Bureaucratic Quaity and Electoral Accountability

Tara Slough – NYU

August 2022

In search of accountability...

○ Pervasive "bad" governance in developing democracies.
  ◦ Corruption, lack of public goods and services.
  ◦ Cited as evidence of limited accountability.
  ◦ Recent work on information as an antidote to these problems (e.g., Dunning et al. 2019)

○ Challenges:
  1. Conflicting findings in studies of information and accountability.
  2. Asymmetric treatment of outcomes of limited accountability in developed vs. developing democracies.

Co-production of public goods

- Politicians and bureaucrats co-produce public goods:
  - Politicians allocate funding.
  - Bureaucrats produce/implement public goods.

- Globally, bureaucratic quality varies substantially.

- Bureaucratic quality drives the efficiency of public goods investments, which influences:
  - Politician incentives to allocate budget to public goods vs. rents.
  - Voters' ability to update on politician type, select "competent" types.

Overview

Theory: Simple model of electoral accountability with a voter, a politician, and a bureaucrat.

○ Characterize equilibria at different levels of bureaucratic quality.

○ Equilibria imply distinct **empirical implications** of electoral accountability.

Overview

Theory: Simple model of electoral accountability with a voter, a politician, and a bureaucrat.

Design: Two theoretically-structured meta-studies to test empirical implications against two special cases capturing existing arguments.

- ○ Extend four studies of accountability of Brazilian mayors.
    - ◦ 3 studies on corruption and accountability.
    - ◦ 1 study on incumbency disadvantage.
- ○ Examine how treatment effects in 12 information and accountability experiments vary in (national) bureaucratic quality.

Overview

Theory: Simple model of electoral accountability with a voter, a politician, and a bureaucrat.

Design: Two theoretically-structured meta-studies to test empirical implications against two "nested" corner cases.

Findings: Data is consistent with the (full) model, not the alternatives.

- ○ In Brazil...
  - ◦ Politicians allocate funds to rents (instead of public goods) as a function of bureaucratic quality.
  - ◦ Voters update on politicians differently at different levels of bureaucratic quality.
  - ◦ Voter retention of incumbents varies in bureaucratic quality.
- ○ In information experiments...
  - Suggestive evidence that effects of information vary in bureaucratic quality.

Related literature

1. **Bureaucracy** and electoral accountability. (Fox and Jordan, 2011; Yazaki,2018; Li et al., 2019; Raffler and Martin, 2019; Foarta 2022)

2. Empirical studies of **information and accountability**. (Ferraz and Finan, 2008; Humphreys and Weinstein, 2012; Chong et al., 2015; Banerjee et al., 2011; de Figueiredo et al., 2011; Weitz-Shapiro and Winters, 2016; Adida et al., 2017; Larreguy et al., 2020; Arias et al., 2019; Bhandari et al., 2019; Boas et al., 2019; Platas and Raffler, 2019; Cruz et al., 2018, 2019; Varjão, 2019)

3. **Cumulation** and secondary analysis of reduced-form causal estimands. (Banerjee and Duflo, 2009; Dunning et al., 2019; Slough and Tyson, 2022a, 2022b)

Theory

Model overview

○ Simple 2-period accountability model.

○ Players: **P**olitician, **B**ureaucrat, **V**oter.

○ P of type $\theta \in \{\underline{\theta}, \overline{\theta}\}$ – Incompent or competent.

  ◦ Ability to "get things done"
  ◦ Monitor at rate $\overline{\theta}$ or $\underline{\theta}$, where $0 < \underline{\theta} < \overline{\theta} < 1$
  ◦ Private information to P and B
  ◦ Citizen's prior: $\Pr(\theta = \overline{\theta}) = \pi \in (0,1)$

Public goods production

○ In each period, public goods co-produced by P and B.

○ With budget normalized to 1, P allocates:
  ◦ a_t to public goods.
  ◦ $1 - a_t$ to private rents.

○ Bureaucrat, of quality $q > 1$, exerts effort $e_t \in (0,1)$ to produce the public good
  ◦ q is exogenous, common knowledge.

○ Public goods g_t produced according to:

$$g_t = \begin{cases} qa_t & \text{with probability } e_t \\ 0 & \text{with probability } 1 - e_t \end{cases}$$

Election, voter's utility

○ Voter observes a signal, z, of:

$$z = \begin{cases} g_1 & \text{with probability } p \\ \varnothing & \text{with probability } 1 - p \end{cases}$$

- ◦ $p = 0$: no voter information $\Rightarrow$ "no accountability"
- ◦ Used to derive predictions "with" and "without" voter information

○ Voter's utility:

$$E[u_v(i)] = E[g_2^i | z] + \phi$$

$$E[u_v(c)] = E[g_2^c]$$

- ◦ where $\phi \sim U[-b, b]$, for $b > q$, is a valence shock
- ◦ Challenger assumed to act as a first-period incumbent.

Utilities

○ Politician:

  ◦ If in office:

$$U_t^P = 1 - \underbrace{a_t}_{\text{Rents}} + \underbrace{g_t}_{\text{PG}}$$

  ◦ If not in office, U_t^P normalized to 0
  ◦ No discounting.

○ Bureaucrat:

  ◦ Recall that monitoring rate is $\theta \in (0,1)$:

$$U_t^B = -\theta(1 - e_t) - \frac{e_t^2}{2}$$

  ◦ Bureaucrat is not forward-looking.

Sequence, equilibrium concept

○ Sequence:

1. Nature determines θ_1.
2. The incumbent allocates a_1 to the public good.
3. The bureaucrat exerts effort e_1 to produce g_1.
4. With probability p, the voter observes $z = g_1$ and forms posterior $\mu(z)$. ϕ is realized and the voter chooses incumbent or challenger.
5. The incumbent allocates a_2^i (if re-elected), challenger allocates a_2^c (if not re-elected) to the public good.
6. Bureaucrat exerts effort e_2^i or e_2^c to produce g_2^i or g_2^c, respectively.

○ Solution concept: Perfect Bayesian Equilibria (PBE) with intuitive criterion refinement.

Analysis

○ Bureaucrat's optimal effort (in both periods):

$$e_t^* = \theta_t$$

○ In a second term, a politician allocates:

$$a_2^{i*} = \begin{cases} 1 & \text{if } q \geq \frac{1}{\theta_2} \\ 0 & \text{else} \end{cases}$$

  ◦ Given the production function, $E[g_2^i] = q a_2^i \theta_2 \rightarrow$ Politician type (θ) and bureaucratic quality (q) are complements.
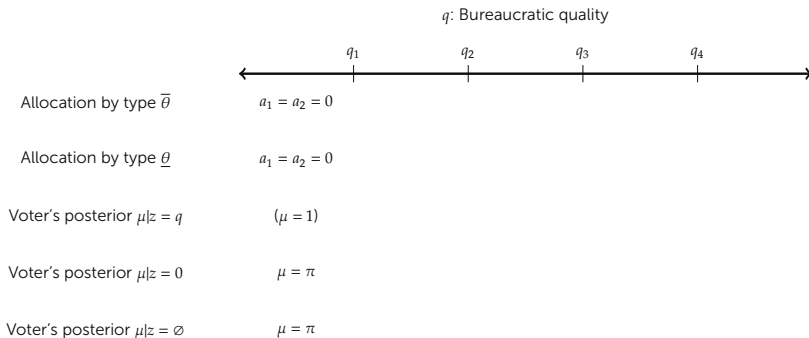
Voter's re-election decision

○ Voters re-elect if $E[u_v(i)] > E[u_v(c)]$ implying:

$$\Pr(\text{re-elecion}) = \frac{1}{2} + \frac{E[g_2^i|z] - E[g_2^c]}{2b}$$

○ Recall that voter may or may not observe $z \in \{0, qa_t\}$:

- With probability $1 - p$ voter does not observe z and so $\mu = \pi$
- With probability p voter observes z, but informativeness of public goods signal depends on politician allocation behavior!

Equilibria

○ Four thresholds of bureaucratic quality: $q_1 \leq q_2 \leq q_3 \leq q_4$, where $q_1 < q_4$:

q: Bureaucratic quality

	q_1	q_2	q_3	q_4
Allocation by type $\bar{\theta}$	$a_1 = a_2 = 0$			
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$			
Voter's posterior $\mu|z = q$	$(\mu = 1)$			
Voter's posterior $\mu|z = 0$	$\mu = \pi$			
Voter's posterior $\mu|z = \varnothing$	$\mu = \pi$			

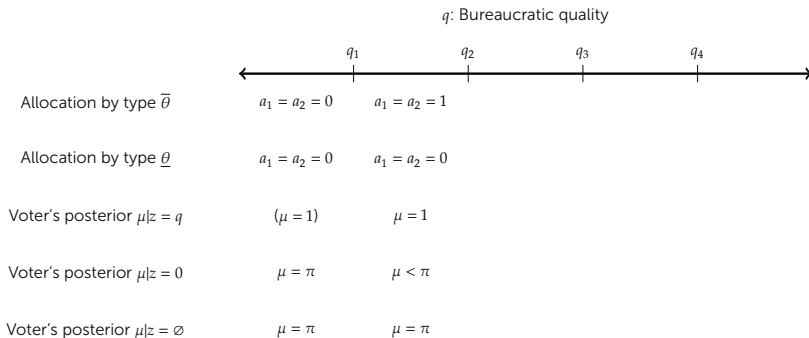**Pooling**

Equilibria

○ Four thresholds of bureaucratic quality: $q_1 \leq q_2 \leq q_3 \leq q_4$, where $q_1 < q_4$:

q: Bureaucratic quality

	q_1	q_2	q_3	q_4

Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$		
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$		
Voter's posterior $\mu\|z = q$	$(\mu = 1)$	$\mu = 1$		
Voter's posterior $\mu\|z = 0$	$\mu = \pi$	$\mu < \pi$		
Voter's posterior $\mu\|z = \varnothing$	$\mu = \pi$	$\mu = \pi$		

Separating

Equilibria

○ Four thresholds of bureaucratic quality: $q_1 \leq q_2 \leq q_3 \leq q_4$, where $q_1 < q_4$:

q: Bureaucratic quality

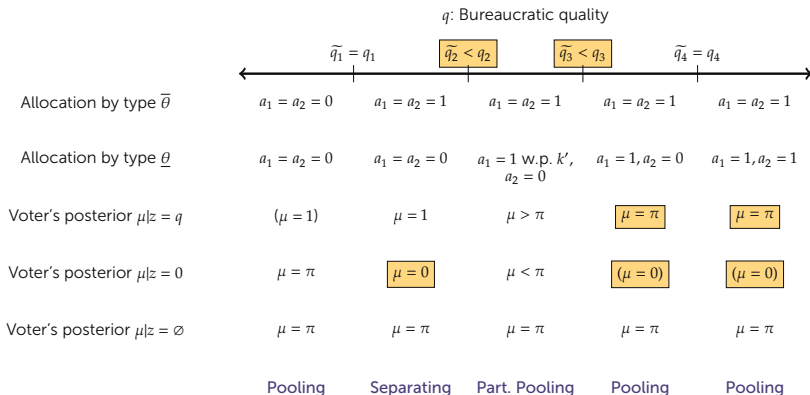|	q_1	q_2	q_3	q_4
Allocation by type $\bar{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1$ w.p. k, $a_2 = 0$	$a_1 = 1, a_2 = 0$
Voter's posterior $\mu\|z = q$	$(\mu = 1)$	$\mu = 1$	$\mu > \pi$	$\mu > \pi$
Voter's posterior $\mu\|z = 0$	$\mu = \pi$	$\mu < \pi$	$\mu < \pi$	$\mu < \pi$
Voter's posterior $\mu\|z = \varnothing$	$\mu = \pi$	$\mu = \pi$	$\mu = \pi$	$\mu = \pi$

Part. Pool.   Pooling

Equilibria

○ Four thresholds of bureaucratic quality: $q_1 \leq q_2 \leq q_3 \leq q_4$, where $q_1 < q_4$:

q: Bureaucratic quality

	q_1	q_2	q_3	q_4
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1$ w.p. k, $a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = 1, a_2 = 1$
Voter's posterior $\mu\|z = q$	$(\mu = 1)$	$\mu = 1$	$\mu > \pi$	$\mu > \pi$	$\mu > \pi$
Voter's posterior $\mu\|z = 0$	$\mu = \pi$	$\mu < \pi$	$\mu < \pi$	$\mu < \pi$	$\mu < \pi$
Voter's posterior $\mu\|z = \varnothing$	$\mu = \pi$	$\mu = \pi$	$\mu = \pi$	$\mu = \pi$	$\mu = \pi$

Pooling

Extension: Observed Allocations

○ In many experiments and natural experiments, voters are shown the politician's action not the public goods outcome.

  ◦ With probability p, voters observe signal $z = a_1$, else $z = \varnothing$.

○ Four thresholds in bureaucratic quality: $\widetilde{q_1} \le \widetilde{q_2} \le \widetilde{q_3} \le \widetilde{q_4}$, where $\widetilde{q_1} < \widetilde{q_4}$.

q: Bureaucratic quality

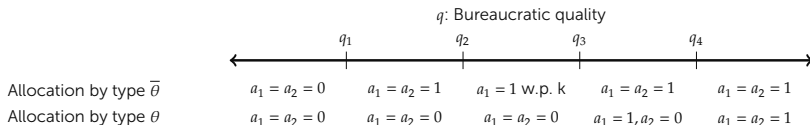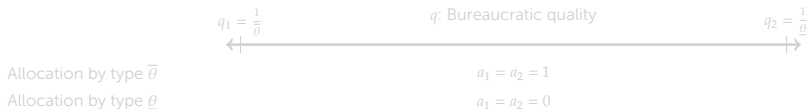|	$\widetilde{q_1} = q_1$	$\widetilde{q_2} < q_2$	$\widetilde{q_3} < q_3$	$\widetilde{q_4} = q_4$
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1$ w.p. k', $a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = 1, a_2 = 1$
Voter's posterior $\mu \vert z = q$	$(\mu = 1)$	$\mu = 1$	$\mu > \pi$	$\mu = \pi$	$\mu = \pi$
Voter's posterior $\mu \vert z = 0$	$\mu = \pi$	$\mu = 0$	$\mu < \pi$	$(\mu = 0)$	$(\mu = 0)$
Voter's posterior $\mu \vert z = \varnothing$	$\mu = \pi$	$\mu = \pi$	$\mu = \pi$	$\mu = \pi$	$\mu = \pi$
	Pooling	Separating	Part. Pooling	Pooling	Pooling

Research Design

Empirical goal

○ To establish the **plausibility** of "general" model versus existing alternatives.

   ◦ But this is a dense literature where lots of people have said lots of stuff.
   ◦ Two modal "existing alternatives" in the **empirical** literature.

○ Existing alternatives → two restricted cases of the model

   1. **"No bureaucrat"**: competent type can always get public good produced; incompetent cannot ever get public good produced.
   2. **(Completely) uninformed voters**.

General model vs. cases

General model:

q: Bureaucratic quality

	q_1	q_2	q_3	q_4
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = 1$ w.p. k	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = a_2 = 1$

Case #1: No bureaucrat, $\underline{\theta} = 0, \overline{\theta} = 1$:

$q_1 = \frac{1}{\overline{\theta}}$ q: Bureaucratic quality $q_2 = \frac{1}{\underline{\theta}}$

Allocation by type $\overline{\theta}$ $a_1 = a_2 = 1$

Allocation by type $\underline{\theta}$ $a_1 = a_2 = 0$

General model vs. cases

General model:

q: Bureaucratic quality

	q_1	q_2	q_3	q_4
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = 1$ w.p. k	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = a_2 = 1$

Case #1: No bureaucrat, $\underline{\theta} = 0, \overline{\theta} = 1$:

$q_1 = \frac{1}{\overline{\theta}}$ q: Bureaucratic quality $q_2 = \frac{1}{\underline{\theta}}$

Allocation by type $\overline{\theta}$ $a_1 = a_2 = 1$

Allocation by type $\underline{\theta}$ $a_1 = a_2 = 0$

Case #2: Completely uninformed voters, $p = 0$:

q: Bureaucratic quality

q_1 $q_2 = q_3 = q_4$

Allocation by type $\overline{\theta}$ $a_1 = a_2 = 0$ $a_1 = a_2 = 1$ $a_1 = a_2 = 1$

Allocation by type $\underline{\theta}$ $a_1 = a_2 = 0$ $a_1 = a_2 = 0$ $a_1 = a_2 = 1$

General model vs. cases

General model:

q: Bureaucratic quality

q_1 q_2 q_3 q_4

Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = 1$ w.p. k	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = a_2 = 1$

Case #1: No bureaucrat, $\underline{\theta} = 0, \overline{\theta} = 1$:

$q_1 = \frac{1}{\overline{\theta}}$ q: Bureaucratic quality $q_2 = \frac{1}{\underline{\theta}}$

Allocation by type $\overline{\theta}$ $a_1 = a_2 = 1$

Allocation by type $\underline{\theta}$ $a_1 = a_2 = 0$

Case #2: Completely uninformed voters, $p = 0$:

q: Bureaucratic quality

q_1 $q_2 = q_3 = q_4$

Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$

Observable implications

○ Equilibria provide (interesting) empirical implications on:
  - Politician's allocation behavior:
    - Affects public goods outputs.
    - But public goods also affected by bureaucrats' behavior.
  - Voter's beliefs about the politician's type.
    - Voters learn a different amount from a signal in different regions of bureaucratic quality.
  - Voter's voting behavior.
    - Obviously (but not so obviously?) voting behavior cannot be identical to beliefs.

○ Hard to measures all implications of the model simultaneously.
  - But we have measured all these pieces before in different places.

○ Theoretically-structured meta-studies incorporating results from multiple studies.

Study #1: Brazilian Mayors

Measuring bureaucratic quality, q

○ Measure: **education level** of the average municipal bureaucrat

  ◦ From IBGE's Municipal Information Survey (MUNIC), 2005-2014
  ◦ From counts bureaucrats by education level, measured ≈ triennially

○ What drives variation in bureaucratic quality?

  ◦ Variation in public sector hiring, contracting processes (Toral 2019)
  ◦ Local labor market conditions

    ◦ Include: State FE; decile bins: % formal, avg. ed., GDP, population
    ◦ Collectively these account for only **20% of variation** in BQ

Validating bureaucratic quality measure

○ **Assumption**: Bureaucratic quality is sticky, at least in the short-run.

  ◦ Autocorrelation (annualized), calculated from 5 rounds of data collection:

Measure	Autocorrelation
Quality (avg. education)	0.83
Per capita personnel	0.95
Total personnel (count)	0.99

  ◦ First-difference models reveal no evidence that changes in mayor or mayor's party yield differential changes in BQ.
  ◦ Also, no evidence of differential changes in the variance.

○ For accountability application: zero conditional association with community radio presence, given state FE, and % formal, avg. ed., GDP, population decile bins.

Audits: Measuring Politicians' Behavior

○ Model emphasizes tradeoff between allocation and rents:
  - Public goods are co-produced.
  - Rents measure actions of the politician.

○ Audit outcomes serve as the measure of politician allocation.
  - Mayors responsible for proposing budget, monitoring execution. Gonçalves (2013)
  - Lawsuits against audits from politicians, not bureaucrats. Seabra (2016)

○ Scope: First 11 rounds of randomized CGU audits, 2003-2004:
  - DV is % of audited funds misused Avis et al. (2018)
  - Here randomization is serving as random sampling, since I am only looking at audited municipalities.
  - Abstracts from politician learning from audits Lichand et al. (2016); Avis et al. (2018)

Measuring Citizen Updating

○ Survey experimental evidence to measure **updating**

  ◦ Lots of recent consternation about non-alignment between survey, field experiments on corruption. Boas et al. (2019) and Incerti (2019)
  ◦ But they measure changes in beliefs and actions, respectively.
  ◦ Focus for talk: updating.

○ Nationally representative **survey experiment** fielded in Brazil Weitz-Shapiro and Winters (2016); Winters and Weitz-Shapiro (2016)

  ◦ Conducted in 2013 in 142 municipalities.
  ◦ Manipulation is information about audit outcome of hypothetical "Mayor Carlos" in "municipality like yours"
  ◦ Treatment conditions: (1) no information, (2) **clean**, or (3) corrupt
  ◦ Testing a new prediction for updating on a clean signal.

Measuring Citizen Voting Behavior

○ Administrative electoral data on **incumbent re-election**

○ Focus on one equilibrium implication: variation in **incumbency disadvantage** across levels of bureaucratic quality

   ◦ Documented in Brazilian mayoral races Klasnja and Titunik (2017)
   ◦ Measured directly from electoral returns in close election t and election $t+1$
   ◦ Focus on three election cycles: 2000→2004, 2004→2008, 2008→2012

q: Bureaucratic quality

	q_1	q_2	q_3	q_4
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1$ w.p. k, $a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = 1, a_2 = 1$
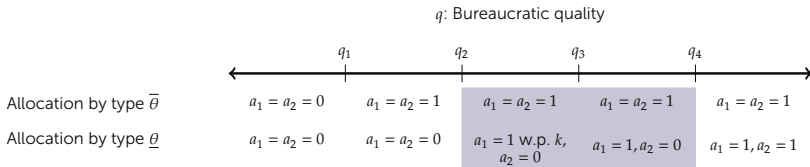
Test #1: Politician allocation behavior

○ Prediction: Allocation to rents is decreasing in bureaucratic quality.

○ Purpose: Distinguish general model from "no bureaucrat" case, where separating equilibrium emerges for all q.

○ Test: Sign of association between bureaucratic quality and rents extracted.

  ◦ Estimator:

$$Y_{msl} = \beta_0 + \beta_1 Q_m + \gamma_s + \lambda_l + \delta \mathbf{X}_m + \epsilon_{msl}$$

  ◦ Prediction is that $\beta_1 < 0$.
  ◦ Note: Theory suggests non-linearities in Q_m. I use linear as well as tercile, quartile specifications of Q_m.

Result #1

○ **Negative association** between bureaucratic quality and rents.
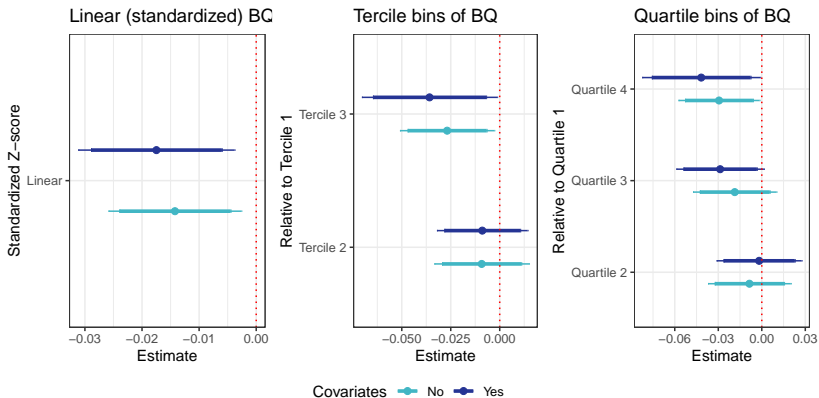
Association between q and % of audited funds misused.

Aside: What is the range of bureaucratic quality in Brazil?

q: Bureaucratic quality

	q_1	q_2	q_3	q_4
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1$ w.p. k, $a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = 1, a_2 = 1$
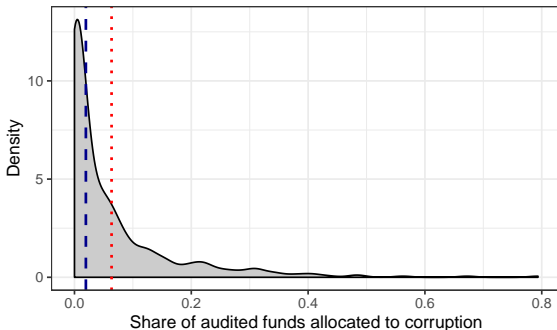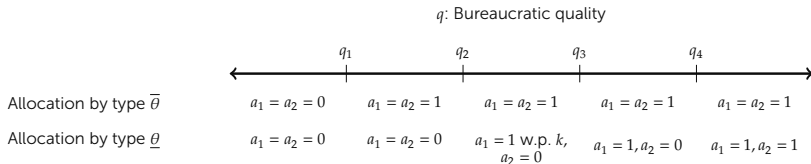
Rents are relatively circumscribed.

Test #2: Term effects on allocations

○ Prediction: Term effects (difference between second and first terms) are **attenuated to zero** at high levels of bureaucratic quality.

○ Purpose: Separate general model from pure selection case without bureaucrat and uninformed voter case:

    ◦ Model without bureacrat → ↓ rents in second term than first.

    ◦ Fully uninformed voters → no difference in rents from first to second term.

q: Bureaucratic quality

	q_1	q_2	q_3	q_4	
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1$ w.p. k, $a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = 1, a_2 = 1$
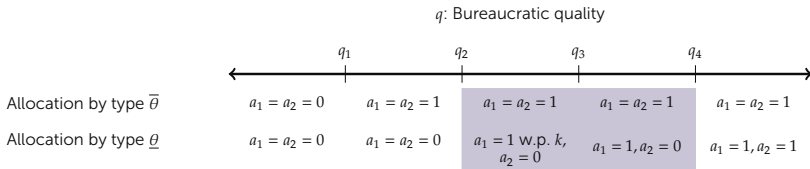
Test #2: Term effects on allocation

○ Prediction: Marginal effect of second term on rents is non-zero at low levels of bureaucratic quality (within sample).

    ◦ Estimator:

$$Y_{msl} = \beta_0 + \beta_1 Q_m + \beta_2 \text{Second term}_m + \beta_3 Q_m \text{Second term}_m +$$
$$\gamma_s + \lambda_l + \delta X_m + \epsilon_{msl}$$

    ◦ Prediction: $\beta_2 + \beta_3 > 0$ for low levels of Q_m and $\beta_3 < 0$.

    ◦ Brazilian mayors are term-limited to two (consecutive) terms.

    ◦ Second term$_m$ is an indicator for a mayor's final term in office.

Result #2:

○ Second term shirking is only detected at low levels of BQ.
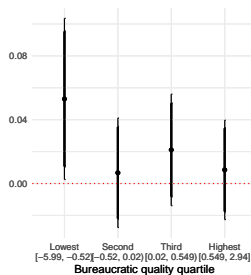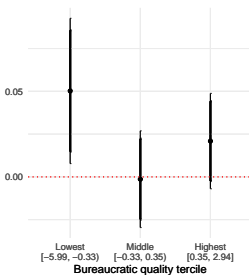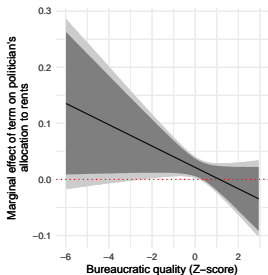
Marginal effect of second term on politician's allocation to rents at different levels of BQ.

Mechanisms

Implications of Result #2:

○ First-term incompetent politicians reduce allocation to rents to win re-election → **voters are watching**

　◦ ...but only at low levels of BQ → evidence of **pooling equilibrium** at high BQ

○ Inconsistent with a **"bureaucrats in charge"** alternative explanation for previous association between BQ and rents (at least in isolation).

Mechanisms

Prediction #3:

○ At high levels of q, V's posterior (μ) is equal to her prior (π) upon receiving a signal that P allocated no funds to rents.
  - Here, the signal is politician allocation behavior, not public goods provision → extension with observable allocations.

○ Purpose: Separate general model from pure selection model (without bureaucrat).
  - In model without the bureaucrat separating equilibrium emerges at all levels of bureaucratic quality.
  - As such, we would expect voters to update on a clean signal everywhere (assuming $\pi \in (0,1)$).

Signal content

Test #3:

- CATEs of the **clean audit** treatment at different levels of bureaucratic quality.
    - Estimator:

$$Y_{ims} = \beta_0 + \beta_1 + \beta_2 \text{Clean signal}_i + \beta_3 \text{Clean signal}_i Q_m +$$
$$\beta_4 \text{Corrupt signal}_i + \beta_5 \text{Corrupt signal}_i Q_m + \gamma_s + \theta X_m + \epsilon_{ims}$$

    - Outcome is 7-point feeling thermometer towards mayor.
    - Predictions: $\beta_3 < 0$ and $\beta_2 + \beta_3 = 0$ at high levels of BQ.
    - Use of corrupt signal allows for "testing" off-path assumptions.

Result #3:

○ Updating on clean signal attenuated to 0 as BQ increases → evidence that voters update consistently with general model predictions.
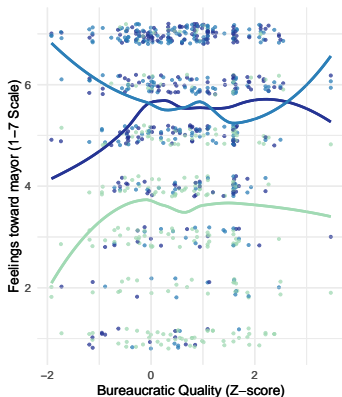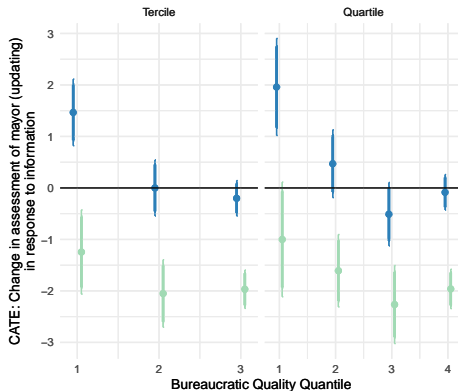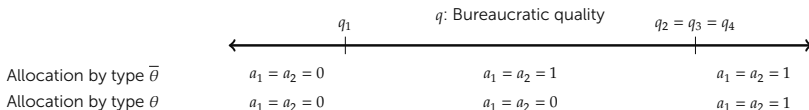

labelformat=empty

Voters do not update on a clean signal at high levels of BQ.

Prediction #4:

○ Prediction: **Incumbency disadvantage** emerges at low levels of BQ (in sample).

○ Purpose: Show that voters' retention decisions anticipate second-term shirking where it is most likely to emerge.

  ◦ Under both special cases, recall that model does not predict second-term shirking.

q: Bureaucratic quality

	q_1	q_2	q_3	q_4
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = 1$ w.p. k, $a_2 = 0$	$a_1 = 1, a_2 = 0$	$a_1 = 1, a_2 = 1$
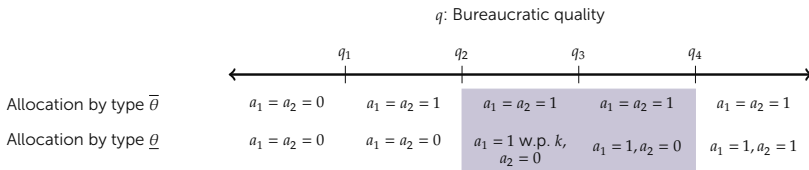
Versus case with **uninformed voters**:

q: Bureaucratic quality

	q_1		$q_2 = q_3 = q_4$
Allocation by type $\overline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$	$a_1 = a_2 = 1$
Allocation by type $\underline{\theta}$	$a_1 = a_2 = 0$	$a_1 = a_2 = 0$	$a_1 = a_2 = 1$

Test #4:

○ Test: Conditional LATES on re-election in Brazilian municipalities in a close
 elections RDD Klasnja and Titiunik (2017).

  ◦ For each quantile bin, b, estimand is:

  $$\tau_b = E[Y_i(1) - Y_i(0)|X = c, B_i = b] = \lim_{x \downarrow c} E[Y_i|B_i = b] - \lim_{x \uparrow c}[Y_i|B_i = b]$$

  ◦ Estimator: Calonico et al. (2017) estimator, fit separately on each bin with
    optimal bandwidth from pooled sample.
  ◦ Prediction: $\tau_1 < 0$, $\tau_1 < \tau_2, \tau_3$ etc.

○ Issue: Whether a party wins re-election depends on:
  ◦ Parties' decisions to contest next election.
  ◦ Voters' behavior.

○ Tradeoff between identification, interpretation guides results presented.

Result #4a:

○ Greatest incumbency disadvantage point estimate in lowest quartile of bureaucratic quality, but...

  ◦ Results are ambiguous.
  ◦ Cannot attribute this as an outcome of voter behavior (yet).
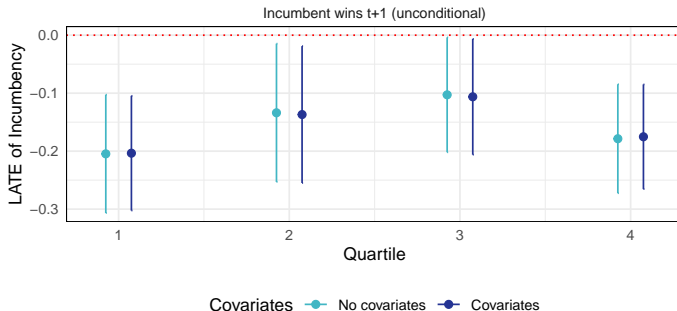
Estimates of (unconditional) incumbency disadvantage.

Result #4b:

○ **Conditional on incumbent running**, incumbency disadvantage is largest at when bureaucratic quality is low.

　○ Consistent with (some degree) of accurate voter anticipation of shirking.

　○ ... but prevalence of incumbency disadvantage at higher levels of bureaucratic quality inconsistent with general model (and alternatives).
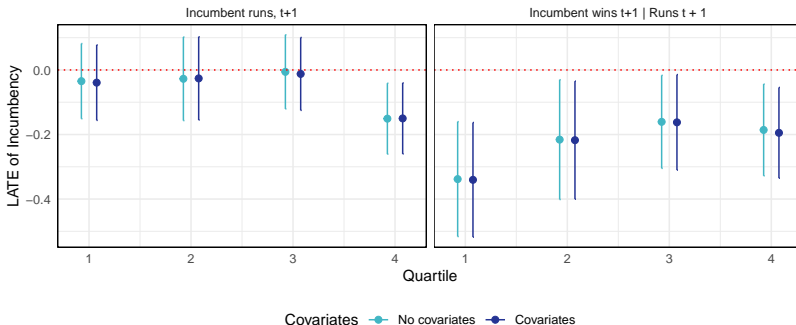
Components of unconditional incumbency disadvantage.

Study #2: Information Experiments

Where do we study information and accountability?

○ Studies of information and accountability **concentrated** in:
  ◦ Democracies with low-ish levels of bureaucratic quality, high-ish corruption, and low-ish public goods provision
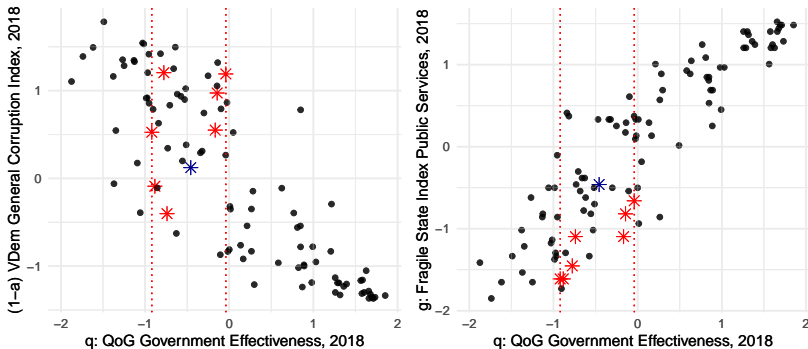
labelformat=empty

Stars indicate countries with accountability experiments. All variables are standardized.

Cumulated Evidence

○ Recent **null meta-analytic findings** from field experiments on information and accountability Dunning et al. (2019), Incerti (2019)

○ Meta-analyses estimate some weighted average of individual study estimates:
  ◦ ... but under this model, the "pooling" of study estimates should attenuate meta-estimates toward 0, even if voters are learning!

○ Absent better measures of sub-national bureaucratic capacity, we are left with 8 country-level measures.
  ◦ Examine 12 experiments, approximating 8 "clusters"

Suggestive evidence

○ Suggestive evidence of larger effects of information at higher levels of q (in sample).

Bad News   Good News
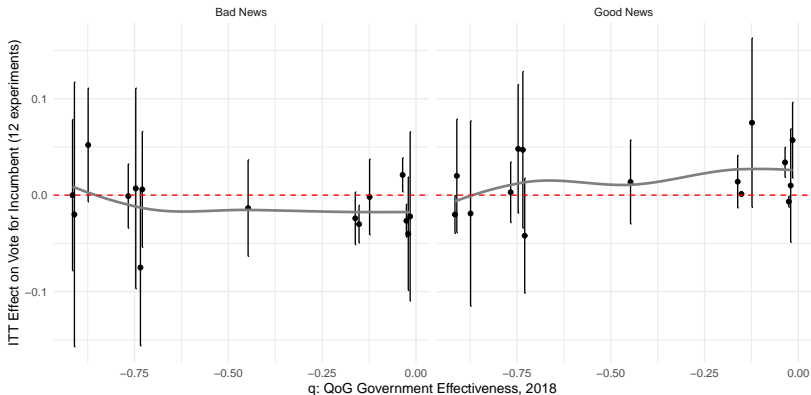
labelformat=empty

ITT estimates of "good" or "bad" news as a function of QoG measure of bureaucratic quality.

Limitations

1. Better **measurement** of subnational bureaucratic quality important for developing further tests of the argument.

2. Selection (into study) on **equilibrium outcomes** potentially limits learning from **partial equilibrium** tests.
   - Hard to know where we are in the parameter space, various observational equivalencies.

3. Role of theory in definition of **external validity**. Slough and Tyson (2022)

Discussion

Implications

1. Observable implications of functioning accountability relations **look different in different places**.
   - Critical observation: stems from **co-production** of public goods by politicians and bureaucrats.

2. Bad outcomes need not be generated by **"bad politics"**.

3. Over-emphasis on **similarities** rather than **differences** in the (current) study of comparative politics
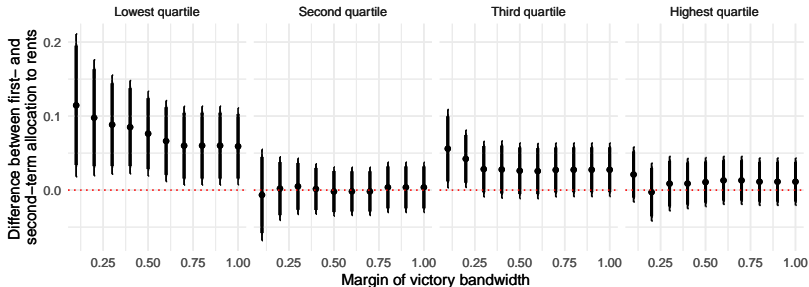
Thank you!

www.taraslough.com

Second-term effect: mechanisms

○ Two mechanisms driving term effects:
- ◦ **Positive selection** of second-period politicians → ↓ term difference (2nd-1st)
- ◦ **Shirking** of low types → ↑ term difference (2nd-1st)

○ RD-like exercise (with zero-degree polynomial) allows us to vary **composition** of second-period politicians (under model assumptions)

Term effects at varying bandwidths.

results implications

Vignettes

Arm	Vignette Text
Control	"Imagine that you live in a neighborhood similar to your own but in a different city in Brazil. Let's call the mayor of that hypothetical city in which you live Carlos. Imagine that Mayor Carlos is running for reelection. During the four years that he has been mayor, the municipality has experienced a number of improvements, including good economic growth and better health services and transportation." (Weitz-Shapiro and Winters, 2016, p. 266).
Clean	Control text + "Also, it is well known in the city that Mayor Carlos has not accepted any bribes when awarding city contracts."
Corrupt	Control text + "Also, it is well known in the city that Mayor Carlos has accepted bribes when awarding city contracts."

Vignette text for each treatment condition.

design   results