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WASHINGTON UNIVERSITY
Center in Political Economy

**COALITIONS AND INCUMBENCY ADVANTAGE IN MEXICO:
A STUDY OF THE 2010 STATE ELECTIONS**

by
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1 Introduction

In 2010, 14 Mexican states held elections. Each of them renewed state Congress, 12 governors and mayors in all municipalities of 13 states were elected. In six of these states (Chiapas, Durango, Hidalgo, Oaxaca, Puebla, and Sinaloa), a remarkable number of the contended seats at all levels of government (governor, congress and municipalities) were won by a coalition between two of the three largest parties. The coalition, which excluded the Institutional Revolutionary Party (PRI), was successful in three governor elections and substantially reduced the PRI's control in local congresses. While at the federal level the PRI has lost and won elections since the 1990's, these losses were unprecedented for these states: with the exception of Chiapas, the PRI had held the governor's office and an overwhelming number, if not the totality, of seats in the other five local congresses since its foundation.

The expectation for a coalition to win would not usually be surprising, since in a competitive scenario it would not be unusual that the sum of two parties' vote shares would exceed that of a single large party. Nonetheless, this coalition was mainly formed by parties traditionally opposed to each other, the National Action Party (PAN) and the Democratic Revolution Party (PRD). PAN is the right wing party currently holding the presidency since 2000. On the social dimension it favors conservative policies and on the economic dimension it supports private businesses. By contrast, the PRD is a left wing party which economic agenda promotes a strong involvement of government and its social agenda is mostly liberal oriented, although it differs from state to state. Traditional supporters of PAN and PRD are opposed on both dimensions and their policies appear to be located in different extremes in a social-economic policy space¹. More importantly, for over two decades, and specially since the presidential elections of 2006, these parties have very publicly antagonized each other in Congress.

Forming a coalition, therefore, inevitably would entail compromise for both parties'

¹Unfortunately, no panel survey similar to the one gathered by the American National Election Study or the British Election Study is available for Mexico. Such a survey could allow us to accurately draw the policy space of the main Mexican parties. However there are only three large-scale electoral panel studies in Mexico led by Chappel Lawson from MIT, covering the 1997 Mexico City mayoral election, and the 2000 and 2006 presidential races (see Lawson and Moreno (2007) for a detailed description of the last survey).

policy proposals. The coalitions ran campaigns with common candidates and platforms. Political Science has recognized from its foundation that studying the electoral consequences of policy shifts contributes to several central themes in the discipline, including the role of issues in electoral politics, the extent of elite responsiveness to the public, and the role of policy congruence as the basis of representation (see Powell 2000). At least for the PRD, it would later be revealed that a large portion of the party opposed the coalition plan and regarded it as a *treason* to their core principles. This topic was at the center of internal elections held this year to renew the executive committee of the party. Moreover, in the aftermath of these elections the newly elected board foreclosed the possibility of a coalition in the state of Mexico to be held in 2012, an election with very high stakes for the three parties. However, judging from the results of the elections held in 2010, it would appear that both parties' platform shift went unpunished by voters.

Was such a coalition indeed successful? On the one hand, existing theory tells us that one feasible way for opposition parties to overthrow PRI would be through successful coordination. On the other hand, a coalition between dissimilar parties such as PAN and PRD seemed unlikely, because it would require parties (and their voters) to compromise on virtually all policy dimensions. Even if these compromises were achieved, the parties would still have to credibly commit to enacting such a platform once they held office. Theoretically, explaining the success of this coalition is difficult, unless one assumes "removing PRI from office" as a policy dimension itself. This paper will argue that democratic transition in and of itself was the most salient policy dimension behind its success, studying the case of single-member district (SMD) elections in 13 states² that held elections in 2010. Few studies account for the will of democratic transition as a policy dimension and most of the work done on this topic, for the Mexican case, analyzes the problem at a *national* level. For instance, Levin and Alvarez (2011) argue that the attitude towards the incumbent party is no longer relevant. Rather, region and party identification, as well as their perception of the *quality* of the process, are found to be the determinants for voters' choice in Mexico. Moreover, Greene (2002) covers the constraints faced by opposition parties

²The 14th state (Veracruz) was discarded from the sample since a cross-relation of demographic data could not be established.

when challenging an hegemonic party, such as PRI before 2000. Nonetheless, these approaches only take into account presidential elections or focus mainly on the link between the federal congress and state governors, and hence ignoring the dynamics of elections at local congresses' districts. This paper will attempt to provide insight into the local politics behind the final stages of democratic consolidation in Mexico. Even if the federal government moved away from a dominant one-party system, we still need to examine the local level since the lack of change in executive partisanship seems to be notorious in several states with an hegemonic party.

I study SMD electoral results at the district level, in order to determine if the formation of coalitions between PAN and PRD effectively improved the vote share of opposition parties by reducing the PRI's incumbent advantage. The Mexican constitution forbids consecutive reelection at any level of government, thus the concept of incumbent candidate does not apply as it would in another polity such as the in the U.S. Nonetheless, an akin effect of "party incumbency" is observed in Mexican elections with the existence or lack of alternation between parties in office. The next section reviews the literature on coalitions formation and on the Mexican political system. Section three describes the electoral and demographic data that are used in this paper, along with a review of the Mexico Panel Survey carried for the presidential election in 2006. Section four discusses different models and their suitability for this case, since data are only available at an aggregate level, diluting voters' preferences and choices. Section five analyzes the results and computes the effect of coalition formation in the probability of PRI being voted for. Results show, as expected, that a coalition between PAN and PRD works against PRI chances of winning.

2 Coalitions and democratic transition at the subnational level

In this light, the coalitions between PAN and PRD in Mexico would be predicted to fail, but studies about democratic transition in this country have long acknowledged that coordination among parties was indeed necessary to overthrow the PRI (see Greene 2002). In what follows I will argue that in terms of voter's preferences, a PAN-PRD coalition is justifiable by recognizing that voters had preferences in a one-dimensional policy space,

i.e. overthrowing the hegemonic party. However, very few studies have approached the case of Mexican sub-national electoral results in detail and systematically.

Existing research has assumed that democratic transition permeates to the sub-national level, but little is known about the pace at which this occurs or the intervening factors in this process. In Mexico there is some lag at the state level, as even a decade after the first party rotation at the federal level occurred many states had yet to see a non-PRI governor or a non-PRI local congress. One would expect a lack of symmetry between national-level democratization and state-level democratization, explained as different incentives for parties and candidates at these two levels, but literature is scant in this subject. Gibson (2010) suggests that there are two broad questions to tackle this topic: “First, how do we measure and conceptualize variations in democracy across jurisdictions of the nation-state? Second, what are key mechanisms of continuity and change in subnational authoritarianism in nationally democratic countries?” (Gibson 2010, 3). This section explores literature relative to these broad questions. I show that the ideological concessions required by coalitions between parties may be fruitful for winning an election. In addition, literature on democratic transitions will shed light on the more specific strategies available for parties in this political context. Finally, literature on the Mexican case will illustrate the importance of coalitions in state elections that are multi-party systems functioning in practice as two-party systems.

In Downs’ spatial model, political candidates choose ideologies on a one-dimensional policy space and create their policies in order to secure the most votes as opposed to following party ideology, converging to the same point, i.e. the one preferred by the median voter. Among the 15 basic assumptions of the Downsian model stated in a review provided by Grofman (Grofman 2004, 26), at least two of them are violated in the Mexican case. For instance, a coalition between two opposed parties would not allow voters to accurately estimate the candidate policy positions. Moreover, candidates from a PAN-PRD coalition are not part of a unified party team and it should increase voters’ uncertainty about the coalition’s positions. However, as Downs put it originally: “if political ideologies are truly means to the end of obtaining votes, and if we know something about the distribution of voters’ preferences, we can make specific predictions about how ideologies change in con-

tent as parties maneuver to gain power” (Downs 1957, 114). In a political context in which a large hegemonic party exists we can see that “even if votes are shaped by substantive policy preferences rather than candidate personalities or individual pay-offs, they are also constrained by the available choices offered by candidates and parties” (Powell 2004, 282).

Shifts in ideology have been suggested to have a detrimental effect in the share of votes (Tavits 2007). Cox (1997) notes, “in some countries, dominant parties appear to have a positional advantage, in that politics is largely unidimensional and they are centrally located. In these cases, the opposition is more divided among itself and cannot coordinate to overthrow the centrists” (Cox 1997, 277). Cox (1999) observes that electoral coordination occurs across electoral districts, as competitors from different districts ally to form regional or national parties. This follows from Duverger (1954) that posited the simple majority single-ballot system favors the two-party system, although the parties opposed may be different in different areas of the country. The simple majority system therefore makes possible the creation of local parties or the retreat of national parties to local positions. To illustrate this case Cox (1999) depicts a hypothetical election where a single right party is competing against two leftist parties in a single member district. If they form a coalition it wins with certainty; otherwise, the right wins. For this to happen there are three assumptions to take into account. First of all, voters have to acknowledge that only two parties have realistic chances of winning the election. Secondly, in order to facilitate coordination both Left candidates must have the same expectation as to who is more likely to win the election. Finally, in order to succeed both Left candidates should only care about the outcome of the current election. To some extent, leftist parties have to narrow their sight and only care about ousting the Right party.

Ideological shifts, however, may be fruitful for parties when they are responding to shifts in the distribution of voters. The mapping of voters’ preferences into a policy space has proved useful in explaining shifts of voters. Schofield (2006) traces the effect of changes in policy dimensions such as social and economic agendas had in the evolution of US polity over the past two centuries. Moreover, Schofield and Miller (2007) assert that equilibrium in a two-party system can be explained by including not only voter’s preferences to policy dimensions, but also by including their nonpolicy judgments of party leaders. In addi-

tion this model pins down the influence activists have in the policy position taken by a candidate. Finally, Schofield (2010) studies a large variety of polities, consistently finding supporting evidence for a model that accounts both for the distance voters have from a candidate's policy positions and also from the candidate's "traits".

While voters recognize that parties may need to adjust their policy proposals and platforms in response to changes in voters' preferences, ideological shifts or shifts in the core values that parties represent are more difficult to justify for voters.

"The two main axes of political competition in advanced democracies -economic and social - acquire inherently different roles in the voting decisions of the public. In the case of the latter, voters expect consistency. Change on principled issues is unexpected and threatens the credibility of the party" (Tavits 2007, 155).

Yet, Green (2002) accounts for what he calls "imperfect" competition, as opposed to "perfect competition" in which each voter is equally available to each party. The situation in which an hegemonic party holds most of the resources, it creates a dilemma for opposition. They "cannot catch more votes unless they move toward the median voter, but they cannot attract activists unless they stick to the extremes on policy" (Green 2002, 756). Therefore, they have to bring to the election a crosscutting cleavage "that creates the conditions for opposition voters to coordinate on the stronger challenger when their primary interest is in ousting the incumbent" (Green 2002, 762). If they are successful, such a cleavage would allow them "to criticize the incumbent as authoritarian and corrupt against their more democratic credentials. It also supplies a basis for opposition coordination behind a single party or coalition" (Green 2008, 16). Hence, adding a "valence dimension" to the policy space of the election (Green 2008, 17).

It follows that in making coalitions, parties must avoid concessions on principled issues which could upset their core followers, since "maintaining a reputation requires that politicians refrain from taking positions or actions that conflict with the party's platform" (Carey and Shugart 1995, 419). Because of this, when a coalition is formed, "central, moderate parties are more likely to be included in a coalition because the ideological, policy compromises they make when they join a government is less costly in terms of what the *formateur* of the coalition must pay them in return for such compromises" (Sened 1996,

368). However, in extreme cases as state elections with an hegemonic party, competing parties could be forced to “break a straightforward relationship between the economic position of voters and the policy that would result from automatically satisfying their interests through the construction of broader policy bundles” (Boix 2007, 504), which could include democratic transition itself.

In the case of presidential systems, Mainwaring and Scully (1995) argue that presidential systems have a disadvantage when building a coalition, as opposed to parliamentary democracies in which institutional mechanisms rule the formation of coalitions. This lack of institutionalization seems to shape a political system in which “parties’ objectives may be exclusively to win office or may also include implementing their preferred policies; parties’ internal structure may be unified or divided” (Stokes 1999, 251). In this light, it seems that presidentialism and a federal government structure promote two features. First, to the extent that there is at least some “institutional compatibility” between local authoritarianism and national democratic politics (Gibson 2010, 4), coalitions between very different parties may be politically viable. Secondly, if we assume that parties are internally divided between state-level sections and the national party, then state coalitions with national-level foes become a plausible strategy at the former level. With this in mind, I now turn to literature on the Mexican case.

The PRI’s remarkable success in maintaining power at all levels of government in Mexico has led to much research regarding the mechanisms by which it sustained power. Fox (1994), Hiskey (2003) and Diaz-Cayeros et al. (2006) studied clientelism in Mexico during the early 1990s, as a mechanism to withhold power by the hegemonic PRI. At the same time this period was shaped by a profound internal transformation of the electoral machine. Traditionally, “elections, in combination with centralized control of state resources, are central to maintaining hegemony” (Diaz-Cayeros et al 2006, 27). However, throughout the last decade of the 20th century, there was a shift from direct vote coercion to federal programs that did not make political subordination a condition of material benefits (Fox 1994). Yet these shifts led “poor people in need of basic services [to shift] their patrons from regional elites to federal officials” (Fox 1994, 169). In light of the PRI’s nearly total control of government, this shift might not seem as a drastic surrender of power from the

party to other parties. However, this argument would predict that in light of the loss of the PRI's absolute majority in the federal legislature in 1997 and the loss of the presidency in 2000 disrupted the mechanism through which the federal government could coerce municipal authorities with the assignment of funds. Without this mechanism, parties at the local level should have become even weaker, losing elections in favor of new parties. Yet as Stokes (2005) points out, Mexico's PRI faces negligible competition and even though the Mexican political system deeply changed in the late 1990s, this remains true at the state level.

Every Mexican state has its own state electoral committee that among its main tasks organizes the election, fixes the maximum amount of electoral expenditures and distributes resources to parties, observes and sanctions improper behavior from individuals and parties and counts votes, as well as solves further disputes. Their tasks are backed by state electoral laws that derive from the federal one, although state legislatures can vote particular changes, as long as they do not contradict the federal constitution. Party allowance is specific to each state electoral law but the principal rules remain constant. Every party receives a fixed amount and a variable amount that depends on their performance in the past election (vote share). They can receive money from individuals, but individual contributions are capped. For example, in Sinaloa these contributions cannot account for more than 10% of their total allowed expenditure. Rules on coalition formation are also state specific. Some states allow their formation at the district level and other states, such as Guanajuato and the state of Mexico have foreclosed that possibility, in 2009 and 2010 respectively. Moreover, in November 2010 the Supreme Court ruled that states are allowed to modify their electoral law in this way. This strategy seems to prove that coalitions between these dissimilar parties threaten the incumbency advantage of the PRI and that establishing such kind of barriers are needed to maintain it.

The case of elections held in the southern state of Oaxaca in 2005 (see Gibson 2005 and Durazo Herrmann 2010) is an example of the connection between the federal government and local, and sheds light on the topic studied here. On the one hand, federal tolerance for subnational authoritarian practices is a necessary condition for their continuity (Durazo Herrmann 2010, 85). On the other hand, "weak and reluctant local branches" are unable

to coordinate in a common strategy to defeat the incumbent party (Gibson 2005, 102). In the case of Oaxaca, the first attempt, with an unsuccessful result, struggled to gain support from local politicians of the PAN and PRD. As noted by Gibson (2005), “neither the local PAN nor the local PRD had any interest in forming part of such an alliance. The local parties were weak, starved for resources, and co-opted by the state’s governor” (Gibson 2005, 119). Nonetheless, at the national arena the parties had a strong interest in seeing PRIs candidate defeated (Gibson 2005, 119).

At the state level, several states have never had a governor from a party other than PRI. This pattern is more salient for state legislatures. Thus, at the subnational level the resulting scenario turned out to be different than the federal democratic outcome. More specifically, until the election of 2010 the hegemonic party still held the governor’s office and largely controlled the local congress in 10 states³, and their state legislatures continued to be controlled by the PRI and winning 100% of the seats in some cases. One important component of measures of democracy is that one-party-dominant-systems should be classified as authoritarian unless the incumbent actually loses and peacefully yields power (Przeworski et al. 2000). Although these criteria were developed with the national-level party system in mind, recent studies have applied them to sub-national levels. For example, Giraudy (2010) measures the level of democracy in Mexican states using Przeworski et al.’s (2000) electoral definition of democracy. Her results show that the states of Oaxaca, Puebla, Baja California, Coahuila, Colima, Hidalgo, Tabasco, Tamaulipas, Veracruz, and Yucatan could be qualified as *undemocratic* (Giraudy 2010, 59). What explains this delay in democratic transitions? To what extent have coalitions been successful at overthrowing the PRI?

Studies regarding transition from an hegemonic party system to a democratic system at the subnational level consistently conclude that the only way an hegemonic party as the PRI can be overthrown is with a successful coordination between PAN and PRD. Yet, most of this work obviates the policy preferences of voters and focus mainly in the institutional factors, as well as those features that enhance PRIs incumbency advantage. This appears

³These 10 states are Campeche, Coahuila, Colima, Durango, Hidalgo, Mexico State, Quintana Roo, Tabasco, Tamaulipas, and Veracruz. In addition, Oaxaca, Puebla, and Sinaloa did not have a change in executive partisanship until 2010, and Sonora until 2009.

to be consistent across similar polities, such as Brazil (see Lyne 2008).

“When voters make policy-based choices, then neither government nor opposition has an inordinate advantage in developing a competitive profile for the next election. Neither incumbents nor opposition have a monopoly on the best ideas for turning government resources into programs that will effectively address the major social questions of the day. In order for the opposition to regain political office when voters exercise policy-based voting, parties must develop a reputation for supporting an alternative mix of policies that can win a larger number of votes. [...] The opposition party’s distinct position-taking and voting activity provide the basis for making credible claims to voters that they support different programs from those of the existing government, and that they will implement them if the voters put the opposition in office” (Lyne 2008, 40-41).

On the one hand, the incumbent party controls the existing electoral institutions so that it can draft laws to raise the cost of entry of the opposition⁴. On the other hand, the PRI’s incumbency advantage allows it to have “unilateral control of the state apparatus and its vast sources of patronage available to buy off mass support” (Magaloni 2005, 145). This was noted earlier in Diaz-Cayeros and Magaloni (2001) such that a successful coalition formation was a necessary condition for the opposition parties to defeat PRI. However, they also note that those elections in which the opposition splits, PRI is more likely to win.

Finally, Dominguez and McCann (1996) extensively explore surveys conducted from 1988 to 1994 regarding voters intentions and motivations. They find a pattern, which they describe as a two-step process in which “voters decide, first, on their view of the ruling party” and “or those open to the possibility of being governed by another party, but only for them, there is a second step” (Dominguez and McCann 1996, 11). Klesner 2005 also argues that to democracy in 2000 cannot be only explained taking into account “socio-economic differences and social issues but on the issue of the one-party regime’s future” (Klesner 2005, 103). His analysis illustrates “how the hegemonic party system collapsed in the 1990’s, to be replaced not by a three-party but by two separate two-party systems” (Klesner 2005, 105). This fact is indeed at the heart of the coalitions performed in 2010. In general, PRI and PRD compete in the southern states of Mexico, including the capi-

⁴A recent example in Mexican politics is the electoral reform in the state of Mexico for which the local congress, in which the PRI has absolute majority, passed a new electoral law banning coalitions. This law was validated by the Supreme Court and set a precedent for states legislatures to impose entry barriers such as banning coalitions between opposition parties.

tal, and PRI and PAN compete in the northern and western states. This particular feature can be observed in most states. As will be shown below, the effective number of parties by election is consistently around 2 even though ballots usually contain around half a dozen contenders for each election. The literature on multi-party elections has suggested that this contrast between the number of registered contenders and the effective number of competitors is a sort of psychological Duverger effect, resulting from the fact that “voters may refrain from ‘wasting’ votes for parties running in their district but with little chance of winning a seat” (Taagepera and Shugart 1989, 65).

To sum up, existing literature in political science has contrasting conclusions regarding coalitions. On the one hand, it recognizes the potential electoral benefit for parties, such that coalitions may be a necessary evil for party rotation and democratic transitions. On the other, it warns that the compromises needed for parties to form a common platform may entail drastic shifts, which could anger voters. However, current research focuses on the costs in terms of votes that ideological shifts would have for parties running alone. Literature on coalitions obviates this cost, as studied cases do not consider a coalition between parties as dissimilar as PAN and PRD. An important question remains. Were PAN-PRD coalitions indeed successful at reducing the PRI’s overwhelming power and incumbency advantage at the state level? The next section analyzes electoral results of state congress elections in 13 Mexican states for 2004, 2007 and 2010.

3 Analysis

3.1 Data: Electoral outcomes and Sociodemographics

I collected an original dataset of aggregated results for single-member state district elections, covering a total of three elections (2004, 2007 and 2010). Local congresses are renewed every three years. The 2007 election was a midterm election⁵ and the other two occurred at the same time as the governor elections. These data contain results by party or coalition for 259 different districts in 13 out of 32 states in Mexico. Note that this study only takes into account SMD elections and not PR. The Mexican electoral system, both

⁵Except for the state of Hidalgo, for which elections were held in 2005, 2008, and 2010

at the federal and state level, is mixed and has a legislative body that is mainly formed by a share of SMD seats and the rest with PR seats that are assigned to parties according to their relative performance. While acknowledging that parties consider the PR tier into their electoral strategy, this study is concerned about the effect of coalition formations in SMD tier. Hence, PR seats are not taken into account as they are assigned to specific parties and not to coalitions. Moreover, there is not a separate ballot to separately vote for PR tier.

The number of districts is determined by state, following as criterion the proper representation of municipalities and population. For example, two extreme cases are the state of Baja California and Oaxaca. The latter has 25 SMD and more than 500 counties and the former had 16 SMD and only 4 counties. For the sample used the number of districts ranges from 15 to 26. Similar guidelines were followed in the assignation of the 300 federal congress SMD. However, there is no *rule of thumb* as to how to relate state with federal SMD. It can be the case that a federal district is formed exactly by the sum of state districts but it can also be the case that sections (ballots) of a state district are located in two separate federal districts. Fortunately, there is consistency in the the identification of a section ⁶ and the match between local and federal districts was established.

There are two characteristics that can be identified in this dataset. The first one is the formation of a PAN-PRD coalition in a particular district. Coalitions can be formed for one or several districts within a state electoral system. It is important to note that none of the districts considered for the midterm election 2007 had a coalition of this kind. The second characteristic to be identified is the incumbency of the PRI. As it was mentioned above, the concept of *incumbent candidate* does not exist in Mexico, as reelection is not allowed. For the election of 2010 this dummy variable was created, and along with another dummy variable accounting for the existence of a coalition. Contingency tables for the PRI winning the SMD in 2010 are shown in Table 1. It can be noted from the Pearson χ^2 test of the two tables that the null hypothesis of independence between the two can be rejected.

In order to control for characteristics of every district, socioeconomic variables were obtained from the INEGI (Instituto Nacional de Estadística, Geografía e Informática, analogous to the U.S. Census Bureau). This bureau compiled a dataset from the 2005 census

⁶This was validated for every section by comparing the county to which they belonged to.

		PAN-PRD Coalition				PAN-PRD Coalition	
		No	Yes			No	Yes
PRI wins	No	20	18	PRI wins	No	3	45
	Yes	46	4		Yes	65	58
Non-Incumbent PRI				Incumbent PRI			
p-value = 4.38e-09				p-value = 1.07e-11			

Table 1: Contingency tables with Pearson χ^2 test (2010 election)

that could be cross-referenced to every electoral section and federal district in Mexico. I then aggregated these section-level data for the state SMD. This endeavor offered an opportunity to accurately characterize the voters of a particular section and consequently of any local district of any state. Unfortunately, at the time of writing only the 2005 census data has been released in this way but not the 2010 census. This feature limits this study to a cross-sectional analysis, instead of a longitudinal one. Finally, the mapping of sections with districts was not available for Veracruz and therefore had to be dropped from the sample.

Data from the 2005 census is divided in four sets of data by section: population, household, living and indigenous population. For every district the following variables were available: total population, number of households, number of houses, fraction of female population, weighted average age, fraction of population with at least secondary school studies, fraction of population speaking a dialect, fraction of population with no health care at all, fraction of population benefiting from health care provided by the federal government (Seguro Popular⁷), and a house index reflecting the availability of nine basic services⁸ for a specific house (theoretically ranging from 0 to 9). These variables would allow every district to be identified according to its population characteristics (size, gender, age, and ethnic composition), development proxy (education level), and economic proxies (health care and house characteristics).

⁷Seguro Popular is a program designed by the federal government to offer health care to the population with the lowest income (mostly the first and second lowest deciles of the population). Its implementation began in 2003 and appears to be successful to date (King et al. 2009) at improving citizens' health. The main target of this program is to offer coverage to all the population that lacks any kind of health care by 2012.

⁸The characteristics taken into account are: electricity, television, refrigerator, washing machine, computer, running water, bathroom, sink, and sewage.

3.2 Mexican voters' policy space

The Mexico Panel Survey (MPS) conducted in 2006 was designed to capture the factors affecting Mexican voters behavior. This survey tried to emulate the American National Election Study in the US and the British Election Study in the UK. It was a brief and constrained project, mainly aiming to study the 2006 presidential election. The project was divided in three waves of surveys: nine and three months before the election, and one month in the aftermath. These surveys offer a unique dataset to shed some light on the federal election held in July 2006, as well as Mexican voters' preferences. The survey tried to establish a profile of the voter by means of socio-demographic characteristics, which accuracy was maximized by the panel nature of the surveys, and preferences and opinions on several relevant topics at the time. Some questions on *controversial* issues were asked, covering the following issues: death penalty, abortion in rape cases, trade between Mexico and the US, private investment in the electric sector (state-controlled), wealth redistribution, and the role of the State in the economy. In addition, it allowed to establish the valence of candidates and parties, as well as voters perception of how clean elections were (Lawson and Moreno, 2007).

Unfortunately, the survey offers an asymmetric picture of the election, as it only asked for the voter's position on these issues and not the voter's perception of parties and/or candidates toward these issues. Consequently, distance between voters and candidates or parties cannot be computed since only the position of voters was recorded in the survey. Nonetheless, such a survey is still useful to offer a glance of the ideology and preferences of Mexican voters, in the context of the 2006 presidential election. From the available information, a policy space can only be plotted for the voter's position by partisanship (waves one, two and three) and by *actual* election choice (wave three).

At first glance, voters' preferences could be determined by means of a two-dimensional policy space that could be constructed by accounting for social and economic issues. The survey included two questions on social or moral issues: abortion and death penalty. In addition, several questions inquired on the opinion voters had regarding the state and its role in the economy, providing some information about the economic policy space as well.

However, the panel study faces an important limitation. Social questions were asked in such a way that respondents could only answer whether they were for or against. Hence, from two dichotomous variables there are only four different states the social issue can take for each respondent, no matter what weight and scale are assigned to each variable. Without much transparency in his procedure, Greene (2007) draws such a two-dimensional plot, by constructing a social and an economic index. Unfortunately, his method does not escape the problems that the lack of variation in policy positions poses. Specifically, the author finds that voters' positions by partisanship were almost indistinguishable from the median voter (Greene 2007, 210). Another limitation of the survey is that it did not record the perception voters had on the candidates or parties positions, thus the distance between them cannot be measured and this forecloses the use of techniques such as the one used in Schofield and Miller (2007).

Levin and Alvarez (2011) study the 2006 presidential election and inquire on what influenced voters' choice. The salient feature of this election was that the attitudes toward the formerly hegemonic PRI were no longer relevant, as it had already lost the presidential election in 2000. In line with previous findings, they account that voting decisions are mainly determined by region and party identification. Moreover, retrospective evaluations of the national or their personal economic situations, and their perception of the integrity of the electoral process have a significant impact. Finally, voters' position in a social and economical policy space has little in their voting behavior (Levin and Alvarez 2011, 25-26).

These studies, along with Green (2002) seem to point that Mexican voters' behavior is not primarily shaped by their position on social and economic issues. They are more likely to vote based on party identification and it is worth noting that even though voters' position in the policy space does not necessarily determines their choice, a coalition between PAN and PRD would still be unlikely to succeed due to party identification. These findings also suggest that recent local elections cannot be explained in the same way federal elections do and that there are sub-national features that have to be taken into account.

3.3 The Mexican sub-national political system

In order to have a comprehensive overview of an electoral system Taagepera and Shugart (1989) provide two measures that can help in identifying parties with considerable advantage in a political system. Such measures are merely descriptive but offer substantial insight on the dynamics of political competition. The first measure is the advantage ratio (Taagepera and Shugart 1989, 204), defined below:

$$A = \frac{\%seats}{\%vote} \quad (1)$$

Figure 1 plots the PRI advantage ratio for the three elections included in this study: 2004, 2007, and 2010. Note that PR seats are not taken into account, as we are interested in looking at vote concentration and not in the actual representation of parties in local congresses. The solid line, with slope of one, would indicate no advantage for the PRI: the percentage of seats would correspond exactly to the share of votes obtained in the election. States where PAN-PRD coalitions were formed are identified with a filled square, while those without coalition are identified with a cross. We can observe that the advantage ratio of PRI is well above 1 in most cases, a strong advantage. A striking feature is that the PRI winning all the SMD seats is not a rare event. This means that PRI is receiving more than its proportional share by state, and in a few cases the party was even able to win all of the SMD.

Finally, it should be noted that for the 2004 and 2010 elections, in the states with PAN-PRD coalitions PRI obtained lower percentages of seats, albeit a similar share of votes as in states where this coalition was not a competitor. However, this index was only calculated for descriptive purposes and “peculiarities of interaction or geographic concentration of parties must be taken into account” (Taagepera and Shugart 1989, 214). Nonetheless, we can conclude that the formation of PAN-PRD coalitions slightly reduced the PRI’s advantage ratio. Moreover, it can be observed that for the states considered in this sample the ratio was higher than 2 for several elections, for which PRI won all SMD with a share of votes between 50% and 60%. This feature might suggest the current distribution of districts fosters a two-party system, such that a fragmented opposition is unlikely defeat the

PRI.

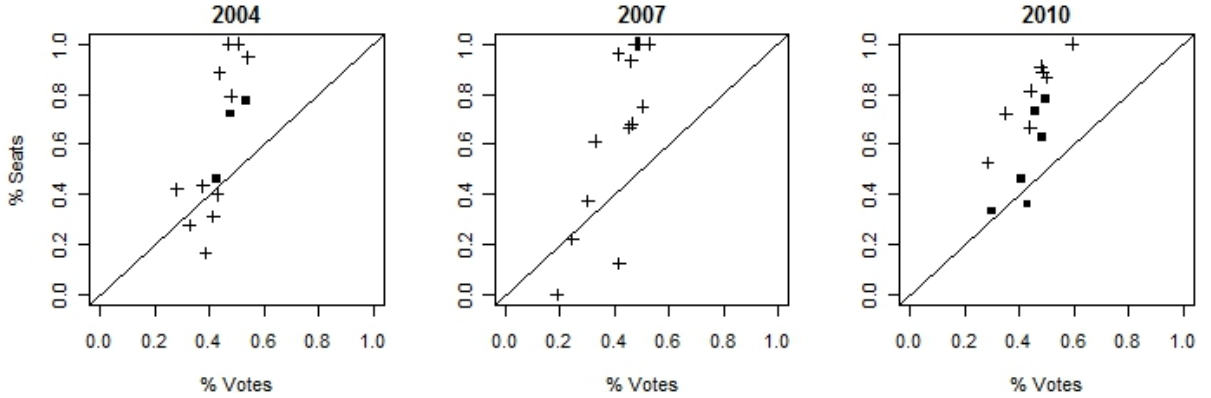


Figure 1: Advantage ratio of PRI for SMD elections by state (square: PAN-PRD coalition; cross: no coalition).

The second index suggested by Taagepera and Shugart is the effective number of parties N , as defined in (2) (Taagepera and Shugart 1989, 203). In this case n is the number of different parties that hold at least one seat in Congress and p represents these parties' proportion of seats. Juan Molinar argues that N is a weak index because in certain situations, as it overstates the size of the largest party while a weighted index such as the NP (3) counts the winning party differently from the rest, counting the winning party as one and weighting N by the contribution of the minority parties (Molinar 1991, 1385). Hence I use Molinar's version in this paper. Results are shown in Figure 2.

$$N = \frac{1}{\sum_{i=1}^n p_i} \quad (2)$$

$$NP = 1 + N \left(\frac{\sum_{i=2}^n p_i^2}{\sum_{i=1}^n p_i^2} \right) \quad (3)$$

Except for Chiapas (CHS), Tlaxcala (TLX) and Zacatecas (ZAC), all elections held in the 14 states had an effective number of parties close to 2. This suggests that even before the existence of these large coalitions the electoral system in these states was operating like a two-party system, instead of mimicking the national-level three-party system. Surprisingly, for the six states that in 2010 had a PAN-PRD coalition, NP did not substantially change. Since we are looking at SMD elections by state, it's possible to conclude that a

Duvergerian equilibrium had been reached. Yet even if there is an equilibrium in the effective number of parties, this is not a sufficient condition for party rotation to take place. The effective number of parties tells us that at one party in addition to the PRI in these states was capable of winning at least a portion of seats, but the advantage ratio calculated above tells us the PRI was still far more powerful (in terms of seats) than this second political force, therefore over-represented. Note that way the advantage index is being calculated *overestimates* PRI's advantage and is likely to be smaller once PR seats are taken into account.

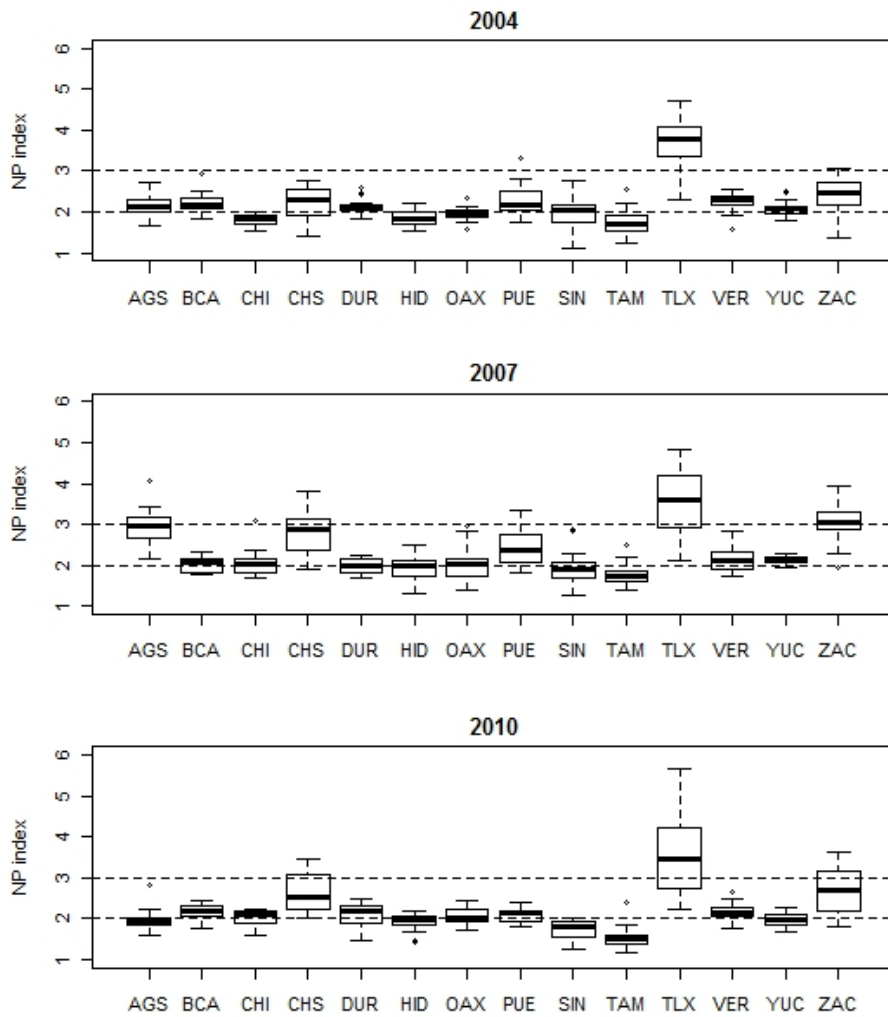


Figure 2: Effective Number of Parties in districts, by State

One may argue that the fight between PAN and PRD to be the second party in the

system, as occurs at the national level, keeps them from campaigning effectively to defeat the PRI at the state level. To test this proposition, the second-to-first (SF) loser's vote ratio proposed by (Cox 1997, 85-88) is a useful descriptive measure. It calculates the ratio of the second loser's vote share to the first loser's vote share. High values of this ratio are evidence of a tight competition between the losing parties, or a multi-party system. Low values would confirm a Duvergerian equilibrium for a majoritarian political system. Using data for federal congress elections Diaz-Cayeros and Magaloni (2001) found there is no reason to assume the Mexican system is characterized by non-Duvergerian equilibria (Diaz-Cayeros and Magaloni 2001, 273). In addition, the SF ratio for local SMD by state⁹ in Figure 3, we find that most of the states have a ratio closer to 0. Moreover, looking at the histograms by election in Figure 4 we cannot observe the bimodal pattern suggested in Cox (1997) but rather a peak close to 0, particularly for the 2010 election.

3.4 State-level elections: parties, coalitions, and choice sets

The choice set of alternatives that voters have during state elections is rather complex, since state electoral systems can be fragmented, as opposed to the federal level. On the one hand, there are seven parties having a national reach. These parties are registered as *federal* parties and can also compete at federal elections for congress, and senate. According to electoral rules, they require a share of votes of at least 2 %, in order to maintain their registration. At the state level similar rules apply but we can observe a wider set of alternatives in some states but this varies substantially. For example, consider the cases of Sinaloa and Tlaxcala in the most recent election. Voters in the state of Sinaloa could only vote either for a coalition led by PRI or for a coalition mainly formed by PAN and PRD. However, in Tlaxcala voters could also vote for one of five local parties. Note that these features explain why the effective number of parties was below 2 for Sinaloa and above 3 for Tlaxcala (see Table 2).

For the 13 states studied in this paper 23 different choice sets were identified. These choice sets could have as many as 10 alternatives (choice set 1) or as few as 2 (choice sets 18

⁹The ratio is not available for Sinaloa in 2010 and Chihuahua 2007, since only two coalitions of parties contended these elections.

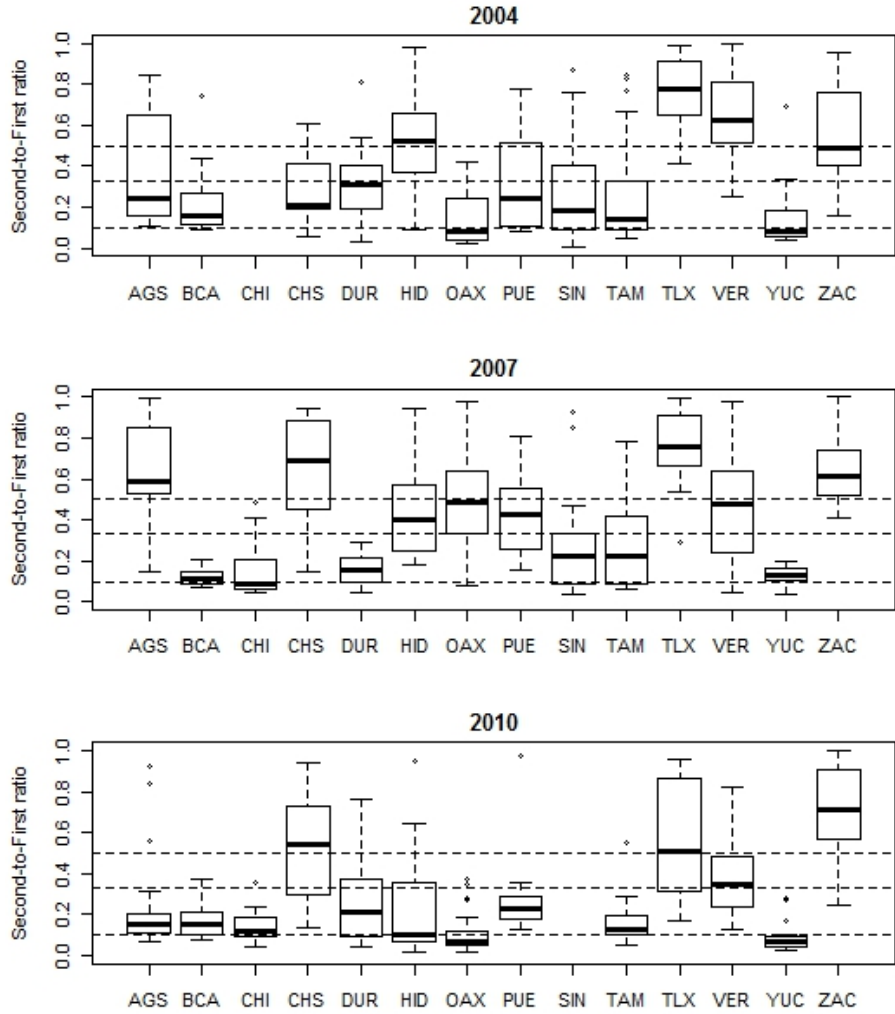


Figure 3: SF ratio by state and election

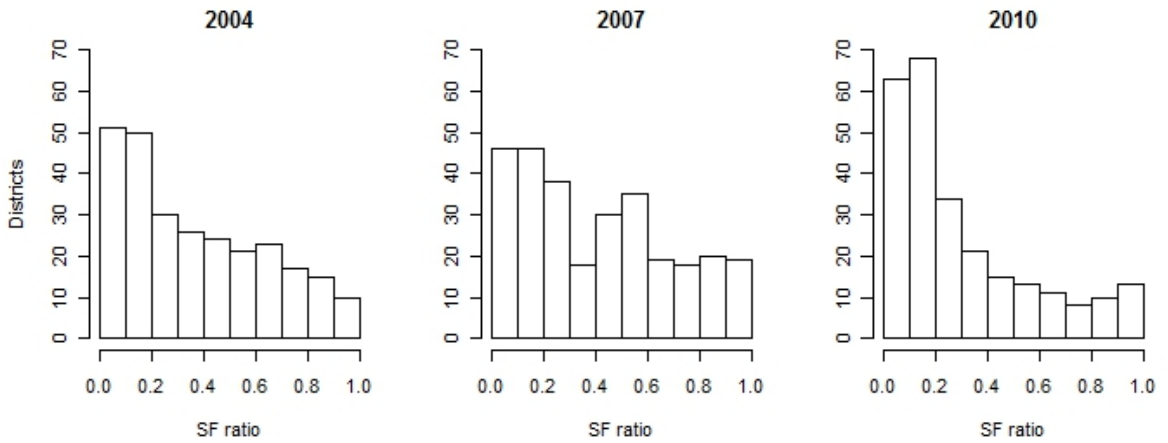


Figure 4: Histogram of SF ratio by election

and 21). Table 2 summarizes which parties and/or coalitions were available for each choice set. The left column of the table is divided in two parts: the top part lists parties competing by themselves while the bottom portion lists coalitions. I indicate in parentheses whether they are a federal or local party. In the second part I show the number of parties belonging to the coalition. Even though only a coalitions between PAN and PRD has been mentioned so far, it can be observed that it is a common practice for big parties, such as PRI, PAN, and PRD, to form coalitions with smaller parties. Moreover, PRI competed in most of the choice sets by forming a coalition with the Mexican Green Party (PVEM) and/or the New Alliance Party (PANAL). It is worth mentioning that these two parties have rather ambiguous policy positions and in practice act as *satellites* of the PRI.

Table 3 summarizes the number of districts for which a choice set was available by state. It is worth noting that only choice sets 5 and 8 were available in more than one state (for both cases the number was 3), while the rest of the choice sets were state-specific. Seven states had only one choice sets but other states could have up to five, as in the case of Chiapas. The difference of choice sets within states is mainly due to changes in coalitions. For example, in some districts PRI forms a coalition with PVEM and PANAL but in other only with the latter or the former, or even run by itself. These *satellite parties* seem to play an important role in allowing PRI to remain as an hegemonic party. In a few rare cases in Chihuahua, some parties did not compete in some districts, not even in a coalition.

4 Model

A discrete choice model would provide the best fit for an election process like this one. This study is based on aggregate election results and provides an opportunity to observe revealed preferences of voters, as opposed to stated preferences. Specifically, this analysis focuses on pinning down the effect a PAN-PRD coalition has on the probability for the PRI to win a SMD. As it was shown in the previous subsection, choice sets vary by state. Moreover, available alternatives substantially vary from choice set to choice set. This feature is burdensome and a multinomial logit (MNL) model cannot be used in a straightforward way. In order to set a MNL one would have to include all 51 unique alternatives available

Alternatives	Choice Sets																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Single Parties																							
CONV (federal)	x	x	x	x	x	x	x	x															
PAC (local)	x								x														
PALT (local)								x															
PAN (federal)			x	x	x	x	x																x
PANAL (federal)			x	x	x	x									x	x			x				x
PAY (local)			x																				
PD (local)															x								x
PEBC (local)																							
PLT (local)	x	x																					
PP (local)	x	x																					
PPT (local)	x	x																					
PRD (federal)	x	x	x	x	x	x	x																
PRI (federal)	x	x	x	x	x	x									x	x	x						x
PS (local)	x	x																					
PT (federal)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x							x
PUP (local)																							
PVEM (federal)																							
Coalitions																							
PAN+PANAL (2)	x	x																					
PAN+PANAL+PES (3)																							
PAN+PRD+CONV (3)																							
PAN+PRD+CONV+PANAL (4)																							
PAN+PRD+CONV+PANAL+PALT (5)																							
PAN+PRD+PT+CONV (4)																							
PRD+CONV (2)																							
PRD+PT+CONV (3)																							
PRI+PANAL (2)																							
PRI+PVEM (2)																							
PRI+PVEM+PANAL (3)																							
PRI+PVEM+PANAL+PD (4)																							
PT+CONV (2)																							
PVEM+PALT (2)																							
Total	10	9	7	6	7	6	6	5	4	5	5	3	4	4	4	6	4	4	2	3	4	5	4

Table 2: Alternatives by choice set

State	Choice Sets																							Districts	Choice Sets		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Aguascalientes							18																	18			1
Baja California											16																1
Chihuahua					13	1	8																				3
Chiapas								4	7			1	7		5												5
Durango														10				4				1					3
Hidalgo					2		4										4	8									4
Oaxaca																				25							1
Puebla													26														1
Sinaloa																					24						1
Tamaulipas																											3
Tlaxcala																											2
Yucatan	17	2																									1
Zacatecas																											1
Districts	17	2	15	3	28	1	3	30	4	7	16	1	7	26	5	10	4	8	4	25	24	1	18			18	
Choice Sets	1	1	1	1	3	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	

Table 3: Districts by choice set and state

across states but still most of the alternatives were not actually available to voters in a particular district. Moreover, the MNL is based on the unrealistic assumption, for the problem at hand here, that independence of irrelevant alternatives (IIA) holds and the likelihood of voting for any two parties does not depend on other available alternatives.

An amenable solution to this problem is to consider a logit model for which the outcome is a dichotomous choice that accounts for voting for the PRI, either alone or in a coalition, or not. Such outcome would consider a PRI victory if the party ran by itself or in a coalition with *satellite* parties and/or local parties. Clearly, the PRI's decision to run in a coalition entails strategic considerations on its part about its chances of winning the election. I believe that studying the determinants of PRI coalitions would be best approached through a longitudinal study of the repeated interactions between the PRI and other parties in these districts. However, because this article focuses on opposition parties' incentives to form a coalition in a single election, I consider both the incumbency variable and the PRI coalition information as given, and take them as the only information available to the PAN and PRD at the time they form their own coalition. In this model the utility faced by voters takes the form:

$$U = V + \epsilon = \beta_1 PRI + \beta_2 PANPRD + \beta_3 INC + \theta Z^T + \epsilon \quad (4)$$

where *PRI* is a dummy variable indicating whether the PRI ran in a coalition (one) or alone (zero) for a specific district in the district. *PANPRD* is the covariate of interest defined by a dummy variable taking value 1 if voters could vote for a PAN-PRD coalition in their district, 0 otherwise. *INC* is a dummy variable indicating whether the PRI was the incumbent party of that district. Vector *Z* accounts for the characteristics of district *n*, such as a set of sociodemographic variables describing the representative voter of the district such as age, schooling, and house development index.

Hence, the standard logit formulation yields that the probability voters chose PRI in a SMD is given by

$$Pr(\text{voting for PRI}) = \frac{e^V}{1 + e^V} \quad (5)$$

where V comes from equation 4.

Train (2009) offers an alternative to this problem consisting in a nested logit that allows choice sets to have specific alternatives and it even allows some overlap of alternatives between choice sets. Taking into account the hierarchical structure of the problem and consider a two-level problem as the one depicted by the following tree could help in solving issues such as the formation of a coalition by the PRI.

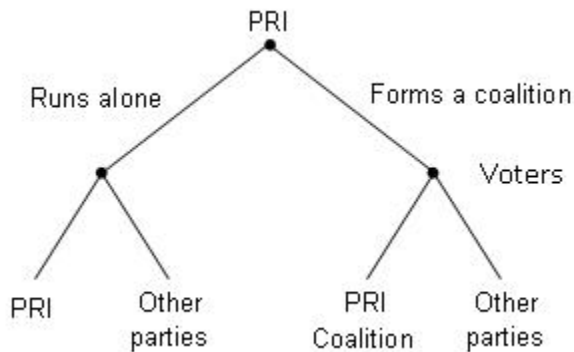


Figure 5: Hierarchical structure of the election

On a first stage the PRI chooses to run alone or in a coalition (upper model). Then, in the second stage, voters face two alternatives (lower model): voting for or against PRI, and decide which alternative yields the greatest utility to them. A nested logit offers two main advantages over the standard logit¹⁰. On the one hand it slightly relaxes the IIA assumption while, on the other hand it allows variance to be different across subsets of alternatives (nests). Finally, while the error terms may present some correlation in the same nest, the error terms of different nests are still uncorrelated.

In the case considered here there are two nests in the upper model, which are non-overlapping subsets. Therefore, the probability voter n chooses an alternative $i \in B_k$, for $i = \{1, 2\}$, can be expressed as the product of two probabilities, namely the probability an alternative belonging to nest B_k is chosen, and the probability alternative i is chosen, given that an alternative belonging to nest B_k is chosen:

$$P_{ni} = P_{ni|B_k} P_{nB_k} \quad (6)$$

¹⁰See Hensher and Greene (2002) for a review of nested logits features, compared to multinomial and mixed logits.

where $P_{ni|B_k}$ is the conditional probability of choosing alternative i given that an alternative in nest B_k is chosen, and P_{nB_k} is the marginal probability an alternative in nest B_k is chosen. This equality is exact, since any probability can be written as the product of a marginal and a conditional probability. In such a model, error terms have the following multivariate distribution, which is essentially derived from a MNL:

$$\exp \left(- \sum_{m=1}^2 \left(\sum_{j \in B_m} e^{\epsilon_j / \lambda_m} \right)^{\lambda_m} \right) \quad (7)$$

where $1 - \lambda_m$ accounts for the correlation within nest m . The next step is to write down the deterministic part of the utility faced by voters.

Nevertheless, the nested logit model applied to the 2010 election results in Mexico proved unsuccessful. By means of a χ^2 test on twice the difference of the log-likelihood of the logit model considered above and the nested logit, we cannot reject the hypothesis that they are not different. Thus, these results suggest that the nested logit does not achieve a better fit to the data. Moreover, the parametrization of the problem in the nested logit leads to a less straightforward interpretation of the coefficients. For these two reasons, I consider the logit a more appropriate model to discuss. Even though the model was estimated, results are not reported here.

5 Results

Table 4 summarizes results obtained using the utility function from equation 4 (*full* model), which is listed on the right column. In addition, a *base* model without demographic variables was estimated and is listed on the left column. Coefficients for a PAN-PRD coalition and PRI incumbency are highly significant. PRI coalition and Age turn out to be slightly significant (at a 90% confidence level). The rest of the demographic variables are not significant. As expected, the coefficient for PANPRD is negative but it is surprising to see that a coalition led by PRI has a negative effect. Incumbency is also highly significant and has a positive contribution to the probability of PRI to be voted. These coefficients, as well as their standard errors are close to those estimated in the *base* model.

	Base model	Full model
Intercept	1.51 (0.44)	6.83 (14.40)
PRI	-0.68 (0.41)	-0.71 (0.41)
PANPRD	-2.71 (0.46)	-2.95 (0.49)
INC	2.03 (0.44)	2.17 (0.46)
Age		-0.32 (0.45)
Schooling		-22.85 (14.14)
House Index		2.35 (1.49)
N	259	
Null deviance	327.83 on 258 df	
Residual Deviance	265.46 on 255 df	260.36 on 252 df
McKelvey R^2	0.14	0.06

Notes: Std. errors in parenthesis

Table 4: Results of a logit model of probability of PRI winning a SMD

When we observe the McKelvey R^2 ¹¹ of both models, the explained variance of the *full* model is 0.06, while the one computed for the *base* model is substantially higher (0.14). Nonetheless, for both model the hypothesis that the model is the same as the null model is rejected with probability close to 1. One possible explanation is that including demographic variables results in a misspecification of the model, due to the aggregate nature of the data.

We are interested in estimating the effect a coalition between PAN and PRD had in the probability of PRI to be voted, i.e.

$$Pr(PRI\text{isvoted}|PANPRD = 1) - Pr(PRI\text{isvoted}|PANPRD = 0)$$

Fixing the demographic variables on their means, we obtain the following effects for the *full* model:

		Incumbent	
		No	Yes
PRI coalition	No	-0.62	-0.28
	Yes	-0.60	-0.42

Table 5: *Full* model effects

Turning to the results for the *base* model, we can observe that both models offer similar estimates, although those from the *full* model are slightly larger, in absolute value, than those of the *base* one. We obtain the following effects for the *base* model:

		Incumbent	
		No	Yes
PRI coalition	No	-0.58	-0.27
	Yes	-0.56	-0.40

Table 6: *Base* model effects

As expected, a coalition between PAN and PRD substantially reduces the chance of a PRI victory. This reduction ranges from close to one third to two thirds of the probability and depends on two characteristics of PRI: incumbency and coalition with *satellite* parties.

¹¹The McKelvey and Zavoina R^2 is an attempt to measure model fit as the proportion of variance accounted for. In this case, we are attempting to explain the variance of the latent variable. The variance of the latent variable can be computed by $y^* = \beta' Var(x)\beta$. This statistic is given by $R^2 = \frac{Var(y^*)}{Var(y^*) + Var(\epsilon)}$.

Surprisingly, the PRI leading a coalition works against itself. This could be due to weakness of PRI in a district, prior to the election, thus forcing it to run in a coalition. Moreover, the worst and best cases for PRI occur when it runs alone in the election. The best scenario is for the PRI to be the incumbent party in a district, which suggests that though PAN-PRD coalitions are effective, the PRI still holds an important incumbency advantage in many districts in Mexico today.

6 Conclusion

In Mexico, the lack of transition to democracy at the state level contrasts with a more competitive scenario at the federal level since the late 20th century. Explaining such a scenario relies on taking into account a complex link between federal elections and the role of states at the federal level. In addition, overthrowing the hegemonic party seems to require, in most cases, a coalition to be formed despite of other policy dimensions that might matter to voters. "In order to survive in the competitive game, parties need to find a balance between displaying responsiveness to changing circumstances and standing by one's values" (Tavits 2007, 161).

Yet, a coalition between such different parties faces the challenge of losing voters because it implies drastic shifts in policy positions, to reach a platform on which both parties can run. Furthermore, it faces the challenge that both parties may not be able to agree on a common agenda at all in the first place, even if they did their policy positions could become unstable and confuse voters. However, it is possible that in a local political system that is lagging with respect to the rest of the country in terms of democratic transition to non-PRI regimes, overthrowing the incumbent hegemonic party could be enough of a common policy interest to obscure other differences among parties. Was rejection for PRI candidates enough to mute other important policy dimensions as salient in the election? Greene (2002) notes that this was not the case for the presidential election of 2000, mostly due to the lack of internal agreements within opposition parties. Moreover, when it comes to the sub-national arena Gibson (2005) notes that coordination can fail due to lack of internal agreement.

This paper has found that a coalition between PAN and PRD inflicts a reduction in the probability of PRI winning the election, regardless of being the incumbent party or forming a coalition with *satellite* parties. The probability decreases from one third to two thirds, which in most cases should be enough for PRI to lose the election. A surprising result is the fact that forming a coalition does not make the PRI stronger. For the opposition to overthrow PRI when it is the hegemonic party, PAN and PRD face a greater challenge when PRI runs alone. This may be caused by the fact that districts are SMD and the Duvergerian characteristic of state elections in Mexico. The more alternatives voters face, the more likely it is that they will vote for larger parties, to avoid wasting their vote. Therefore, forming a coalition of opposition parties is indeed a necessary but not sufficient condition to win the election.

Methodologically, this paper faced the challenge of analyzing district electoral results, where not all districts had the same party configurations in the election. This problem of varying choice sets was identified in Yamamoto (2011) for Japanese elections and coalition formation. His development yields a robust method to tackle research problems like the one considered here, which take into account the formation of coalitions by district and with regional parties that do not run in every state. Nevertheless, the use of electoral results -aggregate data- as opposed to individual stated preferences, is a disadvantage when it comes to studying voters' behavior, as problems of model identification arise.

The results obtained here, however, provide evidence of an important new dimension of elections in new democracies; democratization itself. Even though some studies appear to dismiss policy preferences as a determinant factor in voters' behavior, the only panel survey permitting to study individual choices is flawed as it does not allow to measure the distance between voters and parties positions. The results also highlight the dire need of individual-level public opinion and voting behavior data in Mexico. Further research concerning Mexican elections and coalition formation must take into account individual choices made by voters, following their policy preferences. Such a limitation might obscure a more accurate profile of Mexican voters and shed some light on what matter most to them when PAN and PRD opt to form coalitions, despite their dissimilar policy positions.

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