CONDITIONAL CASH TRANSFER PROGRAMS AND THEIR ELECTORAL EFFECTS

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INTRODUCTION

How does the population of inegalitarian countries react to their governments' initiatives to fight poverty and reduce inequality? Numerous studies published recently assume that the level of income inequality determines the level of popular support for redistribution. The most influential theoretical framework in this research agenda has been proposed by Meltzer and Richard (1981), who assume that preferences for redistribution are a function of the individual's location in the national income distribution. According to them, the difference between the median voter's income and the average income in the economy indicates how much she gains from redistribution and, since she is the decisive voter, it also determines the size of redistributive programs that are implemented by the government.

Redistributive policies can take many forms, and some of them do not necessarily benefit the median voter. Consider, for example, unemployment insurance programs, which cover less than 10% of the population in most countries. If the median voter is the decisive voter and can choose among alternative policies, she should opt for those that target her instead of the unemployed. Following this rationale, Moene and Wallerstein (2001) demonstrated that less investment is made by the government in unemployment insurance programs when the median voter's income is much below the national average, because she is better off with non-targeted redistributive policies. On the other hand, when the median voter's income is close to the average she extracts lifetime utility from protection against unemployment, and will, therefore, support investments in these programs. The authors use evidence from advanced industrial societies to support their claims.

Generalizing Moene and Wallerstein's (2001) assumptions to the developing world provides a clear picture of what the attitudes of a median voter living in highly inegalitarian democracies will be. Consider Latin America, which, according to the United Nations *2009 Human Development Report*, has twelve countries among the top twenty most unequal in the world. In a typical Latin American country, the median voter is expected to have the following characteristics: a) she is employed (in none of these countries is the unemployment rate higher than 50%); b) her income is considerably lower than the average (much lower than in developed countries); c) she strongly supports redistributive policies; and d) she prefers policies targeting the low-income employed rather than policies targeting the unemployed. Based on these expectations, popular support for redistributive policies targeting low-income workers should be stronger than the support for policies targeting those living below the poverty line.

Intriguingly, the main strategy of income redistribution in the continent has been to target citizens whose income falls below the median voter's. The so-called Conditional Cash Transfer (CCT) programs, which provide cash to poor households on the condition that their children attend school and visit the doctor regularly, were first implemented in some areas of Mexico and Brazil in the 1990s, and quickly spread to almost every Latin American country. According to the World Bank report *Conditional Cash Transfers: Reducing Present and Future Poverty*, written by Fiszbein and

Schady (2009), seventeen Latin American countries currently have a CCT program, and the coverage varies from five percent of the population in Chile to twenty percent in Brazil and Mexico, to forty percent in Ecuador. This World Bank publication thoroughly analyzes the impact of CCT programs on many socio-economic indicators and concludes that they have been effective in achieving their objectives.

The fact that CCT programs are associated with a consistent reduction of poverty and social inequality makes them highly visible among the domestic population. It is not obvious if Latin American presidents were motivated by electoral calculations, party ideology, influence from neighboring countries, or something else, when they implemented these programs. We can, however, use opinion surveys and electoral results to determine how citizens have reacted to them. It will allow us to asses if the link established by the literature between inequality and support for redistribution applies to the developing world. Following Moene and Wallerstein's (2001) rationale, we expect that support for CCT programs is strong only among grantees, who comprise the minority of the population. The median voter should oppose them and push the government to adopt less targeted redistributive policies. Despite the fact that CCT programs are associated with evident improvement of socio-economic conditions among the poor, the incumbent who implements them is likely to incur high electoral costs.

In this paper, I introduce a theoretical framework that justifies my expectation that targeted redistributive programs polarize the electorate, rather than only implying additional votes for the incumbent. Based on some basic premises about individual electoral behavior, which closely resembles those proposed by Meltzer and Richard (1981), and Moene and Wallerstein (2001), my model allows us to make predictions about the impact of those programs on vote swings at the aggregate level. I will show that those premises have implications at the aggregate level of analysis, which will be tested with evidence from Brazil. I also discuss briefly the Mexican case, and argue that it also seems to fit my "polarizing effect" hypothesis. Mexico and Brazil were the two first countries to implement CCT programs in Latin America, and their examples were followed across the continent. The Brazilian *Bolsa Família*, and the Mexican *Oportunidades* are today the biggest CCT programs in the world in terms of number of grantees.

In the next section, I introduce a theoretical model that explains why CCT programs polarize the electorate and trigger vote swings. My argument is that the sign of these vote swings depends on the local class structure. In the third section, I briefly discuss the association between the implementation of *Oportunidades* in Mexico and *Bolsa Família* in Brazil with the results of the following presidential elections. In both cases, there is strong evidence that the program polarized their respective electorates. In the fourth section, I use data from Brazil and estimate four OLS models showing a strong statistic association between investments in *Bolsa Família* and Lula's vote swings. These models provide empirical evidence for my argument that CCT programs polarize the population across social classes and can be risky electoral strategies.

CLASS STRUCTURE, TARGETED REDISTRIBUTION, AND ELECTIONS

Assume that countries are comprised of three social classes - the poor, the middle class (MC), and the rich - and that their relative sizes are, respectively, p, m, and r. The sum of these three proportions is one. Poor citizens are eligible to receive CCT grants; rich citizens earn above the national average; and the MC is composed of the remaining citizens, i.e., those who are not eligible to receive CCT grants but earn below the national average. The size of each class (p, m, and r) and the income thresholds that separate one from the other vary from country to country and depend on three factors. First, the CCT program's eligibility criteria determine the size of the poor and of the MC, as well as the income threshold that separates one class from the other. Defining poverty is, therefore, a political decision made by each national government. Second, the sizes of the MC and

of the rich, as well as the income threshold separating one from the other, depend on the level of inequality. The more inegalitarian the country is, the smaller the percentage of the population earning above the average will be. Consequently, in highly inegalitarian countries with a very restrictive CCT program, the middle class is enormous. On the other hand, in egalitarian countries with a generous CCT program, the middle class is small. Finally, income thresholds separating one class from the other also depend on the country's level of development. In developed countries, the two cutoff points that define the national class structure are likely to be higher than in developing ones.

Classes are defined at the national level, because their relative sizes depend on the eligibility criteria of a national CCT program, on the national level of inequality, and on the national level of development. As a consequence, the class structure of sub-national units (states, provinces, municipalities, counties, districts, etc.) may vary. There might be units where the majority of the population earns above the national average, and units in which the majority is poor and eligible to receive CCT grants. In municipality i, the relative size of the poor, the middle class, and the rich are, respectively, p_i, m_i, and r_i, and the sum of these three proportions equals one.

Now, assume three time points: t_{-1}, t, and t_{+1}. In t_{-1}, the incumbent I is elected president for the first time; in t, he implements a CCT program; and in t_{+1}, he runs for reelection. In both elections, I runs against the same opponent O, who makes the same promises and has the same ideology. Citizens use two criteria to choose between the two candidates: 1- the impact of the previous government's policies on their disposable income (retrospective vote), and 2- everything else (ideology, partisanship, heuristics, etc). Because t_{-1} is the first period, the only criterion used by individuals to choose between I and O in this time point is "everything else". The likelihood of a citizen voting for I in t_{-1} is determined by that criterion and expressed as l, a parameter that varies from 0% to 100%. Analogously, the likelihood of the same citizen voting for O is $(1 - l)$. The parameter l is also the likelihood that a randomly selected citizen will vote for I in t_{-1}, and, therefore, corresponds to I's national vote share in that election.

For several reasons, this parameter may have different values for different segments of the population. The likelihood of the vote for I may vary across age groups, levels of education, employment status, party affiliation, etc. For simplicity, assume that it varies only across social classes, and that the likelihood of a poor citizen, a MC citizen, and a rich citizen voting for I in t_{-1} is, respectively, l_P, l_M, and l_R. Consequently, I's national vote share in that election is $pl_P + ml_M + rl_R$, while O's vote share is $1 - (pl_P + ml_M + rl_R)$. Since I wins, his vote share is necessarily higher than O's.

As I pointed out, the size of each class varies across sub-national units. Thus, I's vote share in sub-national unit i at t_{-1} is:

$$VS^I_{i,t-1} = p_i l_P + m_i l_M + r_i l_R \tag{1}$$

In t, a CCT program is implemented by I for any reason. My intention is to understand the effects of these programs on electoral results, and, therefore, I ignore the causes of its implementation. Once adopted, the program automatically increases the poor', and decreases the rich', disposable incomes. Therefore, it tends to be supported by the poor, and opposed by the rich. Middle class citizens neither pay the costs, nor get the benefits, and their attitudes are a function of the CCT's indirect effects on their disposable income. The decreased purchasing power of the rich, and the increased purchasing power of the poor, affect the local economy in accordance to their relative sizes and indirectly affect the middle class. In sub-national units with a large proportion of poor and a small proportion of rich, the program boosts the local economy, whereas in units with opposite characteristics the program's effect on the local economy is negative. Therefore, MC citizens living

in underdeveloped areas are likely to support the program, while those living in developed areas are likely to oppose it. Differently from the poor and the rich, the attitudes of the middle class vary across sub-national units as a function of the program's impact on the local economy, and this impact is determined by the relative sizes of those other two classes.

Support for, and opposition to, any policy implemented by I are reflected in the electoral arena. Individuals choose their candidates by numerous reasons, and the implementation of a redistributive program does not fully determine who each citizen will vote for. But it determines the citizens' electoral behavior probabilistically: CCT programs increase (decrease) the likelihood of their supporters (oppositionists) voting for I. Therefore, keeping everything else constant, and assuming that the MC is negatively influenced by the size of the rich and positively influenced by the size of the poor in the sub-national unit, the likelihood of a member of each class voting for I in t_{+1} is:

a) poor: $l_P(1 + \alpha)$
b) rich: $l_R(1 - \beta)$
c) MC: $l_M(1 + \gamma p_i - \delta r_i)$

where α is the parameter that captures the CCT's positive effect on the likelihood of a poor citizen voting for I; β captures the CCT's negative effect on the likelihood of a rich citizen voting for I; γ, which is conditional on p_i, captures the CCT's positive effect on the likelihood of a MC citizen voting for I; and δ, which is conditional on r_i, captures the CCT's negative effect on the likelihood of a MC citizen voting for I. The parameters α and β are the *direct effect* of a CCT program on I's electoral support, while the terms γp_i and δr_i are its *indirect effect*, through the impact that the increased purchase power of the poor and decreased purchase power of the rich has on the economic well-being of the middle class. The negative of these four parameters explains the influence of a CCT program in the level of O's electoral support.

The values of α, β, γ, and δ can be also influenced by static country-specific factors. For example, the value of β could be lower in a country where I is a member of a rightist party than in a country where I is leftist, because the rich are generally more fond of conservative politicians. Other examples of factors that might influence the value of these four parameters are the size of the CCT program, the information environment, the party/ideology of O, the levels of inequality and development, and the values of l_P, l_M, and l_R. It is beyond the scope of this paper to assess the effects of contextual factors, but it suffices to say that none of these effects can be large enough to change the signs of the four parameters, i.e., contextual factors can only influence their magnitudes. The implication is that a CCT program *always* affects the attitudes of members of the three classes towards I and O in the direction proposed above, and that it *necessarily* polarizes the country across social classes.

As a result of this polarizing effect, I's vote share in unit i in t_{+1} is:

$$VS_{i,t+1}^{I} = p_i(l_P + \alpha l_P) + m_i(l_M + \gamma p_i l_M - \delta r_i l_M) + r_i(l_R - \beta l_R) \qquad (2)$$

Equation (2) shows that, even though a CCT program always polarizes the electorate, this polarization might not affect I's vote share in the sub-national unit i. If I loses as many votes among the rich as he gains among the poor, and if the CCT's indirect negative influence on the MC attitudes is as large as its indirect positive influence, I's and O's performances do not change at the aggregate level from one election to the other. It follows that comparing I's t_{-1} and t_{+1} performances in the same sub-national unit does not provide us with an accurate estimate of the electoral polarization triggered by CCT programs. The fact that I's performance remained the same in unit i does not mean that the constituency did not get polarized.

On the other hand, because the program's effects depend on the class structure of the unit, the influence of a CCT program on I's electoral performance will *necessarily* vary across units when their class structures vary. The incumbent is expected to lose votes in places where the rich are sufficiently larger than the poor, to gain votes where the poor are sufficiently larger than the rich, and to keep the same performance when the sizes of these classes are equilibrated. This equilibrium is not necessarily attained when both classes have the same size, because it also depends on the other parameters of equation (2).

I's vote swing from one election to the other is expressed by the difference between (2) and (1):

$$\Delta VS_i^I = p_i(l_P + \alpha l_P) + m_i(l_M + \gamma p_i l_M - \delta r_i l_M) + r_i(l_R - \beta l_R) - p_i l_P - m_i l_M - r_i l_R,$$

which can be reduced to:

$$\Delta VS_i^I = p_i(\alpha l_P + \gamma l_M m_i) - r_i(\beta l_R + \delta l_M m_i) \qquad (3)$$

Equation (3) shows that the cross-unit variation of I's vote swings due to the implementation of a CCT program is a function of units' class structures. I call the first right-hand term ($p_i(\alpha l_P + \gamma l_M m_i)$) the CCT program's *poverty effect*, because it reflects the positive influence that the program has on the poor' vote, and, through the poor, on the MC vote. The second right-hand term ($r_i(\beta l_R + \delta l_M m_i)$) is called the *richness effect*, because it reflects the negative influence that the program has on the rich' vote, and, through the rich, on the MC vote. This equation shows that I's vote swing in unit i is positive when the poverty effect is higher than the richness effect, and negative otherwise. It also shows that the sign and magnitude of I's vote swing depend on the ratio between the proportion of rich and the proportion of poor. To see it more clearly, consider a hypothetical sub-national unit x, in which I does not gain nor lose votes, and ΔVS_i^I is zero. For municipality x, equation (3) becomes:

$$(\alpha l_P + \gamma l_M m_x) = \frac{r_x}{p_x}(\beta l_R + \delta l_M m_x)$$

In every municipality where the proportion of rich divided by the proportion of poor equals $\frac{r_x}{p_x}$, I neither gains nor loses votes, because the negative influence of the richness effect is neutralized by the positive influence of the poverty effect. On the other hand, I is expected to improve his performance when that ratio gets lower, i.e., when the proportion of rich decreases below r_x and/or the proportion of poor increases above p_x.

REDISTRIBUTION AND POLARIZATION IN BRAZIL AND MEXICO

In the model proposed in the previous section, the sign and magnitude of I's sub-national vote swings depend on several parameters: the likelihood of a member of each class casting a vote for him in t_{-1} (l_P, l_M, and l_R), the effect of the implementation of a CCT program in t on these likelihoods in t_{+1} (α, β, γp_i, and δr_i), and the relative size of each class (p_i, m_i, and r_i) in each sub-national unit. The first two sets of parameters capture contextual characteristics, and vary across countries and across incumbents, but not across sub-national units. The last set of parameters is the only one that varies across sub-national units. In this section, I briefly discuss how was the process of implementation of a CCT program in Brazil and Mexico and their association with the following elections, paying close attention to how vote swings varied across sub-national units. A quick glance to these cases shows how electorally risky these programs can be, given their polarizing effect.

The Brazilian program *Bolsa Família* was implemented by President Lula in 2003, about one year after he was elected. This was not the first CCT program implemented in Brazil, but investments made on *Bolsa Família* helped it to reach for the first time almost 100% of the targeted population by the end of 2006. There is little doubt that it was the first Brazilian CCT program capable of having a real impact on levels of poverty and of income inequality. Several studies have been published after Lula's reelection in 2006, assessing the role of the program on his electoral performance. Most of these studies conclude that it had a determinant role (Nicolau and Peixoto 2007, Zucco 2008, Soares and Terron 2008), and some of them even associate Lula's victory with the program (Hunter and Power 2007). From one election to the other, the incumbent improved his performance in the states that received the lion's share of resources. Table I suggests that this association is strong.

Table I: Lula's Performance by Geographic Regions

Region	BF Coverage (%)	1st Round			2nd Round		
		2002 Vote Share (%)	2006 Vote Share (%)	2006 - 2002 (pp)	2002 Vote Share (%)	2006 Vote Share (%)	2006 - 2002 (pp)
Northeast	35.68	38.51	59.76	**21.25**	57.31	71.90	**14.59**
North	23.84	40.36	52.69	**12.33**	55.83	63.72	**7.89**
Center-West	13.96	39.79	35.88	**-3.91**	54.80	49.52	**-5.28**
South	11.23	45.33	32.48	**-12.85**	54.48	43.59	**-10.89**
Southeast	10.95	42.52	39.67	**-2.85**	59.52	53.41	**-6.11**
Brazil (Total)	**18.52**	**41.62**	**44.52**	**2.90**	**57.60**	**57.16**	**-0.44**

Notes. BF coverage was calculated by dividing the number of granted households by the total number of households. Vote shares account for invalid votes (blank and null votes), and, therefore, differ from official results. Sources: MDS, IBGE, TSE, and author's calculations.

The table shows something that has been highly neglected by the literature: Lula lost at least as many votes in the richest states as he gained in the poorest ones. Despite the dramatic gains experienced by Lula in the underdeveloped areas of the country, he ended up with similar national vote shares in 2002 and 2006. There is a high and significant correlation between his electoral performance in 2006 and investments in *Bolsa Família* at the municipal level (0.7), but the correlation between those investments and vote swings from one election to the other is at least as high (0.75). Vote swings can assume negative and positive values, depending on whether the incumbent improved or not his performance, allowing us to associate the program with electoral gains and costs. Therefore, the latter correlation suggests that investments in the program explain both the electoral gains and losses of Lula in 2006.

The Mexican experience has some similarities with the Brazilian one. The program *Oportunidades*, which was actually an extension of the previous CCT program PROGRESA to urban areas, was implemented by President Vincent Fox two years after his historical electoral victory. In 2000, Fox was able to displace the ruling party PRI from power for the first time in seventy years, taking advantage of his strong electoral support from Central and Northern states of Mexico. His performance in the poor states of the Southwest was considerably bad. Once in office, Fox worked hard to reduce the Mexican income inequality, and the main instrument he used was the CCT program *Oportunidades*. By the summer of 2006, the program reached one fourth of the Mexican population, but most of the grantees were concentrated in the poor Southern states, where his party's (PAN) electoral support was the lowest.

Some of the scholars that have assessed the impact of the program on the performance of the PAN's candidate Calderón in 2006, have reached similar conclusions to those that analyzed the impact of *Bolsa Família* on Lula's performance in the same year. After finding that grantees were more prone to vote for the incumbent than for other parties, Díaz-Cayeros et al. (2009: 245) concluded that "well-designed welfare programs to alleviate poverty can produce significant electoral payoffs for

incumbent parties, not only from the Left, but also from the Right". However, from 2000 to 2006, the PAN candidate lost votes in almost every Mexican state, especially in rich areas. Table II suggests that the hypothesis that the program threatened Calderón's election should not only be considered, but also be taken very seriously.

Table II: PAN Candidate's Performance by Geographic Region

Region	*Oportunidades* Coverage	2000 Vote Share (%)	2006 Vote Share (%)	2006 - 2000 (pp)
Northeast	7.01	30.25	20.43	**-9.83**
Northwest	10.86	25.91	23.65	**-2.26**
Center	13.34	31.51	22.33	**-9.18**
West	16.87	28.31	23.73	**-4.57**
Southeast	28.6	25.49	16.53	**-8.95**
East	31.82	24.87	20.14	**-4.73**
Southwest	52.58	13.25	12.77	**-0.05**
Mexico (Total)	**20.69**	**27.2**	**21.02**	**-6.18**

 If we divide the country between states whose *Oportunidades* coverage was less than 20% (15 states), and those with coverage higher than that (17 states), the aggregate electoral swing of the first ones was -9.21 percentage points, while the electoral swing of the second ones was -2.8 percentage points. In every state of the first group, PAN faced negative electoral swings, while in the second group it faced positive electoral swings in 5 states, or almost one third of them. Moreover, while there is no statistical association between investments in the program and Calderón's vote shares at the state level, the correlation between those investments and PAN electoral swings is 0.33, significant at the 0.1 level. Therefore, it is likely that the program explains both PAN's huge losses in rich areas and the variation of these losses across states.

CLASS STRUCTURE AND LULA'S BID FOR REELECTION IN 2006

Now, let us take a closer look at the Brazilian case. How does the model introduced in the second section help us to understand what happened in Brazil during the 2006 elections? To answer this question, I analyzed municipal-level data from four governmental agencies (MDS, TSE, IBGE and IPEA), and estimated four linear regression models using the difference between Lula's vote shares in the second rounds of the 2006 and 2002 elections as the dependent variable. This variable is an indicator of Lula's municipal vote swing, and can only assume values between -1 and 1. Positive values indicate that Lula improved his performance from one election to the other, while the opposite is true for negative values. I also estimated the same models using data from the first round, but, since the results are similar, they are omitted.

The main explanatory variable is the ratio between the proportion of rich and the proportion of poor in each municipality. The proportion of poor was calculated by dividing the number of families receiving *Bolsa Família* grants by the estimated number of families in the municipality. Unfortunately, there are no data on the proportion of people earning above the national average. IBGE only provides data on the percentage of the population earning more than 5 minimum wages (R$755.00), and more than 10 minimum wages (R$1,510.00) in 2000, the year in which the last Census before the 2006 elections was carried out. Since the average income in that year was R$1,117.95, I estimated models using both measures, but below I only report those using the less conservative one (5 minimum wages). I have no good reason for choosing one over the other, but both of them produce similar results, and lead to the same conclusions.

Besides the ratio between the proportion of rich and the proportion of poor, I also included a dummy variable that equals 1 when the proportion of rich is higher than the proportion of poor

$\left(^{r_i}/_{p_i} > 1\right)$, and the product of these two variables. The inclusion of this interaction term is necessary because the relationship between Lula's vote swing and the main explanatory is not expected to be linear. The value of the ratio $^{r_i}/_{p_i}$ for all municipalities in which the proportion of poor is higher than the proportion of rich have values constrained between zero and one, while those in which the rich are lager have, in my sample, values that vary from one to fifty. Therefore, the regression line should be steeper between zero and one than between one and fifty. The inclusion of the proposed interaction term is a way to break the regression line at the point in which the main explanatory variable equals one, allowing it to have different slopes below and above this value.

As control variables, I used all municipal characteristics regarded by the literature as having had some influence on Lula's performance in 2006. Following Zucco's (2008) insights, I divided control variables in three categories. Among socio-demographic variables I included the municipal HDI, the percentage of *Negros* (individuals classified as black or brown by the Brazilian Census), the percentage of Pentecostal Christians, and the log of the population. Among political variables, I included the difference between the 2006 and 2002 second round turnouts (Turnout Swing), Lula's 2002 vote shares in the second round, and two dummy variables that equal 1 if the mayor or the governor is from the Workers Party. Finally, I included two of the variables used by Zucco (2008) to control for the possibility that municipalities more dependent on federal resources usually display higher levels of support for the incumbent: per capita income and size of the public sector. The latter was calculated by dividing the public administration's GDP by the aggregate GDP.

Some scholars have called attention to the fact that Lula's 2006 vote shares are characterized by a strong spatial dependence (Carraro et al. 2007; Soares and Terron 2008). The explanation for that can be either the presence of neighborhood effects, or the impact of unobserved variables with geographically limited influence. The usual way to test for this possibility is through the Moran's I statistic, an indicator that varies from -1 to 1. The closer its value gets to these extremes, the stronger is the variable's spatial autocorrelation, implying that its value in one locality is influenced by its value in the neighboring ones. I constructed a weights matrix whose criterion was first order contiguity, and estimated a Moran's I of 0.78, significant at the 0.01 level. This value is high, and makes the inclusion of controls for spatial autocorrelation strongly recommended. As it is usual in spatial econometric analyses, I also calculated the local Moran's I (LISA) for each municipality. The results are displayed in Fig. 1.
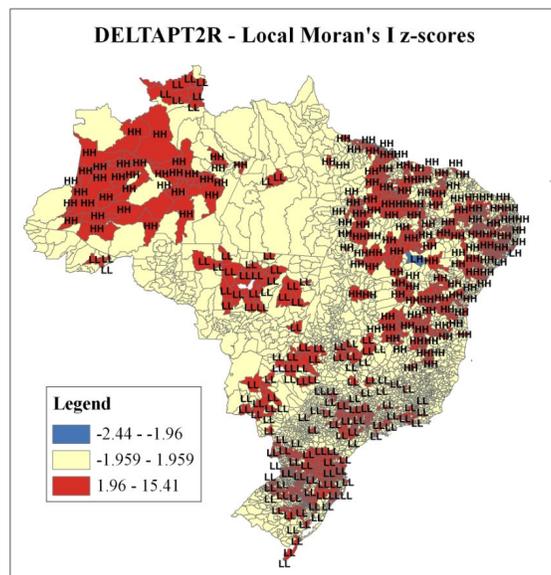
Figure 1: Local Moran's I z-scores of Lula's Municipal Vote Swing

The map highlights municipalities for which the local Moran's I statistic was significant at the 0.05 level (z-scores lower than -1.96 and higher than 1.96). The red spots indicate municipalities with high DELTAPT2R (Lula's vote swing in the second round) whose neighbors also have high values (HH), and municipalities with low values whose neighbors also have low values (LL). The four LH outliers (blue spots) indicate municipalities with low values whose neighbors have high values. Note that LL municipalities are concentrated in the South, Southeast, and Center-West, while HH municipalities are concentrated in the North and Northeast. Out of 5557 municipalities for which electoral data were available, 1940 have significant HH or LL LISA scores. It is a further piece of evidence that the dependent variable is spatially autocorrelated.

The next step is to decide which of the spatial regression models is more appropriate: the lag or the error model. In general, the Lagranger Multiplier test is used to determine it. I performed this test for models with and without control variables, using data for the first and second rounds, and all of them indicated that the spatial error model should be used instead of the lag model. This is consistent with Carraro et al.'s (2007) and Soares and Terron's (2008) findings and suggests that the spatial dependence of Lula's performance is due to unobserved variables whose influence is spatially limited. Some possible explanations for this kind of spatial dependence could be that presidential candidates prioritized some areas of the country during their campaigns, or that regional groups of interest invested in political propaganda in their areas of influence. I estimated models that control for the spatial autocorrelation of the error term (lambda) and models that do not.

My results are displayed in Table III. I did not include control variables in the first two models. Models 1 and 3 are simple OLS regressions, while models 2 and 4 include a control for spatial autocorrelation of the error term (lambda). First of all, note that models without control variables already have a considerably high R-squared, similar to, or higher than, most of the models that have been estimated so far by the literature. It attests to the high explanatory power that the class structure had on Lula's vote swings from 2002 to 2006. The inclusion of controls slightly improves the models' fit, and reduces the magnitude of the coefficients of my main explanatory variables, but it does not make them less significant.

Table III: OLS Models - Dependent Variable: Lula's Vote Swing (2R)

Variable	Model 1	Model 2	Model 3	Model 4
Constant	0.314 ***	0.235***	0.585***	0.681***
Rich/Poor	-0.373***	-0.239***	-0.117***	-0.06***
Dummy for Rich > Poor	-0.342***	-0.218***	-0.102***	-0.053***
Rich/Poor * Dummy	0.363***	0.231***	0.113***	0.057***
HDI			-0.119**	-0.234***
Log of Population			0.014***	0.007***
Negros			0.16***	0.126***
Pentecostal Christians			-0.108***	0.083***
Turnout Swing (2R)			0.073***	0.055***
Lula's 2002 Vote Share (2R)			-0.524***	-0.594***
PT Governor			-0.036***	-0.023**
PT Mayor			-0.025***	-0.021***
Log of Per Capita Income			-0.061***	-0.048***
Size of Public Sector			0.099***	0.043***
Lambda		0.75***		0.755***
Number of Observations	5427	5427	5427	5427
R-squared	0.64	0.79	0.79	0.88
AIC	-8807.66	-10953.7	-11759.2	-14116.8

Notes. Except for the proportion of poor and for the political variables, all the others refer to 2000. Levels of significance: *** < 0.01; ** < 0.05.

Because I included an interaction term, the OLS equation for municipalities in which the poor is larger than the rich is different from the equation for municipalities in which they are not. For the first kind of municipalities (poor is larger), model 1's equation is:

$$\Delta PT2R = 0.314 - 0.373(Rich/Poor) + \varepsilon,$$

while the equation for the second kind of municipality (rich is majority) is:

$$\Delta PT2R = -0.028 - 0.01(Rich/Poor) + \varepsilon$$

When the poor are larger than the rich, the effect of the ratio between the two classes seems stronger than when the rich prevail. As I explained before, it is a mere artifact of the fact that I am using a ratio between the proportion of rich and proportion of poor as the independent variable. Substantively, the effect of class structure is similar for both kinds of municipalities. Except for the inverted signs of the coefficient for Pentecostal Christians in models 3 and 4, the signs of all the other control variables are consistent with what has been found in previous works, and will not be discussed here (explanations for their effects can be found in Zucco 2008). I do not have any plausible explanation for the ambiguous effect of the proportion of Pentecostal Christians.

My results confirm that the municipality's class structure explains the sign and the magnitude of Lula's electoral swings from 2002 to 2006 and provide evidence that CCT programs polarize the electorate rather than only increase the incumbent's support and chances of reelection. Even though most of the authors who assessed the effect of the *Bolsa Família* program on Lula's 2006 vote shares have stated that it helped him to get reelected, the real story is a bit more complicated than it appears to be. Investments in the program, which are included in my models as the denominator of the ratio rich/poor, also explain Lula's losses in the most developed areas of the country. It is not a surprise that his national vote share did not vary much from 2002 to 2006.

My empirical findings show that the *Bolsa Família* program had a significant impact on Lula's municipal performance in 2006. Consistently with what previous studies have showed, the incumbent's electoral bases changed considerably from one election to the other as a consequence of investments in the program. Nevertheless, the fact that the program also led to electoral losses in the more developed and populous cities of the country entailed that the effect of Lula's electoral gains on his national performance was negligible. In inegalitarian countries, the implementation of targeted redistributive programs is a strategy that involves electoral costs and profits. Had Lula not implemented *Bolsa Família*, and keeping everything else constant, my expectation is that he would be still reelected in 2006, but with the same electoral bases as those of 2002.

CONCLUSIONS

In the last 15 years, targeted redistributive programs have spread throughout Latin America and other parts of the world. International and national organizations have published several reports praising the positive impact of these programs on socio-economic indicators, such as level of poverty, income inequality, school enrolments, and nutritional values among the poor. It is likely that presidents from all across the continent were lured by the optimism behind these reports, and worked to implement similar programs in their own countries.

However, redistributive policies are usually opposed by a significant segment of the population, especially in inegalitarian countries. This opposition is reflected in the electoral arena, and incumbents implementing CCT programs are bound to lose votes. These electoral costs have been mysteriously overlooked by all the authors that analyzed the impact of the program *Bolsa Família* on Lula's performance in 2006, and of the program *Oportunidades* on Calderón's performance in

the same year. The current consensual thesis is that the program helped the incumbent candidate to get reelected. In this paper, I provided theoretical and empirical evidence that these statements must be reviewed. Lula gained at least as many votes as he lost as a consequence of *Bolsa Família*, which explains the fact that his national performance did not change much from one election to the other. There is also evidence that *Oportunidades* rather threatened than helped Calderón's bid for reelection. More research is necessary, however, for us to better understand the nature of this association in Mexico.

Even though my focus here has been restricted to what happened in Brazil and Mexico, I believe that the theoretical model I proposed is useful to interpret similar events elsewhere. Assessing the impact of CCT programs on incumbents' performances in other countries is a promising way to test my theory and advance this research agenda. While it is not done, I hope that my findings stimulate skepticism over mainstream statements that CCT programs do not entail electoral costs, and are only implemented as a vote-buying instrument to serve the incumbent's reelection objectives.

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