Government through Patronage

Bargaining for Education in Decentralized Brazil

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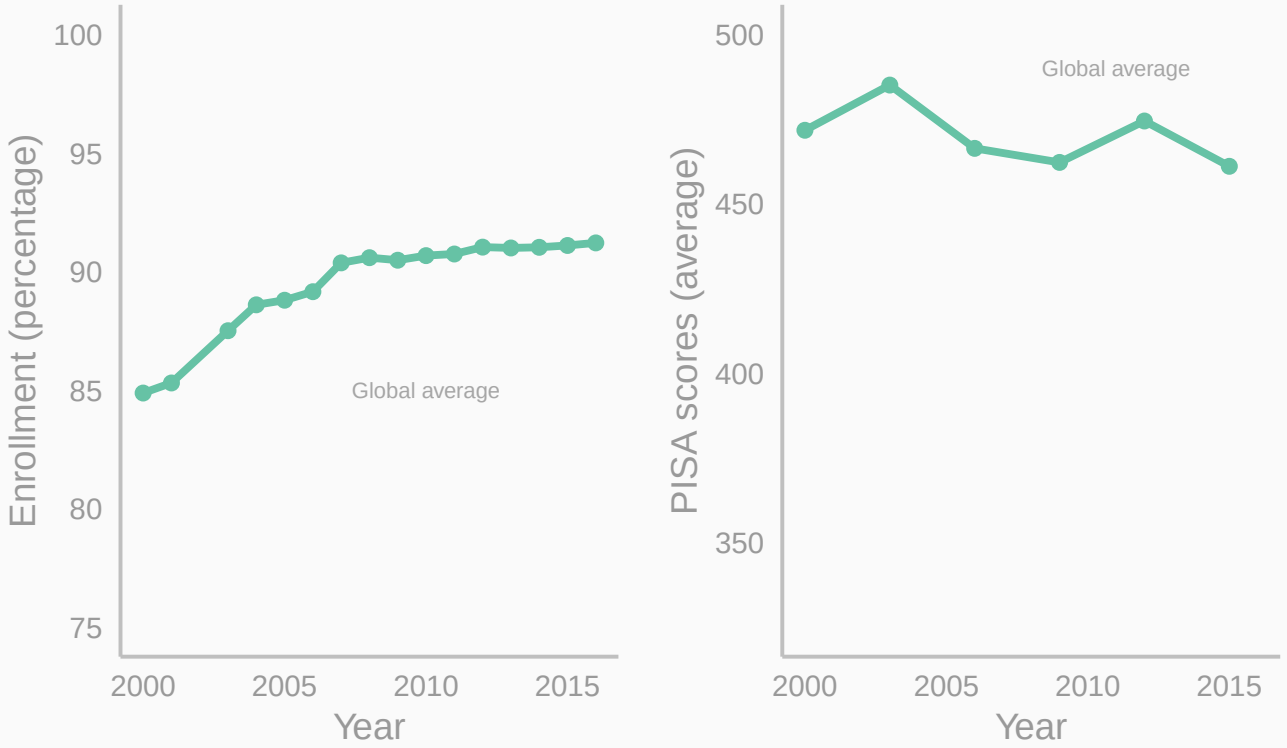
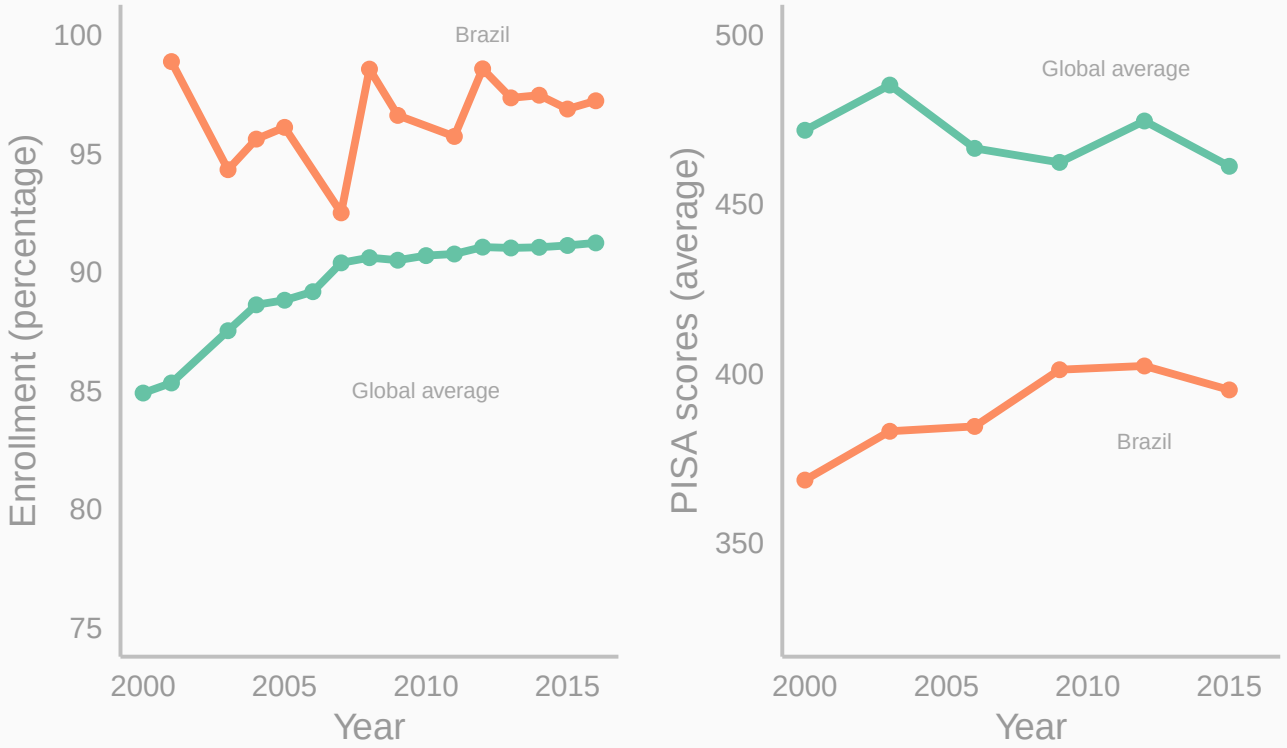
Education: a global perspective

- Children across the world rely on governments for education.
- Access improved significantly over the past decades.
- Improvements in quality remain a challenge.
- "Schooling does not always lead to learning. Worldwide, there are more non-learners in school than out of school."
  - UNICEF.

Global education



Education in Brazil



A domestic challenge

- Each country faces a particular set of challenges.
  - Widespread institutional reforms make cases comparable.
- Decentralization: subnational politicians have direct impact on public services.
  - Falleti 2010, Arretche 2017.
- Quality of education varies along subnational lines.

Mapping domestic inequality

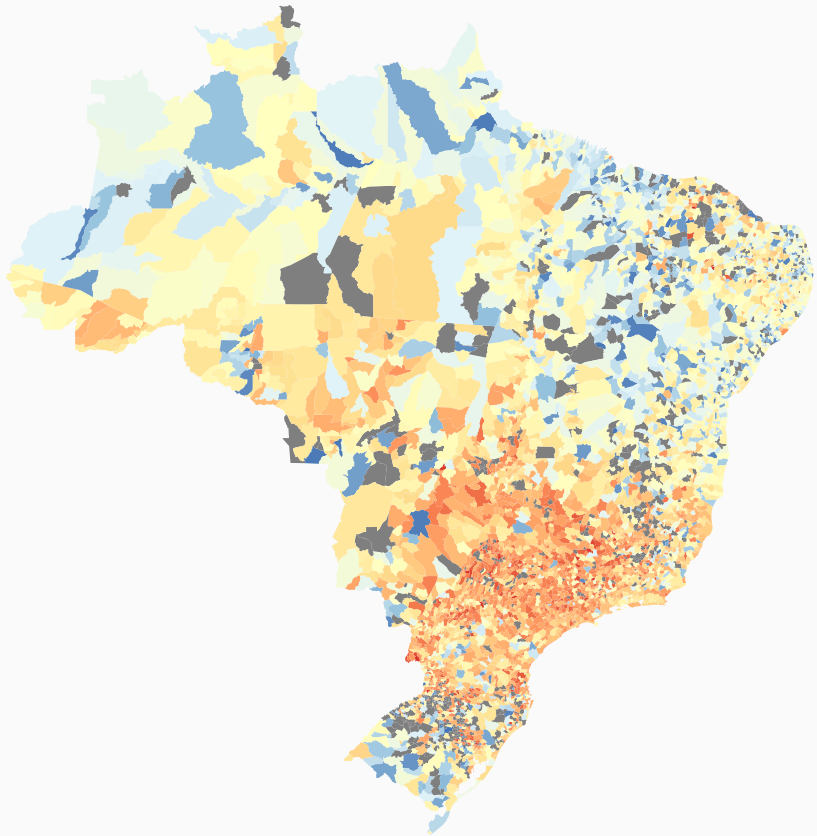


Figure 1: Municipal variation in the quality of education (2015). Polygons represent municipalities, warmer colors indicate higher municipal average in standardized test scores.

Findings

- Decentralization delegates management over personnel.
  - Mayors and legislators have competing claims.
- Mayors allocate public sector jobs to gain legislative support.
  - Increased control by the executive reduces patronages.
- Bureaucratic turnover has negative effects on education.
  - Students perform worse on standardized exams.

Contribution

- Growing literature on the politics of personnel and public services.
  - Pepinsky 2013, Finan et al. 2015, Akhtari et al. 2017.
- Interaction between political elites in local government.
  - Klasnja and Titiunik 2017, Novaes 2019.
- Effect of competition in weakly institutionalized countries.
  - Gottlieb and Kosec 2019.

Outline

1. Related literature
2. Theory
3. Institutional context
4. Research design and data
5. Conclusion

Bureaucracy and public goods provision

- Initial emphasis on industrialization and the developmental state.
  - Johnson 1982, Kohli 2004.
- Political control can make bureaucracies deliver better public services.
  - Toral 2018, Shaffler 2016, Gulzar and Pasquale 2017.
- Analyze who are the politicians managing bureaucracies.
  - And who do they govern with.

Presidential coalitionism and patronage

- Executive and legislators reshape policy and bureaucratic institutions.
  - Cameron and McCarty 2004, McCarty 2004.
- Presidential coalitionism.
  - Mayor (president) builds a coalition by allocating cabinet positions to city councilors (Congress members
  - Raile et al. 2011, Amorim Neto 2000.
- Jobs allocated to city councilors.
  - "City councilors knocked on my door with…people they wanted me to hire." - former mayor of S.

Bureaucratic turnover and inexperienced education

- Staff rotation induces negative productivity shock.
  - Gailmard and Patty 2007.
- Students taught by inexperienced teachers and principals learn less.
  - Clotfelter et al. 2007, Akhtari et al. 2017.
- "I am aware that the position is temporary. Especially because it is a political position, decided by the administration." - school principal in municipality I.

Theory

- Model the executive decision over patronage allocation during government.
  - Mayors need to coopt a winning coalition in the legislature.
- Trade-off between patronage and quality of public services.
  - Probability of reelection vs. governance.
- From pre-electoral bargains with brokers to administrative term.
  - Stokes et al. 2013, Robinson and Verdier 2013.

Prediction

- Mayors with a larger coalition engage in less patronage.
  - Executive prioritizes cheap votes.
- Legislators who already formed an electoral alliance with the government.
  - Groseclose and Snyder 1996, Banks 2000.
- Controlling less seats makes buying a majority more expensive.
  - Indifferent or opposition legislators demand more jobs.

Public education in Brazil

- Over 20 million students enrolled in municipal schools.
  - 1.2 million public teachers and 100 thousand school principals.
- Primary education managed by municipal governments.
  - Personnel decisions centralized by the executive, subject to legislative influence.
- "We are invited to work at the school by the department of education, with the city councilor…appointing people they think have the necessary qualifications." - school principal A.

Enrollment by administrative level

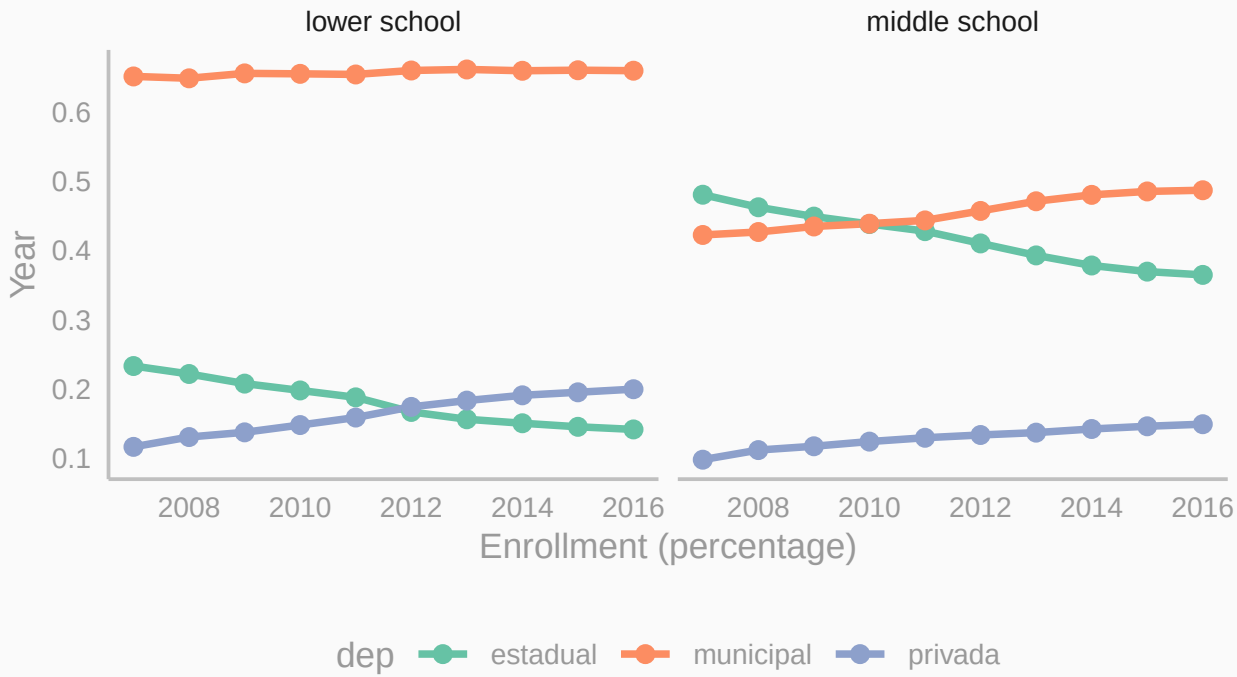


Figure 2: A decentralized system. Lower school education is primarily under the responsibility of municipalities.

Local government

- Local politicians elected for four year terms, with reelection.
  - 5 thousand mayors and over 50 thousand city councilors.
- Executive responsible for delivering public services.
  - City council gives budgetary approval and legal oversight.
- Executive coalitions declared during electoral campaign.
  - Political alliance for electoral campaign and during mayoral term.

Research design

- Bureaucratic turnover $\rightarrow$ student learning.

$$\text{test score}_{isjt} = \beta_1 \text{turnover}_{isjt} + \beta_2 \text{grade}_{isjt} + \beta_3 \text{turnover}_{isjt} \times \text{grade}_{isjt} + \psi X_{isjt} + \phi V_{sjt} + \zeta W_{jt} + \alpha_k + \delta_t + \epsilon_{isjt}$$

- Model specification: hierarchical linear modeling with heterogeneous effect by grade and state-year fixed effects.
  - Outcome of interest: average student test scores at the classroom level.
  - Treatment: (1) teacher and school principal turnover, (2) teacher turnover index.
  - Unit of analysis: classroom.

Research design

- Executive coalition $\rightarrow$ bureaucratic turnover.

$$\text{turnover}_{sjt} = \gamma \text{coalition seats}_{jt} + \mu P_{jt} + \zeta W_{jt} + \alpha_k + \delta_t + \epsilon_{jt}$$

- Model specification: (1) logistic regression, (2) linear model with state-year fixed effects.
  - Outcome of interest: (1) hiring/dismissal of teacher/school principal, (2) proportion of dismissal and hiring.
  - Treatment: share of legislative seats held by executive coalition.
  - Unit of analysis: (1) individual bureaucrat, (2) municipal bureaucracy.

Data

- Student learning.
  - SAEB (2007 - 2015): national test scores for 5 million students (5th and 9th grades).
  - SPAECE (2007 - 2018): state test scores for 400 thousand students (2nd, 5th and 9th grades).
- Educational staff.
  - National school census (1995 - 2016): annual census of 100 thousand schools.
  - RAIS (1985 - 2015): annual employment data on school principals and teachers (over 1 million per year).
- Fieldwork.
  - Interviews conducted in summmers of 2018 and 2019 in Brazil.
  - Mayors, secretaries of education, school principals and teachers.

Bureaucratic turnover by department

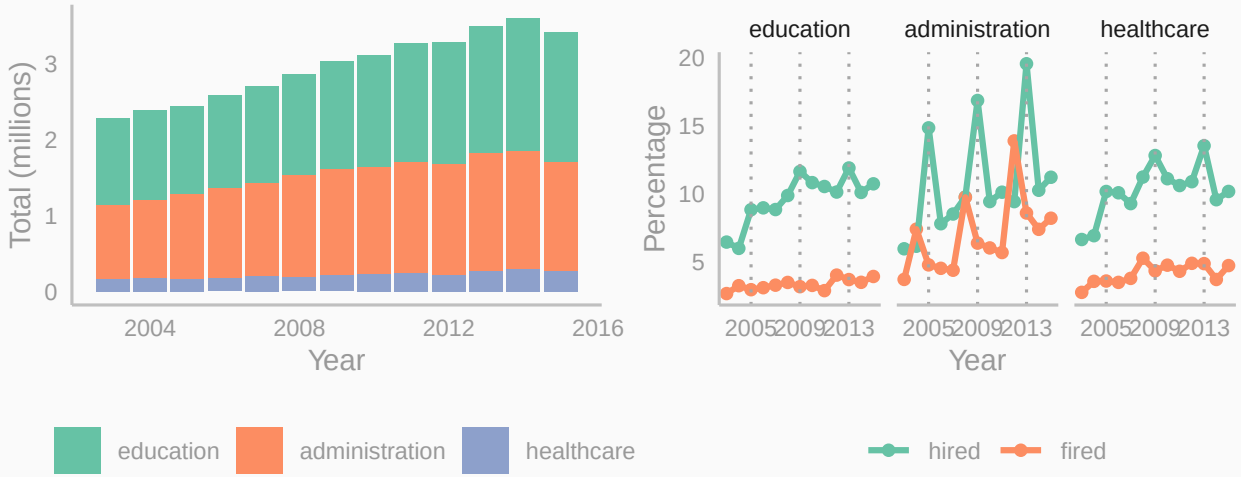


Figure 3: Municipal bureaucracies. Total number of bureaucrats and hiring/dismissal rates for bureaucratic staff over time. Disaggregated by department.

Results

- Staff turnover has negative effects on student learning.
  - Robust to different turnover and standardized exam specifications.
- Increase in patronage in municipalities with lower share of executive-held seats.
  - Similar pattern for different turnover specifications (hiring, dismissal and turnover).

Staff turnover and student test scores: SAEB and SPAECE

	Student learning					
	SAEB test score				SPAECE test score	
	(1)	(2)	(3)	(4)	(5)	(6)
Turnover index	−0.010***	−0.008***			−0.011***	−0.010***
	(0.0004)	(0.0004)			(0.001)	(0.001)
Turnover index × Grade 9	−0.001	−0.005***			0.017***	0.017***
	(0.001)	(0.001)			(0.003)	(0.003)
Teacher experience (2 years)			−0.015***	−0.011***		
			(0.0002)	(0.0002)		
Teacher experience (10 years)			−0.0002	−0.002***		
			(0.0004)	(0.0004)		
School principal experience (2 years)			−0.009***	−0.008***		
			(0.0002)	(0.0002)		
School principal experience (10 years)			0.014***	0.011***		
			(0.001)	(0.001)		
Controls	–	✓	–	✓	–	✓
Observations	649,889	541,822	827,491	792,248	29,099	29,099

Note: *p<0.1; **p<0.05; ***p<0.01

Table 1: Bureaucratic turnover and student learning. Higher turnover in teachers and principals reduce student learning. All models include year and state fixed effects.

Staff turnover and student test scores: SAEB and SPAECE

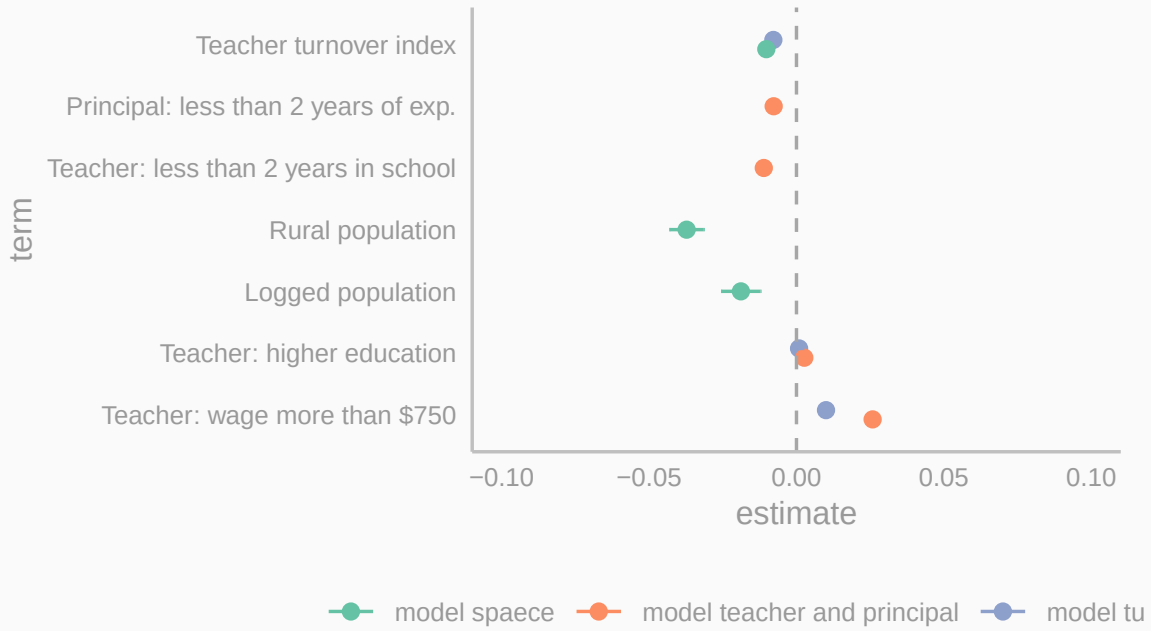


Figure 4: Relative impact of bureaucratic turnover. Point estimates and confidence intervals retrieved from models with controls.

Executive coalition and staff turnover

	Dependent variable:				
	Turnover index	Hired (Logit)	Fired (Logit)	Hired (FE)	Fired (FE)
	(1)	(2)	(3)	(4)	(5)
Executive share of seats	−0.032***	−0.171***	−0.751***	−0.014***	−0.013***
	(0.001)	(0.016)	(0.013)	(0.005)	(0.004)
School principal		0.467***	0.154***	−0.033***	0.028***
		(0.014)	(0.012)	(0.002)	(0.002)
Controls	✓	✓	✓	✓	✓
Observations	2,587,317	1,782,086	1,782,086	62,327	62,327
R^2	0.052			0.086	0.052
Note:					*p<0.1; **p<0.05; ***p<0.01

Table 2: Executive coalitions and staff turnover. An increase in the share of legislative seats held by the mayoral coalition decrease the amount of turnover for teachers and school principals, including hires or dismissals. Models 1, 3, and 5 include year and state fixed effects.

Executive coalition and staff turnover

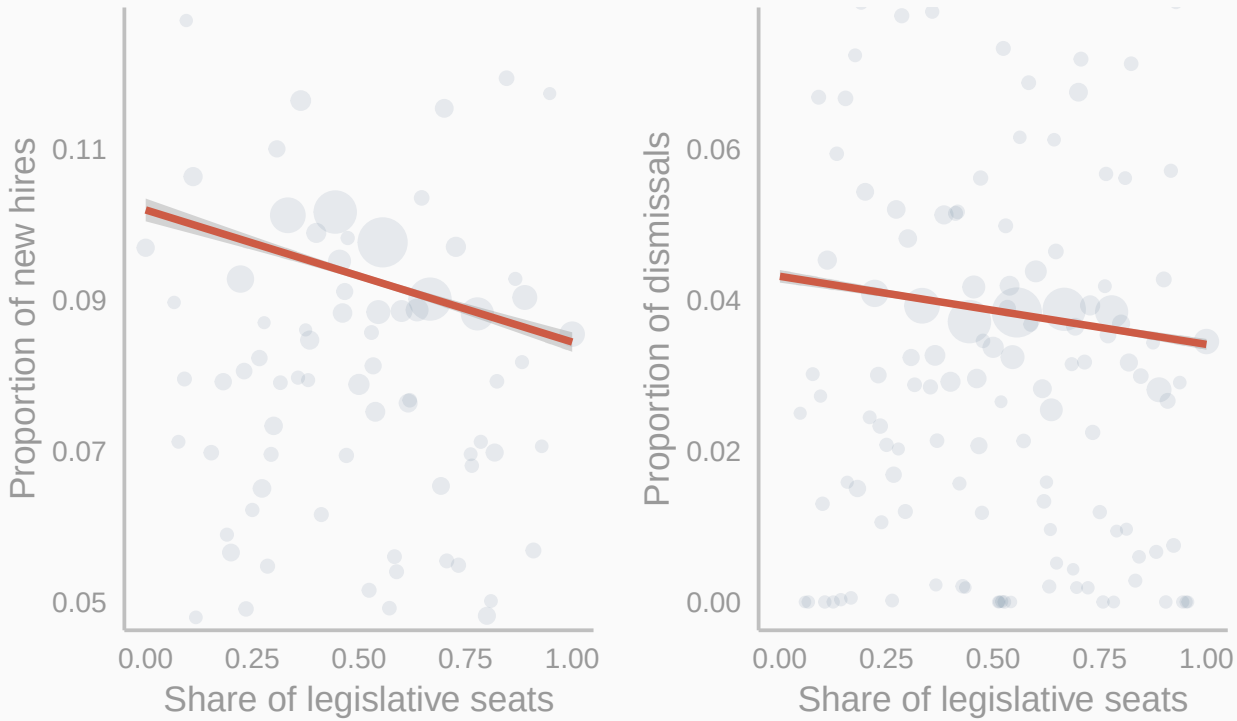


Figure 5: Predicted and actual values for bureaucratic turnover. The line graph plots the predicted proportion of educational staff hired or firede. Circles' size is proportional to the number of observations contained in the data.

Conclusion

- Subnational political actors manage public services.
  - Political elites interact and negotiate with one another.
- Bureaucratic turnover results from executives coopting legislators.
  - Negative downstream consequences for the quality of education.
- Is political competition welfare enhancing for citizen?
  - Future research can theorize on how heterogeneous political elites reshape governments.

Thank you!

If you have any comments/suggestions:

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