# Government transparency and political clientelism: Evidence from randomized anti-corruption audits in Brazil

**Gustavo J. Bobonis**[1]  |  **Paul J. Gertler**[2]  |

**Marco Gonzalez-Navarro**[3]  |  **Simeon Nichter**[4]

[1]University of Toronto and BREAD. gustavo.bobonis@utoronto.ca

[2]University of California, Berkeley, NBER, BREAD, and J-PAL. gertler@berkeley.edu

[3]University of California, Berkeley and J-PAL. marcog@berkeley.edu

[4]University of California, San Diego. nichter@ucsd.edu

Political clientelism is considered a fundamental reason why politicians are not accountable and responsive to their constituencies. We study whether transparency initiatives – more specifically, top-down anti-corruption audits – can reduce the incidence of vote buying and political clientelism in the context of Brazil's municipal government anti-corruption program. This program selected municipalities at random to audit municipal finances, which allows for causal inference. We combine the audit program data for a sample of municipalities in the country's Northeast region with a dedicated longitudinal survey we conducted in 2011-2013 of a large representative sample of impoverished rural households. This enables us to estimate short and long-term effects of the government anti-corruption audits on subsequent levels of vote buying and political clientelism. We observe a substantial 3.2 percentage point (52 percent) reduction in the probability that candidates engage in vote buying during electoral periods; these effects persist across electoral terms. Additional evidence supports the view that politicians reduce their use of clientelist practices in the short-run; citizens internalize this, and modify their attitudes towards and willingness to participate in clientelist relationships in the longer-run.

# Transparencia gubernamental y clientelismo político: evidencia de auditorías anticorrupción aleatorias en Brasil

**Gustavo J. Bobonis[1]** | **Paul J. Gertler[2]** |

**Marco Gonzalez-Navarro[3]** | **Simeon Nichter[4]**

[1]University of Toronto y BREAD.
gustavo.bobonis@utoronto.ca

[2]University of California, Berkeley,
NBER, BREAD y J-PAL.
gertler@berkeley.edu

[3]University of California, Berkeley y
J-PAL. marcog@berkeley.edu

[4]University of California, San Diego.
nichter@ucsd.edu

El clientelismo político se considera una razón fundamental por la cual los políticos no son responsables ni responden a sus electores. Estudiamos si auditorías anticorrupción pueden reducir la incidencia de la compra de votos y el clientelismo político en el contexto del programa anticorrupción del gobierno municipal de Brasil. Este programa seleccionó municipios al azar para auditar las finanzas municipales, lo que permite la inferencia causal. Combinamos los datos del programa de auditoría para una muestra de municipios en la región noreste del país con una encuesta longitudinal dedicada que realizamos en 2011-2013 de una gran muestra representativa de hogares rurales empobrecidos. Esto nos permite estimar los efectos a corto y largo plazo de las auditorías anticorrupción del gobierno, en los niveles posteriores de compra de votos y clientelismo político. Observamos una reducción sustancial de 3.2 puntos porcentuales (52 por ciento) en la probabilidad de que los candidatos participen en la compra de votos durante los períodos electorales; estos efectos persisten en todos los términos electorales. Evidencia adicional respalda la opinión de que los políticos reducen su uso de prácticas clientelistas a corto plazo; los ciudadanos internalizan esto y modifican sus actitudes y su disposición a participar en las relaciones clientelares a largo plazo.

## 1 | INTRODUCTION

Democratic political institutions often fail to represent the interests of the poor and vulnerable, who frequently comprise the vast majority of constituents. An expansive literature points to vote buying and political clientelism – the contingent exchange of private benefits for political support (Kitschelt and Wilkinson, 2007) – as fundamental reasons why politicians are not accountable and responsive to citizens in many countries (Stokes, 2005; Keefer, 2007). Indeed, numerous studies argue that clientelist political equilibria contribute to a host of problems, including corruption, policies that disproportionately benefit political elites, restricted political competition, and the under-provision of public goods.[1]

Governments and civil society organizations have undertaken many efforts to reduce the prevalence of vote buying and clientelism, such as encouraging voters to refuse offers of material benefits, underscoring the importance of voting in accordance with one's conscience, and providing information about candidates' qualifications (e.g., Vicente and Wantchekon, 2009; Hicken et al., 2015; Blattman et al., 2017). The empirical literature suggests that such initiatives often have moderate, mixed effects on reducing clientelism in the *short-run*; however, there remains no evidence about whether their effectiveness persists for longer durations. Meanwhile, supply-side efforts are undermined by the cost of policies that tackle politicians' underlying incentives to engage in clientelism: examples include land property rights reforms, centrally mandated social insurance, and asset transfer programs (e.g., Bobonis et al., 2017; Frey, 2017; Larreguy, Marshall, and Trucco, 2015). As such, there remains a pressing need for additional evidence about interventions that can reduce vote buying and clientelism in a persistent and cost-effective manner.

We study whether transparency initiatives —more specifically, top-down municipal government anti-corruption audits— can reduce the incidence of vote buying and political clientelism. Our project focuses on the effects of Brazil's anti-corruption program, which has conducted over 2,200 random audits since its 2003 initiation, reaching over one-third of Brazil's 5,570 municipalities. We combine audit data for a sample of municipalities in the country's Northeast region from 2004 to 2012, with a unique longitudinal household survey that we conducted in 2011-2013 of a large representative sample of impoverished rural households across 40 municipalities in the region. This novel dataset enables us to estimate causal effects of the government anti-corruption audits on subsequent levels of vote buying and political clientelism in those municipalities. Specifically, the design allows us to study audits' *short-term* effects within an incumbent mayor's term on vote buying during the 2012 municipal elections, as well as their *long-term* effects on clientelist interactions in the mayoral term following an anti-corruption audit.

The rich nature of our individual survey data also allows us to study an extensive set of mechanisms through which such transparency initiatives can affect clientelism. For instance, we study whether audits affect politician-initiated (supply side) or citizen-initiated (demand-side) responses; whether they change citizens' perceptions of honesty, competence, and accessibility of local officials, their beliefs and attitudes towards vote buying, their electoral preferences and behaviors; and whether politicians modify their clientelist strategies given increases in transparency, political, and legal accountability.

We find that the anti-corruption audits lead to a substantial 3.2 percentage point reduction in the probability that candidates engage in vote buying during electoral periods; a 52 percent reduction relative to households in the comparison group. We also explore the persistence of these effects by decomposing audits executed in the current term —to

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[1]See Bates (1991); Kitschelt and Wilkinson (2007); Baland and Robinson (2008); Piattoni (2001); Bardhan and Mookherjee (2012); Robinson and Verdier (2013); Stokes et al. (2013); and Anderson, Francois, and Kotwal (2015) as examples of the literature characterizing clientelist politics and its consequences.

measure short-term effects-— from those executed in a preceding electoral term —to measure long-term effects. Our estimates of short-term effects imply that candidates are 3.7 percentage points less willing to deliver the private goods they had offered to citizens in exchange for votes during the first electoral campaign following an audit. The effects persist partially into the subsequent electoral cycle; our estimates imply a 2.1 percentage point reduction in vote buying in the subsequent electoral term. This evidence points to a substantial reduction in clientelist interactions resulting from the municipal-level accountability initiative.

What explains these results? The evidence points to the presence of a complex set of strategic responses to accountability schemes: citizens respond to politicians' reduction in the use of clientelist practices and modify their attitudes towards and willingness to participate in clientelist relationships in the longer-run. Consistent with the argument above, in the longer-run citizens in audited municipalities are 2.2 to 4.4 percentage points less likely to be willing to trade their votes for money (R$50 or R$100)[2] and are also less likely to agree with the statement that politicians typically target core supporters when buying votes. Finally, in audited municipalities, citizens report being 3.7 percentage points (51 percent) less likely to accept money from a candidate and then renege on the agreement to vote for her. Overall, our study points to the presence of a complex set of strategic responses to accountability schemes such as top-down anti-corruption audits in nascent democracies, in ways that can persistently help reduce rent-seeking and corruption.

The study makes several contributions to the political economy literature. First, it is the first to identify whether top-down anti-corruption initiatives can be effective in tackling clientelism, both in the short-run and longer-run. This contribution substantially extends research in Brazil on how voter audits reduce voter buying– a form of clientelism in which politicians reward citizens for illegally transferring their voter registrations to neighboring districts – with important consequences for government policies and performance (e.g., Hidalgo and Nichter, 2016; Karim, 2017). Second, the study provides evidence about a potentially important mechanism that helps to explain robust evidence that anti-corruption audits can reduce rent-seeking and corruption (e.g., Olken, 2007; Bobonis, Cámara Fuertes, and Schwabe, 2016; Avis, Ferraz, and Finan, 2018; Gans-Morse et al., 2018). Our work will also help to fill important gaps in policy debates about the importance of transparency for improving local governance in developing countries, as surveyed recently in Khemani et al., (2016).

The article is organized as follows. Section 2 provides contextual information about the anti-corruption audit program of municipal governments and patterns of political clientelism in Northeast Brazil. We follow with a description of our data sources in Section 3, along with the empirical methodology. Section 4 presents the central empirical results of our study. Finally, Section 5 concludes with a discussion of findings and their broader implications.

## 2 | CONTEXT

### 2.1 | Poverty and political clientelism in Northeast Brazil
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Political clientelism and vote buying are common in much of Brazil; for example, over a thousand politicians have been ousted by electoral courts since 2000 for delivering private goods to citizens during political campaigns (MCCE, 2012). Based on survey data from the

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[2]The exchange rate was USD$1 = R$2.05 on 12/31/2012.

[3]This subsection borrows from the context description of Bobonis et al., (2017), our previous study on vulnerability and clientelism in Northeast Brazil.

Latin American Public Opinion Project, eleven (11) percent of voters across all of Brazil were offered a benefit in exchange for their vote in 2014 state/federal elections (LAPOP, 2014). The Northeast region of the country, encompassing most of Brazil's semi-arid zone, is known for disproportionately high levels of vote buying and clientelism. The zone spans over one million square kilometers, and its population of over 28 million residents is disproportionately poor.

As documented in our previous work, clientelism is widespread in the region. Households' substantial vulnerability to shocks leads many to request assistance from local politicians in exchange for votes (Bobonis et al., 2017). Our longitudinal data reveal that 21.3 percent of survey respondents asked for private help from a mayoral or councilor candidate during the 2012 election year. Moreover, 8.3 percent of respondents made such requests to those same politicians during the following non-election year. These demands increase amidst adverse shocks such as droughts. While not all requests involve life necessities, most do —about a third of requests in both years involved health care, and another quarter involved water. Local politicians have considerable discretion and resources to fulfill citizens' requests. When responding to such requests, politicians frequently mete out assistance using political criteria, as the number of demands often exceeds available resources. In rural Northeast Brazil, mayors and city councilors often favor citizens with whom they have ongoing clientelist relationships, in which material benefits are exchanged for political support (Nichter, 2018).

Local politicians also engage in the practice of vote buying during electoral campaigns. Based on our survey data, 20.1 percent of citizens interviewed were promised benefits to voters in exchange for their vote, and approximately 30 percent of these promises were actually delivered. A substantial subset of citizens also report being willing to trade their votes for money. In hypothetical questions regarding their willingness to trade votes for money, approximately 10.9 percent are willing to do so for 50 reais, a figure that rises to 16.1 percent if offered 100 reais.

Incumbent politicians usually have greater financial and organizational resources to engage in clientelism, not least because they can more easily access government coffers, programs, and employees (e.g., Gallego and Wantchekon, 2012; Stokes, 2009). Studies suggest that the ability to control public programs and employment helps incumbents' electoral performance (Schady, 2000; Folke, Hirano, and Snyder, 2011), and experimental evidence suggests that clientelism is more effective for incumbent candidates (Wantchekon, 2003).

In line with the general consensus that clientelism tends to favor incumbent politicians, our survey data suggest incumbents are more likely to fulfill citizens' requests. Respondents were more likely to have received private benefits from incumbent than non-incumbent politicians. During the 2012 election year, 7.0 percent of respondents had requests fulfilled by incumbent candidates, versus 5.7 percent by challenger candidates. The disparity is even starker during the year after the 2012 election, reaching an order of magnitude: whereas 3.6 percent of respondents had requests fulfilled by politicians in office, only 0.36 percent had requests fulfilled by politicians out of office.

## 2.2 | Anti-corruption audit program of municipal governments

We study the consequences of audits from Brazil's anti-corruption program targeted at municipal governments, executed by the *Controladoria Geral da União* (CGU) (Office of the Comptroller General). This program, entitled *Programa de Fiscalização por Sorteios Públicos* (Monitoring Program by Public Lottery) randomly audits municipalities by investigating their use of federal funds. The lotteries are held publicly, with all municipalities below

500,000 residents eligible for selection (Avis, Ferraz, and Finan, 2018).[4] Lotteries are conducted by state, so the probability of selection for an audit in a given lottery is constant across municipalities in a given state. The probability of audits also varies over time within a state depending on fiscal resources available for the program.

Once the municipal governments in a given lottery are selected, the CGU collects information on the federal funds transferred to these municipal governments during the previous three to four years and randomly selects a set of orders for inspection corresponding to distinct municipal programs implemented with the use of federal funds. The CGU then sends a team of approximately ten auditors to the municipality to examine these accounts and documents, as well as to inspect for the existence and quality of public work construction and delivery of public services. Once the audit is complete, the team prepares a report that is centrally evaluated, and a final report is issued and disseminated to the public and to the media via internet. The program has been an important instrument in Brazil's efforts to combat political corruption: the information obtained is widely used in political campaigns and in voters' selection and sanctioning of municipal politicians via dissemination in the media (Ferraz and Finan, 2008), and have assisted federal law enforcement and judicial entities build cases against corrupt officials (Avis, Ferraz, and Finan, 2018).

## 3 | DATA

### 3.1 | Study population and sample

Our study's population consists of vulnerable rural households in Brazil's semi-arid zone lacking reliable access to drinking water. The sample selection of households involved two steps. First, municipalities were randomly selected using weights proportional to the number of households without access to either piped water or cisterns, according to the most recent administrative data from the federal government's *Cadastro Único*. In the second step, clusters of neighboring households (i.e., *bairros logradouros* in the *Cadastro Único*) were selected at random within the sample municipalities. Up to six eligible households were interviewed in each cluster. In order to ensure independence of observations across household clusters, we imposed a restriction that clusters be located at least two kilometers away from each other. Our surveys were conducted in 454 rural neighborhood clusters in 40 municipalities, located in all nine states of the semi-arid region.

### 3.2 | Household surveys

Our face-to-face panel survey spanned nearly three years. We conducted an in-depth baseline household survey of 1,189 heads of households in October-December 2011, gathering detailed household characteristics as well as information about individual family members. This first survey wave provides a rich set of household and individual-level characteristics such as water access, education, health, depression, labor supply, and food insecurity.

The next two waves involved individual-level surveys of all present household members at least 18 years of age. These waves provide one of the first longitudinal surveys ever fielded investigating clientelism during both election (2012) and non-election (2013) years. In order to study political interactions around the campaign season, the second wave was fielded in November-December 2012, immediately after the October 2012 municipal elections. This wave successfully contacted 1,649 households in the sample. Given that all adults present in these households were interviewed, this second wave totaled 3,685 individual interviews. To capture effects during a non-election period, the third wave was

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[4]Larger municipalities are always audited.

fielded in November-December 2013. This wave successfully reached 2,115 households in the sample, with a total of 3,761 individuals interviewed.

We measure a rich set of citizen-politician interactions, as well as citizens' preferences, attitudes, and beliefs regarding politics and the municipality-level political process. Specifically, we have measures of citizens' requests for assistance from politician networks[5] and we identify individuals who are likely to be in clientelist relationships.[6] Finally, we measure standard strategies employed by political networks – such as candidate visits as well as promises and deliveries of private goods in exchange for political support. We also collected substantial data on voters' willingness to trade votes for money, attitudes towards clientelism and vote buying, and perceptions of politicians' attributes. We discuss results based on a number of these measures below.

### 3.3 | Audit data and other municipal characteristics

We merge the individual and household survey data with audit information from Brazil's CGU anti-corruption Monitoring Program. Of the 40 municipalities covered by our longitudinal survey, 15 were audited (at least once) between 2004 and 2012; seven during the 2004-08 electoral term and eight during the 2009-12 term. We have data on the outcomes of the audits for 11 of these 15 audits, available from the CGU database for audits carried out during March 2006 onwards, aggregated to the audit outcome by Avis, Ferraz, and Finan (2018).[7] For each finding, the audit reports describe the irregularity found and classify it as: (1) an act of mismanagement, or (2) an act of (moderate or severe) corruption.

Data on several socioeconomic and demographic municipal characteristics come from the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística (IBGE)), particularly population levels, share of the population that lives in urban areas, income per capita, share of the population that is literate, and income inequality, based on the 2000 population census.

Given the reduced sample of (audited and non-audited) municipalities in our study, we examine whether the set of audited municipalities in our study is comparable to the broader group of these across the states of the region; Table 1 reports descriptive statistics of these two groups. Given the sampling design, our study sample of municipalities is broadly similar to the broader sample of municipalities. As expected, sample municipalities are significantly larger in population size given that the first stage sample proportional to number of households without access to piped or cisterns water sources. These municipalities

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[5]During the 2012 election year, 21.3 percent of survey respondents asked for private help from a mayoral or councilor candidate, and 8.3 percent made requests of those politicians during the following non-election year. The composition of demands during both years reveals that citizens' requests are motivated by vital needs such as medicine, medical treatments, and water.

[6]That is, citizens who frequently conversed with politicians at least monthly before an electoral campaign. While clientelism is not the only reason for such conversations, citizens who interact so frequently with politicians outside of campaign periods are especially likely to be in clientelist relations. In the first half of 2012 — before that year's election campaign officially began in July — 18.4 percent of survey respondents talked at least monthly with a local politician. While these citizens most often conversed with a single councilor, their relationships might also be expected to yield political support for that councilor's allied mayoral candidate: 71.8 percent of respondents reported voting for a mayor and councilor of the same political group or coalition. These frequent interactors are more likely to request help from politicians: 34.5 percent of these request assistance vs. 19.8 percent of those who do not engage as frequently with local politicians. It is also the case that they are more likely to receive assistance: 21.8 percent of frequent interactors have fulfilled requests whereas only 10.4 percent of those not in these relationships do. See Nichter (2018) and Bobonis et al. (2017) for a detailed discussion of measures of clitentelist political relationships in Brazil.

[7]We are grateful to Eric Avis, Claudio Ferraz, and Fred Finan for making the CGU data at the audit level available to us.

show slightly higher levels of income inequality (Panel A). The timing and outcomes of the audits in the study sample are also similar to those in the broader sample of audited municipalities. That said, comparing audit outcomes within state and lottery round, our sample of municipalities shows a higher incidence of irregularities and acts of corruption, but not acts of mismanagement (Panel B).

### 3.4 | Empirical methodology

The study's research design relies on the random assignment of anti-corruption audits across municipalities and time. We compare individual survey responses of residents in municipalities that faced an anti-corruption audit before the 2012 election to those in municipalities that did not.

Specifically, we estimate the following set of empirical models:

$$y_{ihcms,2012} = \alpha_s + \beta_1 \text{Audit}_{mst} + \epsilon_{ihcms,2012} \tag{1}$$

where $y_{ihcms,2012}$ represents the outcome for individual $i$, in household $h$, neighborhood cluster $c$, in municipality $m$ and state $s$; $\text{Audit}_{mst}$ represents an indicator variable for whether an anti-corruption audit took place in the municipality during the period $t$; $\alpha_s$ is a vector of state fixed effects; and $\epsilon_{ihcms,2012}$ represents unobserved determinants of the individual's outcome in 2012. Given random assignment of audits across municipalities over time, coefficient $\beta_1$ captures the intent to treat effect of municipal audits on the political economy outcomes of interest.

We also estimate models to distinguish short-term and longer-term effects of an audit. To decompose effects, these models employ an indicator variable for having been audited during the incumbent's electoral term (2009-12) ($\text{Audit}_{ms,09-12}$), as well as one for having been audited during the preceding electoral term (2004-08) ($\text{Audit}_{ms,04-08}$). The former variable captures short-term effects, while the latter captures how preceding term audits influence political interactions in subsequent elections. Since the government's audit random assignment process is stratified at the state level, we incorporate state fixed effects in each specification. We allow error terms to be correlated across individuals within municipalities (the unit of random assignment). Given that we have a sample of 40 municipalities, 15 which experienced audits, we report standard errors based on cluster-robust variance estimation CRVE, and implement asymptotic refinement methods to construct standard errors and conduct inference (e.g., wild cluster bootstrap-t tests, permutation tests).

## 4 | RESULTS

We first present evidence regarding the relationship between audits and clientelist interactions (see Table 2). We find that the anti-corruption audits lead to a substantial 3.2 percentage point reduction in the probability that candidates engage in vote buying during electoral periods; a 52 percent reduction relative to households in the comparison group (Panel A, column 4). We also explore the persistence of these effects by decomposing audits executed in the current term —to measure short-term effects— from those executed in a preceding electoral term —to measure long-term effects. Our estimates of short-term effects imply that candidates are 3.7 percentage points less willing to deliver the private goods they had offered to citizens in exchange for votes during the first electoral campaign following an audit (Panel B, column 4). The effects persist partially into the subsequent electoral cycle; our estimates imply a 2.1 percentage point reduction in vote buying in the subsequent

TABLE 1  Municipality and audit characteristics

| | Municipalities in household survey sample w/audits (1) | Other municipalities in Northeastern states w/audits (2) | Difference (within State audit round) (3) |
|---|---|---|---|
| Panel A: Municipality characteristics | | | |
| Population (1000's) | 50.6 | 19.6 | 26.5** |
| | [69.7] | [24.0] | (8.4) |
| Share urban | 0.484 | 0.482 | -0.050 |
| | [0.246] | [0.219] | (0.068) |
| Income PC | 182.4 | 173.1 | -3.9 |
| | [96.5] | [61.8] | (19.1) |
| Illiteracy rate | 0.385 | 0.374 | 0.009 |
| | [0.080] | [0.089] | (0.025) |
| Gini | 0.603 | 0.555 | 0.043** |
| | [0.061] | [0.057] | (0.020) |
| Panel B: Audit characteristics | | | |
| Year of audit | 2009.4 | 2009.3 | -0.092 |
| | [1.5] | [2.0] | (0.099) |
| Number of service orders | 3.27 | 3.20 | 0.010 |
| | [0.29] | [0.30] | (0.080) |
| Number of irregularities | 102.5 | 90.7 | -22.1** |
| | [39.9] | [45.9] | (10.55) |
| Acts of mismanagement | 17.7 | 18.1 | -3.3 |
| | [6.6] | [10.5] | (3.0) |
| Acts of corruption | 84.7 | 72.5 | -18.8* |
| | [39.1] | [42.4] | (9.7) |
| N | 11 | 210 | |

*Notes:* Standard deviations in brackets; heteroskedasticity-robust standard errors of in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

TABLE 2   Effects of audits on clientelism interactions, 2012 elections

| | Frequent Interactor | | Candidate Offers | | Private help |
|---|---|---|---|---|---|
| | Before campaign | During campaign | Promised | Delivered | requests |
| | (1) | (2) | (3) | (4) | (5) |
| **Panel A: Overall effect** | | | | | |
| Audit | -0.059*** | -0.034** | -0.001 | -0.032*** | -0.045*** |
| | (0.014) | (0.016) | (0.017) | (0.010) | (0.015) |
| **Panel B: Effects by audit period** | | | | | |
| Audit, current term (2009-12) | -0.046*** | -0.058*** | -0.021 | -0.037*** | -0.079*** |
| | (0.018) | (0.020) | (0.021) | (0.012) | (0.018) |
| Audit, past term (2004-08) | -0.049*** | -0.012 | 0.013 | -0.021** | -0.020 |
| | (0.015) | (0.017) | (0.018) | (0.010) | (0.016) |
| State FE | Yes | Yes | Yes | Yes | Yes |
| Observations | 3668 | 3668 | 3685 | 3685 | 3668 |
| Mean of Y : Control group | 0.148 | 0.186 | 0.201 | 0.061 | 0.144 |

*Notes:* Y is the outcome variable: Probability of political interaction. Number of municipalities: 40. Number of audited municipalities: 15. Wild cluster bootstrap standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

electoral term (Panel B, column 4).

What explains this reduction in clientelism between local politicians and poor households? First note in column (3) that politicians in audited municipalities promise goods at the same rate as those in non-audited municipalities. We had seen in column 4 that actual delivery of promised goods had collapsed. This is consistent with the politician being less able to dip into municipal coffers to deliver on promised goods.

This breakdown in reliability of the relationship is reflected in a much lower degree of interactions between candidates and their political clients. We find a significant 5.9 percentage point (approximately 40 percent) decrease in the probability that individuals report having personal interactions with political candidates, following audits before the electoral campaign begins (Panel A, column 1). This relationship remains, albeit is more muted, after the campaign begins (column 2).

Finally, reduced interactions between politicians and citizens are accompanied by a 4.5 percentage points (31.2 percent) reduction in the probability of making requests to political patrons (column 5). The overall evidence thus points to a substantial reduction in clientelist interactions resulting from the municipal-level accountability initiative. We find evidence for the mechanism underlying this result to be the reduced ability of politicians to deliver clientelistic goods in spite of promises made, which leads to citizens investing less time seeking out politicians to request goods and ultimately in less goods being contingently delivered in exchange for votes.

These effects are clearest for the administration that received an audit, but some of these effects persists into subsequent administrations; for example the reduced ability to make good on promises to deliver private goods in exchange for votes, and in terms of reducing clientelistic interactions between politicians and citizens (Panel B, column 1)

Additional evidence points to the presence of a complex set of strategic responses to

TABLE 3   Effects of audits on voters' willingness to sell vote

|  | Willing to trade vote for money | | Think politicians target core | Declared support and switched |
|---|---|---|---|---|
|  | 50 R | 100 R | supporters | vote |
|  | (1) | (2) | (3) | (4) |
| **Panel A: Overall effect** | | | | |
| Audit | -0.022* | -0.044*** | -0.051** | -0.037*** |
|  | (0.013) | (0.015) | (0.021) | (0.011) |
| **Panel B: Effects by audit period** | | | | |
| Audit, current term (2009-12) | 0.013 | -0.021 | -0.011 | -0.029** |
|  | (0.016 | (0.019) | (0.025) | (0.013) |
| Audit, past term (2004-08) | -0.028** | -0.041** | -0.075*** | -0.036*** |
|  | (0.014) | (0.016) | (0.022) | (0.011) |
| State FE | Yes | Yes | Yes | Yes |
| Observations | 3648 | 3647 | 3685 | 3685 |
| Mean of Y : Control group | 0.109 | 0.161 | 0.419 | 0.073 |

*Notes:* Y is the outcome variable: Probability of political interaction. Number of municipalities: 40. Number of audited municipalities: 15. Wild cluster bootstrap standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

accountability schemes: citizens respond to politicians' reduction in the use of clientelist practices and modify their attitudes towards and willingness to participate in clientelist relationships in the longer-run. We explore this empirically by measuring the causal effects of audits on citizens' attitudes and preferences towards vote buying (see Table 3). Consistent with the argument above, citizens in audited municipalities are 2.2 to 4.4 percentage points less likely to be willing to trade their votes for money (R$50 or R$100)[8] (columns 1-2) and are also less likely to agree with the statement that politicians typically target core supporters when buying votes (column 3). Finally, in audited municipalities, citizens report being 3.7 percentage points (51 percent) less likely to accept money from a candidate and then renege on the agreement to vote for her (column 4). These effects are take time to surface and are concentrated in municipalities audited in a preceding electoral term (Panel B).

Audits can reveal different underlying levels of corruption across municipalities. To investigate whether the effects we have documented up to this point are due to audits per se, or whether they are due to changes in behavior of politicians in more corrupt administrations, in Table 4 we to our mains specification a control for the number of irregularities as a share of service orders (audited programs) in a municipality audit. A higher value indicates that the audit revealed more corruption in the municipality. Panel A shows that all of the significant effects we discussed above for audits are no longer significant once we control for the degree of corruption. This is consistent with the hypothesis that the effects of audits we documented above are in fact due to the effects of audits among the set of more corrupt administrations. Results are similar in Panel B.

Overall, our study provides evidence for the presence of a complex set of strategic responses to accountability schemes such as top-down anti-corruption audits in nascent

[8]The exchange rate was USD$1 = R$2.05 on 12/31/2012.

TABLE 4 Effects of audits on clientelism interactions controlling for irregularities, 2012 elections

| | Frequent interactor | | Candidate offers | | Private help |
|---|---|---|---|---|---|
| | Before campaign | During campaign | Promised | Delivered | requests |
| | (1) | (2) | (3) | (4) | (5) |
| Panel A: Overall effect | | | | | |
| Audit | -0.052 | -0.018 | -0.003 | -0.029 | -0.038 |
| | (1.000) | (0.402) | (0.843) | (1.000) | (0.304) |
| Irregularities / Service orders | -0.035 | -0.074*** | 0.006 | -0.015 | -0.034 |
| | (1.000) | (0.006) | (0.786) | (1.000) | (0.441) |
| Panel B: Effects by audit period | | | | | |
| Audit, current term (2009-12) | -0.000 | -0.016 | -0.064 | -0.037 | -0.103 |
| | (0.975) | (1.000) | (0.330) | (0.216) | (0.107) |
| Audit, past term (2004-08) | -0.048** | -0.011 | 0.012 | -0.021 | -0.020 |
| | (0.025) | (1.000) | (0.737) | (0.222) | (0.616) |
| Irregularities / Service orders | -0.077* | -0.071 | 0.071 | -0.001 | 0.040 |
| | (0.096) | (1.000) | (0.387) | (0.968) | (0.472) |
| State FE | Yes | Yes | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes | Yes |
| Observations | 3668 | 3668 | 3685 | 3685 | 3668 |
| Mean of Y : Control group | 0.148 | 0.186 | 0.201 | 0.061 | 0.144 |

*Notes:* Y is the outcome variable: Probability of political interaction. Number of municipalities: 40. Number of audited municipalities: 15. Robust *p*-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

democracies, in ways that help persistently reduce rent-seeking and corruption.

## 5 | CONCLUSION

The objective of this study is to understand the effects of randomly assigned municipal government audits on political clientelism. Preliminary findings point to important effects: (a) evidence of substantial short-term effects; (b) evidence of some degree of persistence in the reduction in clientelism as well as mechanisms explaining it. The study is the first to identify whether top-down anti-corruption initiatives can be effective in tackling clientelism. We provide evidence for a potentially important mechanism that helps to explain robust evidence that anti-corruption audits can improve the conduct of electoral politics. Our evidence points to the presence of a complex set of strategic responses to accountability schemes: citizens respond to politicians' reduction in their capacity to provide promised clientelist benefits. This in turn modifies citizens' attitudes towards and willingness to participate in clientelist relationships in the longer-run. Our work also helps to fill important gaps in policy debates about the importance of transparency for improving local governance in developing countries.

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