

Tragic Brilliance: Equilibrium Party Hegemony in Mexico

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ABSTRACT

Why do citizens acquiesce in regimes of which they obviously disapprove? We provide an analytic narrative that suggests a general mechanism underlying the survival of one-party dominant, authoritarian regimes. The “tragic brilliance” of these systems lies in that the party in power employs a complex system of rewards and punishments that lead citizens to actively support it. Specifically, localities that fail to support the incumbent party receive lower fiscal transfers. We apply our approach to shed light on the long-standing hegemonic dominance in Mexican politics by the PRI. We model the PRI’s credible threat to punish localities electing the opposition. Our empirical investigations provide evidence for this punishment regime.

Keywords: authoritarianism, Mexico, fiscal transfers, party hegemony, propensity score matching

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1. Introduction

Why do citizens acquiesce in regimes of which they obviously disapprove? Around the world, regimes survive despite rampant corruption, an absence of fundamental rights, harsh taxation, restrictive economic regulation, and the general failure to foster economic growth. This question represents a major puzzle for comparative politics. One simple answer is that authoritarian regimes rely on coercion. The exclusive reliance on force is insufficient to explain why authoritarian regimes survive. The literature demonstrates that authoritarian regimes that suffer poor economic performance are much less likely to survive (see, e.g., Geddes 1999, Haggard and Kaufman 1995, Remmer, 1993). If force were the sole means of authoritarian survival, economic performance would not matter.

A second answer is that authoritarian regimes remain in power when they achieve legitimacy through economic performance. This approach faces some striking anomalies. Geddes (1999) shows, for example, that some types of authoritarian systems, namely single-party regimes, are quite resilient to economic crisis and they live the longest.¹ Communist regimes remained in power long after the Soviet economic model failed. Since 1980, Mexico experienced two recessions, the debt crisis and the Peso Crisis, and the *Partido Revolucionario Institucional* (PRI) remained, nonetheless, in power.² If economic performance alone explained the PRI's hegemony, the party should have lost power in the early 1980s, as most authoritarian governments in Latin America did.³

The mechanisms as to why autocratic regimes exhibit stability are still unclear. Using an analytic narrative approach (Bates *et. al.* 1998), we provide what we believe is a general

mechanism underlying the survival of the most resilient form of authoritarianism, namely, one-party dominant regimes. Our account suggests that these regimes are at once tragic and brilliant: Tragic in that they force citizens to accept corruption, low levels of government service, and inefficient policies; brilliant in that they induce citizens not only to accept these features, but to play an active role in maintaining the system. The “tragic brilliance” of one-party dominant systems lies in that the party employs a complex system of rewards and punishments that lead citizens to actively support the party, even if reluctantly.

We address this fundamental question in the context of the seven-decade dominance of Mexican politics by the PRI. We suggest that the PRI maintained its hegemonic position in part by creating a set of institutions that gave citizens incentives to support – and, indeed, aid – the party. Mexican scholars have noted, at least since the classic study by Brandenburg (1964), that the PRI used state financial resources to buttress political support. Ames (1970) suggested that public expenditure was targeted to states according to the strength of the ruling party. However, most accounts beg the question of why the manipulation of financial transfers was so effective, and few have provided systematic empirical evidence to back their claims.⁴

Our model builds on Geddes’s (1999) findings. We consider voters in a locality (e.g., a municipality) who prefer the opposition to the PRI. Voters face the choice of whom to elect as their local leader, either a PRI or an opposition candidate. The national PRI, in control of the federal government, then decides whether to punish the locality through the withdrawal of budgetary funds. We show that the threat to withdraw funds induces citizens to support the PRI candidate. This outcome reflects a centralized fiscal system where localities receive the lion’s share of their funds from higher level (PRI-controlled) governments. The system is incentive

compatible: citizens do not like the system's corruption and inefficiency; and yet they face powerful incentives to play their role in preserving it.⁵

Our account is related to recent contributions by Scheiner (2004) and Golden (2003), which study the role of local factors in explaining party dominance in Japan by the LDP, and in Italy by the Christian Democratic Party, respectively. Scheiner (2004) emphasizes the career patterns of Japanese politicians and the difficulty of opposition candidates to reach office. He summarizes his argument with the formula "Clientelism + Fiscal Centralization = Local Opposition Woes": with a national system based on patronage, only fiscally autonomous regions elect non-LDP members to their legislatures. He provides direct evidence of this hypothesis with measures of prefectural assembly success by opposition parties. Golden (2003) studies the reasons behind the remarkable resilience of the Italian political equilibrium. She produces evidence suggesting that pork barrel legislation in Italy (*leggini*) was predominantly driven by a quest to target specific clientele, rather than broad redistribution policies.⁶

While our theoretical argument is similar to Scheiner and Golden, we provide the conditions under which "defections" from the hegemonic equilibrium are possible. Furthermore, we explicitly test the mechanism of the punishment in the transfer of resources and focus on the election of executives in individual political jurisdictions (municipalities).

Studies of the political manipulation of fiscal transfers in Mexico have produced conflicting results. One of the earliest studies, Camp (1976), argues that the federal government often used its discretion in the allocation of revenue sharing transfers for political gain.⁷ Systematic evidence for the punishment regime during the period Camp (1976) studies is hard to find, however, because every state and virtually every municipality was governed by the PRI.⁸

Party hegemony began to weaken in the 1980s, when over 100 of Mexico's more than 2,400 municipalities defected to the opposition, mostly to the National Action Party (PAN). The debt crisis and the nationalization of the banks in 1982 both contributed to the PAN's growth in the localities, particularly in the Northern states (Chand, 2001). The first states to defect to the opposition were Baja California and Guanajuato in 1989 and Chihuahua in 1991.

Evidence for what we call the punishment regime first emerges from case studies of the first decade in which the opposition makes political gains. These studies underscore the difficulties opposition municipalities and states face to govern with fewer fiscal transfers (Rodríguez, 1997 and Rodríguez and Ward, 1995). Other studies highlighted the prevalence of clientelistic practices, targeted primarily to poor voters, for the survival of the PRI (Cornelius, 1975, 1999 and 2004; Fox, 1994; see also articles contained in Cornelius, Craig and Fox 1994).

Fewer econometric analyses of the discretionary allocation of funds exist, and they produce mixed results (Molinar and Weldon, 1994; Bruhn, 1996; Hiskey, 1999 and 2003). Our econometric results of the allocation of the most important federal transfers to the localities – revenue sharing funds – reveal a pattern of discretionary resource allocation consistent with the logic of entry-deterrence: the PRI punishes voters who defect to the opposition, and rewards its own supporters that can more credibly threatened to exit. Magaloni (forthcoming) obtains analogous results in her study of municipal-level PRONASOL allocations from 1989 to 1994. We argue that this threat to withdraw voters from the party's spoils system induces support for this party.

Our account is consistent with a range of results from the public opinion literature on Mexico.⁹ For example, in contrast to the United States, retrospective economic evaluations play a

small role in voting choices in Mexico, and voters are not very issue oriented. The now classic study of voting behavior in Mexico, Domínguez and McCann (1996), demonstrates that the overwhelming majority of the population had negative evaluations of economic performance, though they nonetheless voted for the PRI in the 1988 and 1991 elections. Magaloni (forthcoming) demonstrates the limits of retrospective voting in subsequent elections. Our model suggests a possible mechanism for this finding. The PRI's credible punishment implies that voters support the PRI regardless of bad economic conditions: the punishment regime implies that voters have as much to lose by switching to the opposition during bad times as during good ones. Deterrence is most effective for those who depend most on state transfers for their survival, namely poor voters.

We develop our argument as follows. Section 2 presents the simple strategic model of the PRI's credible threat to punish localities electing the opposition. Section 3 provides evidence supporting our approach, through the use of conventional OLS methods and a propensity score matching technique. Our conclusions follow.

2. Equilibrium Hegemony

Accounts of Mexican politics during the era of party hegemony often emphasize the president and his cabinet as the prime political players in the system. It is important to note, however, that the president was also the leader of the party and all cabinet members pursued their careers as party members.¹⁰ At the local level, governors and municipal presidents reproduced the national

system, since most scholars agree that they also led the local party organizations (Scott, 1959; Brandenburg, 1964). In short, the historic power of the president was intimately related to the PRI's ability to maintain its hegemonic control of Mexican politics through the interaction of the party controlled by the president with the governors and the municipal presidents.¹¹ Thus, in order to understand the resilience of authoritarianism in Mexico we concentrate on the hegemonic party. Throughout, we will use the convention that the PRI refers to the national party organization, holding power in the central government; and the local PRI as the politicians affiliated to the hegemonic party in the particular locality under study.

Explaining hegemony if voters prefer the PRI to the opposition is not puzzling. Yet students of Mexican public opinion show that it is difficult to assess how prevalent such voters are. We can think of "sincere" PRI supporters as those who prefer the PRI to the opposition. A vote for the PRI might stem from three sources. First, voters might support the PRI because they approve of the economy. As mentioned above, there is little evidence suggesting support for the PRI based on good governance (Domínguez and McCann 1996; Magaloni, forthcoming). Second, a sincere vote for the PRI might stem from ideological affinity. Here too the public opinion literature demonstrates that Mexican voters are not very issue oriented (Domínguez and McCann, 1996; Domínguez and Poiré, 1999; Domínguez and Lawson, 2004). Third, voters might sincerely opt for the PRI due to strong partisan attachments. There is, however, not enough research on the meaning of party identification in Mexico. Poiré and Magaloni (2004) argue that party identification is highly endogenous to electoral choice. It is thus hard to disentangle true partisanship from the actual strategic calculation embedded in the vote choice.

Findings in the public opinion literature therefore cast doubt on the notion that voters supported the PRI sincerely based on variables such as economic performance, issue positions, or ideology. This does not deny that partisan loyalty to the PRI existed – voters, in fact, supported the PRI election after election. Yet, supporting the PRI does not imply an absence of strategic considerations in such choice (e.g., voters in localities sticking with the PRI might do so because of the anticipated costs of defecting). Consistent with Mexican survey research, we assume in the model developed in the next section that the majority of voters disliked the PRI, and seek to explain why they would nonetheless support it.

A simple strategic model of punishment

We begin modeling the pivotal voter in each locality, who has the first move (see figure 1). The pivotal voter may choose the local PRI or the opposition to govern locally. The PRI moves second and may decide to punish the locality. For simplicity, we think of the punishment as a decision by the federal government to withhold the funds necessary to run the government from the locality.¹² The game results in four possible outcomes, which we label A - D.

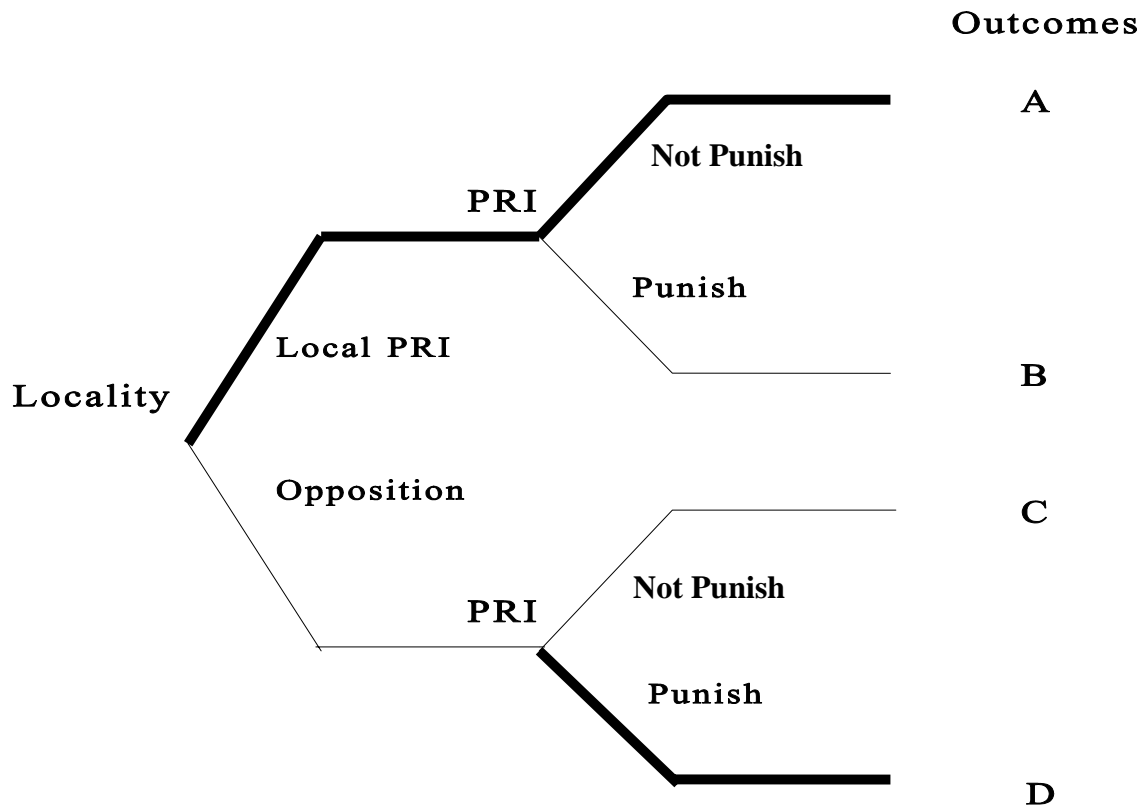


Figure 1

Consider the preferences of local voters who, *ceteris paribus*, prefer to get rid of the PRI, but who also want to receive federal funding. These voters most prefer to be governed by the opposition and not to be punished by the PRI with fewer funds (C). Second they prefer to be governed by the local PRI without punishment (A). Third, they next prefer to be governed by the opposition without funds (D). Finally, they least prefer to be governed by the local PRI and being punished with less funds (B). This preference ordering implies that an opposition government without funds is not as valuable as a PRI government with funds. Hence, the full preference ordering for the locality is: $C \succ A \succ D \succ B$

The PRI, in contrast, first prefers that the locality be governed by the local PRI and not punish it with less funds. The local PRI might use the funds to help the national party at election

time (A).¹³ It next prefers that the local PRI govern without funds (B). Thus, we assume that the PRI prefers to finance its supporters than to punish them. Implicit in this assumption is the notion that, lacking strong ideological attachments to the ruling party, voter support for the PRI is conditional on receiving some form of reward, even if small. At election time the PRI always distributed money, even in the era of non- competitive elections, and that funds were distributed to loyal followers.¹⁴ Third, the PRI prefers the opposition to govern without funds (D). And last on the PRI's list is that the opposition govern the locality with funds, which it uses against the PRI (C). The full preference ordering for the PRI is: $A \succ B \succ D \succ C$

We solve the game through subgame perfection by working backward through the tree: Given its preferences, the PRI provides funds to localities that elect the local PRI and punishes those that elect the opposition. Working back a step and taking the subsequent PRI's behavior as known and given, we have the locality's choice: because it prefers A to D, it will choose to elect the local PRI. We represent the equilibrium path by the heavy line in figure 1 from the first node on the center left: The locality chooses to elect the local PRI representatives and the center rewards it with funds.

The model shows that the hegemon's credible threat of punishment makes it too costly for the locality to elect the opposition. Because the PRI punishes localities by withdrawing funds, it forces the locality to choose between electing the opposition without funds and the local PRI with funds. Given this choice, the pivotal voter in the locality prefers the local PRI.

The implications for government spending of our deterrence game differ from models of vote buying, such as Dixit and Londregan (1996) and Lindbeck and Weibull (1987). Formulated for competitive elections, these models hold that incumbents should not waste resources in core

constituencies, since these voters will support the regime regardless of the transfer. Nor should incumbents invest in opposition supporters who are not likely to change their minds. Incumbents should rather focus on “swing” constituencies, namely, opposition voters who can be bought off with transfers.

In our game, the hegemonic PRI seeks to maintain its long-term position, and to do this, it focuses on *detering localities from defecting* to the opposition. Our empirical predictions are, first, that the PRI should punish localities that defect, even those that do so by small margins; doing otherwise would create perverse incentives, namely to reward defection. Second, since the PRI wants to deter exit, we expect it to reward more its own municipalities that can more credibly threaten to exit, namely those won by narrower margins. In contrast to the swing voter models of vote-buying cited above, we predict a differential impact for vote margins, depending on which party wins the election.

Implications of the game for Mexico

For the model’s payoff structure to make sense, three conditions must be met: 1) localities should be highly dependent on federal transfers; 2) information about the game structure should be common knowledge; and 3) ideological attachments to the opposition should be weak.

Municipalities in Mexico depend heavily on transfers. The lion’s share of municipal revenue comes from federal transfers. By financing local PRI governments and punishing opposition ones, the PRI can seriously disrupt a local opposition government’s ability to provide basic services. Overall, the average dependence of municipalities on federal revenue sharing

transfers was 70% in 1995.¹⁵ The difference in dependence from the center by partisan identity is, however, quite striking: while PRI and the PRD municipal governments depended on around 71 percent, municipalities governed by the PAN received only 58.6% of their budget from revenue sharing. This difference of means is statistically significant.

PAN municipalities depended less on the center because they were able to collect more taxes. We do not investigate revenue collection effort here. We note, however, that success in collecting local taxes is only partly correlated with income. Our data show that the PAN is significantly more effective collecting taxes *at all* levels of development, while the opposite is true for the PRI. This observation reflects the fact that tax collection effort is implicitly endogenous to the political game that we study: if opposition governments want to be effective so they can survive, the punishment regime compels them to collect more taxes.

Second, the game assumes that voters understand the game. In reality, we do not need voters to know the whole mechanics of the punishment regime -although many might, because opposition parties, and particularly the PAN, bitterly complained about punishment.¹⁶ For the purposes of the model, all that we require is that voters observe that when the opposition wins, it does a poor job at handling key issues that are relevant to voters in local elections;¹⁷ namely, that the streets are in worse shape; garbage is no longer collected; the local government imposes new taxes –and less patronage is distributed by the municipality. The PRI's system forces the opposition to govern with less money and to collect more taxes, an unpopular combination. Indeed, local opposition governments had much lower reelection rates than the PRI. Between 1993 and 1995 the PRI won the election in municipalities where it previously governed 75% of

the time; the PAN reelection rate was 35%, while the PRD's was 41% (both are significantly different from the PRI in a test of means).¹⁸

The conventional explanation to the opposition's failure to get reelected was incompetence due to lack of experience.¹⁹ Our approach suggests a different interpretation: by design, the punishment regime implies that voters judging local governments on the basis of delivered services and patronage will view the opposition as less competent. But our model shows that this conclusion is a consequence of the PRI's punishment regime and the opposition's lack of budgetary resources to deliver services.

Third, our model presupposes that partisan preferences for the opposition are not intense enough among most local voters so as to outweigh the cost of punishment. This assumption is consistent with findings in the public opinion literature that show, on the one hand, that Mexican voters are not very issue or ideologically oriented, and on the other, that partisan loyalties to the opposition were relatively weak (Poiré, 1999). Ideological orientations and partisan loyalties nonetheless enter our model when voters in a given locality to prefer D over A – that is, when localities are likely to embrace the opposition despite the PRI's punishment. The model suggests that voters who are ideologically farthest from the PRI will be most tempted to defect. Historically in Mexico, the PAN was farthest from the PRI, although that distance might have been reduced as the PRI became more associated with neoliberal reforms during the 1990s.²⁰ The PRD, in contrast, emerged from a party split of leaders ideologically committed to the PRI's original social agenda. In our approach, the larger ideological distance of the PAN from the PRI than the PRD from the PRI implies that the penalty required to prevent PAN voters from defecting is larger than the one necessary for PRD voters.

We depart from the public opinion literature, however, in stressing the risks of withdrawal of funds more than risks stemming from voter uncertainty about the opposition. The argument stressing uncertainty as the main source of risk can only distinguish among voter types by looking at idiosyncratic propensities toward risk: PRI supporters do not like uncertainty, whereas opposition voters mind it less. Our approach instead derives propensities toward risk from objective socioeconomic conditions. We expect poorer voters to be more risk adverse, and thus remain loyal to the PRI because, when threatened to be withdrawn from the party's spoils system, they stand more to lose and possess no other exist options (see below).

A second implication follows from the standard assumption in the literature on distributive politics that the weight attached to government transfers is a decreasing function of income (Dixit and Londregan, 1996). This means that, *ceteris paribus*, deterring poorer voters from defecting requires a smaller punishment than richer ones. This assumption implies that the PRD, which is strongest in poorer localities, will have a harder time convincing voters to defect: even a small punishment can deter them. Below we discuss the unraveling of the hegemonic equilibrium or how socioeconomic changes and the internationalization of the economy shapes valuations of D and A.

3. Discretionary funds and the PRI's punishment regime

To test our model's conclusions about the PRI's punishment regime, we investigate the PRI's use of discretionary funds; that is, those funds most easily withdrawn from defecting localities.

Given the centralization of taxation, revenue sharing funds allocated to states and municipalities were the most important source of funds for these subnational governments. Although revenue sharing from the federal to the state level follows relatively strict formulas, state governors exercise great discretion in the allocation of funds to their municipalities. Revenue sharing funds received by municipalities are thus particularly attractive for testing our model.

The literature on subnational politics in Mexico has shown through qualitative analyses that public funds were often used for political purposes.²¹ Statistical analysis have also been pursued, particularly as subnational data became more readily available.²² However, both the qualitative and the quantitative literature make contradictory claims, including the notion that funds were allocated to loyal PRI members, that they were targeted to opposition bastions in order to buy back political support, or that the PRI focused on competitive swing districts.

Our model provides specific theoretical reasons to expect a withdrawal of funds from localities choosing to vote the PRI out of office. We model the determinants of the allocation of 1995 revenue sharing funds among 1840 of the 2417 municipalities in Mexico.²³ We concentrate on the municipal level because the punishment regime was most compelling in that arena, and it is also at that level that the decision of voters to choose the opposition was most heroic.²⁴

We focus the test in the year after the peso crisis of December 1994. We use one year in order to make the results comparable to the quasi-experimental propensity score matching developed below. Consonant with the logic of the model outlined in the last section, before 1995 the deterrence of opposition entry was very effective, so that outcome A was an overwhelmingly common event. Before 1995, the PAN and the PRD governed only around 150 municipalities, while in that year the number jumped to 383. We do not examine subsequent years because after

1997, with the loss of the PRI's absolute majority in the federal legislature, the level of discretion in the allocation of funds from the center to the municipalities was dramatically reduced. However, we show that our findings are not driven by the year we selected for our cross-sectional analysis. The appendix presents results of a GLS pooled-time series analysis of allocation of revenues sharing funds from 1989 to 1994 where we obtain comparable results to the 1995 cross-sectional analysis.

The analysis excludes 429 municipalities in Oaxaca: those municipalities in that state elect their governments without political parties, selecting representative for the municipalities following traditional method of community norms ("usos y costumbres"). The results of the analysis remain unchanged if we include these municipalities and add a dummy to control for them. We also excluded 170 municipalities for which data on the dependent variable was unavailable.²⁵ Revenue sharing is measured in per capita terms as the natural logarithm, in order to obtain a better fit of the model.

Our deterrence game differs from swing voter models in two fundamental ways: first, our theory predicts that the PRI should allocate more resources to its own municipalities, while swing voter models predict no resources to core constituencies. Second, in swing voter models there is no punishment. Swing voter models predict more resources allocated to localities won by narrower margins, regardless of which party wins. Our theory predicts instead a differential impact for vote margins, depending on which party wins the municipality. If the opposition wins, we should observe punishment regardless of margins of victory. If the PRI wins, we should observe more funds being targeted to municipalities that are won by narrower margins and that can more credibly threatened to exit.

Our core estimation includes as independent variables dummies for whether the municipality is governed by the PAN (gopan), the PRD (gopr).²⁶ The central implication of our model is that gobpan and gobprd should have a negative coefficient. We also include opposition margins of victory (opomargin) which are margins of victory when either the PAN or the PRD wins the municipality. Since our model implies that the PRI should punish opposition municipalities regardless of its margin of victory, we do not expect to find a statistically significant coefficient for this variable once controlling for gopan and gopr. To avoid endogeneity problems, we employ margins of victory of the preceding municipal elections. We also include a dummy variable for the states in which the PAN controlled the state government (pan governor). Although formulas determine the allocation of funds to the states, the PAN has argued since 1989 that the formulas are biased against the states it governs. Hence, if the PAN claims are correct, we expect a negative sign on this variable. Since we do not expect politicians to differ in their motivations by partisanship, we expect PAN governors to *reward* with more funds municipalities controlled by their own party. To test for this hypothesis, we interact pan governor with gobpan, expecting a positive coefficient.

To test for whether the PRI treated differently its own loyal municipalities depending on its margins of victory, we include a second model that adds a dummy variable indicating whether the municipality is governed by the PRI (gopri). The model also includes the PRI's margin of victory (PRImargin). We expect to find a negative and statistically significant coefficient for PRImargin, meaning that the PRI should allocate more resources to its own municipalities won by narrow margins, since they can more credibly threaten to exit. As in Model I, we employ margins of victory in the preceding municipal election to avoid endogeneity problems.

To test between the hypothesis that the PRI allocates resources to swing voters and our theory, we provide a third regression with the margin of victory (margin of victory) as an independent variable. Unlike models I and II, margins of victory in Model III do not distinguish for whether the PRI or the opposition won the municipality –i.e., margins of victory are for all the municipalities. If the swing voter model correctly explained our data, we should observe a negative and statistically significant coefficient for margin of victory in Model III.

All three models control for levels of development through the Conapo marginality index, which derives from a factor analysis of a series of municipal level socioeconomic indicators as reported by INEGI in its 1995 vote count.²⁷ Higher values for the Conapo index indicate greater poverty in the municipality. We expect to find more funds allocated to richer states. This expectation is grounded on the origin of the revenue sharing system formulas, which were meant to compensate states for their tax collection capacity on a derivation based. Richer localities collect more taxes and should receive more funds. We expect to find a negative coefficient, meaning that more funds should be allocated to richer municipalities (negative because Conapo is coded as marginality, not a level of development index). We also control for the per capita income of states (we use log per capita state GDP in 1995 pesos, as reported by INEGI).²⁸ Funds are distributed in two stages, with federal formulas allocating funds to states, and then governors allocating funds to municipalities. We therefore expect this variable to have a positive sign, reflecting that first stage allocation.

Table 1. Determinants of Revenue Sharing Allocation, Municipalities 1995
Dependent Variable: log Revenue Sharing per Capita (robust standard errors)

Independent variables	MODEL I	MODEL II	MODEL III
State GDP (log)	1.057*** (0.072)	0.987** (0.065)	1.0839*** (.0670)
Conapo 95	-0.076*** (.021)	-0.108** (0.001)	-0.10287 (.0222)
Gopan	-0.329*** (0.079)		
Gobprd	-0.226*** (0.091)		
pan governor	-0.119* (0.085)		
Pan gov * gopan	0.368*** (0.135)		
Gopri		0.026 (0.049)	
Margin of opposition victory	0.209 (0.379)		
Margin of PRI victory		-0.002** (0.0005)	
Margin of victory			0.6529*** (0.0750)
Constant	-3.21*** (0.528)	-2.70** (0.465)	-3..6594*** (0.5159)
	N = 1835 F= (7, 1829)=58.22 R-squared=0.22	N = 1835 F= (4,1830)=57.73 R-squared =0.24	N=1832 F(3, 1828)=144.531 R-squared =0.2365

***significant at the 99 percent level ** significant at the 95 percent level * significant at the 90 percent level

We report OLS estimates with heteroskedastic consistent errors in Table 1. All of our expectations are fulfilled. The results of model I show strong evidence for our theory. Governments from both PAN and PRD receive fewer funds than the PRI, which is the base category. As expected, the margins of opposition victory ($opomargin$) is not statistically significant, which supports our claim that the PRI punishes municipalities that defected to the opposition regardless of their margins of victory.

Model II shows that the PRI does distinguish its own municipalities according to its margins of victory. PRI_{margin} is negative and statistically significant, which means that the PRI invests more funds in its own municipalities that are won by smaller margins of victory. This is consistent with our claim that the PRI strategically allocates more funds to loyal municipalities that credibly threatened to exit.

Model III allows us to reject the alternative hypothesis that the PRI employs revenue sharing to attract the support of swing voters regardless of which party wins the municipality. If the swing voter logic were correct, the sign of the coefficient for margin of victory should be negative, meaning that municipalities won by narrower margins should receive more funds regardless of which party won the municipality. However, margin of victory in model III is positive and statistically significant. Because the margin of victory is very highly correlated with the vote share of the PRI, the specification in Model III shows more funds devoted to places where the PRI is strong and the opposition is weak. Model II serves to disentangle how the PRI treats the municipalities where it is strong. This model reveals that, consistent with our argument, the PRI allocates more funds to its loyal municipalities that are won by narrower margins. Per our model's hypothesis that the PRI punishes localities that elect the opposition, and the amount

of resources withdrawn from a municipality that defects to the PAN or the PRD is substantial. Our estimates indicate that, on average, municipalities choosing the PRI receive \$132 pesos in per capita terms. Municipalities electing the PAN or the PRD would have \$95 and \$106, respectively.²⁹

In sum, the evidence suggests that a punishment regime exists. Our estimates imply that defecting municipalities receive around one fourth less resources. This difference can have substantial effects on the capacity of mayors to govern, particularly in medium or large cities with mounting demands for public service provision. The political manipulation of revenue sharing is also clear when the PAN controls the governorship: PAN governors systematically reward PAN municipalities with more funds (they receive on average \$122 pesos, similar to PRI municipalities). This result suggests that there is a big value for the opposition in capturing a state governorship, since it can use the discretionary allocation of revenue shares to reward its own municipalities.³⁰

Consistent with the revenue sharing formulas, richer states and municipalities also receive more funds.³¹ The PAN tends to win more often in these types of localities and yet, *ceteris paribus*, it receives fewer funds: after controlling for state per capita income, we find that states governed by the PAN are punished.

In their state level analysis of PRONASOL, Molinar and Weldon (1994) conclude that funds were mostly employed to “buy back opposition voters”, specifically those who defected to the PRD, a strategy that is consistent with swing voter models of distributive politics. In his analysis of PRONASOL allocations in municipalities in Jalisco and Michoacán, Hiskey (1999) claims instead that PRONASOL’s funds were disproportionately targeted to places where the PRI

received more votes. Hiskey (1999) only finds evidence that the PRI withdrew funds from municipalities governed by the PRD in the state of Michoacán and not from municipalities governed by the PAN in the state of Jalisco, and he concludes that the program was motivated by a “reward the loyal municipalities” strategy where more funds go to places where the PRI wins with more votes.

Our findings are different from these works. Unlike Molinar and Weldon (1994), our results reveal that the PRI punishes municipalities that defect to either the PRD or the PAN. Punishment takes place regardless of margin of victory, which is inconsistent with the “buying-back” logic. Furthermore, we find that fewer funds are allocated to municipalities that the PRI wins by large margins, in contrast to Hiskey’s (1999) “reward the loyal strategy.” Our results, instead, support our claim that resources get allocated according to the logic of entry-deterrence where the PRI punishes municipalities that defect the opposition and allocates more funds to its own loyal places, primordially those that can more credibly threat to exist.

Selection bias is a potential problem with these estimations. Opposition municipalities might receive fewer funds for reasons unrelated to punishment -- for example, due to their wealth, and a series of omitted variables that are not included in the estimation. The approach we follow to deal with possible selection biases is to use a non-parametric, quasi experiment approach using propensity score matching (Imai, 2003; Rosenbaum and Rubin, 1993), where the propensity is the probability that a municipality is governed by the PRI. This technique removes the linear assumptions of parametric tests and instead constructs something akin to an experiment in which comparable cases are matched.³²

Propensity score matching deals with selection bias because this method analyzes only cases that are clearly comparable (i.e. municipalities that would have the same probability to vote for an opposition party). Although selection effects might bias an entire dataset, the quasi-experiment keeps in the analysis only those cases where one can claim no selection effects are at work. Using a set of randomly selected cases, we can test for a significant difference in the amount of money municipalities in the treatment group (i.e. the ones voting for an opposition party) receives against those in the control group (i.e. the ones still voting for the PRI).

One of the advantages of the quasi-experiment approach is that it is both simple and transparent. To implement this test, we first perform a probit estimation to create a “propensity score”; namely, the probability that a party other than the PRI governs a given municipality.³³ The treatment variable in this quasi-experiment is whether the majority votes for the opposition. In the dataset 383 municipalities defected from the PRI to either the PAN or the PRD. We estimated the propensity score as a function of the Conapo marginality index for 1990, which reflects the level of development of the municipality; the illiteracy rate, to proxy for the level of political engagement and information; the degree to which a municipality is rural (defined as the percent of localities in the municipality under 5000 inhabitants); and the economic environment of the municipality, as reflected by the state per capita GDP and its growth rate in 1995. We use this set of variables for two reasons: first, these variables are commonly associated with modernization; and second, there is a wide consensus among Mexican scholars that modernization has been a major reason for the erosion of PRI electoral support (see Klesner, 2005).³⁴

The propensity scores of the unmatched dataset (that is, of all the Mexican municipalities) are presented in Figure 2. The figure shows a kernel density plot; that is, a smoothed histogram of the propensity scores, according to the identity of the municipal government. The scale in the horizontal axis shows the probability of voting for an opposition party, which is almost always less than 0.5. The figure clearly indicates that the PAN and PRD governed municipalities frequently have higher propensity scores than the PRI governed ones. This is indicated by the shift of the line describing opposition municipalities to the right of the PRI governed ones. The graph shows that at each propensity score, some municipalities voted for the PRI and some for the opposition. This is the feature that allows making comparisons without a selection bias.

We thus need to match municipalities in order to eliminate from the analysis municipalities that have nothing in common, concentrating on a dataset where one can claim a random selection of treated and control groups. We construct matches based on similar propensity scores, comparing the amount of funds transferred to a municipality voting for the opposition with the funds received by one voting for the PRI. The quasi experiment then simply compares the difference in revenue sharing.³⁵

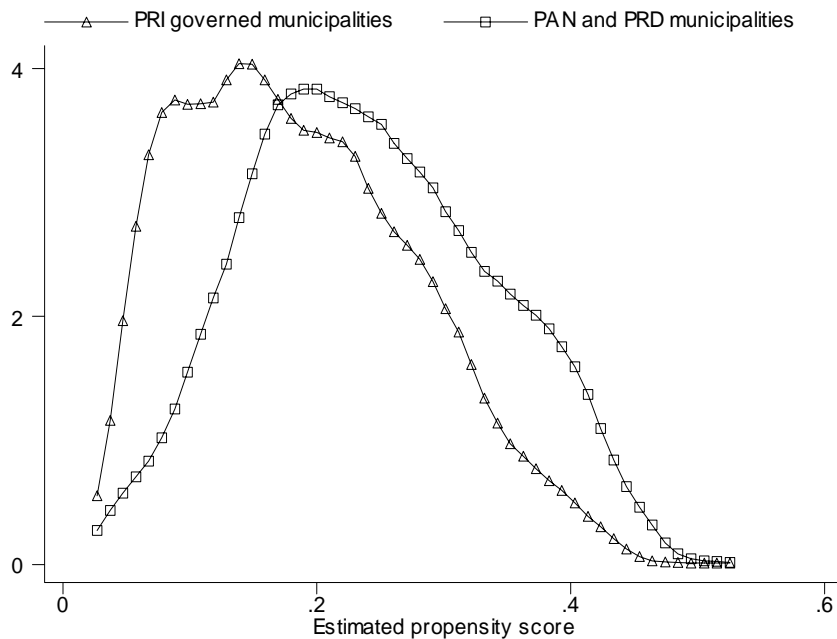


Figure 2

The data in figure 2 can be matched in several ways, but all involve the construction of “comparable” cases: a “radius match” that compares municipalities within a specified radius around the propensity score;³⁶ “stratification” that puts the cases into groups (in this case five groups);³⁷ the “nearest neighbor” method that matches a case with the closest match with a similar propensity score but a different treatment;³⁸ and the “kernel” method, which calculates a density function like the one in figure 2.³⁹

Table 2 calculates the effect of the punishment regime using the so-called average treatment on the treated (ATT) effect, according to each of the three matching criteria. The first column shows the number of cases receiving the treatment, namely voting for a party different from the PRI. The second column shows the number of municipalities that are matched to this treatment group, which varies according with the matching method. The third column calculates ATT, while the fourth provides the standard error of the test of means, and the final column

provides the t statistic. Except for the nearest neighbor matching, all differences are statistically significant at the 99 percent level.

Table 2. Evidence of the Punishment Regime from Matching

<i>Match Method</i>	<i>Treated</i>	<i>Control</i>	<i>ATT</i>	<i>Error</i>	<i>t statistic</i>
Radius	378	1522	-39.253	9.561	-4.105
Stratification	378	1989	-25.334	9.007	-2.813
Nearest neighbor	378	293	-18.44	11.63	-1.586
Kernel	378	1522	-31.213	10.579	-2.95

Note: for Kernel and stratification methods, bootstrapped standard errors are reported.

The quasi experimental estimation suggests that the effect in terms of per capita revenue sharing funds of the punishment regime is always negative, lying somewhere between 18 and 39 pesos per capita less funds for to the opposition municipalities. This magnitude is quite similar to that found in the OLS estimation. Comparing cases without matching reveals that the average of revenue sharing funds is 179 in PRI governed municipalities vs. 131 pesos in opposition-controlled ones. Hence an uncontrolled comparison would bias results upwards suggesting a larger punishment than what there is. The quasi-experimental increases our confidence about the results, suggesting that as PRI hegemony was beginning to unravel, the party reacted by withdrawing funds from opposition voting municipalities.

4. Conclusions

The survival of large numbers of authoritarian regimes raises the question of why citizens support a system in which they disapprove. We argued that coercion alone is insufficient to ensure authoritarian survival. Instead, we propose that hegemony is sustained by a credible local punishment regime that withdraws financial resources from defectors. We applied our approach to the question of how Mexico's hegemonic party, the PRI, sought to retain power by deterring voter exit. Our conclusions relate to the comparative literature on one party systems and the political economy of Mexico.

We sought to sharpen our understanding of why some authoritarian systems seem to be so resilient to economic change. As an empirical matter, Geddes (1999, p.11) shows that one-party dominant regimes tend to be resilient to change because they are less vulnerable to elite splitting when challenged. Our argument builds on Geddes, showing that self-enforcing hegemony crucially depends on the construction of citizen support. In the hegemonic equilibrium, opposition-preferring voters nonetheless support the PRI because the hegemonic party forces voters to accept a tragic choice: vote for the party and retain essential services or vote for the opposition and risk having funds for these services cut off. Acting alone, voters in one locality can only make themselves worse off by defecting to the opposition. In this account, hegemony crucially depends on the interaction between elites and citizens: party hegemony requires that citizens choose, if reluctantly, to support the party.

Our account also identifies the mechanism underlying Geddes's finding that one-party dominant regimes are relatively resilient to poor economic conditions. As long as localities

calculate that there is a significant probability that the incumbent will retain power, they have strong incentives to refrain from defecting. A tipping point occurs only when the overwhelming majority of opposition-leaning localities can coordinate.

We also address two pivotal questions about elections in one-party dominant regimes: why do elections matter despite being relatively uncontested; and why do hegemonic parties devote a major portion of social resources to organizing and managing frequent elections? We show that elections, in combination with centralized control of state resources, are central to maintaining hegemony. By providing a clear-cut mechanism for screening supporters from opponents, elections allow party officials to exercise a credible threat over those who might exit. The credible threat provides localities with an incentive to remain within the system. Despite being lopsided, elections are critical for maintaining the political control of the hegemonic equilibrium (see Magaloni, forthcoming).

Our analytic narrative provides the mechanism that accounts for concentration of political power in a single party despite competitive, multiparty elections without relying solely on fraud or force. It is potentially applicable to more democratic dominant party systems such as the LDP in Japan, the Christian Democrats in Italy, and the Congress Party in India. The approach may also have applications in Africa where, according to van de Walle (2001,6), “the dominant modal party system ... is emerging across much of the region.”

Our model fits well with the public opinion literature.⁴⁰ As noted above, retrospective economic evaluations play a small role in voting choices in Mexico, and voters are not very issue oriented (Domínguez and McCann 1996, Magaloni, 1999). Scholars believe that support for the PRI is accounted for by prospective calculations – Mexican voters supported the ruling party

because they thought the opposition would do an even poorer job (Domínguez and McCann, 1995; Magaloni, 1999). PRI voters also seem risk-averse (Cinta, 1999; Buendía, 1996; Morgenstern and Zechmeister, 2001).

Our account sheds light on the mechanisms behind these public opinion findings. First, the PRI's punishment regime deters voters regardless of circumstances: they have as much to lose by switching to the opposition during bad times as good ones. Second, the punishment regime shows that voters' prospective expectations about the opposition's relative incompetence are reasonable. Our approach suggests that voters evaluate opposition parties as less competent for two reasons. First, because these parties have no record in the national government, their promises lack credibility (Magaloni, 1999). Second, the punishment regime implies that the opposition has substantially fewer funds than the PRI to provide what citizens want most from their local governments, namely, repaired roads, electricity, sewage, water, among other public goods. They therefore appear less capable. Finally, opinion research demonstrates that PRI voters were risk-adverse. Our approach provides a rationale: defecting risks punishment, so opposition supporting voters must be more risk-acceptant than PRI supporters.

What set of circumstances might facilitates the unraveling of the self-enforcing hegemonic equilibrium? Elsewhere (Diaz-Cayeros, Magaloni and Weingast, 2003) we show how trade liberalization and remittances made it easier for local economies to pursue international options, liberating them from their strong dependence on state transfers coming from the central government. We also argue that global integration raised the opportunity cost for many local economies of remaining within the traditional PRI system.

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Appendix

The appendix presents results of a GLS random effects estimation of the allocation of per capita revenue sharing funds in the more than 2,400 municipalities from 1989 to 1994. One lag of the dependent variable (*lagparpc*) is used to control for serial correlation. The analysis adds a dummy for the municipalities in Oaxaca governed by customary law (community norms). We exclude municipalities for which data on the dependent variable was unavailable. Revenue sharing is measured in per capita terms as the natural logarithm, in order to obtain a better fit of the model. As independent variables, we use dummy variables for whether the municipality is governed by the PAN (*gopan*) or the PRD (*gopr*). We include opposition margins of victory (*opomargin*) which are margins of victory when either the PAN or the PRD won the municipality. To avoid endogeneity problems, we employ margins of victory in the preceding municipal election. We also include a dummy variable for the states in which the PAN controlled the state government (*pan governor*). We interact *pan governor* with *gopan*, to test if PAN governors rewarded their municipalities with more funds. We control for levels of development through the Conapo marginality index (*conapo 90*). We also control for local tax collection (*ltax*), which is measured in logarithmic terms. This variable is to test for whether governors reward municipalities that can collect more taxes with more revenue sharing funds. Results of the analysis are presented in table A1. It can be seen that the punishment variables (*gopan* and *gopr*) are of the expected sign and statistically significant.

Table A1. Determinants of Revenue Sharing Allocation, Municipalities 1989-1994
Dependent Variable: lparpc

Independent Variables	Coeff.	Std. Err
lag revenue sharing (log)	0.76	0.01
Own taxes (log)	0.04	0.00
Capital city	-0.11	0.05
conapo 90	0.00	0.01
goPAN	-0.08	0.04
goPRD	-0.07	0.03
PAN governor	-0.03	0.03
PAN gover*gobpan	-0.03	0.07
Opomargin	-0.07	0.10
community norms	-0.21	0.02
Constant	1.12	0.03
sigma_u	0.17828834	
sigma_e	0.36373953	
Rho	0.19371149	
Number of obs	9794	
Number of groups	2313	
R-sq: within	0.0574	
between	0.9124	
overall	0.7987	
Wald chi2(10)	21410.34	
Prob > chi2	0	
corr(u_i, X)	0	

Endnotes

¹ A lively literature studies different types of authoritarian regimes; see, e.g., Geddes (1999), Huntington (1968), Przeworski *et. al.* (2000), and Sartori (1976). Geddes's empirical work shows that one-party dominant systems survive on average for 24 years; military regimes for 8.5 years; and personal dictators for 15 years.

² The debt crisis triggered a dealignment process of loss of support, but it was extremely slow considering the depth and length of the recession, and only a handful of localities defected to the opposition. The Peso crisis of 1994 did cause a more profound reaction among the electorate, as many localities elected opposition governments in the local elections taking place after 1994. The PRI was not defeated until 1997 in Congressional elections and 2000 in the presidential race.

³ Together with Chile and Cuba, the Mexican PRI was the only authoritarian regime in Latin America that survived the so-called "lost decade."

⁴ The claims have often been contradictory. In the most thoroughly analyzed public expenditure program in Mexico, most scholars coincide in that PRONASOL was employed for "perpetuating the official party or state-party status of the PRI" (Collier, 1992). However, when it comes to providing systematic empirical evidence about the specific political logic of the program, scholars either restrain from offering any definitive conclusion. Bruhn (1996), for example, writes that "at the state-level of aggregation there are no significant bivariate relationships between PRONASOL allocation per capita and any of the independent variables, whether one looks at measures of partisan support (1988 PRI vote, 1988 Cardenas vote, and 1988 PAN vote) or economic variables that might plausibly influence allocations" (p. 262). Scholars have offered

very tentative conclusions derived from regressions carried out at the inappropriate level of analysis -state-level allocations, when PRONASOL funds were targeted to municipalities instead (Molinar and Weldon, 1994). When analysts have focused on municipal-level allocations, they have studied only a few states (Hiskey, 1999). A more comprehensive analysis of PRONASOL allocations is found in Diaz-Cayeros et. al. (2000).

⁵ Our approach shares some insights with recent work on state building in Russia. For accounts of this process, see Solnick (1998), Treisman (1999), and Tsalik (2000).

⁶ In explaining the breakdown of such system, Golden (2004) shows that internationalization, as represented by the 1991 Maastricht treaty, undermined the dominance of the Christian Democrats: the political realignment was primarily driven by social groups linked to small firms in the north and center which exported throughout Europe. In a longer piece reporting our research we draw implications from the model and make an empirical test of analogous international effects through trade, migration and remittances for the case of Mexico.

⁷ In particular, his analysis of data from 1934 to 1969 reveals that states whose politicians tend to be poorly represented in federal government personnel or ruled by governors who had no experience in federal bureaucratic posts, tended to receive less funds.

⁸ For a more recent analysis of federal public investment, which fails to reach conclusive findings, see Morgenstern, 1997.

⁹ Although existing literature on voting behavior in Mexico is mostly about national elections, we believe that many of its finding are useful for understanding voting choices at the local level as well.

¹⁰ On the Mexican political system, see, among many others, Smith (1979); Camp (1995); the articles in the edited volume by Cornelius, Gentleman and Smith (1989); Weldon (1997); and González Casanova (1965).

¹¹ For early accounts stressing the role of state and municipal politics, see Scott (1959); and Brandenburg (1955 and 1964).

¹² Given the centralization of tax authority in the hands of the national government, local sources of funds are more expensive to collect than federal handouts, so withheld federal funds cannot be fully substituted with own sources, such as local taxation (see Diaz-Cayeros, 1997).

¹³ We argue that the PRI prefers to reward its supporters than not to reward them. Implicit in this argument is the notion that the PRI is an electoral machine composed of a multiplicity of politicians. For the coalition to hold together, the national PRI needs to provide its local politicians with some resources. Also implicit in this argument is the notion that voters need to receive some benefits to continue to support the PRI (see Magaloni, forthcoming).

¹⁴ We assume that either party, when elected, uses the funds in part for partisan purposes to reward local party constituents and help solidify their support for the party at the national level. Parties may well provide constituency benefits in different ways, including at one extreme the provision of socially desirable public goods all the way to outright appropriation of rents.

¹⁵ Calculated with data from INEGI, Sistema Nacional de Información Municipal, Bases de Datos (SIMBAD) at www.inegi.gov.mx. Our calculations correct for double accounting of transfers for third parties and do not include debt finance.

¹⁶ For example, on taking office in 1989, the first demand of the first opposition governor in Mexico, Ernesto Ruffo of Baja California, was to obtain transparent information concerning the

revenue sharing funds allocated to his state, and upon assuming office, he compelled the president not to punish his state with fewer funds (Campuzano, 1995).

¹⁷ To our knowledge, there are almost no surveys of municipal elections. *Reforma* newspaper has recently begun to collect surveys for municipal races. In a survey of municipal elections in the Estado de México, voters selected public services as the most important problem of the municipality, above employment, inflation and even crime (Jorge Padilla, personal communication).

¹⁸ Own calculations based on data from CIDAC, Centro de Investigación para el Desarrollo, A.C., www.cidac.org.

¹⁹ See, for example, essays in Cabrero (1998); Ward (1995); Rodriguez (1995); and Rodriguez and Ward (1998).

²⁰ Although in the nineties, the president and the PAN grew increasingly less distant on policy positions, the president's policy positions did not match the policy positions of the overwhelming majority of local PRI politicians who remained on the left of the ideological spectrum. Thus, the assumption that PAN is farther from the PRI than PRD seems appropriate for most local elections.

²¹ The qualitative literature is rather substantial, but good places to start are Rodríguez and Ward (1995) Cabrero (1998) and Cornelius, Eisenstadt and Hindley (1999), and the references therein. Some classic studies are Cornelius (1975) and Fagen and Tuohy (1972).

²² See Molinar and Weldon (1994), Bruhn (1996 and 1999), Diaz-Cayeros et. al. (2000), Hiskey (1999 and 2003), Cleary (2003 and 2004), Beer (2003), and Hiskey and Canache (2005).

²³ We have also tested our model with Federal Public Investment data at the state level. The overwhelming majority of the public works in the country were financed by those funds. We found a systematic withdrawal of funds for states governed by the opposition in 1995.

²⁴ Current scholarship on Mexico has established quite clearly the link between democratization at the national level and local political processes. See the seminal contributions by Fox (1994); Rodríguez and Ward (1995), Rodríguez (1997), Cornelius (1999) and Bruhn (1999). For more recent accounts of local politics and democratization see Lawson (2000), Lujambio (2000), Hiskey (2003), Mizrahi (2003), Cleary (2003 and 2004), Beer (2003); Aranda Vollmer (2004), Ochoa Reza (2004), Shirk (2004), Hiskey and Canache (2005); and Hiskey and Bowler (2005).

²⁵ Data was coded from INEGI's Sistema de Información Municipal, Bases de Datos (SIMBAD). The missing data on the dependent variable is biased towards poorer municipalities. It includes the cases where INEGI does report information, but the information is all zeros, which suggests this is really missing data.

²⁶ Coded from the CIDAC dataset, see footnote 16.

²⁷ Sociological variables include: illiteracy, the percentage of the population receiving less than two minimum wages, percentage of households without basic services such as water, electricity and sewage. The *Conteo de Poblacion y Vivienda* is not a census, but a fairly small questionnaire carried out by INEGI in mid decade.

²⁸ Banco de Información Económica (BIE) at www.inegi.gob.mx.

²⁹ Given the wide variation in municipal finances across municipalities, could this difference lie within the range of error of the estimates? When we calculate 95% confidence interval for the estimates of the predicted funds transferred to PRI municipalities, as compared to those governed

by the opposition, there is no overlap between those intervals. This implies that, even allowing for statistical error in the estimates, we can be quite confident of the differential amounts of funds distributed to PRI and opposition.

³⁰ An implication of this result for the post-PRI era is that the PRI has plenty of resources at its disposal to defend its electoral coalition in municipal elections because it still controls the overwhelming majority of governorships.

³¹ We also ran an unreported model with the “dependency ratio”, indicating the extent to which the municipality depended on federal transfers. Those models did not modify our basic findings. The dependency ratio model slightly increased the R2 in the models. However, as we have noted, the variable is clearly endogenous to the political game we have described, in that PRI governments are less successful at collecting taxes than PAN governments *at all* levels of development. Since we lack appropriate instrumental variables to model tax collection effort, we do not run a two-stage model to correct for such endogeneity. Results of the regression with the dependency ratio are available upon request.

³² Another possible method, which assumes linearity, would have involved a Heckman selection model that first determines whether a municipality will fall under the PRI or the opposition, and then this probability is used to test whether there is a punishment regime.

³³ The estimation was carried out using the PSCORE program for STATA developed by Becker and Ichino (2002).

³⁴ Elsewhere (Diaz-Cayeros, Magaloni and Weingast, 2003) we show that the probability of defecting to the opposition also depends quite crucially on variables related to the

internationalization of the economy. For the purpose of the calculation of the propensity score we chose, however, a much simpler socioeconomic bare bones model.

³⁵ Matching thus relies on a “common support”, meaning that we match municipalities whose propensity score indicates the same probability of defecting to the opposition, but while one is governed by the PRI (the control group) the other one is not (the treated group).

³⁶ The ATT is computed by averaging over the unit-level treatment effects of the treated where the control(s) matched to a treated observation are those observations in the control group that lie within a 0.1 radius (Becker and Ichino, 2002).

³⁷ ATT is computed using a weighted (by the number of treated) average of the block-specific treatment effects. In turn these are computed as the difference in average outcomes of treated and controls within the same block for which pscore has found all the control variables to be balanced (Becker and Ichino, 2002).

³⁸ The ATT is computed by averaging over the unit-level treatment effects of the treated where the control(s) matched to a treated observation is/are those observations in the control group that have the closest propensity score; if there are multiple nearest neighbors, the average outcome of those controls is used (Becker and Ichino, 2002).

³⁹ The ATT is computed averaging over the unit-level treatment effects of the treated where the control unit outcome matched to a treated observation is obtained as kernel-weighted average of control unit outcomes (Becker and Ichino, 2002).

⁴⁰ Although existing literature on voting behavior in Mexico is mostly about national elections, we believe that many of its findings are useful for understanding voting choices at the local level as well.

