiera recursos por arriba del promedio. En cuanto a la distribución geográfica de los recursos los modelos estimados muestran que el gobierno federal priista apoyo a sus seguidores al nivel estatal y municipal, al mismo tiempo que castigo a la oposición.

1. *Introduction*

When we ask how federal resources to aid the poor get distributed among the population it is our hope to find the help going to those people or communities that need it most and can make the best out of it. We would also like to observe no political use of resources, that is, incumbents restraining from the use of public monies as a short run mechanism to win votes. And finally it would make us very happy to see agency officials in charge of implementation of programs doing their job without trying to bias the distribution to further their own career objectives affecting program goals.

However, unbiased, uninterested, well targeted distribution of resources may seldom be the rule and more the exception. The reasons are numerous and complex, but several authors have pointed out at least three. First there may be technical and conceptual problems to formulate an adequate, agreeable measure of poverty and clear criteria for recipient's characteristics (Inman and Rubinfeld, 1997; Donahue 1997; Scott, 1999).

Second a democratic political system may create incentives for incumbents to target the population or the timing that represents the highest electoral return (Nordhaus, 1975; Rogoff, 1990; Alesina, 1997; Levitt and Snyder, 1997; Fleck, 1999; Bickers and Stein, 1996). And finally, bureaucracies have their own interests and program implementation may be plagued by informational asymmetries that make monitoring and compliance to original program objectives difficult (Niskanen, 1968; Wintrobe, 1997; Moe, 1997).

The purpose of this paper is to contribute to the understanding of the distribution of federal outlays for social programs in Mexico. I propose to do so by evaluating the extent of the political influence on the distribution of resources, considering the timing of federal and local elections, as well as electoral characteristics at the state and municipal levels.

This paper will look into the question of what is the effect of increased electoral competition on the timing and geographical distribution of social expenditures, focusing then on one particular aspect of the debate on the distribution of federal outlays. In a time when political alternation in the federal Executive has finally arrived in Mexico it seems important to explore the effects of heightened electoral competition on the policy instruments available to incumbents.

Five sections follow. The second part reviews the relevant research on the issue of political manipulation of government policy. Two aspects are underscored here. On the one hand there is the question of manipulation of policy instruments linked with political calendars. Here we find the literature related to the political business cycle and its subsequent refinements, like budget cycles, fiscal cycles, etc. (Nordhaus, 1975; Tufte, 1976; Rogoff, 1990; Alesina, 1997). On the second hand there are the studies on distributive politics that seek to uncover the relation between

federal outlays and previous electoral results, like the margins of vote, the characteristics of voters, party competition, incumbent's vulnerability, etc. (Cox and McCubbins, 1986; Fleck, 1999; Bickers and Stein, 1996; Levitt and Snyder, 1997) Both strands of this literature analyze two aspects of the same problem that must be considered simultaneously.

The last part of this second section reviews the empirical research for Latin America that deals with political bias of programs or expenditures and that bears relation with the literature on political business cycles and distributive politics.

The third part lays down the main propositions to be tested with subsequent empirical analysis. The main argument here will be that federal social expenditures are positively related to the timing of elections and to the geopolitical distribution of the vote in previous elections, but that this political manipulation is directly related to the rules established for the distribution of the program. When programs appear more discretionary, i.e., when there is no established set of criteria to select beneficiaries, and no set of formal indicators for geographical distribution, they will be hostage to political interests.

The fourth part describes the data set available for a particular social program in Mexico that will be used to estimate the model to test the propositions on political manipulation on the distribution of federal outlays. The fifth part describes the results obtained with the empirical analysis, these results will be compared to other analyses on different social programs that have explored similar issues. The sixth part concludes.

2. Electoral Policy Cycles and Distributive Politics

The notion that politicians manipulate economic policy to their own advantage is deeply rooted in popular folklore. During election time it is not rare to find numerous journalists describing the opportunistic use of government resources by incumbents in order to create advantageous economic conditions for citizens about to cast their vote. Surely the presence of elections is not the only determinant for public resource allocation, but it can't be denied that electoral competition does play a crucial role for public policy making in democracies.

The scholarly literature on this phenomenon started by arguing the existence of cycles in key economic variables motivated by political calendars. This literature has dramatically expanded since the mid 1970's. Two themes seem the most relevant in the academic research on the subject of political manipulation of government policy. First, we find the politically motivated cycles. Different studies have found evidence for and against the relationship between economic indicators and time of elections.

Second, the studies on distributive politics put emphasis on the political-electoral characteristics of the areas where allocation is made, i.e., are resources targeted to those regions that appear as the most profitable for electoral outcomes? Which are the most profitable strategies?.

This section is a brief overview of recent studies on politically motivated policy cycles and distributive politics that shed some light on the different types of political manipulation of outlays from federal social programs.

Politically motivated policy cycles

Two scholarly works appear as the fundamental building blocks in the literature on political or electoral business cycles. On the one hand, Nordhaus' article published in 1975 is often cited, along with Lindbeck (1976), as the starting point of the politico-economic approach to macroeconomic policy. The other major work is Tufte's (1978) book on the political control of the economy.

Both authors argue that in a democracy politicians in office are motivated by their reelection prospect and such motivation leads them to attempt to manipulate the economy in order to create favorable economic conditions just before elections, with the belief that this will increase their chances of being favored at the polls.

The Nordhaus model states that the incumbent government stimulates the economy immediately before each election and eliminates the resulting inflation with a post-electoral downturn or recession. Tufte's work clearly describes the beliefs of incumbent governments on the electoral benefits that will be attained if voters' prosperity is increased in the months immediately preceding an election. However, Tufte also describes the government's limitation in achieving broad or generalized economic improvement just before elections. Compared to Nordhaus, Tufte is more skeptical about the ability of politicians "and their economic advisors" to influence the course of a large national economy systematically and to do so with precise timing.

The evidence shown by Nordhaus (1975) refers to the empirical analysis on yearly data on unemployment in nine democracies from 1947 to 1972¹, in order to statistically show that periodic competitive elections will "lead to a political business cycle, with unemployment and deflation in early years followed by an inflationary boom as elections approach" (p.185). Nordhaus finds evidence of politically motivated cycles in five of the nine countries studied (Germany, France, Sweden, New Zealand and the United States) based on unemployment rates before and after elections.

Tufte's empirical work centers not on inflation or unemployment but rather on specific transfer payments, which increase disposable income. He analyses social security payments in the United States from 1950 to 1976, reaching the conclusion that these payments are more likely to increase in electoral years.

The main differences between these two authors is that while Nordhaus analyses the behavior of macroeconomic variables (especially unemployment) and assumes an exploitable tradeoff of the sort displayed by a short term Philips curve,

¹ The countries are Australia Canada, France, Germany, Japan, New Zealand, Sweden, the United States and the UK.

Tufte emphasizes a much simplified notion of economic manipulation. In his own words, “election year economics is probably not often a matter of sophisticated macroeconomic policy” (p.10). Tufte’s work is crucially based on policies that are more easily manipulated by government. He refers to those policy instruments that are easy to start up quickly and yield clear and immediate economic benefits.

A second interesting distinction between Nordhaus and Tufte is the recognition by the latter of the multiplicity of actors involved in creating economic cycles that favor incumbents. Unlike Nordhaus, Tufte spells out the multi-agent nature of the problem. He explicitly recognizes that “partially implicated in the election year stimulation of the economy are many different agencies and groups – those who make economic policy, those who monitor the budget and rate of spending, those who pass legislation increasing beneficiary payments in an election year and those who determine the money supply” (p.59).

According to Tufte the reasons why agencies might accelerate their administration of economic stimulus are 1) to stay out of trouble with the federal executive, 2) to parley an election-year increase into permanent expansion or 3) to maintain their long-run independence by short-run assistance to those who might most immediately threaten their independence.

Nordhaus and Tufte represent the two main works of what later became known as the opportunistic theory of political business cycles. The main assumptions here are that politicians care only about reelection and voters have limited capability to foresee the opportunistic intentions of politicians, behavior that will eventually represent a cost to the voters once the pre-election period is over.

The assumption that the electorate is incapable of learning and is prone to systematic mistakes in expectations became increasingly unsatisfactory. As a response, the models developed since the mid 1980’s have incorporated the assumption of rational expectations and emphasize how a rational public limits the extent to which policy makers can manipulate the economic cycle (e.g., Cukierman and Meltzer, 1986).

Some more recent work has further drifted away from the effect of politics on macroeconomic variables, such as unemployment and inflation, and has placed increasing attention on the link between policy instruments, especially fiscal policy, and political calendars (Rogoff, 1990; Blais and Nadeau, 1992; Alesina, 1997). These new models which incorporate voter’s rationality to policy makers opportunistic behavior emphasize the role of the policymaker’s competence, defined as their ability to reduce waste in the budget process, promote growth without inflation or insulate the economy from random shocks. These models consider the asymmetries of information between incumbents and voters with respect to the competence of the policymaker. Aware of the informational asymmetries, incumbents try to signal as much competence as possible. These efforts lead to cycles in key variables that coincide with the electoral calendar. A key element in these models is that voters’ rationality limits politicians’ opportunism, which implies

that the political cycles are likely to be short lived, smaller in magnitude, on specific policy instruments and less regular than in the traditional models

Figure 1 below shows the principal predictions of business cycles model of the opportunistic type, according to the assumptions placed on voter's rationality.

Figure 1²
Predictions of the Opportunistic Models of
Political Business Cycles

	<i>Traditional (Myopic voters)</i>	<i>Rational Expectations</i>
<i>Policy subject to manipulation</i>	<ul style="list-style-type: none"> • Monetary and fiscal policies are expansionary in the year or two before the election and contractionary in the year or two after the election. 	<ul style="list-style-type: none"> • Monetary and fiscal policies are expansionary two or three quarters preceding an election and contractionary two or three quarters after the election.
<i>The predictions of rational expectations models are smaller and shorter effects than in the traditional models</i>		
<i>Before elections</i>	<ul style="list-style-type: none"> • Economic expansion in the year or two before the election, GNP growth above normal, unemployment below normal in election year. Inflation begins to increase immediately before an election. 	<ul style="list-style-type: none"> • Short run manipulation of policy instruments immediately before elections. • No regular multiyear cycle in growth and unemployment. • Increases in deficits, inflation or money growth in the two or three quarters before the elections.
<i>After elections</i>	<ul style="list-style-type: none"> • Inflation continues to increase for a few quarters after the election, then falls. GNP growth lower after elections. 	<ul style="list-style-type: none"> • Smaller and shorter lived effects on inflation. No systematic effect on growth and unemployment.
<i>Impact on vote share</i>	<ul style="list-style-type: none"> • Vote share of the incumbent is increasing in the rate of growth in the election year and decreasing in the unemployment rate. 	<ul style="list-style-type: none"> • Vote share of the incumbent is increasing in past growth (and decreasing in past unemployment); the specific pattern of this relationship depends on voters' information.

Recent empirical research for the United States and for other OECD countries has brought little support for the predictions of the traditional opportunistic business cycle model (Alesina, 1997). There is no systematic evidence that the economy grows faster or that the unemployment rate is lower during election years and there is no evidence of a systematic postelectoral increase in the inflation rate.

² From Alesina, *et al.* (1997), p. 36

The evidence on the use of particular policy instruments (especially government grants), appears more like the model of cyclical manipulation with rational expectations but the data seems to suggest that this manipulation might be stronger under certain conditions.³

For example, Alesina *et al.* (1997) have shown that for the period between 1961 and 1985, there are significant electoral effects on US government transfers to citizens. However, if the years between 1986 and 1994 are included in the sample those effects tend to disappear. The explanation here relates to the fact that most transfer programs in the United States have become long-term mandatory spending programs that can no longer be easily manipulated for short-run purposes.

Distribution and elections

Another strand on the literature that explores political manipulation has been that of distributive politics. These studies focus not particularly on the timing of distribution, but rather on the answers to three other important aspects of political influence, these may be posed as who gets the benefits of the politicians' efforts to win elections? What types of programs are used to promote politically biased distribution? and the how and why do institutions propitiate or hinder this manipulation? In this section I focus on some of the answers given to the who gets what of the politicians' manipulation of government policy by recent articles on distributive politics.

Who benefits?

Cox and McCubbins (1986) developed a model of electoral politics to analyze which groups are most likely to benefit and which are most likely to suffer from a politicians' decisions of distribution. In the context of electoral competition, the authors frame their model as a redistributive game between competing candidates. The main argument here is that the optimal strategy for risk-averse politicians will be to promise redistributions first and foremost to their support groups and thereby maintain existing political coalitions.

In their analysis Cox and McCubbins classify groups within a constituency in three types. First there are the support groups, those who have consistently supported a politician in the past and to whom he looks for support in the future. Second, the opposition groups, those who have consistently opposed the politician, and whom he thinks won't ever support him. Third, the swing groups those who have been neither consistently supportive nor consistently hostile.

A politician distributes or redistributes resources based, in the first place, on group responsiveness. "...if groups can be strongly ordered in terms of electoral

³ See for example Tufte (1978), Alesina (1988), Hibbs (1987) and McDonald (1991).

responsiveness, then they can be similarly ordered in terms of the amounts they are promised by a candidate: unresponsive groups will be promised little, responsive groups relatively more” (p. 377). If the assumption is that support groups are more responsive than swing groups, and that opposition groups are the least responsive, then resources should be distributed according to this order. However, the level of responsiveness may not necessarily correspond to this order.

It is commonly assumed that opposition groups are the least responsive of the three groups. However, it is not clear whether the level of responsiveness is greater among swing groups or support groups. If swing groups are taken as riskier investments than are more well-known groups, and politicians are risk averse than the contention by Cox and McCubins is that politicians will adopt strategies in which they invest little in opposition groups, somewhat more in swing groups and more still in their support groups.

The proposition stated above contrasts with some empirical analyses that argue in favor of politicians targeting swing groups more than support groups. For example in his analysis of the New Deal Realignment Fleck (1999) proposes that in particular circumstances⁴ the incumbent will seek to favor states that have a large number of swing voters. The rationale is that politician’s expected vote share in a state changes in response to the value of policy to voters in that state, thus the greater the change in the vote share for a given change in the value of policy, the more favorable the distribution will be to that state. Fleck’s empirical findings show that a Democratic Party government provided high benefits to swing states and much lower benefits to the traditionally democratic south in the late 1930’s because of the president’s ability to concentrate benefits in states with high electoral payoffs.

The prediction on the decisions of distribution among swing or support groups oscillate between support to these two groups according to the assumptions of the models. Particularly important appear to be: 1) the relative size of the groups, 2) the ability to target specific population and the ability to claim credit for the goods distributed, and 3) the degree of risk aversion held by politicians.

First, it is likely that incumbents allocate resources both to swing and loyal voters, although not in the same proportion. However, the size of the group will have a direct effect on the vote rate for incumbents. Thus it is likely to see that resources will be positively related to group size. This is not to say that swing voters will get more than supporters, but that outlays directed to swing or loyal groups will increase in proportion to their relative size.

Second, not all programs can be neatly targeted to specific voters, first because there is an identification problem and second because programs may have as an objective the creation of public or quasi-public goods and thus the inability to restrict benefits according to voter type.

Finally the valuation of risk faced by politicians depends on the information available, and thus different institutional configuration (e.g., party strength, relative

⁴ Specifically this refers to the President’s power to influence legislators’ prospects for reelection

power of the Executive and the Legislative, etc.) should be able to modify distribution among groups.

Furthermore, two underlying key assumptions in the literature on distributive politics are, first that citizens respond, in various degrees and according to the group they belong, to politicians efforts to influence their voting decisions, and, second, that politicians can indeed influence the distribution of resources among different types of groups.

Is there evidence to substantiate the idea that politicians have an influence on voting decisions? Levitt and Snyder (1997) have used a data set drawn from the Federal Assistance Awards Data System (FAADS) to show that increased federal spending in congressional districts helps incumbents win votes. This data set contains annual district-level outlays on a program-by-program basis for all federal domestic assistance programs in the US from 1983 to 1990. Examples of programs in the FAADS data set are social security and medicare, payments to agricultural producers, community development grants, and highway improvement funds.

With an instrumental variable estimation, to account for the omitted variable bias caused by the fact that politicians are likely to exert more effort to bring money into their districts when they are electorally vulnerable than when they are electorally secure, the authors come to the conclusion that more money translates into more votes.

The importance of research of this type is that it confirms that incumbents are correct in assuming that they can influence the electorate by increasing federal expenditures and thus will continue their efforts to bias distribution. A key finding of Levitt and Snyder is the relation between program type and political manipulation, reaching the conclusion that this relation will be particularly strong for the more discretionary, high variation spending programs. In the next section I address the issue of what program characteristics are more conducive to make the distribution of federal outlays subject of political manipulation.

What types of programs?

Several authors have called attention to the importance of program type in the issue of political manipulation. Levitt and Snyder (1997) grouped programs included in the FAADS data set in two categories. First, the small number of large, broad based entitlement programs including social security, medicare, low-income housing payments, and veteran' retirement benefits. These programs are characterized by a geographically diffuse distribution of benefits (low variation programs). Second, there are a large number of smaller programs that target particular states, regions or constituencies, such as agricultural payments, urban mass transit grants,

environmental restoration funds and a variety of specific education and research grants (high variation programs)⁵.

Levitt and Snyder underscore the differences among programs because first they take high variation programs as more likely to be discretionary than low variation programs and therefore more amenable to political manipulation; second, it may be easier to claim credit for the benefits coming to a district as a result of high variation programs.

Their empirical results show strong evidence that increases in the federal spending for discretionary high variation programs (mostly federal grants) helps incumbents win votes. The estimated effect of increased federal grants is large and important, but the electoral benefits of other types of spending, especially transfers, seem to be less evident. Their results therefore suggest the need to differentiate between types of expenditures.

Bickers and Stein (1996) grouped programs in the following categories 1) discretionary grants (i.e., project grants, cooperative agreements) to local government agencies, including school districts, municipal and county governments that are located in each congressional district; 2) discretionary grants to institutions of higher education, public or private, in each district; 3) discretionary grants to private persons or organizations, including nonprofits, business concerns and individuals in each district and 4) contingent liability awards (i.e., direct loans, guaranteed loans and federal insurance).

According to these authors the above categories represent populations of programs over which politicians have an opportunity to exercise a nontrivial degree of influence, and at the same time, are programs where the recipients comprise populations of attentive publics likely to recruit and/or support candidate for office.

Furthermore, the authors argue that programs that automatically provide funds by a formula or by entitlement are inappropriate for the study of manipulation of federal aid for electoral purposes.

Within the programs that Bickers and Stein use for their analysis⁶ particular mention is made of the Small Business Administration Programs (SBA). When these programs are excluded from the analysis, the results indicate that the remaining programs in the data set are not necessarily manipulated.

The characteristics pointed out by the authors which make these programs subject of manipulation are : 1) fast processing time; 2) the type of assistance provided (the potential beneficiaries are present in every community in every congressional district) and 3) the awards for these programs are in the form of contingent liabilities, the programs are largely self-financing (loan repayments fund subsequent loans).

⁵ In this study a coefficient of variation was calculated to classify programs as follows: first the average expenditure to each district was calculated over the period 1983-90, coefficients of variation for each program based on district averages was calculated, Programs with a coefficient of variation of less than 0.67 were considered low variation and above 0.67 as high variation.

⁶ They use the same FAADS data set.

The following section contains a brief synthesis of existing studies on the timing and geographical distribution of federal spending in Latin America.

Evidence for Latin America

The evidence for politically motivated economic cycles in Latin America seems to support the idea of cyclical manipulation of monetary and fiscal policy. In an analysis of 17 Latin American countries in a period of over 35 years, Ames (1987) presents evidence showing significant increases in total public sector expenditures in electoral years. Schuknecht (1996) takes a sample of 35 developing countries (Latin American countries included) that held elections during at least part of the 1970 to 1992 period and tests the hypothesis that fiscal deficits increase before elections. This study shows that governments in developing countries engage in expansionary fiscal policies to enhance their reelection prospects, which raises the fiscal deficit and fiscal consolidation follows after the election.

Beatriz Magaloni (2000) has examined the connection between economic policy and electoral politics in Mexico, using time series data for the period between 1970 and 1998. In her analysis she shows evidence for increases in government spending prior to elections. Worth noting is that in this study Magaloni uses aggregate data on programmable government expenditures and not on any particular area of policy.

One of the few studies using a cross-section/ time series data set of a small scale, targeted poverty alleviation program in Latin America is Schady (2000). This study uses province-level data on monthly expenditures, socioeconomic indicators and electoral outcomes to analyze political influences on the timing and geographic distribution of the Peruvian FONCODES (*Fondo Nacional de Compensacion y Desarrollo Social*) between 1991 and 1995. The author shows that there is a large, significant effect of elections on the timing and distribution of FONCODES' expenditures.

Studies on social policy in Mexico have mostly relied on qualitative analysis (Velez, 1994; Warman, 1994; Cornelius *et al.*, 1994) due in great part to the lack of systematic data sources. Among the works that have used quantitative methods to analyze social programs are Gershberg, 1994; Molinar and Weldon, 1994; Scott, 1999 and Rocha, 2001. These studies have analyzed the distribution of federal outlays for poverty alleviation programs at the state or municipal levels.

Gershberg (1994) looks into the redistributive and efficiency components of the educational sector expenditures analyzing an educational program inserted in the Solidarity strategy (*Escuela Digna*) of the Salinas administration. Scott (1999) centers his analysis on the correspondence with poverty criteria of the distribution of the Social Infrastructure Fund (*Fondo de Infraestructura Social Municipal*) at the state and municipal levels for the period 1997-1999. Molinar and Weldon (1994) and Rocha (2001) analyze the political bias of the distribution of two different social

programs (PRONASOL and PROGRESA, respectively) considering the results of the federal elections at the state level.

These studies analyze three different social programs in Mexico: PRONASOL, PROGRESA and the Fund for Social infrastructure. The first was implemented between 1988 and 1994, the second began in 1997 and the Social Infrastructure Fund⁷ has been around in its different versions since 1995.

Molinar and Weldon (1994) use data on the National Solidarity Program (PRONASOL) at the state level for 1990, using the three large subdivisions that were found in the former Chapter 26 of the Mexican federal budget to show evidence of the link between elections and government expenditures. These authors argue that PRONASOL expenditures were related to the Mexican government's electoral responsiveness with evidence that shows how resources were distributed at the state level. Their claim is that despite its decades-long history of non-competitive elections, by 1991 the regime was willing to compete for votes with methods common to all electoral democracies (p.141).

Rocha (2001) replicates the model used by Molinar and Weldon (1994) with the data from the PROGRESA program for 1999 arguing the influence of the 2000 presidential election in the allocation of resources. She comes to a mixed conclusion: while PROGRESA was not an apolitical program as it was claimed, manipulation became more subtle. The analysis on monetary allocation in the year 1999 does not reveal a political bias but when the model considers the number of households benefited per state with the program as the dependent variable then the results show evidence of political motivations.

Two things come to mind when reviewing the Rocha (2001) and Molinar and Weldon (1994) papers. On the one hand, the consolidation towards a more competitive democratic system in Mexico will not eliminate by itself political manipulation of government policy, quite the contrary. In fact, it seems that increased electoral competition is likely to place clearer incentives to bias government resources to favor incumbents. On the other, there appear to be differences in the use of programs as mechanisms for possible manipulation, this will depend on program type.

With respect to the first point, the study by Brown and Hunter (1999) is illustrative. These authors show how regime type affects public expenditures for social programs, that is, the relationship between democracy and social spending. The "expectation that democracies are more likely than authoritarian systems to spend more on social programs is rooted on the premise that social provisions rank high on the political agenda of the poor (or politicians assume they do), and open electoral competition and the right to associate freely give the poor effective political influence. Because the poor comprise a large proportion of the electorate in

⁷ This Fund was part of the pronasol program, but it became a partly decentralized program since 1996 and by 1998 it became part of Chapter 33 of the Federal Budget which are resources decentralized to States and municipalities by a specific formula that considers seven specific quantifiable socio-demographic characteristics.

most developing countries, democratic governments cannot easily ignore or repress their demands. Even if the underprivileged do not actively push for welfare-enhancing reforms politicians may well direct social provisions their way in an effort to gain votes” (p.780)

This empirical analysis, on annual data on social spending for 17 countries in Latin America from 1980 to 1992, sustains that authoritarian governments place greater weight on addressing the exigencies of the market, whereas democratic governments respond more to political reasons.

The explanation of why democracies respond more to political constraints by increasing social expenditures is rooted on the following premises: politicians who deliver social benefits to their constituents hope to garner votes and ensure political survival. Other policies may not have such immediate effects, and even if a given politician does not continue in office political cronies and party allies can often benefit electorally from the patronage and program she or he delivered while in power.

However Brown and Hunter (1999) do not approach the issue of how increased social spending associated with democracy is distributed. Is it allocated to programs that reduce poverty and enhance equity? Does it go to programs that favor the middle and upper classes or to regionally distributed patronage and pork barreling? Is it targeted towards swing or support groups? These are the questions left unanswered by the authors.

In this respect, Schady’s (2000) paper in the FONCODES expenditures in Peru shows how this targeted poverty alleviation program was distributed to coincide with political variables. First, it was related to the timing of election, because resources were boosted before national elections, and second because more community-based projects were channeled to provinces where the political returns were expected to be large.

High political returns were operationalized in this study to coincide with measures of marginality (proxied by the absolute deviation of the vote from 50%), and core support (the vote for Fujimori). The results of the regression analysis on the logarithm of per-capita FONCODES expenditures between 1991 and 1993 show that marginal voters and core supporters received a disproportionately large share of FONCODES expenditures. For the period between 1993 and 1995 the results of Schady’s analysis show that an additional variable was more important in the distribution of FONCODES, the changes in the vote between 1993 and 1990, rather than simply the level of government support in the 1993 referendum.

In the Molinar and Weldon (1994) paper the logic of distribution for the Mexican PRONASOL expenditures at the state level was to channel a greater amount of resources in 1990 (one year before the midterm elections) to core supporters and to the leftist opposition⁸ than to the rest of the population.

⁸ The variable of supporters is operationalized as the percentage of vote for PRI at the state level for the 1988 presidential elections. The variable of opposition, as the percentage of vote of Cárdenas in the 1988 presidential elections.

Another distinction that could be made considering papers that have analyzed particular social programs and political bias in Mexico is that program type is a variable that must be considered. Not all programs are subject to the same type of political manipulation as is shown in the differences between PROGRESA and PRONASOL. Rocha (2001) did not find strong statistical evidence of manipulation of the resources at the state level, as was the case in the Molinar and Weldon (1994) paper for the study of PRONASOL. However, when taking the number of beneficiaries as the dependent variable, Rocha finds evidence of the influence of the geopolitical variables, such as percentage vote for the PRI or the opposition.

However, the effects of program type have not been explicitly approached in any of the studies cited above. And no particular theory has been tested regarding how program characteristics influence the magnitude of political manipulation.

The empirical analysis of this paper centers on the Risk Capital Program of the National Fund for Social Enterprises (FONAES). The data set that will be used here is a panel data set, cross section at the level of states, yearly from 1992 to 2000, and monthly at the municipal level from January 1992 to April 1999. This program began as part of Salina's PRONASOL strategy, but it continued through President Zedillo years and the Fox administration is apparently continuing the program. No other analysis that I know of on a social program derived from the Solidarity years in Mexico has a panel data base that is both national at the state and municipal level and contains a time series covering that amount of years on a specific program that was born during the PRONASOL years.

The special characteristics of this program will allow us to test some propositions regarding the timing of the allocation linked with elections, and make comparisons with other programs.

3. Propositions and Methods

Various studies cited in section two show compelling evidence that particular policy instruments are subject of political manipulation by incumbents. This manipulation takes mainly two forms. One is to time the distribution of resources with elections, the second, is to reach particular areas where the vote rate of return seems higher.

Additionally, the studies on distributive politics in the United States (Levitt and Zinder, 1997; Fleck, 1997 and Bickers and Stein, 1996) show that program type is a variable that must be considered in the analysis of the distribution of federal outlays.

The main argument of this paper is that programs which are more amenable to political manipulation, and easier to claim credit for will exhibit a cyclical pattern of allocation that coincides with electoral calendars, and will be directed to geopolitical units that have the highest electoral returns in the eyes of the incumbents.

The following steps are thus necessary to test the empirical propositions derived from the above claim: 1) define the characteristics of programs that can be subject to political manipulation, 2) test that there exist a cyclical pattern of allocation closely related to electoral calendars, and 3) test which electoral or political variables have had more influence in the decisions of distribution.

If our claim is correct we would expect to see increases in federal outlays of social programs in a cyclical pattern that coincides with electoral calendars. Also we would expect to see a significant relation between electoral variables, such as the percentage of vote for the incumbent in the past, the percentage of vote for the opposition in the last election, the strength of the incumbent's party and the distribution of federal outlays.

a) Programs with "high variation"

Following Levitt and Snyder (1997) and Bickers and Stein (1996), highly manipulable programs are those that exhibit "high variation". By this we mean that a program exhibits important changes in its distribution patterns, from one year to the next. These will be discretionary programs, programs over which politicians have an opportunity to exercise a nontrivial degree of influence, programs for which we find fast processing approvals for allocation, and for which the potential beneficiaries are present in every community. These programs are usually demand based, are not distributed by a formula and are not entitlement programs.

A useful measure is that proposed by Levitt and Snyder (1997). They have categorized programs according to their coefficient of variation, based on district averages⁹.

b) Cyclical Manipulation

With time series data on federal outlays a cyclical pattern on expenditures can be tested with the following econometric specification¹⁰:

$$Y_t = \alpha + \beta X_t + \chi z_t + u_t$$

⁹ The coefficient of variation is defined as the standard deviation divided by the mean. A program that allocated the same resources (per capita) to each district would have a coefficient of variation of 0.

¹⁰ We follow Shady (2000) econometric specification.

Where:

Y_t stands for natural log of monthly expenditures at time t;

X_t is a vector of dummy variables for the presence of elections;

z_t is a vector of exogenous variables that affect expenditures (including a linear trend and quarterly dummies);

u_t is the error term.

Parameter β indicates if expenditures are timed with elections. The expected sign is positive with statistical significance. This initial specification will be tested with OLS method, and if required with corrected Prais-Winsten method for serial correlation and heteroscedasticity.

Additionally, with a cross-section/time series data set, a second specification would be:

$$Y_{st} = \alpha + \beta_i X_{st} + \chi Z_s + \mu_s + \varepsilon_{st}$$

Where:

Y_{st} is the natural log of per capita expenditures in unit s at time t;

X_{st} represents a vector of dummy variables for the presence of elections in unit s at time t;

Z_i represents a vector of other variables that affect distribution of expenditures, such as a poverty index and regional dummies;

μ_s is the time invariant unit specific effect, and

ε_{st} is the typical error term, across time and units

This model will be tested using GLS regression method¹¹. We would expect to see positive and significant coefficients on the X variables if resources are timed with elections.

c) Geographical determinants

The influence of electoral variables, using a panel data set, can be tested using the following specification:

$$Y_{st} = \alpha + \beta X_{st-1} + \chi Z_s + \mu_s + \varepsilon_{st}$$

¹¹ Both random effects and fixed effects specifications will be run.

where:

Y_{st} is the natural log of per capita expenditures in unit s at time t ;

X_{st-1} is a vector of electoral variables on the most recent past federal election in unit s ,

Z_i is a vector of other variables that might affect the distribution such as a poverty index and regional dummies

μ_s is the time invariant unit specific effect, and

ε_{st} is the typical error term, across time and units

The variables included in X would be the percentage vote for the incumbent party in the last election, in order to see if the incumbent rewards loyal states; the percentage vote by the opposition in the last election, to account for the effect of the electoral growth of the opposition; and the margin of victory or defeat of the incumbent party, to measure if incumbents care about marginal states. The estimation method will be the same as in the previous model.

4. Program and Data description

In December 1991, under the broad framework of the National Solidarity Program of the Salinas Administration in Mexico, the National Fund for Social Enterprises (Fondo Nacional de Apoyo a Empresas de Solidaridad, *FONAES*) was created. The main objective of the Fund has been the allocation of resources to foster productive economic activity of peasants and urban groups in need, with the joint participation of federal, state and municipal governments, as well as the social and private sectors.¹²

From its creation to December 2001, the Fund has invested 4.65 billion pesos for the creation or support of 8,516 social enterprises and 15,721 productive projects¹³. The help provided consists on direct transfers in the form of loans, aid in the identification of markets, and the opening of channels for commercialization, promoting, fostering and financing projects related to agriculture, lumber, cattle, agroindustry, microindustry and some other activities. The most important programs of the Fund are: 1) risk capital, 2) working capital, 3) financing, guarantee, investment and capitalization funds, 4) community saving funds (*Cajas Solidarias*).

¹² Secretaría de Programación y Presupuesto, *Decreto por el que se establecen el Programa y el Fondo de Apoyo a las Empresas de Solidaridad*. Diario Oficial de la Federación, 4 de diciembre de 1991.

¹³ Secretaría de Economía, *Acuerdo por el que se determinan las Reglas de Operación del FONAES para el ejercicio fiscal 2002*. Diario Oficial de la Federación, 14 de marzo de 2002.

The target population of the Fund is composed of peasants, indigenous population and urban groups living in poverty conditions in rural and urban areas that do not have access to the formal financial sources and that do not receive similar subsidies or transfers from the Federal Government.

Today, its operation rules, which by law have to be published yearly since 1998, established that the program must operate in the poorest regions, as classified by the index elaborated by the Mexican National Council of Population (CONAPO)¹⁴.

Because the risk capital program is the most important in FONAES, measured by the size of enterprises created and by the amount of resources allocated, I will focus on the analysis of this program.

Risk Capital Program

This program consists on loans up to 40% of the total value of the project. These resources have to be used to create, expand, reactivate or consolidate productive activities or a social enterprise through the creation of a legal constituted partnership (*asociación en participación*) with FONAES. This amount has to be repaid with no interest in a period between five and eight years. As long as FONAES is involved in the project (i.e., as long as total repayment has not occurred) the agency must receive a share of profits of the enterprise up to 25% of profits generated and proportional to Fund's participation. The maximum amount per project for the year 2002 is set at one million pesos and the minimum is 550 thousand¹⁵.

Each application is revised, validated and pre-approved by the state office of FONAES and then sent to the central office where every activity, i.e., cattle, fisheries, agriculture, agroindustry, commercialization, etc. has a corresponding area which evaluates their potential and feasibility and decides if support is given, taking into consideration program characteristics and the availability of funds allocated initially to each state. The application and approval process takes an average of two months¹⁶.

¹⁴ This index is a measure of development lags at the geographical level. It was elaborated with factor analysis considering nine related variables: % of people without indoor running water, drainage and electricity; % of people in houses with sand floor and overcrowding; % of economic active population earning less than two minimum wages; illiteracy; % of people with unfinished primary schooling; and % of people living in communities of less than 5,000 inhabitants.

¹⁵ To be eligible for the program a written application has to be handed to the FONAES office, either at the central office in Mexico City or at the State office. In such application, the purpose, motive, amount of resources needed and the name and basic information of the organization involved is necessary. Also a detailed description of the investment is required. This description must contain information like: financial projections, a market study, environmental impact study, the corresponding licenses and permits to engage in the activity proposed, etc.

¹⁶ This information was conveyed to the author in interviews held with FONAES officials at the state and federal levels during summer of 1999 and December 2001.

It is important to note that the FONAES offices in the states, and also the municipal governments, help with much of the preparation of the application procedure. State offices of this Federal agency are also in charge of monitoring the use of resources. Thus even if the allocation of resources among states is decided at the Federal level, FONAES state's offices have a significant amount of discretionary power on the decision of acceptance within the applicants and thus of the distribution within the states.

Data

Two data sets for the risk capital program of FONAES were made available from the Department of Social Development. The first containing the name of the project, its location (municipality and state), and the amount of resources allocated by date, covering from January 1992 to April 1999. The second data set, at the state level, contains the total amount of resources per year per state from 1992 to 2000.

There was no systematic information available on the projects themselves, such as level of repayment or jobs created per project, nor on the socio-demographic characteristics of the groups that received the resources.

I transformed resources to inflation adjusted pesos, included the Poverty Index elaborated by CONAPO for each municipality and state. From the data sources from INEGI¹⁷ I also included variables at the municipal level (population, literacy rate, percentage of population earning less than two minimum wages, number of households) and indicators on basic social infrastructure (percentage of households without running water, electricity, sewerage, etc.).

With data from the National Federal Electoral Institute (IFE), *Banamex* and CIDE (*Centro de Investigacion y Docencia Economicas*), I incorporated, the party affiliation of the municipality at the time of the first allocation of resources, and the party affiliation of the local government in the next election. I constructed an indicator variable for the change in party affiliation of the municipal government in any time between January 1992 and April 1999.

At the state level, for the period 1992-2000, I constructed indicator variables for the presence of federal elections (1994, 1997, and 2000), governor and municipal elections in each state, for the presence of presidential elections (1994 and 2000) and a variable that distinguishes the change of administration (1992-1994 and 1995-2000). I created an indicator variable for the party affiliation of the state governor, as well as for any change in this affiliation at any time in the period. Also included are the percentage vote for the PRI, PAN, PRD and other parties¹⁸ in federal elections and regional dummy variables.

¹⁷ Mexican National Institute for Geography, Statistics and Informatics.

¹⁸ Others parties includes coalitions and alliances formed.

5. Results

Descriptive statistics and differences in the allocation at the State and Municipal Levels

In the period between January 1992 and April 1999, expenditures from FONAES' risk capital program were allocated to 1,081 municipalities out of more than 2,400 in the country. Of the municipalities that benefited from this program, 87 percent were governed by the PRI at the time of the first allocation of resources. The difference in the mean per capita resources received by the municipalities initially governed by the PRI (90.4 pesos) and other parties (91.3 pesos) was not statistically significant. But when considering those municipalities initially governed by PAN, the contrast is striking. PAN municipalities received on average 24.8 pesos, which is more than three times less money than their PRI counterparts.¹⁹

Table 1 shows descriptive statistics for the 1,081 municipalities benefited and the 1,347 that did not receive any resources from this program, including population, illiteracy and basic social infrastructure.

Comparing municipalities that were benefited with this program with those that were not, the first type were on average larger (by the size of their population), richer, more educated and with better infrastructure. This can more clearly be observed in the difference of the mean value of the poverty index (-0.166) for benefited municipalities and not benefited municipalities (0.133)²⁰.

If only municipalities that were benefited with the program are considered, we find a positive correlation between the poverty index and the log of per capita resources allocated of (0.2602) indicating a positive statistically significant relationship between these variables. That is, poorer municipalities received more resources from the program.

16 percent of the municipalities benefited had a change in party affiliation in the local government during this period. Of those municipalities that voted for a different party in the next election following initial allocation, per capita resources were on average 38.9 pesos and statistically different from loyal municipalities, which amounted to 100.2 pesos per capita.

¹⁹ All figures are in constant January 2002 pesos.

²⁰ The index is constructed to be distributed as a normal standard variable, greater values of the index imply greater degree of poverty.

Table 1
Summary Statistics
Risk Capital Program
Benefited municipalities
1992-1999

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Population	1081	63816.46	149473.80	424.00	1696609.00
Overcrowding	1081	66.20	10.52	21.73	91.47
Sand flooring	1081	35.00	23.59	.09	97.61
Less than 2 minimum wages	1081	78.21	13.26	34.83	100
Illiteracy	1081	18.40	12.26	1.11	69.29
W/o running water	1081	23.90	21.35	0	100
W/o electricity	1081	13.52	16.30	0	100
Poverty index	1081	-0.16	0.97	-2.44	2.54
Total exp	1081	1173634.00	1514075.00	6928.73.00	1.71 e+07
Per capita exp	1081	90.47	301.64	0.16	5812.14
PRI	1081	0.87	0.32	0	1
OTHERS	1081	0.12	0.32	0	1
Per capita PRI	947	90.36	296.87	0.21	5812.14
Per capita others	134	91.31	335.14	0.17	2695.45
Per capita PAN	64	24.85	45.74	0.17	256.27
Per capita PRD	45	57.10	100.45	234.14	579.14
Change in party	1081	0.16	0.36	0	1
Per capita change in party	175	38.97	84.39	0.46	1010.21
<i>Municipalities not benefited by the Program</i>					
<i>Basic Statistics</i>					
Population	1347	16594.68	61627.10	121.00	1081143.00
Overcrowding	1347	67.13	12.28	29.01	100
Sand flooring	1347	46.03	28.51	0.24	100
Less than 2 minimum wages	1347	84.00	12.86	32.34	100
Illiteracy	1347	21.80	13.67	1.04	83.47
W/o running water	1347	25.42	23.25	0	100
W/o electricity	1347	13.78	16.31	0	99.69
Poverty index	1347	0.133	1.00	-2.200	3.159

Source: fonaes, sedesol. banamex

All states were benefited from the program in this period. The pair wise correlation between log per capita resources per state and the poverty index is positive and larger (0.3670) than at the municipal level. The mean per capita yearly resources received at the state level was 7.3 pesos²¹. States that changed party affiliation during anytime in this period received on average 2.2 pesos per capita a year. The mean for states that changed to a PAN government was 2.1 pesos per capita a year.

Table 2
Summary Statistics
Risk Capital Program
Allocations at the State Level 1992-2000

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Per capita yearly resources	288	7.278	10.24	0	115.75
Poverty index	288	-0.0003	1.002	-1.74	2.36
% vote PRI Federal elections ¹	288	51.21	11.36	22.96	78.92
% vote PAN federal elections ¹	288	20.88	13.12	0	49.25
% vote PRD federal elections ¹	288	14.17	11.68	0	45.36
% vote OTHERS federal election ¹	288	13.67	16.82	1.94	77.03

1. Refers to percentage vote in federal elections for federal representatives (diputados) at the state level.

Source: Per capita resources, from FONAES. Vote is taken from BANAMEX data base.

Table 3
Coefficient of Variation, Risk Capital Program
1992-2000

<i>Year</i>	<i>Average state per capita allocation*</i>	<i>Standard deviation</i>	<i>Coefficient of variation</i>
1992	9.06	7.95	0.88
1993	12.11	10.27	0.85
1994	17.55	12.96	0.74
1995	3.30	3.79	1.15
1996	4.44	5.85	1.32
1997	6.05	5.74	0.95
1998	5.07	4.71	0.93
1999	3.92	3.69	0.94
2000	3.95	3.54	0.90
1992-2000	7.27	10.24	1.408528

* In inflation adjusted pesos, base 2002

Source: Elaborated with data from FONAES, SEDESOL

²¹ Note here that I am using total state population, thus the mean average yearly resources is much lower than at the municipal level.

Table 4
Program Variation PROGRESA and FAIS
1998-2001

Year	Average state per capita allocation*		Standard deviation*		Coefficient of variation	
	PROGRESA	FAIS	PROGRESA	FAIS	PROGRESA	FAIS
1998	32.64	135.90	28.61	63.35	0.87	0.46
1999	72.81	161.34	50.84	78.48	0.69	0.48
2000	99.35	162.34	69.77	103.90	0.70	0.64
2001	131.36	193.56	94.82	123.89	0.72	0.64
1998-2000	82.37	161.47	59.21	86.49	0.71	0.53

* In current pesos

Source: Elaborated with data from Primer Informe de Gobierno, 2001. Presidencia de la República.

Program variation

Several characteristics make this program amenable to political manipulation. The fact that it has no strict criteria for its distribution, there is no formula by which states or municipalities can get a proportional share of the outlays from the program; nor is it means-tested at the individual level. The allocation decisions are based on the criteria of agency officials at the federal and local levels based on project proposals viability and projections on earnings and on loose assessment on applicants' compliance to target population characteristics. Furthermore, there are potential beneficiaries of the programs in every state and municipality and the resources are given to the beneficiaries directly by the Federal government.

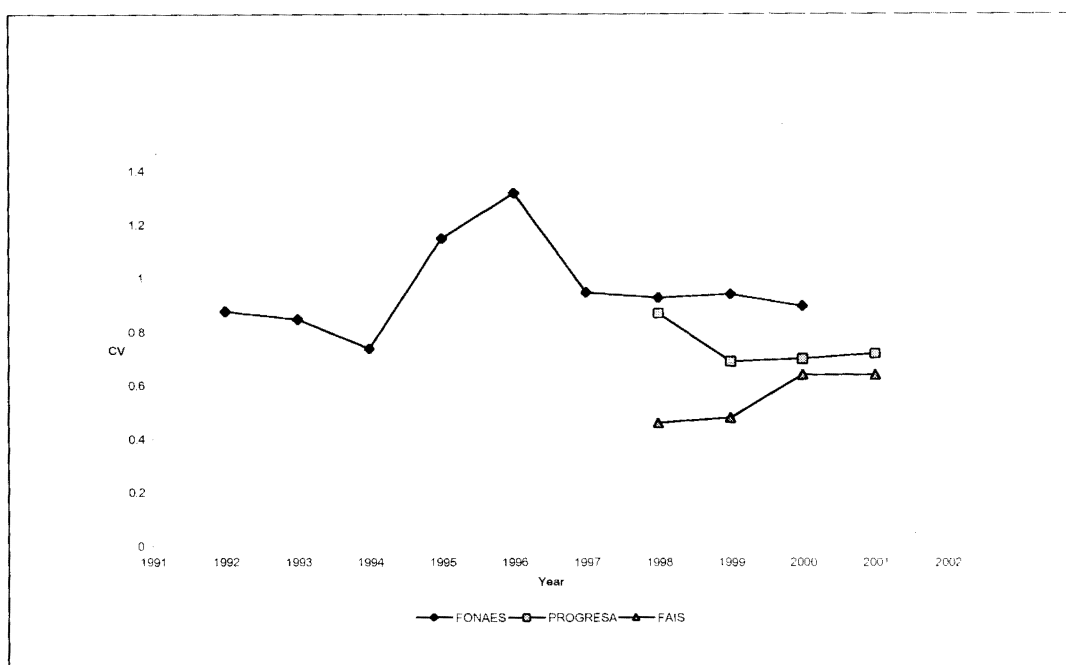
Other social programs in Mexico, especially after the Salinas administration, have followed clearer criteria for distribution; examples are PROGRESA and the FAIS (*Fondo de Aportaciones para la Infraestructura Social*)²² of the Zedillo administration. But in order to determine if the program this paper analyses has the potential of being manipulated by political interests, we follow Levitt and Snyder (1997) in calculating a measure of its variation. Because the overall distribution of federal social program outlays is not available, the coefficient of variation was calculated for each year and the overall period based on state averages. In order to assess the degree of variation of the program we compared the coefficient of variation of the FONAES program to that of the two most important programs of the poverty alleviation strategy of the Zedillo administration mentioned above: PROGRESA, and the FAIS. The first of which is a targeted means-tested program and the second is distributed by formula from the Federal government to the states.

The coefficient of variation for FONAES' per capita outlays of the risk capital program for the overall period is 1.4, while that of the PROGRESA program per capita outlays for the period between 1998 and 2001 was 0.71 and for the FAIS was 0.53, which implies a more even distribution of these two programs between the states

²² Fund for the construction of social infrastructure.

than FONAES. Not only do we find a larger coefficient of variation for the overall period but also, as can be observed in Figure 2, the year to year variability of the coefficient is larger for the FONAES program than for the other two, especially in the years between 1994 and 1997, which would indicate that distribution can more easily change between states from one year to the next in this program, during that period.

Figure 2
Coefficient of Variation per capita State Averages
Several Programs



Cyclical Manipulation

Table 5 below shows the results of the multivariate regression model using the inflation adjusted monthly time series data on the expenditures of the risk capital program by FONAES in the period between 1992 and 1999. In the first model, *Election* represents a dummy variable for the twelve months prior to the election date. The results show an increase of 82 per cent in expenditures in this period compared to no election. A second model shows an even more impressive increase in the resources six months prior to the election (indicated by the coefficient of the variable *Election-6*), of the order of more than 100 percent. These results show that not only elections matter but also that the federal government, placed greater

importance on increasing expenditures of this program as the time of election approached.

A third model was run, using two variables to distinguish between the presidential election of 94 and the midterm election of 97, in order to test if there was a significant effect on the type of election. The results show positive and significant coefficients, as expected, on both variables, but a noticeable difference. While in the period prior to the 1994 presidential election we observe an increase of nearly 150% in resources of the program, in the midterm election, of 1997 this increase was a third of this magnitude.

Table 5
The effects of elections on the timing of FONAES expenditures
1992-1999

<i>Dependent variable is log of monthly expenditures of the risk capital program by FONAES</i>			
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>
Election	0.8214*** (0.2865)	-	-
Election -6mo	-	1.0058*** (0.3667)	-
Election 94	-	-	1.4970*** (0.4026)
Election 97	-	-	0.4884* (0.2593)
Monthly linear trend	YES	YES	YES
Change	0.6449 (0.4627)	0.4430 (0.4343)	1.2307** (0.4813)
Quarterly dummies	YES	YES	YES
Constant	16.39*** (0.5481)	16.7776*** (0.4980)	15.6285*** (0.5903)
Durbin Watson statistic (original)	1.411	1.433	1.602
Durbin-Watson Statistic (transformed)	2.073	2.058	2.025
Adj R ²	0.4155	0.4086	0.4202
F	11.31***	11.02***	10.01***
Number of Observations	88	88	88

Standard error in parenthesis. * p < .10; ** p < .05; *** p < .01

Table 6 shows the analysis using the panel data set on yearly federal outlays at the state level in the period 1992-2000. The dependent variable is log of yearly per capita inflation adjusted pesos of the risk capital program by FONAES by state. The first model shows the effect of a federal election, controlling for the degree of poverty, regional differences and the change of administration (1992-1994, 1995-2000). The regression coefficient on the variable of interest is of the expected sign and statistically significant, showing more than 34 per cent increase in per capita resources per state in the year when federal elections take place compared to the years when there is no federal election.

The second model includes two dummy variables indicating the 1994 presidential election and the years of elections in the Zedillo administration (1997 and 2000). The increases in resources with those two events are of 33% and 23%, respectively, indicating that federal elections in the Zedillo administration had a lower impact on the amount of resources distributed for elections than the 1994 presidential election. A third model that differentiates between the two presidential election (1994 and 2000) and midterm elections (1997) shows positive statistically significant coefficients, but the difference between those periods are not of the magnitude we would have expected. The increase in resources in the year of the midterm elections appears higher (36%) than the increase in the presidential elections (22%). An explanation for this result is that resources were increased in a lesser proportion during the presidential election of 2000, which lowers the observable impact in the increase in presidential elections. To corroborate this we ran the model using an indicator variable for the 2000 presidential election. We indeed found a very low coefficient of 0.054, and no statistical significance, which implies that resources in that year were not statistically different from years with no election.

The results on the last model seem to suggest that there was a counterforce to offset the incentive of using federal resources in the attempt to influence the electorate during the 2000 presidential election. We need to find convincing explanations for the fact that in the face of increasing electoral competition increases in resources did not coincide with the electoral calendar for this year. It is likely that a more thorough analysis on the operation of the program and the incentives of its bureaucracy could shed some light on why of this particular result that appear as contradictory to the theory on political manipulation revised in previous sections.

Table 6

The effects of elections on FONAES expenditures at the state level, 1992-2000
 Dependent variable is log of inflation adjusted per capita pesos by state of the risk
 capital program by FONAES¹

	(1)	(2)	(3)	(4)
Federal election	0.3419*** (0.1253)	-	-	-
Election 94	-	0.3290* (0.1966)	-	-
Elections with Zedillo	-	0.2310* (0.1399)	-	-
Presidential election (1994 and 2000)	-	-	0.2178* (0.1326)	-
Mid term election (1997)	-	-	0.3569* (0.1781)	-
Election 2000	-	-	-	0.0544 (0.1775)
Poverty index	0.3208** (0.1524)	0.3338*** (0.1453)	0.3341*** (0.14553)	0.3591*** (0.1384)
Change in administration	1.1087*** (0.1184)	1.1264*** (0.1407)	1.1834*** (0.1194)	1.1636 (0.1193)
R2 (overall)	0.4273	0.4258	0.4533	0.4303
Wald stat (chi2)	132.5	146.6	147.10	135.92
Number of observations	260	281	281	281
Groups	31	32	32	32
Hauseman test (chi2)	1.08	0.15	0.14	0.19
P>chi2	0.8971	0.9845	0.9859	0.9101

Regional dummies and a constant term included, not reported. Robust standard error in parenthesis. * p < .10; ** p < .05; *** p < .01

Geopolitical distribution

Figure 3 shows the predicted regression line on the partial models of the log per capita resources from FONAES and the pro PRI, pro PAN and pro PRD votes in the previous federal elections at the state level. A positive relation between resources and pro PRI vote can be observed in the first graph, while this relation turns negative for the other two largest opposition parties.

Figure 3
Log of FONAES per capita expenditures and pro PRI, pro PAN and pro PRD vote in federal elections for simple majority representatives, 1992-2000

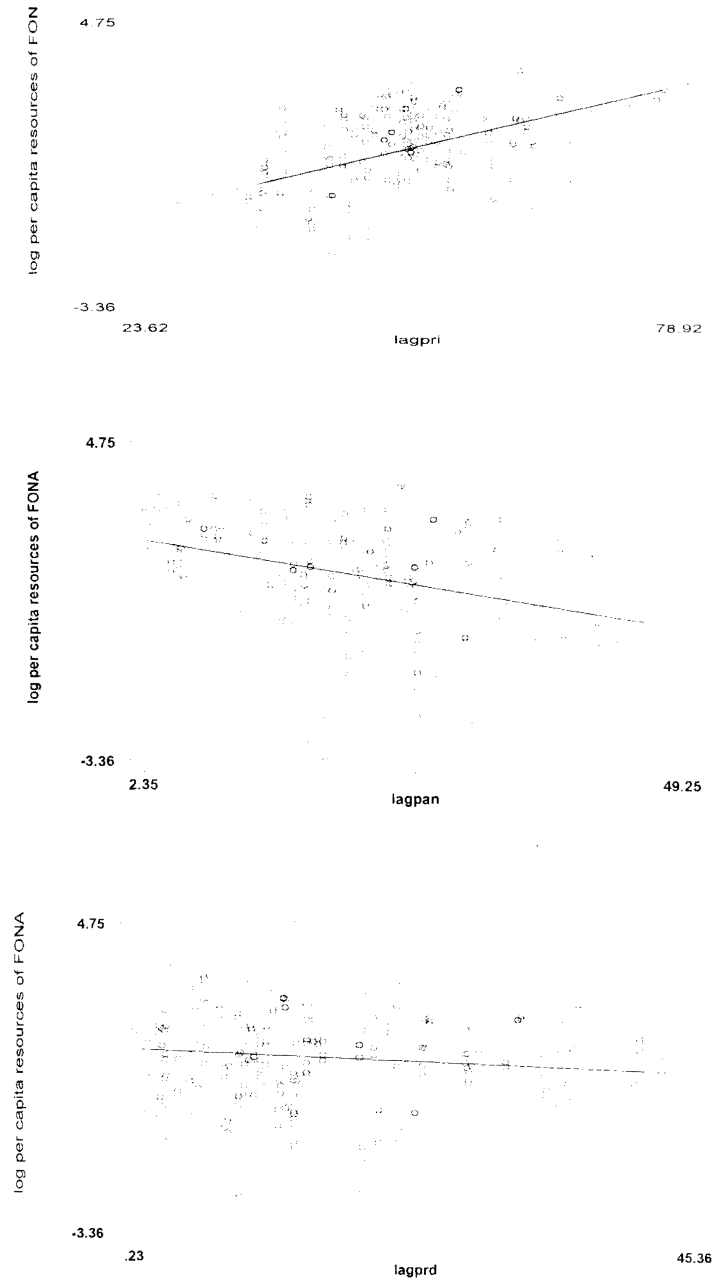


Table 7 shows the results of the model for the geopolitical distribution of FONAES' risk capital program federal outlays at the state level. The first model includes the percentage of PRI vote for simple majority representatives in the prior federal election at the state level, and the poverty index as the two main explanatory variables. Positive and statistically significant coefficients are found in both variables, indicating that an increase of 1% in the vote for the incumbent party at the federal level translated into an increase of 4.7 % in additional resources for the state from this program. The impact of the poverty index (indice de marginacion) was much greater, representing an increase of nearly 30 percent of resources for an additional point in the scale of the index. For example, Chiapas, the state with the highest poverty index (2.36), receives on average more than 70% additional resources than states with the mean poverty level, all else constant.

The second model includes the percentage vote for the PAN, the PRD and other parties and coalitions formed. The results show that for states that increase their vote share to the PAN by 1% a fall in resources followed of nearly 5%. The decline of resources for the PRD was around 4%; the coefficient on other parties and coalitions formed was not statistically significant. The results show how the program benefited loyal states and punished the growth of the opposition, no matter if this came from the right or the left, but the decrease in resources from the program appears marginally more severe for the PAN.

The final model uses a variable of absolute deviation of the pro PRI vote in order to measure how resources were distributed, as the margin of vote for the federal incumbent party got smaller. If the program is used to gain back those state that are more likely to transit to an opposition government then we would expect that as the margin gets smaller more resources will flow to that state. The results show a positive statistically significant coefficient, which was not the expected sign, meaning that as the PRI got stronger in some states more resources were directed there.

Table 7
*Geopolitical distribution of FONAES at the State level
 1992-2000*

<i>Dependent variable is log of inflation adjusted per capita pesos by state of the risk capital program by FONAES¹</i>			
	(1)	(2)	(3)
% vote for PRI last election	0.04669*** (0.006)	-	-
% vote for PAN last election	-	-0.04841*** (0.0093)	-
% vote for PRD last election	-	-0.04309*** (0.0078)	-
% of vote other parties or coalition in last election	-	-0.00628 (0.0217)	-
/Pri vote – 50/	-	-	0.0404*** (0.0090)
Poverty index	0.2997** (0.1338)	0.3199** (0.1415)	0.3449*** (0.1379)
R2 (overall)	0.4394	0.4478	0.3409
Wald stat (chi2)	103.90	108.79	54.58
Number of observations	250	250	250
Groups	32	32	32
Hauseman test (chi2)	0.47 (0.7915)	3.04 (0.3872)	.30 (0.5824)

1. Base is January 2002

Regional dummies and constant term included, not reported. Robust standard error in parenthesis.

* p < .10; ** p < .05; *** p < .01

6. Conclusion

This paper analyses the relation between the distribution of outlays of federal social programs in Mexico and electoral competition. Scholarly literature, both empirical and theoretical, has argued that politicians will attempt to manipulate the policy instruments at their disposal, in order to increase their probability of winning the next election. This manipulation takes mainly two forms; one is to time program expenditures to coincide with the electoral calendar and the other is to target those areas or groups where the vote rate of return appears higher. The predictions made in several works reviewed here have been that resources will increase when elections approach and that the more responsive groups will receive the greatest share. An increasing number of empirical works have shown that particular policy instruments follow this pattern. However, few studies have explicitly made the connection between program characteristics and the extent of political manipulation.

A central claim of this paper has been that political manipulation will appear to be clearer when the programs are not tied to strict criteria for recipient selection, or formulas with precise parameters for geographical distribution.

In order to test these propositions we used data on a small-scale poverty alleviation program in Mexico that seemed potentially more amenable to political manipulation for the period between 1992 and 2000. First, its coefficient of variation was calculated for the overall period, and for each year, and compared to that of other programs targeted for the poor. The results indicated that this program not only had a higher coefficient of variation using per capita state averages, but that the variability of the coefficient was noticeable for the period between 1994 and 1997.

Second, two models were used to see whether the period prior to elections had an effect on the amount of resources of the program. The results support the proposition that more resources were given prior to the 1994 and 1997 federal elections, but found no evidence that in 2000 resources were increased above average. One plausible explanation for this is the fact that the publication for the operation rules for the program was made compulsory from 1998 onwards, which may have limited the discretionary allocation and increased the oversight of the distribution, which would explain the relative stability of the program's coefficient of variation after 1997.

Third, the effects on vote share for the incumbent party and the main opposition parties on the decisions for distribution were analyzed. The results show a clear pattern. The incumbent rewarded loyal supporters, both at the state and municipal levels, and punished the growth of the opposition.

We would expect to see a more subtle or a lower political manipulation of the other two programs for which coefficients of variation were calculated (PROGRESA and FAIS). Rocha's (2001) analysis has pointed out that PROGRESA monetary distribution of per household does not appear to follow clear political criteria, which would support the claim that low variation programs are less amenable to political manipulation by incumbents, or that other type of manipulation takes place, aside from the time and distribution of federal outlays.

The majority of studies on the determinants for the distribution of social programs in Mexico rely on anecdotal or limited evidence to show that political manipulation has been an important criteria for distribution. This study contributes to this discussion by analyzing a small-scale poverty alleviation program with a rich and disaggregated panel data set to show the extent of political interests in the distribution of expenditures.

Further research will have to explore more in detail how program design affects the type or extent of potential political manipulation by incumbents. In order to do so a more thorough comparison between programs' rules and implementation is needed.

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