Popularity, Legislative Majority, or Party Building: What do Latin American Presidents' Prioritize?

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Abstract

Political leaders routinely make momentous decisions, but they cannot always get what they want. This paper develops a methodology for consistently estimating the relative weights in president utility functions, despite the fact that president motivations are unobserved. The structural equation model presented here intends to help in the investigation of how presidents make decisions on behalf of their governments in regards to budget allocation. What trade-offs do they face, and how do they resolve them? What are the constraints under which they operate, both within their governments and in the political system? Using data from Brazil, Mexico and Venezuela I find that all presidents care enough about their popularity in their governments. In the Venezuelan case, this is true for the entire period analyzed. For the cases of Brazil and Mexico, this is true only for years previous to presidential elections. In the years previous to municipal elections, the weight on party building gains more power.

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INTRODUCTION

Latin America is considered one of the most unequal regions in the world. Since 1998, we have seen a series of center-left presidents elected across the region, mostly on the promise to reduce inequality. But although they are powerful, Latin American presidents are not dictators. To fully implement their redistributive agendas, they must contend with subnational governments that have been empowered by a wave of decentralizing reforms and who threaten to divert presidential resources or usurp credit for the largesse themselves. The combination of newly inaugurated center-left presidents and decentralization produced an unfavorable setting for new executive leaders. Any longtime opposition leader who finally wins the presidency almost inevitably faces dozens of state governors and hundreds or even thousands of municipal mayors who are affiliated with traditional ruling parties. This vertical version of divided government is the crux of what I call the 'presidential dilemma'.

The dilemma underscores how politicians feel the tug between conflicting options. Even when making decisions that don't involve choosing the lesser of two evils, there may well be uncomfortable trade-offs between different choices. In determining whether to allocate discretionary resources for one or another particular place, elected officials must balance the wishes of the overall electorate, pressure from party leaders within the Congress and party members in another offices, and their own preference. The relative importance of those competing factors remains an open question. The primary difficulty that arises in attempting to answer that question is the lack of observability of the variables in question. As researchers, we never get to observe what politicians weight in their utility functions when making momentous decisions. The best we can do is to infer what we believe they were lead to do based on their actual actions and the political pressures surrounding them. Since an elected official's preference is likely to be correlated with both party affiliation and constituency preferences, failure to control for politicians' personal motivations will lead to biased estimates of the impact of all of the influences on allocative behavior.

By focusing on the relationship of voters, presidents and legislators, previous studies have partially succeeded in overcoming the problems caused by nonobservability of the presidents' preferences in regards to his decisions. For some scholars, incumbent parties are better positioned to establish clientelistic linkages with their core voters and to extract the highest returns from patronage (Stokes, 2005; Magaloni, Diaz-Cayeros and Estevez, 2007; Zucco, 2008; Greene, 2008; Nichter, 2008). Low-income voters are more susceptible to 'selling' their votes in exchange for material goods and are apt to support (and vote for) the government that provided such outcomes (Gervasoni, 1998; Brusco, Nazareno and Stokes, 2004; Reinikka and Svensson, 2004). Therefore, there are findings of a positive vote share effect on the allocation of resources, meaning that municipal core voters are a strong predictor of discretionary transfers (Case, 2001; Golden, 2003; Larcinese, Rizzo and Testa, 2006; Ansolabehere and Snyder, 2006).

Another set of scholars have argued that minoritarian presidents in Latin America, and particularly in Argentina and Brazil, use their distributive powers for legislative coalition building (Snyder and Samuels, 2001; Arretche and Rodden, 2004; Auston and Mueller, 2006; Alemán and Calvo, 2006). According to this view, federal politicians have incentives to distribute federal resources favoring certain municipalities that help their political power. Given that the votes of legislators are essential to advance the presidential agenda, national politicians might favor municipalities in which coalition partners have constituents. Within this institutional arrangement, this literature reports, presidents have strong incentives to allocate public goods, such as intergovernmental transfers, based on strategic electoral and legislative calculations to obtain legislative support (Sørensen, 1995; Gibson and Calvo, 2000; Jones and Hwang, 2005; Giraudy, 2007; Bonvecchi, 2009).

A final alternative to all of the above hypotheses is that transfers are politically manipulated, targeting mayors who align with the President (Ames, 1994; Fachelli and Ronconi, 2004; Nazareno and Stokes, 2006; Brollo and Nannicini, 2011). This theoretical standing predicts that regions governed by mayors aligned with the central government are the main targets of particularistic spending on almost all local public goods. The argument, however, is not that this is a way to form coalitions. Rather, this literature argues that the president uses mayors as 'brokers' to maintain local power (Herzer and Pirez, 1989; Levitsky, 2003; Stokes, 2005; Arulampalam et al., 2009), or cut opposition disbursements as a way to tie mayors' hands and consequentially to decrease their electoral chances in the next race (Brollo and Nannicini, 2011). The main implication of such explanations is that we must expect governments to provide particularistic spending to regions governed by loyal mayors, to avoid giving away potential electoral gains to the opposition (Armesto, 2009).

Recognizing the importance of this debate, this paper develops a methodology for estimating the relative weights Latin American presidents place on the various alternatives considered above. Importantly, this methodology does not require presidents preferences to be observed in order to yield consistent estimates. The paper then proceeds to estimate the model using data of Brazil, Venezuela and Mexico from 2000-2012. Identification of the model hinges on three critical assumptions: (i) each president's preferences remains fixed over time, (ii) president decision functions are logarithm, and (iii) municipal voter preferences are assumed to be reasonably *proxied* by the votes casted both in legislative and presidential elections. Under those assumptions, it is demonstrated that the relative weights assigned to the various factors can be ascertained even though presidents actual preferences are not observed.

The model has a number of attractive features. First, because the parameter estimates obtained are explicit weights in the utility function, interpretation of the results is straightforward. Second, the model is ideal for testing a wide variety of hypotheses concerning presidential distributive behavior. For instance, one can test whether the weight placed on voter preferences increases as presidential elections approach, or whether the weight of subnational pressures increase with proximity of local elections. Third, the model generates explicit estimates of presidents ideologies which may prove useful to future researchers. Finally, because the model requires only resource allocation data as inputs, it can be applied to any time period or subset of fiscal transfer data, and therefore may prove to be a valuable tool in studying a wide range of questions.

The results, based on the three samples, suggest that legislative majority is assigned only 2% of the weight in the Brazilian president utility function. The rest of the weight is divided between popularity and party building preferences, but party building stands as the most important determinants of the distributive strategy pursued by Lula. In Venezuela, in the other hand, the model predicts that party building only weights one tenth on Chávez utility function. While the legislative majority also receives some weight, the popularity is overwhelmingly the most important determinant of the distribution of discretionary transfers in the period. The weight that Chávez do place on popularity is disproportionately higher than the other two components of his utility function; the estimates suggest that municipalities that can increase the president's popularity are 2 times more influential than municipalities that are governed or represented by Chávez co-partisans. Finally, in Mexico, all three components of the decision function are weighted similarly, although popularity stands over the others.

The paper is organized as follows. Section I develops the model underlying the empirical specification, and demonstrates that the model can be estimated without directly observing presidents' ideologies. Section II describes the choice of proxy variables, the limitations of these proxies, and the sample to be analyzed. Section III presents empirical estimates of the basic specifications. Section IV offers a brief set of

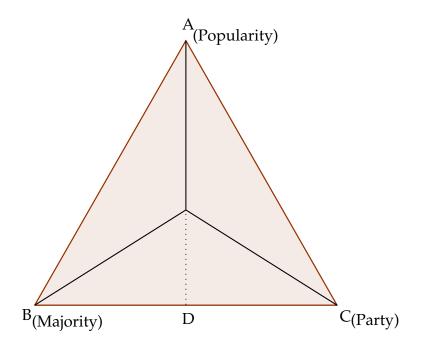
conclusions.

MODELING PRESIDENTIAL ALLOCATION

The main debate in the distributive politics literature in Latin America is to decide what presidents potentially take into account when determining where to allocate discretionary investments. Given the different levels of decentralization, the competitiveness of elections, and the vertical division of power documented by several scholars, I believe we can summarize this debate in three different sets of presidential interests:

- (i) The president's interest in popularity, which is a short-term goal to increase electoral prospects.
- (ii) The president's interest in legislative majority, which is a short-term goal to make sure his government is producing the changes advocated in campaign.
- (Iii) The president's interest in strengthen the basis of his own party, which is a long-term goal to guarantee his policies will be carry over.

To develop a more general theory to account for presidents' decisions, I retain the premise that presidents value all three goods: popularity, legislative majority, and party building. They typically pursue all these goals. The question is what sorts of trade-offs they make between these objectives and under what circumstances they weight one more than the other. Pure popularity seekers, majority seekers, or party-building seekers are unlikely to exist, though each of the three can be seen as ideal types to be contrasted with empirical evidence. Figure 1 illustrates the space of trade-offs between these different pursuits in a three-dimensional space in which each Figure 1: Range of Feasible Presidential Allocation Pattern



dimension represents one political goal.¹ This representation further assumes that there is some constraint on the total quantity of each goal presidents can obtain. For simplicity, this illustration assumes that we can think of these trade-offs in the form of weights that presidents give to each pursuit, and that the sum of these weights is constrained to be 1². Reality is obviously more complex, but my objective here is to come up with a simple and intuitive analytical tool to measure presidents' weights in regards to these three complementary objectives.

To model the presidential behavior I will use his power to distribute discretionally as the starting point. In the formal model I describe below, presidents and mayors are deciding what to do based on their utility functions, and legislators are receiving the benefits or costs of this dispute indirectly. As I posit before, presumably presidents care about their popularity among voters, about building a legislative coalition, and

¹I borrow the idea from Strom and Mueller (1999).

²All three goals might influence each other indirectly. My identification strategy will rule this possibility out, as I explain in the next section.

about deepening his party structure in the municipalities across the country. I assume, however, that mayors care about their own careers and have incentives to divert the resources granted from the president to their municipalities to accomplish personal goals. I am not implying that mayors divert resources illegally or for corruption purposes. On the contrary, I just posit that they might have interests different than the president, and they might prefer to spend the resources allocated from the president in a way that benefit their own popularity among voters. Therefore, I assume local politicians are able to steal *political credit* from allocations that the president has appropriated in their municipalities, reducing the amount of resources voters identify as coming straight from the president's purse.

I formalize this idea defining *political leakage* as the difference between what was allocated by the president in municipality $i(z_i)$ and what voters observed as begin the investments made in municipality $i(x_i)$:

$$\ell_i = \ln(z_i - x_i) \tag{1}$$

where $z_i > x_i$.³

Let's define the political support function of the president as V_i , the number of votes he received in municipality *i*:

$$V_i = \alpha_i^P + \beta \, \ln(x_i) \tag{2}$$

Let's define the political support function of legislators as L_i , the number of votes he received in municipality *i*:

$$L_i = \alpha_i^L + \beta \, \ln(x_i) \tag{3}$$

³Note that assuming z_i to be strictly bigger than x_i makes leakage function to be different than zero. This is necessary as $\ln(0)$ does not exists. But this also implies that in every situation we will observe some (small or large) leakage.

Let's define the political support function of mayors as M_i , the number of votes he received in municipality *i*:

$$M_i = \alpha_i^M + \beta \,\ln(x_i) \tag{4}$$

By assumption presidents care about political success in general. This is a combination of the number of votes himself, legislators and mayors from his party received. In analyzing the influences on a president's behavior, I focus here on the overall utility of a president when receiving inputs from these three elements. The problem is formalized by assuming that the president utility function is a weighted average of his political support function, in addition to the ones of mayors and legislators from his party. Broadly speaking, we can think of presidents allocating resources z_i across municipalities i = 1...n, to maximize his utility function

$$U_p = \tilde{\alpha} \sum_i V_i + \tilde{\beta} \sum_i L_i + \tilde{\omega} \sum_i M_i$$
(5)

such that legislators and mayors in municipality *i* are from president's party.

In order to distribute resources, I assume, presidents need to collect taxes. This implies that president's distributive strategy is constrained by the total taxes the president is able to raise given the transfers he is willing to distribute. Let's define $Z = \sum z_i$ as the total taxes president must raise. Taxes are fixed for every municipality and defined as τ . The government budget constraint is, then

$$G = \tau Z$$

and I assume the weight parameters of the president's objective function to be constrained to

$$\tilde{\alpha} + \tilde{\beta} + \tilde{\omega} = 1$$

Since utility functions are defined only up to an affine transformation, there is no loss of generality implied in constraining the decision weights to sum to one. In order for the estimated coefficients to be directly interpretable as weights in the utility function, however, all of the variables inputed in president's utility functions must be measured in the same units. In equation (5), parameter $\sum_i V_i$ represents the number of votes the president received in the last election, $\sum_i L_i$ the total number of votes received by legislators who are willing to support the president's legislative agenda, and $\sum_i M_i$ the total number of votes mayors loyal to the president received in the last election. I will extrapolate these meanings and interpret $\sum_i V_i$ as a *proxy* for president's popularity, $\sum_i L_i$ as a *proxy* for president's legislative majority, and $\sum_i M_i$ as a *proxy* for president's party local strength. The relative magnitude of parameters $\tilde{\alpha}$, $\tilde{\beta}$ and $\tilde{\omega}$ indicates, therefore, the importance presidents place on popularity, legislative majority, and party building. I assume that the impact of spending is separable across municipalities, that is, spending in municipality *j* has no effect on mayoral, legislative or presidential politics in municipality *i*.

Legislators have no control over ℓ_i , but mayors do. More specifically, they control how much *leakage* can happen, which defines how much resources voters will observe. Given that president and legislators' political support functions are determined by x_i , mayors are seeing here as agents of the president and of legislators. Their choice of ℓ_i will affect these other players, as well as their own political support functions. Mayor are assumed to care about both their own political careers as well as about how much leakage they can produce. With votes, they can maintain their offices. With leakage, they can show power. In some cases, showing power might come in detriment of the president – when $z_i - x_i > 0$, or it might come in addition to the president - when $z_i = x_i$. Mayor's utility function can be defined as:

$$U_M(\lambda^j, z_i, x_i) = \lambda^j \ell_i + (1 - \lambda^j) M_i$$
(6)

where λ^j is given by mayor's partian status and refers to the probability that mayor of type *j* will steal credit from the president ($0 \le \lambda^j \le 1$). I also assume $\lambda^j = 0$ if mayor is from president's party. I do not believe that, *a priori* mayors from the presidential party will have incentives to steal credit from the president's action, because this also hurt their own political support function. Opposition and coalition mayors, in the other hand, have incentives to divert credit from allocations in order to place their own parties in the presidential office.

The political context in which this game operates can be summarized as: (1) the president elected sets z_i for municipality *i*, (2) mayor of municipality *i*, takes z_i as given and decides on ℓ level, and (3) voters in municipality *i* observe x_i .

We can re-write the utility function of a mayor from the presidential coalition as

$$U_{M^{C}}(\lambda^{C}, z_{i}, x_{i}) = \lambda^{C} \ln(z_{i} - x_{i}) + (1 - \lambda^{C})[\alpha_{i}^{M^{C}} + \beta \ln(x_{i})]$$

This mayor, then, chooses x_i to maximize $U_{M^C}(\lambda^C, z_i, x_i)$

$$\max_{x_i} \quad \left[\lambda^C \ln(z_i - x_i) + (1 - \lambda^C)(\alpha_i^{M^C} + \beta \ln(x_i))\right]$$

$$-\frac{\lambda^{C}}{z_{i} - x_{i}} + \frac{\beta(1 - \lambda^{C})}{x_{i}} = 0$$

$$x_{i} = \frac{\beta(1 - \lambda^{C})}{\lambda^{C} + \beta - \beta\lambda^{C}} \times z_{i}$$
(7)

Equation (7) specifies x_i such that a mayor from the presidential coalition maximizes his utility. Note that by $\frac{\beta(1-\lambda^C)}{\lambda^C+\beta-\beta\lambda^C}$ the share of z_i mayor will not leakage is a function of elasticity of his vote to x_i (β) and his nature-given propensity to steal credit (λ^C). We can, then, re-write mayor's political support function (Eq. 4) as

$$M_{i} = \alpha_{i}^{M} + \beta \ln \left(\frac{\beta(1 - \lambda^{C})}{\lambda^{C} + \beta - \beta \lambda^{C}} \times z_{i} \right)$$

$$= \alpha_{i}^{M} + \beta \ln \left(\frac{\beta(1 - \lambda^{C})}{\lambda^{C} + \beta - \beta \lambda^{C}} \right) + \beta \ln(z_{i})$$

$$= \alpha_{i}^{M} + A + \beta \ln(z_{i})$$
(8)

where $A = \left[\beta \ln \left(\frac{\beta(1-\lambda^{C})}{\lambda^{C}+\beta-\beta\lambda^{C}}\right)\right]$.

Equation (8) gives us mayor's political support function when he maximizes x_i - the amount of resources voters observe as being invested in municipality *i*. With such result we can calculate the presidential utility under four mutually exclusive conditions: (1) when municipality *i* is represented by a legislator and is governed by a mayor from the same party as the president, (2) when municipality *i* is represented by a mayor from the same party as the president, but governed by a mayor from a party different to the president, (3) when municipality *i* is governed by a mayor from the same party as the presented by a legislator from a party different to the president, but represented by a legislator from a party different to the president, but represented by a legislator from a party different to the president, but represented by a legislator from a party different to the president, but represented by a legislator from a party different to the president, but represented by a legislator from a party different by a legislator from a party different to the president, but represented by a legislator from a party different to the president, but represented by a legislator from a party different to the president, but represented by a legislator from a party different to the president, and (4) when municipality *i* is governed by a mayor and represented by a legislator from parties different than the president.

(1) If municipality *i* is represented by a legislator and is governed by a mayor from the same party as the president, then, the president chooses z_i to maximize U_p under

the constraint *G*:

$$\max_{z_{i}} \left\{ \tilde{\alpha} \sum_{i} V_{i} + \tilde{\beta} \sum_{i} L_{i} + \tilde{\omega} \sum_{i} M_{i} - \tau Z \right\}$$
...
$$\max_{z_{i}} \left\{ \tilde{\alpha} \left[\sum_{i} \alpha_{i}^{P} + A^{P} \right] + \tilde{\beta} \left[\sum_{i} \alpha_{i}^{L} + A^{L} \right] + \tilde{\omega} \left[\sum_{i} \alpha_{i}^{M} + A^{M} \right]$$

$$+ \left[\tilde{\alpha} + \tilde{\beta} + \tilde{\omega} \right] \beta \sum_{i} \ln(z_{i}) - \tau Z \right\}$$
(9)

Differentiating in respect to z_i

$$\frac{\beta}{z_i} - \tau = 0$$

$$z_i = \frac{\beta}{\tau}$$
(10)

(2) If municipality *i* is represented by a legislator from the same party as the president, but governed by a mayor from a party different from the president, he does not care about this mayor and then chooses z_i to maximize $U_p(x_i, z_i)$. By the same calculation we get

$$\max_{z_{i}} \begin{cases} \tilde{\alpha} \sum_{i} V_{i} + \tilde{\beta} \sum_{i} L_{i} - \tau Z \\ \dots \\ \max_{z_{i}} \end{cases} \begin{cases} \tilde{\alpha} \left[\sum_{i} \alpha_{i}^{P} + A^{P} \right] + \tilde{\beta} \left[\sum_{i} \alpha_{i}^{L} + A^{L} \right] + (\tilde{\alpha} + \tilde{\beta}) \beta \sum_{i} \ln(z_{i}) - \tau Z \end{cases}$$
(11)

Differentiating in respect to z_i

$$\frac{(\tilde{\alpha} + \tilde{\beta})\beta}{z_i} - \tau = 0$$

$$z_i = (\tilde{\alpha} + \tilde{\beta})\frac{\beta}{\tau}$$
(12)

(3) If municipality *i* is governed by a mayor from the same party as the president, but represented by a legislator from a party different from the president, he does not care about this legislator and then chooses z_i to maximize $U_p(x_i, z_i)$

$$\max_{z_{i}} \begin{cases} \tilde{\alpha} \sum_{i} V_{i} + \tilde{\omega} \sum_{i} M_{i} - \tau Z \\ \dots \\ \\ \max_{z_{i}} \end{cases} \begin{cases} \tilde{\alpha} \left[\sum_{i} \alpha_{i}^{P} + A^{P} \right] + \tilde{\omega} \left[\sum_{i} \alpha_{i}^{M} + A^{M} \right] + (\tilde{\alpha} + \tilde{\omega}) \beta \sum_{i} \ln(z_{i}) - \tau Z \end{cases}$$
(13)

Differentiating in respect to z_i

$$z_i = (\tilde{\alpha} + \tilde{\omega})\frac{\beta}{\tau}$$
(14)

(4) If municipality *i* is governed by a mayor and represented by a legislator from parties different than the president, he does not care about either the legislator nor the mayor. Then the president chooses z_i to maximize $U_p(x_i, z_i)$

$$\max_{z_{i}} \begin{cases} \tilde{\alpha} \sum_{i} V_{i} - \tau Z \\ \dots \\ \\ \max_{z_{i}} \end{cases} \begin{cases} \tilde{\alpha} \left[\sum_{i} \alpha_{i}^{p} + A^{p} \right] + \tilde{\alpha} \beta \sum_{i} \ln(z_{i}) - \tau Z \end{cases}$$
(15)

Differentiating in respect to z_i

$$z_i = \tilde{\alpha} \frac{\beta}{\tau} \tag{16}$$

Now that we have the utility function of mayors and the president under the optimal points of x_i and z_i , we can put the pieces of z_i together with indicator variables

for party affiliation of legislators and mayors to obtain a regression model:

$$z_{i} = \frac{\beta}{\tau} \mathbf{1}_{\{\text{L and M same party}\}} + (\tilde{\alpha} + \tilde{\beta}) \frac{\beta}{\tau} \mathbf{1}_{\{\text{L same party, M different party}\}} + (\tilde{\alpha} + \tilde{\omega}) \frac{\beta}{\tau} \mathbf{1}_{\{\text{L different party, M same party}\}} + (\tilde{\alpha}) \frac{\beta}{\tau} \mathbf{1}_{\{\text{L and M different than president's party}\}} + \epsilon_{i}$$
(17)

where $\epsilon \sim N(\mu, \sigma^2)$. Equation 17 can be estimated by including municipality fixed effects. The estimates of the coefficients associated with the fixed effects represents all the other features of municipality *i* that are not associated with the party affiliation of its representatives in the Congress or in the City Hall. Because estimates of the weighting parameters $\tilde{\alpha}$, $\tilde{\beta}$, and $\tilde{\omega}$ are obtained from a regression of equation 17, the weight presidents place on municipalities governed and represented by mayor and legislator from his party ($\tilde{\alpha} + \tilde{\beta} + \tilde{\omega}$) $\frac{\beta}{\tau}$ can be determined.

This equation is, however, not identified. So, to estimate its parameters I reparametrized it by:

$$D_1 = \frac{\beta}{\tau} \tag{18}$$

$$D_2 = (\tilde{\alpha} + \tilde{\beta}) \frac{\beta}{\tau}$$
(19)

$$D_3 = (\tilde{\alpha} + \tilde{\omega})\frac{\beta}{\tau}$$
(20)

$$D_4 = \tilde{\alpha} \frac{\beta}{\tau} \tag{21}$$

From this we can find

$$rac{D_2}{D_1} = ilde{lpha} + ilde{eta} \qquad \qquad rac{D_3}{D_1} = ilde{lpha} + ilde{\omega} \qquad \qquad rac{D_4}{D_1} = ilde{lpha}$$

Note that equations 18, 19, 20, and 21 imply that $D_1 + D_4 = D_2 + D_3$.⁴ Thus, I can estimate D_1 , D_2 , D_3 and D_4 by regressing z_i on $x_1 = 1$ (L and M same party as president), $x_2 = 1$ (L same party as president, M different party), $x_3 = 1$ (M same party as president, L different party), and $x_4 = 1$ (neither from president's party) constraining the sum of the coefficients of x_1 and x_4 to equal the sum of the coefficients of x_2 and x_3 , and the regression intercept to equal zero.⁵

After estimating equation 17 under the re-parametrized model, the OLS estimates of D_1 , D_2 , D_3 and D_4 can be used to find the values for $\tilde{\alpha}$, $\tilde{\beta}$, and $\tilde{\omega}$. Given the constrain imposed over these parameters, we know that the weights over popularity, legislative majority and party building should sum to 1. Thus, finding $\tilde{\alpha}$ and $\tilde{\beta}$ will be sufficient to solve the estimation problem proposed here. The identification of the parameters hinges on having all of the variables in the model measured in the same units. If the different variables are arbitrarily scaled, then there is no reason for the decision weights to sum to 1, and none of the parameters in the model are identified. That requirement drives the data choices outlined in the following section.

Data

In applying the model of the previous section to the data, three sets of choices are required. First, the units of measure must be defined. Second, proxy variables must be selected. Third, the appropriate sample needs to be identified. Those three choices are treated in turn.

⁴Given that $\tilde{\alpha} + \tilde{\beta} + \tilde{\omega} = 1$, we can write $\tilde{\omega} = 1 - \tilde{\alpha} - \tilde{\beta}$. Thus, $D_3/D_1 = \tilde{\alpha} + \tilde{\omega} = \tilde{\alpha} + 1 - \tilde{\alpha} - \tilde{\beta} = 1 - \tilde{\beta}$. We know that $D_2/D_1 = \tilde{\alpha} + \tilde{\beta}$, and that $D_4/D_1 = \tilde{\alpha}$. Then, we can write $\tilde{\alpha} = D_4/D_1$ and $\tilde{\beta} = 1 - D_3/D_1$. Therefore, $D_2/D_1 = D_4/D_1 + 1 - D_3/D_1$, and $D_2 = D_4 + D_1 - D_3$ or $D_2 + D_3 = D_1 + D_4$.

⁵In practice, this can be done by regressing z_i on the following three independent variables $(x_1 - x_4), (x_2 + x_4), (x_3 + x_4)$, while restricting the intercept to zero. Note this estimates $z_i = D_1x_1 + D_2x_2 + D_3x_3 + D_4x_4 = D_1x_1 + D_2x_2 + D_3x_3 + (D_2 + D_3 - D_1)x_4 = D_1x_1 - D_1x_4 + D_2x_2 + D_2x_4 + D_3x_3 + D_3x_4 = D_1(x_1 - x_4) + D_2(x_2 + x_4) + D_3(x_3 + x_4)$. Note that this constrains the coefficient on x_4 (i.e. D_4) to equal $D_2 + D_3 - D_1$.

Units of Measure

The only requirement for a unit of measure for the analysis is that it reflects discretionary allocations across municipalities and that it is available for all four municipal types (both mayor and legislator are from president's party, only mayor is from president's party, only legislator is from president's party, and neither mayor nor legislator are from president's party) for the time period in question. Any expenditure variable compiled annually, as well as estimates from public and private institutions satisfy this criterion. In practice, the discretionary transfers allocated from presidents direct to municipalities compiled annually by the countries ministry of finance are used in the analysis that follows, primarily because they have been the standard measure in previous literature on the topic (see for example Calvo and Murillo (2004), Arretche and Rodden (2004), Brusco, Nazareno and Stokes (2004), Magaloni, Diaz-Cayeros and Estevez (2007), Bonvecchi (2009), Brollo and Nannicini (2011)).

The federal discretionary transfers are measured for each municipality on approximately 12 years per country. These resources are typically used to infra-structure investments that impact education, health, sanitation and transportation in the municipalities. Transfers are scaled by municipal population to avoid the necessity to deal with large heterogeneous municipal population sizes. My data cover all 5,564 municipalities in Brazil from during the eight years of Lula's presidency (2003-2010), all 335 municipalities in Venezuela from during the 12 years of Chávez's presidency (2000-2011), and all 2,438 municipalities in Mexico from during the 12 years of PAN's presidency (2000-2012), a total of nearly 80,000 municipality-year observations. The abundance of data is what allows me to fit the structural model proposed here. I am able to find enough numbers of all possible municipal status in the data set.

There is one primary shortcoming of analyzing federal transfers (see Figure 2). They exhibit left censoring (that is, transfers are restricted to be non-negative), which may lead to inconsistent parameter estimates. The critical case is Brazil, where the large majority of municipalities do not receive investments every year. The top-right graph in Figure 2 shows how the number of zero values is way higher than the frequency of municipalities that receive some investments. For the cases of Mexico and Venezuela, this is less a problem. Note how the density height for these cases is higher for the municipalities which receives investments. In practice, however, I do not treat zero values as censoring, but as real values. Municipalities that do not receive appropriations are not proxies for negative transfers, but places where investments were indeed not seen by voters.⁶ As a check for bias induced by censoring, the basic specifications of the previous section were replicated using symmetrically trimmed least squares (Powell, 1986), an estimation technique that is robust to censoring. In all cases, the estimates of the weighting parameters in the utility function were virtually unchanged, suggesting that censoring is not a critical issue.

Choice of Variables

Variables are needed for identifying the party affiliation of mayors and legislators. The framework developed in Section I imposes an important restriction: in order for the model to be identified, all of the variables must be mutually exclusive *dummies*. See Table 1 for the summary statistics of the variables. During Lula's government, he faced 45% of municipalities with legislators from his party, but only 3% with both legislators and mayors. In Mexico, the PAN governed without representation of mayors or legislators in 72% of municipalities, an expected picture given the dominance of the PRI in that country. In Venezuela, Chavez faced the best scenario when compared to other presidents in the region. In 39% of the municipalities his party elected the

⁶In another paper I propose a Bayesian two-part model (BTM) to deal with semicontinuous variables, and argue this is the solution required to solve this issue. The structural model presented above will not be estimated using the BTM in this paper, but results are unchangeable using it.

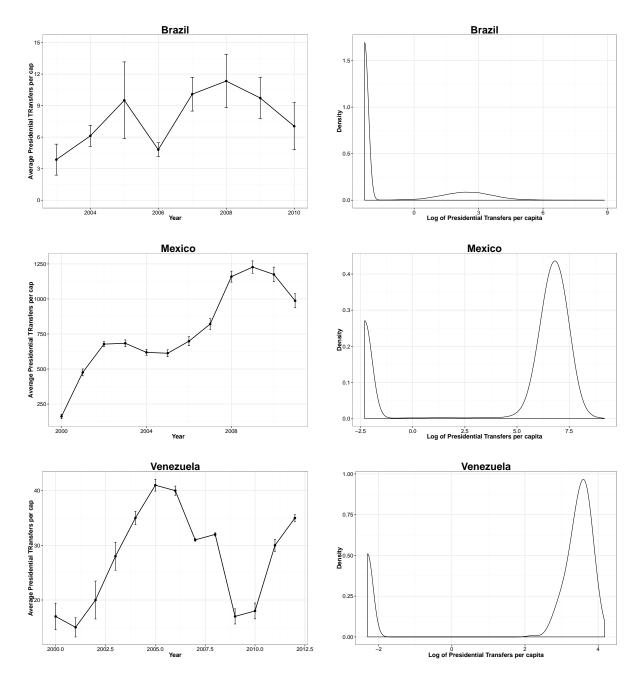


Figure 2: On the left, the average of presidential appropriations per capita over time. On the right, the *distribution of the log of presidential appropriations per capita.*

mayor and the legislator running for those seats, and in only 19% of the country's territory his party was absent. This scenario describes very well the different levels of what I defined as the 'presidential dilemma' (Nunes, 2012). Whereas in Brazil, Lula faced a large opposition setting in the municipalities, in Venezuela, Chavez controlled most of the offices in the country. The Mexican case is in between them.

Table 1: Distribution of Municipal Types by Country								
	Neither Mayor Legislator Mayor+Legislator							
	N (%)	N (%)	N (%)	N (%)				
Brazil	20462 (48)	1874 (4)	1933 (45)	1150 (3)				
Mexico	11897 (72)	1752 (11)	2148 (13)	763 (5)				
Venezuela	62 (19)	54 (16)	89 (27)	130 (39)				

Table 1: Distribution of Municipal Types by Country

These four *dummies* were created based on two variables: (1) party affiliation of mayors, and (2) percentage of votes the president's party received in each municipality for the legislative elections. The first variable is self explanatory and does not present any special challenge. The official electoral results from each country were collected and allowed me to identify the party of each mayor. The second variable, however, needs a justification. Brazil and Argentina have proportional representation systems. The first with open list, the second with closed list. Mexico, in turn, has a mixed system with some deputies elected by a plurality single-member districts, and others by closed list PR. In order to identify the municipalities that could be classified as constituencies of legislators from the president's party, I calculated the amount of votes each party received in each municipality in the legislative elections, and I selected the municipalities in which the president's party vote share was the largest. In Mexico and Venezuela this was less a problem because of the low number of relevant parties. Most of the municipalities in which the president's party was the largest also had majority of the votes there. In Brazil, in the other hand, the fragmentation of the party system reduced the chances that a party received a plurality of votes in each

municipality. Most of the municipalities identified as president's party constituencies did not voted more than 50% for the president's party.

Although there is no good measurement for legislator's constituency for PR systems, specially for open list, capturing the dominance and presence of a party in a municipality by counting the number of votes it received there, seems to be a good approximation for the purposes of my research. With this measurement choice I will be able to parse out the municipalities in which the president's party did very well in the legislative elections, and use this as a *proxy* for how much a president should care about such municipality if he is interested in helping his legislators for the next election. Again, I believe this to be a good measurement because in PR systems the number of seats is generally allocated by the total number of votes a party list obtain. Getting the majority of votes in many municipalities increases directly the likelihood a party will elect more seats for the Legislature, what can be taken as a *proxy* for how much important a municipality is for this party.

Due to the non-concurrent election cycles, mayoral affiliations change in a year different than legislators' affiliations. In Brazil, for example, mayors' political affiliation changed in 2005, reflecting the 2004 mayoral elections, and in 2009, reflecting the 2008 local elections. Legislators, in the other hand, changed with the other national elections in 2006 and 2010. In Mexico, municipal affiliations changed in 2004 and 2009, whereas national elections changed legislators' affiliations in 2000 and in 2006. In Venezuela, national elections happened in 2000, 2006 and 2012, whereas municipal elections occurred in 2000, 2004 and 2008. In the data used here, mayoral affiliations also change between these these intervals (although marginally) as a function of mayor's party switching, or party splitting.

The Choice of Sample

Presidential discretionary transfers directly to municipalities over the period 2000-2012 are the basis of the sample. Three types of exclusions are made in the data. First, municipalities with less than 6 years of information are dropped. The model requires estimating a fixed effect for each municipality. For those places which data is only available for few years (either because they are new municipalities, or because I couldn't find enough information for them), those estimates are quite imprecise. Moreover, the imprecision of those estimates has an adverse impact on the standard errors of the weights in the utility function. Including only municipalities which data exists for a minimum of 6 years in the sample reduces the number of parameters to be estimated by 375 in Brazil, by 132 in Mexico and by 12 in Venezuela, while lowering the available observations to 5215, 1380, and 300, respectively.

Second, as noted earlier, for municipalities which party affiliation of mayors and legislators did not change over time, the legislators' voter proxy is likely to be noisy and very sensitive to the party affiliation of mayors. Therefore, municipalities which affiliation of mayors or legislators do not change at least once are excluded from the sample. This eliminates an additional 155 municipalities in Brazil, 37 in Mexico and 22 in Venezuela, leaving 4,840 municipalities in Brazil, 1,343 in Mexico, and 278 in Venezuela.

The third type of exclusion is for missing data. I excluded from the sample all municipalities for which I could not find mayoral party affiliation, national transfers or party vote shares for legislative elections. After exploring the raw data, I believe it is possible to argue the missing data happens at random. To check for that, I run a logit model having as a dependent variable a *dummy* for inclusion/exclusion of the data point in the sample, and as independent variables the variables I am going to use in this paper. No coefficient was statistically different than zero, suggesting no

systematic effect of any independent variable important for my study on the chances of being included or not in the sample. I also run the results with an imputed data set from Amelia, and weights of utility function came all very similar.

EMPIRICAL ESTIMATES

Regression estimates of equation 17, using the variables and sample defined in the previous section, are presented in Tables 2, 3, and 4. The coefficients reported in Tables are decision weights in presidents' utility functions. As a test of the robustness of the results, a range of specifications are estimated using different legislative constituency proxies, sometimes instrumenting for party, and sometimes including year dummies to capture any systematic variation over time. Columns (1), (2), (5), and (6) of Table 3 use the president's party votes in lower house elections as the proxy for how much he cares about his legislative majority; the remaining columns use the president's party votes in upper house elections as a proxy. The odd-numbered columns are OLS estimates; the even-numbered columns instrument for the legislative vote proxies with once-lagged and twice-lagged values. Columns (5) - (8) add year dummies to the specification. In all cases, the sum of the weights in the utility function were restricted to equal 1, and overall presidential preferences were assumed to be constant over time.

	Dep. variable: Federal transfer spending per capita								
Weight on:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Popularity	.463	.450	.452	.451	.453	.453	.459	.456	
Legislative Majority	.021	.052	.034	.036	.046	.048	.049	.051	
Party Building	.516	.498	.514	.513	.501	.499	.492	.493	
Proxy Legislative Maj.	Lower House		Upper House		Lower House		Upper House		
Instrument for Party	No	Yes	No	Yes	No	Yes	No	Yes	
Includes year dummies	No	No	No	No	Yes	Yes	Yes	Yes	
Adj. R^2	.91	-	.91	-	.99	-	.91	-	

Table 2: Estimated Weights in Presidents Decision Functions - Brazil

The results are quite similar across the different specifications. It is reassuring to note that all of the weights are positive, although that restriction was not imposed. The high adjusted R^2 values in the OLS cases imply that the regressions are able to explain almost all of the variation in presidents distributive strategies. This is largely attributable to the municipality fixed effects, since variation across municipalities is much more pronounced than variation in a given municipality's transfer pattern over time. I do not have estimation of precision for the weights, as I have not calculated standard errors for theses estimated values yet.

In Brazil, legislative majority is estimated to receive only 2 percent of the weight in presidents' decision functions, suggesting that the constituency of legislators has relatively little influence on the distributive strategy of the president. The coefficient on the president's popularity, however, is approximately the same magnitude as that on party building: roughly .46 and .51. The similarity of those parameters suggest that Lula has used his discretionary power to produce more popularity for himself and to build his party strength in the municipalities. Although under some specifications the party building weight gains in magnitude, I would say this is an indication of a strategy that allows the president to build his support and his party at the same time. This is an interesting finding given the 'presidential dilemma' described before. Given that Lula was facing several municipalities in which his party was not governing, but in which he had gained the majority of the presidential votes, his decision function seems to accommodate both situations at once. He target municipalities to maintain the popularity he achieved in the previous election, but also to strengthen the presence of his party. These results provide little evidence for the legislative majority argument presented before, but strong support for the popularity and party building hypothesis.

In Mexico, the scenario looks different with all the three components of the president's utility function having very similar weights. The most salient one is the popularity, roughly .38; followed by the legislative majority, approximately .33; and by

	Dep. variable: Federal transfer spending per capita								
Weight on:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Popularity	.378	.375	.370	.371	.368	.382	.383	.375	
Legislative Majority	.334	.332	.331	.338	.337	.324	.321	.329	
Party Building	.288	.293	.299	.291	.295	.294	.296	.296	
Proxy Legislative Maj.	Lower House		Upper House		Lower House		Upper House		
Instrument for Party	No	Yes	No	Yes	No	Yes	No	Yes	
Includes year dummies	No	No	No	No	Yes	Yes	Yes	Yes	
Adj. R ²	.96	-	.93	-	.97	-	.93	-	

 Table 3: Estimated Weights in Presidents Decision Functions - Mexico

party building, .29. Given the long history of influence of the PRI across different offices in the country, it seems the PAN government had to spend resources to build their power on all those three elements. This is a typical case of portfolio diversification strategy in which the president uses the available resources to benefit his party members in congress, in the municipalities, and also help out his own voters. As I was expecting the Mexican presidents during PAN's government to be more party building than the model estimated, the low weights on party building make sense for the level of decentralization observed in Mexico. World Bank reports show Mexico in a position lower than Brazil in its fiscal decentralization ranking, what make mayors as not important as they are for the presidential goals in Brazil.

	Dep. variable: Federal transfer spending per capita								
Weight on:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Popularity	.674	.654	.694	.654	.661	.672	.681	.678	
Legislative Majority	.194	.193	.191	.197	.190	.195	.194	.192	
Party Building	.132	.153	.115	.149	.501	.149	.125	.130	
Proxy Legislative Maj.		Lower House		Upper House		Lower House		Upper House	
Instrument for Party	No	Yes	No	Yes	No	Yes	No	Yes	
Includes year dummies	No	No	No	No	Yes	Yes	Yes	Yes	
Adj. R ²	.87		.89		.91		.95		

 Table 4: Estimated Weights in Presidents Decision Functions - Venezuela

In Venezuela, the popularity of the president appears to be the most important determinant of the discretionary transfers, garnering between 65 and 69 percent of the overall weight. The main implication of this results is that president Chavez was distributing discretionary investments to praise his constituency, and to build a personal linkage with voters. This result is consistent with many studies about the new left in Latin America and lends some empirical support to the recent theoretical work that stresses the importance of popularity to populist politicians (Arnson and Perales, 2007; Castañeda, 2006; Lustig, 2009; McLeod and Lustig, 2011; Seligson, 2007; Weyland, Madrid and Hunter, 2010). The low weight of Chavez on party building is also consistent with my expectation that a president from a centralized system should not worry too much about the dilemma of not having loyal agents in the local offices to implement his policies. Venezuela, as stated by the World Bank, is the most centralized country in Latin America.

The estimates obtained here have important implications for a wide range of political science research. As pointed out by Dix (1984), in the democratic countries of Latin America the parties in power used to find it extremely difficult to win the election following their ascent to power, or even to avoid a decrease of their share of the vote. Although turnovers were in fashion in the region since re-democratization, *de facto* partisan shifts were only observed in the beginning of the 21st century. In the first years after re-democratization, the political parties controlling the presidency were either inheritors of the authoritarian regime alliances, or groups that were not opposition to the regime at all. It is only with the emergence of left political parties with political agendas ideologically different from the ones carried out by the traditional ruling parties that turnovers should be taken as indeed in place. Such moves are considered historical because they not only changed traditional structures in most countries, but they also marked the 'left turn' in the region (Weyland, Madrid and

Hunter, 2010; Aronowitz, 2006).⁷

The first major ideological shift in a Latin American presidential election occurred in 1998 when Hugo Chavez, a former coup leader, was elected president of Venezuela. He was followed in 2000 by Ricardo Lagos in Chile and Vicente Fox in Mexico. Brazil was the next to see the emergence of an opposition left party. PT arrived in the presidency through the leadership of Luis Inacio Lula da Silva. Then, the Peronist Nestor Kirchner won the presidency of Argentina in 2003, followed by Evo Morales of Bolivia in 2005, and Rafael Correa of Ecuador in 2006. The rise of these alternatives was associated with a broadening of social and economic policy options in Latin America. Unlike the 1980s and the 1990s, when candidates often campaigned for office on vaguely reformist platforms but governed as before (Stokes, 2002), the post-1998 wave of Freshman presidents' victories - most by the left - accompany a new era of policy experimentation in which governments expanded their developmental, redistributive, and social welfare roles. That means freshman governments changed not only who governed Latin Americans, but also how they pursued such changes.

Although such turnovers produced large reordering at the central level of government, historical political machines were still in place in the lower levels of government. In other words, elected presidents did not have a range of allies to give them political and electoral support. In Brazil, Lula's party governed less than 3% of the municipalities (or 18% of the population) in 2002. In Venezuela, Chavez's party governed less than 18% of the municipalities (or 24% of voters). In Mexico, Fox's party controlled 27% of the municipalities in 2000, which represented 35% of the total population. Given this scenario of uncertainties about what would happen in the region, it became of real interest to know which interests the new presidents would prefer to benefit. Or to put in a different way, it became of interest of most scholars of the region what

⁷Mexico's Vicente Fox is the only exception, as his electoral victory marked the first turnover toward a conservative party in Latin America (Greene, 2008).

these new presidents prioritize in their redistributive agendas. The methodology and estimation I present here have as they main aim to help understanding how presidents acted. But the application of it can be wider. Having the necessary data, any research can estimate the weight politicians put in these three components of their utility functions anywhere else.

Estimating the Weights Over Time

The model developed here is extremely flexible in its ability to test hypotheses about president allocative patterns. In this section, I will explore the variation of allocations over time to estimate the weights of president's utility function by year. This will allow me to explore a wide range of factors that potentially influence decision weights. In all cases, the specification employed uses votes for the elections for the lower house as a *proxy* for legislative majority, and does not instrument for that variable using lagged values. Therefore, the results reported below are variations on the results reported in column (1) of Tables 2, 3, 4. In this section, then, each president's weight functions will be allowed to change over time.

The patterns identified in each plot suggest three different stories. In Venezuela the overall pattern estimated in the last section is pretty much confirmed. Chávez used his discretionary power to allocate resources in order to build his popularity among voters. The weight that this estimate gains is the largest across all years. Given the documented control that he had over the legislature during his government (Corrales and Penfold-Becerra, 2007; Tarre, 2011; Hsieh et al., 2011), it is not of surprise that the weight the legislators have on his decisions was, in general, smaller. Note, however, that in the beginning of his mandate, when he did not have that much control over the government, Chávez's main concern in the allocation of resources were to praise his legislative majority. The two peaks in the popularity weight happens in the year of the

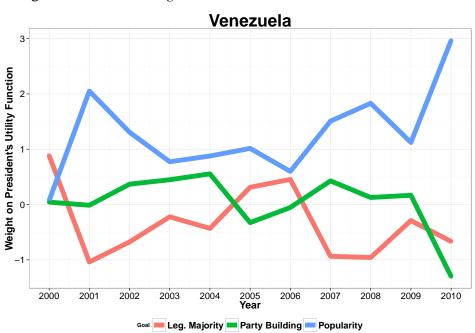


Figure 3: Estimated Weights in Presidents Decision Functions Over Time

opposition coup against Chávez in 2001, and in the year before the last presidential election, in 2010.

In Mexico, popularity gains weight during the two first years of PAN's government – a historical turnover in the presidency after 70 years of dominance of the PRI –, and in the years previous to the presidential elections in 2005 and 2011. In the years close to municipal elections, the party building component on the president's utility function is what appears to be the most important determinant of the discretionary transfers, garnering between 50 and 60 percent of the overall weight. Except for the first year in government, the legislative majority strategy has never influenced the PAN's government enough. The estimate weight for this element has almost always been close to zero. When desegregated, the evidence for Mexico suggests a different story than the one estimated in the aggregate level. The electoral cycle of the nonconcurrent elections for the national and local levels seems to be an important factor in determining when each strategy becomes dominant in the Mexicans utility functions.

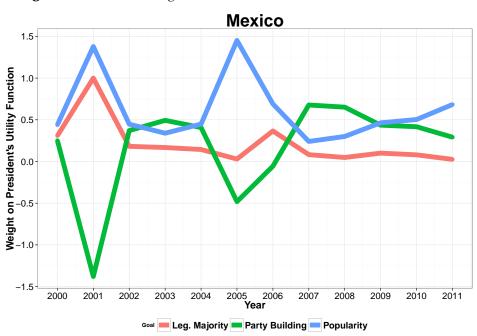


Figure 4: Estimated Weights in Presidents Decision Functions Over Time

The temporal diversification of strategies points me to conclude that politicians are indeed acting in order to maximize their utilities dynamically over time.

The pattern of allocation in Brazil seems similar to the one identified in Mexico. The weight on legislative majority is always the lowest, popularity is higher in the years previously to national elections, and party building in the years previous to municipal elections. The coincidences of both cases suggest that decentralization might not be the only variable important to measure how important mayors are for presidents interested in the implementation of a infra-structure agendas in the municipalities. Brazil has a much more decentralized system than Mexico, however, the weight of party building seems to follow the same pattern in both cases. My hypothesis about this similarity is that even a small level of decentralization might be enough to make mayors important players in the political system. If that's the case, the predictive power of fiscal decentralization might be even stronger when correlated with the allocative strategies of presidents. This analysis is part of my research agenda.

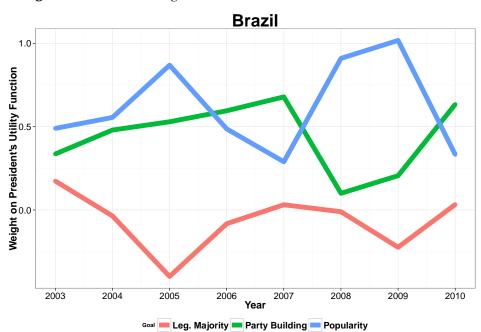


Figure 5: Estimated Weights in Presidents Decision Functions Over Time

DISCUSSION

This paper attempts to disentangle the relative weights that Latin American presidents assign to various factors in establishing which municipality receives investments from the federal government. The primary methodological contribution of this work is the attainment of consistent estimates of the president's decision function weights, even though presidents preferences are not observed. Popularity and party building are both shown to play a role in predicting presidents' allocation patterns, although a huge variation was measured across countries. Less than one fifth of the weight in the decision function is devoted to legislative majority, suggesting a substantial amount of successful pressure coming from local politicians and voters, but not from legislators.

My findings suggest that Lula, Chávez, Fox and Calderón distributed resources to guarantee their popularity across the municipalities. The importance of this element is documented in the size of the weight popularity receives over the years. In the Venezuelan case, this is true for the entire period, what suggests the centralization of the distribution and implementation of policies made Chávez a popularity-seeking politician. For the cases of Brazil and Mexico, we observe a diversification strategy over time. For the years previous to presidential elections, the weight of popularity stands in their utility functions, while in the years previous to municipal elections, the weight on party building gains more power. I believe the higher level of decentralization of these two countries, when compared to Venezuela, suggests that mayors are important players for the presidents in Brazil and Mexico. This might explain the weight in the party building strategy.

The formal political economy literature has shown that presidents should just target cheap voters, not differentiating the role that the different levels of government play in shaping the presidential preferences. My model develop the previous ones further showing that all three possible goals (popularity, majority in the legislature, and nationalized party) are not mutually exclusive, although I highlight the importance of understanding politics as prioritization under scarce time and resources.

Although I cannot make general conclusions here, I believe my results open a research agenda that needs to be explored in Latin America and elsewhere. The combination of presidential turnovers and decentralization produced an interesting puzzle for newcomer presidents in Latin America. On the one hand, Latin American presidents enjoy great discretion over targeted spending decisions (Hallerberg, Scartascini and Stein, 2009). Such resources could, then, be geographically targeted to promote policy goals (Treisman, 1996; Besley et al., 2003; Evans, 2006), and to promote voter support for the president's party in national elections (Ames, 2001; Pereira and Mueller, 2004; Amorim Neto, 2006). On the other hand, given the processes of decentralization in these countries, presidents could not rely on local politicians as good agents who would cooperate with the president on the implementation of his agenda, in helping him getting electoral credit for the public goods allocated, and in

mobilizing voters to support the president in the next electoral cycle.

Thus, although the president enjoyed budgetary power, his allocated strategy needed to take into consideration the risks of agency loss. To the extent that voters respond to targeted spending, a president can use budgetary discretion to gain votes for him. But federal transfer spending also improves re-election odds for incumbent mayors in targeted municipalities, especially under a decentralized setting. The political benefits of transfer spending thus accrue not just to the president, but also to an array of local politicians who may or may not share the president's party and political goals. By targeting his own core voters and pursuing social policy goals, the president may be supporting the reelection goals of his political enemies at the local level. When a president and local mayors are from different parties, and mayors have autonomy to manage and implement public services and goods, the president faces a trade-off between (1) meeting core voter expectations on outcomes while providing resources to opponents who could threaten his power; or (2) only allocating resources to towns run by co-partisan mayors, while excluding the majority of his supporters from receiving benefits.

In the cases of Brazil, Mexico, and Venezuela in the beginning of Lula, Fox, and Chavez governments, respectively, we observe a critical detachment between the presidential electoral support, and the presidential party's local electoral support. Consequentially, presidents elected with the majority of votes faced a new situation, in which their personal electoral support had not translated into party support. The methodology I presented in this paper is a first attempt to estimate how much presidents care about his own popularity, the majority he needs in the Legislature, and the structure of his party in the municipalities. Because the estimation technique applied in this paper requires only the allocation data, it can be applied to any time period and any subset of discretionary transfers. For instance, one could examine earlier periods of the history of Latin American countries, tracing the importance of parties and the degree to which the neo-populism resembles the classic one. It might also be of interest to apply this methodology to other countries. Alternatively, one could determine how the distribution of resources vary across areas, comparing, for instance, how left and right presidents weight votes, legislators and their own parties.

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