The politician, the party, and the president: How do political scandals propagate across the party network?

Arieda Muço

CEU

June 13, 2023

Motivation

- Political representation is the cornerstone of modern political systems: voters elect politicians to represent them
- Personal interests rather than those of their constituents (Grossman, 2001)
- Deviation from the original mission may undermine their own electoral outcomes and career prospects as well as those of the organization they represent (Tirole, 1996)
- A growing literature debates the existence of electoral spillovers: individual candidates affect party's outcomes in other election types

Research question

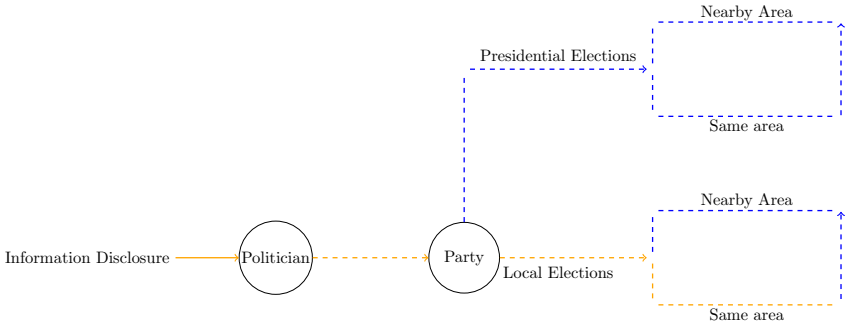
Does information disclosure about a corrupt local politician affects the party of the politician?

- Party is an organization with local and national representation

Main hypothesis: individual wrongdoing may not remain confined to the person or area they originate. Electoral spillovers in neighboring areas and presidential candidates might emerge.

Visualizing research question and literature

- Ferraz and Finan (2008), Banerjee et al (2011), Costas et al (2012), and Bobonis et al (2019) focus on the effect of information about the politician on the electoral outcomes in the same area where information is discloses
- Larreguy, Marshall and Snyder (2014) focus on the effect of on the party of the politician in the same area where information is discloses



- Spillovers on the party are shown with dashed lines. In orange is depicted the previous literature and in blue the novel contributions of this paper

Testing ground

- I am going to use Brazil as a testing ground
- Random Audits which allow for the question to be answered causally
- Rich institutional setting – Weak candidate party tie at the local level versus strong ties in national level politics
  - Mayors switch party, often during their mandate
  - The presidential party, in the sample period, has only 3 percent of the municipalities, weak party support, and engages in vote buying – Mensalão scandal

Identification Strategy

- Random Audits in Brazilian local governments
- Spillover effect on the party in the audited municipality and neighboring areas, in local and presidential election
  - Neighboring areas are defined as those that share antenna coverage with the audited town
- To understand if the severity of corruption matters, I will use Natural Language Processing methods

Preview of the findings

In local elections

- In the audited municipality: An audit affect the vote support for the party, regardless of the corruption disclosed
- In nearby areas: Voters react only if corruption disclosed in the audited municipality is high enough

In presidential elections

- In the audited municipality: Voters punish the party in national elections if there if the local mayor was audited, and threshold effects emerge
- In nearby areas: Voters punish the party in national elections if there if the local mayor was audited, and threshold emerge

Outline

- Institutional Background
- Corruption Index
- Effects of Audit Investigation and Intensity of Corruption
- Alternative Interpretations
- Conclusions

Institutional Background

Brazilian Municipalities

- Brazil has 5570 municipalities, and 27 federal units comprising 26 states and the Federal District, where the national capital, Brasilia, is located
- Municipalities are the level of public administration in the country. Responsible for providing goods and services
- Municipal revenues are generated by taxes and transfers

Political System

- Multi-party system at local and higher governments
- More than 30 parties participate in local elections
- Two main parties have dominated the race for president since the democratization of the country (PT and PSDB)

Justiça Eleitoral

Municipal Elections

TREINAMENTO

2° turno

PREFEITO Mayor

Vice-Prefeito ViceMayor

91 PEsp PARTIDO DOS ESPORTES

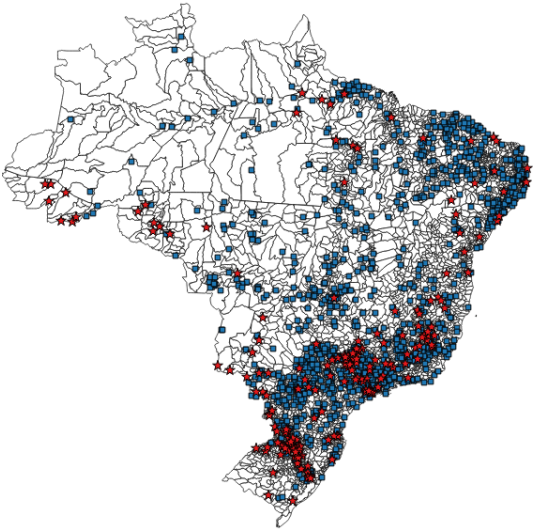
60 % of candidates switched party in the 2000 elections

92 PMus PARTIDO DOS RITMOS MUSICAIS

Forró

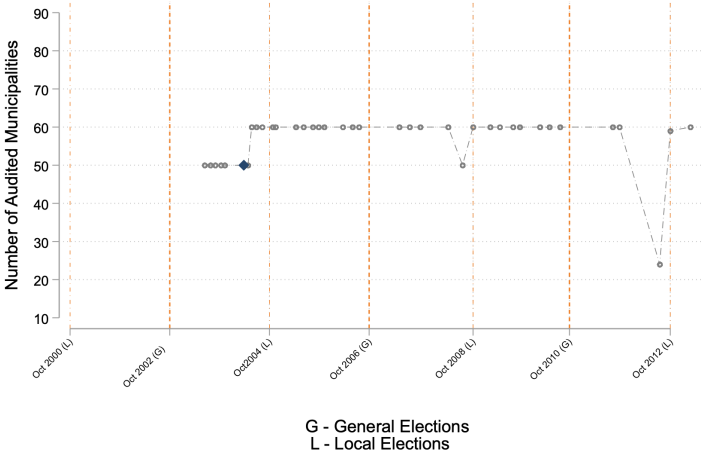
Samba

PT and PSDB municipalities

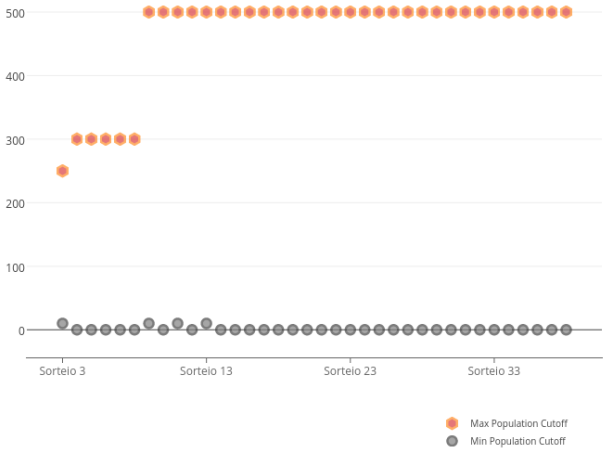


The audit program

Timeline


Number of Audited Municipalities
90
80
70
60
50
40
30
20
10
Oct 2000 (L)
Oct 2002 (G)
Oct2004 (L)
Oct 2006 (G)
Oct 2008 (L)
Oct 2010 (G)
Oct 2012 (L)
G - General Elections
L - Local Elections

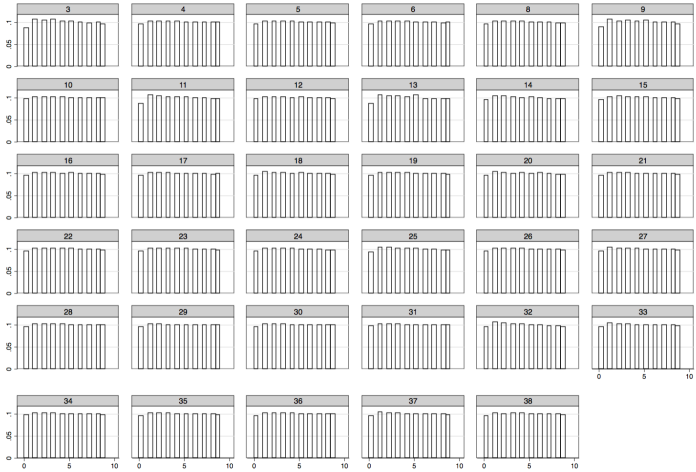
Population Cutoffs



Fairness of the lottery: Allocated numbers per round

Graphs by Audit Rounds

Fairness of the lottery: Selected numbers per round



Corruption Index

The text of the audit report

- Provides detailed summaries of wrongdoings
- Extract information and classify each instance as severe versus non-severe irregularity

Toy example of a report summary

- Indication of fraud in procurement process
- Payments for non executed services
- Non-actualization of pupils' cadastral information

Toy example of a report summary [classification]

- Indication of fraud in procurement process **[Severe]**
- Payments for non executed services **[Severe]**
- Non-actualization of pupils' cadastral information **[Not Severe]**

Harmonizing text

Ministério da Previdência Social:

1.1. Não alimentação da base do Sistema de Óbitos – SISOBI/MPAS, adotado com base no Aplicativo SEO – Versão 2.0 -, oriundo do INSS, referente às certidões de óbitos emitidas pelo Cartório de Registro Civil/Comarca de Rialma – GO, Município Rianápolis-GO.

2.1. Falta de retenção e recolhimento da contribuição previdenciária de 11% sobre o valor de serviços contratados.

Ministério da Saúde

1.1. Falta de Relatório de Gestão do Exercício de 2003.

2.1. Funcionamento das Equipes de Saúde da Família e da Equipe de Saúde Bucal em Desacordo com as Normas Estabelecidas pelo Ministério da Saúde.

Different format across reports

41000 MINISTERIO DAS COMUNICACOES
4.1.1 CONSTATAÇÃO:
1.1) Inexistência de atendimento pessoal aos usuários.

49000 MINISTERIO DO DESENVOLVIMENTO AGRARIO
5.1.1 CONSTATAÇÃO:
Desvio de finalidade na aplicação dos recursos do financiamento.
5.1.2 CONSTATAÇÃO:
Desvio de recursos do PRONAF B para aquisição de bens não admitidos pelo programa.

Text Classifier

Consists of a list of rules to distinguish more severe versus less severe cases. The rules are based on words and combination of words

- **Words:** fraud, collusion, fake
- **Combination of Words:** procurement simulation
- Recognized and used in the machine learning literature
- Accuracy of these models can be high

Severe irregularities are related to:

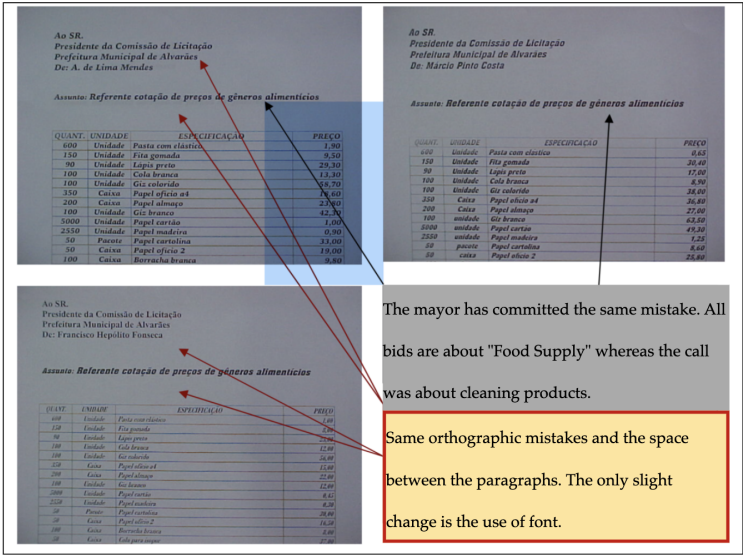
- Procurement Process
- Over-invoicing
- Diversion of Resources

Corruption measure

I take the principal component of a series of variables

- The number of pages, the number of lines, the number of images, and the total amount of irregularities summarized for each report
- The latent component captures the underlying corruption in the municipality

Simulation Procurement



Ao SR.
Presidente da Comissão de Licitação
Prefeitura Municipal de Alvarães
De: A. de Lima Menezes

Assunto: Referente cotação de preços de gêneros alimentícios

QUANT.	UNIDADE	ESPECIFICAÇÃO	PREÇO
600	Unidade	Pasta com elástico	1,90
150	Unidade	Fita gomada	9,50
90	Unidade	Lapis preto	29,30
100	Unidade	Cola branca	13,30
100	Unidade	Giz colorido	28,70
350	Caixa	Papel oficio a4	36,60
200	Caixa	Papel almaço	23,00
100	Unidade	Giz branco	42,30
5000	Unidade	Papel cartão	1,00
2550	Unidade	Papel madeira	0,90
50	Pacote	Papel cartolina	33,00
50	Caixa	Papel oficio 2	19,00
100	Caixa	Borracha branca	9,80

Ao SR.
Presidente da Comissão de Licitação
Prefeitura Municipal de Alvarães
De: Marcio Pinto Costa

Assunto: Referente cotação de preços de gêneros alimentícios

QUANT.	UNIDADE	ESPECIFICAÇÃO	PREÇO
600	Unidade	Pasta com elastico	0,65
150	Unidade	Fita gomada	30,40
90	Unidade	Lapis preto	17,00
100	Unidade	Cola branca	8,90
100	Unidade	Giz colorido	38,00
350	Caixa	Papel oficio a4	36,80
200	Caixa	Papel almaço	27,00
100	unidade	Giz branco	63,50
5000	unidade	Papel cartão	49,30
2550	unidade	Papel madeira	1,25
50	pacote	Papel cartolina	6,40
50	caixa	Papel oficio 2	26,80

Ao SR.
Presidente da Comissão de Licitação
Prefeitura Municipal de Alvarães
De: Francisco Hepolito Fonseca

Assunto: Referente cotação de preços de gêneros alimentícios

QUANT.	UNIDADE	ESPECIFICAÇÃO	PREÇO
600	Unidade	Pasta com elástico	1,40
150	Unidade	Fita gomada	25,00
90	Unidade	Lapis preto	27,00
100	Unidade	Cola branca	12,40
100	Unidade	Giz colorido	24,40
350	Caixa	Papel oficio a4	15,40
200	Caixa	Papel almaço	22,40
100	Unidade	Giz branco	12,40
5000	Unidade	Papel cartão	8,65
2550	Unidade	Papel madeira	0,30
50	Pacote	Papel cartolina	28,40
50	Caixa	Papel oficio 2	16,50
100	Caixa	Borracha branca	8,40
50	Caixa	Cola para isopor	27,40

The mayor has committed the same mistake. All bids are about "Food Supply" whereas the call was about cleaning products.

Same orthographic mistakes and the space between the paragraphs. The only slight change is the use of font.

Fake Firms

Estrada que dá acesso ao endereço informado como sendo da licitante de CNPJ nº 07.981.189/0001-90.

Fim da estrada onde deveria estar instalada a sede da licitante de CNPJ nº 07.981.189/0001-90.

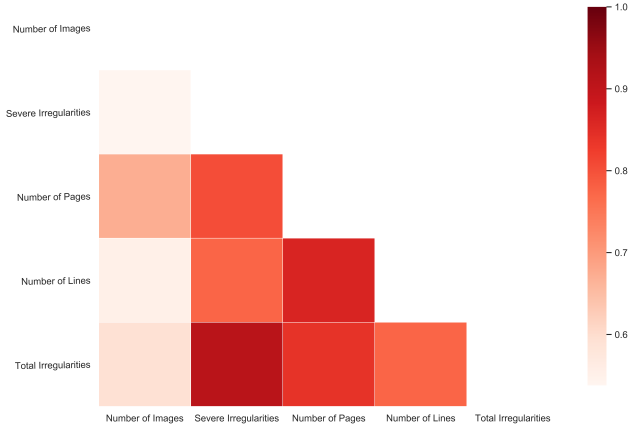
Comprovante de endereço da rua onde deveria funcionar a empresa de CNPJ nº 07.981.189/0001-90.

Placa indicativa do bairro onde deveria funcionar a empresa de CNPJ nº 07.981.189/0001-90.

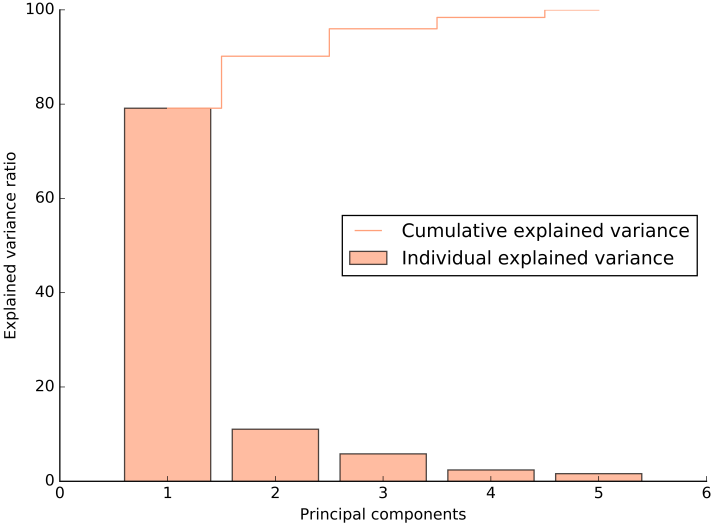
Placa indicativa do bairro onde deveria funcionar a empresa de CNPJ nº 06.313.322/0001-77.

Rua onde deveria funcionar a empresa de CNPJ nº 06.313.322/0001-77.

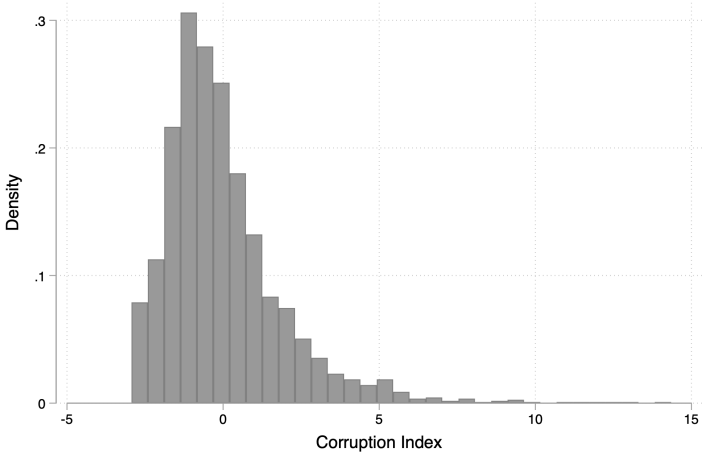
Heatmap


Number of Images
Severe Irregularities
Number of Pages
Number of Lines
Total Irregularities
Number of Images
Severe Irregularities
Number of Pages
Number of Lines
Total Irregularities
1.0
0.9
0.8
0.7
0.6

Common variation



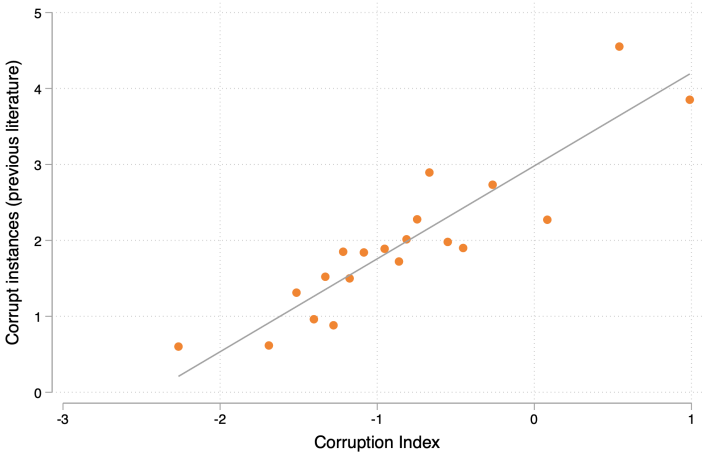
Corruption measure: The first principal component



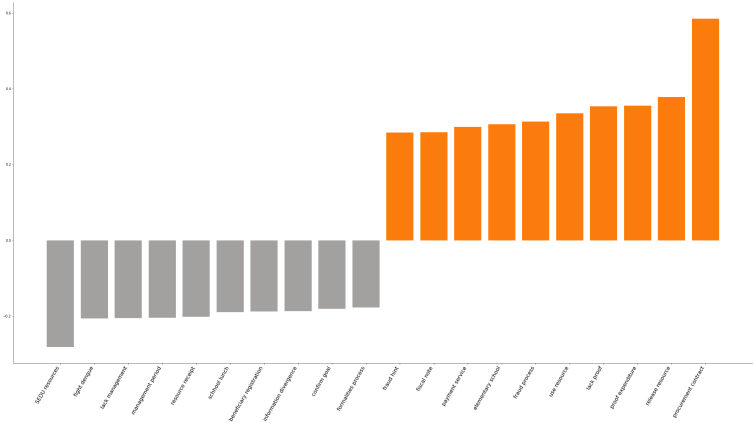
Corruption measure: Advantages

- Removes subjective decision making
- It is replicable
- Less time consuming

Correlation with other hand-coded measures



Alternative Measure: Supervised Learning



- Use hand-coded labels available in the literature to create a "target-variable"
- Low versus high corruption

Data

I combine data from many different sources:

- Audit Data – main regressor. (Comptroller General of Brazil, CGU)
  - For all years from 2003-2013
- Electoral Outcomes – dependent variable from the Brazilian Electoral Court (TSE)
  - Biennial voting outcomes for years 1996-2012
- A measure of antenna coverage and detailed geographical data provided by the Brazilian Communication Agency (ANATEL)
  - Shapefiles, Latitude and Longitude of population centroid and Gridded Population of Brazil are provided by Brazilian Statistical Office (IBGE) and NASA
  - Compute fraction of the population covered in each neighboring municipality
- Municipal Characteristics – from municipal census of 2000 as controls provided by Brazilian Statistical Office, IBGE and IPEA

Audit effect on local elections

Local Elections

If municipality i headed by a mayor from party p is audited, how does this affect the electoral outcomes of the party p in the municipality j

- When $i = j$, the focus is on the audited municipality.
- Otherwise, we are considering neighboring municipalities

$$\Delta E_{pit} = \alpha + \beta \text{Treated}_{pjt} + \nu_s + X_i^T \delta + \eta_p + \tau_t + \varepsilon_{pit}$$

Where:

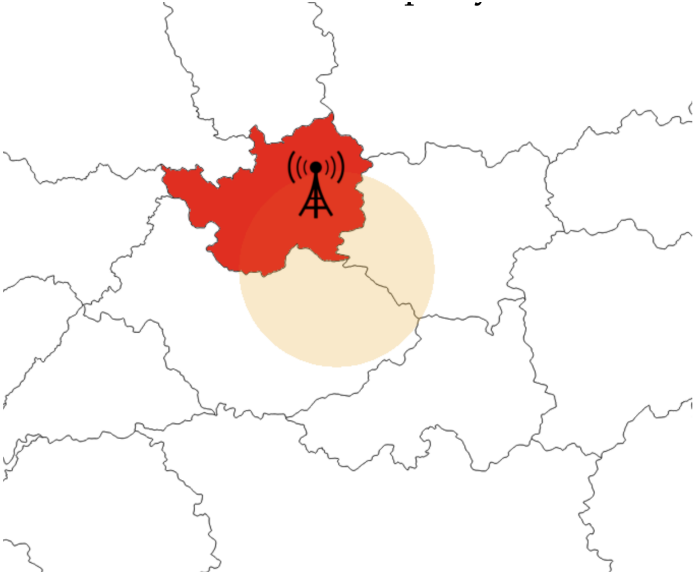
- ΔE_{pit}: Change in electoral outcomes, election probability or vote share
- Treated_{pjt}: Treatment status – one if the audit happens before elections and zero if after
- ν_s, η_p, τ_t: State, party and term fixed effects
- X_i: Vector of municipal characteristics, measured in year 2000
- ε_{pit}: error term

Informed Neighbor

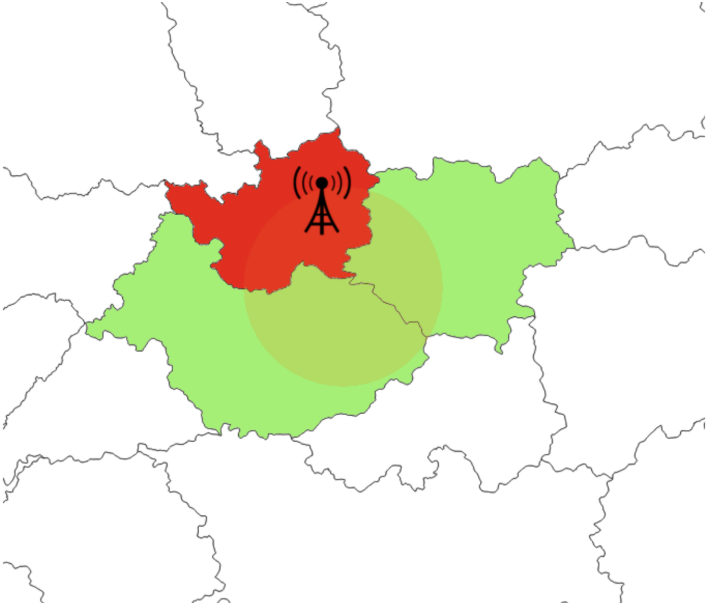
Neighbour j is informed on what happens on the audited municipality i if:

- It is contiguous to the audited municipality
- Receives radio coverage from an antenna located in the audited municipality i
  - 40% of Brazilians use radios as a source of political information (Latinobarometro)
  - TV broadcast is dominated by national channels which are unlikely to provide local information
  - Brazil has one of the lowest levels of newspaper penetration in the world (Porto, 2003; IBOPE, 2012)

Audited Municipality



Informed Neighbors



Mean Comparison

	Audited Municipalities			Informed Neighbors		
	Treated	Control	*t-stat*	Treated	Control	*t-stat*
Literacy rate (2000)	78.40	78.48	1.22	82.80	81.96	0.61
Urban population (2000)	60.00	60.16	0.25	62.20	63.55	0.17
Male population (2000)	50.75	50.64	0.73	50.53	50.39	-0.33
Illumination (2000)	86.09	87.07	-0.90	89.84	88.92	1.58
Human Development Index (2000)	70.23	70.18	1.04	73.16	73.20	-0.49
Income per capita (2000)	173.30	171.22	0.88	207.70	213.78	-0.63
Latitude	-15.91	-16.27	0.01	-18.96	-18.79	0.39
Longitude	-45.91	-45.84	1.32	-47.63	-46.88	1.94
Distance to state capital	232.67	249.41	-1.25	216.58	226.41	-0.91
Vote share (2000)	55.28	54.94	0.32	53.22	53.31	-0.18
Reelecteed (2000)	0.31	0.30	0.42	0.33	0.35	0.72
Rerun (2000)	0.59	0.58	0.24	0.59	0.62	0.23
Electorate (2000)	15871.38	17650.65	0.41	26771.93	53430.73	-0.17
Fraction blank votes (2000)	1.59	1.54	0.98	1.62	1.70	-0.22
Fraction null votes (2000)	5.61	5.83	-0.92	4.90	4.97	0.08
Number of parties (2000)	2.79	2.81	0.00	2.96	3.11	-0.51
PT member (2000)	0.04	0.03	1.13	0.06	0.11	-1.58
PSDB member (2000)	0.18	0.18	-0.38	0.16	0.20	-0.59
PTB member (2000)	0.06	0.06	0.29	0.04	0.04	-0.23
PMDB member (2000)	0.22	0.27	-1.82	0.30	0.21	2.01
PP member (2000)	0.14	0.11	1.87	0.14	0.17	-1.13
PFL member (2000)	0.18	0.18	0.53	0.16	0.14	1.09
Observations	594	379		309	156	

Audited area: Results

	Party is reelected			Change in vote share		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	-0.088**	-0.099***	-0.143**	-1.967*	-2.248**	-2.750
	(0.036)	(0.036)	(0.059)	(1.112)	(1.122)	(2.024)
Treated x Corruption		-0.003			-0.027	
		(0.019)			(0.537)	
Corruption		-0.032*			-0.861*	
		(0.017)			(0.466)	
Treated x C2			0.088			1.827
			(0.083)			(2.598)
Treated x C3			0.040			-0.522
			(0.082)			(2.552)
C2			-0.131**			-4.235**
			(0.063)			(2.037)
C3			-0.152**			-3.634*
			(0.067)			(2.133)
Observations	973	973	973	973	973	973

Informed Neighbors: Results

	Change in vote share					
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.445	0.753	-0.125	0.197	-0.052	5.200
	(1.869)	(1.936)	(2.007)	(2.015)	(1.769)	(3.298)
Treated x Corruption					-2.405***	
					(0.880)	
Corruption					0.999	
					(0.692)	
Treated x C2						-6.796
						(4.985)
Treated x C3						-8.617**
						(4.278)
C2						5.107
						(4.288)
C3						4.922
						(3.348)
Observations	465	465	465	465	465	465
Term	Yes	Yes	Yes	Yes	Yes	Yes
Party		Yes	Yes	Yes	Yes	Yes
Party-Term FE			Yes	Yes	Yes	Yes
Controls				Yes	Yes	Yes

Placebos

	Audited Municipality				Informed Neighbor	
	Party is reelected		Change in vote share		Change in vote share	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.025	0.012	-0.362	-0.065	-0.462	-1.001
	(0.047)	(0.049)	(1.658)	(1.719)	(1.881)	(1.939)
Observations	540	540	540	540	465	465
Term FE	Yes	Yes	Yes	Yes	Yes	Yes
Party	Yes	Yes	Yes	Yes	Yes	Yes
Party-Term FE		Yes		Yes		Yes
Controls		Yes		Yes		Yes

Summary of the findings: Local Elections

Audited municipality

- An audit investigation negatively affects the party's support in the audited municipality, regardless of the amount of disclosed corruption
- Voters are less likely to vote for the incumbent party if the underlying corruption is high

Informed neighbors

- The announcement does not affect electoral outcomes in the nearby areas
- The vote support for the audited party is reduced if underlying corruption is high

Audit effect on presidential elections

Presidential Elections: Results

	Audited Municipality				Informed Neighbors			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated	-4.135**	-4.694***	-4.455***	-0.745	-3.308*	-3.222*	-3.453*	0.876
	(1.698)	(1.657)	(1.664)	(2.790)	(1.858)	(1.857)	(1.811)	(2.325)
Treated x Corruption			-1.617*				-2.348***	
			(0.888)				(0.833)	
Corruption			0.233				0.220	
			(0.676)				(0.963)	
Treated x C2				-2.904				-1.810
				(4.160)				(4.403)
Treated x C3				-7.669*				-9.845***
				(4.080)				(3.511)
C2				-1.139				-0.987
				(2.711)				(2.770)
C3				0.199				-1.866
				(3.194)				(3.486)
Observations	387	387	387	387	871	871	871	871
Party	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls		Yes	Yes	Yes		Yes	Yes	Yes

Presidential Elections: Placebos

	Audited Municipality		Informed Neighbors	
	(1)	(2)	(3)	(4)
Treated	0.393	0.617	-1.078	-1.362
	(1.136)	(1.164)	(1.301)	(1.212)
Observations	387	387	869	869
Party	Yes	Yes	Yes	Yes
Controls		Yes		Yes

Summary of the findings: Presidential Elections

Audited municipality

- An audit investigation negatively affects the party's support in the audited municipality
- Voters are less likely to vote for the incumbent party if the underlying corruption is high

Informed neighbors

- Behave similarly to the voters in the audited municipality

Mechanism

Mechanisms

I am going to explore two mechanisms: Media and an active political opposition

- Local and national media picks up local content
  - Local media are usually captured by incumbents
  - News about audits are more likely to cross municipal borders if unveiled corruption is high
- Political opposition uses the audits to attacks the incumbent in local and national elections

Anecdotes

Titles from articles published by Folha de Sao Paulo on October 1, 2004

- Suspects of fraud to overthrow 199 mayors
- 40 mayors accused of corruption are running for re-election
  - People knew that the opposition would take advantage of this during the elections...

    Giovani Brillantino, Mayor of Itagimirim (BA)
  - It is irresponsible of the CGU to point out unproven irregularities during an electoral period, allowing the opposition to treat them as crimes or misappropriation of funds. It is a disaster because my opponent is from PT

    Adilicio Caldorin, Mayor of Laguna (SC)

Vox Pop

Joao Batista Lima, pensioner, Curuca, Brazil

"I'm voting for Lula because I like the way he administers the country," he says.

"People say Lula's PT party is corrupt. But there was corruption in previous governments. It's only because there is more investigation into it, people are paying more attention to it now."

Norival Alves, taxi driver, Mococa, Brazil

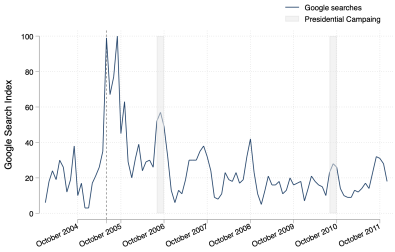
"I had intended to annul my vote in this year's election, but at the last minute I decided to vote for Geraldo Alckmin.

"The corruption scandals had taken away my desire to vote.

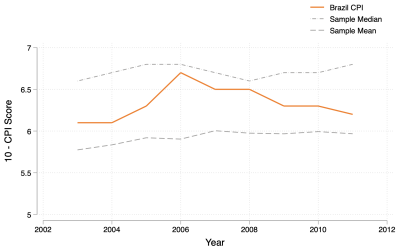
"I was expecting improvements - more jobs, more schools, better health care.

Source BBC

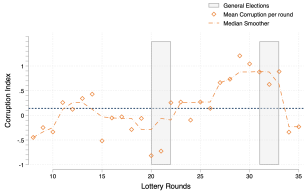
Searched, Perceived and Actual Corruption



(a) Google searches



(b) Corruption Perception Index



(c) Actual Corruption

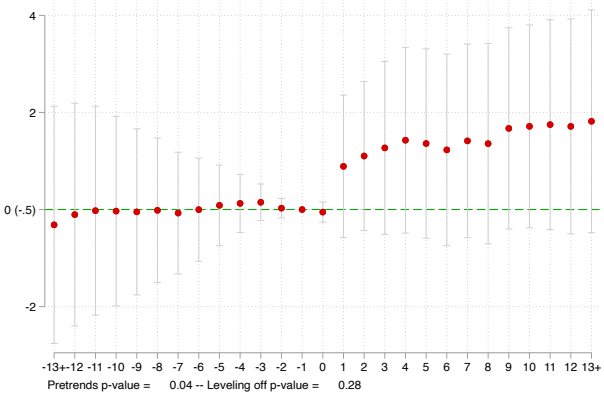
Event Study

$$Y_{i,m,t} = \sum_{m=-12}^{-2} \beta_m Audit_{i,m,t} + \sum_{m=0}^{12} \beta_m Audit_{i,m,t} + \alpha_i + \delta_{m,t} + \varepsilon_{i,q,t}$$

Where:

- $Y_{i,m,t}$: is an indicator variable if the municipality i is mentioned jointly with corruption in the newspaper article, published in month m of year t. The outcome variable is the standardized variable with respect to the 2002 mean and standard deviation
- $\text{Audit}_{i,m,t}$: are indicator variables tracking the month of audit announcement
- α_i: municipality fixed effects
- $\delta_{m,t}$: state-year fixed effects
- $\varepsilon_{i,q,t}$: error term

Event study: Results



Before-After: Results

	Corruption mentions					
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.017	0.020	0.020	-0.032	-0.024	-0.024
	(0.016)	(0.016)	(0.016)	(0.030)	(0.031)	(0.031)
Corruption	-0.014*	-0.012	-0.012			
	(0.007)	(0.007)	(0.007)			
Treatment x Corruption	0.020**	0.018**	0.018**			
	(0.008)	(0.008)	(0.008)			
2nd Tercile				-0.029	-0.022	-0.022
				(0.033)	(0.034)	(0.034)
3d Tercile				-0.053	-0.045	-0.045
				(0.033)	(0.033)	(0.033)
Treatment x 2nd Tercile				0.070*	0.065	0.065
				(0.041)	(0.043)	(0.043)
Treatment x 3d Tercile				0.074*	0.068*	0.068*
				(0.038)	(0.039)	(0.039)
Observations	973	973	973	973	973	973
Term	Yes	Yes	Yes	Yes	Yes	Yes
Party	Yes	Yes	Yes	Yes	Yes	Yes
Term x Party fixed effects	No	Yes	Yes	Yes	No	Yes
Controls	No	No	Yes	No	No	Yes

Conclusions

- I document electoral effect on the party in case of misbehavior of the individual politician
  - The vote of the presidential candidate is affected in the audited and neighbours
  - Electoral effect on the party in neighboring municipalities in local elections
- The spillovers are larger than the direct effect and threshold effects emerge.
- Parties with a national counterpart experience a vote loss that is six times as large
- Implications of the findings:
  - These results are relevant towards better understanding the role of political parties
  - Electoral accountability as an important way to fight corruption
  - Add to the literature that considers audits as a tool to combat corruption
  - Spillovers from an anti-corruption program which we must take into account for cost-benefit analysis