The Political Economy of Municipal Transfers: Evidence from Mexico

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How do fiscal institutions, partisanship, and governance affect federal transfers to municipalities? We address this question using a novel research design and data set for Mexico. We compare the state-level obligations for federal transfers to municipalities with the distribution of these funds as reported by municipalities. This strategy allows us to know whether state-level formulas are binding, whether there are partisan skews in the formula, and how and why governors reallocate funds. We find that state-level fiscal institutions are quite binding; even so, deviations from the formula total approximately US$300–500 million annually. Whereas Partido Revolucionario Institucional governors appear to reallocate to municipalities when they are governed by their co-partisans, Partido Acción Nacional and Partido de la Revolución Democrática governors appear to reallocate funds to municipalities for equity, stabilization, and disasters (with no detectable partisan bias).

There is considerable research about the political economy of subnational transfers. Whereas much of the first-generation literature (e.g., Musgrave 1959; Oates 1972) emphasized governance motivations for intergovernmental transfers—notably equity and efficiency—much of the more recent literature has highlighted the political and institutional logic of transfers (e.g., Grossman 1994). This article helps bridge those two perspectives. Using a unique data set with more than 10,000 observations from Mexico, we seek to identify how partisanship, fiscal rules or institutions, and governance influence the allocation of federal funds.[1] Our research design leverages the fact that since 2001 state governments have (voluntarily) reported to the federal finance ministry (*Hacienda*) the amounts they owe to each municipality based on their state-level formulas, while municipal governments have separately reported the amounts they receive from state governments to the national statistics agency (*Instituto Nacional de Estadística y Geografía*, *INEGI)*. Comparing the amounts due based on the state-level formulas with the actual distribution of funds allows us to see if there are systematic differences between resources promised by law and resources delivered by politicians, and to see if

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political-economy factors explain the differences. These are important questions in any polity, especially new democracies in which rules determine resource allocation.

We find that, nationally, approximately 96 percent of the transfers flow to the intended municipality in Mexico, surprising perhaps for a country with weak rule of law, widespread corruption, and an incomplete transition to democracy at the subnational level. Nevertheless, we also find that deviations from the formula are common and not trivial in magnitude: The net discrepancy between reported and actual allocations equaled some 3.1–5.7 billion pesos annually (roughly US$300–500 million) from 2002 to 2007, slightly less than the budget of the main health care program for the poor at that time, *IMSS-Oportunidades*, which covered 10 million people.

Using the difference between expected allocations from the formula and actual allocations as reported by municipalities, we then explore a series of well-established political economy hypotheses about the nature of the discrepancies. We find that deviations do not appear to be random; instead, governors seem to reallocate across municipalities based on partisan (not surprisingly) and governance (surprisingly) criteria. These findings are consistent with accusations that governors manipulate federal transfers for their own ends. Specifically, we find that the pro-Partido Revolucionario Institucional (PRI) bias in actual transfers is far more systematic than one would expect from the formulas, suggesting that PRI governors (and only PRI governors) disproportionately reallocate funds to co-partisans; that governors from all major parties (notably the Partido Acción Nacional (PAN) and Partido de la Revolución Democrática (PRD)) redirect funds to municipalities that initially receive less via the formula; that only PAN governors consistently redirect funds to poorer municipalities; and that governors from the PRD and PAN reallocate more to municipalities hit by natural disasters. Surprisingly, perhaps, reallocations for governance purposes are at least as large as those for partisan ends.

This article makes three contributions. First, we use a research design that allows us to know whether the fiscal rules have a partisan bias, to know whether politicians play by the rules, and to know whether deviations from the rules have a partisan skew and/or serve other purposes. This research design—in which we separate the political economy of transfers into rule design and rule implementation—allows us to show how the structure of intergovernmental transfers permits nondiscretionary funds to become partly discretionary. It is an important innovation because subnational transfers are used in most countries (Bird and Smart 2002), and because at least a fraction of such transfers follow specific formulas (Bergvall et al. 2006). While the formulas themselves are heavily scrutinized (Shah 2006), part of the value of this article is asking whether politicians actually follow the rules, something that is generally assumed, but rarely tested (an exception is Postali and Rocha 2009). Imagine the uproar it would cause if it were revealed that governors elsewhere, say in the United States, behaved

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similarly, reallocating roughly 4 percent of federal transfers to favored municipalities. This research design also offers a fairly generalizable and reliable way of separating the way in which three main variables—fiscal institutions, partisanship, and governance—influence resource allocation, particularly during the implementation phase. While some research suggests that these general variables have an independent impact on transfers, few scholars compare them simultaneously.[2]

Second, our findings are important, and not just for people who study Mexico. While the equity, efficiency, and social welfare concerns emphasized by first-generation fiscal federal scholars have largely fallen by the wayside, we find that the amounts diverted for policy concerns—proxied by equity, stabilization, and natural disasters—are substantively meaningful, suggesting that democracy is working in some dimensions, despite weak electoral incentives.

Third, we update and extend knowledge about subnational transfers in Mexico. While there is a small and well-regarded literature on fiscal transfers and decentralization in Mexico (Díaz-Cayeros 2006; Ibarra-Salazar and Mollick 2006, 2010), not much is known about how states distribute federal funds to municipalities. These revenue-sharing funds (called *participaciones*) have accounted for approximately 44 percent of municipal revenues since 2001. Besides filling in the political-economy details of their allocation, our results add to the literature on parties in Mexico, showing that different parties prioritize different outcomes even when operating in the same setting (Strøm 1990). Whereas the PAN and PRD seem to make governance a higher priority, the PRI emphasizes partisan rewards. Our results also highlight the growing strength of governors (Langston 2011; Grindle 2007).

In short, this article uses the case of Mexico to enhance our understanding of the interaction between legacy and contemporary politics and to bridge first- and second-generation fiscal federalism. It offers a research design that should be applicable wherever resources are supposed to follow rules, and one that could easily be applied to other related questions, such as the difference between budgets and outlays in countries like the United States or Canada.

Fiscal Federalism in Theory and Practice

Oates (2005), Boadway and Shah (2007), and Weingast (2008) provide relatively comprehensive overviews of the political economy of subnational transfers, giving us broad guidance with respect to the criteria that determine transfers. They divide the literature into two strands. The first-generation literature emphasized governance motivations for intergovernmental transfers. Building on the assumption that governments maximize some social-welfare function, Buchanan (1960), Musgrave (1959), and Oates (1972) provided a theoretical rationale for transfers. They showed that under a variety of conditions, intergovernmental transfers could

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enhance equity (e.g., by guaranteeing basic services for everyone), increase efficiency (e.g., by fostering spending in public goods with jurisdictional spillovers), and smooth spending (e.g., by responding to local revenue shocks). While first-generation models are not without empirical support, as federal transfers generally favor regions with less fiscal capacity (Shah 2006) and smooth revenue shocks (von Hagen 2007), they only explain a small fraction of the variance.

Because actual allocations only partially follow social-welfare prescriptions, the more recent literature has emphasized the political and institutional logic of transfers (Inman 1988). Second-generation models assume that politicians maximize their own welfare, not that of society. If politicians prioritize reelection/career advancement/wealth/power, social objectives will only be served when politician's private benefits are congruent with social-welfare criteria.[3] Because political parties usually structure political advancement, one near truism in the second-generation literature is that partisanship will influence the structure and level of transfers. Exactly how and when is a matter of some theoretical and empirical debate (summarized effectively in Calvo and Murillo 2009 and Cox 2009). The simplest hypothesis (and arguably most consistent finding, e.g., Grossman 1994; Veiga and Pinho 2007; Solé-Ollé and Sorribas-Navaro 2008; Arulampalam et al. 2009; Berry, Burden, and Howell 2010) is that partisans will oversupply their co-partisans; under most conditions, the payoffs from cooperating with members of your team exceed the payoffs from going it alone or cooperating with the opposition.[4]

Likewise, because politicians respond to incentives and constraints, institutional design also matters. Oversight models, in particular, emphasize the role of legislatures in determining or overseeing transfers. When legislators have the ability to initiate or block legislation and/or the ability to monitor and sanction deviations from the rules by executives, legislative bargaining models (e.g., Grossman 1994) suggest that governors would give additional revenue to municipalities that have more power in the legislature in return for support on other issues.

Still others have focused on fiscal rules, suggesting that transfers can partially be depoliticized by using formulas with ostensibly objective criteria, such as population, poverty, and so on (World Bank 2001), and/or by delegating transfer responsibilities to independent agencies. Khemani (2007), for example, uses data for India to show that transfers decided by independent agencies are less politicized than those decided by legislators, while Banful (2011) uses data from Ghana to show that formulas based on objective criteria can, nevertheless, reflect political goals, as politicians adjust the input variables and their weights.

Politics and Revenue Sharing in Mexico

Over the past several decades, Mexico has gradually transitioned from a (relatively) centralized single-party authoritarian state to a partially decentralized multiparty

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federal republic with competitive elections at most levels of government (for a summary, see Gonzalez 2010). There are thirty-one states, one federal district, and approximately 2,000 municipalities.[5] There are three main political parties: The PRI, a broad center-left party that dominated politics for most of the twentieth century, using varying degrees of repression; the PAN, a center-right party that reemerged as political force in the late 1980s, thanks in large part to the loosening of restrictions on political competition; and the PRD, a left-party that was founded in 1989, largely by an assortment of PRI dissidents, factions, and offshoots. Although vestiges of Mexico's authoritarian past (still) linger in some parts of the country, Mexico has held relatively free and fair elections for most offices since the late 1990s; non-PRI politicians have been able to compete and win numerous offices, including the presidency, which the PAN held from 2000 to 2006 and from 2006 to 2012.

Subnational politics has become increasingly competitive as well (especially state legislatures). The PRI retains the largest subnational presence, particularly at the gubernatorial level, arguably the electoral post that has seen the greatest increase in (relative) power since the onset of competitive elections. Presidents and governors are elected for six-year terms, while mayors and local congresses serve three-year terms.[6] The electoral connection between incumbents and their constituents is relatively weak for a variety of reasons, including bans on consecutive reelection for all posts and relatively centralized parties in terms of candidate selection and resources.

Mexico's revenue sharing system is largely the consequence of fiscal reforms during the 1980s and the aforementioned democratic developments, aptly described in Rodríguez (1997) and Díaz-Cayeros (2006). Nonconditional transfers emerged in the 1980s as states and, to a lesser extent, municipalities relinquished some taxing powers; in return subnational units were guaranteed a share of revenue, called "*participaciones*," from the federal income tax, the value-added tax, and most ordinary petroleum taxes. States were guaranteed not less than the amount they previously acquired with their own efforts, while municipalities were guaranteed 20 percent of the funds transferred to states (Díaz-Cayeros 2006). Because states benefit from federal transfers based on their collection from former state taxes, per capita transfers vary considerably between states in a regressive manner (Courchene and Díaz-Cayeros 2000). Between 2001 and 2008, municipalities received 1,120 pesos per capita on average (the standard deviation (SD) = 1,118 pesos per capita).

Participaciones are states' own revenue by law. This means that states can distribute this money (including funds for municipalities) based on their own criteria and that state legislatures alone bear responsibility for monitoring these resources, as the federal Constitution literally prevents the central government from auditing these funds. During the age of PRI hegemony, states created formulas to govern the distribution of nondiscretionary transfers, using a variety of ostensibly

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objective measures: population, previous *participaciones*, municipal tax collection and, in a few cases, poverty (these formulas can be found in the appendix available as supplementary data at *Publius* online). Many of the state laws are fairly straightforward with the input variables accounting entirely for the distribution of funds. In some cases, one finds additional conditioning variables (e.g., Mexico state can withhold funds if the municipality has not paid into the state pension fund). The inclusion of previous *participaciones* in the formulas means that most municipalities should receive at least a large fraction (if not at least as much) of what they received the previous year.[7] Note also that some state laws contain clauses (e.g., Michoacan and Tamaulipas) specifically prohibiting the manipulation of *participaciones*. Once municipalities receive the money, they are free to spend it as they please.

With the passage of time and the surge in political competition, new personalities have emerged and the partisan composition of municipalities and states has changed. We assume that today's governors have different priorities than their predecessors, giving them incentives to change how transfers are distributed. Altering the flow of funds can be done "formally" by rewriting the laws and/or "informally" by discretionally deviating from the formula. Specifically, and as Banful (2011) finds for Ghana, governors could seek to change the formulas (the input variables and their weights) to reflect their preferences, including partisan goals. In point of fact, eleven of Mexico's thirty-one states changed formulas between 2002 and 2007; most merely increased the weights given to stabilization variables (notably previous transfers) and/or marginally adjusted the weights given to pre-existing variables, such as population. We presume that these changes reflected political goals, but do not have enough leverage (in effect, insufficient cases relative to possible explanatory variables) to identify either the causes of these changes or their consequences with much precision. Instead, we focus on discretionary deviations from the formula, something that has generated considerable speculation, but not systematic study.

Accusations that state governments manipulated federal unconditional transfers were common during and before the period for which we have data. In 1993, for example, a local opposition congressman from Puebla accused the state government of "threatening and forcing Mayors to work with the PRI in order to receive their *participaciones*" (Ramirez 1993). Several years later, the city of Puebla accused the state governor of illegally retaining *participaciones* destined for PAN municipalities and of illegally channeling *participaciones* to a development program sponsored by the governor (Ramirez 2000). In 2002, the PAN's candidate for governor of Nuevo Leon claimed the sitting PRI administration had illegally diverted federal transfers to local PRI strongmen ("*caciques*") (García et al. 2002). During roughly the same period, a series of municipalities sued their state governments for inappropriately and opaquely allocating federal transfers, culminating in a unanimous Federal

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Supreme Court ruling in 2004, which declared that all states must establish a ''clear and reasonable'' basis for distributing *participaciones* among local governments; the Court also required states to pay interest for allocations retained for any reason (Avilés 2004a, b). Despite the Court's ruling, in 2008, federal legislators from opposition parties in Oaxaca accused the state government of diverting *participaciones* for pet projects and asked the Federal Supreme Auditor (ASF) to review all *participaciones* transferred by Oaxaca in 2007 (Sánchez 2008).

Based on the anecdotal evidence and conversations with people in *Hacienda*, we conjecture that reallocating was a viable and desirable way of channeling resources because reallocations are hard to detect, offer ongoing flexibility, allow for precise targeting, and, in all likelihood, allow governors essentially to bypass state legislatures. First, consider the way state budgets work. States publish their budgets in their official newspapers at the beginning of the year. These budgets report the share of total statewide *participaciones* revenue that each municipality can expect to receive (known as coefficients) and the expected peso equivalents, based on the state formula. Later—often much later—they publish in their state newspapers the *participaciones* they actually paid each trimester and the *participaciones* they paid for the entire year, along with updated municipal coefficients (the coefficients vary because some of the input variables—like municipal tax collection—are not fixed). Since *participaciones* are a fixed percentage of select federal taxes, which fluctuate during a year, paid *participaciones* can be quite different from budgeted ones. Given the dynamic nature of the input variables, keeping track of things is challenging, especially if governors underbudget and municipalities, legislators, and auditors focus on amounts (as opposed to shares).[8] Presumably, municipalities (and legislators alike) are most concerned with transfers being at least what was budgeted and what they stipulated in their own budgets. Once that budgeted *amount* is covered, the local government is basically receiving unbudgeted revenue. For the state budgets we analyzed carefully (e.g., Mexico State 2007) the amount that all but one municipality received in pesos exceeded the original amount in the state budget, generally by a substantial figure.

Second, consider the ways funds are dispersed. *Participaciones* flow directly from Hacienda to state treasurers, who then distribute them to municipalities. These funds do not pass through state Congresses. While state legislatures must approve the budget, their main role is ex post facto, as the state auditor reports to them. Historically, state governors have been sufficiently powerful to influence the election of the state auditor, reducing the probability of thorough investigations. Even when governors do not control that post indirectly, the auditing powers of state congresses are relatively weak. In Morelos and Mexico states, for example, the auditor lacks the legal authority to impose sanctions or collect fines.[9]

Finally, timing favors governors. While governors hold their post for six years, mayors and state legislators only serve three-year terms, and none can be

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immediately reelected. Because it generally takes two to three years for final fiscal data to be reported, the politicians affected are leaving and/or have left office by the time things could come to light. In other words, even if reallocations were detected, they might be hard to punish.

From the standpoint of governors, reallocations may even be preferred relative to changing the formula because they offer flexibility and precision in ways that the legal formulas do not. Because circumstances change, a governor might want to distribute funds one way one year and another way another year. Rewriting the law each year would impose considerable transaction costs, as state legislatures have become increasing fragmented (and, in many cases, more vocal). To wit: The effective number of parties in state legislatures increased from around one in the mid-1990s to around 2.5 by 2007, and the share of PRI-majority legislatures dropped from nearly all to just over one-third, according to data from the Centro de Investigación para el Desarrollo, A.C. (CIDAC). Finally, the formulas are blunt instruments, making them imprecise tools for increasing or decreasing resources to municipalities with desired (political) characteristics.

One important question is whether the reallocations we identify are consistent with legislative preferences. That is, rather than representing oversight failure, state legislatures might be aware of and, at least tacitly approve of, such reallocations, per the oversight models. The existing literature on state legislatures in Mexico, for example, specifically suggests that the degree of oversight will depend on the extent that non-PRI parties have captured seats in the state legislature and/or captured the governor's office (Beer 2000)—something we will try to detect.

Specific Hypotheses

Given the general political-economy literature and background on Mexico, we set out some more specific hypotheses. First, even though the formulas use objective criteria, they were largely written by the PRI. Because the formulas have been sticky and because the PRI has held a substantial share of seats in every state legislature, we might expect a pro-PRI bias in the formulas (H1). In other words, partisan skews in present-day outcomes would largely be a function of inherited constraints.

Second, because today's governors do not necessarily have the same priorities as their predecessors and because changing the formula is costly and imprecise, sitting governors have incentives to reallocate resources. With opportunistic politicians and weak oversight, we expect a disjuncture between reported allocations and formula allocations, and this disjuncture should be consistent with the preferences of politicians (notably governors), rather than random (H2).

Third, while the general literature would expect collusion with the state legislature, the particulars of the Mexican case are such that collusion is unlikely. While detecting tacit approval is never easy, we think that there are several

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observable implications of oversight models. Collusion or bargaining models suggest that governors with a minority in the state legislature would reallocate more to opposition parties because they have to make side-payments for legislative support. They would not reallocate to their party because the (opposition) majority could sanction them. The standard oversight model, by contrast, suggests that majority governments would be especially inclined to reallocate. That is, given that their party does the monitoring and sanctioning, governors have less to fear, especially if they reallocate to fellow partisans. Hence, we would view as evidence of legislative involvement (H3) any of the following: (H3A) majority governors reallocating more to co-partisans than minority governors; or (H3B) majority governors reallocating more overall; and/or (H3C) minority governors reallocating more to nonpartisans than co-partisans.

Fourth, because Mexico has strong parties, with relatively centralized resource and ballot control, partisanship ought to play a role in the reallocation of funds (H4). The external electoral rules are uniform across parties, but the internal rules for candidate selection and resource allocation vary across parties. We expect the PRI to be the most partisan because it is the most hierarchical (Langston 2011). Although partisan reallocation could come in a number of forms, we hone in on the general vertical alignment hypothesis because it is theoretically parsimonious.

Fifth, we believe that governors have incentives to reallocate for governance purposes (H5). That is, even though reelection of governors is banned in Mexico and the electoral connection is relatively weak, the fact that Mexico is a democracy means that governors have at least some incentives to acquire a reputation for governing well and serving citizens throughout the state. A major motivation for such behavior is that gubernatorial posts serve as a springboard for other positions, including the presidency. Much like partisanship, governance motivations could take several forms. To take some examples: The formulas most governors inherit are inequitable from a per capita standpoint; if population equity figures into governor utility functions, they might redress these imbalances (H5A).[10] Likewise, if reducing poverty, or targeting the poor for electoral gain, matters for governors, they might transfer funds to municipalities that have higher poverty rates. More specifically, if Mexican parties pursue specific policy outcomes and the traditional Left or Right distinction holds, we might expect the PRD to have the strongest commitment to reducing poverty, followed by the PRI and then the PAN (H5B). Finally, we could imagine that governors would reallocate to municipalities hit by negative events, ranging from revenue shocks to natural shocks, such as hurricanes, floods, and earthquakes (H5C). Given the extensive media coverage of such events, governors that fail to act might pay a political price (Healy and Malhotra 2010), while those that do act may be able to claim credit for mitigating the human cost of such disasters, enhancing their national reputation. Because it is possible that these governance motivations could overlap with partisan interests, we also look for

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partisan bias in reallocations that are ostensibly for governance reasons (these hypotheses are summarized in table 1).

Data Description

We have data for most Mexican municipalities from 2002 to 2007. With a complete data set, we would have approximately 2,000 municipalities, yielding 12,000 observations. Most of our regressions contain 1,993 municipalities, with 10,575 observations. Almost two-thirds of the missing observations are due to Oaxaca and Jalisco. A few (generally small) municipalities do not consistently report their *participaciones* revenue to the national statistics agency (INEGI); the bulk of these municipalities are in Oaxaca. In addition, we were unable to locate municipal coefficient data for Jalisco for 2005 and 2006 and Guanajuato for 2003 to 2005.[11] Although the number of missing observations is small, they could be systematic, potentially generating poor inferences. To take one example: Jalisco and Guanajuato states were PAN strongholds during this period, meaning the missing observations could generate poor inferences about reallocations between PAN governors and PAN municipalities. As noted later, we do not believe this to be the case, as a cross section for 2007 with complete data for Jalisco and Guanajuato yields similar results as our panels. Likewise, one might be concerned about influential observations. We exclude the Federal District and, as part of the sensitivity analysis, exclude every state individually. The most important exclusions are probably Tamaulipas and Oaxaca. Not only are these states PRI strongholds that reallocate substantially, meaning they could be outliers, but many municipal

Table 1 Summary of hypotheses

H1:	The formulas will exhibit a pro-PRI bias.
H2:	Governors will systematically deviate from the formula.
H3:	Evidence that legislators are complicit with deviations could come in the form of:
	(A) larger partisan reallocations by governors with a majority;
	(B) larger overall reallocations by governors with a majority;
	and/or (C) larger reallocations to non co-partisans by minority governors.
H4:	Partisanship will affect deviations, with the PRI most likely to favor co-partisans.
H5:	Governors will reallocate for governance purposes, favoring municipalities that:
	(A) receive less by formula (EQUITY);
	(B) have higher marginalization rates (POVERTY);
	and/or (C) have been negatively affected by shocks (EMERGENCY).

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posts in Oaxaca are nonpartisan, meaning that reallocation dynamics could be distinct. Our results are robust to these exclusions and many others (e.g., omitting Chiapas).

Dependent Variables

Our reported *participaciones* data (TRANSFERS) are the municipal-level totals reported to INEGI. Our data on state-level formula coefficients come directly from copies of official state newspapers archived in Hacienda. The formula coefficients are based on the state laws or formulas governing transfers. We assume that states take into account their input variables and any other relevant factors. The formulas are generally reported to eight or nine decimal places, meaning that there is some measurement error (discussed later), but it should be small. Specifically, the sum of the state coefficients should be one for each state-year, with an SD of zero. Our mean value for state-year is 0.9998, with an SD of 0.0028. To generate the amount each municipality should have received by FORMULA, we multiplied the final coefficients by the sum of *participaciones* in the state-year, using the last available figures. Our final dependent variable (DIFFERENCE, detailed below) is the difference between the per capita amount given by the state formula and the per capita amount reported by the municipality.

The Partisan Distribution of Transfers

We start by examining the partisan distribution of TRANSFERS as reported by municipalities and the partisan distribution of transfers that one would expect by FORMULA. For these regressions, we estimate three basic models, one with fixed-effects (FE) for time only, another with time and state FE, and a third with year and municipal FE. The first model asks whether more *participaciones* flow to municipalities governed by one party or another. The second model asks whether municipalities governed by different parties receive more or less money once we control for persistent state variables, helping us isolate within-state differences due, in particular, to the governor's party. The third model asks whether any given municipality receives more or less revenue when we control for persistent municipal characteristics, helping us to identify the effect of changes in party at the municipal level. We think all are useful, but prefer the models with municipal FE, as the inferences with municipal FEs are both more statistically valid and more substantively interesting: Does the same municipality receive more or less when governed by one party, as opposed to another party?

Throughout the analysis, we use a standard generalized least squares (GLS) model with clustered standard errors (SEs) at either the municipal or state level.[12] Whenever serial correlation is problematic, we use Prais–Winsten models, which

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capture the memory of the series adequately (DW $\approx$ 1.95). With minor permutations, the models follow the same basic structure:

$$Transfers_{it} = \varphi + \beta 1X1(Parties)_{it} + \beta 2X2_{st} + \alpha_t + \varepsilon_{it}$$

$$Transfers_{it} = \varphi + \beta 1X1(Parties)_{it} + \beta 2X2_{st} + \alpha_t + \alpha_s + \varepsilon_{it}$$

$$Transfers_{it} = \varphi + \beta 1X1(Parties)_{it} + \beta 2X2_{st} + \alpha_t + \alpha_i + \varepsilon_{it}$$

where i indexes municipalities, s states, and t time, and α's are different types of FE.

X1 (parties) are the variable of interest. We use categorical variables for the party that controls the mayor's office. (Mayors are elected by party list; because of governance clauses in the federal constitution, they are guaranteed at least a majority in the assembly.) We exclude one party, the PRI, against which everything else is compared. We then use Wald tests to compare the partisan variables in the model against each other. These tests are only shown when parties are different or there is an expectation that they should be. During our time frame, the three major parties held all governor positions and 96 percent of municipalities (importantly, roughly half of municipalities changed parties at least once). In terms of state-years, the PRI held 61 percent of governorships, the PAN held 21 percent, and the PRD held 18 percent; in terms of municipal-years, the PRI held 53 percent of municipalities, the PAN held 25 percent, and the PRD held 18 percent. We code the remaining municipalities as "*Other*." In addition, roughly 15 percent of municipalities were governed by coalitions. Because virtually all coalitions included a major party (and our main results use municipal FE), we ran models with and without coalition governments to confirm that the results are not sensitive to these cases.

X2 represents state-level variables. In our initial regressions, we only control for state-level transfers (because states receive different amounts). Later, we add more state-level variables, such as legislative composition. Note that because pure state-level observations are fixed within states in any given year, the SEs for these variables will be downward biased, something we ignore because such variables are essentially nuisance parameters.

In our initial regressions, we do not include additional municipal-level variables because at this point we are primarily interested in description—that is, how do allocations flow based purely on party. Furthermore, if these municipal-level factors matter for transfers, it is because politicians have decided they matter; hence, the relevant municipal-level (demographic) factors for each state will be captured by the formula, our next dependent variable. Later, we add municipal-level variables and variables for the interaction of state and municipal-level factors.

We start by presenting the distribution of unconditional TRANSFERS by partisan affiliation of municipality from 2002 to 2007. Models 1–3 of table 2

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present the partisan breakdown of per capita *participaciones (logged)*, conditional on the year, state and municipal FE. On average, municipalities governed by the PAN and PRD receive less than those governed by the PRI, even when we control for the fixed characteristics of states and municipalities, and even with the PAN controlling the presidency. The within-state difference is 3–4 percent of *participaciones* revenue, whereas the within-municipality difference is 1–2 percent.

Models 4–6 of table 2 ask whether this skew is because of the formula, per H2. We specify the same models as above, but change the dependent variable to per capita transfers due to each municipality according to the state-level formula obligations reported to Hacienda (FORMULA). Model 4 of table 2 suggests that there is no systematic bias in the formula against municipalities that are governed by the PAN or PRI. That is, if we do not condition on anything, per capita allocations should not favor one party over another. Once we include the time-invariant characteristics of states (Model 5), an anti-PAN and anti-Other bias emerges, suggesting that the PRI was partially able to lock-in its political preferences via the objective criteria in the formula. This bias is roughly as large as the anti-PAN bias in the actual distribution of transfers: It is much larger for minor parties. There is no bias in the formulas against the PRD. Model 6 add municipal FEs. Once we account for time-invariant municipal characteristics, *all biases against mainstream parties disappear*. They indicate that if the same municipality were governed by different mainstream parties the formulas would not discriminate based on party. To the extent there is bias, it is against the municipality based on ''objective'' criteria; it may or may not be because the PAN or OTHER governs the municipality. In other words, we find qualified support for H1: The formula captures some of the pro-PRI skew between municipalities, but not the skew within municipalities over time, suggesting that PRI governors were unable to systematically update the formula to keep pace with changes in the partisan composition of municipalities. The fact that formula and reported allocations differ is consistent with H2.

The Political Economy of Deviations from the Formula

We now turn to the DIFFERENCE between the per capita amount given by the state formula and the per capita amount reported by the municipality. The key question is whether the differences are systematically related to the political-economy variables highlighted above (H3–H5). Before presenting the analysis, we detail the new dependent variable. As one would expect, formula and reported allocations are highly correlated (0.9). The mean of the absolute value of reallocations (since, by definition, an increase in revenue for one municipality implies a loss for another) is 166 pesos per capita, but 25 percent of the values are below twenty pesos and the value at the fiftieth percentile is only forty-eight

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Table 2 The partisan distribution of unconditional transfers 2002–2007

DV (=percentage deviation from formula)	Reported transfers (log)			Formula transfers (log)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
PRI	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted
PAN	**–0.038 (0.014)*****	**–0.039 (0.014)*****	**–0.019 (0.009)****	**–0.019 (0.012)**	**–0.026 (0.011)****	**–0.008 (0.008)**
PRD	**–0.047 (0.014)*****	**–0.042 (0.014)*****	**–0.015 (0.010)**	**–0.012 (0.016)**	**0.001 (0.016)**	**0.002 (0.011)**
Others	**–0.017 (0.035)**	**–0.007 (0.034)**	**0.000 (0.018)**	**–0.146 (0.034)*****	**–0.125 (0.032)*****	**–0.062 (0.028)****
State Transfers PC	1.247 (0.042)***	1.253 (0.045)***	1.221 (0.047)***	1.028 (0.005)***	0.996 (0.006)***	0.997 (0.006)***
Constant	–1.221 (0.265)***	–1.613 (0.316)***	–1.48 (0.312)***	0.049 (0.038)	0.085 (0.103)	0.162 (0.042)***
FE year	Yes	Yes	Yes	Yes	Yes	Yes
FE state		Yes			Yes	
FE municipal			Yes			Yes
DW/ρ	1.994	1.954	0.0000	2.193	2.181	0.0000
R^2	0.9097	0.9157	0.9185	0.9134	0.9272	0.9487
N	10,575	10,575	10,575	10,575	10,575	10,575
Groups	1993	1993	1993	1993	1993	1993
SE cluster	municipal	municipal	municipal	municipal	municipal	municipal
Model type	GLS-Prais	GLS-Prais	GLS	GLS-Prais	GLS-Prais	GLS

Notes. DW: (1) Durbin-Watson stastic; ρ: extent of serial correlation. (2) Sensitivity analysis can be found in the SSRN version.

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pesos. The SD of this variable is 530 pesos per capita, however, reflecting very long tails.

At the state level, the absolute value of total reallocations equals approximately 7–8 percent of state *participaciones* budgets for municipalities in any given year, with sizable differences across states (and years). While Tamaulipas reallocates an average of 17 percent of its *participaciones* revenue annually (and Oaxaca reallocates 12 percent), most states reallocate much less. In terms of reallocations as a share of total *participaciones* budgets, there are some systematic differences between parties (e.g., tests of means and simple regressions using state-years as the unit of observation indicate that PRI governors systematically reallocate more than PRD governors, who in turn, systematically reallocate more than PAN governors).

The question is whether legislative configuration matters, per H3(A–C). Using state-year as the unit observation, we can find no evidence that it does. While majority governors reallocate more than plurality and, especially, minority governors, the differences are not statistically significant. Furthermore, there is essentially no difference in the amounts reallocated by parties under different legislative configurations. We cannot, for example, distinguish the PRI in majority situations from the PRI in minority situations. Finally, when we look at the three-way interactions between party of governor, party of municipality, and governor status in the legislature, we find no statistically significant differences in reallocations between majority and minority governors. Because nothing merited a table, we present an illustration that succinctly makes the point. Figure 1 shows the fraction of time a state was ruled by a PRI governor with a legislative majority and reallocations as a fraction of the total *participaciones* budget. Both the *largest* and *smallest* reallocators were PRI states with majority governors.

At the municipal level, we are interested in understanding per capita reallocations, *DIFFERENCE*, across municipalities. In particular, do skews in reported allocations reflect reallocations that systematically favor one party over another (H4) and/or governance concerns (H5)? Because of the skew in the data, we create several variants of the dependent variable for the regressions that follow. The benchmark is the percentage difference between reported allocations and formula obligations (log(reported amount/formula amount)). This transformation yields a dependent variable that is unbound, not constant sum (i.e., not compositional), has shorter tails, and, we believe, is relatively representative of the underlying data. A positive number indicates reallocations in favor of the municipality. The sensitivity analysis in the SSRN version presents results with alternative measures/models, including linear measures without the top/bottom 1 percent. For the DIFFERENCE measures, we use a standard levels regression because serial correlation is not an issue ($\rho \approx 0$).

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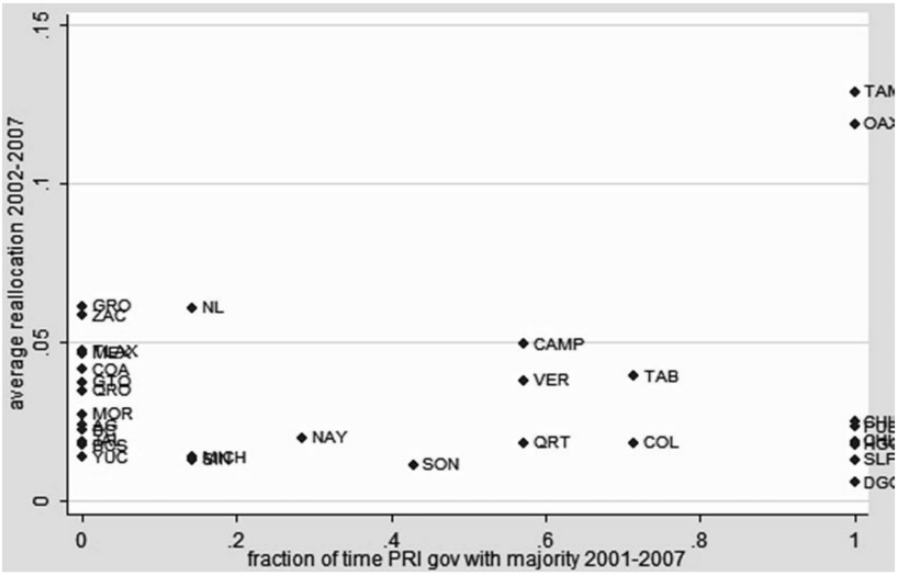

Figure 1 Average reallocations as fraction of *participaciones* budget by state versus fraction of time governed by PRI governor with a majority in the state legislature between 2001 and 2007.

Measuring Partisanship Bias[13]

To test for general partisan bias in reallocations, we created variables that account for all partisan combinations of governor and municipal party. To take an example of the coding: PRI_PRI stands for PRI governor and PRI mayor; PRI_PAN stands for PRI governor and PAN mayor; PRI_PRD stands for PRI governor and PRD mayor; PRI_Other stands for PRI governor and any party besides the big three. Because these variables are not completely independent in any given state-year and because states or governors make the decisions (meaning we would expect similar patterns across states or governors), we make clustered SEs at the state-level our benchmark. Note, however, that the municipal component of these varies within states in any given year and the cross-level interaction can vary over time as governors change.

Measuring Governance

To tap into governance, we focus on three criteria: population equity, poverty alleviation, and negative shocks. Our proxy for population equity (*EQUITY*) is the difference between the peso amount per capita for a municipality via the formula and the mean per capita transfer for all municipalities in any given state-year. This variable is positively correlated with population (0.15), indicating that governors

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are targeting places that receive less than their population share as well as places with more voters. A positive value indicates higher reallocations.

Our proxy for poverty alleviation is the census bureau's marginalization rate (*POVERTY*), which accounts for poverty, access to services, and education levels (CONAPO, various years). Given that municipal-level data were collected every five years, we use a six-year moving average (the results are not especially sensitive to the moving average structure). Because poverty is a persistent variable, it is highly collinear with municipal FE.

To measure exogenous shocks, we use natural disaster data from the Office of Civil Protection, a subunit of the Governance Ministry (SEGOB). They are responsible for declaring states of emergency and states of disaster. States of emergency indicate civilian displacement or suffering. They allow municipalities to receive supplies (e.g., water, blankets, and medicine), largely distributed by the Red Cross; they do not entitle municipalities to state and federal reconstruction funds. Since we only have data for 2007, we use a single cross section for this variable. We focus on the fraction of the municipal population affected (EMERGENCY) because it is relatively exogenous. That is, while SEGOB declares states of emergency at the request of governors, *SEGOB alone determines the number of people affected, using satellites and teams on the ground, in addition to information from governors.*

Our baseline specification only includes the partisan and governance variables, alongside state totals and municipal FE.[14] As a robustness check, we include covariates that could offer alternative explanations for why governors favor some municipalities over others. To take one example not discussed thus far: It is possible that reallocations could covary with either federal conditional transfers to municipalities (*aportaciones*) and/or local tax receipts. That is, given that the PAN held the presidency, perhaps the over-allocation to PRI municipalities by PRI governors is merely substitution for federal funds not being received and/or for shortfalls in local taxes. PRI governors exhibit partisan bias to compensate for federal bias that goes in the opposite direction. Hence, our main model is as follows:

$$Difference_{it} = \varphi + \beta\psi 1(Parties)_{sit} + \beta\psi 2(Governance)_{it} + \beta\psi 3_{st} + \beta\psi 4_{it} + \alpha_t + \alpha_i + \varepsilon_{it}$$

where $\psi 1$ is now the combination of state and municipal party; $\psi 2$ represents the governance variables: EQUITY, POVERTY, EMERGENCY; $\psi 3$ includes categorical variables for gubernatorial election year, for governor with a majority in the state legislature, and for governor with a plurality (we exclude governor with a minority); and $\psi 4$ includes a categorical variable for municipal election year, and logged measures of municipal tax revenue and federal conditional transfers to municipalities (*Aportaciones*).[15]

Table 3 presents the primary results. Model 1 includes a simple interaction for vertical alignment between governor and mayor, in effect, testing for whether parties

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Table 3 Percent deviation from the formula due to partisanship and governance

DV (=percentage deviation from formula)	2002–2007 panel				2007 cross section
	Model 1	Model2	Model 3	Model 4	Model 5
Vertical Gov_Mayor	**0.010 (0.008)**				
Vertical PRI_PRI		**0.022 (0.014)***	**Omitted**	**Omitted**	**Omitted**
PRI_PAN			**–0.019 (0.007)*****	**–0.018 (0.006)*****	**–0.022 (0.016)**
PRI_PRD			**–0.029 (0.015)***	**–0.015 (0.012)**	**–0.056 (0.018)*****
PRI_Other			**0.007 (0.019)**	**0.009 (0.013)**	**–0.008 (0.026)**
Vertical PRD_PRD		**–0.008 (0.023)**	**–0.033 (0.067)**	**0.033 (0.052)**	**0.047 (0.054)**
PRD_PAN			–0.034 (0.054)	0.041 (0.047)	0.034 (0.055)
PRD_PRI			–0.022 (0.063)	0.050 (0.047)	0.048 (0.054)
PRD_Other			–0.014 (0.058)	0.052 (0.046)	0.041 (0.048)
Vertical PAN_PAN		**–0.019 (0.017)**	**–0.053 (0.047)**	**–0.039 (0.046)**	**–0.002 (0.035)**
PAN_PRI			–0.043 (0.047)	–0.029 (0.048)	0.017 (0.038)
PAN_PRD			–0.017 (0.044)	–0.006 (0.049)	0.008 (0.038)
PAN_Other			–0.022 (0.041)	0.001 (0.046)	
Equity	**0.870 (0.041)*****	**0.871 (0.042)*****	**0.870 (0.042)*****	**0.890 (0.035)*****	**0.074 (0.018)*****
Poverty	**–0.011 (0.119)**	**–0.014 (0.115)**	**–0.016 (0.112)**	**0.183 (0.100)***	**–0.030 (0.011)*****

(continued)

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Table 3 Continued

DV (=percentage deviation from formula)	2002–2007 panel				2007 cross section
	Model 1	Model2	Model 3	Model 4	Model 5
Emergency					**0.094 (0.046)****
State Transfers PC	0.224 (0.138)	0.226 (0.140)	0.226 (0.015)	0.128 (0.142)	0.206 (0.059)***
Constant	–1.547 (1.081)		–1.505 (1.130)	–0.324 (0.998)	–0.667 (0.189)***
Controls				Yes	Yes
N	10,575	10,575	10,575	9,715	1,680
Groups	1993	1993	1993	1961	
ρ	0.0000	0.0000	0.0000	0.0000	
FE year	Yes	Yes	Yes	Yes	no
FE unit	Municipal	Municipal	Municipal	Municipal	State
R^2	0.65	0.65	0.65	0.66	0.62
SE	CL state	CL state	CL state	CL state	HW

Notes. Controls include: categorical variables for governor with a plurality, governor with a majority, governor election year and mayoral election year, and continuous variables for *aportaciones* and property taxes. The controls are only significant in the cross sections. In cross sections, we combined PRD_Other and PAN_Other into a single category and used mean reallocations from 2002 to 2006 at the municipal level as a proxy for unit FE. Panel results with state FE are similar, though the coefficient on Equity is smaller (0.2–0.3). Those results are shown in the SSRN version.

*Significant at 10%. **Significant at 5%. ***Significant at 1%. PC = per capital; CL = clustered; HW = Huber-White.

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(regardless of their particular label) transferred more to co-partisans. The comparison group is all nonvertically aligned municipalities. Although positive, the interaction is not significant. Model 2 includes specific party labels for vertical alignment; with specific party labels, only the PRI_PRI combination is positive and significant vis-à-vis nonaligned municipalities. Both PAN_PAN and PRD_PRD are negative, but not significant. (In Wald-tests, not shown, the PRI_PRI combination is significantly different from PAN_PAN.) In order to know whether this result represents discrimination on the part of PRI governors vis-à-vis municipalities not governed by the PRI, we need to know how PRI governors treat non-PRI municipalities. Hence, Model 3 includes the full set of partisan interactions, using the PRI_PRI combination as the reference category. (Omitting PRI_PRI means we do not need to show a multitude of Wald tests.) Model 4 adds the control variables in $\psi 3$ and $\psi 4$ (which are not significant). Model 5 presents the main 2007 cross-section results. In all cases with the full set of interactions, the point estimates on the PRI_PAN and PRI_PRD combinations are negative (and generally significant) vis-à-vis the omitted PRI_PRI category. With a PRI governor, the same municipality would lose 1–2 percent of its *participaciones* budget (6–9 pesos per capita) when governed by the PAN and 1–3 percent when governed by the PRD (as opposed to the PRI); these are not trivial figures considering the PRI_PRI combination accounts for 28–32 million people per year. In other words, the behavior of PRI governors helps explain the pro-PRI skew within and between municipalities. PAN or PRD governors, by contrast, reallocate as much to other parties as to co-partisans.

Population EQUITY, the first governance variable, is highly significant, very robust, and even more substantial in magnitude than partisanship. The state FE models (shown only in the SSRN version) indicate that a municipality disadvantaged by the formula would receive a boost of approximately 0.2–0.3 percent for each percentage point less than the average per capita allocation. The municipal FE models (shown in table 3) indicate that a municipality that experiences a one-off increase in its gap from the state mean would obtain about 88 percent of what it lost. We assume that the former is a commitment to population equity, while the latter is a year-to-year revenue stabilizer.[16] The second governance variable, POVERTY, is generally insignificant and changes considerably across conditioning variables, something one might expect with high multicollinearity between poverty and the unit FE.[17] The third governance variable, EMERGENCY (shown in Model 5), is also positive and significant, indicating that governors respond to disasters.

Symmetries Across Parties

So far, we have assumed that the governance effects are symmetric across parties. Arguably, we might expect parties to behave differently on the governance

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dimensions, notably with respect to poverty. To check for asymmetries, we multiplied governor party times the various dimensions of governance, creating variables such as PRI_EQUITY, PAN_EQUITY, and PRD_EQUITY. We then checked for partisan differences with Wald tests, focusing primarily on the interaction term as we want to know whether parties have different priorities. The results are presented in condensed form in table 4.[18] They show that governors from all parties reallocate based on population equity; PAN governors have the largest point estimate and are statistically distinct from the PRI; PRD governors have the second largest coefficient, but are indistinguishable from both PAN and PRI governors. PAN governors also reallocate more to municipalities with higher marginalization rates than the PRI, but we do not know whether they do so because the municipalities are poor or if it is because of some other unobserved municipal characteristic. Both the far left (PRD) and the center-right (PAN) emphasize poverty reduction more than the center-left, both in reallocations (and in initial formulas). Model 3 also shows that the PRD and PAN tend to reallocate more unconditional transfers to municipalities hit by disasters (these results are marginally sensitive to specification).

Before we conclude that partisanship primarily motivates PRI reallocations, while governance primarily motivates PAN and PRD reallocations, we need to consider the interaction of governor, mayor, and governance. That is, conceivably the PAN prioritizes EQUITY because PAN municipalities lose from the formula. We tested for partisan bias in the governance criteria using three-way interactions of governor party, municipal party, and governance. While fitting models was difficult, given small samples, we found no differences across the combinations. The point estimates were, in fact, frequently inconsistent with a partisan bias story.

Discussion of Confounding Factors and Concerns

One obvious question is whether parties are endogenous variables (Díaz-Cayeros, Magaloni, and Weingast 2005). In principle, transfers could clearly affect election outcomes. We do not have a reliable way of dealing with endogeneity (such as valid instruments or a dynamic panel model), but simple tests of the probability that a municipality would switch parties during an election year, given current and past reallocations, indicate no obvious problem of endogeneity, even when the sample is restricted to observations with only PRI governors and PRI mayors.

A second question is why are there asymmetries across parties? That is, why do PRI governors seem to privilege party, while the PAN and PRD governors do not? One possibility is that selection bias is causing a problem. We doubt that conjecture because the 2007 cross section has complete data for Guanajuato and Jalisco; the results are virtually identical to the panels. A second possibility is that

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Table 4 Interactions between governor party and governance variables

DV (=percentage deviation from formula)	Panel 2002–2007		2007 cross section
	Model 1	Model 2	Model 3
PRI_PRI	Omitted	Omitted	Omitted
PRI_PAN	**–0.013 (0.006)****	**–0.018 (0.007)*****	**–0.030 (0.019)**
PRI_PRD	**–0.029 (0.018)***	**–0.022 (0.014)**	**–0.064 (0.020)*****
PRI_Other	0.039 (0.062)	0.015 (0.022)	0.005 (0.027)
Other partisan interactions	**Suppressed**	**Suppressed**	**Suppressed**
PRI_equity	**0.135 (0.044)*****	**0.802 (0.060)*****	0.081 (0.022)***
PRD_equity	**0.285 (0.119)****	**0.933 (0.034)*****	0.056 (0.014)***
PAN_equity	**0.356 (0.076)*****	**0.941 (0.032)*****	0.070 (0.033)**
PRI_poverty	**0.003 (0.020)**	**–0.063 (0.119)**	–0.041 (0.011)***
PRD_poverty	**0.029 (0.027)**	**0.001 (0.129)**	–0.014 (0.017)
PAN_poverty	**0.072 (0.026)*****	**–0.050 (0.110)**	–0.008 (0.020)
PRI_emergency			**0.078 (0.070)**
PAN_emergency			**0.216 (0.085)****
PRD_emergency			**0.262 (0.086)*****
State Transfers PC	0.229 (0.125)*	0.220 (0.015)	0.208 (0.059)***
Constant	–1.466 (0.824)*	–1.563 (1.151)	–0.632 (0.182)***
Controls	No	No	Yes
N	10,575	10,575	1,680
Groups	1993	1993	
ρ	0.1610	0.0000	
FE year	Yes	Yes	No
FE unit	State	Municipal	State
R^2	0.34	0.65	0.62
SE	CL state	CL state	HW
F PRI_eq = PRD_eq	0.23	0.04	
F PRI_eq = PAN_eq	0.00	0.00	
F PAN_eq = PRD_eq	0.61	0.86	
F PRI_pov = PRD_pov	0.32	0.00	
F PRI_pov = PAN_pov	0.02	0.48	
F PAN_pov = PRD_pov	0.25	0.07	
F PRI_em = PAN_em			0.13
F PRI_em = PRD_em			0.05
F PAN_em = PRD_em			0.68

Notes. The table presents interactions of governor party with the governance variables. Models were estimated with a full set of partisan interactions and (where indicated) with control variables. To make the table more readable, we suppressed the controls and all of the basic partisan interactions except those involving the PRI. In cross sections, we used mean reallocations from 2002 to 2006 at the municipal level as a proxy for unit FE. The complete table can be found in the SSRN version.

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reallocations have a higher electoral payoff for the PRI. The results above cast doubt on this conjecture. When PRI governors increase reallocations to co-partisans, the probability that the PRI will retain the municipality in the next election does not increase. A third possibility is that the internal payoffs within the PRI are higher for cooperation. We cannot test this conjecture, but believe it likely, given Langston's (2011) work, and the fact that PRI_PRI reallocations have the largest point estimate during municipal election years.[19]

A final question is whether reallocations are substitutes for changing the formula. Because there are few formula changes and no discernible patterns, we can mostly speculate. Changes in the formula are not strongly correlated with: governor party; changes in governor or governor party; the legislative composition; changes in the partisan composition of legislatures; or with changes in the number of opposition held municipalities. We can detect no substitution between changing the formula and reallocating (as the same states do both). In fact, four of the five states with the highest reallocations changed their formulas during this period; after the change, the share they reallocated fell (but remained well above zero), suggesting that governors largely do what they want and then ask legislatures for permission. In other words, changing the formula seems to be an imperfect substitute for reallocating, even in PRI states, arguably because formulas preclude precise targeting and because municipalities change hands.

Several other issues deserve mention. One concern is that there is a latent political or social variable that is collinear with our governance measures, notably population equity. We believe that the municipal FE should absorb persistent unobservables of this nature. Another concern is that we may have omitted a potential (time-varying) explanatory variable, such as the popularity of the governor and/or drugs or violence at the municipal level. We would clearly prefer to include such variables in the analysis, as their absence would be a problem if they were highly correlated with our variables of interest, something we cannot reject ex-ante.

A final concern is whether our data are of sufficiently high quality to make sound inferences. We know there are errors in this data set, just as there are in many data sets with government figures and significant manual entry. We do not know whether the errors are random, but see few reasons for municipalities to lie about how much they obtain, and no reason for these lies to vary across parties in ways consistent with our results; and, to the extent that states have incentives to lie, they should lie to hide partisan bias, not reveal it. While we wish we could address measurement error more rigorously, we believe that the overall consequences of measurement error in our analysis should be fairly benign, largely because the primary variables that might have error are left-hand side variables, the measurement error itself should be small, and our substantive results are robust in linear models (Chen, Hong, and Nekipelov 2011).

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Conclusion

This article compared the state-level formulas for the distribution of transfers with the amounts that municipalities reported receiving, using a unique municipal-level data set from Mexico. This research design allows us to identify with some precision how fiscal institutions, partisanship, and governance influence the allocation of resources in the implementation phase. Our primary results rest on sound methods (difference-in-difference estimators with time and municipal FE), but use observational data, meaning that there are some threats to inference. We have done our best to identify and mitigate potential problems, including selection bias induced by missing data, influential observations, endogeneity, and measurement error.

Our results showed that federal unconditional transfers for municipalities, a major source of local revenue, are skewed towards municipalities governed by the PRI. We then identified several sources of the skew. The formulas that use objective criteria are biased against municipalities governed by the PAN and nonmainstream parties, consistent with historical institutionalism's emphasis on legacy politics. However, the formula bias only captures some of the between-municipality difference in resource allocation and it does not explain the variation over time within municipalities. To understand more of the variation one needs to examine the short-term actions of governors, who regularly deviate from the formulas. They do so, we believe, because Mexico's particular structure of transfers allows federal funds to pass through state treasuries and provides legislatures with relatively weak oversight tools, creating some room for gubernatorial discretion. The discretionary deviations are small relative to the overall transfer budget, suggesting that Mexican subnational fiscal institutions are quite binding, but they would not be tiny for many municipalities, especially ones highly dependent on transfers. The discretion has a variety of effects, some of which are consistent with the insights of second-generation fiscal federalism scholars, others of which are consistent with the normative vision of fiscal federalism.

Specifically, some reallocations follow a partisan pattern, as PRI (and only PRI) governors reallocate to a municipality when it is governed by their co-partisans; they reallocate away from the very same place when it is governed by another party. These reallocations were not substitutes for federal conditional transfers or municipal taxes. More importantly, perhaps, governance also affects reallocations. Governors, notably from the PAN and PRD, compensate municipalities disadvantaged by the formula. The PAN also reallocates more to municipalities with higher marginalization rates than the PRI, somewhat surprising for a supposedly center-right party, but consistent with other work on Mexico (e.g., Díaz-Cayeros, Estévez, and Magaloni 2006). PRD and PAN governors also reallocate more to municipalities hit by natural shocks. All in all, we find that PAN and PRD governors seem to weigh governance more in their utility function than PRI

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governors, who place a larger premium on partisanship. Finally, and with additional caveats, we find no partisan bias in governance reallocations.

While these findings are unique to Mexico, our research design is generalizable. Specifically, one could study the differences between formulas or budgets and actual spending or outlays anywhere to understand whether politicians follow the rules and to separate out the various factors that influence the distribution of resources across units. Presumably, issues of oversight and control exist anywhere where there are long lags in reporting and weak auditors. Furthermore, other studies that include shocks and/or stabilization might find a similar balance between governance concerns and pure partisan politics. In other words, while seats, votes, and patronage are essential elements in democratic theory and practice, governance may also determine political survival. At least, PAN and PRD governors in Mexico seem to think so.

Supplementary Data

Supplementary data can be found at www.publius.oxfordjournals.org.

Notes

The authors thank the anonymous referees and Federico Estévez for outstanding comments.

1. The replication data set and do files will be available upon publication. The appendix available as supplementary data at *Publius* online contains data description and (some) sensitivity analysis. A much longer and less-polished version with additional sensitivity analysis can be found on SSRN.
2. Popov (2004), for example, provides a head-to-head comparison for Russia. Like us, he finds that governance criteria have a larger substantive impact than pure political variables.
3. As Banful (2011) and Brollo and Nannicini (2011) detail, the political manipulation of transfers has been documented in many countries. We extend such studies to the implementation phase.
4. Partisanship can manifest itself in myriad ways when it comes to transfers. Johansson (2003), for example, finds targeting of "swing" constituencies in Sweden, while Larcinese, Rizzo, and Testa (2006) find targeting of "core" constituencies in the United States. Brollo and Nannicini (2011) find a partisan-timing effect in Brazil. More sophisticated models did not pass our initial tests—hence, the attenuated literature review and analysis.
5. As with many federal systems (e.g., the United States, Brazil), the number of municipalities in Mexico has trended upward over time, partly because of fiscal federal incentives.
6. The electoral calendar varies across states.
7. Specifically, some state formulas mimic the federal formula, applying the state-level formula only to the amounts that exceed what was transferred the previous year; when

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the amount is smaller the municipality receives the same share it got the previous year. In the period studied (2002–2007), federal transfers increased almost every year.

8. The federal government underbudgeted *participaciones* revenue by several percentage points on average between 2002 and 2007. State governments generally follow its lead.
9. The federal government has noticed this weakness. The 2007 Federal Accounting Law mandates the creation of independent auditing bodies in states by 2012.
10. In 2002, the SD of municipal transfers within states by formula ranged from 52 (Guerrero) to 2,847 (Zacatecas) pesos per capita, indicating considerable within-state inequality.
11. We do not use multiple imputation, as even the lagged values for reallocations are not a good predictors of current values.
12. Clustered SEs at the municipal level are robust to heteroskedasticity and within unit (serial) correlation. Clustering at the state-level makes more sense with reallocations because governors make the decisions, but it also means that the results are robust at the state level, and not the unit level. In practice, our results are not sensitive to different ways of calculating the SEs.
13. We tested to see whether over-allocations to the PRI occurred merely because they are PRI municipalities. The answer is no. PRI municipalities receive more because of other factors.
14. State FE models can be found in the SSRN version. In the cross section, we substitute average reallocations from 2002 to 2006 for unit FEs. Note that multilevel models failed to converge.
15. More sophisticated variants of some variables were used in the analysis (e.g., the combination of PRI governors with PRI municipalities in election years). Because these results were insignificant and space is a concern, we omitted them from the article.
16. Partly due to pressure from Hacienda, fourteen states guarantee a fraction of last year's revenue to each municipality. Our results are robust for both groups in tests with split samples.
17. Without any FE, poverty is positive and significant, suggesting that, on average, governors reallocate to poor municipalities.
18. The partisan interactions are perfectly collinear with constituent terms for governor. Models with constituent terms and no partisan interactions are in the SSRN version.
19. The SEs on the PRI_PRI*election_year interaction were enormous, suggesting that some PRI governors may have also punished some PRI mayors by reallocating away from them.

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