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Political Research Quarterly 2009; 62; 731 originally published online Sep 24, 2008;
DOI: 10.1177/1065912908320664

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<http://prq.sagepub.com/cgi/content/abstract/62/4/731>

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The Corruption-Enhancing Role of Re-Election Incentives?

Counterintuitive Evidence from Brazil's Audit Reports

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Traditional wisdom on the effect of re-election on incumbent performance is that first-term politicians refrain from rent extraction because they want to be re-elected. The authors find no evidence to support this belief. The corruption-reducing effects of re-election may be offset when the expected utility for rent extraction is very high. This occurs when the likelihood of detecting corruption is very low. Mayors who committed irregularities are less likely to be re-elected when this information is released in the electoral year only. Although citizens hold mayors accountable for bad behavior, they do not do so to the point of discouraging misbehavior.

Keywords: *corruption; re-election; accountability; political competition*

In 2006, in the State of Pernambuco, Brazil, eight former mayors were put in jail. They were imprisoned for a variety of crimes, including malfeasance, serious irregularities in bid procurement, overinvoicing, and forgery of payments to so-called phantom (i.e., existing in paper only) firms belonging to themselves or relatives while in office. It is surprising that all of them had been mayors for two terms of office and had committed crimes in their first term. More significantly, although most of these crimes were detected by the state audit court in the first term of office, it did nothing to impede the mayors' continued perpetration of these crimes or running for re-election. This represents a puzzle contrary to the traditional wisdom on the governance-enhancing role of re-election incentives. Why would they run for office again if their crimes were made public by the audit court through a variety of mechanisms? Why does it seem that first-term mayors engaged in corrupt practices more often than "lame ducks" in their second and final term (the Constitution bans running for re-election for a third term)? Are citizens more likely to reward corrupt practices when these are disclosed by watchdogs?

Since Schumpeter's [1942] (1972) attack on the classical notion of public interest, democracy has

come to be evaluated not by the ability of governments to express the general will—or in modern jargon, a social welfare function—but by the ability of citizens to hold governments accountable. Elections are important because citizens are able to hold incumbent politicians accountable by either punishing or rewarding their performances (Powell 2002). In the case of poor performance, citizens would be able to "throw the rascals out" (Riker 1983, p. 244). The possibility of re-election provides politicians with incentives to align their preferences with that of the citizens and to refrain from rent-seeking behavior. Ferejohn's (1986) highly influential model predicts that incumbent politicians avoid maximum rent extraction in their first electoral term to get re-elected

Authors' Note: Previous versions of this article were presented in session 4-4, Corruption, Rule of Law, and Democratic Performance, at the 65th Midwest Political Science Association Annual Meeting, Chicago, April 12–15, 2007, and at the 10th Annual Conference of the International Society for New Institutional Economics, Boulder, CO, September 21–24, 2006. We are very grateful to Valentina Bali, Eric Chang, Bernardo Mueller, Phillip Keefer, and the anonymous reviewers for their comments and suggestions. We also thank Sharon Loo, Otavio Bartalotti, Elize Massard, Jose Alexandre da Silva, and David Dreyer for their assistance.

and enjoy future rents. Besley and Case (1995) propose an alternative model in which incumbent governors' opportunistic behavior may be curtailed through the possibility of re-election.

When the re-election incentives argument is extended to encompass the factor of corruption, it is expected that incumbents seeking re-election are supposedly less corrupt than those who are ineligible to re-election. Corruption behavior can be distinguished from mere rent-seeking and opportunism. However, we can expect a similar deterrence effect in both caused by the election process. Admittedly, due to measurement problems and data, few empirical studies have tested the impact of re-election incentives on corruption. The illicit nature of corruption practices and the corresponding difficulty in finding evidence and measuring the extent of corruption renders studies on corruption problematic. Ferraz and Finan (2007b) provide one of the few empirical tests of the governance-enhancing role of re-election incentives. Their test uses the term limits in Brazil's municipal elections to determine whether re-election incentives affect the level of rent extraction of incumbent politicians. They find that in municipalities where mayors are in their second and final term, there is significantly more corruption than in similar municipalities where mayors are in their first term. Their model estimates that municipalities with second-term mayors have, on average, R\$188,431 more diversion of resources, and the incidence of irregularities is 23% higher. In addition, these effects are stronger in municipalities where the costs of rent extraction are lower, such as municipalities without media and judicial presence (i.e., in areas without local courts; *comarca*).

The model also tests the role of political competition. And in so doing, it was discovered that a higher degree of political competitiveness in a municipality results in lower rent extraction and corruption. In other words, the effect of re-election incentives is more pronounced in municipalities where mayoral elections are close, indicating that a higher share of pivotal voters induce first-term mayors to reduce rent extraction so as to guarantee re-election for a second term. The basic intuition for the model proposed by Ferraz and Finan (2007a) derives from the work of Persson and Tabellini (2000). The incentives to engage in redistributive transfers toward groups with more swing voters are strongest when politicians are more likely to be re-elected. This comes at the cost of less public provision and rent extraction. Without re-election incentives and the need to buy votes, incumbent

politicians spend more on public goods while extracting more rent.

This article presents a panel of 184 Brazilian municipalities and arrives at very distinct conclusions on the governance-enhancing role of re-election incentives. The large number of observations on all types of irregularities detected by the auditing institution allows us to test the corruption argument. Unlike the contributors mentioned in the previous paragraph, our focus is on corruption, not on the incentives for the provision of public goods or pork.

The data set covers the whole universe of municipalities and comes from a single professional auditing institution. Brazil is a good case for such a test because of the existence of a two-term limit for mayors. By focusing on a single country, we are better able to control for a host of other potential source of variation of an institutional nature as well as other country sensitive factors. The institutional factors that could affect corruption include electoral rules, federalism, and separation of powers (Rose-Ackerman and Kunikova 2005; Chang and Golden 2006, 2007; Tavits 2007).

Our sets of tests do not lend support to the standard argument about the role of re-election incentive. First, we test whether re-election incentives induce mayors to commit more irregularities. The results of this test suggest that first-term mayors are more likely to commit irregularities than second-term mayors. This result cannot be explained by the argument that corruption reduces the role of re-election incentives. These results are consistent with the theoretical argument developed in the second section of the article. That is, the corruption reducing effects of re-election incentives may be offset when the expected utility of incumbency for rent extraction is very high. This occurs primarily when it is unlikely that corruption will be detected. Furthermore, politicians caught engaging in corrupt practices may have an incentive to seek re-election because being an incumbent offers the best protection against future sanctions. Not only do mayors have privileges when they have to respond to criminal charges, but they also have access to varying mechanisms of intimidation and co-optation.

Second, we consider the role of close elections as determinants of irregularities and find that as an election becomes more competitive, the chances of irregularities being committed also increase. This is owing to the effect of re-election on incumbents. As the likelihood of detection is very low and the pay-offs are high, politicians have greater incentives to engage in corrupt practices when they run in close elections.

Third, we test whether the work carried out by the auditing institution affects the likelihood of re-election. We find that the existence of irregularities during the four-year term of office of a mayor does not significantly affect his or her chances of being re-elected. However, the number of investigations perpetrated by the Audit Institution during the electoral year only decreases the probability of being re-elected by 19%. In short, although citizens hold mayors accountable for bad behavior, they do not discourage misbehavior. At the most general level, our findings suggest that the governance effects are highly dependent on current check-and-balance institutions. Re-election incentives tend to produce good governance when these institutions are developed and robust. Conversely, when check-and-balance institutions are weak, re-election may generate perverse incentives.

This article is divided into five sections. The first section describes our theoretical argument and develops a critical dialogue with the pertinent literature. The second section outlines both the institutional context and descriptive statistics between re-election incentives and politicians' misbehavior. The third part of the article presents and tests our hypotheses on candidate re-election and its impact on corruption with several econometric model specifications. In the fifth section, we address the extent to which citizens sanction corruption when they have access to information. In other words, we test the effect of corruption against the probability of re-election success. Finally, we close our analyses with our conclusions.

Theory

The incumbent behavior model developed by Ferejohn (1986), Persson and Tabellini (2000), Besley and Case (1995), Besley and Burgess (2002), and Besley (2005) predicts that the possibility of re-election provides politicians with incentives to align their preferences with that of the citizenry and refrain from rent-seeking behavior. Incumbents seeking re-election are therefore more likely to be less corrupt than those ineligible for re-election. However, there are two distinct mechanisms at play in the process through which citizens hold incumbents accountable. Failure to recognize these mechanisms may result in the underestimation of politicians' incentives for corrupt behavior. The first mechanism refers to the effects of the re-election incentive on corruption. The incumbent model predicts that politicians will internalize the re-election incentives and adjust their behavior accordingly. That is, the incumbents' decision

to engage in corrupt behavior is based on their subjective evaluations of the chances that their misbehavior might be disclosed.

Incumbent politicians have incentives to engage in corruption when the pay-offs are large. They estimate the magnitude of rents to be privately appropriated and used in corrupt practices for electoral purposes (e.g., vote buying) and discount the probability of being caught.¹ In addition, politicians caught engaging in corrupt practices may have an incentive to seek re-election because being an incumbent is the best protection against future sanctions. Not only do politicians usually have privileges when responding to criminal charges, but they also have access to varying mechanisms of intimidation and co-optation while in office. Conversely, lame ducks may have an incentive to refrain from corrupt practices out of fear that future governments may retaliate against them by exposing all available evidence of their misbehavior. Persson and Tabellini (2000), as well as Ferraz and Finan's (2007a) model, predict that when races are close, the higher share of pivotal voters induces politicians to reduce rent extraction to guarantee re-election for a second term (also see Mesquita et al. 2003). This supposedly would come at the cost of less public provision and rent extraction and would lead to more provision of private goods. Deprived of re-election incentives and the need to buy votes, incumbent politicians spend more on public goods while extracting more rent.

As indicated previously, when the re-election incentives argument is extended to corruption behavior, it is expected that incumbents seeking re-election are supposedly less corrupt than those who are ineligible to re-election. Corruption behavior can be separated from pork and rent seeking. However, we can expect a similar deterrence effect in both caused by re-election incentives. There is a supposed trade-off between private goods and corruption and rent extraction. However, we are primarily interested in corruption and not on the broader phenomenon of clientelism and the related questions of pork barrel and electorally opportunistic policies. We argue that corruption and pork barrel may be intertwined (although they can be separated in the empirical investigation, as shown in the empirical section in this article). Rent extraction takes many forms, some of which are illegal in most countries. Politicians in close races might want to increase rent extraction for their network through illegal means because chances of detection are low and the pay-offs involved are very high. In close races, an extra incentive to engage

Figure 1
When Do Politicians Internalize Their Re-Election Incentives?

		Can Citizens Observe?	
		Yes	No
Are the payoffs (rent x likelihood of being caught) < potential benefits?	Yes	Scenario 1 Retrospective Accountability (dynamic)	Scenario 2 Retrospective accountability (static)
	No	Scenario 3 (Payoffs of corruption are > benefits from good behavior) <i>Accountability in context of bad governance</i>	Scenario 4 (Payoffs of corruption are > benefits from good behavior) <i>No accountability</i>

in corruption may exist due to the fact that the value of an additional irregularity increases at the margin. An additional misdemeanor might tip the balance of the race and lead to victory.

The second mechanism at work occurs when the internalization effect of re-election incentives does not take place for the reasons discussed above. Citizens may or may not be in a position to sanction misbehavior. Thus, four alternative scenarios may be identified. In the first scenario, incumbent politicians internalize future sanctions and adjust behavior (see Figure 1). Citizens can observe these moves, and the result is a dynamic mechanism of accountability, a virtuous circle (see the top left cell in Figure 1). In the second scenario, incumbent politicians internalize future sanctions and adjust their behavior accordingly. Nonetheless, citizens cannot observe these moves and after repeated play, politicians will be gradually discouraged from continuing with this behavior. We call this situation a statistic scenario of retrospective voting accountability.

In the third scenario, incumbents know that citizens have very little information about the behavior of politicians and that monitoring by watchdogs is inadequate. Therefore, they have no incentives to adjust their behavior. Citizens with access to information on

their behavior with information or fire alarms provided by watchdogs (e.g., the audit work) are able to sanction their behavior on Election Day. The last scenario is the worst-case scenario (no. 4 in Figure 1). A vicious circle is created because incumbents know that citizens receive little or no information about the behavior of politicians due to the fact that monitoring by watchdogs is inadequate and they are unable to sanction misdemeanors.

The bottom two cells describe the scenario in many new democracies in Latin America and in the transition countries. Another behavioral and contextual assumption in this article is that in many countries, politicians caught engaging in corrupt practices may have an incentive to seek re-election because being an incumbent is the best protection against future sanctions. Not only do incumbent politicians have privileges when they have to respond to criminal charges (parliamentary immunity, special courts to judge their cases), but they also can manipulate and intimidate enforcing officials and co-opt relevant social actors. Moreover, when politicians are in office, the costs of accusation and evidence gathering are borne by the accusers—the opposition. A defeated mayor will face accusations brought forward by incumbents.

In the contexts of the scenarios described in the bottom left cell of Figure 1, we argue that the re-election incentives are more than offset by the incentives for corrupt behavior because the expected utility from engaging in corruption is very high. The latter occurs because the likelihood of being detected is low and the pay-offs are very high. The pay-offs include very significant perks, such as high salaries, the ability to find public employment for the members of one's family, and many other opportunities for rent seeking. The question of determining each country's true scenario in Figure 1 is an empirical one. In the subsequent sections, we explore the empirical hypotheses generated by these simple heuristics.

Relationship between Re-Election Incentives and Misbehavior

As previously mentioned, our first test explores the relationship between the ability of running for re-election and the politicians' propensities to be involved in corruption. The empirical claim that re-election is an instrument of democracy is based on the premise that elected governments develop close connections between voters' preferences and public policies. It is generally assumed that the possibility of competitive re-elections causes democratic governments and their policy makers to take into account citizens' preferences more fully than they would otherwise. However, this is a proposition that has to be tested rather than assumed.

Prior to 1997, there was a ban on re-election for executive posts in Brazil. However, that same year, the Brazilian Congress passed a constitutional reform allowing one consecutive re-election term for all executive positions, including mayors. Therefore, the mayors who were elected in the 1996 election faced a huge institutional incentive to enlarge their time horizons at the municipality level by running for re-election in 2000. The data we use for the tests in this article include information for all municipalities in the sixth largest Brazilian state, Pernambuco, which contains 184 municipal governments. The data cover all observations for the period 1997 to 2006, including additional data on the years that elections were held (2000 and 2004).

By concentrating the analysis on all municipalities in a single state, we have the advantage of controlling for a host of other potential sources of variation, which include institutional features as well as other state-sensitive factors such as poverty levels, cultural

proclivities, and so forth, that could distort our analysis. Had the data also included other states and other audit courts, we could not have controlled for variation associated with differences across audit institutions. Therefore, by controlling for these institutional features, we have been able to isolate the impact of running for re-election and other political aspects on the behavior of audit courts.

The great majority of incumbent mayors, 135 (73.36%), exploited this opportunity and ran for re-election in 2000, and 97 (71.85%) were successful in this strategic choice. In the 2004 election, 64 mayors ran for re-election. Given that mayors in Brazil are allowed to run for re-election just once, only 87 mayoral slots were available for re-election. Thus, 64 out of 87 (73.56 percent) mayors ran for re-election in the 2004 election.² The rate of re-election success is quite high: approximately 72% and 66% in the 2000 and 2004 elections, respectively. This may suggest the existence of a strong incumbency effect at the local level. Therefore, it is plausible to infer that if a mayor does not face huge problems, the chances of being successfully re-elected are very high. The mean probability of being re-elected in these two electoral episodes is 0.6859.

In addition to the number of mayors who ran for re-election and the electoral results, we also had access to a new data set detailing the irregularities reported by the audits from the State Audit Agency (*Tribunal de Contas*) for the state of Pernambuco from 1997 to 2004.³ These data also contain information about the state auditing decisions regarding each kind of irregularity committed by the local executive branch during their terms of office.⁴ It should be mentioned that audit institutions in Brazil adopt the Audit Court Model found in countries such as Austria or France, which focuses primarily on breaches of the law. They perform compliance or conformity audit and not efficiency or impact audit; they are therefore not concerned with poor administrative practices.

The audit work can refer to three aspects:⁵ (a) third-party denouncements investigated by the state audit court, (b) special audits carried out on the self-initiative of the state audit court based on its auditors' suspicions and/or risk analyses, and (c) an annual accounts report rendered by each municipal unit as mandated by the Constitution. These are mandatory reports of accounts—largely routine work, required by law—that are submitted every year by the state and municipal governments.

The audits are prepared by a team of tenured audit professionals who are highly paid and hired through a

very competitive recruitment process (nationwide sit-down examinations). The audit work is generally perceived to be highly technical and impartial (Speck 2002; Santiso 2007).⁶ The audit work is further revised and submitted for ratification by the audit court board. It is at this point that the process is vulnerable to political influence, as the board may refuse to ratify the auditors' findings. Our data, however, refer to the technical audit work prepared by the corps of auditors, and thus it is reasonably safe to assume that they are not prone to political manipulation.

We also collected original data about a pioneering weekly program of auditing of municipalities carried out during the electoral year of the past two elections for mayor in the state of Pernambuco, the so-called Elections Operation. In this program, the audit court sends a taskforce of auditors on a weekly basis to all municipalities during the four official months of the electoral race for the specific purpose of finding irregularities.

Mayors fear the audit court's decisions primarily because it acts as an administrative tribunal and enjoys quasijudicial powers. It can impose fines, require the reimbursement of monies spent irregularly, prevent corrupt mayors from running for office (for a period of 8 years), and recommend imprisonment. However, it is up to the public prosecutor's office to initiate the process and to the criminal courts to impose a sentence.

Information gathered on third-party denunciations suggests that mayors who decide to run for re-election received more than double the denunciations vis-à-vis the local chief executives who opted to do something other than run for re-election (74 and 31, respectively). These denunciations are largely made by municipal councilors, opposition candidates, trade unions, and citizens. This result can be interpreted in two ways: First, mayors running for re-election are more likely to perpetrate irregular activities because their pay-off would more than compensate the probability of being caught; second, the candidates running for re-election could be easily monitored by third parties, especially the opposition. This is because the opposition has vested interest in increasing the number of incumbents it denounces. A cursory look at the Audit Institution's decision to investigate the denunciations supports both explanations. The successfully re-elected mayors also received a larger number of denunciations that were "verified" (i.e., they turned out to be true during the investigation process) by the Audit Institution vis-à-vis the mayors who failed to be re-elected (36 and 21, respectively).⁷

A potential explanation for the positive correlation between corruption and re-election seeking is that mayors who seek re-election are simply investigated more often and more intensely. Mayors who do not run for re-election may be just as corrupt, but because they do not run for political office, they receive less attention and are investigated less. This is a plausible argument, and this, in fact, may be occurring. However, to explore this issue further, we investigated the data from other sources—from other types of audits, not just third-party denunciations.

The data collected on three other sources—Special Audits, Audits of Annual Reports, and from the Electoral Operation (see below)—show that the same pattern prevails. Mayors who did not run for re-election received more special audits than mayors who ran for re-election. Nevertheless, the audit investigations revealed that those who ran for re-election had about 10% more irregularities than mayors who did not run. These special audits arose from much suspicion, evidence, risk analyses, or information that the auditors gather from the municipalities' administrative units. More important, the decision to carry out these audits is made by the team of auditors themselves. There might be some element of endogeneity in this case as well. In other words, the decision by a team of auditors may be somewhat influenced by the denunciations and media coverage, or by other omitted political variables. However, the data support our interpretation.⁸

The third source of data used refers to annual accounts reports rendered by the municipalities and analyzed by the audit court that produces a decision concerning the rejection or otherwise of a mayor's annual account report. The data are also consistent with our claim. Mayors running for re-election had a higher rejection rate in 2004 than mayors who did not (198 and 168, respectively). It is also a fact that a higher proportion of mayors' account reports tend to get rejected among those who run for re-election (143) when compared with those incumbent mayors who do not for re-election (101). Re-elected mayors also have higher number of accounts rejected (96) than those who did not get re-elected.

The fourth type of data comes from the Electoral Operation undertaken by the Audit Institution during the electoral years of 2000 and 2004. Similarly, the data cover all municipalities in the state. In 2000, mayors who ran for re-election possessed a higher propensity to be involved in irregular activities than mayors who chose not to stand for re-election (199 and 168, respectively). There is a difference between

these two groups of mayors when these two elections are considered separately. According to the Audit Institution, about 68% of the mayors standing for re-election in the 2000 election perpetrated irregularities, compared to 30% of those not running. The descriptive data for 2004, however, do not support our argument. When we compare the group of re-elected mayors with those who failed to retain their seats, the former presented over twice as many irregularities (70%) than the latter (30%) in both electoral episodes. Overall, we find that there is support for our argument from this type of descriptive source, although not conclusively.⁹

Taken as a whole, these descriptive statistics from the four types of data available lend support to the hypothesis that the mayors who ran for re-election presented a greater number of irregularities than mayors who did not. This is true according to the analyses of the investigations carried out by the Audit Institution during the electoral periods of 2000 and 2004. In addition, the group of re-elected mayors was found to be engaged in more illegal activities than the mayors who failed to be re-elected. Moreover, the first period (1997–2000) has demonstrably more irregularities than the second period (2001–2004). An alternative explanation for the positive correlation between corruption and re-election seeking is that mayors who seek re-election are simply investigated more extensively and more frequently. As we indicated before, this is a plausible theoretical argument. However, it is not supported by the empirical evidence.

As Brazil neither underwent a major electoral reform nor experienced shifts in the allocation of mayoral institutional powers, a question emerges: what would account for the differences observed between these two periods? In other words, why are Brazilian mayors who successfully run for re-election more involved in corruption?

Hypotheses and Econometric Tests

We claim that the corruption-reducing effects of re-election incentives may be offset when the expected utility of incumbency for rent extraction is very high. This occurs primarily when the likelihood of detecting corruption is very low. In addition, politicians caught engaging in corrupt practices may have an incentive to seek re-election because being an incumbent is the best protection against future sanctions by opponents. This is because mayors not only have privileges when they respond to criminal charges but they also have access to various mechanisms of

intimidation and co-optation. In addition, the more recent a crime is, the more serious the repercussions are because many administrative crimes lapse within a short period of time. We find that this incentive structure is not only a very plausible behavioral assumption but also common knowledge in the Brazilian context. Therefore, our hypothesis predicts a positive relationship between running for re-election and the level of corruption perpetrated by the local mayor. We tested these hypotheses using several model specifications.

However, there is a risk that our dependent variables (denouncement, confirmed denouncement, and corruption) could be endogenous with mayors' choices of running for re-election. If this is the case, the model could lead to incorrect estimates of the effects of independent variables. It is also plausible, for instance, that more able or educated mayors commit more irregularities and are more likely to run for re-election (in which case, the estimates would be biased upwards).¹⁰ Those who do not run for re-election are a combination of second-term mayors and first-term mayors who for some reason decided not to run again. Perhaps the reason why some first-term mayors did not seek re-election was to avoid the denouncements.

In addition, there is an issue related to the fact that our key independent variable is discrete. Moreover, in one of the econometric exercises, not only is our independent variable dichotomous, but so too is our dependent variable, Corruption, which has the value of 1 if the mayor was found guilty of one of the three forms of investigation (denouncements, special audits, and general reports on municipal accounts) by the audit authority and 0 if otherwise. However, running two-stage least square regression with dichotomous endogenous variables—even with the appropriate instruments—does not provide reliable estimates.

Two-stage estimation of models that deal with endogeneity in discrete variables has been discussed in the literature (Alvarez 1997; Alvarez and Glasgow 1999; Achen 1986; Amemiya 1978; Maddala 1983). One of the techniques advocated by this literature is the two-stage probit least squares. This method can be applied to either a binary dependent variable with a continuous, potentially endogenous, regressor on the right-hand side, or a continuous dependent variable with a binary, potentially endogenous, regressor on the right-hand side (our two specific cases with number of denouncements and number of confirmed denouncements). The parameters in the endogenous equation (having run for re-election as dependent

Table 1
Probit Panel Data Estimation for Running
for Re-Election ($N = 368$)

Variable	Coefficient	SE	z Statistics
Governor's party	-.28728*	.18572	-1.55
Difference of votes	.00001	.00001	1.31
Number of voters	-.00004*	.00003	-1.39
Constant	.17233**	.07689	2.24

Note: Pseudo $R^2 = .0091$; Log likelihood = -251.5342 .

variable) generated by a Panel Probit model (see Table 1) are then used to create a predicted value for running for re-election (xb), the potential endogenous variable, having "number of voters," as instrument of this first equation. We also controlled for three variables: (a) difference of votes between the winner and the candidate that comes in the second position in the electoral race; (b) the "Governor's Party"—that is, if the mayor belongs to the same political party as the state governor; and (c) the number of voters in each municipality.

These predicted values of the first equation are then substituted for the variable "run for re-election" on the right-hand side of the second equation using a Fixed Effect Panel data estimator for the entire period (1997–2004). It has been demonstrated by this literature that the estimates obtained in this second stage are consistent. We also included the "difference of votes" and "Governor's Party" as control variables in the second equation. We expected a negative correlation between difference of votes and the number of denunciations and number of confirmed denunciations. That is, we predict that the greater the gap of votes between the winner and the loser, the smaller the mayor's chances of receiving denunciations. In this situation, he or she would face less risk of losing the election. Concerning the third control variable, "Governor's Party," we expect a positive relationship—that is, mayors that belong to the governor's political party increase their probability to be involved in corruption. This is expected, because mayors who are under the protective umbrella of powerful governors tend to be more confident of impunity, reflecting deep-rooted historical patterns. Other mechanisms may be at play here (e.g., these mayors might be disproportionately favored in the allocation of governors' pork barrel projects).¹¹ This stems from the discretion governors enjoy, allocating resources to faithful mayors who belong to their political party.

Table 2
Two-Stage Panel Data with Fixed
Effect Estimation for Number
of Denunciations ($N = 368$)

Variable	Coefficient	SE	t Statistics
xb	31.86269***	5.16619	6.17
Governor's party	8.70494***	1.54167	5.65
Difference of votes	-0.00068***	0.00010	-6.32
Constant	-1.8493***	0.43502	-4.25

Note: R^2 overall = .3283; F statistics = 15.82.

Table 3
Two-Stage Panel Data with Fixed Effect
Estimation for Number of Confirmed
Denunciations ($N = 368$)

Variable	Coefficient	SE	t Statistics
xb	22.56041***	4.01695	5.62
Governor's party	6.13267***	1.19872	5.12
Difference of votes	-0.00045***	0.00008	-5.40
Constant	-1.46178***	0.33825	-4.32

Note: R^2 overall = .0389; F statistics = 13.15.

We followed the procedures suggested by the literature, and the results we got demonstrate that the coefficient of the predicted value of the potential endogenous equation (xb) is positive and strongly statistically significant at 1% in both estimates, "number of denunciations" (see Table 2) and "number of confirmed denunciations" (see Table 3). That is, running for re-election increases the probability of mayors' involvements in misdeeds, as measured by the number of denunciations received as well as by the number of denunciations verified by the Court of Account. This result is consistent with our theoretical predictions. The control variables "difference of votes," which measures the electoral gap of votes between the first and second runners, and whether the candidate belonged to the governor's party, also behaved according to our model's predictions.

With regard to our third econometric exercise, which has discrete variables (corruption and running for re-election) on both sides of the equation, we followed Alvarez and Butterfield's (1997) suggestion of using a binary probit model to control for endogeneity. In fact, the estimation procedure is similar to the model we used to generate a predicted value (xb). That is, from the Panel probit estimation (see Table 4) of the decision of running for re-election, we generated the predicted values of this decision (xb), having Human Development Index as an instrument in this

Table 4
Probit Panel Data Estimation for Running for
Re-Election ($N = 368$)

Variable	Coefficient	SE	z Statistics
Governor's party	-0.28728*	0.18572	-1.53
Difference of votes	0.00001	0.00001	1.22
Number of voters	-0.00003	0.00003	-1.11
Human Development Index	-1.01269	1.37899	-0.73
Constant	0.79337	0.84957	0.93

Note: Pseudo $R^2 = .0102$; Log likelihood = -251.2653.

first equation. Next, this predicted value is used as a substitute for "run for re-election" in the second panel probit equation that estimates the model corruption (see Table 5). As mentioned previously, these authors claim that this two-stage procedure yields consistent estimates of the model in the second equation.

Table 5 shows that the coefficient of the predicted value of "running for re-election" (xb) is positive and statistically significant at 1% according to our theoretical prediction. That is, running for re-election increases the probability of corruption. We also found that as the election becomes more competitive, irregularities stand a higher chance of being committed. It suggests that politicians have greater incentives to engage in corrupt practices when they run close elections than when they do not. The results on the effect of the difference of votes between the first and second runners are counterintuitive. Political competition is generally held to generate more transparency and less corruption. We claim that this is so in highly institutionalized political environments where corruption is adequately monitored. Conversely, in weakly institutionalized political settings, politicians have incentives to engage in corrupt practices. By diverting public funds for the electoral campaign, mayors may tip the balance in their favor. Owing to the low likelihood of being detected and the positive marginal pay-off, mayors running for re-election have strong incentives to misbehave. The variable "Governor's Party" presents a positive and statistically significant coefficient indicating that mayors who belong to the governor's political party are more likely to be involved in corruption. As indicated before, we expect that mayors who are under the protective umbrella of powerful governors tend to be more confident of impunity and are undeterred by the probability of sanctions.

The fact that politicians are not deterred from committing irregularities due to low risks involved is almost a truism in new democracies around the

Table 5
Panel Binary Probit Estimation
for Corruption ($N = 368$)

Variable	Coefficient	SE	z Statistics
xb	4.59952***	1.71289	2.69
Governor's party	1.19046**	0.52378	2.27
Difference of votes	-0.00014***	0.00004	-3.39
Number of votes	0.00004***	0.00001	3.54
Constant	-0.37162*	0.34071	-1.09

Note: Pseudo $R^2 = .042$; Log likelihood = -203.31787.

world. Ribeirão Bonito, a town situated 260 km from the metropolitan region of São Paulo, provides an illuminating case for this fact (Trevisan et al. 2003; Estado de São Paulo 2007). In 2006, four municipal councilors, including the president of the council, were imprisoned following the disclosure of a video recording of their bargaining over bribes in exchange for giving legislative support to the mayor. This episode would not have attracted much attention if it were not for the fact that the previous incumbent mayor of Ribeirão Bonito and a number of councilors had been impeached and imprisoned for malfeasance (specifically, for appropriating funds for public school meals) in one of the most publicized corruption scandals in the country. This scandal led to the set-up in Ribeirão Bonito, of Amarribo, a highly successful nongovernmental organization specializing in anti-corruption campaigns. Amarribo acquired a national reputation by distributing more than 120 thousand booklets to raise consciousness of corruption and by organizing numerous workshops. In so doing, it helped establish 87 similar institutions throughout the country. An aptly titled feature article, "Under the nose of the fraud watchdogs," in the *Estado de São Paulo* (2007), the country's premier newspaper, mirrored our findings when it noted that Amarribo's activism in Ribeirão Bonito has not hindered its political elites from pocketing public funds.

Electoral Success and Corruption

Prima facie, the counterintuitive findings reported in the previous section suggest that voters do not care about corruption and that politicians do not fear either judicial or electoral sanctions. This section addresses this question and reports the findings of a test designed to evaluate this hypothesis. The literature and the media have reported scores of cases of corrupt politicians' electoral successes: from Silvio

Berlusconi in Italy to Paulo Maluf in Brazil, who, despite numerous judicial inquiries accusing them of a wide range of crimes, continue to be electorally successful. This is particularly true at the subnational level in Brazil where corrupt mayors and governors have been consistently re-elected despite judicial confirmation of their involvement in bribes and kickbacks.

Why do voters support corrupt politicians?¹² Our behavioral assumption is that once citizens are informed, they prefer noncorrupt politicians to corrupt ones. This assumption is also found in a number of current works on corruption (Persson and Tabellini 2000; Ferraz and Finan 2007a; Kurer 2001; Chang 2005; Lederman, Loayza, and Soares 2005). Votes for corrupt politicians stem from information asymmetries affecting voters and politicians. As the former cannot observe the politicians' true characters, this issue of information asymmetry generates moral problems. Any change raising the level of information available to voters has potential to affect the voters' ability to sanction politicians' deviant behavior. An alternative explanation focuses on how voters are affected by corrupt politicians' provision of private goods (Manzetti and Wilson 2007). There are two variants of this explanation. In the first instance, voters' behavior stems from their subjective evaluation of the benefits associated with these private goods. If these benefits exceed the utility generated by voting for noncorrupt politicians, voters would then support them. In the second variant, voters are trapped in a bad equilibrium. In such a scenario, corrupt politicians are re-elected due to the uncertainty of future electoral outcomes. This group would favor noncorruption to corruption; however, as they are recipients of private goods from an incumbent, they have no incentive to vote for a clean contestant. This is because they fear that the worst scenario may result (i.e., the re-election of the corrupt politician without their support, in which case they would lose access to benefits; Kurer 2001).

A third approach stresses supply factors. Voters may find it costly to vote for a clean contestant if they hold strong preferences that differ from the voters' ideal points—be these preferences ideological, religious, related to kinship, and so forth, in the other relevant issue dimension (Persson and Tabellini 2003). In the context of small towns where voters are split into two constituencies, and in which countries such as Brazil are usually structured around competing elite families, voters prefer to support corrupt politicians because the clean contestant's preferences may be far from their ideal points.

To establish the validity of these claims, we estimate the determinants of re-election success for mayors in the 2004 election.¹³ In this election, 64 of 87 mayors decided to pursue a second term by running for re-election. Since incumbent mayors who decide to run for re-election are not necessarily representative of a random sample of all incumbents legally able to run, a Heckman selection model was used to control for self-selection in the equation estimating the electoral success of mayors. A general re-election model could not be adequately defined if the prior decision to run is not considered, as this decision may be a consequence of the mayor's anticipation of the voters' negative reaction of the incumbent's misdeeds.

The only result of the Heckman Selection Model that we highlight here is the level of independence of the two equations: the selection (run for re-election) and the outcome (electoral success) models.¹⁴ STATA automatically tested whether $\rho = 0$. If $\rho = 0$, there is no selection bias and we can present the single-equation estimates. If $\rho \neq 0$, there is bias and we should present the estimates from the treatment selection model instead. The Heckman probit shows that $\rho = 0$. That is, the null hypothesis of independence was not rejected, indicating that those who ran for mayoral re-election were drawn from a random sample of the entire population of incumbents.

As we do not have to correct for selection bias, we decided to estimate the determinants of re-election success for mayors using a simple logit equation. The dependent variable is a dummy with the value of 1 if the mayor was re-elected and 0 if otherwise. This model uses two key independent variables: "corruption," which is a measure of mayor misbehavior during the entire term as described previously; and the "number of irregularities," detected by a special taskforce of the audit court. The taskforce audits were conducted in all municipalities from June to September, and the elections were held in October. The basic difference between the two independent variables is thus in the time frame to which the information refers to and when it was released. The information of the "number of irregularities," produced by the taskforce, were released on the audit court's Web site following the completion of each individual audit. Because of the timing of the released information and the possibility of using it in the electoral campaign, this variable may be interpreted to be representative of the level of information available to voters about the mayors' misdeeds. The context of the electoral race generates expectations regarding the

Table 6
Logit Estimates for Re-Election Success in the 2004 Elections ($N = 63$)

Variable	Coefficient	SE	z Statistics
Corruption	-0.5370	0.6382	-0.84
Campaign expenditure: Re-elected	0.0000**	6.36e ⁻⁰⁶	2.58
Campaign expenditure: Nonelected	-0.0000**	4.49e ⁻⁰⁶	-2.29
Number of irregularities by election operation	-0.8674**	0.4660	-1.86
Governor's party	1.2970*	0.7484	1.73
Pork	8.84e ⁻⁰⁸	1.51e ⁻⁰⁷	0.58
Constant	0.4950	0.6289	0.79

Note: Pseudo $R^2 = .1484$; Log likelihood = -34.709041 .

outcome of those audits, thereby enhancing their political visibility. Following the literature's prediction, we expected a negative relationship between both variables and electoral success. That is, the greater the number of irregularities detected and released, the smaller the chances of re-election.

Our control variables in this case are the campaign expenditure of the re-elected mayor as well as the campaign expenditure of the mayor who was not successfully re-elected. We expect a positive relationship with re-election success in the former scenario and a negative relationship in the latter. We also controlled for a situation where the mayor belonged to 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 discretion of resources that can be used for patronage and pork barrel policies (Samuels 2003).

Moreover, we control for the amount of pork barrel policies received by the municipality—that is, the total amount of appropriations resulting from individual and collective amendments presented by national legislators to the federal budgets from 2001 to 2004. In Brazil, legislators are allowed to amend the budget bill crafted by the executive with individual and collective amendments (i.e., amendments subscribed by two thirds of a state block of legislators). Usually those amendments target municipalities where legislators receive votes and are aimed to cater for legislators' constituencies demands, which is crucial for electoral survival in the open-list and proportional representation system adopted in Brazil (Pereira and Mueller 2004). If legislators can extract electoral benefits from those local policies, it is plausible to test to what extent mayors can also be electorally rewarded for those local policies, since their appropriations take place at the municipal level. We expect, thus, a positive relationship between pork appropriation and re-election.

As we can see in Table 6, the econometric results confirm our expectations of the role of information in voters' electoral choices. The test demonstrates that the number of irregularities perpetrated by mayors and detected by the audit taskforce during the electoral campaign provides a negative and statistically significant correlation with re-election results. Specifically, the larger the number of irregularities detected in the electoral year, the smaller the probability of getting re-elected. The marginal effect of each irregularity committed by the incumbent candidate during the electoral year on the probability of re-election negatively decreases by about 19%.¹⁵

Although the variable that measures corruption during the mayor's entire term in office does have a negative impact on the probability of re-election, it was not statistically significant. However, it is important to mention that the marginal effect of corruption decreases the probability of re-election by about 11%. These results suggest that voters' electoral choices are influenced by the timing of the exposure of candidate's corruption. When information on the candidates' corruption is released closer to the election date, its influence on voters' decisions notably increases. In turn, belonging to the governor's party increases the probability of mayors' re-election. The marginal effect of this variable increases the probability of re-election by 23.85%. A governor in Brazil, in addition to being a key political player at the subnational level, holds several governing tools.

As expected, those mayors who spend more in their electoral campaign tend to have higher chances of being re-elected. The marginal effect of campaign expenditure shows that for about each million of Reais (about five hundred thousand Dollars) spent during the electoral campaign, the chances of re-election of mayors increased by 3.5%. Finally, although the appropriation of federal legislators' amendments at the municipal level presented the

expected positive sign, this variable does not achieve statistical significance.

Our findings are at odds with other empirical works by Ferraz and Finan (2007a, 2007b). Regarding the equation that tests the determinants of re-election success, we share their findings. However, we worked with the entire population of municipalities in the state of Pernambuco¹⁶ and have the advantage of controlling for several political aspects such as campaign expenditure, political party affiliation, and allocation of pork barrel policies. None of these factors is considered in their work. In addition to these aspects, it should also be emphasized that the audits used in Ferraz and Finan's work come from the Federal Internal Comptroller, whereas the ones we use come from the State Supreme Audit Institution—an external control institution similar to the General Accounting Office in the United States (but with a focus on compliance rather than performance). Moreover, because the Federal Internal Comptroller is a federal body, its audits cover irregularities in the use of federal transfers only, not irregularities in the use of other types of municipal financial resources (transfers from state to municipalities, property taxes, sales taxes, etc.). Our data cover all types of expenditures irrespective of source. These differences may account for the contrasting findings between our article and the work by Finan and Ferraz.

Conclusions

We view our findings as complementing existing theories on the effects of re-election commitments. These theories are a subset of a class of theories emphasizing that re-election incentives are primarily determined by the relative costs of corruption. Central to these costs are the degree to which voters are likely to observe corrupt practices, the likelihood of being caught, and the impact of the lack of credible commitments for the provision of public goods, prompting politicians to offer private goods and illegal patrimonial transfers.

At the beginning of this article, we posed two important empirical questions with significant normative implications. We asked, for instance, why would mayors run again for office if their crimes were made public? We also sought to examine the extent to which citizens tend to reward or punish corrupt practices when they are disclosed by watchdogs. Our empirical findings lead to two important mixed normative conclusions regarding the quality of local

democracy and accountability in Brazil. The first conclusion is that when corruption is not likely to be detected and the pay-offs involved are very large (the bottom left cell in Figure 1), local politicians do not respond as the normative theory of democracy would lead us to believe. In other words, they do not align their interests with that of the voters. In fact, the opposite happens: Politicians may have an incentive to engage in corrupt practices when political competition is high (as would be the case of close electoral races), because offering voters these illegal transfers may enable them to stay in office. Moreover, politicians caught engaging in corrupt practices may have an incentive to seek re-election because they are best able to protect themselves from future sanctions from opponents if they are to remain in office.

The second conclusion is that although there is widespread corruption, citizens have been able to vote retrospectively, punishing local administrators who violate their mandates when investigations publicly reveal irregularities of those in office. This is particularly significant in electoral years. These conclusions suggest that enhancing the quality and quantity of information available to citizens is not enough to foreclose the incentive to commit crimes. Both functional audit work and law enforcement capacity are crucial. It remains to be seen how these aspects might emerge endogenously.

Notes

1. Keefer and Vlaicu (2007) argue in several articles that politicians offer private goods to citizens where parties are weak and nonprogrammatic because of their inability to credibly commit to a party program. This is indeed the case in many developing countries, including Brazil. The argument is consistent with our behavioral claim that the dominant strategy of mayors in Brazil is one where corruption is chosen over programmatic appeals. For a review of political agency models, see Besley (2006).

2. A descriptive table with information about mayors who ran for re-election and the electoral results is available on this journal's Web site (<http://prq.sagepub.com>) as supplemental materials.

3. See Speck (2002), for a discussion on audit courts in Brazil.

4. Irregularities include malfeasance, violations of bid procurement laws, overinvoicing, and forgery of payments to so-called phantom (i.e., existing in paper only) firms belonging to themselves or relatives while in office.

5. Article 71 of the Federal constitution of 1988 defines the objectives and competencies of the audit courts. These included the preparation of three different types of reports: (a) annual audit reports for all public administrative units; the law requires that the State Supreme Audit Institutions have to produce at least one audit brief for every unit under its jurisdiction; (b) annual reports on the global accounts of the executive and legislative branches at the state or municipal level; these could be reports

recommending the approval (or approval with reservations) or, more significantly, the rejection of the public accountant's report. The recommendation is thus submitted to the State Assembly, which can endorse or reject it; (c) audit briefs on the mandatory reports that state and municipal governments have to submit on the appropriation of the budget to be presented every 2 or 4 months. These are required by the fiscal responsibility law of 2000, and represent an important part of the State Supreme Audit Institution's workload. In the case a problem was identified, these reports work as a kind of early warning, a flashing red light, so to speak.

6. A highly respected institution, the State Audit Agency (State Supreme Audit Institution) has 616 employees, of which half are college graduates, and receives 1.5% of the state budget, over which it has financial and functional autonomy. Relatively to other states, its board is much more pluralistic and less amenable to political interference than similar institutions (Speck 2001).

7. A descriptive table with information about number of denouncements received and verified is available on this journal's Web site (<http://prq.sagepub.com>) as supplemental materials.

8. A descriptive table with information about Special Audits and Annual Report is available on this journal's Web site (<http://prq.sagepub.com>) as supplemental materials.

9. A descriptive table with information about the Number of Irregular Procedures during the Electoral Operation is available on the journal's Web site (<http://prq.sagepub.com>) as supplemental materials.

10. We are grateful for an anonymous reviewer who drew our attention to this issue.

11. This is a promising path for future research that we intend to explore.

12. A well-known phrase in the Brazilian political jargon is "rouba mas faz." This is a justification used by some voters to tolerate corruption, provided that some tangible results are offered. This statement is associated to a former governor of Sao Paulo in the 1940s who was said to be efficient but corrupt.

13. We test re-election success in the 2004 election only because we unfortunately had no access to campaign expenditure data for the 2000 election.

14. The Heckman probit estimation is available on this journal's Web site (<http://prq.sagepub.com>) as supplemental materials.

15. The marginal effects were calculated at the mean value of all variables. The table showing the marginal effect results is available at this journal Web site (<http://prq.sagepub.com>) as supplemental materials.

16. It is important to recognize that a randomized sample, as used by Ferraz and Finan (2007a, 2007b), certainly provides theoretical leverage and rigor to the empirical investigation. In our case, however, instead of working with a randomized sample of audited municipalities, we obtained data from the entire population of municipalities in the state of Pernambuco. Thus, our data are also not vulnerable to any selection bias.

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