Democracy under High Inequality: Political Participation and Public Goods

Francesc Amat[*]
Pablo Beramendi[†]

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Abstract

Contrary to the view that inequality reduces turnout, political participation among low income voters is higher in democracies with very high levels of inequality and intermediate levels of state capacity. We address this puzzle by analyzing the link between political mobilization and budget allocations at different levels of inequality and state capacity. Under high inequality and low levels of capacity, parties find it optimal to mobilize low income voters via targeted goods. But as inequality decreases and capacity increases, clientelism becomes less effective a tool for voters' mobilization. To evaluate the implications of this argument we exploit a quasi-experiment, namely the anti-corruption audits by the Brazilian federal government on its municipalities. We show that an exogenous increase in monitoring effort by the state breaks the clintelistic equilibrium, leading to a joint reduction in the likelihood of re-election by incumbents, the turnout rates, and the provision of targeted goods at the local level.
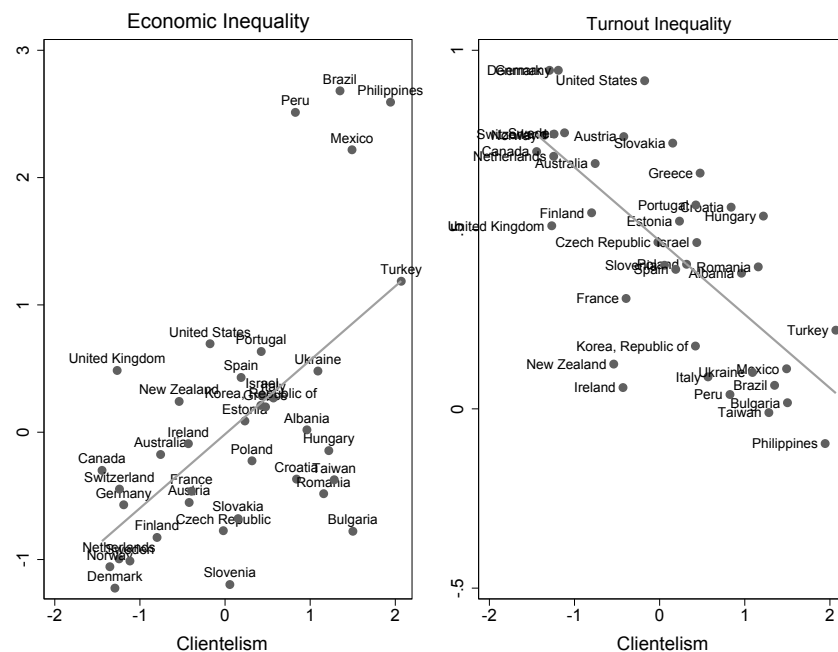
[*]Assistant Professor, IPEG, Universitat Pompeu Fabra.
[†]Associate Professor, Department of Political Science, Duke University.

1 Introduction: Democracy under High Inequality

Inequality is known to bias citizens' political influence. Through various channels, economic inequality undermines the idea of citizens as *political equals* (Dahl, 1991; Przeworski, 2010)[1]. And yet, in younger, less developed, and very unequal democracies poor voters often seem as willing (if not more) to engage in politics as their counterparts in rich democracies (Krishna, 2008; Stokes et al., 2013). As a matter of fact, the relationship between inequality and electoral turnout in the developing world reverses the patterns observed in wealthier democracies: higher levels of inequality are associated with high electoral participation, rather than low, in places like Mexico, Brazil, or Peru even after one accounts for obvious institutional factors such as compulsory voting laws.

Figure 1: Clientelism, Economic Inequality, and Turnout Inequality

How does democracy work under very high economic inequality to feature at once high

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[1]It limits the resources poorer individuals need to engage in politics (Verba et al., 1995; Solt, 2008; Gallego, 2010; Mahler, 2008); alters the structure of informational networks(Bond et al., 2012; Abrams, Iversen and Soskice, 2011); privileges wealthier voters via campaign contributions (Campante, 2011; Przeworski, 2015) or political representation (Bartels, 2009; Gilens, 2012; Gingerich, 2013); undermines pro-redistributive coalitions (Franzese and Hays, 2008); and alters the incentives of political parties to target low income voters (Anduiza Perea, 1999; Anderson and Beramendi, 2012; Gallego, 2014).

levels of economic inequality and high levels of formal political equality? To address this puzzle we reason from the premise that turnout levels reflect primarily parties' efforts to mobilize voters, especially those situated in the lower half of the income distribution. That the case, the explanation of turnout requires not only an account of voters' incentives to engage in elections but also of parties' choices about (1) *whom to target* and (2) *how to target*. By way of motivation, Figure 1 presents the (mean-centered) crossnational relationship between clientelism[2] and economic inequality (left panel) and turnout inequality[3] (right panel). The cross-national patterns suggest that higher levels of clientelism are associated with both higher levels of economic inequality and lower levels of political inequality. This paper investigates this linkage and offers several theoretical and empirical contributions.

First, we analyze formally the conditions under which parties choose to pursue one of two strategies: mobilization through programmatic party-voter linkages, built around competitive offerings of sets of public policies (public goods), and mobilization through the clientelistic use of local public goods, i.e., targeted efforts towards a self-contained group of voters based on a conditional exchange for political support (Kitschelt and Wilkinson, 2007). These efforts may include as well the manipulation of access to services otherwise labeled as public goods.[4] In what follows we use the terms *local public goods* and *targeted goods* interchangeably. Our analysis reveals that mobilizing low income voters through clientelism is an optimal strategy in contexts of very high inequality. It is in these settings where we expect to observe a higher involvement by low income citizens and, as a result, higher levels of turnout.

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[2]Clientelism is an aggregate and continuous measure of clientelistic efforts by parties at the country level (Kitschelt, 2013).

[3]Using the *Comparative Study of Electoral Systems Database* (CSES), we estimate logit regressions with individual income dummies for each country-year available: $Pr(Vote) = \Phi(\alpha + \beta_{LQ} Income_{i,LQ} + \beta_{HQ} Income_{i,HQ} + \beta_3 X_i + \epsilon)$, where the estimated parameters of interest are the turnout probability by income groups: $\hat{\beta}_{LQ,j}$ and $\hat{\beta}_{HQ,j}$. The CSES data measures income in five quintiles. We take the third quintile (median) as the reference category for the impact of the two variables of interest on turnout. Low income quintiles are the bottom two whereas upper income quintiles include the 4th and the 5th. Similar to Kasara and Suryanarayan (2014), we include controls for education, age, age squared, gender, and rural setting. On the basis of these coefficients, turnout inequality is defined as $\hat{\beta}_{diff,j} = \hat{\beta}_{HQ,j} - \hat{\beta}_{LQ,j}$. Positive values reflect high levels of turnout differentials among voters stratified along income lines.

[4]For a more detailed analysis of different forms of non-programmatic politics consistent with the approach in this paper see Stokes et al. (2013).

Our focus on the link between structural conditions and strategic choices not only enhances our understanding of elites' mobilization strategies (Magaloni, Diaz-Cayeros and Estévez, 2007; Diaz-Cayeros, Estevez and Magaloni, 2016). It also contributes to the study of the politics of turnout buying (Nichter, 2008; Hidalgo and Nichter, 2016; Larreguy, Marshall and Querubin, forthcoming). In high inequality contexts, elites magnify their political influence by conditioning the political voice of the poor as opposed to excluding them altogether from the political process. As such, we offer a genuinely political mechanism behind the persistence of *perverse accountability* (Stokes, 2005), bad development equilibria and the self-reproduction of inequality, both economic and political.

Second, we study an additional mechanism linking economic and political inequality: how state capacity mediates the use of local public goods as a mobilization strategy. In particular, we study how the institutional capacity of the state to monitor its citizens shapes elite's incentives to resort to clientelistic mobilization strategies. Low levels of monitoring capacity reinforce and facilitate elites' strategies to manipulate targeted goods for political purposes. A better understanding of the connection between economic inequality, party strategies and state capacity helps illuminate when bad equilibria (high inequality, clientelistic democracies, low state capacity) are likely to emerge and persist (Robinson and Verdier, 2013).

To substantiate these ideas empirically, we leverage on micro-level information in a case, Brazil, where, as illustrated in Figure 1, the status quo equilibrium of high economic inequality and clientelism is prevalent. Exploiting information about turnout, economic inequality, and clientelism among Brazilian municipalities we are able to evaluate the predictions from the model: (1) in contexts of high inequality, the resort to clientelism as a mobilization strategy increases the level of turnout; and (2) the resort to clientelistic strategies translates into a larger provision of targeted goods at the local level. To explore the use of targeted goods we focus on primary education spending at the local level. Primary education is a realm where local authorities have large amounts of discretion to alter the local labor force (via wages or employment (Calvo and Murillo, 2004)), privilege schools's resources by area (thus benefitting/punishing different pools of voters (Bursztyn, 2016)), and even manipu-

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late access through the matching of facilities to specific subareas within the municipality (de Oliveira and Adrião, 2007). Accordingly, more clientelism translates into higher effort in primary education budgets, something we provide evidence for below.

Crucially, we also contribute to the study of institutional reforms aimed to curb down the political influence of corruption and clientelism. We model the impact of these reforms as an exogenous change in the state's ability to monitor elites. Analytically, we predict that an increase in such efforts reduce elites' ability to politically manipulate targeted goods, which translates in a reduction of both the incumbent's probability of re-election and the turnout levels of their constituents. Rather counterintuitively, we show that, under high inequality, exogenous increases in the state's monitoring capacity lead to a reduction of budgetary efforts to lure voters (regardless of whether these are group specific transfers or public goods whose level/access are politically manipulated).

The randomized anti-corruption audits of Brazilian municipalities in the early 2000s provide an opportunity to analyze these relationships (Ferraz and Finan, 2008, 2011). The audits were directly designed as an effort from the federal government to curb down corruption and the misuse of federal funds by Brazilian municipalities (on average 70% of the local budget rests on federal transfers). By exploiting the randomized nature of the audits and their timing (before or after the 2004 election), we show that the exposure to an audit before the election reduces the incumbent's likelihood of re-election, depresses turnout rates (especially in rural contexts with pre-eminent low levels of education), and leads to a reduction of local public goods (primary education) in the subsequent period. No such process is observable in the municipalities that were not audited before 2004.

Our findings suggest that external audits increase uncertainty about the incumbent's re-electability, a premise born out by the data, and, as a result, limits the credibility of the promise of future goods. The result is the demobilization of current beneficiaries and a reduction of turnout. Previous experimental evidence on Mexico shows how conditional cash transfers can be used to mobilize the vote in favor of the incumbent (De La O, 2013). Our results illustrate the complex effects of interventions aimed to sever this kind of strategy.

Using primary education policy at the local level as a relevant case study, we show that exogenous attempts to control political machines may actually reduce the welfare of low income citizens in the short and medium run, especially in contexts where weak fiscal and state capacity prevents new incumbents to replace targeted benefits with programmatic public good provision (Nathan, forthcoming).

2   The Logic: Inequality, Mobilization, and Public Goods

2.1   Premises and Set-up

We model the manipulation of policy as a mobilization device to attract low income voters. Parties have limited resources and must choose how much to devote to local public (targeted) goods for low income voters (b_P), how much for high income voters (b_R), and how much to general public goods (g). Within this framework we study how inequality shapes the conditions under which elites resort to clientelistic strategies to attract voters.

Politics is therefore an activity initiated by elites at all ends of the ideological spectrum. In other words, we assume a sequential set-up in which the elites (the rich) move first and the low-income voters move afterwards and where the rich have perfect information[5]. Accordingly, mobilization is a choice by different groups of rich citizens. The fundamental problem for any party is to maximize the utility of their base such that they attract the support of low income voters. That is the rich will optimize their policy selection in such a way that they (1) meet their budget constraint and (2) at least leave the poor indifferent between their policy offering and the offering that the poor would consider optimal.

To incorporate inequality into the analysis, we define[6] δ and $(1 - \delta)$ as the fraction of, respectively, rich and poor citizens in any given society. Similarly, we define ϕ and $(1 - \phi)$ as the share of income of, respectively, the rich and the poor. Using these simple definitions we can express the income of the rich (w_R) and the poor (w_P) as a function of inequality:

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[5]Given that the rich have perfect information and move first, they will exploit this advantage by optimizing their utility based on their information.

[6]We follow the notation in Acemoglu and Robinson (2006).

$$w_R = \frac{\phi\overline{w}}{\delta} \quad \text{and} \quad w_P = \frac{(1-\phi)\overline{w}}{1-\delta}$$

Finally, elites (rulers) face a standard budget constraint defined by $t\overline{w} = b_P + b_R + g$. To capture the variety of experiences in terms of state/fiscal capacity, we impose the assumption that a share, λ, of the income of the rich is non-taxable by low income voters. λ allows us to capture the role played by the state's ability to monitor and tax its citizens. It also allows us to analyze the predictions emerging from exogenous changes in such capacity. Accordingly, the budget constraint is defined as:

$$t\overline{w}(1-\lambda\phi) = b_P + b_R + g \quad \text{for the share of citizens } (1-\delta)$$

$$\text{and} \quad t\overline{w} = b_P + b_R + g \quad \text{for the share of citizens } \delta$$

On the basis of these premises, we model the problem as a strategic interaction in which low income voters decide whether to vote (or not), and the elite parties choose which policy tool to concentrate their efforts on. Critically, we assume that the poor will vote if their utility threshold is satisfied by the offerings made by the party of the rich. Therefore, solving the model requires to take two steps, sequentially:

1. Identify the optimal values of taxes (t^*), targeted goods (b_P^*), and public goods (g^*) for the poor, given the budget constraint. These values define the indifference threshold for the poor to turnout to vote. The problem for low income voters is defined as follows:

$$\underset{t,b_p,g}{\text{maximize}} \quad U_i(t,b,g) = (1-t)w_P + \alpha ln(b_P) + g \tag{1}$$

$$\text{subject to} \quad t\overline{w}(1-\lambda\phi) = b_P + b_R + g$$

Where α capture the sensitivity of low income voters to targeted goods. As detailed in the appendix, this yields the following results: $b_P^* = \alpha$; $b_R^* = 0$; $t^* = t^{max} \leq 1$; and $g^* = t\overline{w}(1-\lambda\phi) - \alpha$. These in turn allow to define the poor voter's utility threshold for voting. Poor voters will vote under any combination of t, b, and g that generates

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levels of utility *at least* similar to those defined by:

$$\overline{U_P} = (1 - t^{max})w_P + \alpha ln(\alpha) + t\overline{w}(1 - \lambda\phi) - \alpha \tag{2}$$

This expression defines the level of reservation utility of the poor that the elites must meet with their policy offerings so that the latter turn out to vote.

2. Identify the optimal values of taxes (t^*), targeted goods (b_P^*, b_R^*), and public goods (g^*) for the elite. The elites, irrespective of their ideological leanings, need to choose a portfolio of targeted goods, public goods, and taxes that meets two constraints: (1) a budget constraint (recall that the poor had limited ability to tax the elite, but the elite has full capacity to tax itself); and, crucially, (2) a political constraint driven by the need to meet the mobilization threshold of low income voters defined previously in (2). Accordingly, its maximization problem can be defined as:

$$\begin{aligned}
\underset{t, b_r, g}{\text{maximize}} \quad & U_i(t, b, g) = (1 - t)w_R + \beta ln(b_R) + g \\
\text{subject to} \quad & t\overline{w} = b_P + b_R + g \\
\text{and to} \quad & (1 - t)w_P + \alpha ln(b_P) + g \geq \overline{U_P}
\end{aligned} \tag{3}$$

Where β captures the sensitivity of high income voters to targeted goods for the elite and $\overline{U_P}$ defines the low income voters' utility threshold as defined above.

2.2 Comparative Statics and Hypotheses

Solving the model (step by step details are provided in the Appendix) allows us to explore how the relationship between economic inequality and the elite's choice of local public (targeted) goods for low income citizens shape turnout, especially turnout among low income voters. Recall from the set-up above that we proxy inequality from two angles: the proportion of low income citizens in society $(1 - \delta)$ and the share of income owned by high income citizens (ϕ). The model yields the following comparative statics between these two

aspects of inequality and the choice of targeted (b_P^*) goods:

$$\frac{\partial ln(b_{p}{}^{*})}{\partial(\phi)} = \frac{-\tau^{max}\overline{w}\lambda}{\alpha} \leq 0 \tag{4}$$

$$\frac{\partial ln(b_{p}{}^{*})}{\partial(1-\delta)} = \frac{\tau^{max}w_{P}\lambda}{\alpha} \geq 0 \tag{5}$$

Inequality shapes the choice of b_P^* through the interaction of two mechanisms, one economic, one political. The economic mechanism concerns both the size of voters targetable by clientelistic efforts $(1 - \delta)$ and the ability of the elite to finance such efforts (ϕ). On one hand, equation (4) implies that as the elites become wealthier they need less resources to meet the mobilization constraint of the poor since the low income are poorer and therefore more easily mobilized[7]. On the other, equation (5) means that the optimal level of targeted goods towards the poor (b_P^*) increases in the number of poorer voters, especially in contexts with a lower ability of the state to monitor its citizens.

The political mechanism concerns the incentives of the elites to meet the low income citizens' reservation utility constraint. Equation (5) above suggests that as the absolute income of the poor increases (w_P), the level of targeted goods necessary to meet the poor's reservation utility also rises. In addition, the incentives to meet such a constraint, and therefore get the poor to vote, are also affected by the the ability of the state to monitor and tax its citizens, and accordingly, the ability of the elite to hide away part of their wealth and/or engage in mismanagement for political purposes (λ).

A lower λ implies an increase in the reservation utility of the poor to actually turnout to vote[8]. Substantively, this implies that as the capacity of the state increases it becomes more expensive to acquire the support of the poor by supplying targeted goods. Accordingly, the extent to which elites offer targeted goods in response to increases in their income or increases in the share of poor voters is moderated by the level of the state's monitoring capacity. As the state's monitoring capacity declines, (i.e. higher values of λ) elites are better off using more

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[7]This effect is stronger the higher the average income of society ($\overline{w}$), reflecting the well known intuition that development undermines clientelism (Kirchheimer, 1965; Stokes et al., 2013)

[8]This is the case as, working from (2) above, $\frac{\partial \overline{U_P}}{\partial \lambda} = -t\overline{w}\phi$

targeted goods to meet the low income voters' reservation utility constraint. By contrast, as λ tends to 0, the connection between economic inequality (whether captured through the number of poor or the share of income by the rich) and the the optimal level of targeted goods weakens until the point in which $\lambda = 0$, when it disappears. These results uncovers a channel through which external interventions to reduce λ crucially affect elites' mobilization strategies.

The analysis above suggests that elites do not only react by mobilizing against the increasing revenue raising power of the state (as in Kasara and Suryanarayan (2014)). Under conditions of high inequality and low state capacity, they strategically mobilize low income voters to secure their political position. These are the circumstances that render clientelism is both rational and self-enforcing[9]. As such, in equilibrium the self-reinforcing link between high economic inequality and clientelism as a mobilization strategy leads to the following hypotheses:

Hypothesis 1.1: Under high inequality, clientelism leads to higher rates of political participation, especially in areas with a higher share of low income voters.

Hypothesis 1.2: Under high inequality, clientelism leads to higher use of local public (targeted) goods as a mobilization strategy of low income voters.

The second key insight of the model concerns the consequences of institutional interventions to increase state capacity under conditions of high inequality. Given a status quo of high economic inequality and clientelism, institutional reforms to increase the state's monitoring ability (i.e. reduce λ in the model) undermine the effectiveness of clientelism. Such reduction in the effectiveness of clientelism implies:

Hypothesis 2.1: A reduction in the probability of re-election of the incumbent, as her ability to secure the support of a large pool of voters declines.

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[9]For evidence consistent with this theoretical contention in the Brazilian case, see Timmons and Garfias (2015).

Hypothesis 2.2: A reduction in the level of turnout, as incumbents are less capable of meeting the low income voters' reservation utility to participate.

Hypothesis 2.3: A reduction in the provision of local public (targeted) goods towards lower income voters.

3 Empirical Strategy and Research Design:

Hypothesis 1 concerns equilibrium levels of turnout and local public goods provision under the status quo. Hypothesis 2 speaks to the implications of exogenous manipulation in the levels of monitoring capacity. To evaluate them, we join a recent stream of scholarship exploiting Brazilian municipalities to identify mechanisms driving the interaction between voters and politicians in contexts with a strong incidence of corruption, clientelism, and inequality (Hidalgo and Nichter, 2016; Brollo, 2012; Brollo et al., 2013). Our specific strategy focuses primarily on the random audits by the Brazilian government on its municipalities (Ferraz and Finan, 2008, 2011).

Beyond the well understood advantage of holding constant potential cross-national sources of heterogeneity, two reasons render Brazil a suitable case for our purposes. First, in 1997 Brazilian authorities succesfully promoted a constitutional change to allow re-election of incumbents at the local level, a provision implemented from 2000 onwards (Ferraz and Finan, 2008, 2011). Second, Brazil is a democracy where voting is legally compulsory for individuals between 18 and 70 in all elections. This provision notwithstanding, there remains considerable variation in the levels of turnout across localities. For the localities in our sample, the range was between 65% and 96% in 2000 and 2004. In both instances the distribution was approximately normal, as shown in the Appendix in Figure 8. The reduced variation due to institutional constraints makes Brazil a harder case to test our hypotheses.

In addition, the audits offer a rare opportunity to link concepts and data. The audits provide various measures of the extent to which local authorities resort to clientelistic strategies. To measure party strategies we resort to the variable that Ferraz and Finan (2011)

defined as *local mismanagement* and that is defined as "the number of violations divided by the number of service items audited" (Ferraz and Finan, 2011, p.1284). These violations include the performance of uncompetitive bidding for local contracts, and various ways of turning public goods into targeted goods, most prominently the misuse of resources earmarked for other purposes (i.e. using resources intended for health to boost teachers salaries or, as typically recorded in individual municipal reports, to hire a larger pool of part-time teachers).

This proxy matches the conceptualization of clientelistic strategies as a "material inducement" geared towards the modification of electoral behavior (Kitschelt and Wilkinson, 2007). Note that the measure does not include clerical or accounting errors or fiscal adjustments in year to year budgets. Importantly, our results below are robust to replacing this indicator by proxies capturing acts of corruption more directly oriented towards targeted personal gains, such as frauds in procurement, diversions of public funds to private individuals or entities, or over-invoicing of goods and services.

We match these measures to census-based socio-demographic and economic information at the local level, as well as to detailed political information obtained from the Tribunal Superior Electoral (TSE), including the level of turnout in local elections, and data on budgetary choices by local governments. The latter allow to capture how local governments use policies such as primary education to manipulate salaries and employment opportunities in the public sector as part of their electoral strategy (Calvo and Murillo, 2004; Bursztyn, 2016). These three features allow us to test whether in equilibrium municipalities with a higher incidence of inequality and clientelism are associated with larger levels of budgetary commitments towards policies that can be targeted towards constituents.

Turning to H2, the launch of a major anticorruption initiative in 2003, led by the *Controladoria General da União* (CGU) to scrutinize the use of federal funds by local authorities, offer an opportunity to identify the impact of increases in the state's monitoring capacity.[10]

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[10]This is important because endogenous relationships abound in the literature. Fergusson, Larreguy and Riano (2015) show how parties with a strategic advantage in clientelistic politics will oppose investments in state capacity, thus limiting pro-equality politics. Debs, Helmke et al. (2010) show that the left fares better under equality because voters are more likely to cling to pro-redistributive coalitions that in turn help

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The audits are de facto an exogenous manipulation of λ implemented through a randomized selection of targeted municipalities:

1. Through a sequence of lotteries, the CGU chose randomly about 8% of a total of 5500 Brazilian municipalities, including state capitals and coastal cities (N of audited municipalities=366). Once a municipality is chosen, the CGU gathers information on all federal funds received and sends a team of auditors to examine them. Auditors get information from the community and the local council members about any form of malfeasance or misuse of funds, as well as from the local documentation available.

2. Immediately, after the inspection (about a week long visit), a detailed report is sent back to the CGU, which in turn forwards it to the federal accounting auditor (*Tribunal de Contas da Uniao*), the judiciary, and all members of the local council. A summary with the key findings for each audited municipality is made publicly available.

3. Critically, we have information (thanks to Ferraz and Finan (2008, 2011)) on the date in which the reports were released to parties and voters. As a result we can exploit the contrast between those municipalities in which the audit results were released before the 2004 election and those in which they were not[11].

The combination of the random selection of municipalities and the discontinuity around the 2004 election determine the nature and composition of the treatment and control groups. Since all the municipalities included in our sample have been investigated, the *treatment* is purely informational. The *treatment group* includes municipalities that have been audited and in which the results of the investigation have been released before the 2004 election, and the *control group* includes all the municipalities where the investigation took place and was released after the 2004 election. Table 6 in the Appendix includes the balance tables on relevant covariates for the treatment and control groups. For most of the covariates there are

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contain inequality. Bursztyn (2016) focuses in turn on voter's demand: it is the voters themselves who may not want more public goods.

[11]Given the short time span between selection, visit, and release randomization determines both which particular municipality is selected and when the information is released. There is no room for strategic manipulation of the information by parties or the federal government.

not significant differences across the two groups, except for some municipality size variables: e.g. population and number of legislators per voter.

4   Results

4.1   Turnout Rates and Local Public Goods under the Status Quo

We start by analyzing the way in which clientelism conditions the relationship between economic inequality and turnout rates in Brazil (H1.1) with the cross-section of audited municipalities in Ferraz and Finan (2011) for which the mismanagement measure is available. Under the status quo the self-reinforcing relationship between inequality and clientelism should lead to higher turnout rates. Thus, we expect political participation to be higher when both inequality and clientelism are high. As explained before, the audited mismanagement measure, coded by Ferraz and Finan (2011), is our main independent variable of interest.

The first two columns in Table 1 employ the turnout rates in 2000 as dependent variables of interest and the third and fourth columns the turnout rates in 2004. The audits started in 2003 and therefore the audited levels of mismanagement are actually ex-post measures in the first two columns. But regressing the turnout rates in 2000 as a function of the ex-post audited mismanagement is also interesting since clientelism is sticky. The key results though refer to columns (3) and (4) in which we explore the turnout rates in 2004. Specifically, we estimate the following equation:

$$TurnoutRates_{04} = \alpha + \beta_1 Ineq_{m,s} + \beta_2 Mism_{m,s} + \beta_3 Ineq_{m,s} x Mism_{m,s} + \eta X_{m,s} + v_s + \epsilon_{m,s} \quad (6)$$

All models in Table 1 include regional state fixed effects (v_s) and standard errors clustered at the state level. The inclusion of state level fixed effects aims to control for unobserved heterogeneity, and the clustering at the state level is designed to account for the geographical distribution of the units of observation. Models in columns (2) and (4) include controls for the levels of fiscal transfers whereas the other two do not include them since differences

in transfers received by the municipalities might be an important confounder. Following a strategy similar to the one in Ferraz and Finan (2011), we introduce a series of municipal, party, and major specific controls [12].

The results in Table 1 are consistent with our theoretical expectations. All models report a positive and significant coefficient for the interaction term between the Gini measure and the audited mismanagement at the municipality level. And as expected, the estimated coefficient is even stronger when explaining the turnout rates in 2004, which is reasonable since the audits started in 2003 and as such the mismanagement measure is a better proxy for the levels of clientelism just before the 2004 elections. But interestingly, the ex-post levels of mismanagement are also associated with higher levels of turnout rates when inequality is high in the preceding local elections in the year 2000.

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[12]Municipal level characteristics include: the area, the log of population, the share of urban population within the municipality, the (log) local GDP per capita, the change in the level of population between censuses, the share of population over 18 with at least secondary education, whether the municipality is new and the number of active public employees. We also add controls for specific political and judicial institutions at the municipality level: presence of a judicial district, use of participatory budgeting during the period 2001-2004, and the seats to voters' ratio within each municipality. Mayors' specific characteristics include age, gender, level of education, and past non-consecutive experience as a mayor or council member. Finally, we also include electoral controls: the share of council members from the same party as the mayor, whether the mayor was from the same party as the governor, the effective number of parties in the 2000 election, and the margin of victory and the change in the electoral census.

Table 1: Turnout Rates under the Status Quo

Turnout Rates 2004	2000		2004	
	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Gini	-0.20**	-0.21**	-0.26***	-0.26***
	(0.09)	(0.09)	(0.07)	(0.06)
Audited Mismanagement	-0.03	-0.03	-0.06***	-0.06***
	(0.02)	(0.02)	(0.02)	(0.02)
Gini X Audited Mismanagement	0.06*	0.07*	0.10***	0.10***
	(0.03)	(0.03)	(0.03)	(0.03)
Constant	0.80***	0.83***	1.17***	1.10***
	(0.09)	(0.11)	(0.08)	(0.09)
Municipality Controls	Yes	Yes	Yes	Yes
Electoral Controls	Yes	Yes	Yes	Yes
Fiscal Transfers Controls	No	Yes	No	Yes
Regional State FEs	Yes	Yes	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes
R-squared	0.56	0.56	0.54	0.54
N	366	366	366	366

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Recall, however, that according to our argument clientelism should lead to higher participation rates of low income voters. Unfortunately we do not have individual level data available, but we can explore the heterogeneous effects depending on the share of urban population as a measure of urban versus rural areas, where the prevalence of low income voters is higher. To do so, we simply divide the sample according to municipalities that are above or below the median share of urban population. Results in the supplementary Appendix (see Table 8) show that, indeed, the enhancing effect of clientelism on turnout rates is most prevalent in rural areas.

We continue by analyzing how clientelism also affects the relationship between economic inequality and the provision of targeted goods towards low income voters in the audited municipalities cross-section. According to our theoretical expectations (H1.2), under the status quo the self-reinforcing relationship between inequality and clientelism should lead to higher provision of targeted goods towards the poor. As a key measure of incumbents' budgetary effort during the 2000-2004 legislature towards low income voters we take the

measure of (log) local spending in primary education. Specifically, we employ the data collected recently by Bursztyn (2016) on the amount of local public spending in primary education at the municipality level.

Our analysis suggests that spending on targeted goods towards low income voters is a crucial mobilization tool in clientelistic equilibria. Accordingly, we expect greater spending by the municipal authorities in local primary education when economic inequality and clientelism are both high. Therefore, to explore the determinants of municipal spending in targeted goods towards the poor under the status quo we estimate the following specification:

$$LogSpendingEduc = \alpha + \beta_1 Ineq_{m,s} + \beta_2 Mism_{m,s} + \beta_3 Ineq_{m,s} x Mism_{m,s} + \eta X_{m,s} + v_s + \epsilon_{m,s}$$

$$(7)$$

For the controls, we employ a similar specification to the one in Bursztyn (2016). In addition to regional state level fixed effects (v_s), models in Table 2 also include controls for the average municipality budget in all columns; a control for the municipality median household income in columns (2), (3) and (4); and the mayors' characteristics are included as controls in columns (3) and (4). Finally, column (4) also include party fixed effects, since spending priorities might be of course responsive to parties' ideological concerns. And as before, all the standard errors presented are clustered at the regional state level.

Consistent with our theoretical expectations, all models in table 2 report a positive and significant interaction between economic inequality and clientelism, which is proxied again by the level of mismanagement recorded during the audits. This implies that spending in primary education was higher in those municipalities with both high clientelism and high inequality. A subsequent exploration of the interaction between mismanagement and economic inequality in two subsamples of urban and rural municipalities confirms that this effect is dominant in rural areas and completely absent in urban areas (see Table 9 in the Appendix). This additional evidence further reinforces the notion that spending in primary education functions, in part, as an instrument to mobilize low income voters.

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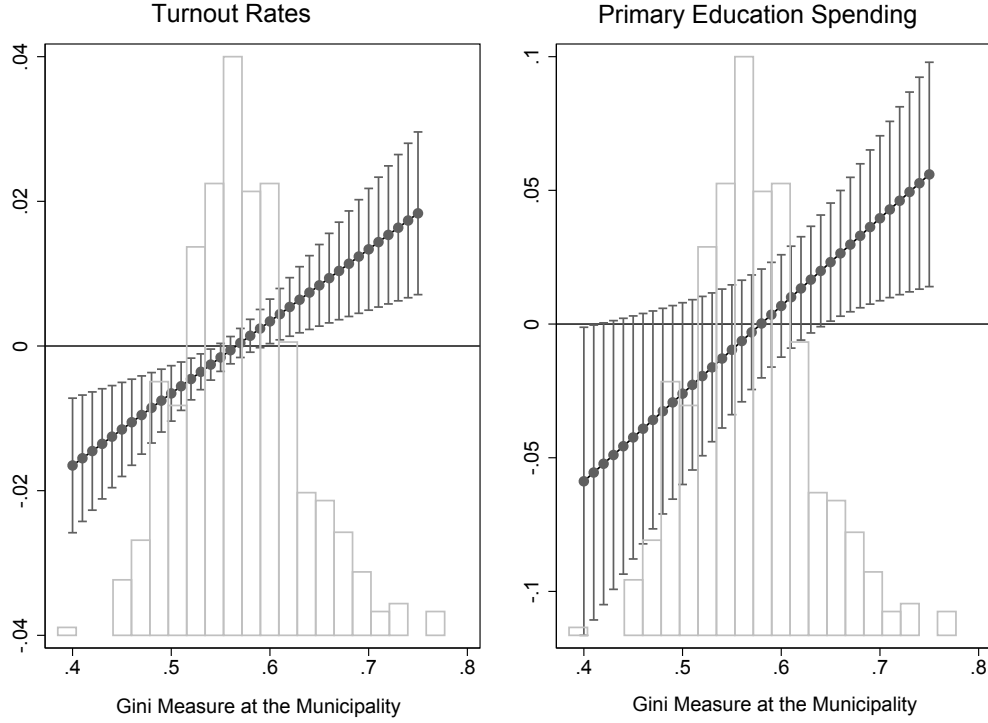Table 2: Average Local Spending in Primary Education under the Status Quo

Local Primary Education Spending	2000-2004 Legislature			
	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Gini	-0.42	-0.53*	-0.53*	-0.49
	(0.28)	(0.31)	(0.30)	(0.30)
Audited Mismanagement	-0.21*	-0.18*	-0.19*	-0.18*
	(0.10)	(0.10)	(0.09)	(0.10)
Gini X Audited Mismanagement	0.36**	0.32*	0.33**	0.30*
	(0.17)	(0.16)	(0.15)	(0.16)
Constant	-0.51	-0.71*	-0.96*	-1.09*
	(0.35)	(0.38)	(0.47)	(0.55)
Mean Budget Control	Yes	Yes	Yes	Yes
Median Income and Re-Election Control	No	Yes	Yes	Yes
Mayor Characteristics Controls	No	No	Yes	Yes
Party Fixed Effects	No	No	No	Yes
Regional State FEs	Yes	Yes	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes
R-squared	0.97	0.97	0.97	0.97
N	306	306	306	306

*** p<0.01, ** p<0.05, * p<0.1

To illustrate the nature of the status quo we have been describing in this section, the left panel in Figure 2 shows the marginal effect (based on column (4) in Table 1) of the audited mismanagement on turnout rates conditional on the levels of economic inequality at the municipality. The effects are substantively important. Under high inequality, the marginal effect of audited mismanagement is associated with between 1 and 2 more percentage points in turnout rates, whereas under very low inequality the marginal effect of audited mismanagement amounts to a 1.5 percentage points reduction in participation.

On the other hand, the right panel in Figure 2 illustrates the other side of the equilibrium under the status quo: the marginal effect (based on column (4) in Table 2) of mismanagement on spending in primary education is positive and significant given high levels of inequality. As such, both panels in Figure 2 capture an important mechanism underpinning the status quo in equilibrium: mobilization of low income voters under high inequality builds on the provision of targeted goods -namely, local spending in primary education.

Figure 2: Marginal Effects of Audited Mismanagement on Turnout and Public Goods

4.2 Audits Exposure and Re-Election Probability

We turn to study exogenous changes in the monitoring ability of the state (i.e. the parameter λ in our model) and their consequences. According to our second hypothesis (H2.1), we expect the shock associated with the release of the audits to lower the ability of local incumbents to manipulate budgets and, thus, to satisfy the political constraint (recall that the reservation utility of the low-income voters increases in the state's monitoring ability). That should lead to an increase in the amount of electoral uncertainty faced by the incumbent and therefore to a likely decrease in the re-election probability.

We estimate the re-election probability in the 2004 local elections as a function of the interaction between the audited levels of mismanagement and the shock associated to the exposure of the audits results before the 2004 elections. We anticipate that when there is no exposure, greater mismanagement (i.e. more clientelism) should be associated with a higher

re-election probability. In contrast, when the audits reports were released before the 2004 elections, the re-election probability should decline sharply. To explore this prediction we estimate the following equation:

$$Reelected = \alpha + \beta_1 Exp_{m,s} + \beta_2 Mism_{m,s} + \beta_3 Exp_{m,s} x Mism_{m,s} + \eta X_{m,s} + v_s + l_t + \epsilon_{m,s} \quad (8)$$

All models reported in Table 3 include lottery fixed effects (l_t), since the proximity to the 2004 elections might be associated with unobserved heterogeneity in the incumbents' ability to circumvent the audit results. Also, as in the previous analysis, the reported standard errors are clustered at the state level. The main difference is that models in columns (1) and (2) do not include regional fixed effects, whereas models in columns (3) and (4) they do so. Also, models in columns (2) and (4) incorporate further controls and account for the incumbent characteristics. We run the models in this table with a logit specification since the dependent variable is dichotomous (1 if re-elected and 0 otherwise) but the results are the same if instead a linear probability model is employed.

Table 3 provides strong evidence in favor of hypothesis H2.1. Note that the exposed variable is a dummy variable, which takes value 1 if the release of the audit reports occurred before the 2004 elections and 0 otherwise, making the interpretation straightforward. If clientelism practices were not exposed before the 2004 elections, higher levels of audited mismanagement increase the probability of re-election. By contrast, where the audits results were released before the elections, higher levels of audited mismanagement actually lead to a much lower re-election probability.

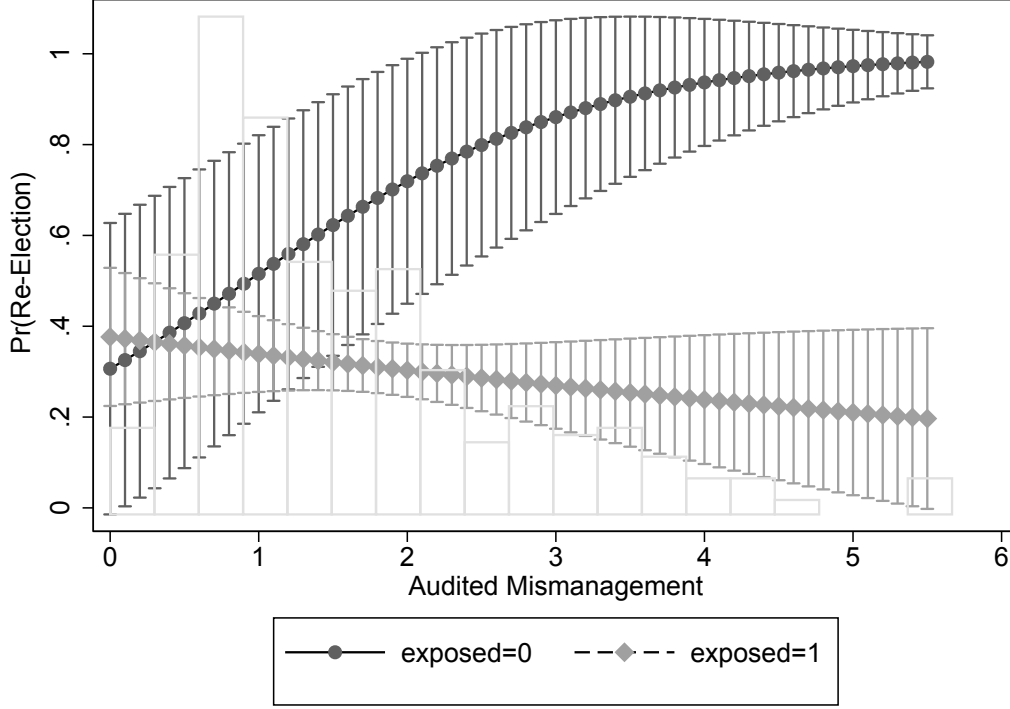Table 3: Re-Election Probability and Audits Exposure

Incumbent Re-Elected	(1) Logit	(2) Logit	(3) Logit	(4) Logit
Exposed	0.34	0.72	0.31	1.37
	(0.96)	(0.95)	(1.13)	(1.55)
Audited Mismanagement	0.69**	0.70**	0.88**	1.08**
	(0.34)	(0.32)	(0.45)	(0.52)
Exposed X Audited Mismanagement	-0.71*	-0.70*	-1.04**	-1.21**
	(0.38)	(0.39)	(0.49)	(0.57)
Constant	3.07	6.39	-1.68	3.45
	(8.41)	(10.04)	(11.73)	(14.60)
Municipality Controls	Yes	Yes	Yes	Yes
Electoral Controls	Yes	Yes	Yes	Yes
Mayor's Controls	No	Yes	No	Yes
Lottery FEs	Yes	Yes	Yes	Yes
Regional State FEs	No	No	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes
Pseudo R-squared	0.162	0.294	0.256	0.420
N	198	198	194	194

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 3 provides a graphical representation of the scale of the effects. The re-election probability declined dramatically in those municipalities in which the release of the audit results occurred before the 2004 elections. For this particular subgroup, the predicted drop in the probability of re-election across is 50 percent ore more depending on the existing levels of mismanagement. The contrast with the incumbency advantage provided by clientelism in the control group is striking. This result is in line with previous contributions on the negative effect of the audits on the probability of re-election. At the same time, it offers a novel perspective since it shows that the negative effect was especially severe at high levels of mismanagement. These findings provide strong evidence that stronger monitoring efforts by the state caused an increase in electoral uncertainty for both incumbents and voters[13].

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[13]To provide further evidence of this relationship we have also run municipality fixed effects models, following Bursztyn (2016), with the entire sample of Brazilian municipalities that show that party re-election probability was higher in municipalities with both greater spending in primary education and higher inequality. In Table 10 and Figures 18 and 19 (in the Appendix) we show that spending in primary education exerts a positive effect on party re-election probability, under mid and high development levels, when inequality is high and, alternatively, when the share of illiterate voters is also high.

Figure 3: Audits Exposure, Mismanagement and Re-Election Probability

4.3 Audits Exposure and Changes in Political Participation

We turn now to study the impact of randomized audits on turnout (H2.2). We model the determinants of the change in the levels of turnout between 2000 and 2004[14] as a function of the interaction between: economic inequality, clientelism, and a dummy capturing whether the municipality belongs to the treatment or the control group (exposure before versus after 2004). Also, to keep the comparison as sharp as possible we limit the sample to majors who seek re-election for the first time. By restricting the sample this way, we avoid the confounding effect of the term in office. Importantly, in the Appendix (see Table 7) we provide evidence that mayors in their first mandate tend to resort less in clientelistic practices (proxied by audited mismanagement) as compared to second term mayors, and specially so under high levels of inequality. Thus, we estimate the following equation for the

---

[14]We get rid out of outliers with extreme values at the bottom and at the top of the distribution (i.e. below the first and above the ninety-nine percentiles).

sample of audited municipalities with mayors in its first term mandate during the 2000-2004 legislature:

$$
\begin{aligned}
\triangle Turnout \quad &= LogTurnout_{2004} - LogTurnout_{2000} = \\
&+\alpha + \beta_1 Ineq_{m,s} + \beta_2 Mism_{m,s} + \beta_3 Ineq_{m,s} x Mism_{m,s} \\
&+\beta_4 Exp_{m,s} + \beta_5 Exp_{m,s} x Ineq_{m,s} + \beta_6 Exp_{m,s} x Mism_{m,s} \qquad (9) \\
&+\beta_7 Exp_{m,s} x Ineq_{m,s} x Mism_{m,s} \\
&+\eta X_{m,s} + v_s + l_t + \epsilon_{m,s}
\end{aligned}
$$

All models include lottery fixed effects (FEs), (l_t) to account for different timing in the audit release. Columns (1) and (2) do not include regional fixed effects (v_s), whereas all the other columns include them. Since we know that clientelism is geographically concentrated among certain areas, the inclusion of regional FEs is important. Finally, the last two columns exclude those municipalities in which the mayor was member of the PMDB. In contexts where clientelistic parties are hegemonic incumbents have the potential to activate compensating mechanisms that mute the political consequences of the federal audits. Since the PMDB is widely recognized as one of the parties with powerful clientelistic machines, we want to assess how sensitive our findings to the inclusion/exclusion of municipalities under its control are.

Importantly, we have also checked if the correlation between the levels of audited misman-agement and inequality is the same across exposed (treatment) and non-exposed (control) municipalities. Actually, the correlation between mismanagement and inequality is negative and significant in the treatment group, but insignificant in the control group. This is the case because under high inequality the levels of audited mismanagement are lower in exposed municipalities. If any, this negative correlation runs contrary to the possibility of finding significant results in our main specification. But in order to test the robustness of the results we have rerun the models excluding extreme upper values for the mismanagement variable and the results do not change[15].

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[15] See Table 11 in the Appendix. Interestingly, when dropping the extreme values in the mismanagement variable the difference across groups in the correlation between inequality and mismanagement disappears.

Table 4: Audits Exposure and Changes in Turnout Rates

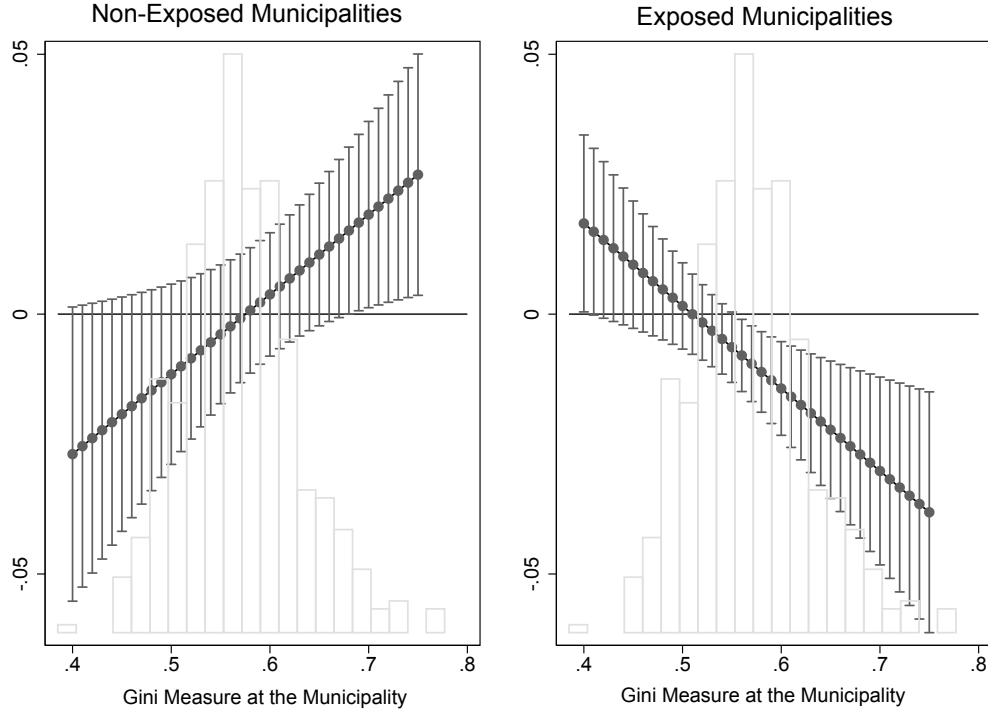| Turnout Change 2004-2000	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Gini	-0.18	-0.25*	-0.15	-0.24	-0.33*	-0.47**
	(0.12)	(0.14)	(0.11)	(0.14)	(0.17)	(0.17)
Mismanagement	-0.04	-0.06	-0.03	-0.05	-0.06	-0.09*
	(0.03)	(0.04)	(0.03)	(0.04)	(0.05)	(0.05)
Gini X Mismanagement	0.08	0.11*	0.05	0.08	0.11	0.15*
	(0.06)	(0.06)	(0.06)	(0.07)	(0.08)	(0.08)
Exposed	-0.20**	-0.24**	-0.19*	-0.24**	-0.28*	-0.35**
	(0.09)	(0.10)	(0.10)	(0.11)	(0.14)	(0.14)
Exposed X Gini	0.35**	0.42**	0.35*	0.44**	0.54**	0.67**
	(0.17)	(0.17)	(0.18)	(0.19)	(0.25)	(0.24)
Exposed X Mismanagement	0.10**	0.12**	0.10*	0.12**	0.14*	0.17**
	(0.05)	(0.05)	(0.05)	(0.05)	(0.07)	(0.07)
Exposed X Gini X Mism	-0.21**	-0.23**	-0.18**	-0.23**	-0.26**	-0.31**
	(0.09)	(0.09)	(0.09)	(0.10)	(0.12)	(0.12)
Constant	0.37**	0.42***	0.15	0.19	0.22	0.28
	(0.15)	(0.14)	(0.14)	(0.15)	(0.20)	(0.21)
Municipality Controls	Yes	Yes	Yes	Yes	Yes	Yes
Electoral Controls	Yes	Yes	Yes	Yes	Yes	Yes
Mayor's Controls	No	Yes	No	Yes	No	Yes
Lottery FEs	Yes	Yes	Yes	Yes	Yes	Yes
Regional State FEs	No	No	Yes	Yes	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes	Yes	Yes
PMDB Mayors Excluded	No	No	No	No	Yes	Yes
R-squared	0.50	0.52	0.64	0.66	0.62	0.66
N	198	198	198	198	165	165

*** p<0.01, ** p<0.05, * p<0.1

The findings reported in Table 4 are robust to different specifications and consistent with our theoretical expectations. Audits information release have a negative effect on turnout especially when both the levels of audited mismanagement and economic inequality are high. Interestingly, though, the results are specially strong once the incumbents who are members of the PMDB are excluded in the last two columns of Table 4. This may reflect the fact that mayors in areas where clientelism is hegemonic have a wider array of exonerative strategies against the impact of the audits at their disposal. Interestingly, if the model is run with the sample that excludes the PMDB mayors, the estimation without the basic set of controls also provides significant results. Also, in the Appendix we report that the results remain robust if instead of the mismanagement measure we employ the corruption measure[16] also

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[16]See Table 12 in the Appendix

coded by Ferraz and Finan (2011).

To facilitate the interpretation of the results, Figure 4 compares the marginal effect of audited mismanagement on changes in municipal levels of turnout in the control (left panel) and treatment (right) groups at various levels of inequality. Given high levels of inequality, in those municipalities where the external audits were not released, the more incumbents misuse federal funds for clientelistic purposes, the higher the increase in turnout. By contrast, in those municipalities where the audit took place and was released before the 2004 election, the same strategy triggers a reduction in electoral participation of a similar magnitude. In other words, the status quo persisted in the control group but was radically transformed in the treatment group. Consistent with Hidalgo and Nichter (2016), the findings here contributes to an emerging agenda on the impact of audits on turnout. Our results, though, emphasize that the negative effects of external audits on turnout changes were highly conditional to the pre-existing levels of economic inequality and clientelism.

Figure 4: Marginal Effect of Audited Mismanagement on Turnout Change

4.4 Audits Exposure and Changes in Local Public Goods

The next hurdle involves evaluating the consequences of audits' releases before 2004 on the provision of local public spending in primary education (H2.3). As developed above, we expect an exogenous shock that increases the monitoring ability at the municipality level to be associated with a decline in the provision of targeted goods towards low income voters. We implement a specification very similar to the one in the previous section. The difference, though, lies in the focus on mid-term policy consequences as opposed to short-term turnout changes.

Therefore, in this section we study the determinants of the change in the average levels of local spending in primary education by comparing the (log) averages between the 2000-2004 and the 2004-2008 legislature terms[17]:

$$
\begin{aligned}
\triangle SpendingEduc \ \ &= LogSpending_{08-04,Leg} - LogSpending_{04-00,Leg} = \\
&+\alpha + \beta_1 Ineq_{m,s} + \beta_2 Mism_{m,s} + \beta_3 Ineq_{m,s} x Mism_{m,s} \\
&+\beta_4 Exp_{m,s} + \beta_5 Exp_{m,s} x Ineq_{m,s} + \beta_6 Exp_{m,s} x Mism_{m,s} \\
&+\beta_7 Exp_{m,s} x Ineq_{m,s} x Mism_{m,s} \\
&+\eta X_{m,s} + v_s + l_t + \epsilon_{m,s}
\end{aligned}
\tag{10}
$$

All the models in Table 5 control for the log change in the total municipality budget as well as the median household income level during the 2000-2004 legislature. Also important, all models except the one in column (1) include regional fixed effects (v_s) to account for unobserved heterogeneity. The columns reported gradually incorporate controls for the incumbent and party characteristics during the 2004-2008 legislature: mayor previous re-election, mayor characteristics[18] and party fixed effects. The last column in Table 5 also includes lottery fixed effects (l_t). And as usual, all models report clustered standard errors at the regional state level.

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[17]The data comes from Bursztyn (2016) and refers to the averaged and deflated spending levels across the 2001-2004 years (for the first legislature) and the years 2005-2008 (for the subsequent legislature).

[18]The controls for the mayor characteristics include: gender, age, age squared, marriage and education level.

Table 5: Audits Exposure and Changes in Local Public Goods Provision

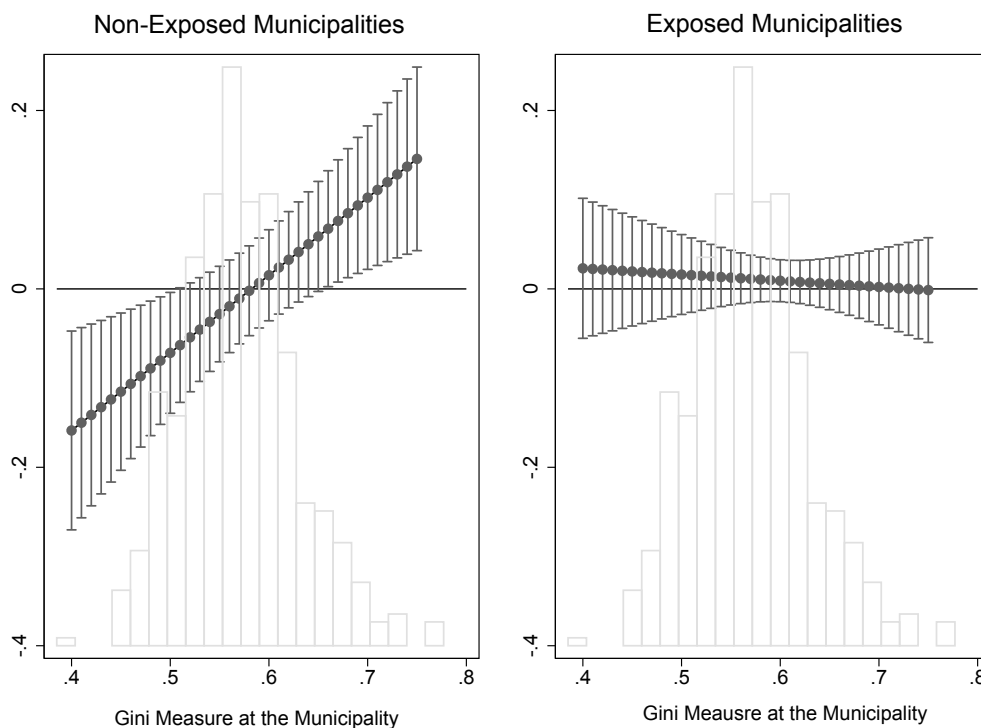| Change in Local Public Goods	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Gini	-0.31	-1.12***	-1.14***	-1.14**	-1.74***	-2.14***
	(0.51)	(0.39)	(0.37)	(0.46)	(0.43)	(0.42)
Mismanagement	-0.33**	-0.42***	-0.46***	-0.44***	-0.51**	-0.52**
	(0.15)	(0.15)	(0.14)	(0.14)	(0.19)	(0.20)
Gini X Mismanagement	0.54**	0.69***	0.76***	0.74***	0.87**	0.90**
	(0.24)	(0.23)	(0.22)	(0.24)	(0.32)	(0.34)
Exposed	-0.33	-0.64**	-0.64**	-0.57	-0.96**	-1.00**
	(0.30)	(0.25)	(0.25)	(0.33)	(0.39)	(0.41)
Exposed X Gini	0.56	1.07**	1.07**	0.96	1.63**	1.87***
	(0.53)	(0.44)	(0.43)	(0.57)	(0.67)	(0.66)
Exposed X Mismanagement	0.34*	0.45**	0.48***	0.45**	0.56**	0.55**
	(0.17)	(0.18)	(0.17)	(0.18)	(0.23)	(0.23)
Exposed X Gini X Mism	-0.56*	-0.73**	-0.78***	-0.75**	-0.94**	-0.93**
	(0.28)	(0.28)	(0.27)	(0.30)	(0.39)	(0.39)
Constant	0.19	0.60**	0.65***	0.65	1.15*	1.27**
	(0.31)	(0.23)	(0.21)	(0.51)	(0.61)	(0.57)
Budget Controls	Yes	Yes	Yes	Yes	Yes	Yes
Re-Elected Mayor Control	No	No	Yes	Yes	Yes	Yes
Mayor's Controls	No	No	No	Yes	Yes	Yes
Party FEs	No	No	No	No	Yes	Yes
Lottery FEs	No	No	No	No	No	Yes
Regional State FEs	No	Yes	Yes	Yes	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.66	0.75	0.75	0.77	0.80	0.83
N	145	145	145	145	145	145

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

To directly illustrate the results, Figure 5 plots the marginal effects of audited misman-agement on the log change in primary education spending for non-exposed (control) and exposed (treated) municipalities. As expected, for the control group the the status quo persists and clientelism continues to exert a positive effect on the dynamics of spending in primary education when inequality is high. Interestingly, and in full alignment with our theoretical predictions, this relationship completely vanishes for the treated municipalities (i.e. exposed municipalities to the shock of audits release). In the latter the levels of audited mismanagement bear no effect on the dynamics of primary education spending at the local level.

The fact that the relationship between audited mismanagement and the mid-term changes in local spending in primary education vanishes for exposed municipalities is highly consistent with the model results. According to (5) and (6) above, as the monitoring capacity of the

state increases (i.e. lower values of λ) elites are better off relying less on local public goods to meet the low income voter's reservation utility. And as λ tends to 0, arguably what happens under exposure, the relationship between economic inequality, clientelism and provision of targeted goods is expected to disappear. Our findings suggest that efforts to curb down clientelism may have constraining effects on outcomes such as spending on primary education, thus contributing to an incipient literature on the potential detrimental effects of anti-corruption programs in Brazil (Lichand, Lopes and Medeiros, N.d.).

Figure 5: Marginal Effect of Audited Mismanagement on Education Spending Change

4.5 Mechanism

Our empirical strategy rests on the premise that in contexts such as Brazilian municipalities turnout rates provide relevant information on the behavior of low income voters. Unfortunately, there are no micro data available within municipalities to fully validate this premise. In support of our approach, recent findings by Cepaluni and Hidalgo (forthcoming)

suggest that the type of voters affected very much depends on the type of intervention (and their associated penalties) being evaluated. When the penalties associated with the intervention affect services with access primarily reserved to middle and upper income groups, changes in turnout rates will reflect the elasticity of these groups to the intervention (in their case, age related enforcement of compulsory voting). Yet when the intervention affects instruments such as mismanagement of cash funds or access to basic social services, the expectation is that aggregate turnout rates trace in large part responsiveness by lower income strata.

As a second best, the data allow us to go further in support of the notion that the demobilization effects concentrate primarily around areas with a higher share of low income voters. The theory suggests that the randomized audits exogenously reduced the effectiveness of clientelism through the demobilization of low income voters. If the mechanism operates in this way, the impact of audits on the relationship between economic inequality and turnout changes should be more apparent in areas with a higher share of low income voters. To the extent that the effects are stronger in these areas, this would suggest a stronger demobilization impact in localities with a larger presence of low income voters. Figure 6 reports the heterogeneous effect of audits in urban versus rural areas, whereas Figure 7 compares the heterogeneous effects of audits exposure in areas with low and high prevalence of education.[19]

Taken altogether, Figures 6-7 lend considerable support to the claim that the federal audits worked to undermine the effectiveness of clientelism as a mobilization strategy and triggered an exogenous change in the linkage between economic inequality and turnout. The sudden stop in the workings of the clientelistic machine took place most visibly in rural areas and in areas with greater prevalence of low education, both areas where clientelism had ex-ante higher incidence and with higher density of low-income voters. These are the areas in which the demobilization effect triggered by the audits emerges most strongly.

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[19]The corresponding Tables for the exploration of the heterogeneous effects are reported in the Appendix, see Tables 13 and 14.

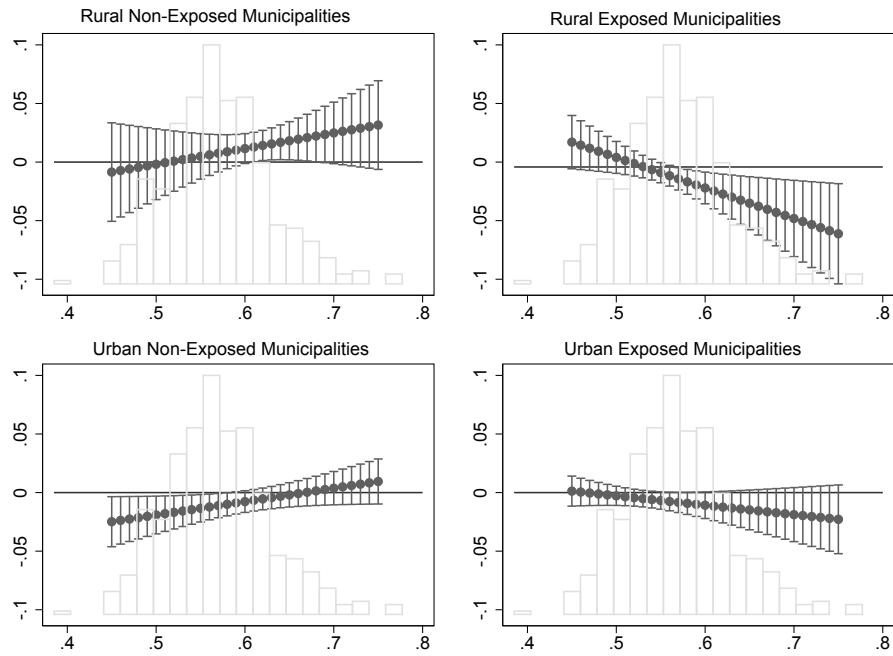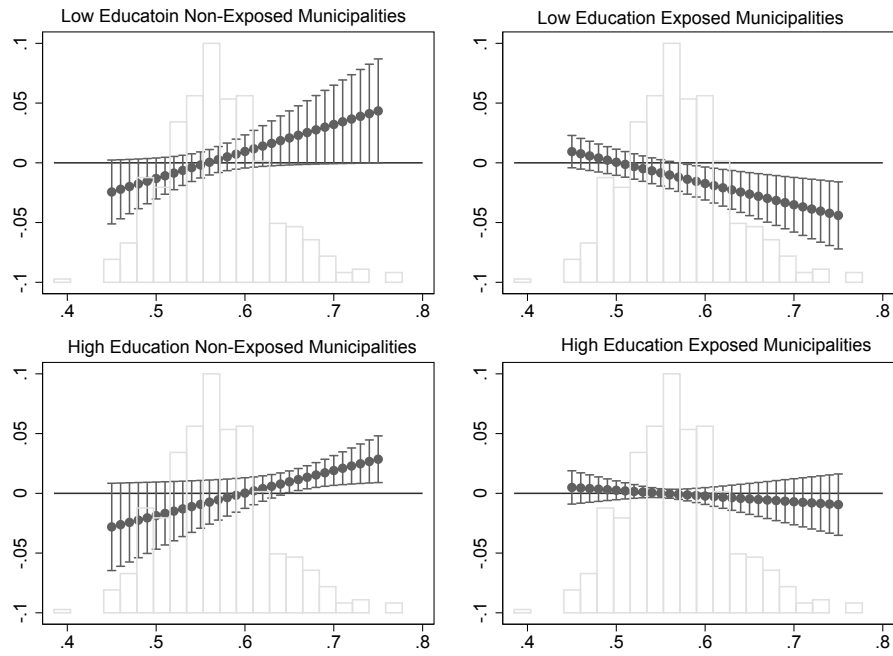Figure 6: Turnout Change: Rural versus Urban Areas

Figure 7: Turnout Change: Low Education versus High Education Areas

5   Conclusion

Democracy works differently under very high inequality. Contrary to the stardad view based on rich democracies, we have shown how high inequality and clientelism jointly facilitate an equilibrium in which both turnout and budgetary committments to targetable policies emerge as an optimal strategy. We have studied the consequences of exogenous disruptions of such equilibrium: as external interventions undermine clientelism, turnout and the budgetary use of targeted goods decline, and with them so does the incumbents' likelihood of re-election. Exploiting variation among Brazilian municipalities and the randomized audits by the Federal government we have marshalled evidence consistent with these analyses.

Our findings suggest that an increase in the monitoring ability of the state against corruption and clientelism reduce subsequent budgetary efforts in public goods whose budgets can be manipulated politically, particularly under conditions of high inequality and high clientelism (Uslaner and Rothstein, 2012). Similar findings with substantial implications have been reported on health policy (Lichand, Lopes and Medeiros, N.d.). In addition, recent evidence suggests that local politicians local politicians adjust to both changes in their institutional constraints (De La O and Garcıa, 2015; Cheibub Figueiredo, 2005) and modifications in their budget constraint (Bhavnani and Lupu, 2016).

Taken together, these analyses point to a discussion about the short and long run effects of reforms in contexts of low institutional capacity, about what works and does not across democracies with varying levels of institutional capacity (Harding and Stasavage, 2014). The results in this paper suggest that clientelism emerges as a second best strategy in low capacity contexts: some people incur in welfare losses as a result of efforts to transition towards more programmatic politics. These are short-run effects. More work is needed to establish the conditions under which long-run transitions towards more programmatic, tax-compliant democracies (Gadenne, 2013) take place as well as the length of the valley of tears associated with such transition.

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Supplementary Information for Online Publication Only

Appendix I: Theory

We begin by defining the offerings elites need to provide such that low income voters turn out to vote. The problem for low income voters is defined as follows:

$$\underset{t,b,g}{\text{maximize}} \quad U_i(t,b,g) = (1-t)w_P + \alpha ln(b_P) + g$$
$$\text{subject to} \quad t\overline{w}(1-\lambda\phi) = b_P + b_R + g \tag{1}$$

Where α captures the sensitivity of low income voters to targeted goods. The analysis yields the following results:

1. $b_P^* = \alpha$

2. $b_R^* = 0$

3. $t^* = t^{max} \leq 1$ since utility is linear in t

4. $g^* = t\overline{w}(1-\lambda\phi) - \alpha$

Accordingly, poor voters will vote under any combination of t, b, and g that generates levels of utility *at least* similar to those defined by:

$$\overline{U_P} = (1-t^{max})w_P + \alpha ln(\alpha) + t\overline{w}(1-\lambda\phi) - \alpha \tag{2}$$

This expression defines the level of utility of the poor that the elites must meet with their policy offerings so that the latter turn out to vote. The elites, irrespective of their ideological leanings, need to choose a portfolio of targeted goods, public goods, and taxes that meets two constraints: (1) a budget constraint (recall that the poor have limited ability to tax the elite, but the elite has full capacity to tax itself); and (2) a political constraint driven by the need to meet the mobilization threshold of low income voters defined in (2). Accordingly, their maximization problem can be defined as:

$$\underset{t,b,g}{\text{maximize}} \quad U_i(t,b,g) = (1-t)w_R + \beta ln(b_R) + g$$
$$\text{subject to} \quad t\overline{w} = b_P + b_R + g \tag{3}$$
$$\text{and to} \quad (1-t)w_P + \alpha ln(b_P) + g \geq \overline{U_P}$$

Where β captures the sensitivity of high income voters to targeted goods and $\overline{U_P}$ defines the low income voters' utility threshold as defined above.

The Lagrangian is defined as:

$$\mathcal{L} = (1-t)w_R + \beta ln(b_R) + t\overline{w}(1-\lambda\phi) - b_P - b_R +$$
$$+ \mu[(1-t)w_P + \alpha ln(b_P) + t\overline{w}(1-\lambda\phi) - b_P - b_R - \overline{U}] \tag{4}$$

From here it follows that:

$$t_R^* = t^{max} \leq 1 \quad \text{since utility is linear in } t \tag{5}$$

$$\frac{\partial \mathcal{L}}{\partial b_P} = -1 + \mu\alpha\frac{1}{b_P} - \mu = 0 \tag{6}$$

$$\frac{\partial \mathcal{L}}{\partial b_R} = \beta\frac{1}{b_R} - 1 - \mu = 0 \tag{7}$$

$$\mu[(1-t)w_P + \alpha ln(b_P) + t\bar{w} - b_P - b_R - \bar{U}] = 0 \tag{8}$$

From [4]-[6], it follows that:

$$b_P^* = \frac{\alpha\mu}{1+\mu} \tag{9}$$

$$\mu = \frac{b_P}{\alpha - b_P} \tag{10}$$

$$b_R^* = \frac{\beta}{1+\mu} = \frac{(\alpha - b_P)\beta}{\alpha} \tag{11}$$

Substituting (10) into the complementary slackness condition (CSC) (8), which must be binding given that $\mu > 0$, we obtain:

$$\alpha ln(b_P) + bp(\frac{\beta}{\alpha} - 1) + t^{max}\bar{w} - \beta + (1 - t^{max})w_P = \bar{U} \tag{12}$$

Inequality and the Elite Choice of Targeted Goods for the Low-Income Voters

From [11] and [12] it follows that

$$\alpha lnb_P^* = \beta - \alpha + \alpha ln\alpha - t^{max}\bar{w}\lambda\phi \tag{13}$$

Which yields

$$lnb_P^* = \frac{\beta}{\alpha} - 1 + ln\alpha - \frac{t^{max}\bar{w}\lambda\phi}{\alpha} \tag{14}$$

From which it follows that

$$b_p^* = e^m, \quad \text{where } m = \frac{\beta}{\alpha} - 1 + ln(\alpha) - \frac{\tau^{max}\bar{w}\lambda\phi}{\alpha} \tag{15}$$

Which in turn allows us to establish the following comparative statics on the impact of inequality on the level of targeted goods towards citizens in the lower half of the distribution:

1. With respect to the share of income of those above the mean (ϕ), it follows:

$$\frac{\partial ln(b_p{}^*)}{\partial(\phi)} = \frac{-\tau^{max}\overline{w}\lambda}{\alpha} \leq 0 \qquad (16)$$

Note as well that:

$$\underbrace{\frac{\partial ln(b_p{}^*)}{\partial\phi}}_{\leq 0} = \underbrace{\frac{\partial ln(b_p{}^*)}{\partial b_p}}_{> 0} \frac{b_p^*}{\partial\phi}$$

From which it follows that:

$$\frac{\partial b_p^*}{\partial\phi} < 0$$

2. With respect to the share of voters below median income $(1 - \delta)$:

Substituting $\phi = 1 - \frac{w_P(1-\delta)}{\overline{w}}$ into [13] and differentiating with respect to $(1 - \delta)$ produces:

$$\frac{\partial ln(b_p{}^*)}{\partial(1-\delta)} = \frac{\tau^{max}w_P\lambda}{\alpha} \geq 0 \qquad (17)$$

Note as well that:

$$\underbrace{\frac{\partial ln(b_p{}^*)}{\partial(1-\delta)}}_{\geq 0} = \underbrace{\frac{\partial ln(b_p{}^*)}{\partial b_p}}_{> 0} \frac{b_p^*}{\partial(1-\delta)}$$

From which it follows up that:

$$\frac{b_p^*}{\partial(1-\delta)} > 0$$

Inequality and the Elite Choice of Public Goods

Given the budget constraint and previous results on b_p^*, b_r^* and t^{max} we have:

$$b_R^* = \frac{(\alpha - b_P)\beta}{\alpha}$$

$$b_P^* = e^m; with \quad m = \frac{\beta}{\alpha} - 1 + ln(\alpha) - \frac{\tau^{max}\overline{w}\lambda\phi}{\alpha}$$

Which yields the following budget constraint

$$t^{max}[(1 - \delta)w_P + \delta w_R] = e^m + \frac{(\alpha - b_P)\beta}{\alpha} + g^*$$

Rearranging on the basis of previous results, we obtain

$$g^* = t^{max}[(1-\delta)w_P + \delta w_R] - e^m - \frac{(\alpha - b_P^*)\beta}{\alpha}$$

Or developing:

$$g^* = t^{max}[(1-\delta)w_P + \delta w_R] + (\frac{\beta}{\alpha} - 1)e^m - \beta \tag{18}$$

Recall that

$$\phi = 1 - \frac{w_P(1-\delta)}{\bar{w}}$$

Substituting m and subsequently ϕ into [18] allows us to take the derivative of g^* with respect to $(1-\delta)$, which yields the following result:

$$\frac{\partial g^*}{\partial(1-\delta)} = t^{max}w_P + t^{max}w_P(\frac{\beta}{\alpha} - 1)e^m\frac{\lambda}{\alpha} \tag{19}$$

Rearranging we obtain:

$$\frac{\partial g^*}{\partial(1-\delta)} = t^{max}w_P - t^{max}w_P(1 - \frac{\beta}{\alpha})b_P^*\frac{\lambda}{\alpha} \tag{20}$$

Note that $\frac{\partial g^*}{\partial(1-\delta)} < 0$ insofar as $\beta < \alpha$, and b_P^* in equilibrium is high enough, which suggests that insofar as the poor are more responsive to bribes than the rich, an increase in the number of poor voters implies a reduction in the optimal level of provision of public goods.

Using a similar approach we can obtain results that relate the optimal level of public goods and the share of income in the hands of high income voters. First recall that:

$$1 - \delta = (1 - \phi)\frac{\bar{w}}{w_p} \tag{21}$$

Substituting this expression and m into [18] above gives:

$$g^* = t^{max}[(1-\phi)\frac{\bar{w}}{w_p}w_P + \delta w_R] + (\frac{\beta}{\alpha} - 1)e^{\frac{\beta}{\alpha}-1+ln(\alpha)-\frac{\tau^{max}\bar{w}\lambda\phi}{\alpha}} - \beta \tag{22}$$

We can now take the derivative of (2) with respect to ϕ, yielding:

$$\frac{\partial g^*}{\partial\phi} = -t^{max}\bar{w} - t^{max}\bar{w}(\frac{\beta}{\alpha} - 1)\frac{e^m\lambda}{\alpha}$$

Rearranging we obtain:

$$\frac{\partial g^*}{\partial\phi} = -t^{max}\bar{w} + t^{max}\bar{w}(1 - \frac{\beta}{\alpha})\frac{b_P^*}{\alpha}\lambda \tag{23}$$

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The Elite's Choice of Public Goods and the Political Constraint

The results for the elite choice in the presence of the political constraint $(\bar{U})$ are the same as above. In what follows, we solve the maximization problem in the absence of the political constraint, and compare the optimal levels of public goods (g^*) under both circumstances $(g^* vs. g^*_{\bar{U}})$. The maximization problem without the political constraint becomes:

$$\underset{t,b,g}{\text{maximize}} \quad U_i(t,b,g) = (1-t)w_R + \beta ln(b_R) + g$$
$$\text{subject to} \quad t\overline{w} = b_P + b_R + g \tag{24}$$

$$\underset{t,b_R,g}{\text{maximize}} \quad U_i(t,b,g) = (1-t)w_R + \beta ln(b_R) + t\overline{w} - b_P - b_R + g \tag{25}$$

Solving the problem yields:

- $t^*_R = t^{max} \leq 1$

- $b^*_P = 0$

- $b^*_R = \beta$ since $\frac{\partial U_i}{\partial b_R} = \beta \frac{1}{b_R} - 1 = 0$

- finally, substituting into the budget constraint and rearranging we obtain $g^* = t^{max}[(1-\delta)w_P + \delta w_R] - \beta$

Recall that, by contrast, the level of public goods with the political constraint $(g^*_{\bar{U}})$ is given by $g^*_{\bar{U}} = t^{max}[(1-\delta)w_P + \delta w_R] + (\frac{\beta}{\alpha} - 1)bp^* - \beta$. Comparing the optimal level of public goods provisions with and without the political constraint produces the following result:

$$g^* \lessgtr g^*_{\bar{U}}$$
$$t^{max}\overline{w} - \beta \lessgtr t^{max}\overline{w} + (\frac{\beta}{\alpha} - 1)bp^* - \beta \tag{26}$$
$$0 \lessgtr (\frac{\beta}{\alpha} - 1)\underbrace{bp^*}_{\geq 0}$$

This implies that $g^* > g^*_{\bar{U}}$ if $\beta < \alpha$ and $bp^* > 0$.

Appendix II: Empirics. Additional Figures and Tables

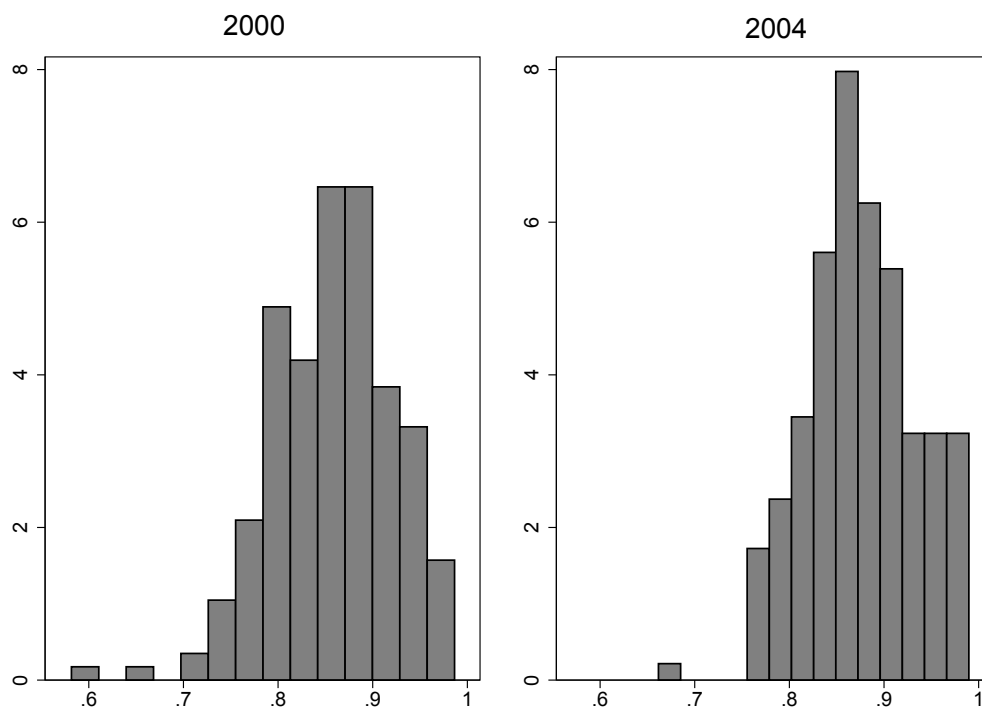Figure 8: Turnout Rates for Municipal Elections in Brazil, 2000 and 2004

Figure 9: Primary Education Spending Levels, 2004-2000 and 2008-2004 Averages
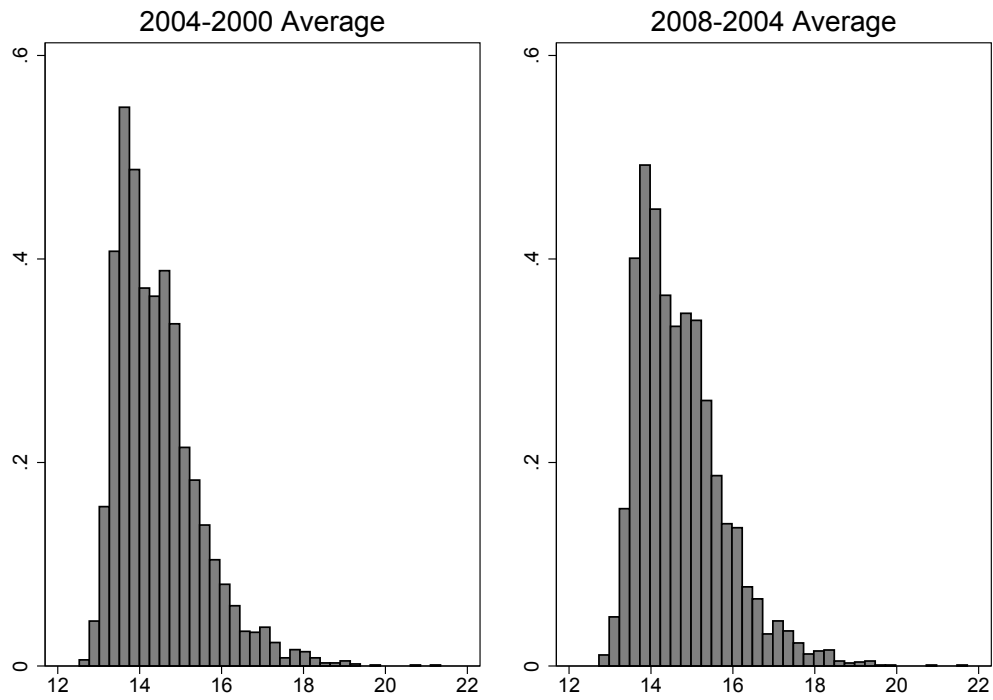
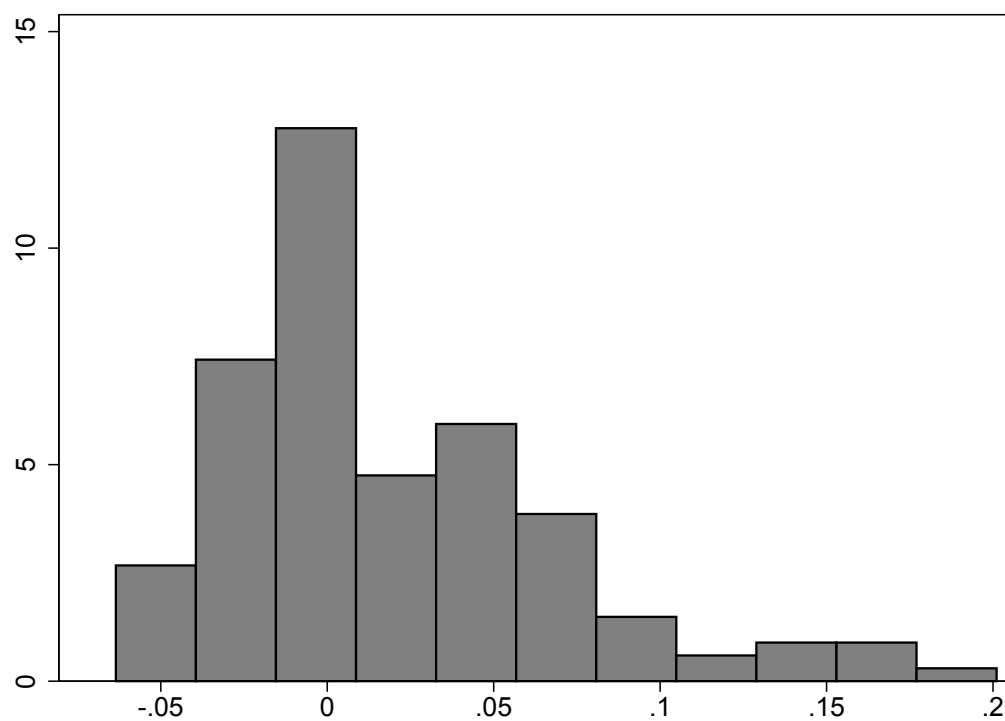Figure 10: Change in Turnout Rates 2004-2000. Density Function

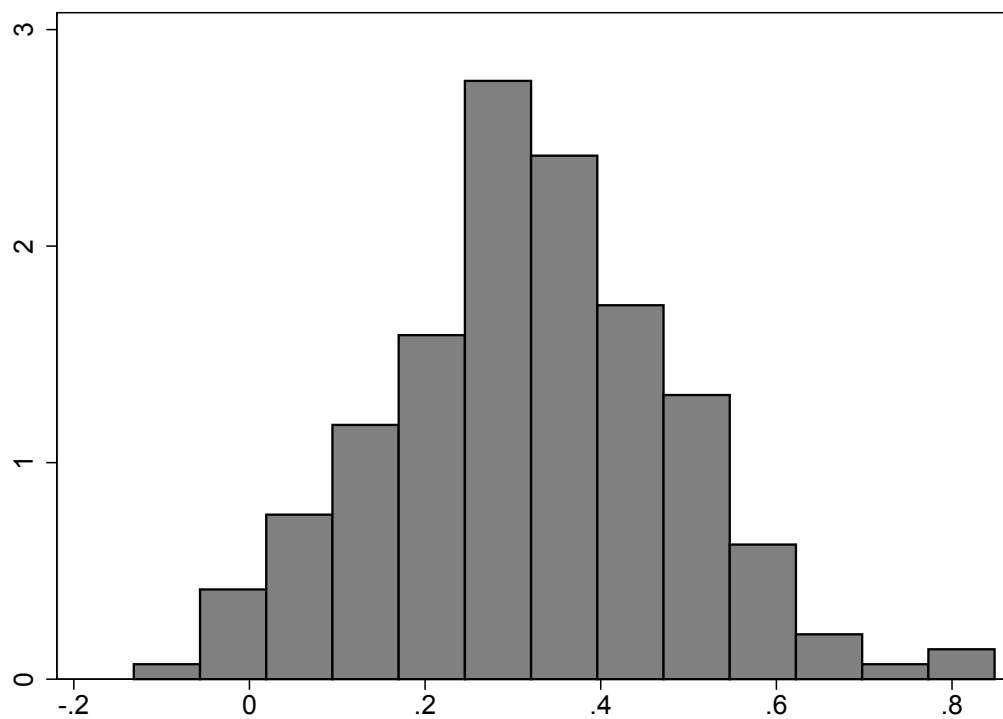Figure 11: Change in Primary Education Spending 2008-2004. Density Function

Figure 12: Gini Measure at the Municipality. Density Function

Figure 13: Audited Mismanagement at the Municipality. Density Function

Table 6: Balance Table

	Non-Exposed	Exposed	Difference	P-Value
Gini measure (IPEA) for income	0.58	0.57	0.01	0.31
Audited Mismanagement	1.84	1.63	0.21	0.32
Real GDP per capita in 2002 (log)	-0.94	-1.06	0.12	0.28
Population in 2000 (log)	9.83	9.54	0.29	0.03
Share in urban areas 2000	0.63	0.62	0.01	0.73
Share with at least secondary education	0.24	0.25	-0.00	0.89
Indicator new municipality	0.19	0.22	-0.03	0.58
Area census 2000	2.14	2.25	-0.12	0.90
Indicator for judiciary district	0.61	0.55	0.06	0.40
Number of legislators per voter	11.60	15.20	-3.60	0.02
Total current transfers received (log)	16.01	15.79	0.22	0.07
Number of active employees (log)	6.29	6.06	0.24	0.05
Effective number of legislative parties 2000	4.75	4.49	0.27	0.30
Indicator Mayor same party as 98 governor	0.20	0.24	-0.04	0.53
Win Margin in 2000 elections	0.15	0.14	0.01	0.74
Indicator for participatory budgeting	0.01	0.03	-0.02	0.49
Ratio aptos between 2000 and 2004 (TSE)	1.07	1.10	-0.03	0.13
Average median household income 2000-2005	94.11	96.57	-2.46	0.74

Table 7: Motivating the Exclusion of Second Term Mayors

Audited Mismanagement in Random Audits	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Gini Index	1.88	1.81	1.85	1.86
	(1.28)	(1.28)	(1.23)	(1.20)
First Term Mandate	3.19***	3.12***	2.92**	2.90**
	(1.14)	(1.12)	(1.14)	(1.17)
First Term Mandate X Gini Index	-5.39**	-5.34**	-5.04**	-5.05**
	(2.03)	(2.00)	(2.04)	(2.09)
Constant	0.02	-0.22	-0.33	0.79
	(2.76)	(3.00)	(2.96)	(2.91)
Municipality Controls	Yes	Yes	Yes	Yes
Electoral Controls	No	Yes	Yes	Yes
Mayor's Controls	No	No	Yes	Yes
Lottery FEs	Yes	Yes	Yes	Yes
Regional State FEs	Yes	Yes	Yes	Yes
Party FEs	No	No	No	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes
R-squared	0.42	0.43	0.43	0.46
N	366	366	366	366

*** p<0.01, ** p<0.05, * p<0.1

Table 8: The Status Quo: Turnout in Rural and Urban Areas

Turnout Rates in 2004	Rural Areas			Urban Areas		
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Gini	-0.23*	-0.22*	-0.23*	-0.32*	-0.33*	-0.32*
	(0.13)	(0.13)	(0.13)	(0.17)	(0.17)	(0.17)
Audited Mismanagement	-0.08***	-0.08***	-0.08***	-0.02	-0.02	-0.02
	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.03)
Gini X Mismanagement	0.14***	0.14***	0.14***	0.03	0.03	0.03
	(0.04)	(0.04)	(0.04)	(0.06)	(0.06)	(0.06)
Constant	1.37***	1.38***	1.38***	1.17***	1.18***	1.13***
	(0.14)	(0.13)	(0.26)	(0.17)	(0.17)	(0.19)
Municipality Controls	Yes	Yes	Yes	Yes	Yes	Yes
Electoral Controls	No	Yes	Yes	No	Yes	Yes
Fiscal Transfers Controls	No	No	Yes	No	No	Yes
Regional State FEs	Yes	Yes	Yes	Yes	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.59	0.60	0.60	0.57	0.57	0.58
N	183	183	183	183	183	183

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

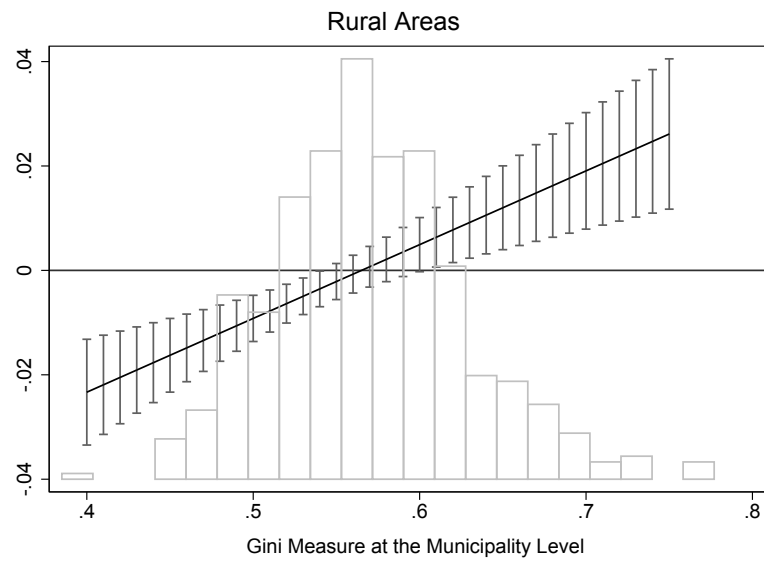Figure 14: Marginal Effect of Mismanagement on 2004 Turnout Rates in Rural Areas

Figure 15: Marginal Effect of Mismanagement on 2004 Turnout Rates in Urban Areas
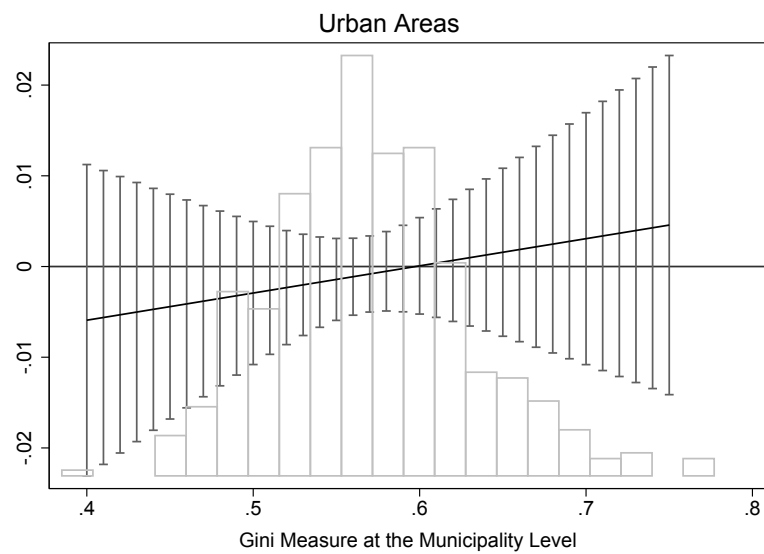
Table 9: The Status Quo: Primary Education Spending in Rural and Urban Areas

Primary Education Spending 2004-2000	Rural Areas			Urban Areas		
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Gini	-0.45	-0.83*	-0.74*	-0.08	-0.08	-0.13
	(0.31)	(0.43)	(0.39)	(0.52)	(0.54)	(0.61)
Audited Mismanagement	-0.21**	-0.21**	-0.19*	-0.11	-0.11	-0.10
	(0.09)	(0.10)	(0.11)	(0.18)	(0.17)	(0.17)
Gini X Mismanagement	0.35**	0.35**	0.33*	0.18	0.18	0.17
	(0.14)	(0.16)	(0.17)	(0.29)	(0.28)	(0.28)
Constant	-2.80***	-2.34***	-2.51***	-0.60	-0.60	-0.68
	(0.75)	(0.65)	(0.83)	(0.57)	(0.56)	(0.65)
Mean Budget Control	Yes	Yes	Yes	Yes	Yes	Yes
Median Income and Re-Election Controls	No	Yes	Yes	No	Yes	Yes
Mayor Characteristics Controls	No	No	Yes	No	No	Yes
Regional State FEs	Yes	Yes	Yes	Yes	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.95	0.96	0.96	0.98	0.98	0.98
N	150	150	150	156	156	156

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

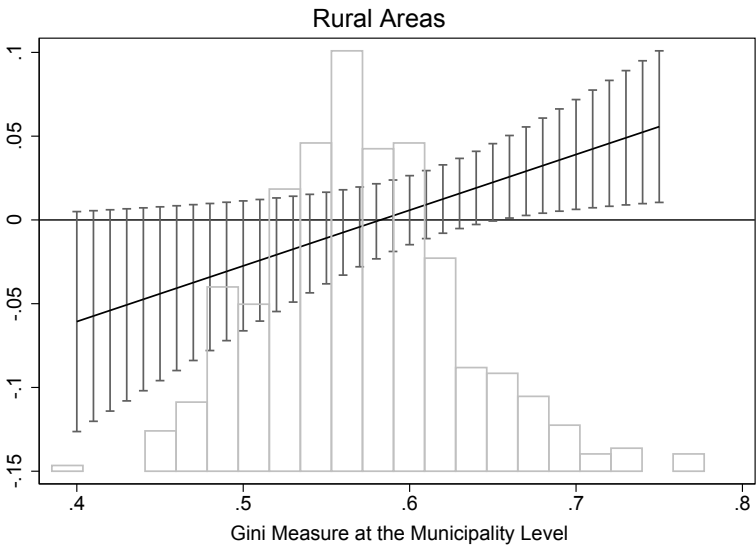Figure 16: Marginal Effect of Mismanagement on Primary Spending in Rural Areas

Figure 17: Marginal Effect of Mismanagement on Primary Spending in Urban Areas
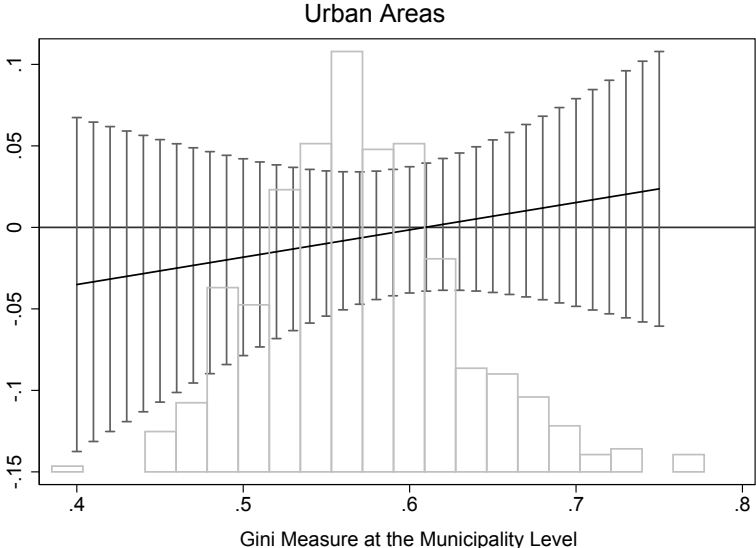
Table 10: Incumbent Party Re-Election. Municipality FEs Models with Complete Dataset

Incumbent Party Re-Election, Complete Dataset	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Log Mean Budget	0.03	0.06	0.06	0.05
	(0.09)	(0.10)	(0.10)	(0.10)
Log Educ Spending	-1.10***	0.05	3.91**	0.47
	(0.21)	(0.32)	(1.63)	(0.68)
Log Educ Spending X Log Median Income	0.26***	0.02	-0.89**	-0.10
	(0.05)	(0.07)	(0.36)	(0.14)
Gini X Log Educ Spending			-6.82**	
			(2.68)	
Gini X Log Educ Spending X Log Median Income			1.62***	
			(0.61)	
Illit X Log Educ Spending				-0.03*
				(0.02)
Illit X Log Educ Spending X Log Median Income				0.01*
				(0.00)
Constant	-0.90	-1.77	-1.75	-1.65
	(1.12)	(1.22)	(1.25)	(1.26)
Mayor Controls	Yes	Yes	Yes	Yes
Party in Power in Previous Term	Yes	Yes	Yes	Yes
Municipality Fixed Effects	Yes	Yes	Yes	Yes
Party Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects X Region Fixed Effects	No	Yes	Yes	Yes
R-squared	0.69	0.70	0.70	0.70
N	9153	9153	9153	9153

*** p<0.01, ** p<0.05, * p<0.1

Figure 18: Marginal Effects of Primary Education Spending on Re-Election Conditional on Inequality at Various Municipality Median Income Levels
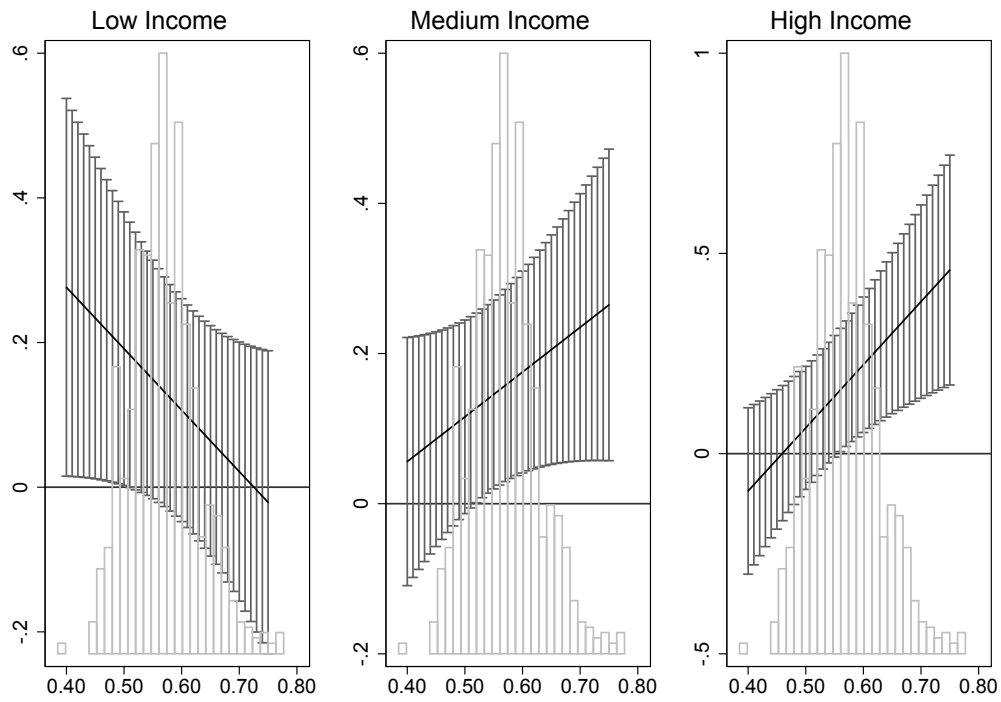
Figure 19: Marginal Effects of Primary Education Spending on Re-Election Conditional on Illiteracy Rates at Various Municipality Median Income Levels
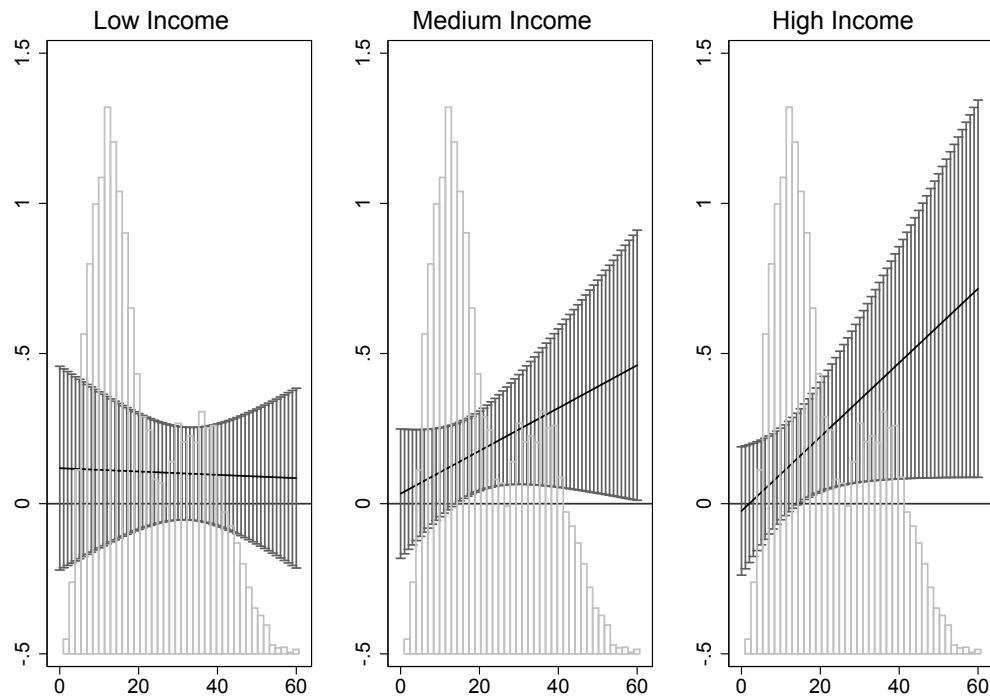
Table 11: Robustness Check: Excluding Extreme Upper Values for Audited Mismanagement

Change in Turnout Rates 2004-2000	(1) Complete OLS	(2) Excluding 1% OLS	(3) Excluding 5% OLS	(4) Excluding 25% OLS
Gini	-0.24	-0.22	-0.19	-0.28*
	(0.14)	(0.15)	(0.18)	(0.14)
Mismanagement	-0.05	-0.05	-0.04	-0.06
	(0.04)	(0.04)	(0.04)	(0.04)
Gini X Mismanagement	0.08	0.08	0.06	0.05
	(0.07)	(0.07)	(0.07)	(0.07)
Exposed	-0.24**	-0.25**	-0.24*	-0.45***
	(0.11)	(0.12)	(0.13)	(0.11)
Exposed X Gini	0.44**	0.45**	0.43*	0.68***
	(0.19)	(0.21)	(0.23)	(0.20)
Exposed X Mismanagement	0.12**	0.12*	0.13*	0.23**
	(0.05)	(0.06)	(0.07)	(0.08)
Exposed X Gini X Mism	-0.23**	-0.22*	-0.23*	-0.36***
	(0.10)	(0.11)	(0.12)	(0.13)
Constant	0.19	0.19	0.29*	0.29
	(0.15)	(0.15)	(0.15)	(0.19)
Municipality Controls	Yes	Yes	Yes	Yes
Electoral Controls	Yes	Yes	Yes	Yes
Mayor's Controls	Yes	Yes	Yes	Yes
Lottery FEs	Yes	Yes	Yes	Yes
Regional State FEs	Yes	Yes	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes	Yes
R-squared	0.66	0.67	0.67	0.72
N	198	195	187	148

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Robustness Check: Alternative Corruption Index Measure

Change in Turnout Rates 2004-2000	(1) OLS	(2) OLS	(3) OLS
Gini Index	-0.09	-0.09	-0.12
	(0.09)	(0.09)	(0.09)
Corruption Index	-0.43	-0.34	-0.46
	(0.53)	(0.49)	(0.65)
Gini Index X Corruption Index	0.98	0.82	1.07
	(0.89)	(0.81)	(1.05)
Exposed	-0.08	-0.08	-0.09
	(0.06)	(0.06)	(0.07)
Exposed X Gini Index	0.15	0.16	0.19
	(0.11)	(0.12)	(0.12)
Exposed X Corruption Index	0.94	0.92	1.06
	(0.62)	(0.56)	(0.68)
Exposed X Gini Index X Corruption Index	-1.99*	-1.96**	-2.24*
	(1.06)	(0.93)	(1.11)
Constant	0.11	0.11	0.13
	(0.13)	(0.13)	(0.15)
Municipality Controls	Yes	Yes	Yes
Electoral Controls	No	Yes	Yes
Mayor's Controls	No	No	Yes
Lottery FEs	Yes	Yes	Yes
Regional State FEs	Yes	Yes	Yes
Clustering Sate Level	Yes	Yes	Yes
R-squared	0.62	0.63	0.65
N	198	198	198

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 13: Change in Turnout in Rural and Urban Municipalities

Change in Turnout Rates	Urban Areas			Rural Areas		
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Gini	0.05	0.02	-0.08	-0.43	-0.34	-0.39
	(0.12)	(0.12)	(0.14)	(0.51)	(0.39)	(0.39)
Mismanagement	-0.06*	-0.06*	-0.08*	-0.07	-0.06	-0.07
	(0.03)	(0.03)	(0.04)	(0.11)	(0.09)	(0.09)
Gini X Mismanagement	0.09*	0.10*	0.11	0.14	0.12	0.13
	(0.05)	(0.05)	(0.07)	(0.18)	(0.14)	(0.15)
Exposed	-0.06	-0.08	-0.11	-0.38	-0.33	-0.38
	(0.09)	(0.09)	(0.09)	(0.33)	(0.26)	(0.23)
Exposed X Gini	0.06	0.10	0.15	0.72	0.66	0.75*
	(0.17)	(0.18)	(0.17)	(0.55)	(0.43)	(0.41)
Exposed X Mismanagement	0.10*	0.10**	0.11*	0.20	0.19	0.20*
	(0.05)	(0.05)	(0.06)	(0.14)	(0.11)	(0.11)
Exposed X Gini X Mism	-0.18*	-0.19**	-0.19*	-0.39*	-0.37*	-0.39**
	(0.09)	(0.09)	(0.10)	(0.22)	(0.19)	(0.19)
Constant	0.15	0.20	0.24	0.14	0.11	0.15
	(0.18)	(0.17)	(0.20)	(0.37)	(0.33)	(0.36)
Municipality Controls	Yes	Yes	Yes	Yes	Yes	Yes
Electoral Controls	No	Yes	Yes	No	Yes	Yes
Mayors' Controls	No	No	Yes	No	No	Yes
Lottery FEs	Yes	Yes	Yes	Yes	Yes	Yes
Regional State FEs	No	No	No	No	No	No
Clustering Sate Level	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.55	0.56	0.57	0.61	0.64	0.66
N	99	99	99	99	99	99

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 14: Change in Turnout in Low and High Education Municipalities

Change in Turnout Rates	Low Education			High Education		
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Gini	-0.68**	-0.62**	-0.67*	-0.22	-0.19	-0.27**
	(0.30)	(0.28)	(0.36)	(0.16)	(0.16)	(0.13)
Mismanagement	-0.12*	-0.11*	-0.13*	-0.13*	-0.11	-0.11
	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)
Gini X Mismanagement	0.21*	0.21*	0.23*	0.22**	0.19	0.19*
	(0.11)	(0.10)	(0.13)	(0.11)	(0.11)	(0.10)
Exposed	-0.46**	-0.42**	-0.48**	-0.19	-0.19	-0.24**
	(0.16)	(0.16)	(0.22)	(0.12)	(0.13)	(0.11)
Exposed X Gini	0.81**	0.77**	0.87**	0.31	0.32	0.39**
	(0.29)	(0.29)	(0.39)	(0.20)	(0.21)	(0.18)
Exposed X Mismanagement	0.20***	0.19***	0.22**	0.15*	0.14	0.14*
	(0.07)	(0.06)	(0.08)	(0.08)	(0.08)	(0.08)
Exposed X Gini X Mism	-0.39***	-0.37***	-0.40**	-0.26**	-0.25*	-0.24*
	(0.12)	(0.11)	(0.14)	(0.13)	(0.14)	(0.13)
Constant	0.34	0.38	0.49	0.22	0.20	0.27
	(0.34)	(0.35)	(0.40)	(0.17)	(0.19)	(0.17)
Municipality Controls	Yes	Yes	Yes	Yes	Yes	Yes
Electoral Controls	No	Yes	Yes	No	Yes	Yes
Mayors' Controls	No	No	Yes	No	No	Yes
Lottery FEs	Yes	Yes	Yes	Yes	Yes	Yes
Regional State FEs	No	No	No	No	No	No
Clustering Sate Level	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.55	0.57	0.60	0.63	0.64	0.66
N	99	99	99	99	99	99

*** p<0.01, ** p<0.05, * p<0.1