Learn from thy Neighbour: Do Voters Associate Corruption with Political Parties?

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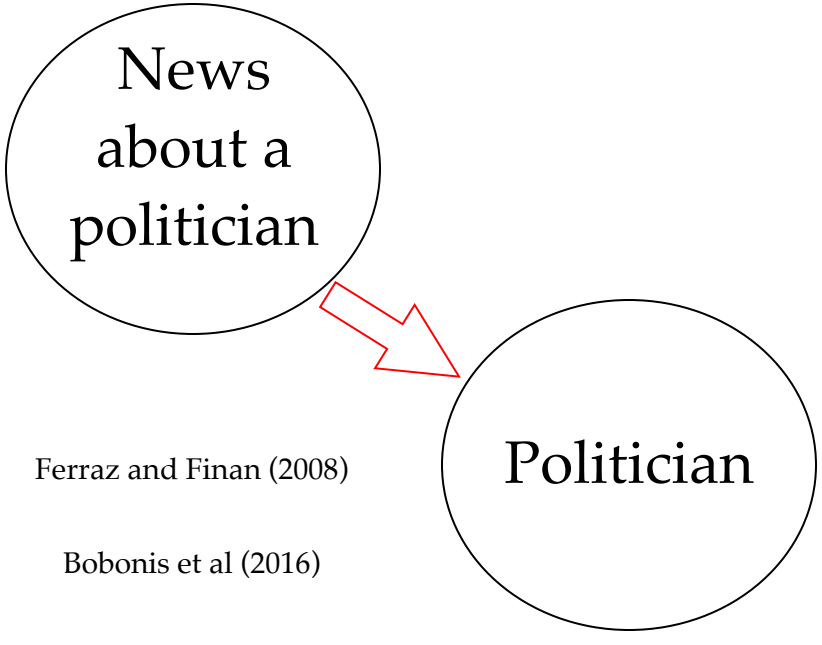
every single time there’s a mass shooting i hold my breath & hope the shooter isn’t black or brown knowing how it would be projected onto an entire community

Research Question

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

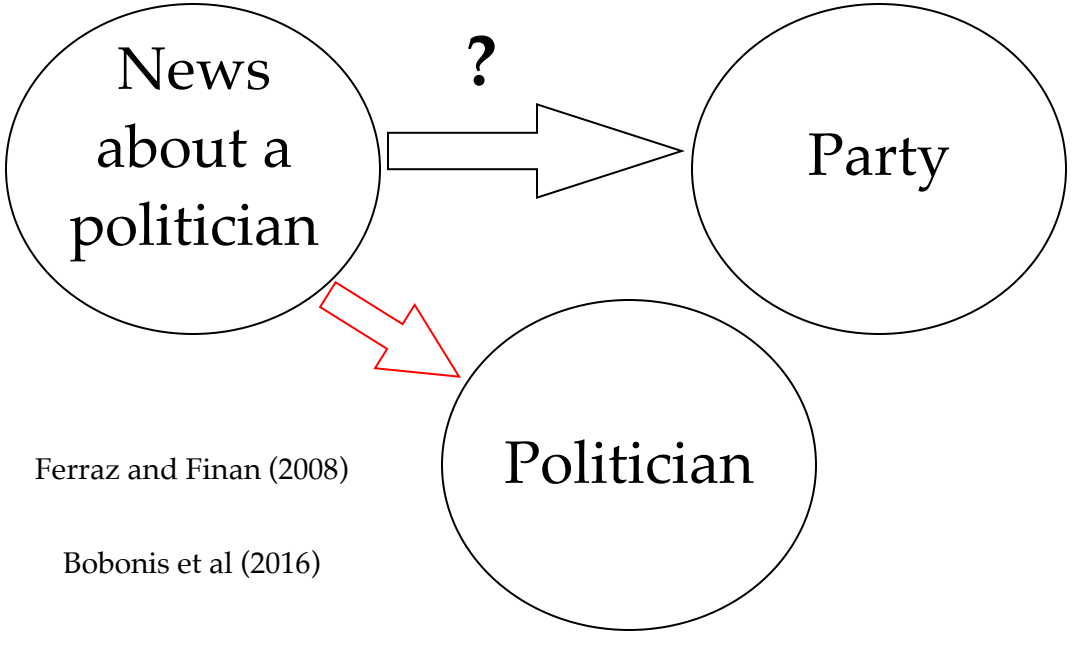
Previous Literature



Ferraz and Finan (2008)

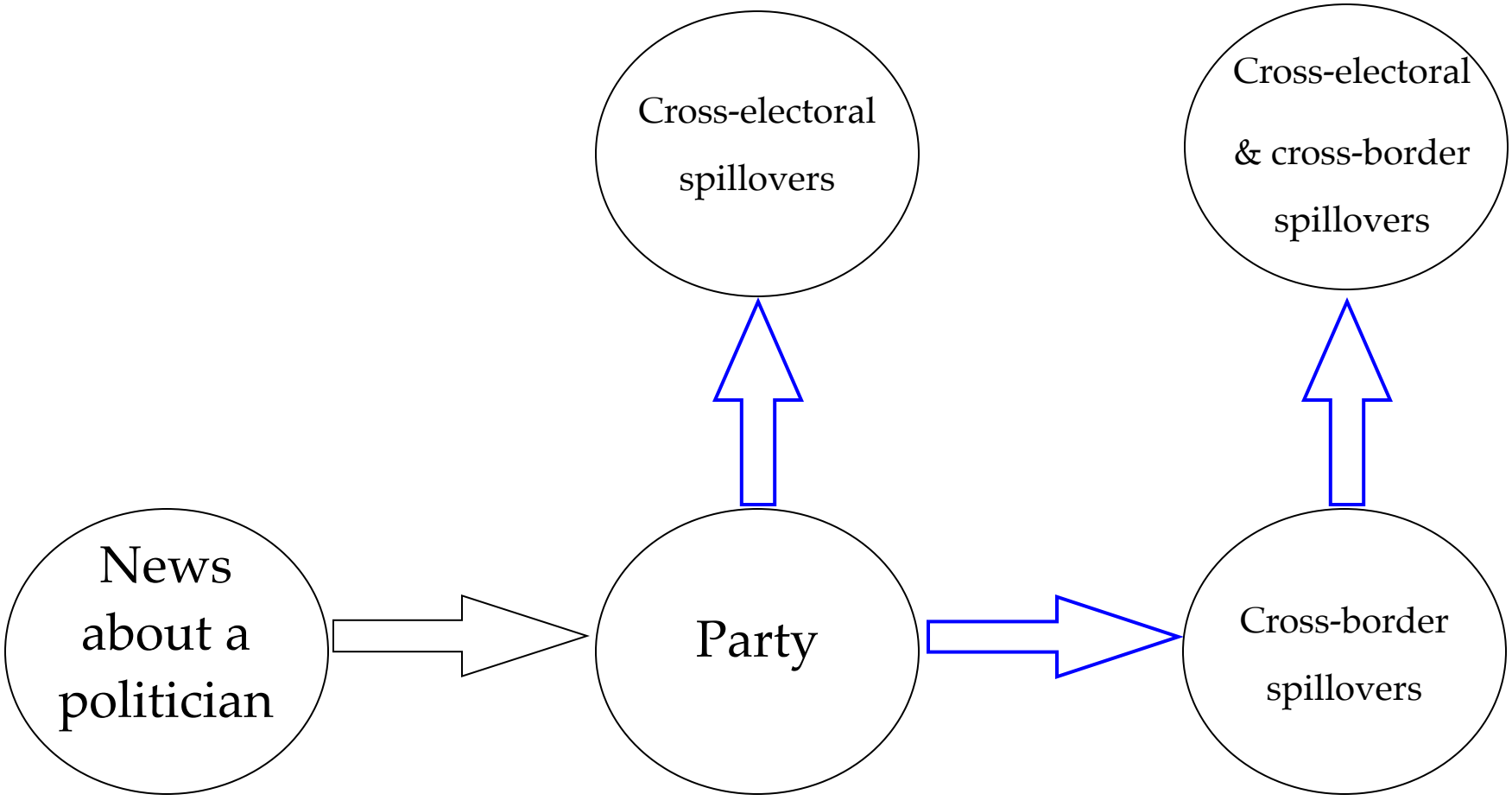
Bobonis et al (2016)

Open Question



Ferraz and Finan (2008)

Bobonis et al (2016)


Cross-electoral spillovers
Cross-electoral & cross-border spillovers
News about a politician
Party
Cross-border spillovers

Identification Strategy

- Random audits in Brazilian local governments
- Neighboring governments sharing media coverage to the audited town (Novel Data)
- Build a Corruption Index using Machine Learning and Text Analysis Tools (New Contribution)

Institutional Background

Brazilian Municipalities

- Lowest level of public administration in the country
- Responsible for providing goods and services
- Municipal revenues are generated by taxes and transfers

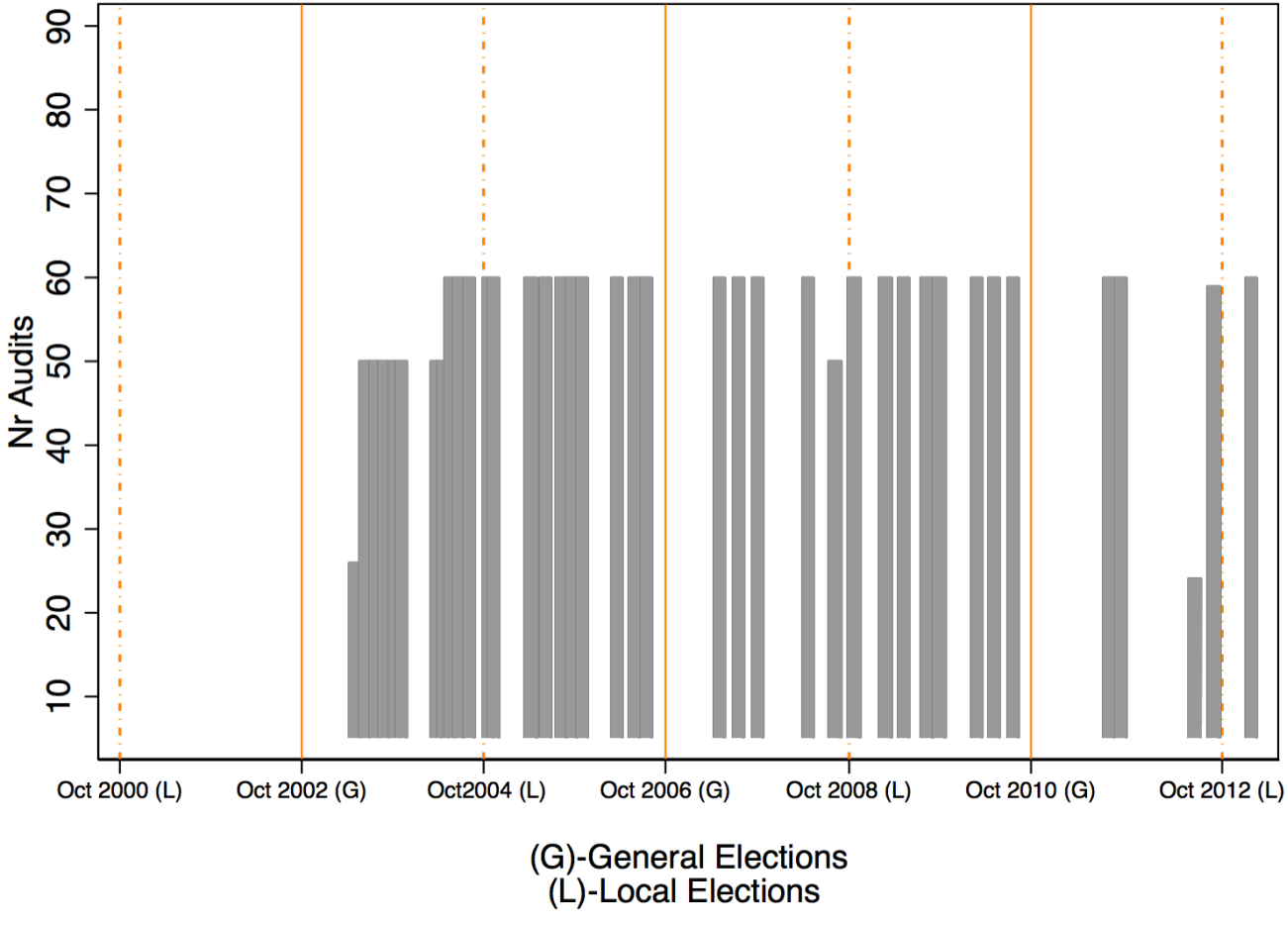
Political System

- 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)

The Audit Program


CONTROLADORIA
GERAL DA UNIÃO
4
5

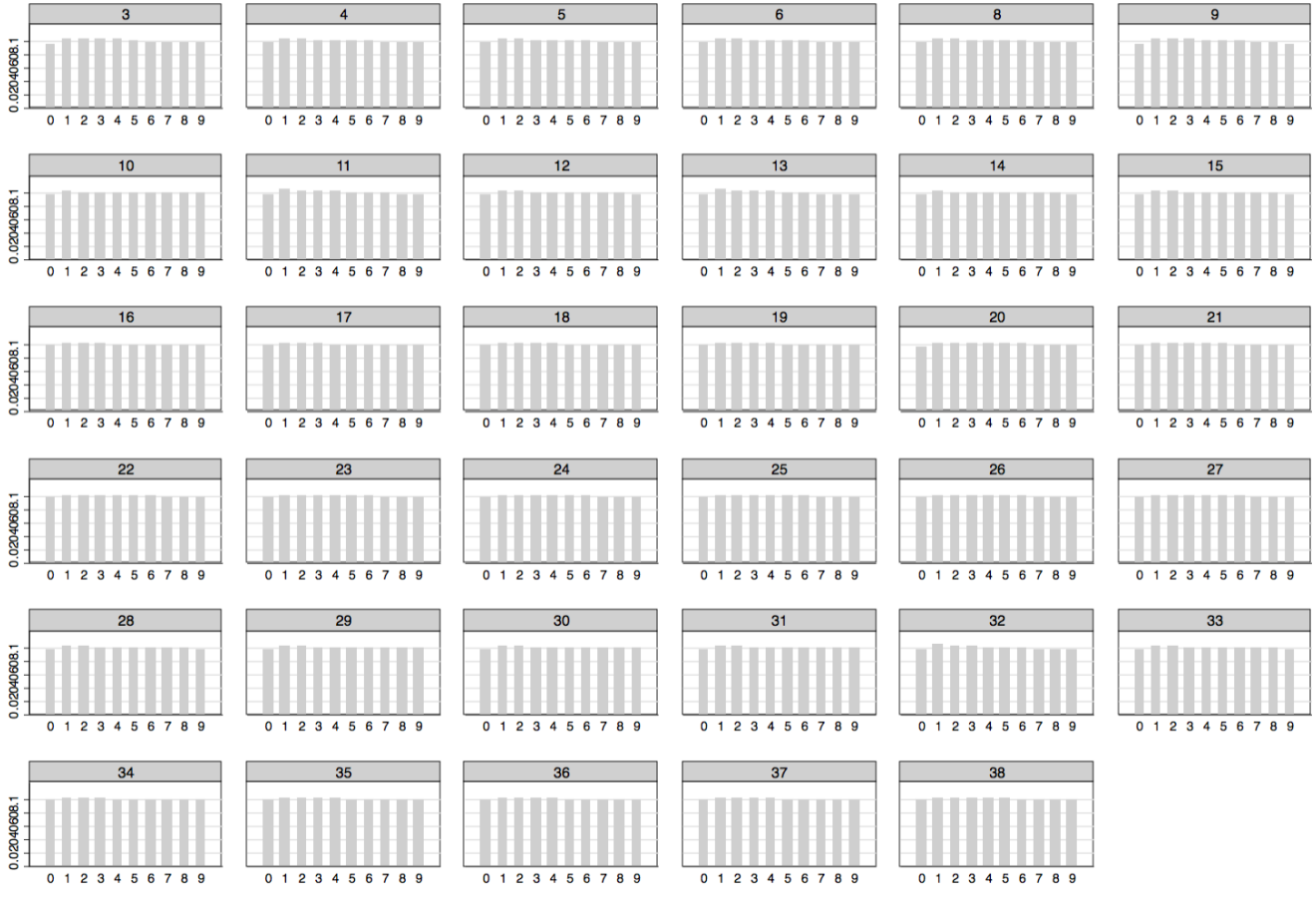
Audit and Election Timeline



Fairness of the lottery

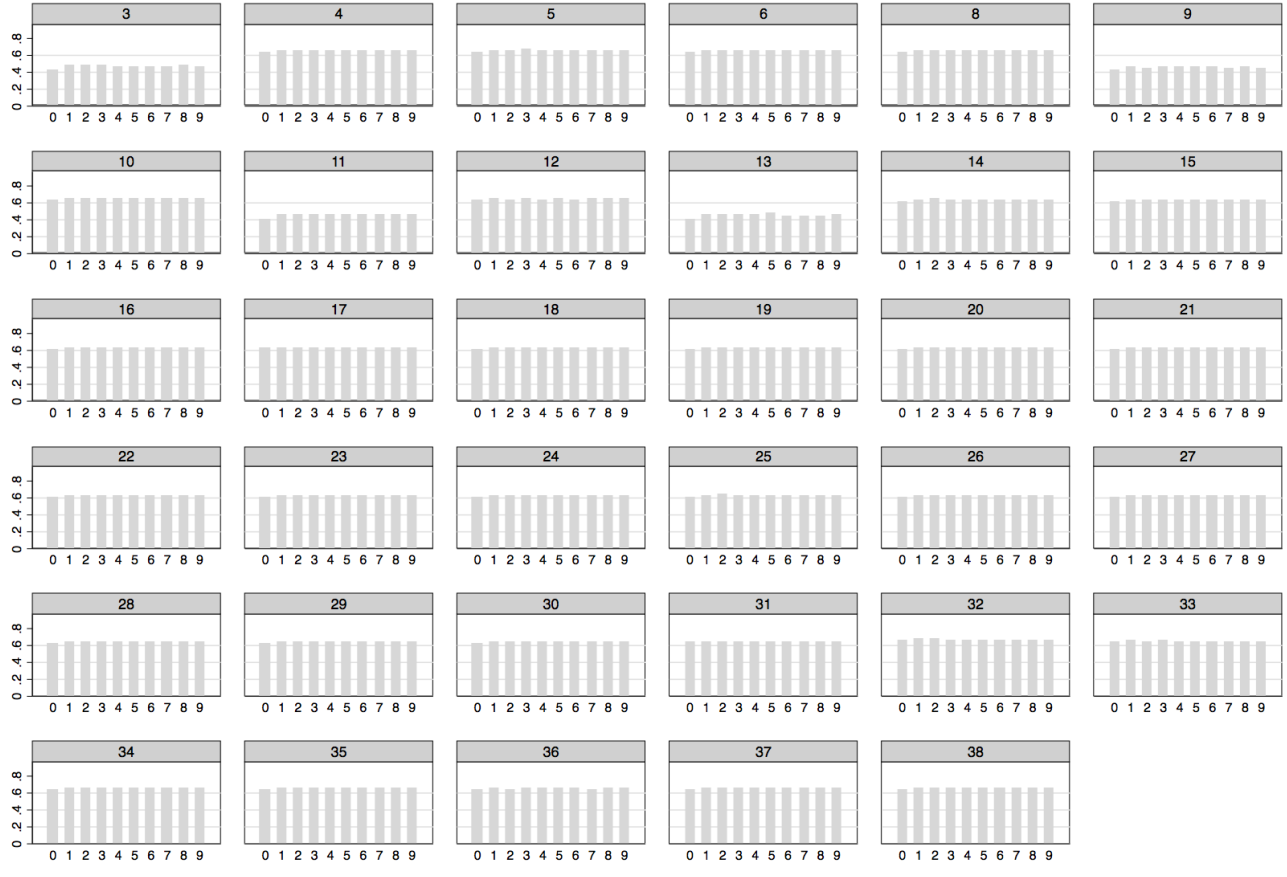
- t-tests on the sample means
- Numbers allocated and selected

Allocated Numbers



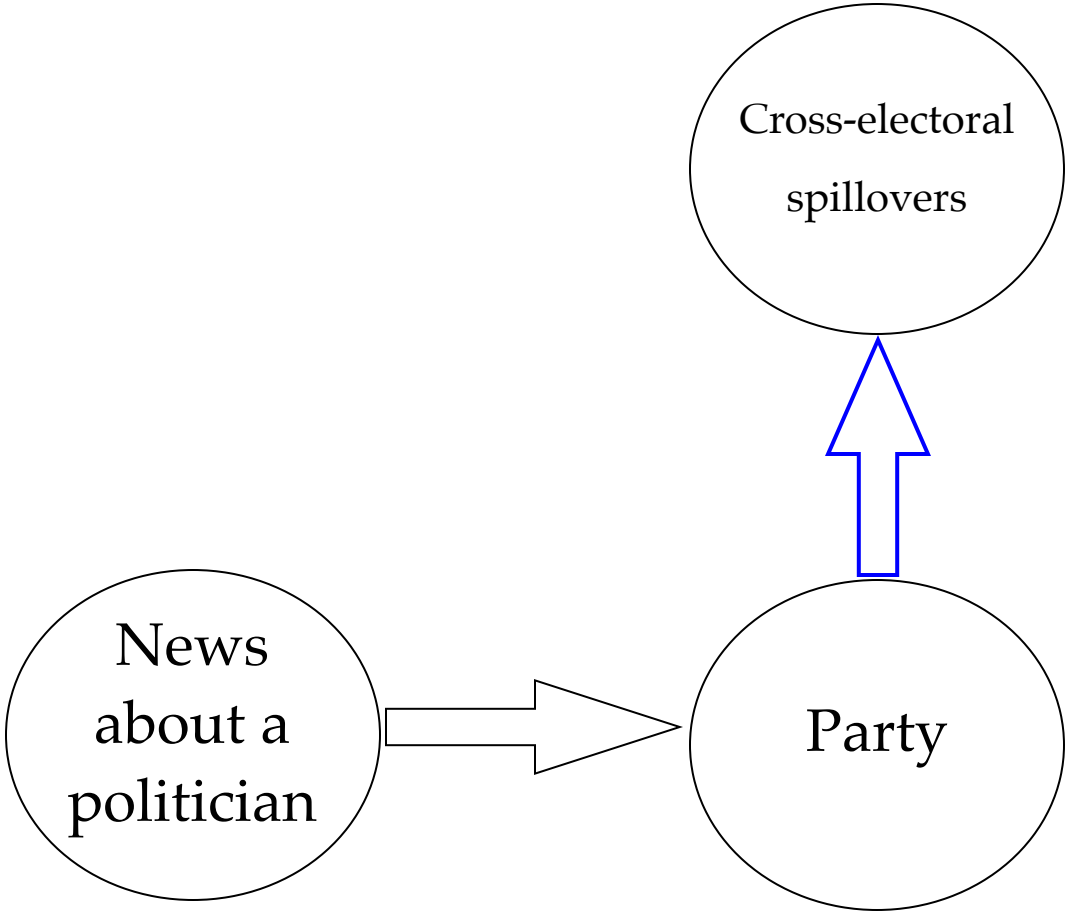
Graphs by Audit Rounds

Selected Numbers



Graphs by Audit Rounds

The effect of the audit investigation



Voters recognise party labels and act accordingly

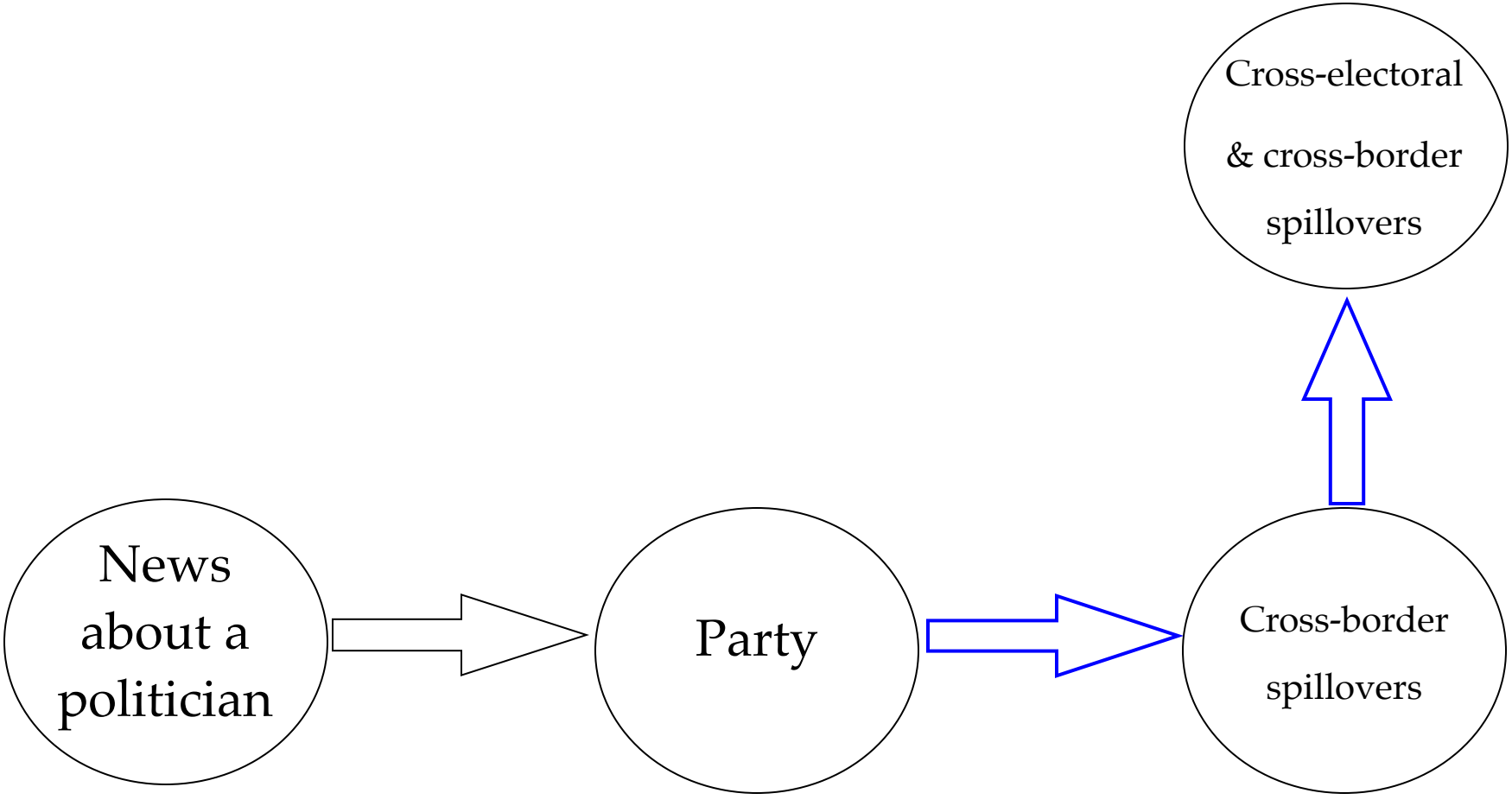
Empirical Strategy

$$\Delta E_{pit} = \beta_0 + \beta_1 \text{Audit}_{pit-s} + \nu_s + X_i^T \delta + \eta_p + \tau_t + \varepsilon_{pit}$$

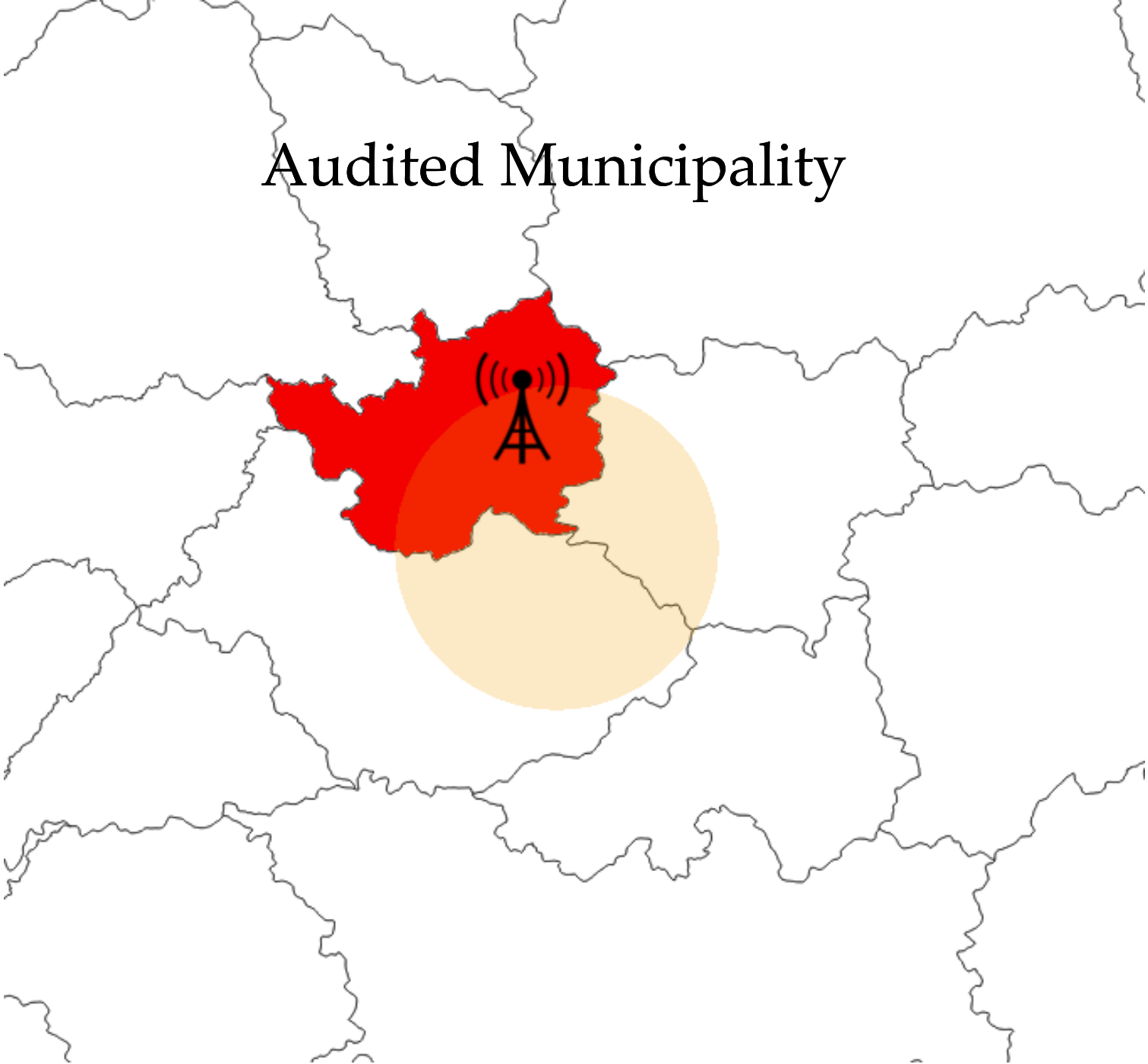
where:

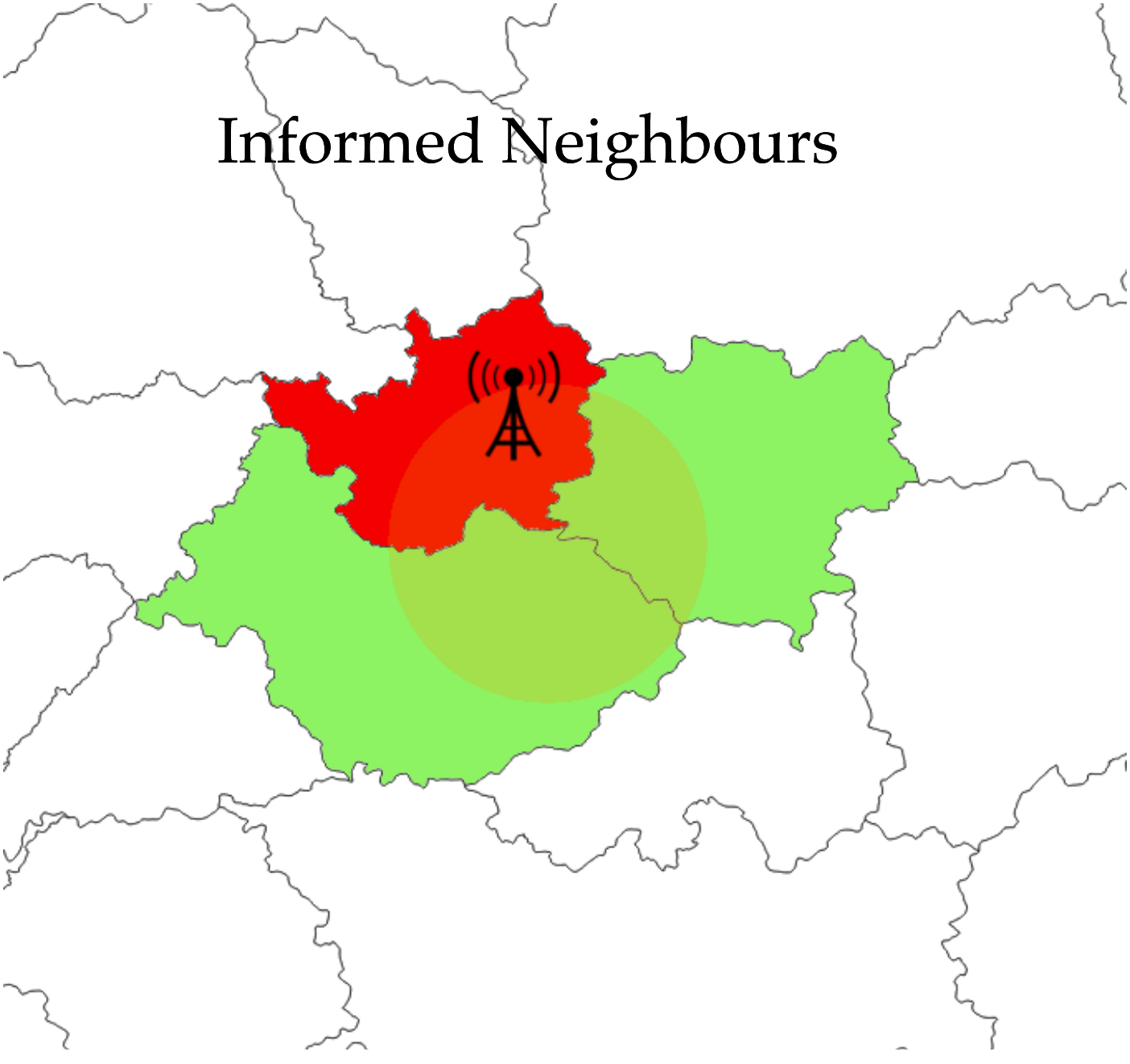
ΔE_{pit}	is the electoral outcome in elections, municipal or presidential
$Audit_{pit-s}$	equals 1 if the municipality was audited before elections
	and zero if audited after elections
ν_s	state dummies
X_i	municipal characteristics
η_p	party fixed effect
τ_t	time fixed effect

Geographical Spillovers



Voters in nearby municipalities recognise party labels and act accordingly


Audited Municipality


Informed Neighbours

Empirical Strategy

$$\Delta E_{pjt} = \beta_0 + \beta_1 \text{Audit}_{pit-s} + \nu_s + X_j^T \delta + \eta_p + \tau_t + \varepsilon_{pjt}$$

where:

ΔE_{pjt}	is the electoral outcome in elections, municipal or presidential
$Audit_{pit-s}$	equals 1 if the neighbouring municipality was audited before elections and zero if audited after elections
ν_s	state dummies
X_j	municipal characteristics of the neighbours
η_p	party fixed effect
τ_t	time fixed effect

Results

Benchmark Case

	Municipal				Presidential	
	Reelection		Δ VS		Δ VS	
	(1)	(2)	(3)	(4)	(5)	(6)
Audit	-0.094***	-0.099***	-1.952*	-2.309**	-4.135**	-4.731***
	(0.035)	(0.036)	(1.060)	(1.099)	(1.698)	(1.667)
Observations	973	973	973	973	387	387
R-squared	0.066	0.116	0.091	0.145	0.290	0.334
State FE	✓	✓	✓	✓	✓	✓
Party FE	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓

Notes: Standard errors clustered at the municipality level. *** Significant at the 1 percent level, ** Significant at the 5 percent level, * Significant at the 10 percent level.

Geographical Spillovers

	Local		Presidential	
	Δ VS		Δ VS	
	(1)	(2)	(3)	(4)
Audit	0.313	-0.135	-3.308*	-3.491*
	(1.679)	(1.669)	(1.858)	(1.872)
Observations	465	465	871	871
R-squared	0.087	0.177	0.322	0.345
State FE	✓	✓	✓	✓
Party FE	✓	✓	✓	✓
Controls		✓		✓

Notes: Standard errors clustered at the mesoregion area. *** Significant at the 1 percent level, ** Significant at the 5 percent level, * Significant at the 10 percent level.

Summary of the Findings

- Strong electoral effect of the audit on the electoral outcomes of the party
  - In nearby areas voters do not respond to an audit investigation
- Voters in areas sharing media coverage behave similarly in presidential elections

Intensity of Corruption

Corruption Intensity

The effect of the policy may be dependent on the amount of disclosed corruption

Classification of Information

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.

Example of a summary

- Indication of fraud in procurement process
- Payments for non executed services
- Non actualisation of pupil's cadastral information

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- Indication of fraud in procurement process
- Payments for non executed services
- Non actualisation of pupil's cadastral information

Classification problem is reduced from 172, 768 pages to classifying 104,337 phrases

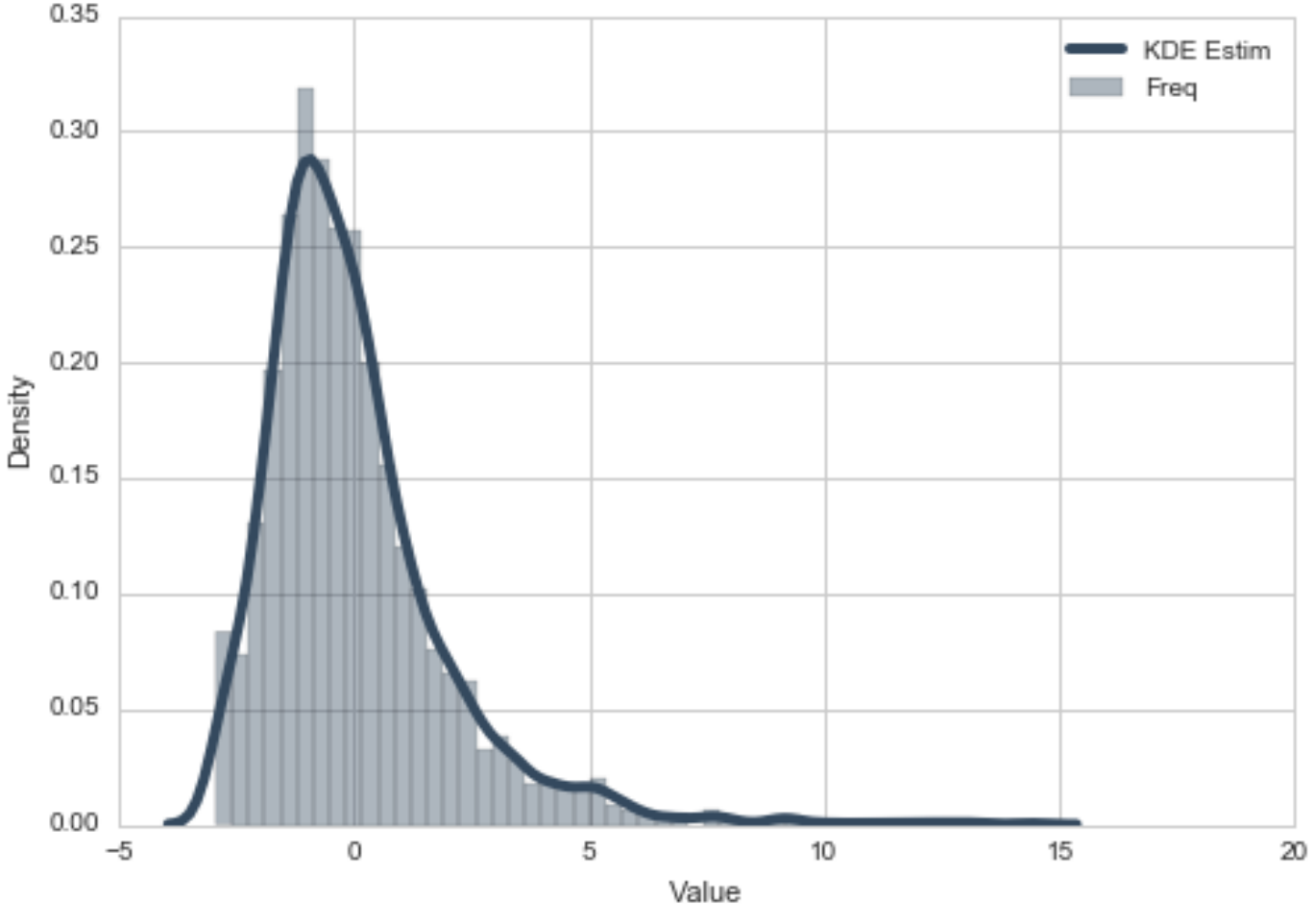
Text Classifier

- Words and combination of words (bigrams and n-grams)
  - words: fraud, collusion, fake
  - combination of words: procurement simulation
- Severe irregularities are related to Procurement Process, Over-invoicing, and Diversion of Resources

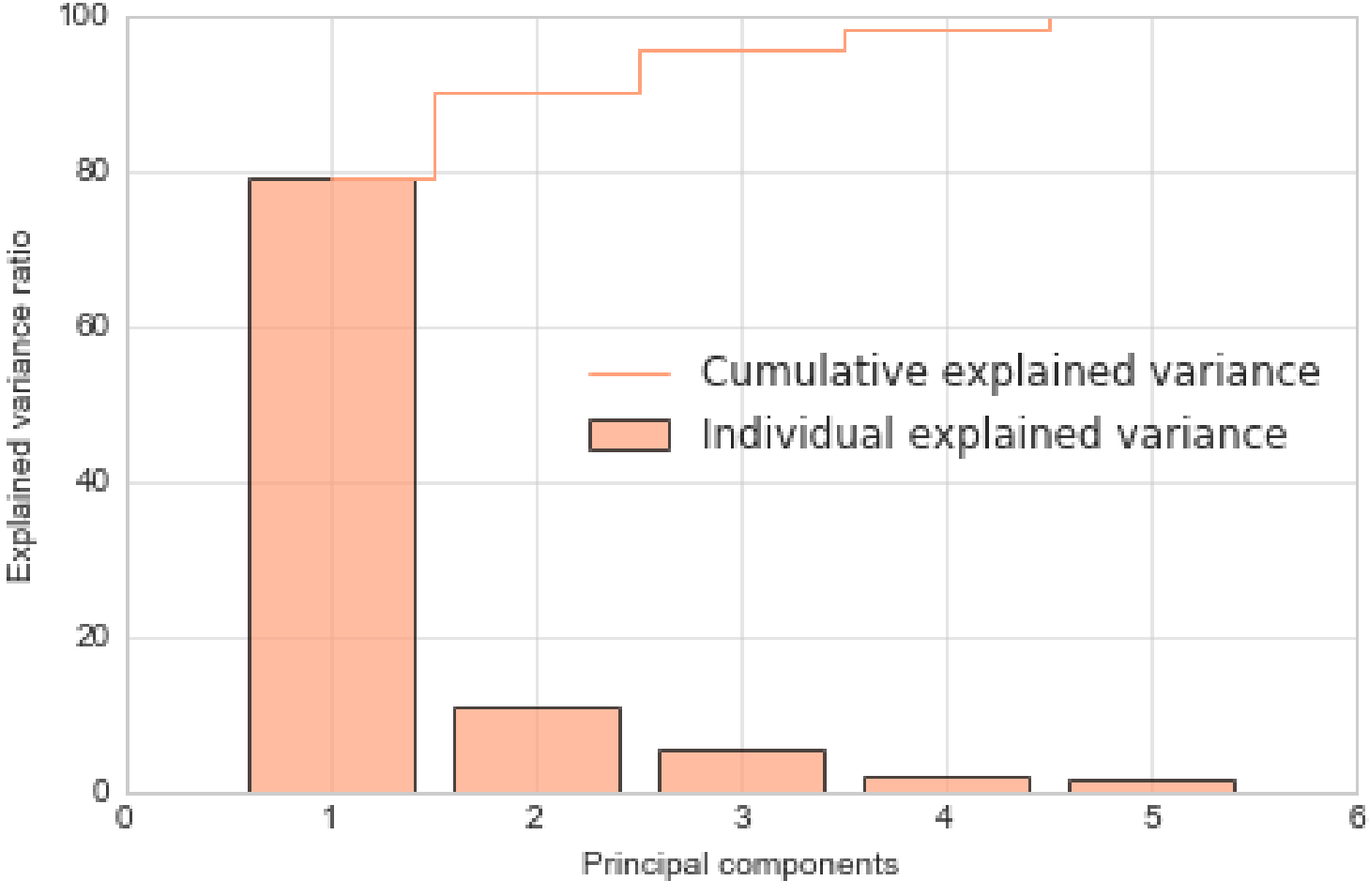
Corruption Measure

- I create the principal component of a series of variables
  - The number of pages, the number of lines, the number of images, and the total amount irregularities summarised for each report
- The latent component is the underlying corruption in the municipality

Distribution of the Corruption Measure



Common Variation



Empirical Strategy

$$\Delta E_{pjt} = \beta_0 + \beta_1 \text{Audit}_{pit-s} + \beta_2 \text{C}_{pit-1} + \beta_3 \text{Audit}_{pit-s} \times \text{C}_{pit-1} +$$

$$\nu_s + X_j^T \delta + \tau_t + \eta_p + \varepsilon_{pjt}$$

if i=j effect on the audited municipality itself

β_3 coefficient of interest

Corruption Intensity: Results

Benchmark Case: Corruption Intensity

	Municipal				Presidential	
	Reelection		Δ VS		Δ VS	
	(1)	(2)	(3)	(4)	(5)	(6)
Audit	-0.111***	-0.159**	-2.609**	-3.564*	-3.830**	2.310
	(0.036)	(0.062)	(1.111)	(2.017)	(1.901)	(3.331)
Audit * Corrupt. Index	0.013		0.249		-2.141**	
	(0.019)		(0.536)		(0.902)	
Corrupt. Index	-0.041**		-1.012**		0.850	
	(0.018)		(0.483)		(0.664)	
Audit * 2^0 Tercile		0.078		2.186		-7.454
		(0.086)		(2.671)		(4.657)
Audit * 3^0 Tercile		0.101		0.144		-9.433**
		(0.086)		(2.598)		(4.047)
Observations	973	973	973	973	325	325
R-squared	0.123	0.132	0.150	0.171	0.313	0.538
Mean Corrupt. Index	0.0556	0.0556	0.0556	0.0556	0.239	0.239
F-test joint significance	5.120	2.964	3.383	2.337	3.430	4.025

Notes: Robust standard errors in parentheses. *** Significant at the 1 percent level, ** Significant at the 5 percent level, * Significant at the 10 percent level.

Campaign Expenditure

	Opposition Parties			Incumbent Parties		
	(1)	(2)	(3)	(4)	(5)	(6)
Audit	0.229**	0.242**	0.208*	-0.137	-0.179	-0.232*
	(0.114)	(0.116)	(0.116)	(0.127)	(0.130)	(0.128)
Audit * Corrupt. Index			-0.010			0.029
			(0.059)			(0.066)
Corrupt. Index			-0.041			-0.027
			(0.051)			(0.056)
Observations	1,400	1,400	1,400	817	817	817
R-squared	0.310	0.344	0.363	0.418	0.438	0.477
State FE	✓	✓	✓	✓	✓	✓
Party FE	✓	✓	✓	✓	✓	✓
Term	✓	✓	✓	✓	✓	✓
Party x Term FE		✓	✓		✓	✓
Controls			✓			✓

Notes: Standard errors clustered at the municipality level. *** Significant at the 1 percent level, ** Significant at the 5 percent level, * Significant at the 10 percent level.

Geographical Spillovers: Corruption Intensity

	Local		Presidential	
	Δ VS		Δ VS	
	(1)	(2)	(3)	(4)
Audit	-0.645	5.195	-3.134*	2.120
	(1.663)	(3.273)	(1.708)	(2.175)
Audit * Corrupt. Index	-2.130**		-2.306***	
	(0.917)		(0.783)	
Audit * 2^0 Tercile		-8.297*		-4.858
		(4.849)		(3.844)
Audit * 3^0 Tercile		-9.084**		-9.847***
		(4.351)		(3.218)
Corrupt. Index	0.913		0.196	
	(0.664)		(0.862)	
Observations	465	465	871	871
R-squared	0.139	0.140	0.490	0.499
Mean Corrupt. Index	-0.00490	-0.00490	-0.00515	-0.00515
F-test joint significance	1.950	1.667	4.468	3.553

Notes: Standard errors clustered at the mesoregion area. *** Significant at the 1 percent level, ** Significant at the 5 percent level, * Significant at the 10 percent level.

Findings: Intensity of Corruption

- In presidential elections, areas sharing information flow behave similarly
  - Parties to blame and shame each-other
- In nearby municipalities, in local elections, voters react only if disclosed corruption is high enough
- There is no differential effect of the audit in the audited municipality in local elections
  - Consistent with opposition using these audit reports to attack the incumbent party

Alternative Interpretations

Alternative Interpretations

- These findings may be consistent with another explanation
  - Vote-Buying

Latinóbarrometro

"Have you known someone in the last election who was pressured or received something to change his/her vote in a certain way?"

Vote-Buying

	Audited Municipality			Informed Neighbour		
	(1)	(2)	(3)	(4)	(5)	(6)
Audit	0.014	-0.060	-0.087	0.087	-0.025	-0.025
	(0.076)	(0.155)	(0.155)	(0.060)	(0.126)	(0.127)
Observations	125	125	125	405	405	405
R-squared	0.000	0.122	0.173	0.005	0.062	0.100
State FE		✓	✓		✓	✓
Population		✓	✓		✓	✓
Controls			✓			✓

Notes: Standard errors clustered at the municipality level. *** Significant at the 1 percent level, ** Significant at the 5 percent level, * Significant at the 10 percent level.

Conclusions

Conclusions

- Strong electoral effect on the party in the presidential elections (audited and neighbours)
- Electoral effect on the party in neighbouring municipalities in local elections
- The spillovers are larger than the direct effect

Implications

- These results are relevant towards better understanding the role of political parties as controlling authorities
- 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