

REELECTING CORRUPT INCUMBENTS IN EXCHANGE FOR PUBLIC GOODS

Rouba mas faz in Brazil

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Abstract: This article addresses the paradox of unpopular corruption and popular corrupt politicians. It explores why corrupt politicians are reelected, paying particular attention to incumbent provision of public goods and voter information on incumbent misconduct. Using a new data set on mayoral elections (2000 and 2004) in the Brazilian state of Pernambuco, we specify econometric models to test the hypothesis that incumbents' performance in delivering public goods might mitigate reputational losses. Our main empirical analysis suggests that (1) corruption decreases the probability of incumbent reelection, (2) public expenditure increases the probability of reelection, and (3) the negative marginal effect of corruption on reelection disappears as public expenditure increases.

UNPOPULAR CORRUPTION, POPULAR CORRUPT POLITICIANS

Why might corruption not deter corrupt politicians from securing reelection? The scholarly literature and the media report scores of cases in which corrupt politicians experience electoral success regardless of their institutional environment. From Silvio Berlusconi in Italy to Paulo Maluf in Brazil and Edwin Edwards in Louisiana, some politicians continue to be successful at the polls despite numerous judicial inquiries accusing them of a wide variety of misdeeds. In Israel, Ehud Olmert was first accused of absconding with money, later explained as legal donations to fund his campaigns first for reelection as mayor of Jerusalem and subsequently for the leadership of the Likud. Despite these allegations, Olmert went on in 2006 to become prime minister as head of the Kadima Party. In Pakistan, Asif Ali Zadari—husband of assassinated politician Benazir Bhutto—was commonly referred to as “Mr. Ten Percent” for allegedly skimming off millions in kickbacks from government deals. Zadari was elected and held the presidency

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from 2008 to 2013, despite his previous imprisonment in Pakistan on charges related to bank fraud and extortion, and his indictment in Switzerland on money-laundering charges.

Rouba mas faz (“he or she steals but get things done”) is a familiar expression for scholars of Brazilian politics. In the phrase’s origins, it designated the political style of Ademar de Barros, a former governor of the state of São Paulo (1948–1951 and 1963–1966), mayor of the state’s capital (1957–1961), and serial runner-up to the presidency. *Rouba mas faz* describes a pattern in which entrepreneurialism and corruption are deeply intertwined. Politicians build a reputation as efficient public managers while accumulating private wealth through corruption. Ademar, as he was known, became famous for his motto “São Paulo não pode parar” (São Paulo cannot stop), which he used to justify his vast investment programs in infrastructure, including airports, metro lines, schools, and hospitals.¹ Examples of *rouba mas faz* abound from Ademar to other lesser-known cases.

In the 2008 Brazilian municipal (local) elections, incumbent mayors ran for reelection in twenty of twenty-seven state capital municipalities. In each case the incumbent was reelected, and of those reelected, nineteen had been investigated for corrupt transgressions, including malfeasance, irregularities in bid procurement, overinvoicing, and forgery of payments to so-called phantom firms belonging either to themselves or to close relatives.

Mayor Dário Berger’s reelection in the city of Florianópolis, located in the southern Brazilian state of Santa Catarina, is instructive. Berger had been investigated for providing illegal environmental licenses. While he publicly acknowledged the accusation, it failed to prevent a successful reelection campaign. In a similar vein, the mayor of Belém, in the northern state of Pará (Duciomar Costa), was reelected despite being investigated for the use of public funds in his electoral campaign. Nelson Trad Filho, mayor of Campo Grande (capital of Mato Grosso do Sul) faced a similar accusation from state prosecutors, yet was reelected in the first round of the 2008 runoff. Raul Filho, mayor of Palmas (capital of Tocantins) located in midwestern Brazil, was also reelected despite a judicial probe for fiscal irregularities. And amid responding to two judicial inquiries, Amazonino Mendes, former governor of the state of Amazonas, was elected mayor of Manaus for a third non-consecutive term in 2008.

Political corruption research has focused on an array of themes ranging from influence peddling to obtaining government contracts to illegal financing of campaigns and the appropriation of funds for exchange of votes for particular benefits (e.g., jobs, food, money). The literature has also provided insights on the paradoxical reelection of politicians charged with malfeasance. However, much less scholarly attention has been devoted to how the provision of public goods abets the political survival of the corrupt. An exception is a recent study by Winters and Weitz (2013), which investigates the implicit trade-off in *rouba mas faz* through a survey experiment. Our research presents what is, to the best of our

1. Whether Ademar resorted to clientelistic exchange with voters is an empirical question and not of interest here. That his reputation is associated with the provision of infrastructure with large externalities is the main rationale for *rouba mas faz* (see Sampaio 1982; Cotta 2008).

knowledge, a first empirical test of the informational and trade-off hypotheses. We investigate the conditions under which the provision of public goods may mitigate or even compensate for the reputational losses of corrupt incumbents. We explore the conditions under which even informed voters reelect a corrupt incumbent. Our econometric tests control for different measures of voter access to information, effectively permitting an evaluation of the competing *rouba mas faz* and informational hypotheses. We test our hypotheses with an original data set on two mayoral elections (2000 and 2004) held across 184 municipalities in the state of Pernambuco.

Our findings suggest that public spending moderates the negative impact of corruption on the probability of reelection, even when voters are informed about a mayor's involvement in corruption. In particular, we claim that while corruption decreases the probability of an incumbent's reelection, the negative effect of corruption diminishes as public expenditure rises. In keeping with the informational hypothesis, we found that the ratio of informed to uninformed voters affects the reelection chances of corrupt incumbent mayors. Access to information provided by radio and possession of television in households increases the likelihood of electoral sanctions by voters.

EXPLAINING THE REELECTION OF CORRUPT INCUMBENTS

A growing body of research has attempted to address the puzzle of the reelection of corrupt politicians (Peters and Welch 1980; Welch and Hilbing 1997; Persson and Tabellini 2000; Ferraz and Finan 2008; Kurer 2001; Chang, 2005; Golden and Chang 2001; Pereira, Melo, and Figueiredo 2009; Figueiredo, Hidalgo, and Kasahara 2011; Rennó 2011). A widespread line of inquiry focuses on informational failures to explain the seeming paradox of corrupt yet popular politicians. Voters, the argument goes, value rectitude in office. When they acquire information about corruption, they will sanction wrongdoing (Ferraz and Finan 2008; Alesina and Tabellini 2006; Klasnja 2011). Uninformed voters may reward corrupt incumbents primarily because of their inability to distinguish clean politicians from dirty ones. This is exacerbated in contexts plagued by high corruption, where mutual accusations and scandals are common. It follows that support for corrupt politicians is attributable, by and large, to the existence of information asymmetries. Voters' inability to observe a politician's true type generates moral hazards, which reinforce corruption. By increasing the level of information available to voters, corrupt incumbents are more likely to be sanctioned for deviant or dishonest behavior. However, the impact of new information will be conditional on the level of political information of the recipients. People with high levels of political information are less likely to change their prior beliefs. They suffer from information bias (Zaller 1992). By contrast, individuals with low levels of political information are more susceptible to respond to new information. In summary, informed voters will sanction corruption, but their responses are not linear: they depend on voters' sophistication.

The alternative explanation to the informational argument is the "trading" or "trade-off hypothesis," which suggests that corruption is one facet of a multi-

dimensional voting space (Persson and Tabellini, 2003; Rundquist, Strom, and Peters 1977). Voting for a clean candidate proves costly if the candidate has preferences that deviate from the voter's ideal point—be these ideological, religious, or kinship related. In the context of small towns, for instance, where voters are split into ideologically defined constituencies, support for corrupt incumbents is driven by the knowledge that a rival's preferences lay far from the voter's ideal point. In such cases, voters prefer a "dirty" candidate who shares their ideological preferences or enjoys family support to a clean candidate from a different ideological camp or family background. Chang and Kerr (2007) have found support for this claim. They also distinguish perceptions of corruption from tolerance for corruption, suggesting that voters who belong to the patronage network of the incumbent are more tolerant of corruption even though they perceive corruption at a higher level than patronage outsiders. The same finding applies to partisanship and ethnic affiliation. Rennó (2011) also found that corruption scandals diminished the chances of reelection in the Brazilian presidential race of 2006 in the wake of the Mensalão corruption scandal. He argues that presidential popularity and ideology trumped corruption as a decisive factor.

Other research focuses on the exchange of votes for particular benefits (e.g., jobs, food, money), neglecting how public goods provision might shape support for corrupt politicians. For instance, Chang and Kerr (2007) examine the possible effects of kinship, clientelistic ties, and partisanship on toleration of corruption but do not consider the provision of public goods in their analysis. Note that our focus is not on the exchange of private goods for votes (political clientelism), which does not necessarily involve corruption.² Manzetti and Wilson (2007) suggest that voters are mobilized by particularistic benefits, and they investigate the extent to which political support varies conditional on government effectiveness. They found that government effectiveness does *not* affect the satisfaction of those who perceive low levels of corruption. However, the interaction between corruption perception and government effectiveness is significant and negative, suggesting that those who perceive high levels of corruption are significantly less likely to sanction the government in countries where government effectiveness is low than in countries where government effectiveness is high. The explanation that where government is ineffective politicians resort to private transfers (assumed rather than empirically verified) to ensure political support overlooks how *effective* government mitigates the reputational costs of corruption, given the implicit assumption of a zero-sum relationship between effectiveness and corruption.

For our purposes, the key work is Winters and Weitz-Shapiro (2013), who tested the trade-off argument in the Brazilian case. They explicitly presented their hypothesis as alternatives: the informed *rouba mas faz* trade-off versus an information constraint hypothesis that voters, once exposed to information about politicians' past behavior, will punish corrupt incumbents. The authors report that respondents strongly reject the *rouba mas faz* trade-off, supporting the alterna-

2. This topic has been the subject of considerable scholarly attention (Calvo and Murillo 2004; Stokes 2005, 2007; Brusco, Nazareno, and Stokes 2004; Wantchekon 2003). For an analysis of corruption research in Latin America, see Morris and Lake (2010), and in Brazil, see Power and Taylor (2011).

tive informational hypothesis. The authors use a nationwide survey experiment in Brazil in which respondents were randomly exposed to vignettes containing information about politicians' involvement (or lack thereof) in corruption and party affiliation and were asked about the likelihood of support for those politicians by a hypothetical voter. Surprisingly, respondents rejected the *rouba mas faz* trade-off, displaying greater sensitivity to information on political misconduct, a finding notably at odds with survey data from Brazil (Figueiredo 2004; Almeida 2006).³

The few contributions that do explore the role of the provision of public goods (or public goods with large externalities such as conditional cash-transfer programs) in securing voter support for governments facing corruption charges in Brazil include Rennó (2007, 2011), Pereira, Rennó, and Samuels (2011), Desposato (2006), Hunter and Power (2007), and Zucco (2008). However, except for Rennó (2011), these studies are more concerned with the politics of redistribution than with the reputational costs arising from corruption. Our expectation that voters' sanctioning of corruption is affected by the experience of material well-being is similar to the findings of Klasnja and Tucker (2013) that poor economic performance makes people less tolerant of corruption.

The microfoundations of the trade-off involved in voters' choice is not well understood. Voters value rectitude and the benefits of public goods provision. The utility they extract from rectitude in office and from material benefits can have an informational basis. Their experience of the provision of public goods in their environment (e.g., building of schools or health clinics) is firsthand, and they use this information to weigh claims about politicians' misdeeds, of which they have only indirect evidence (e.g., audits, media coverage, judicial rulings). Arguably, evidence about public goods provision is stronger than information that pertains to political misconduct, as a result of which we expect voters to more frequently sanction incompetent politicians accused of charges than competent clean ones and to update their beliefs about politicians' over the course of day-to-day experiences.⁴

Our analysis departs from preceding research in several additional ways:

1. We focus on voters' behavior and our research does not suffer from the problems of external validity typical of experimental research.
2. We use data on actual rather than perceived corruption, a measure that presents problems because it refers to reputation instead of firsthand experience, as information is sensitive to previous results that are widely publicized, and as respondents have incentives to underreport their own experiences (Treisman 2007; Golden and Picci 2005; Razafindrakoto and Roubaud 2010).
3. We use three different measures of corruption generated from independent audits (one of which is randomized), thus permitting more robust and unbiased estimates.

3. In 2007 Transparency International commissioned IBOPE—Brazil's largest market research firm—and found that a majority of citizens rejected the statement that a politician could be efficient and corrupt.

4. Olken (2006) explores a similar question: whether voter beliefs about corruption (as opposed to objective measures of missing investments) may prevent politicians from getting involved in corruption activity. On how voters process information, see Lupia (1998) and Zaller (1992).

The data set we use does not suffer from the selection bias usually associated with sources such as media exposés, judicial rulings, and police sources (Ferraz and Finan 2008).

4. We have taken into account the redundancy of the information that voters face using the number of previous convictions of incumbent mayors in an administrative court (the Audit Court). The information about repeat offenders is a more robust indicator than single accusations of corruption.
5. We measure incumbent reelection directly rather than by survey-based measures of government support. We therefore do not investigate attitudes to corruption but the revealed preference of citizens.
6. We use measures of actual incumbent public spending at the local level in areas with a high likelihood of influencing voter support (e.g., health, education, transportation, security, housing), an improvement over indicators of government effectiveness that do not reflect actual incumbent performance (e.g., quality of a bureaucracy), which are themselves the consequences of long-term phenomena.
7. We test the interaction effect of corruption and public spending on the probability of reelection, which allows us to capture the conditional effect of spending on reelection rates.
8. We test the interaction effect of corruption and several proxies of information on the probability of reelection, which allows us to investigate the actual impact of information about corruption on voters' choices.
9. We use an original data set containing information for 184 municipalities in two consecutive electoral periods that permits us to conduct panel estimation.

HYPOTHESES

The following hypotheses capture the main components of our argument:

H₁, mayoral corruption: The greater the level of corruption, the lower the probability of incumbent reelection. This informational hypothesis is based on the assumption that all else being equal, voters prefer to vote for a noncorrupt incumbent.

H₂, previous conviction: The greater the number of previous convictions by the Audit Court, the lower the probability of incumbent's reelection. Voters are expected to be sensitive to "high-powered" information (i.e., information with enhanced credibility). A mayor's previous convictions are therefore likely to be correlated with a higher propensity to sanction. It is important to note that the Audit Court's decision to convict a mayor of a particular irregularity is not tantamount to judicial condemnation. In fact, the decisions are administrative rulings, as the courts are part of the administrative justice system. The more previous convictions (which might be subject to litigation in the criminal courts) a mayor has, the higher the probability of sanctions, because repeat offenders are more likely to be penalized. Note that we use information on convictions for the previous three years in office, not for the period before coming into office.

H₃, public spending: The greater the extent to which voters are compensated with material inducements delivered by means of spending on public goods, the higher the probability of incumbent reelection. Thus, we expect that all else being equal, corrupt incumbents who distribute public goods stand a higher chance of reelection. To estimate the impact of public spending on reelection, we also tested the effect of its interaction with a measure of corruption on the probability of mayor reelection.

H₄, voter information: Access to information in general, and especially on corruption, permits voters to effectively identify the true type of a politician, a standard assumption in the

corruption literature (Adserá, Boix, and Payne, 2003; Ferraz and Finan, 2008). We expect that the better informed voters are about the involvement of a local mayor in irregularities detected and verified by the Audit Court, the lower the probability of incumbent reelection. Voter information should therefore decrease mayor reelection success when there are corruption charges. As we discuss in the following session, we tested H_4 by interacting proxies of information measures with our proxy of corruption.

EMPIRICAL DATA

Dependent Variable

In mayoral elections held across 184 municipalities in the state of Pernambuco—the sixth-largest Brazilian state—the great majority of incumbent mayors, 135 (73.36 percent), ran for reelection in 2000, with 97 (71.85 percent) experiencing success at the polls. In the 2004 election, 64 out of 87 (73.56 percent) mayors ran for reelection, and 42 (65.62 percent) won. The reelection rate is therefore quite high, approximately 72 percent and 66 percent in the 2000 and 2004 elections, respectively, which points to the existence of a strong incumbency effect at the local level.⁵ It follows that our dependent variable is a dummy that takes a value of 1 if the mayor was reelected and 0 otherwise.

All Brazilian municipalities are governed by the same set of rules and political incentives, and therefore we control for potential unobserved heterogeneity resulting from institutional diversity. Politicians in both the legislative and the executive branches are elected every four years under proportional representation, with open lists for the former and plurality with a runoff for the latter in municipalities with more than two hundred thousand habitants. And while legislators have no term limits, mayors are permitted to run for reelection just once. Given these institutional similarities, it is reasonable for our findings to be generalized to other Brazilian municipalities beyond Pernambuco, which has the added advantage of being a fairly representative state, given that its socioeconomic indicators are close to the national mean.

Independent Variables

Our models use three key independent variables as proxies of corruption: the number of *verified denouncements*, *irregularity* (special audits), and *electoral operations*. Each variable captures the identification of corruption by the Audit Court (AC)—constitutionally defined as an ancillary body of the legislative branch. The AC is tasked with monitoring government compliance with the principles of the public administration (e.g., morality, impartiality, efficiency), as well as adherence to legal requirements for hiring personnel, distributing pensions, procurement, and public bidding. Although the AC is not technically part of the judicial system, it operates as a quasi-independent judicial authority. The board members enjoy tenure security and are appointed until retirement at the age of

5. The mean probability of being reelected in both elections is 0.6859.

seventy. Moreover, the AC has several features in common with judicial bodies, including the right of reply, strict procedural rites, collegial decision making, security of tenure, and civil service employee status.

Measures of Corruption / Corruption data commonly used in the literature typically suffer from measurement error given that they are mostly based on voters' perceptions and surveys and are therefore subjected to criticism. Kaufmann, Kraay, and Mastruzzi (2006), for instance, have undertaken various projects to measure corruption and thus construct Worldwide Governance Indicators, based on a very diverse group of sources, including survey respondents, commercial risk agencies, nongovernmental organizations (NGOs), and multilateral organizations.⁶ To ensure robustness and avoid selection bias, we used a set of measures (proxies) generated by different administrative routines of the AC to capture distinct dimensions of the phenomenon of corruption. One of the measures used, *electoral operations*, is based on randomized audits, which eliminates the possibility of selection bias. All three types of audits are prepared by a team of tenured audit professionals, well paid and competitively recruited by national merit examinations. It follows that as a highly respected institution, the State Audit Court (TCE-PE) has 616 employees of which half are college graduates, and it receives 1.5 percent of the state budget, over which it has financial and functional autonomy. Relative to other states, its board is far less amenable to political interference (Speck 2001). In summary, the audit work is generally perceived to be rigorous and impartial (Speck 2002; Santiso 2007).

Verified Denouncements / *Verified denouncements* consist of denouncements of irregularities made by anonymous third parties, typically municipal councilors, opposition candidates, trade unions, and common citizens. Most denouncements contain precise and detailed information about alleged irregularities, including dates and the names of individuals, the values involved, and the nature of the irregularity. Once the denouncement is verified, that is, it is confirmed that the mayor carried out irregularities, the AC must publicize its findings about the complaint with high visibility. Our data indicate that mayors who decided to run for reelection received more than twice as many (70.47 percent) third-party denouncements relative to their peers who did not run for reelection (29.52 percent). Successfully reelected mayors received a larger number (63.15 percent) of denouncements that were verified by the AC in comparison to mayors who failed to be reelected (36.84 percent).

Irregularities (Special Audits) / In contrast to third-party denouncements, auditors are entitled to initiate "special audits" on the basis of risk analysis and other administrative data. The decision to carry out these special audits is made by the auditors themselves. Special audits can take place at any time during a mayor's term

6. The Worldwide Governance Indicators capture six dimensions of governance: voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption.

in office. The data suggest that mayors running for reelection received a larger share of irregular special audits (10 percent more) than those who did not.

Electoral Operations / *Electoral operations* refers to randomized audits of municipalities carried out during electoral years in Pernambuco. As part of this program, auditors select a municipality by lottery, which guarantees the exogenous nature of this variable. The Audit Court sends a task force of auditors to all selected municipalities on a weekly basis during the four official months of the electoral race. The audits have the same coverage as the ordinary audits, covering all kinds of expenditures and financial procedures. The data on irregularities are generated a few months before the mayoral elections and have a greater potential to affect results than do data disclosed in nonelection years. Incumbent mayors standing for reelection perpetrated more irregularities than those who did not run (54.22 percent and 45.67 percent, respectively). In addition, reelected mayors perpetrated twice as many irregularities (70 percent) when compared to those who failed to retain their seats (30 percent). Information on the number of irregularities, produced by the task force, is released on the AC's website following the completion of each audit. Given the sensitivity surrounding the release of this information—namely the possibility of using it in an electoral campaign—this variable can be interpreted to represent the level of information available to voters about the mayors' misdeeds. The context of an electoral race generates expectations regarding the outcome of those audits, thereby enhancing their political visibility.

In keeping with H_1 , we expect that the greater the level of corruption, as proxied by verified denouncements, irregularity (special audits), and the electoral operation audits, the lower the probability an incumbent will be reelected.

Previous Convictions / We also specify a measure of mayoral misbehavior, *previous convictions*, which takes a value of 1 if the mayor was found guilty in one of the two forms of investigation (verified denouncements and irregularity) by the AC, and 0 otherwise. We omit electoral operations from this measure because of a time inconsistency; electoral operations are only conducted during a four-month period before each mayoral election, whereas denouncements and special audits are conducted for the duration of mayoral terms. In keeping with H_2 , we expect that as the existence of previous convictions increases, the probability of incumbent reelection will decrease. Because the AC convictions can be appealed in the state criminal courts, which may take a long time, a mayor who is a repeat offender may have several convictions before a final sentence is issued.

Public Spending / To examine the extent to which citizens are influenced by public goods expenditures in their electoral choices, we use data on average per capita expenditure by incumbent mayors on the provision of education, health, transportation, security, and housing at the municipal level. In keeping with H_1 , we expect that the higher the spending on public goods, the greater the probability of incumbent reelection. As further indicated in appendix 2, the average per capita public spending in Pernambuco's municipalities in the period analyzed was \$213.06, and the standard deviation \$83.16, which suggests that, despite constitu-

tional provisions constraining the leeway of mayors in the allocation of public resources, there is significant variation in expenditure on visible public goods. Although certain initiatives in education and health may be less visible, namely improvements in quality, social spending usually takes highly visible and tangible forms, including, but not limited to, facility renovation, new buildings, and physical infrastructure projects.

Information / Information is proxied in five different and complementary ways in order to capture from different approaches how individuals acquire information about the true type of politicians and use this information to make informed decisions at elections. First, we use percentage of households with television sets in each municipality. Citizens exposed to multiple news programs in the various open channels controlled by national networks are expected to have higher levels of political sophistication. Second, we also include an indicator about whether the municipality had a TV station capable of generating local programs (rather than retransmitting national programming). We expect municipalities with coverage of local issues to differ in terms of the impact on citizens from those lacking such stations. It is a dummy variable with the value of 1 if the municipality has a TV local station, and 0 otherwise. Third, following Ferraz and Finan (2008), we use indicators about the existence of radio stations (AM and FM) at the municipal level as alternative measures of information. These are also dummy variables with the value of 1 if the municipality has AM and FM radio stations, and 0 otherwise. Finally, we use proportion of illiterate voters as a proxy of low exposure to political information. We use the proportion of illiterate voters divided by the size of the electorate for each municipality. Notably, the extant literature on information uses measures of education or political sophistication to capture the possibility of information reaching voters.⁷ We expect the first four variables used as proxy of information to have a negative impact on the probability of reelection of corrupt incumbents. It follows that by increasing the level of information available to voters, especially when it is interacted with corruption, corrupt incumbents should be penalized at the polls for deviant or dishonest behavior, in keeping with H_5 .

With regard to our fifth proxy of information, illiteracy, we expect that the greater the proportion of illiterate voters, the higher the probability of reelecting a corrupt mayor. This expectation is based on Zaller's (1992) seminal work on public opinion formation, which assumes that the greater a person's level of cognitive or intellectual engagement with a political issue, which usually is absent among illiterates, the more likely he or she is to receive political messages concerning that issue and behave accordingly. However, Zaller also calls attention to his second axiom: "People tend to resist arguments that are inconsistent to their political predispositions. . . . [T]he likelihood of resisting persuasive communications that are inconsistent with one's political predispositions rises with a person's political attentiveness" (1992, 44). That is, if voters are well informed, they react mechanically to political information on the basis of external cues and therefore are more

7. Past research (Campbell, Alford, and Henry 1984; Stewart and Reynolds 1990) has shown that TV market and exposure are connected to voters' information level and behavior.

susceptible to rigidities in their voting behavior given their information bias. By contrast, if voters are too poorly informed to be aware of cues, which usually occurs among illiterates, voters tend to uncritically accept whatever ideas and information they might encounter. Given that these voters are less susceptible to information bias, they present greater flexibility in their voting behavior.

In a very creative interpretation of the role of information bias on voting behavior, Calvo, Chang, and Hellwig (2013) assume that all voters see the location of a party through “a convex thin lens” that is “poorly” made and induces optical aberrations. Given that the thin lens “drives” the light toward a single point in the line, all lenses are convex. However, the lens “I-voted-for-a-corrupt politician” is less convex than the lens “I-did-not-vote-for-a-corrupt politician.” That is, informed voters have biased perceptions of the ideological and political location of competing candidates in elections. Following this, one could predict that well-informed voters would have stronger bias. In turn, illiterate voters, with low political information, are more flexible and have smaller information bias, increasing their chances to use new information to punish corrupt politicians.⁸

Interactions: Verified denouncements × public spending / We examine the interaction effect between verified denouncements and public spending on the probability of incumbent reelection, with the expectation that the high levels of public spending will increase the probability of reelection, despite the negative association between corruption and incumbent reelection rates. Thus, we expect a positive correlation between the interaction term and incumbent reelection, which suggests that the marginal effect of corruption on the probability of reelection may decrease as public expenditure on public goods increases.

Verified denouncements × information / In addition, we investigated the interaction effects between verified denouncements and all measures of information on the probability of reelection, with the expectation that information about corruption could decrease the probability of reelection of corrupt mayors. Following Ferraz and Finan (2008), we expect a negative correlation between the interaction term of the four first proxies of information and corruption on incumbent’s reelection.

Concerning the fifth proxy of information, the variable illiteracy, and given our previous discussion about information bias, we expect that the marginal effect of corruption on reelection decreases as the proportion of illiterate voters increase. This expectation is based on the assumption that people who have low political knowledge are substantially less stable in their political attitude and voting behavior. Their chances of punishing corrupt politicians are consequently higher.

Other Controls / To capture the risk of being caught, we rely on the total number of special audits initiated by the AC as a proxy (*audit intensity*). We included this

8. A slightly variation of the information bias argument is suggested by Winter and Weitz-Shapiro (2013, 1), who demonstrate that “high income voters form a partial exception to this overall rejection of corruption; they react less negatively to information about corruption and more strongly to information about competence than the general population.”

variable to control for two potential confounders: local bureaucracies typically have low administrative capacity and so are prone to commit procedural irregularities. In addition, because corruption is fairly widespread and the audit work is far from perfect, the more audits are carried out, the more irregularities will come to the fore. As the number of audits self-initiated by the AC rises, so do the probable identification and exposure of potential irregularities, thus decreasing the chances of success of the incumbent running for reelection. In other words, we expect audit intensity to affect negatively voters' electoral choices. We test this hypothesis to assess the extent to which the intensity of the information provided to voters affects their choices. Its inclusion may also help control for one potential confounder.

We also control for alternative explanations using the variable of mayoral membership in the governor's party: governors play a key role at the subnational level because they have control over the vast administrative machinery as well as the discretionary use of resources for patronage and pork-barrel policies. Therefore we expect that belonging to the governor's party increases the chance of mayoral reelection.⁹ We also use the variable difference of votes between the winner and the second-place candidate in the previous electoral race—the larger the difference, the higher the probability of incumbent reelection.

ANALYSIS

Selection Problem

Since incumbent mayors who decided to run for reelection in 2000 (135) and 2004 (64) may not represent a random sample of all incumbents legally permitted to run for reelection, we used a Heckman selection model with probit analysis of equation independence to control for potential self-selection in the equation estimating incumbent mayor electoral success. Self-selection presents a concern for two reasons: the prior decision to run is not considered, and the possibility that this decision was driven by an incumbent's anticipation of voter (negative) reaction to past misdeeds. If this were the case, the outcome of the election would not be free of bias in the dependent variable, as potential losers could have decided not to run in anticipation of their electoral defeat. That is, there would be significant estimation errors if the prior decision to run for reelection were not considered and controlled for.

However, given that the null hypothesis of independence was not rejected—indicating that those who ran for mayoral reelection were drawn from a random sample of the entire population of incumbents—we refrain from correcting for selection bias (see appendix 1). The only result of the Heckman selection model

9. In previous models we also controlled for campaign expenditure of mayoral candidates in the 2004 election. As expected, mayors who spend more on their electoral campaign tend to have a higher chance of reelection. For each million *real* (about US\$500,000) spent during the electoral campaign, the chance of reelection increases by 3.5 percent on average. However, as data for campaign expenditure were available for only the 2004 election, we dropped this variable from the panel model that covered elections in 2000 and 2004.

that we highlight here is the level of independence of the two equations: the selection (run for reelection) and the outcome (electoral success) models. Because $\rho = 0$ (automatically tested in Stata), and so we do not have to correct for selection bias, we estimate the determinants of incumbent electoral success with different model specifications using panel probit equations. Different model specifications permit us to test distinct proxies of corruption generated by the AC. All models are robust to the inclusion of controls for political competition and alignment with the governor. Model 1 differs from model 2 given that irregularities (special audit) are a subset of audit intensity. They are correlated and therefore are not included in the same model. Model 1 differs from model 3 given that verified denouncements and irregularities (special audit) are a subset of previous convictions. So, we cannot have those variables in the same model since they are collinear. We controlled for other measures of information, which are included in model 4. Models 5–10, in table 2, test different interaction terms of corruption and public spending (verified denouncements \times public spending) and with corruption and different proxies of information (verified denouncements \times TV sets, verified denouncements \times TV local station, verified denouncements \times radio AM, verified denouncements \times radio FM, and verified denouncements \times illiteracy).

Main Findings

As table 1 depicts, the number of verified denouncements and the number of irregularities (special audits) display negative coefficients in all model specifications in which they were included, although only the former presents a statistically significant relation with reelection success, thus confirming H_1 . Specifically, the more irregularities detected, the lower the probability of reelection, with the marginal effect of each verified denouncement decreasing the probability of reelection by 29 percent. The lack of statistical significance of irregularities identified by special audits is likely to be associated with the relatively lower visibility of this mechanism of auditing. Verified third-party denouncements, in contrast, often lead to a highly visible audit report. (See appendix 2 for all descriptive statistics).

Model 2 suggests that as audit intensity—measured by the total special audits—increases, the probability of reelection decreases. However, the coefficient on this variable is not statistically significant.

The number of irregularities perpetrated by mayors and detected by the randomized audits produced by the task force during the electoral operation campaign provides a negative and statistically significant correlation with reelection results when we include a dummy for previous convictions, also negative and statistically significant in model 3. Specifically, the more irregularities detected in the electoral year, the smaller the probability of reelection. The marginal effect of each irregularity committed by the incumbent candidate during the electoral year decreases the probability of reelection by 19 percent, effectively supporting H_3 .

Public spending at the municipal level is positively related to incumbent re-

Table 1 Panel probit estimating reelection success for incumbent mayors (2000 and 2004 elections)

Variables	Model 1	Model 2	Model 3	Model 4
Corruption				
Verified denouncements	-.532** (.248)	-.530** (.249)		-.440** (.215)
Irregularity (special audits)	-.077 (.231)			-.0799 (.215)
Electoral operations	-.263 (.210)	-.281 (.203)	-.318* (.185)	-.167 (.196)
Audit intensity		-.024 (.127)		
Previous conviction			-.674* (.437)	
Information				
Illiteracy	-.406 (2.149)	-.437 (2.165)	-.268 (2.108)	-1.015 (2.087)
TV (sets)	-.021** (.009)	-.022** (.009)	-.023** (.009)	-.024** (.013)
TV (local station)				.271 (.511)
Radio AM				.810 (.541)
Radio FM				.184 (.348)
Public spending	.008** (.004)	.009** (.004)	.009** (.004)	.0146*** (.004)
Controls				
Difference of votes	.000 (.000)	.000 (.000)	.000 (.000)	
Governor's party	-.095 (.437)	-.088 (.443)	.044 (.445)	
Constant	.430 (1.085)	.410 (1.099)	.663 (1.107)	-.775 (1.463)
Sigma u	.0009 (.116)	.0009 (.386)	.0009 (.499)	.0015 (.016)
Log likelihood	-40.466	-40.505	-41.986	-40.800
Observations	82	82	82	82
Number of groups	77	77	77	77

Note: Robust standard errors reported in parentheses.

* $p < .10$; ** $p < .05$; *** $p < .01$.

election and statistically significant in all model specifications, lending support to H_4 . The result supports our argument that voters electorally reward incumbent mayors as a function of public spending.

Our results partially confirm the informational hypothesis. The percentage of households with television sets—arguably a more robust indicator of access to information in the Brazilian case—is statistically significant and in the expected direction. Although the other proxies for information (TV local, radio AM, radio FM) present the expected signs, they are not statistically significant. The same happens with the proportion of illiterate voters, which is not statistically significant. This preliminary result calls into question the scholarly consensus on the role of voter information, with the caveat that when voter information is measured by percentage of households with television, the coefficient is always negative and significant. We therefore find mixed support for H_5 . With respect to our controls, neither membership in the governor's party nor the difference of votes obtained in the previous elections—a measure of electoral competition—explains incumbent reelection.

With regard to our interactions, model 5 in table 2, for instance, underscores the importance of public spending vis-à-vis corruption. The interaction of verified denouncements \times public spending is statistically significant, suggesting that voters lend electoral support even to corrupt incumbents. A corrupt mayor may consequently buy his or her way out of trouble by delivering public goods to voters—clearly a worrisome prospect.

Heeding the warning that coefficients on the constituent parts of an interaction term involving continuous variables are inconsequential (Berry, DeMeritt, and Esarey 2010), we further illustrate the effect of verified denouncements (corruption) on reelection across a range of public spending in figure 1, where the solid dark line represents the marginal effect of corruption (verified denouncements) on the probability of reelection as public spending varies. The vertical lines represent the 95 percent confidence interval. When the confidence interval reaches 0, the marginal effect of corruption on reelection is insignificant (at the 0.05 level). That said, the negative marginal effect of corruption (below 0) on the probability of reelection is most pronounced at low levels of public spending, particularly when public spending is greater than US\$100 million but less than \$250 million. However, as spending on public goods increases beyond that threshold, the marginal negative effect of corruption on reelection becomes statistically insignificant. That is, the negative marginal effect of corruption on the probability of reelection vanishes when public spending by an incumbent mayor is moderate to high. Figure 1 therefore provides strong support for our key contribution: the provision of public benefits generates private gains (reelection), even for corrupt politicians.

We also interact our proxy of corruption, verified denouncements, with all proxies of information (see models 6–10 in table 2). Although the coefficients of these interactions are not statistically significant, it is important to plot out and interpret their marginal effects on the probability of the reelection of corrupt mayors. Figure 2, for instance, shows the interaction effect of verified denouncements and TV (sets), representing the average marginal effect of corruption on reelection, as the percentage of households with television varies. When

Table 2 Panel probit estimating reelection success for incumbent mayors (2000 and 2004 elections), with interactions

Variables	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Verified denouncements	-1.173* (.751)	-.747 (.544)	.324 (.601)	-.730* (.449)	-.431* (.257)	-.195 (.536)
Irregularity (special audits)	-.091 (.224)	-.091 (.217)	-.110 (.217)	-.086 (.216)	-.076 (.222)	-.067 (.217)
Electoral operations	-.242 (.215)	-.179 (.199)	-.257 (.211)	-.190 (.197)	-.166 (.197)	-.174 (.196)
Illiteracy	-.453 (2.170)	-.920 (2.108)	.047 (2.276)	-.942 (2.082)	-1.031 (2.101)	-1.174 (2.108)
TV (sets)	-.023* (.012)	-.025* (.013)	-.023* (.012)	-.023* (.012)	-.024** (.013)	-.024* (.013)
TV (local station)	.241 (.511)	.258 (.510)	.210 (.513)	.164 (.526)	.276 (.518)	.237 (.517)
Radio AM	.734 (.549)	.766 (.546)	.639 (.554)	.766 (.543)	.830 (.621)	.799 (.542)
Radio FM	.173 (.351)	.186 (.350)	.206 (.356)	.224 (.351)	.180 (.354)	.284 (.402)
Public spending	.011** (.005)	.013*** (.004)	.011** (.005)	.014*** (.004)	.014*** (.005)	.0153*** (.005)
Verified denouncements × public spending	.003* (.003)					
Verified denouncements × TV (sets)		.005 (.008)				
Verified denouncements × illiteracy			-2.772 (2.067)			
Verified denouncements × TV (local)				.410 (.507)		
Verified denouncements × Radio AM					-.030 (.457)	
Verified denouncements × Radio FM						-.295 (.589)
Constant	-.266 (1.546)	-.510 (1.530)	-.432 (1.508)	-.799 (1.462)	-.797 (1.501)	.869 (1.476)
Sigma u	.0012 (.264)	.0015 (.016)	.0015 (.016)	.0013 (.292)	.0015 (.316)	.0015 (.016)
Log likelihood	-40.240	-40.605	-39.743	-41.986	-40.798	-40.674
Observations	82	82	82	82	82	82
Number of groups	77	77	77	77	77	77

Note: Robust standard errors reported in parentheses.

* $p < .10$; ** $p < .05$; *** $p < .01$.

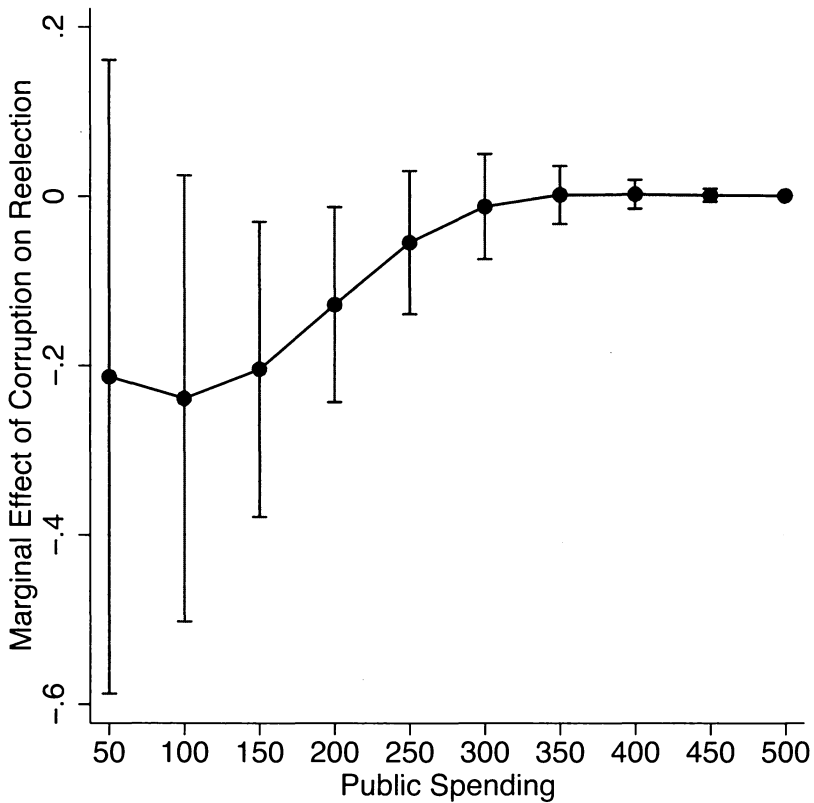


Figure 1 Average marginal effect of corruption on reelection with changes in public spending, 95 percent confidence interval

less than 40 percent of households in a particular municipality have TVs, its marginal effect is null. However, when the percentage of households with TV increases, particularly in the range of 40 percent to 60 percent (Pernambuco's average is 56.14 percent), it plays a relevant and statistically significant role in decreasing the probability of reelection of corrupt mayors. Surprisingly, when the percentage of households with TV sets is greater than 70 percent, the marginal effect on the probability of mayor reelection is also statistically insignificant. This suggests that in a municipality with scarce information resources, when information via TV is available its marginal effect may matter most. However, in big cities, where TV is just one among many sources of information, it can be less relevant.

Figure 3 displays the interaction effect of corruption and the presence of a TV station capable of generating local news in a municipality. It is believed that if a municipality has a TV station, through which news about the municipality's

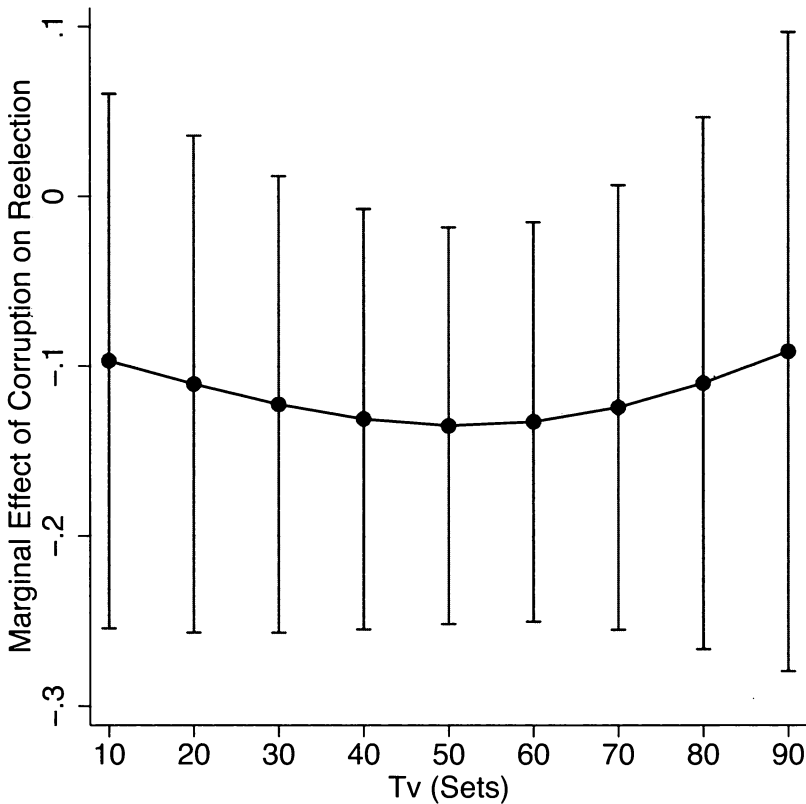


Figure 2 Average marginal effect of corruption on reelection with changes in TV (sets), 95 percent confidence interval

routine and local particular events are more easily and often broadcasted, voters would have more access to information on potential mayoral misconduct and electorally punish him or her accordingly. The marginal effect of the interaction, however, was not statistically significant. A potential explanation for this surprising result, which calls for further investigation, is that the local political elite, or the mayor him- or herself, controls the local TV station, thus decreasing the chances that unwelcome information is broadcast. This might be the case, given that in Pernambuco, about 20 percent of media outlets are owned by state politicians (Melo and Pereira 2013).

Concerning the interaction of corruption with the presence of radio stations in the municipality, we found contradictory results. Whereas the existence of AM radio in the municipality has—when interacted with corruption—no significant impact on mayor reelection, the existence of FM radio that broadcasts mayors’ wrongdoing does, thus decreasing the chances of reelection of a corrupt mayor

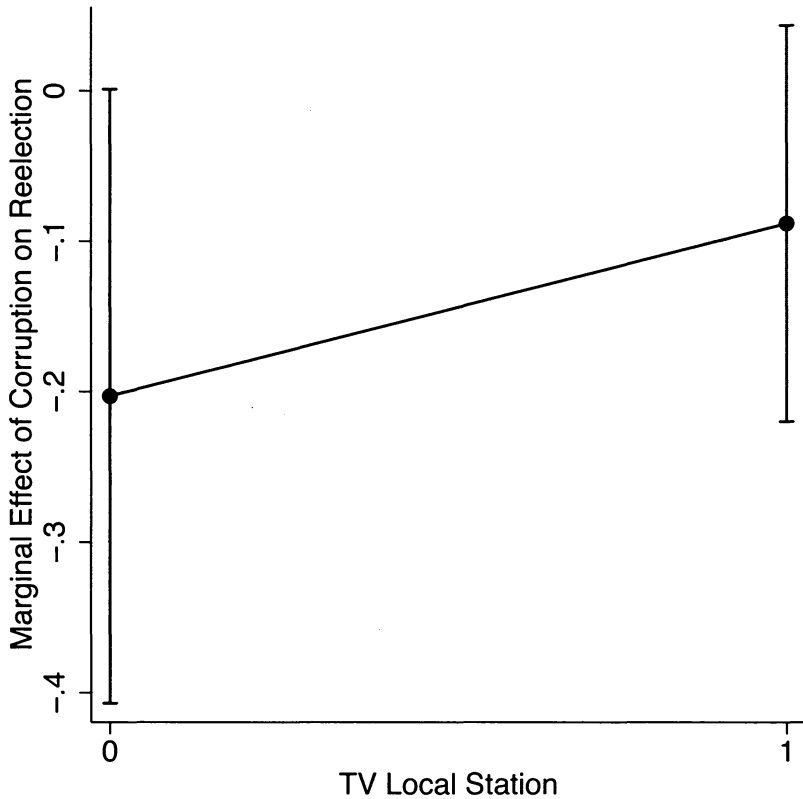


Figure 3 Average marginal effect of corruption on reelection with changes in TV (local station), 95 percent confidence interval

(see figure 5). These mixed results may have to do with the consistent increase in the audience of FM radio in Brazil. According to the Instituto IBOPE Media, the FM audience increased by 14 percent in Brazil between 2006 and 2013, and the number of FM listeners reached 87.57 percent.¹⁰

Finally, we estimated the effect of the interaction of corruption and illiteracy on the probability of the mayor's reelection. Figure 6 clearly shows a positive correlation. This result is consistent with the information bias hypothesis, which predicts that illiterate voters, who would have access to lower levels of political information, present greater flexibility and less information bias in their political behavior.

10. "Segundo levantamento do Instituto Ibope, audiência absoluta do FM cresceu 14% desde 2006," Tudo Rádio, June 6, 2013, <http://tudoradio.com/noticias/ver/9256-segundo-levantamento-do-instituto-ibope-audiencia-absoluta-do-fm-cresceu-14-desde-2006>.

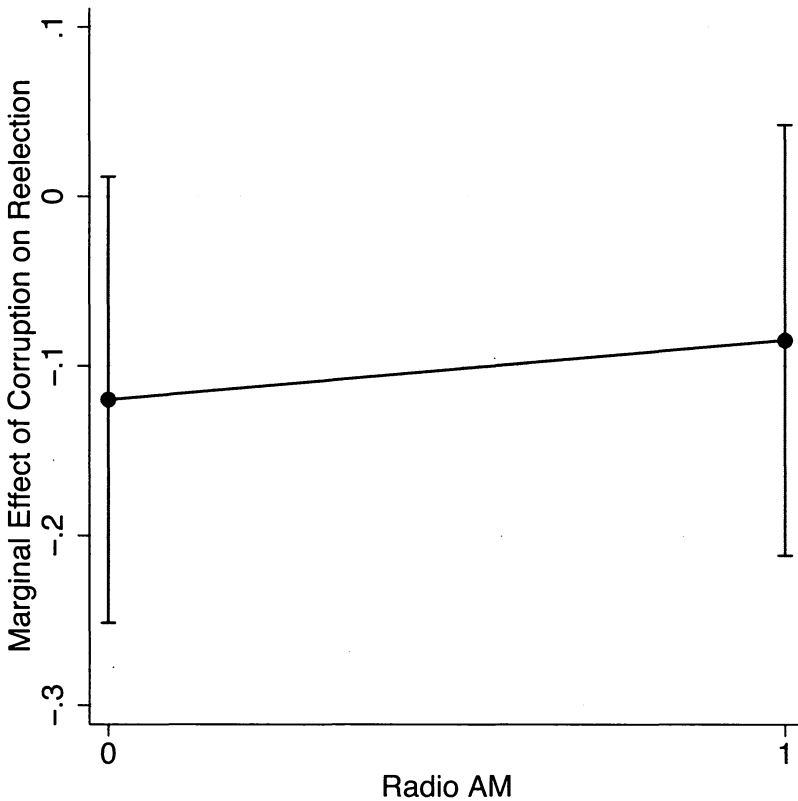


Figure 4 Average marginal effect of corruption on reelection with changes in AM radio, 95 percent confidence interval

DISCUSSION

In an effort to explore the conditions under which voters reelect corrupt incumbents, the explanation we develop in this article highlights the ability of corrupt incumbents to compensate voters through the use of public funds. Specifically, high levels of public goods provision diminish the degree to which voters penalize corrupt incumbents. Results from our empirical analysis support the hypotheses we specify. First, our results validate the general proposition that corruption reduces the electoral success of incumbents. Second, we find that previous convictions decrease the probability of incumbent reelection. Third, we also find that higher spending on public goods increases the chances of mayors' reelection. Fourth, and most important, our results confirm that high levels of public spending help corrupt incumbents increase their chances of reelection, with the effect dissipating when spending on public goods is low. Fifth, we find support for the informational hypothesis: electoral sanctions are shaped by the proportion

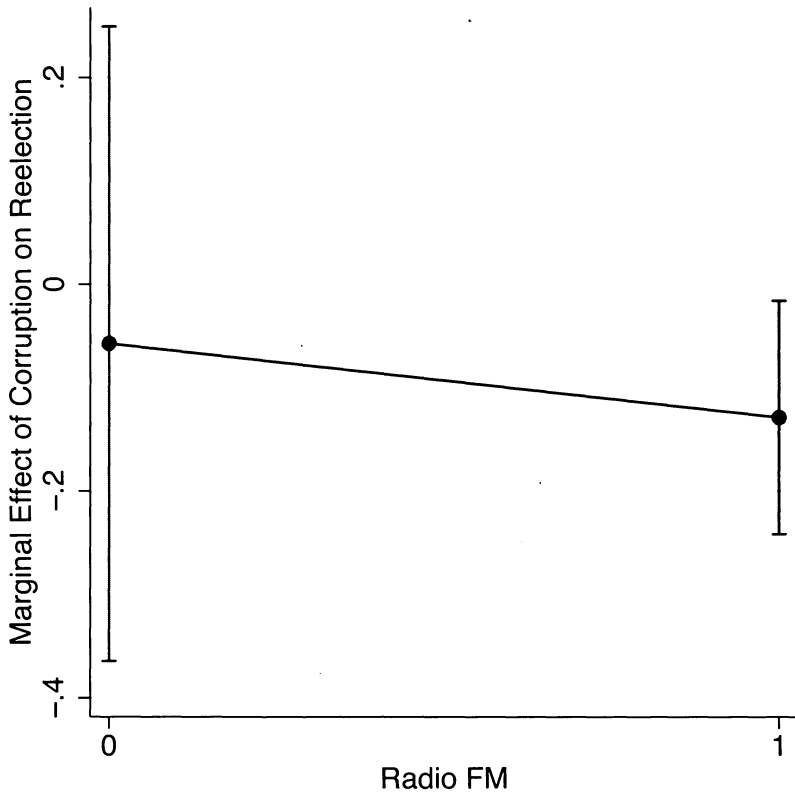


Figure 5 Average marginal effect of corruption on reelection with changes in FM radio, 95 percent confidence interval

of informed to uninformed voters, as measured by percentage of households with television sets by municipality and by the presence of FM radio capable of broadcasting local news. Finally, we also confirm Zaller's (1992) claim that illiterate voters are less susceptible to information bias. In other words, we find evidence that the effect of information about corruption on voting choice is stronger among poor, informed voters.

Our empirical findings provide strong support for the argument we advance here: even informed voters are willing to support corrupt incumbents once they stand to realize gains from public spending. Why are corrupt incumbents who spend less punished more than their frugal counterparts? One explanation is that voters exchange support for material benefits when they are public goods and not only private goods, as emphasized in the current literature. Our findings support this interpretation. The second reason voters might be more likely to punish mayors charged with malfeasance who do not provide public goods

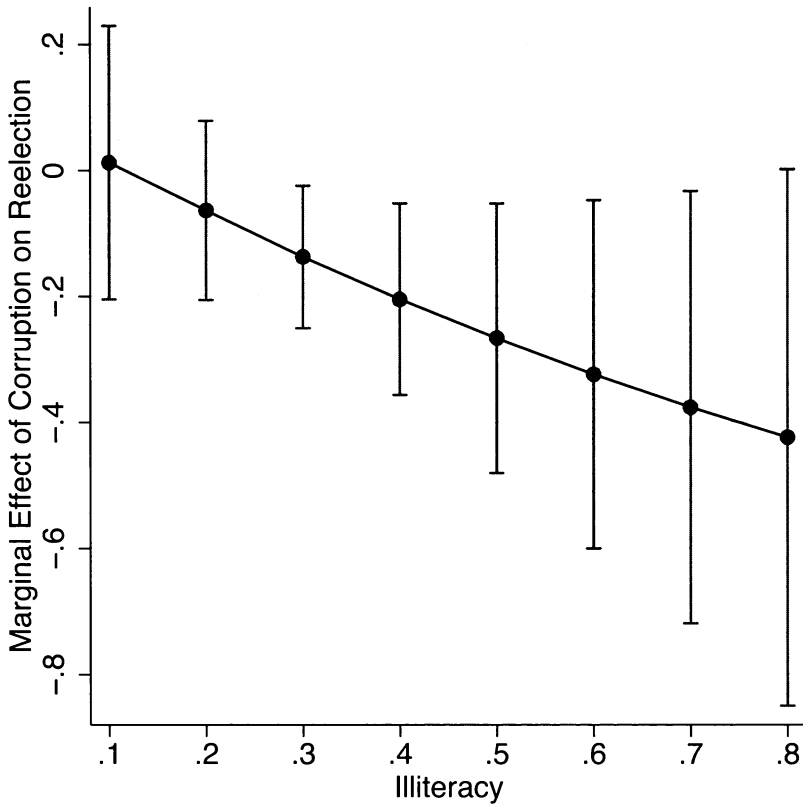


Figure 6 Average marginal effect of corruption on reelection with changes in illiteracy, 95 percent confidence interval

is that the charges are more credible for this type of mayor than for spend-thrift mayors. Although we could not empirically verify this claim, given that we do not have individual-level data to test the argument, we find it plausible. Because they are not mutually exclusive, we think that this explanation might eventually be reconciled with the first explanation and a better and more complete model of voters' choice be built. This is an important avenue for future research.

This second explanation focuses on the visibility of public goods spending vis-à-vis corruption charges. Voters experience firsthand the effects of government spending when they, for instance, learn that schools and health centers have been built in their communities. Claims concerning political misconduct, however, are arguably more indirect and less verifiable, as evidenced by media reports or word of mouth on judicial rulings and audit findings. That is, the existence of infrastructure effectively signals to voters that a significant portion of public resources

have been invested to their benefit, thereby undermining charges of corruption. Absent such evidence, prior beliefs about misbehavior are likely to be reinforced. In other words, rumors about wrongdoing become credible in the absence of investments in public goods. This mechanism of belief formation may explain the apparent cognitive dissonance involved in the *rouba mas faz* attitude, which may ultimately be interpreted as a problem of imperfect information. This second explanation would be consistent with the informational argument as discussed in this article. Future research using individual-level information might further illuminate the mechanisms involved.

The “perverse accountability” mechanism, through which voters tolerate corruption when it is associated with public goods provision, is a source of incumbency advantage for corrupt politicians in the form of barriers to entry for potential “clean” candidates. In the Brazilian context, mayoral elections are extremely costly. In Pernambuco, a middle-income state, market experts estimate their costs at ranging from US\$200,000 in small municipalities to \$2 million in large ones (the capital city not included) (authors’ personal interview with the CEO of a large political consultancy firm). To amass funds for a successful strategy, candidates are likely to compromise their rectitude.

Our findings do not foreclose the possibility that private transfers may play a role in the reelection of corrupt incumbents. Social spending can coexist with the dispensing of patronage, which has been explored in the literature. Mayors need not limit themselves to one strategy to ensure political survival. Thus, while we agree that reelecting corrupt incumbents is customarily a function of institutional weakness (Manzetti and Wilson 2007), we demonstrate that, *ceteris paribus*, voters will support corrupt incumbents when compensated by public goods.

APPENDIX 1. HECKMAN PROBIT MODEL: REELECTION SUCCESS CONTROLLING FOR SELF-SELECTION ON THE DEPENDENT VARIABLE

	Coefficient	SE	Z	P> z	[95% confidence interval]	
Outcome model = Dependent variable: Reelection success						
Verified denouncements	-.4448273	.1704761	-2.61	0.009	-.7789544	-.1107002
Public spending	.0073617	.0049042	1.50	0.092	-.0022504	.0169738
Irregularity (special audits)	.0202869	.1591212	0.13	0.896	-.2915849	.332158
Electoral operations	-.1031211	.151886	-0.68	0.497	-.4008122	.19457
Information (TV)	-.0125712	.007679	-1.64	0.102	-.0276218	.0024794
Constant	.7182485	.8425739	0.85	0.394	-.933166	2.369663
Selection model = Dependent variable: Run for reelection						
Difference of votes	.0000174	.0000158	1.10	0.171	-.0000136	.0000483
Verified denouncements	.2349925	.1295027	1.81	0.070	-.0188281	.4888132
Audit intensity	-.0853037	.0478951	-1.78	0.075	-.1791764	.0085691
Governor’s party	-.1155759	.2121793	-0.54	0.586	-.5314396	.3002878

(continued)

APPENDIX 1. (Continued)

	Coefficient	SE	Z	P> z	[95% confidence interval]	
Constant	-.4767126	.1009151	-4.72	0.000	-.6745026	-.2789226
Athrho	-1.126068	1.198862	-0.94	0.348	-3.475794	1.223657
Rho	-.8096694	.4129304			-.9980876	.8407297

LR test of independent equations. (rho = 0): chi²(1) = 0.95
 Prob > chi² = 0.3302
 Number of obs.: 251; Censored obs.: 169; Uncensored obs.: 82
 Wald chi² (5): 10.54. Log likelihood: -195.9975

Notes: The electoral outcome model has the same specification of dependent and the independent variables used in the panel probit model presented in table 1.

The dependent variable for the selection model is a dummy, which takes on the value of 1 if a mayor runs for reelection and 0 otherwise. The following explanatory variables were used in the equation for the selection model:

(1) *Difference of votes*, or difference in the percentage of votes of the winner over the second runner in the 1996 and 2000 elections. This variable captures the advantage to an incumbent in running for a second term, given strong electoral support in the previous election. We expect that the greater the distance in votes from the winner to the runner-up, the more comfortable the incumbent mayor will be to run for reelection. As predicted, the coefficient of this variable was positive; however, it was not statistically significant.

(2) *Verified denouncements* received by the AC. Following the theoretical expectation and the results obtained by Pereira, Melo, and Figueiredo (2009), we expect a positive correlation since running for reelection would be the best strategy for an incumbent involved in corruption. The coefficient was positive and statistically significant, supporting our prediction.

(3) *Audit intensity*. The number of special audits direct at an incumbent increases the risk of being caught and should discourage incumbent mayors from running for reelection. This was confirmed with the negative and statistically significant variable.

(4) *Governor's party*. As governors are influential at the subnational level, we should expect that those incumbent mayors that belong to the same political party of the governor should be more inclined to run for reelection. Although positive, the coefficient of this variable was not significant.

APPENDIX 2. DESCRIPTIVE STATISTICS

Variable	Observation	Mean	SD	Minimum	Maximum
Verified denouncements	368	.3722826	.9681541	0	10
Irregularity (special audits)	368	.4103261	1.790864	0	30
Electoral operations	368	.6277174	.9539782	0	7
Audit intensity	368	.8288043	2.888583	0	33
Previous conviction	368	.736413	.4411777	0	1
Reelected	199	.6984925	.46007	0	1
Run for reelection	368	.5407609	.4990143	0	1
Public spending	141	213.0688	83.16951	71.15334	787.7711
Governor's party	368	.1467391	.3543274	0	1

(continued)

APPENDIX 2. (Continued)

Variable	Observation	Mean	SD	Minimum	Maximum
Difference of votes	368	3021.611	12077.56	13	198086
Illiteracy	368	.295038	.1168919	.0401338	.6954629
TV sets	368	56.14129	24.33934	5.293	95.741
TV local station	368	1.01	0.97	0.00	2.00
Radio AM	368	0.18	0.62	0.00	9.00
Radio FM	368	0.57	0.83	0.00	10.00
Interactions					
Denouncements × Public spending	141	62.23476	166.3633	0	1311.963
Denouncements × TV sets	368	17.83801	5219871	0	390.936
Denouncements × TV local stations	368	0.33	0.94	0	10.00
Denouncements × Radio AM	368	.1929	1.9720	0	36
Denouncements × Radio FM	368	.3858	2.3292	0	40
Denouncements × Illiteracy	368	.1093171	.3139628	0	3.99135

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