

Does Education Win Elections?*

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Abstract

We show evidence that, in Brazilian municipalities with low median income, voters are less likely to reelect mayors who allocate money to public education expenditures at the expense of cash transfers. The reverse is true for municipalities with high median income. We also present evidence that the poor point out education as a vital issue much less often than the rich. The opposite pattern in preferences is found for issues related to income transfers. Hence, preferences seem to be driving our electoral outcomes findings. This evidence could explain why more democratic societies might not necessarily have higher levels of public education expenditures.

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1 Introduction

It is a common interpretation, both among policy makers and in academic circles, to view public expenditures in education as playing a fundamental role in the development process. Many growth economists (Lucas, 1988; Mankiw, Romer and Weil, 1992) have stressed the impact of education on economic growth. Besides, education has also been pointed out as an important determinant of long-term growth in former European colonies, (Glaeser et al, 2004). In the micro-development literature, several studies have estimated that both the private and social returns to education are particularly high in developing countries (Psacharopoulos, 1985 and 1994, and Duflo, 2001). In addition, education has been found to play an important role in different aspects of development, such as improving health and reducing fertility (Schultz, 1997 and 2002).

The natural question that arises is then: why have poor countries not been investing enough in education and taking advantage of the above observations?

A usual explanation goes back to classical authors up to the recent literature (e.g. Acemoglu and Robinson, 2001, 2006a). This literature views citizens being made hostages by the elites, especially in unequal and/or poor economies. The idea is that in such countries, democracy is less consolidated, hence the elite has enough power to prevent investments in education that could ultimately empower the citizenry, leading to revolts that could overturn the ruling group's power. In sum, past literature has mainly focused on a "class-struggle" explanation for the observed low levels of public investment in education in very unequal and poor societies. Related ideas can be found in the work by Robinson (2001), who proposes a theoretical model to show the conditions under which the elite will prefer to prevent the rest of the population from being educated and hence enfranchised, and Bourguignon and Verdier (2000), who present the conditions under which the elite would be interested in emancipating and educating the

poor.¹

However, recent work by Mulligan, Gil, and Sala-i-Martin (2004), henceforth MGS, has presented evidence that democracy does not lead to higher levels of social expenditures, and in particular, public education spending. To address this theoretical void, Acemoglu and Robinson (2006b) indicated that democracy is only relevant to policy outcomes, to the extent that de facto power is not held by the elite.

As opposed to the referred literature, this paper proposes a more mundane and straightforward explanation for why public education expenditures might not be higher in democratic countries. We argue that preferences which are reflected on voting behavior are the main driving force of low levels of public investment in education. Also, our argument is consistent with the evidence presented by MGS. Our idea is rather simple and could be summarized by two points to which we will get back in more depth later:

(i) The poor tend to be poorly educated, and uneducated people perhaps cannot grasp the value of education. Or perhaps people believe that whatever they have done in life is the right thing to do, so uneducated parents believe there is no need for their children to become educated. We call this the *low schooling effect*;

(ii) The poor (especially below a certain threshold level of income) have urgent basic needs (nutrition, shelter, etc.) that could only be satisfied through immediate increase of their income. If they were to choose between a policy outcome that provides them with future gains or one with immediate gains, their indigence level would compel them to take the second option . We call this the *low income effect*.

We motivate our hypothesis with MGS's dataset. In Table 1, our first specifi-

¹A somewhat related literature that addresses the importance of education for a thriving democracy had some recent contributions such as Acemoglu et al. (2005) and Glaeser et al. (2007).

cation simply replicates their main results of no significant relationship between public education spending and democracy in a cross country dataset with 114 developed and developing countries. In the second specification, we include an extra regressor to the baseline regression, which is the interaction between the log of per-capita income and democracy. We find that democracy does increase public education expenditures in rich countries because the interaction coefficient is positive and significant at the 5% level. In addition, the coefficient for democracy changes sign becoming negative and significant also at the 5% level. The impact of democracy on public education expenditures is zero for countries with per capita income level of \$2,100, 10% below the mean of the sample. Evaluating the effect of democracy on public education expenditures at each mean income level is interesting, but if we believe that the median voter is relevant for policy determination we should take it into account. Therefore, we have also calculated the median income from the UNU-WIDER database, and even though we lose a few observations, we are still able to run a regression with 87 data points. We present our findings in column 3, which are very similar qualitatively and quantitatively to the results of specification 2. The results we have found by exploring further the MGS dataset corroborate with our hypothesis, because they indicate that democracy only contributes to fostering public education expenditures if the median voter is rich enough. Also, we observe that the coefficient on median income itself is not significant: the evidence therefore suggests that the impact of a richer median voter in increasing public spending in education is only important in more democratic societies (the coefficient interaction term between democracy and the median income is positive and significant), which again corroborates our hypothesis and goes against the class-struggle interpretation².

²The class-struggle interpretation predicts that the poorer is the median voter, the more elites have to lose by enfranchising citizens. And hence public education spending should be lower. We fail to find evidence that corroborates with this prediction.

In this paper, we focus on the Brazilian case because of the large heterogeneity of its population in terms of income and education and because Brazilian local elections are a very natural setting to test our conjecture. We begin by showing evidence from survey data that the poor and less educated regard education much less often as the most vital issue for the government to tackle than the rich. In fact, wariness about education rises with income.³ We also provide evidence that these preferences are well expressed in voting behavior. We look at electoral data for the 5,500 Brazilian municipalities and we find that in municipalities with low levels of median income, mayors who have chosen a high level of public education expenditures as a share of the budget at the expense of cash transfers are less likely to be reelected. However the opposite is true for municipalities with high median income.

Some anecdotal evidence brings life to our findings. In 2007, a former Education Minister and presidential candidate in Brazil, Cristovam Buarque, was quoted saying: "Let's speak frankly, the political class does not give paramount importance to education because the population does not do so. Nobody wins a national election talking about education; alas, I am an example". Looking a bit North, some pundits have argued that divergence on education policy was a major determinant for the outcome of the 2000 presidential elections in Mexico, when the Institutional Revolutionary Party (PRI) lost power for the first time in 70 years. Francisco Labastida, the PRI presidential candidate, and Vicente Fox, who was eventually elected, had policy proposals which diverged in very few issues. But Mr. Labastida was the one playing the card of increasing significantly public education expenditures so that Mexicans could learn English and acquire more sophisticated computer training.

This article is organized as follows. In the next Section, we present our

³We find similar results for US survey data using the General Social Survey. We present those results in the appendix.

hypothesis and briefly expose our argument. In Section 3, we report survey data evidence for Brazil, which lends support to our claim that the poor do not regard education as an issue of paramount importance for policy. In Section 4, we look at mayoral electoral outcome in 5,500 municipalities in Brazil. The last Section concludes.

2 Our Argument

In this section, we discuss past theoretical findings that help us comprehend our results. We study theoretical explanations for both, the low schooling effect and the low income effect.

The Low Schooling Effect: Past literature such as Duflo (2001) and Psacharopoulos (1985 and 1994) has emphasized the high returns to education existing in developing countries. In spite of that, we do not observe democratic developing countries investing massively in public education. A few reasons might be related to this stylized fact. First, Foster and Rosenzweig (1996), Bils and Klenow (2000), and Nguyen (2008) have shown that perception of returns to schooling is an important determinant in the level of schooling. Uneducated individuals, may simply not understand the returns that instruction offer and thereby be less interested in public education spending. Another possibility raised by Heckman et al. (1999) is that poorly educated parents educate their kids in such a way that they do not build cognitive abilities when they are very little. This affects their ability to acquire skills making the acquisition of education more costly for the poorly educated.

This stylized fact could also be explained by a finding of the psychology literature - cognitive dissonance. There is a large body of work that was started by Festinger (1957), Bern (1965) and Aronson (1969) documenting that people have an uncomfortable feeling when holding two contradicting ideas. In those

situations, people have a cognitive drive to modifying one of their beliefs. Bern and Aronson have proposed that this stressful feeling emerges more often when the sense of self is involved. This peculiarity may explain why people often believe that whatever they have done is the right thing to do. In our case here, parents who had little education may be driven to believe that the right thing for their kids is to follow the same path they did.⁴

Yet another reason for which the less educated may not be interested in acquiring education is that perhaps the wage premium for low levels of education is low, and it might be the case that the expected final level of schooling of children of poorly educated parents are also low. Thomas (2006) illustrates why this may be so, showing that although the college wage premium relative to elementary school is of the order of 3.5, the high school wage premium is only around 1.5 in Brazil.

Low Income Effect: We have also found in the literature some possible theories for why low income individuals may not show interest for public education spending. The first one is noted by Oreopoulos (2003). This work argues that it is hard to explain why the poor tend to have less interest in earning education with rational intertemporal decisions. An explanation has probably to do with time inconsistent preferences, misguided expectations, or some social/peer pressure story. In this work, Oreopolous shows that liquidity constraints, a possible explanation for our findings, is analytically related to time inconsistent preferences. Another issue that is related to Heckman et. al (1999) is selection. It may well be that the poor are simply less capable and therefore cannot benefit from the wage premium. However, in countries of so much inequality of opportunity it is not easy to believe that poverty of a large share of the population is an equilibrium outcome due to innate abilities.

⁴We are thankful to Ben Friedman for suggesting this interpretation and for David Laibson for providing references on the topic.

Finally, it might simply be the case that, in equilibrium, anticipating the above phenomena, poor people know they will not consume education, and that is why the poor may oppose expenditures in public education.

3 Education and Preferences

In this section, we present evidence on our claim that the poor tend to regard education as a lower priority issue for government policy. We use two sets of Brazilian survey data, drawn from two of the country’s major survey institutes, *Datafolha* and *Fundacao Getulio Vargas (FGV)*.

3.1 The Government’s Policy Priorities

The dataset collected from Datafolha contains 41,894 respondents from 6 waves of the institute’s main nationwide political survey. The goal of this survey was to assess people’s opinion regarding the current federal government, their expectations for the national politics and their preferences among candidates for the following presidential elections. Our dataset contains waves from each of the following years: 1999, 2001, and 2002. The survey was meant to be representative, with respondents from different Brazilian regions and states.

Among the questions asked in the survey, one is of particular interest here: the respondent was asked to point, by looking at a list of possible options, the issue that according to him/her should be the main priority of the Brazilian government. The list of issues is as follows: (i) *health*; (ii) *education*; (iii) *the economy*; (iv) *housing*; (v) *hunger/indigence*; (vi) *unemployment*; (vii) *inflation*; (viii) *wages*; (ix) *violence/public safety*; (x) *agrarian reform*; (xi) *corruption*; and (xii) *drugs/drug trafficking*.

We create a dummy variable for each of the categories above taking value one if the respondent reported the category as the main priority, and zero otherwise. Since our analysis addresses how poor people would tend to favor short-term

monetary gains as opposed to public investments in education, we focus on the following categories: *education*, *hunger/indigence*, *unemployment*, and *wages*. We believe the last three capture the preference for short-term monetary gains. We also create an additional dummy, which is equal to one if the respondent picked any of the last three categories. We call this new category *poverty alleviation*.

Among the explanatory variables, two of them are of particular importance. The first one is *household income*, which was coded into seven income intervals, year after year. Since the boundaries of the intervals were adjusted by the inflation rate between the different years, we transformed this categorical variable into a more continuous one by assigning to each person in each interval the mean level of income from that interval, corresponding to the last wave of the survey. Individuals were also asked to report their personal income in the same fashion. However, based on our story, we conjecture that the relevant income variable is the household one, since this is the one that ultimately determines the budget constraint to which each household member is subject to, especially in a country of strong family ties like Brazil.⁵ The second main explanatory variable is the level of *schooling* of the respondent. Again, this variable was coded into intervals (eight) corresponding to different levels/degrees of schooling. We translated it into number of years of schooling by taking the mean number of years for each category. Individuals were also asked about the level of schooling of the head of the household, and we use this measure in alternative specifications of our regressions.

Our basic specification is a probit regression for each of the priority dummies:

$$priority_m_i = c_j + \beta_1 * income + \beta_2 * schooling + \sum_{k=1}^K \gamma_k X_{k,i} + \varepsilon_i$$

where $priority_m_i$ is the i th government priority dummy, for individual

⁵For robustness, we reproduce the analysis using the personal income measure.

i , c_j denotes the region/country fixed effects, *income* corresponds either to household or personal income, *schooling* refers either to personal or to household head's level of schooling, and ΣX_k denotes our set of control variables which is composed of: (i) an indicator variable that assumes value one for individuals that live in the capital of the state, which is usually the largest city in each state; (ii) an indicator variable which assumes value 1 if individuals are retired; (iii) an indicator variable that assumes value 1 if individuals are unemployed; (iv) sex ; (v) age ; (vi) year dummies, survey wave dummies, and state or region dummies. Table 2 presents the summary statistics for all variables used.

Since in one of the surveys individuals were not asked to report the state where they lived, using state dummies restrict our sample size (we miss around 11,000 observation). For this reason we have two baseline specifications: one which includes region dummies and the other with state dummies.

The rest of the section is organized as follows: (i) we present the results from our baseline regressions; (ii) we then analyze the economic significance of our findings and attempt to disentangle the relative magnitudes of the two effects we are interested in (*low schooling* and *low income* effects); (iii) next, we present a series of robustness checks in the form of different specifications; (iv) finally, we address a concern that could be raised regarding the interpretation of our findings. It could be argued that the reason the poor do not show interest in public expenditures on education is that the poor simply do not trust the government provision of public goods. We present evidence against the argument showing that there is evidence that the poor would forgo other public goods (such as public health and public safety) at the expense of cash transfers.

3.1.1 Baseline Results

In Table 3, we report our main results produced using region dummies in a probit estimation evaluated at the "average" individual. This table presents five

regressions, each of which corresponds to a different dummy of policy priority as the dependent variable. The first specification has the education priority dummy as a dependent variable. We find that education is more likely to be pointed out as a priority for public policy, the larger is household income and the higher is the level of instruction of the respondent. These coefficients are significant at the 1% level and t-values, exceed 7. This means that once family income or personal schooling increase, the respondent is more likely to say that education should be the main priority of the government. Regarding the dependent variables related to poverty alleviation (*education, hunger/indigence, unemployment, wages*, and their sum), both family income and personal level of schooling have negative and significant effects (always at the 1% level, except for family income affecting *hunger/indigence*, which is significant at the 5% level). In a nutshell, this first set of evidence suggests that poorer and/or less educated people are more likely to assign a lower level of priority to education, and a higher one to categories related to immediate income increase.

Remarks on some of the control variables are in order. Individuals living in the state capital and women were more likely to assign a higher importance to education (significant at the 1% level). Also, the dummy variable for unemployment affects negatively the likelihood of an affirmative answer in the education priority question (at the 1% level) and positively all poverty alleviation categories (ranging from 1% to 10% levels). The signs found for the control variables are in accordance with our expectation, since returns to education are higher in urban areas, females worry more about their children and the unemployed are more likely to prefer immediate income transfers rather than education expenditures.

If we look at the specification with state dummies, as reported in Table 4, the results are almost identical. In the education as priority regression, both family income and personal schooling have effects that are positive and significant

at the 1% level. For the other categories, the effects of these two variables are always negative and significant (except for the impact of family income on *hunger/indigence*, which is negative but no longer significant at standard levels).

3.1.2 Economic Significance and Disentangling the Main Effects

Our variables of interest have statistically significant effects. Are they also economically significant?

According to the marginal effects of the probit regression with regional dummies evaluated at the mean level of all control variables, once family income is increased by one standard-deviation departing from its mean, the probability of reporting that education should be the first priority for the government is increased by 16%. If we perform the same exercise, this time increasing the level of schooling of the respondent by one standard-deviation departing from its mean level, the probability of reporting that education should be the first priority for the government is increased by 68% (not percentage points, e.g. probability going from 10% to 16.8%). If we simultaneously increase both family income and personal schooling by one standard deviation, the probability is increased by 93%. Hence, these effects seem indeed economically significant.

The evidence suggests that the stronger effect is the *low schooling* one, as opposed to the *low income*. We can say yet more: departing from the mean of all covariates, if we look at the overall increase in the probability of reporting that education should be the main priority after increasing both family income and personal schooling by one standard deviation, we estimate that between the income effect corresponds to only 17% of the increase in probability, whereas the schooling effects accounts for the remainder.

To illustrate the effects in terms of favoring the other categories, if we look at the sum variable (poverty alleviation), when family income is increased by one standard-deviation departing from its mean level, keeping all other covariates in

their mean levels, the likelihood of reporting it as the main priority is reduced by 6%. When only increasing education by one standard deviation, the effect is a 5% decrease. If we increase both variables simultaneously by one standard deviation, the probability of reporting poverty alleviation as the first priority is decreased by 11%.

3.1.3 Robustness Checks

We ran a series of robustness exercises to check the strength of our results. First, we reproduced the five probit regressions presented above, for each year separately (controlling for survey wave fixed effects) and for each survey wave separately, always controlling for either regional or state dummies. When the education priority dummy is the dependent variable, in seventeen out of the eighteen different robustness specifications, the coefficients on family income and personal schooling were positive and significant. Only for the specification restricted to the smallest survey wave (with only 1449 observations), the coefficients on family income were not significant, albeit still positive. Notwithstanding, even for this particular case the coefficients for personal schooling were still highly significant. As for the regressions with dependent variables related to income transfers, in all specifications the coefficients of interest are negative, and, apart very few exceptions, were also significant. These results are reported in Tables 5a and 5b.

We also reproduced the analysis with a different measure of schooling, the one of the head of the household. It might be the case that some of the interviewees were particularly young so that they would still acquire more education (there are 2664 individuals under eighteen in our dataset). For those observations, the level of schooling of the head of the household could be a more relevant measure for our purposes. If we replace the used measure of schooling by the number of years of schooling of the head of the household, the results

are virtually indistinguishable, as reported in Table 6.

Finally, we ran the set of regressions using the income of the respondent rather than family income. We think the more relevant measure of income is the family one, since it might be the case that the respondent has a low income level for being a dependent household member (student, spouse, or even currently unemployed) so that there could be a very low reported level of personal income even if the level of family income is sufficiently high, which would imply a low level for the *low income effect*. We would then expect this specification to weaken the effects we estimate. This is precisely what we find. For the sake of shortness, we do not present the tables for this exercise (they are available upon request), but the results are unchanged in most specifications, with some exceptions in which the coefficient on income loses some significance, as expected. Also, consistent with our story, the more we restrict the regression to the sample of individuals with higher ratios of personal to family income, the more significance we get in the coefficient for personal income.

3.1.4 Ruling Out a "Public Goods Explanation"

We present here yet another robustness exercise. We believe that our results are driven by what we named low income and low schooling effects, namely that poor and/or poorly educated people tend to favor less public expenditures on education, preferring instead immediate income gains (such as cash transfers). And that this story applies to educational expenditures and not to public good spending in general. Another possible story is that the poor (and therefore, to an important extent, poorly educated people) favor less expenditures on public goods in general. This could be the case, for instance, because they think public good's quality is low, and since they are the main consumers of this type of goods, this dislike should appear more strongly in their reported priority of public policy.

In order to rule out this public goods explanation of our findings, we re-produce our baseline regressions using as dependent variable either *health* or *violence/public safety* as priority dummies, since these were the other two public good spending categories we had available in our survey. We would not expect our two main explanatory variables to affect the probability of reporting those two categories as priorities in the same way as public expenditures on education since; (i) they refer to expenditures with more immediate consequences, as opposed to the gains from educational spending, which take longer to occur (we therefore expect a weaker low income effect); (ii) we do not expect someone's level of schooling to affect systematically his/her preference for these modalities of public spending.

The results of our regressions are presented in Table 7. Consistent with our story, the family income variable does not affect systematically the likelihood of reporting that either health or public safety should be the government's priority (except for the specification with regional dummies, in which family income affects positively and significantly the probability of reporting public safety as priority). The coefficients on schooling are positive and significant for health as priority, and negative and significant for public safety, suggesting that the impact of schooling on favoring public goods spending is not clear.

3.2 The Relative Importance of Public Policies

Our second set of preferences results comes from a nationwide survey collected once in 2002 by the Fundacao Getulio Vargas FGV-ESEB) named *National Election Study*, with the intent of evaluating Brazilian individuals' political preferences. 2,192 individuals from all different states were surveyed. One set of questions in the survey is of particular interest, in which individuals were asked: "What is more important to improve the country's situation?". Each time, there were two suggested answers from which the respondent had to pick one. Two of

the suggested categories interest us: *improve education* and *fight indigence and hunger*. Unfortunately, no question asked the respondent to compare directly the importance of those two items. However, both were directly compared to a third item, *fight corruption*. If we assume transitivity of preferences, then we can back out the direct comparison between the variables of interest.

3.2.1 Baseline Specifications

Our first approach is to look at those with the following preference orderings: (i) *improve education* \succ *fight corruption*, (ii) *fight corruption* \succ *fight indigence and hunger* (where \succ means "preferred to"). If preferences are transitive, we would expect those individuals to have *improve education* \succ *fight indigence and hunger*.

Under this setting, we created a dummy called education priority that equals one for the individuals for which (i) and (ii) hold, and zero otherwise. We run probit regressions of this dummy variable on family income, years of schooling, age, age squared, unemployed, retired, white, sex, state capital and version of the survey (two surveys were conducted, but questions were asked in different order at each occasion) indicators. We also control by either region or state dummies. It is important to mention that this specification should bias downwards our coefficients and estimated effects, since those for which *fight corruption* \succ *improve education* \succ *fight indigence and hunger* are considered among the ones who think that fighting indigence is more important than improving education, even though their actual preferences go in the other direction. We first present the summary statistics of the used variables in Table 8.

Under both specifications, controlling respectively by region and state fixed effects, we observe a significantly positive impact of family income (at the 5% level) and personal schooling (1% level) on the likelihood of reporting that education is more important than fighting indigence and hunger in terms of improving the country's condition. Thus, the results using this other dataset confirm our

previous findings. We report these results in Table 9.

Now we turn to the economic significance of these results. Once family income is increased in one standard-deviation departing from its mean level, the probability of reporting that improving education is more important than fighting indigence is increased by 10%. If the same exercise is performed increasing schooling by one standard deviation instead, the probability is increased by 21%. If both are increased simultaneously by one standard deviation departing from their mean levels, the probability increased by 32%. Despite the bias embedded in our results, we find again that the level of instruction explains the lion share of the effect we study.

3.2.2 Robustness Checks

So far, we have been assuming transitivity of preferences in order to estimate the effects of interest. But it might be the case that some individuals do not have transitive preferences, so that *improve education* \succ *fight corruption* along with *fight corruption* \succ *fight indigence and hunger* will not imply *improve education* \succ *fight indigence and hunger*.

However, by looking at the other sets of comparison questions from the same survey, we observe that for two of them a complete cycle of three topics is included, i.e., the comparison of A with B, B with C, and A with C. The referred comparisons are *fighting indigence/hunger* vs *creating employment* vs *reducing inflation*, and *reducing inflation* vs *creating employment* vs *promoting economic growth*. Our robustness check here consists in dropping the 222 individuals that reported their preferences for either of these two sets in a non-transitive way.⁶ As shown in Table 10, the results are unchanged compared to the baseline specification and if anything, there is some gain in significance for the effect of family income.

⁶ 47 of them had non-transitive orderings for both sets of comparisons, and the remainder for one of them.

After presenting evidence in terms of people’s preferences, we now turn to actual equilibrium outcomes, by analyzing electoral data from Brazil.

4 Education and Reelection

According to articles 30 and 211 of the Brazilian Constitution enacted in 1988, basic education, which corresponds to the US equivalent to elementary and middle school, is responsibility of the municipalities⁷. In fact, average municipal expenditures on public education averaged a little short of half of the municipal public budget in 2002 for the more than 5,500 Brazilian cities. Since the salience of education expenditures is paramount at the local level and since basic education concerns individuals of all levels of income, Brazilian municipal elections are a natural setting to test if our findings on preferences for education discussed in the previous Section are reflected on voting behavior and affect thereby policy implementation. Another attractive feature of the Brazilian setting is that voting is mandatory and hence not tilted towards the more affluent.

To undertake this study we look at the dataset compiled by *IPEA* (Institute for Applied Economic Research), which contains data from the *IBGE* (Brazilian Institute for Geography and Statistics) the Brazilian equivalent to the *US Census Bureau*, in addition to elections data from the Superior Electoral Court (*TSE*) and fiscal accounts data from the Economy Ministry (*Min. Fazenda / STN*).

Municipal elections for all municipalities take place simultaneously in Brazil every four years. The two latter municipal elections took place in years 2004 and 2000. We restrict our attention to these two election periods because previous data are not available and subject to three caveats. First, yearly inflation rates in Brazil surpassed four digits before 1995. Second, the Constitution that shifted

⁷Technical and financial collaboration of other federal entities are encouraged, but not required by the letter of law.

the responsibility for basic education to municipal entities was very young and third, Brazil underwent a large political turmoil in 1991 and 1992 culminating with the impeachment of the president of the republic. Hence analyzing the 1996 municipal elections would not only imply analyzing 1994 and 1993 inflation distorted fiscal data, but also and perhaps more importantly analyzing election outcomes in a period where economic and political stabilization were much more salient than budget allocation of outlays.

4.1 Background on Brazilian Politics

Brazil enjoyed de facto democracy with secret ballots for the first time after the end of the Second World War. After nineteen years of democracy the regime was overthrown by a coup d'etat in 1964 and a military junta took power. Twenty years later, when Brazil and most Latin America underwent a debt crisis, the military government lost legitimacy and gradually opened up. This gradual transition culminated in the promulgation of the new Constitution in 1988 and with a democratically elected president taking office in 1990. According to the new constitution voting is mandatory and citizens who do not comply are subject to a fine.

The new Constitution determined that the Brazilian legislature is chosen under the proportional representation arrangement, which gave rise to a number of parties. Twenty years after the promulgation of the new constitution, Brazil has four major parties⁸ which account for 60% of the House and 73% of the Senate seats. There are 21 parties with at least one seat at the House and 12 in the Senate. The political consensus in Brazil these days is mostly leftist. The rightmost party in Brazil has just changed its name to Democratas because of their ideological affinity with the American Democratic Party.

⁸Worker's Party (PT), Brazilian Democratic Movement Party (PMDB), Brazilian Social Democratic Party (PSDB) and Liberal Front Party (PFL) which has recently changed its name to Democrats (DEM).

4.2 Variables

Reelection: Our dependent variable is a dummy variable that assumes value 1 if a candidate of the incumbent party is reelected and zero otherwise. We chose to study the reelection of parties and not of candidates because candidates are eligible for two mandates only and therefore their reelection prospects hinges not only on voters preference, but also on legislation. We name the reelection variable for 2004 and for 2000 respectively $R2004$ and $R2000$. In some specifications we use $RDiff$ as dependent variable, this variable assumes value one only if the incumbent politician was reelected in 2004 and not in the 2000 elections.

Outlays as a Share of the Budget: We measure the average expenditures on education in two election terms 1997 to 2000 and 2001 to 2004 as a share of total outlays and name it $E9700$ and $E0104$. We also measure governmental cash transfers for the same time periods as a share of total expenditures and name it $T9700$ and $T0104$. We calculate the difference between the share of the budget spent on education and the share spent on cash transfers on each period and name the one for 2001-2004 $Diff$ and the one for 1997-2000 $LagDiff$. We name $ChangeDiff = Diff - LagDiff$ and $ChangeE = E0104 - E9700$.

Interaction with Median Income: Since we are interested in how voting behavior for education relatively to cash transfers changes with income, we interact all the variables described in the paragraph above with the median income of each municipality. Since the median income is available only from decennial census data, we use the median income of year 2000. We name this variable $MI00$ and add this as a suffix to each variable we interact it with. Using the median income implies the assumption that the median voter is the pivotal for policy decisions. In Brazil, voting is mandatory and individuals are subject to fines and legal hassles if they chose not comply with voting regulation. Hence voter turnout is not a major issue and it is likely that the median voter is indeed

close to the individual who earns the median income.

Instrument: We instrument for the municipal education outlays as a share of the budget, and for the relative expenditure in education to transfers with the change in basic education teacher’s minimum wage, which is determined by legislation created and approved by the state government. We name it *wage-growth*. The exclusion hypothesis here is that a change in legislation at a higher sphere of government will only affect the reelection prospects of a mayor to the extent that it affects his budget. This exclusion hypothesis sounds less clear-cut for capital cities, because mayors of capital cities can have some influence on state politics. To address that, we redo all our empirical work excluding capital cities from our sample. One caveat to this instrument is that election prospects of mayors should not hinge upon decisions that are not up to them. However, it is not common knowledge that the state government decides the wage that the municipalities have to pay. The populace observes the municipality paying it.⁹ The reason why we use an instrumental variable in our main specification is that the propensity for a local government to invest in education might be correlated with other unobservable characteristics of the government that affect the probability of reelection, creating omitted variable bias.

Controls: We control for share of the rural population, public municipal expenditures as a share of the municipal output, federal fiscal transfers as a share of total municipal expenditures, for the party of the governor of the state (i.e. if the government and mayor are of the same party affiliation), median income on year 2000, mean income, mean income squared, share of kids that

⁹A previous version of this paper used the share of the population below 15 years old as an instrument. Since basic education is mandatory by law for children between 7 and 14 years old and the municipal governments are the ones responsible for basic education. While demographic patterns are probably at least conditionally exogenous to reelection, once controlling for income, density fertility and others, they are of paramount importance to determining the basic education bill. Although results were robust, we decided to search for an new instrument because changes in the number of kids are common knowledge and hence not up for mayoral discretionarity.

attend school, probability of reaching 40 years old, the share of school teachers who have completed college, basic characteristics of the elected mayor in year 2000 such as his level of instruction, age, age squared, a dummy that assumes value one if the mayor is a professor/teacher and the number of votes the mayor had as a share of total population. We also control for the interaction of median income with some variables such as the share of population below 15 years of age, rural population, fertility rate, literacy rate. Finally we control for $R2000$ and state fixed effects. The summary statistics for these variables are provided in Table 11. All variables are defined precisely in the Appendix.

4.3 Empirical Specification

In our main specification we assume that the probability of reelection in 2004 in each municipality is characterized by a latent variable

$$R2004_i^* = c_j + \beta_1 Diff_i + \beta_2 DiffMI00_i + \sum_{k=1}^K \gamma_k X_{k,i} + \varepsilon_i \quad (1)$$

where i denotes each municipality, c_j denotes a dummy for each state, $Diff$ is the difference in the share of public outlays in education relative to cash transfers, $DiffMI00$ denotes the interaction of $Diff$ with the median income of each municipality in year 2000 and X_K denotes other controls such as the reelection dummy in year 2000, the share of public expenditures as a percentage of the municipal output, the share of federal transfers to the municipality as a share of total municipal expenditures in addition to other demographic and human development variables. Since we do not observe the latent variable we replace it with a dummy that assumes value one when a member of the incumbent party is reelected and zero otherwise. We instrument for $Diff$ and $DiffMI00$ with the change in basic education teacher's wages determined by state legislation. We also use as our main variable of interest $E0104$ and $E0104MI00$. We estimate a probit and an instrumental variable probit for each of the specifications.

4.4 Education Does Not Win Elections When the Median Voter is Poor

The result of our basic OLS specification shows that in municipalities where the median income for the municipality in year 2000 was below 91 reais (around 57 American dollars at today's market exchange rate) per month, higher spending on education and lower spending on cash transfers decrease the probability of the incumbent political party to remain in office. The year 2000 cross municipalities mean of the median income is 100 reais. The distribution of municipal median income is right skewed, the median is 92 reais and one standard deviation is 56 reais. So in basically half of Brazilian municipalities (the poor ones), with a total population of 46 million people, spending more on cash transfers and less on education seemed to be the best bet for reelection prospects of the incumbent party. In the first column of Table 12, we display these results. The relevant coefficients are significant at the 5%/10% level.

In the following column of the same table we display our baseline IV specification. We use an instrument to avoid endogeneity considerations, since the propensity for a local government to invest in education relatively to transfers might be correlated with other unobservable characteristics of the government that affect the probability of reelection, creating omitted variable bias. Indeed, using the instrument we find larger estimates, and according to those, in municipalities with median income below 71 reais, higher spending on education relative to cash transfers outlays decreases the likelihood of the incumbent politician retaining office. The opposite is true for municipalities with median income above this threshold. Also, our instrument passes the weak instruments test with F-values above 12, and more importantly our first stage regressions show that an increase in teachers wages is reflected on an increase in education outlays. The model is perfectly identified so we cannot perform the overidenti-

fication test.

We have also reproduced similar exercises in columns 3 and 4 of Table 12, but now using education outlays only (not relatively to cash transfers) and its interaction with the median income in year 2000 as our main variables of interest. We find similar results, which point out in the same direction: in poor places spending on education is bad for reelection prospects, whereas in rich place the opposite is the case.

Looking back at our baseline OLS case, we evaluate the marginal probabilities at one standard deviation below the mean, 44 reais, we find that allocating an extra 10 percentage points¹⁰ of the budget for education at the expense of cash transfers decreases the probability of reelection by 4%, while the same fiscal move for richer municipalities with median income of 156 reais a month implies an increase in the probability of retaining office 2%. These effects seem economically relevant.

We control for state dummies. The dummies for states of the Northeast are significant for most specifications. This result comes with little surprise given the well documented clientelism embedded in Northeastern politics. The Northern region states dummies are sometimes positive and significant. Reelection in the previous election has a negative and significant sign, which maybe capturing the personalism in Brazilian politics given that politicians cannot be in office for more than two terms. Reelection prospects also seem to decrease with the age of candidates. On other hand it increases with the total municipal government expenditure as a share of the municipal output. Interestingly the most significant coefficient (t-value above 10) among the determinants of reelection is if the governor of the state to which the municipality belongs is of the same party as the incumbent mayor. Being of the same party of the governor of your state increases reelection prospects.

¹⁰A bit less than a standard deviation.

4.5 Robustness

We do three exercises to evaluate the robustness of our results. First we exclude the capital cities from our sample because the exclusion hypothesis is perhaps not that strong for these cases. Second we look at the effect of changes in the outlays on reelection prospects. And lastly we look at how changes in outlays impact changes in reelection prospects. In Table 13, we display results excluding capital cities. With no major changes to the results. Most coefficients remain significant at standard levels.

In the next robustness check, we continue to exclude capital cities from our sample, instrument for wage changes and now we change the two main variables of interest from *Diff* and *DiffMI00* to *ChangeDiff* and *ChangeDiffMI00*. We also change the variables related to *E0104* to *ChangeE*. Again, we find that in poor municipalities an decrease in public education expenditures relative to cash transfers increase both reelection prospects and changes in reelection prospects. These coefficients are significant at the standard levels. For the specifications that use *ChangeE* and *ChangeEMI00* as a the main variable of interest, we find consistent signs but coefficients are smaller and not significant at standard levels. These results are displayed on Table 14.

5 Conclusion

Focusing on data from Brazil, this paper first presented evidence that the poor and less educated regard education as the most vital issue for the government to tackle much less often than the rich. We also provided evidence that these preferences are well expressed in voting behavior. By looking at electoral data for the 5,500 Brazilian municipalities we found that in municipalities with low levels of median income, mayors who choose to allocate a large share of the budget to public education at the expense of cash transfers are less likely to

be reelected. However the opposite is true for municipalities with high median income.

This study aimed to lay out one mundane and straight forward argument for why democratization might not lead to a higher level of educational expenditures. The argument is simply that the poor are not interested in being educated. We provide strong evidence that supports this claim. This finding is perhaps surprising because of the widespread evidence of high returns to education in developing countries. Finally, we linked poverty to low levels of investment in education in the democratic context at the country level. This was done by focusing on the median income (the one of the pivotal voter).

Conditional cash transfer programs, such as the Bolsa Escola in Brazil, that offered cash to poor families in exchange for them ensuring that their kids attend school seem a promising way of circumventing this challenge for development, both economically and politically, since this type of program is usually supported by a large coalition formed by the capital owners who enjoy positive spillovers from being able to hire more productive workers and the poor who enjoy earning the transfers. We believe that more constructive programs in this spirit merit further thinking.

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6 Elections Data - Appendix

Most data used to evaluate the impact of education expenditures relative to cash transfers on reelection prospects can be obtained from the ?? . We now provide the definition of variables and their abbreviation used for the sake of shortness herein. *R2004*, dummy variable that assumes value 1 if incumbent party retained mayoral office in 2004. *R2000*, dummy variable that assumes value 1 if incumbent party retained mayoral office in 2000. *Diff*, share of the budget spent on education relative to cash transfers on average for years 2001 through 2004. *DiffMI00*, share of the budget spent on education relative to cash transfers on average for years 2001 through 2004 multiplied by median income of each municipality in the year 2000 (decennial data available only). *E0104* share of the budget spent on education on average for years 2001 through 2004. *T0104* share of the budget spent on cash transfers on average for years 2001 through 2004. *E0104MI00* share of the budget spent on education on average for years 2001 through 2004 multiplied by median income in year 2000. *T0104MI00* share of the budget spent on cash transfers on average for years 2001 through 2004 multiplied by median income in year 2000. *MI00* median income in year 2000. *GDPPerCapita*, mean income of each municipality on average from 2001 through 2004. *Rural Population*, share of the population that lives in rural areas. *Survival Rate 40+*, share of the population that survives more than 40 years of age. *Expenditures/GDP* total municipal expenditures as a share of the municipal output on average for years 2001 through 2004. *Income Sq.*, mean income squared. *Professors w College*, share of basic education teachers with college degree. *Governor* , dummy variable which assumes value 1 when governor of the state is of the same party as incumbent municipal government in the end of incumbent's term. Elections for state government occur every four years, but two years before and after municipal elections. *Federal Transfers*, federal transfers received by municipality as a share of its total public expenditures. *Pop. Below 15*, population below 15 years of age in year 2000. *Pop. Below 15 MI00*, population below 15 years of age in year 2000 multiplied by the median income in year 2000. *FertilityMI00*, Fertility rate multiplied by the median income on year 2000, *LiteracyMI00*, Literacy rate multiplied by the median income on year 2000, *SchoolAttendanceMI00*, Share of 7-14 year olds that attend school multiplied by median income in year 2000,

The following variables are available upon request at the Tribunal Superior Eleitoral (*TSE*): *Age*: Age of the elected mayor in the year of the election.

Vote/Pop is the number of votes obtained by the mayor in the 2000 election over the total municipal population. *Professor*, dummy with value one if reelected politician is a University Professor, or a School teacher. *Instruction*, estimated number of years of schooling: assumes value 4 if mayors have not completed basic education, 8 if they did so, 10 if they are high school drop outs, 11 if they have high school diploma, 13 if they are college dropouts and 15 if they have finished college.

The instrument *wagegrowth* is obtained from the annual magazine of the public teacher’s union. It is calculated as the percentual change between minimum wage in year 2000 to year 2002.

7 Preferences for Education in the US - Appendix

We have found that in Brazil, preferences for public education expenditures are positively correlated with income. But is this a peculiarity of Brazil? Or a more general result. To answer this question, we look at data from the General Social Survey (GSS henceforth). The GSS asks 1,500 individuals from a national representative sample in the US questions about attitudes towards social and political issues in addition to socioeconomic background, including income, and individual characteristics such as age, sex, education, race and others, which we use as controls. We have data from 1984 to 2006 on the question we use as our dependent variable, which is if the respondent thinks that America is spending too much money, too little money, or about right on education. We call this variable (GSS original code: *nateducy*) support for education and recode it such that more support for education means a higher value, we call the recoded variable *rnateducy*. We also collapse this variable into a binary variable to facilitate interpretation, where 1 means more support for education, we call it *educsup*.

7.1 Estimation Strategy

In our baseline specification, we assume that the support for education of individual i living in region c at time t can be characterized by a latent variable

$$E_{ict}^* = \beta Y_{ict} + \beta_2 X_{ict} + c_i + \tau_t + \varepsilon_{ict} \quad (2)$$

where Y_{ict} denotes the income group of the respondents, X_{ict} is a vector of individual characteristics, c_i and τ_t are region and year dummies and ε_{ict} is the

error term. We do not observe E_{ict}^* , but a variable E_{ict} taking values 0 for low support and 1 for high support for redistribution. We estimate a probit model. We also estimate the ordered probit model for robustness.

Our main variable of interest is the $lrealincome$ which is the log of real income calculated at 1984 dollars. This variable classifies individuals income among 12 income groups. We substitute the income group for the mid-point of the earnings bracket. An issue with this variable is that it is top coded at a very low level, 25,000 dollars. Nonetheless the results of the exercise still provide some information about how preferences for public education vary with income for the poor population in the US. We therefore exclude the highest income group from our regressions.

We draw the vector of individual characteristics mostly from Alesina and La Ferrara (2004) and it includes *age*, age of respondent in years. *married*, dummy equal to 1 if respondent is married. *female*, dummy equal to 1 if respondent is female. *black*, dummy equal to 1 if respondent is African American. *leduc*, the log of the number of years of education. *children*, dummy equal to 1 if respondent has children. *self-employed*, dummy equal to 1 if respondent is self-employed. *helpothers*, dummy variable assumes value 1 when respondents believe helping others is the most important value for a child. The precise survey question is as follows. “If you had to choose, which thing on this list would you pick as the most important for a child to learn to prepare him or her for life?”. The GSS original variable is *helpoth*. *unemp*, dummy equal to 1 if respondent has been unemployed in the last 10 years. *protestant*, dummy equal to 1 if respondent is Protestant. *catholic*, dummy equal to 1 if respondent is Catholic. *jewish*: dummy equal to 1 if respondent is Jewish. *otherreligion*, dummy equal to 1 if respondent is religious but not Protestant, Catholic, or Jewish. We display the summary statistics for these variables in Table A.1.

7.2 Preferences of Brazilians are not Peculiar

We find that even amongst the poor in America, support for public expenditures on education increases with income. We also find that support for education increases with years of education. In fact, one standard deviation change in real income evaluated at the mean of our sample implies a 2 percentage points change in the probability of supporting public expenditures on education. A similar probability change is implied by one standard deviation change in the number of years of education. These estimates are smaller than for Brazil, but

the income variation is much smaller here as well. Also, we find that being female, black and young increases support for public education expenditures. The impact of income and of education on support for expenditures on public education is positive and significant. We display results of regressions that illustrate this point in Table A.2. We also display results for the ordered probit for robustness in the same table.

Table 1: Mulligan Sala-i-Martin and Gil revisited
 Dependent Variable: Public Education Expenditures/GDP

	(i)	(ii)	(iii)
Democracy	0.462 [0.524]	-8.084 [3.545]**	-6.578 [3.288]**
Communist Dummy	1.206 [0.453]***	1.377 [0.448]***	1.601 [0.580]***
British Legal Origin	0.516 [0.299]*	0.599 [0.295]**	0.532 [0.316]*
Elderly Share of the Population	0.036 [0.059]	-0.043 [0.067]	-0.018 [0.074]
Log of Population over 10	-2.336 [0.843]***	-2.224 [0.826]***	-3.318 [0.975]***
Log of Real GDP per capita	0.462 [0.192]**	0.297 [0.199]	1.287 [0.869]
Log of Median Income			-0.872 [0.908]
Democracy*Log of GDP per Capita		1.056 [0.432]**	
Democracy*Log of Median Income			0.919 [0.423]**
Observations	114	114	87
R-Squared	0.28	0.32	0.43

* significant at 10%; ** significant at 5%; *** significant at 1%

Standard Errors in Square Brackets

Table 2 Summary Statistics - Government's priorities dataset

Variable	Obs	Mean	Std. Dev	Min	Max
Family income	42228	1231.06	1717.08	200	12000
Years of schooling	43820	7.11	4.10	2	17
Age	43915	36.97	15.86	16	99
Sex	43916	0.48	0.50	0	1
Unemployed indicator	43916	0.10	0.30	0	1
Retired indicator	43916	0.10	0.30	0	1
State capital indicator	43916	0.36	0.48	0	1
Education as priority	43916	0.06	0.23	0	1
Hunger/indigency as priority	43916	0.07	0.26	0	1
Wage as priority	43916	0.02	0.15	0	1
Unemployment as priority	43916	0.41	0.49	0	1
Poverty as priority	43916	0.51	0.50	0	1

Table 3 - Baseline regressions for government's priorities with region, year, and survey dummies

	Education as priority	Unemployment as priority	Hunger/ indigency as priority	Wage as priority	Poverty as priority
Family income	0.0004 [0.0001]***	-0.0015 [0.0002]***	-0.0002 [0.0001]**	-0.0002 [0.0001]***	-0.0017 [0.0002]***
Years of schooling	0.0064 [0.0003]***	-0.0029 [0.0007]***	-0.0021 [0.0003]***	-0.0009 [0.0002]***	-0.006 [0.0007]***
State capital indicator	0.0127 [0.0023]***	-0.0373 [0.0053]***	0.0025 [0.0025]	-0.0024 [0.0015]	-0.0372 [0.0054]***
Sex	0.0096 [0.0020]***	-0.0022 [0.0049]	-0.0273 [0.0023]***	0.0002 [0.0014]	-0.0321 [0.0050]***
Unemployed indicator	-0.0132 [0.0031]***	0.0996 [0.0085]***	-0.0077 [0.0038]**	-0.0045 [0.0021]**	0.0867 [0.0084]***
Retired indicator	-0.0042 [0.0044]	-0.0161 [0.0108]	0.0123 [0.0057]**	0.0012 [0.0028]	-0.0013 [0.0107]
Age	-0.0001 [0.0003]	-0.0027 [0.0008]***	-0.0027 [0.0004]***	0.0003 [0.0002]	-0.0058 [0.0008]***
Age squared	0 [0.0000]	0 [0.0000]	0 [0.0000]***	0 [0.0000]	0 [0.0000]
Observations	42139	42139	42139	42139	42139

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4 - Baseline regressions for government's priorities with state, year, survey dummies

	Education as priority	Unemployment as priority	Hunger/indigency as priority	Wage as priority	Poverty as priority
Family income	0.0004 [0.0001]***	-0.0014 [0.0002]***	-0.0001 [0.0001]	-0.0001 [0.0001]*	-0.0015 [0.0002]***
Years of schooling	0.006 [0.0003]***	-0.0036 [0.0008]***	-0.002 [0.0003]***	-0.0009 [0.0002]***	-0.0066 [0.0008]***
State capital indicator	0.0129 [0.0028]***	-0.0435 [0.0065]***	0 [0.0027]	-0.0049 [0.0016]***	-0.05 [0.0066]***
Sex	0.008 [0.0024]***	-0.0194 [0.0058]***	-0.0209 [0.0024]***	0.0008 [0.0015]	-0.041 [0.0058]***
Unemployed indicator	-0.0144 [0.0036]***	0.0939 [0.0099]***	-0.0063 [0.0038]*	-0.0034 [0.0024]	0.0841 [0.0098]***
Retired indicator	-0.0052 [0.0051]	-0.012 [0.0129]	0.008 [0.0058]	0.0005 [0.0030]	-0.0022 [0.0127]
Age	-0.0002 [0.0004]	-0.0056 [0.0010]***	-0.0025 [0.0004]***	0.0003 [0.0002]	-0.0085 [0.0010]***
Age squared	0 [0.0000]	0 [0.0000]	0 [0.0000]***	0 [0.0000]	0 [0.0000]***
Observations	30567	30567	30567	30567	30567

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5a - Robustness regressions for government's priorities year by year

	Education as priority	Unemployment as priority	Hunger/indigency as priority	Wage as priority	Poverty as priority
Year 1999 - Region FE					
Family income	0.0003 [0.0001]***	-0.0012 [0.0002]***	-0.0001 [0.0001]	-0.0001 [0.0001]*	-0.0013 [0.0002]***
Years of schooling	0.006 [0.0004]***	-0.0042 [0.0010]***	-0.0022 [0.0004]***	-0.0008 [0.0003]***	-0.0073 [0.0010]***
Observations	22658	22658	22658	22658	22658
Year 1999 - State FE					
Family income	0.0004 [0.0001]***	-0.0012 [0.0002]***	-0.0001 [0.0001]	-0.0001 [0.0001]	-0.0013 [0.0002]***
Years of schooling	0.0058 [0.0004]***	-0.0036 [0.0010]***	-0.0023 [0.0004]***	-0.0009 [0.0003]***	-0.0069 [0.0010]***
Observations	22658	22658	22658	22658	22658
Year 2001 - Region FE					
Family income	0.0006 [0.0001]***	-0.0019 [0.0003]***	-0.0003 [0.0002]*	-0.0003 [0.0001]**	-0.0024 [0.0003]***
Years of schooling	0.0073 [0.0005]***	-0.0004 [0.0011]	-0.0023 [0.0007]***	-0.0008 [0.0004]**	-0.0036 [0.0012]***
Observations	14309	14309	14309	14309	14309
Year 2001 - State FE					
Family income	0.0006 [0.0002]**	-0.002 [0.0007]***	-0.0002 [0.0003]	-0.0003 [0.0003]	-0.0024 [0.0007]***
Years of schooling	0.007 [0.0012]***	-0.003 [0.0027]	-0.0009 [0.0012]	-0.0006 [0.0009]	-0.0046 [0.0028]*
Observations	2737	2737	2737	2737	2737
Year 2002 - Region FE					
Family income	0.0003 [0.0002]**	-0.0019 [0.0005]***	-0.0002 [0.0003]	-0.0001 [0.0001]	-0.0022 [0.0005]***
Years of schooling	0.0059 [0.0008]***	-0.0026 [0.0020]	-0.0009 [0.0010]	-0.0012 [0.0005]**	-0.005 [0.0020]**
Observations	5172	5172	5172	5172	5172
Year 2002 - State FE					
Family income	0.0003 [0.0002]**	-0.0019 [0.0005]***	-0.0002 [0.0003]	-0.0001 [0.0001]	-0.0021 [0.0005]***
Years of schooling	0.0059 [0.0008]***	-0.0025 [0.0020]	-0.0009 [0.0010]	-0.0012 [0.0005]**	-0.0048 [0.0020]**
Observations	5172	5172	5172	5081	5172

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5b - Robustness regressions for government's priorities wave by wave, with region/state dummies

	Education as priority	Unemployment as priority	Hunger/Indigency as priority	Wage as priority	Poverty as priority
Wave 1 - Region FE					
Family income	0.0003 [0.0002]	-0.0023 [0.0008]***	-0.0001 [0.0003]	0 [0.0002]	-0.0024 [0.0008]***
Years of schooling	0.0053 [0.0009]***	-0.0013 [0.0023]	-0.0013 [0.0013]	-0.001 [0.0006]*	-0.0038 [0.0024]
Observations	3723	3723	3723	3723	3723
Wave 1 - State FE					
Family income	0.0003 [0.0002]	-0.0023 [0.0006]***	-0.0001 [0.0003]	0 [0.0002]	-0.0023 [0.0008]***
Years of schooling	0.0053 [0.0009]***	-0.0011 [0.0023]	-0.0013 [0.0013]	-0.001 [0.0006]	-0.0036 [0.0024]
Observations	3723	3723	3723	3632	3723
Wave 2 - Region FE					
Family income	0.0006 [0.0002]**	-0.0019 [0.0007]***	-0.0002 [0.0003]	-0.0004 [0.0003]	-0.0024 [0.0007]***
Years of schooling	0.0065 [0.0012]***	-0.003 [0.0027]	-0.001 [0.0012]	-0.0006 [0.0009]	-0.0047 [0.0028]*
Observations	2737	2737	2737	2737	2737
Wave 2 - State FE					
Family income	0.0006 [0.0002]**	-0.002 [0.0007]***	-0.0002 [0.0003]	-0.0003 [0.0003]	-0.0024 [0.0007]***
Years of schooling	0.007 [0.0012]***	-0.003 [0.0027]	-0.0009 [0.0012]	-0.0006 [0.0009]	-0.0046 [0.0028]*
Observations	2737	2737	2737	2737	2737
Wave 3 - (had no region or state questions)					
Family income	0.0003 [0.0003]	-0.001 [0.0009]	-0.0004 [0.0004]	-0.0002 [0.0003]	-0.0015 [0.0009]
Years of schooling	0.0072 [0.0015]***	-0.0064 [0.0038]*	0.0004 [0.0015]	-0.0017 [0.0019]*	-0.0078 [0.0038]**
Observations	1449	1449	1449	1313	1449
Wave 4 - Region FE (had no state question)					
Family income	0.0159 [0.0023]***	-0.0273 [0.0053]***	-0.0079 [0.0037]**	-0.0029 [0.0018]	-0.0378 [0.0057]***
Years of schooling	0.0063 [0.0006]***	0.0006 [0.0013]	-0.0022 [0.0009]**	-0.0009 [0.0004]**	-0.0024 [0.0014]*
Observations	11572	11572	11572	11572	11572
Wave 5 - Region FE					
Family income	0.011 [0.0021]***	-0.0119 [0.0056]**	-0.0017 [0.0023]	-0.0013 [0.0014]	-0.0147 [0.0055]***
Years of schooling	0.0041 [0.0005]***	-0.0021 [0.0014]	-0.0024 [0.0006]**	-0.001 [0.0004]**	-0.0055 [0.0014]**
Observations	11697	11697	11697	11697	11697
Wave 5 - State FE					
Family income	0.0003 [0.0001]***	-0.001 [0.0003]***	-0.0002 [0.0001]	0 [0.0001]	-0.0011 [0.0003]***
Years of schooling	0.0046 [0.0005]***	-0.0013 [0.0014]	-0.0024 [0.0006]**	-0.0011 [0.0003]***	-0.0049 [0.0013]**
Observations	11697	11697	11697	11697	11697
Wave 6 - Region FE					
Family income	0.0004 [0.0001]***	-0.0015 [0.0003]***	0.0001 [0.0001]	-0.0002 [0.0001]**	-0.0016 [0.0003]***
Years of schooling	0.0072 [0.0006]***	-0.0066 [0.0014]**	-0.0021 [0.0005]***	-0.0006 [0.0004]*	-0.0095 [0.0014]**
Observations	10961	10961	10961	10961	10961
Wave 6 - State FE					
Family income	0.0004 [0.0001]***	-0.0016 [0.0003]***	0.0001 [0.0001]	-0.0002 [0.0001]*	-0.0016 [0.0003]***
Years of schooling	0.0071 [0.0006]***	-0.0059 [0.0014]**	-0.0022 [0.0005]**	-0.0006 [0.0004]*	-0.009 [0.0014]**
Observations	10961	10961	10961	10961	10961

Absolute value of z statistics in brackets
 * significant at 10%; ** significant at 5%; *** significant at 1%

Table 6 - Robustness regressions for government's priorities with schooling of head of household

	Education as priority	Unemployment as priority	Hunger/indigency as priority	Wage as priority	Poverty as priority
Region FE					
Family income	0.0005 [0.0001]***	-0.0012 [0.0002]***	-0.0003 [0.0001]***	-0.0002 [0.0001]***	-0.0016 [0.0002]***
Years of schooling of head	0.0048 [0.0003]***	-0.0053 [0.0007]***	-0.0007 [0.0003]**	-0.0004 [0.0002]**	-0.0064 [0.0007]***
Observations	39969	39969	39969	39969	39969
State FE					
Family income	0.0005 [0.0001]***	-0.0013 [0.0002]***	-0.0002 [0.0001]**	-0.0001 [0.0001]**	-0.0015 [0.0002]***
Years of schooling of head	0.0044 [0.0003]***	-0.0049 [0.0008]***	-0.0011 [0.0003]***	-0.0004 [0.0002]**	-0.0066 [0.0008]***
Observations	28637	28637	28637	28637	28637

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7 - Other public goods-related priorities

	Health as priority	Public safety as priority
Region FE		
Family income	-0.0001 [0.0001]	0.0002 [0.0001]**
Years of schooling	0.0034 [0.0004]***	-0.0015 [0.0004]***
Observations	42139	42139
State FE		
Family income	0 [0.0001]	0.0001 [0.0001]
Years of schooling	0.0035 [0.0005]***	-0.0013 [0.0005]**
Observations	30567	30567

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 8 Summary Statistics - Comparison dataset

Variable	Obs	Mean	Std. Dev	Min	Max
Family income	1892	1020.83	1562.36	0	25000
Years of schooling	2190	9.35	5.18	1	20
Age	2192	39.18	16.60	16	94
Sex	2192	0.45	0.50	0	1
Unemployed indicator	2192	0.11	0.31	0	1
Retired indicator	2192	0.11	0.31	0	1
State capital indicator	2192	0.29	0.45	0	1
White indicator	2192	0.45	0.50	0	1
Education more important	2192	0.19	0.39	0	1

Table 9 - Baseline regressions for comparison with region/state dummies

	Education more important	
	Region FE	State FE
Family income	0.0012 [0.0006]**	0.0012 [0.0006]**
Years of schooling	0.0069 [0.0020]***	0.0075 [0.0020]***
Unemployed indicator	0.0101 [0.0287]	0.0092 [0.0289]
Retired indicator	0.0497 [0.0392]	0.0508 [0.0394]
White indicator	-0.0112 [0.0180]	-0.0095 [0.0185]
Sex	0.0225 [0.0170]	0.0237 [0.0171]
Age	0.0117 [0.0028]***	0.0121 [0.0028]***
Age squared	-0.0001 [0.0000]***	-0.0001 [0.0000]***
State capital indicator	0.0036 [0.0188]	0.001 [0.0199]
Version of questionnaire indicator	0.0216 [0.0167]	0.0216 [0.0167]
Observations	2176	2173

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 10 - Robustness regressions for comparison, dropping non-transitive individuals

	Education more important	
	Region FE	State FE
Family income	0.0015 [0.0006]***	0.0014 [0.0006]**
Years of schooling	0.0063 [0.0021]***	0.0071 [0.0022]***
Unemployed indicator	0.0077 [0.0303]	0.0072 [0.0305]
Retired indicator	0.0709 [0.0428]*	0.0674 [0.0426]
White indicator	-0.0183 [0.0190]	-0.0186 [0.0197]
Sex	0.0297 [0.0181]	0.0315 [0.0181]*
Age	0.0105 [0.0029]***	0.0107 [0.0029]***
Age squared	-0.0001 [0.0000]***	-0.0001 [0.0000]***
State capital indicator	0.0073 [0.0199]	0.008 [0.0212]
Version of questionnaire indicator	0.0175 [0.0178]	0.0177 [0.0178]
Observations	1890	1887

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 11 - Summary Statistics Mayoral Elections Dataset

	Obs	Mean	Std. Dev	Min	Max
R2004	5568	0.2568247	0.4369211	0	1
Rdiff	5568	0.1690014	0.3747868	0	1
Diff	5566	0.3684156	0.1259947	-0.2286042	0.7801607
ChangeDiff	5448	0.0734826	0.1088043	-1.291201	0.5981659
ChangeE	5449	0.0830497	0.0936616	-0.405205	0.5598196
Wagegrowth	5056	0.462161	0.8216639	-0.0931105	2.954299
MI00	5568	99.94025	56.52065	7.97	541.91
R2000	5568	0.3568606	0.4791162	0	1
Survival40	5568	89.57855	4.974262	74.876	97.687
Expenditure/GDP	5568	0.0345874	0.0203962	0.0047628	0.2652433
GDP	5568	171.9968	95.99742	30.429	954.649
Governor	5568	0.2270115	0.4189377	0	1
Federal Transfers	5562	0.0141352	0.0260052	0	0.3824813
Age	5545	47.29249	71.1096	-5199.871	82.79726
Professor	5546	0.0391273	0.1939153	0	1
Instruction	5389	11.73631	4.155217	4	16
Literacy	5568	78.43369	12.36225	39.339	99.093
Fertility	5568	2.845988	0.7306645	1.564	7.786
Professors w College	5568	16.65241	15.13764	0	95.087
Votes/Pop	5542	0.3564731	0.6047092	0.0009581	21.86098
Rural Pop	5568	0.410983	0.2330311	0	1
School Attendance	5568	93.99906	4.608428	46.036	99.944
Pop w less than 15	5552	0.3145203	0.0526368	0.172987	0.5378451

Table 12 - Baseline - Elections Dataset

Dependent Variable: R2004

	Probit	IVProbit	Probit	IVProbit
Diff	-0.655 [0.388]*	-20.323 [9.524]**	- -	- -
DiffMI00	0.007 [0.003]**	0.284 [0.147]*	- -	- -
E0104	- -	- -	-0.287 [0.448]	-11.730 [3.979]***
E0104MI00	- -	- -	0.007 [0.004]*	0.131 [0.068]*
MI2000	-0.012 [0.010]	-0.083 [0.041]**	-0.012 [0.010]	-0.067 [0.027]**
R2000	-0.183 [0.041]***	-0.376 [0.124]***	-0.184 [0.041]***	-0.258 [0.071]***
Expenditures/GDP	5.706 [1.335]***	10.306 [5.623]*	6.100 [1.338]***	6.147 [5.316]
Governor	0.608 [0.045]***	0.569 [0.083]***	0.609 [0.045]***	0.602 [0.054]***
Age	-0.013 [0.002]***	-0.013 [0.003]***	-0.013 [0.002]***	-0.014 [0.002]***
Observations	5253	4766	5254	4767

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Other Control Variables: State Dummies, Survival 40, GDP per Capita, GDP per Capita Sq, Federal Transfers, Age Sq, Professor, Instruction, Instruction Sq, LiteracyMI00, FertilityMI00, Professor w College, Professor w College MI00, Vote/Pop, Rural Pop, Rural Pop MI00, School Attendance, Pop w less than 15.

Table 13 - Elections Dataset - Excluding Capital Cities

Dependent Variable: R2004

	Probit	IVProbit	Probit	IVProbit
Diff	-0.568 [0.392]	-12.506 [4.102]***	- -	- -
DiffMI00	0.006 [0.003]*	0.106 [0.074]	- -	- -
E0104	- -	- -	-0.218 [0.452]	-9.701 [3.786]***
E0104MI00	- -	- -	0.006 [0.004]	0.173 [0.065]***
MI2000	-0.010 [0.010]	-0.047 [0.021]**	-0.010 [0.010]	-0.073 [0.027]***
R2000	-0.188 [0.041]***	-0.235 [0.094]**	-0.190 [0.041]***	-0.322 [0.078]***
Expenditures/GDP	5.654 [1.336]***	1.822 [6.204]	6.043 [1.339]***	11.903 [5.085]**
Governor	0.610 [0.045]***	0.603 [0.053]***	0.611 [0.045]***	0.590 [0.060]***
Age	-0.013 [0.002]***	-0.014 [0.002]***	-0.013 [0.002]***	-0.013 [0.002]***
Observations	5226	4739	5227	4740

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Same Controls as in Table 12

Table 14 - Elections Dataset in Differences

Dependent Variable	R2004 Probit	R2004 IVProbit	RDIFFB Probit	RDIFFB IVProbit
ChangeDiff	-17.350 [8.062]**	- -	-14.63021 [7.323]**	- -
ChangeDiffMI00	0.322 [0.189]*	- -	0.259893 [0.169]	- -
ChangeE	- -	-8.439 [7.629]	- -	4.667 [0.114]
ChangeEMI00	- -	0.196 [0.246]	- -	0.241 [0.297]
M2000	-0.021 [0.021]	-0.015 [0.014]	0.005 [0.019]	0.009 [0.017]
R2000	-0.331 [0.101]***	-0.252 [0.056]***	- -	- -
Expenditures/GDP	15.122 [10.99]	13.068 [23.06]	9.357 [9.726]	16.150 [27.74]
Governor	0.575 [0.088]***	0.619 [0.073]***	0.338 [0.080]***	0.394 [0.091]***
Age	-0.015 [0.003]***	-0.014 [0.003]***	-0.016 [0.003]***	-0.015 [0.004]***
Observations	4735	4736	4735	4736

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Same Controls as in Table 12

Table A.1 Summary Statistics - GSS Dataset

Variable	Obs	Mean	Std. Dev	Min	Max
educsup	2751	0.72	0.45	0.00	1.00
mateducy	2751	2.66	0.57	1.00	3.00
lrealincome	2751	9.03	0.80	5.56	10.02
leduc	2744	2.46	0.27	0.69	3.00
age	2751	46.43	19.56	18.00	99.00
marital	2751	0.33	0.47	0.00	1.00
female	2751	0.60	0.49	0.00	1.00
black	2751	0.17	0.38	0.00	1.00
children	2751	0.69	0.46	0.00	1.00
wrkslf	2751	0.09	0.29	0.00	1.00
unemp	2751	1.59	0.49	1.00	2.00
helpoth	2751	0.13	0.34	0.00	1.00
prot	2751	0.63	0.48	0.00	1.00
cath	2751	0.20	0.40	0.00	1.00
jew	2751	0.01	0.10	0.00	1.00
otherrelig	2751	0.03	0.18	0.00	1.00

Table A.2 US Preferences - GSS Dataset

	Dprobit (Mean)	Dprobit (Mean)	Ordered Probit
	(I)	(II)	(III)
	Coef.	Coef.	Coef.
lrealincome	0.026 [0.011]**	0.028 [0.011]**	0.079 [0.033]**
leduc	0.055 [0.035]		0.136 [0.102]
age	-0.004 [0.000]***	-0.004 [0.000]***	-0.013 [0.001]***
marital	0.035 [0.020]*	0.032 [0.020]	0.094 [0.058]
female	0.063 [0.018]***	0.066 [0.018]***	0.163 [0.053]***
black	0.099 [0.025]***	0.098 [0.025]***	0.302 [0.075]***
children	0.014 [0.020]	0.008 [0.020]	0.060 [0.060]
wrkslf	0.000 [0.023]	0.001 [0.027]	-0.040 [0.084]
unemp	-0.010 [0.020]	-0.010 [0.020]	-0.016 [0.059]
helpoth	-0.065 [0.025]***	-0.068 [0.025]***	-0.145 [0.073]**
prot	-0.021 [0.028]	-0.019 [0.028]	-0.068 [0.082]
cath	-0.015 [0.032]	-0.015 [0.032]	-0.054 [0.094]
jew	0.107 [0.099]	0.113 [0.099]	0.297 [0.288]
otherrelig	0.026 [0.055]	0.030 [0.055]	0.075 [0.163]
Obs	2744.00	2751.00	2744.00

Absolute value of z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%