ECON 3510: Poverty and Economic Development
Lecture 13: Bureaucracy

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Bureaucracy and Development

- ▶ States rely on bureaucrats to enforce policies.

- ▶ An effective bureaucracy is a building block of state capacity, shaping the paths of development.

- ▶ Selection and incentives of bureaucrats are key.

Aneja and Xu (2024)
"Strengthening State Capacity: Civil Service Reform and Public Sector Performance during the Gilded Age"

- ▶ US federal bureaucracy during the Gilded Age (1870s–1900s): **"spoils system."**
  - A patronage system that allowed elected politicians and their parties the power to hire/fire bureaucrats.
  - Even at the local level, parties could use federal jobs to amass political power.
  - Patronage employees were expected to be politically active and contribute part of their salaries to their patrons ("political assessments").
  - Higher turnovers of bureaucrats due to political cycles.

- ▶ The Pendleton Act of 1883 began to build a **civil service system** that separates public administration from politics.
  - Replacing discretionary hiring with rule-based personnel decisions relying on competitive exams and performance.
  - Workers were protected from political removal.
  - Political assessments were outlawed.

Pendleton Act and USPS

- ▶ The authors study how the Pendleton Act affected public service delivery between the 1870s and 1900s by looking at the US Postal Service.
  - In terms of employment, USPS was and remains today the largest agency of the federal government.
  - At the time, mailing was the key communication technology, facilitating American growth.
  - Postal offices spread all across the country and perform similar tasks: able to assess the impact of a nationwide reform.

- ▶ During the period, two waves of expansion of the Pendleton Act within USPS:
  - 1883: post offices in 23 large cities (> 50 postal workers);
  - 1893: post offices in 556 cities.

  Other post offices were affected later and thus serve as controls here.

Data

- ▶ Herculean effort in data collection!

- ▶ **Performance measures (1879–1901):**
  - From *Annual Report of the General Superintendent of the Railway Mail Service*:
    - Delivery errors (for intercity mails), aggregated to origin cities.
  - From *Annual Report of the First Assistant Postmaster General*:
    - Number of mails handled;
    - Cost of service.

- ▶ **Personnel records (1879–1901):** from *Official Registers of the United States*.
  - Biographical information on all clerks and letter carriers: names, birth dates, work locations, and salaries.
  - The authors further match these data to full count censuses to obtain additional background characteristics.

- ▶ **Local newspapers (election years from 1879–1900):** from Gentzkow et al. (2011).
  - Newspaper partisanship and circulation.

Research Design

- ▶ **Data structure:** pools two comparisons
  1. 1883 reforms cities vs. not-yet-reformed cities;
  2. 1893 reforms cities vs. not-yet-reformed cities.

  Years are centered around the year of reform. The authors limit the window to $[-4, 8]$.

- ▶ **"Stacked" diff-in-diff:**
  $$y_{ijk} = \beta \cdot treat_{ij} \times post_k + \theta_{ij} + \tau_{jk} + \mathbf{x}'_{ijk}\gamma + \varepsilon_{ijk}.$$

  - $treat_{ij}$: = 1 if city i is covered by the Pandleton Act in wave $j \in \{1883, 1993\}$.
  - $post_k = \mathbb{1}\{k \geq 0\}$.
  - $\mathbf{x}_{ijk}$: time-varying control variables.
  - Standard errors clustered at ij level.

- ▶ This specification essentially pools two diff-in-diffs for comparisons 1 and 2, restricting β to be the same. β captures the average effect of two waves (if parallel trends are met).
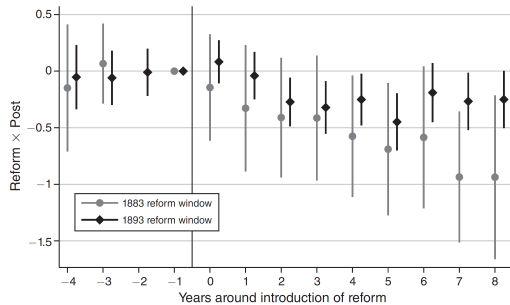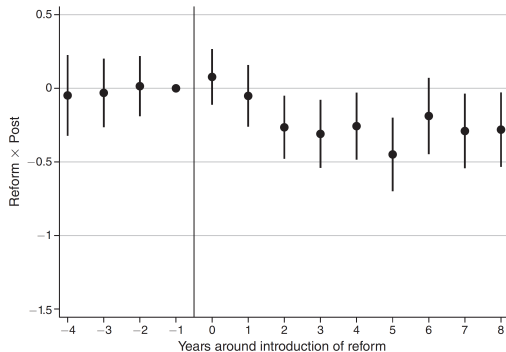
- ▶ **Event study:**
  $$y_{ijk} = \sum_{l=-4}^{8} \beta_l \cdot treat_{ij} \times post_k + \theta_{ij} + \tau_{jk} + \mathbf{X}'_{ijk}\gamma + \varepsilon_{ijk}.$$

Effects on Delivery Errors (for Intercity Mails)

TABLE 2—CIVIL SERVICE REFORM AND PUBLIC SECTOR PERFORMANCE

	log(number of delivery errors)				
	(1)	(2)	(3)	(4)	(5)
Mean of dependent variable:	4.459	4.459	4.459	4.781	4.302
Reform × Post	−0.220	−0.194	−0.200	−0.517	−0.181
	(0.058)	(0.063)	(0.080)	(0.239)	(0.084)
Reform wave					
× City FEs	✓	✓	✓	✓	✓
× Year FEs × State FEs	✓	✓	✓	✓	✓
× Year FEs × Postal employment		✓			
× Year FEs × PDS controls			✓	✓	✓
Sample		Full sample		1883	1893
Observations	18,856	18,856	18,856	6,201	12,655

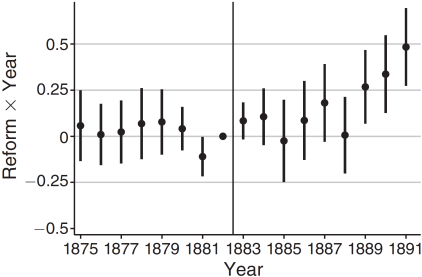# Effects on Delivery Errors: Event Study

Effects on Productivity (for Within City Mails)

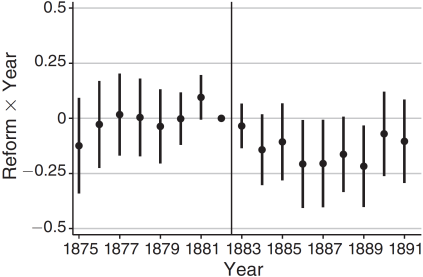TABLE 3—CIVIL SERVICE REFORM AND PRODUCTIVITY (1883 REFORM WAVE)

	log(volume/carrier)		log(cost/volume)	
	(1)	(2)	(3)	(4)
Mean of dependent variable:	12.43	12.43	1.111	1.111
Reform 1883 × Post	0.084	0.137	−0.100	−0.129
	(0.046)	(0.068)	(0.043)	(0.068)
City FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
Year FEs × Postal employment	✓		✓	
Year FEs × PDS controls		✓		✓
Observations	2,880	2,880	2,888	2,888

Effects on Productivity: Event Study

Panel A. Mail per carrier

Panel B. Cost per volume

Mechanisms?

- ▶ Why did the Pandleton Act improve postal workers' performance?

- ▶ *Labor inputs?* Maybe there were simply more people handling the mails.

- ▶ *Selection?* Maybe there were different postal workers after the Act.

- ▶ *Demand?* Maybe somehow demand went down and so the workload was lower.

- ▶ *Incentives?* Maybe the Act protected postal workers from political interference so that they could focus more on their work.

Not about Labor Inputs

TABLE 4—POSTAL EMPLOYMENT, DELIVERY ERRORS PER WORKER AND CIVIL SERVICE REFORM

	log(postal staff)		Delivery errors/staff	
	(1)	(2)	(3)	(4)
Mean of dependent variable:	1.548	1.548	0.321	0.321
Reform × Post	0.014	0.017	−0.081	−0.057
	(0.040)	(0.041)	(0.018)	(0.022)
Reform wave × City FEs	✓	✓	✓	✓
Reform wave × Year × State FEs	✓	✓	✓	✓
Reform wave × Year × Postal employment	✓		✓	
Reform wave × Year × PDS controls		✓		✓
Observations	18,707	18,707	18,707	18,707

► No significant impact on the staff size.

► Still detect a significant decrease in delivery errors normalized by staff size.

Not about Selection of Postal Workers

TABLE 5—CIVIL SERVICE REFORM AND INDIVIDUAL-LEVEL CHARACTERISTICS OF HIRES

Panel A. All hired civil servants	(1)	(2)	(3)	(4)
	Same state	Foreign-born	German	Irish
Mean of dependent variable:	0.628	0.0983	0.0244	0.0187
Reform × Post	−0.014	0.007	0.007	−0.001
	(0.014)	(0.007)	(0.004)	(0.004)
Reform wave × City FEs	✓	✓	✓	✓
Reform wave × Year × State FEs	✓	✓	✓	✓
Reform wave × Year × Job FEs	✓	✓	✓	✓
Reform wave × Year × Controls	✓	✓	✓	✓
Observations	68,977	68,977	68,977	68,977
Panel B. Census-linked hires				
	Age	Literacy	Female	White
Mean of dependent variable:	28.40	0.864	0.114	0.966
Reform × Post	0.826	−0.002	−0.015	−0.000
	(1.038)	(0.027)	(0.026)	(0.012)
Reform wave × City FEs	✓	✓	✓	✓
Reform wave × Year × State FEs	✓	✓	✓	✓
Reform wave × Year × Job FEs	✓	✓	✓	✓
Reform wave × Year × Controls	✓	✓	✓	✓
Observations	22,465	22,465	22,465	22,465

Not about Workload

TABLE 6—TOTAL MAIL VOLUME, COLLECTIONS, DELIVERIES, AND CIVIL SERVICE REFORM (1883 REFORM WAVE)

	log(total volume)		log(collected)	log(delivered)
	(1)	(2)	(3)	(4)
Mean of dependent variable:	14.69	14.69	13.81	14.57
Reform 1883 × Post	0.122	0.129	0.257	0.104
	(0.075)	(0.130)	(0.166)	(0.121)
City FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
Year FEs × Postal employment	✓			
Year FEs × PDS controls		✓	✓	✓
Observations	2,947	2,947	2,947	2,947

Protection from Political Interference

TABLE 7—CIVIL SERVICE REFORM AND PERSONNEL TURNOVER

	Exit rate				Mean experience	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean of dependent variable:	0.173	0.173	0.148	0.148	1.727	1.727
Reform × Post	−0.037	−0.040	−0.041	0.023	0.967	0.779
	(0.016)	(0.016)	(0.023)	(0.028)	(0.114)	(0.138)
Reform × Election				0.054		
				(0.050)		
Reform × Post × Election				−0.130		
				(0.053)		
Reform wave × City FEs	✓	✓	✓	✓	✓	✓
Reform wave × Year × State FEs	✓	✓	✓	✓	✓	✓
Reform wave × Year × Postal employment	✓				✓	
Reform wave × Year × PDS controls		✓	✓	✓		✓
Balanced sample			✓	✓		
Observations	9,502	9,502	4,297	4,297	9,232	9,232

▶ The Act reduced exit rates, especially in election years.

▶ Postal workers had more stable careers.
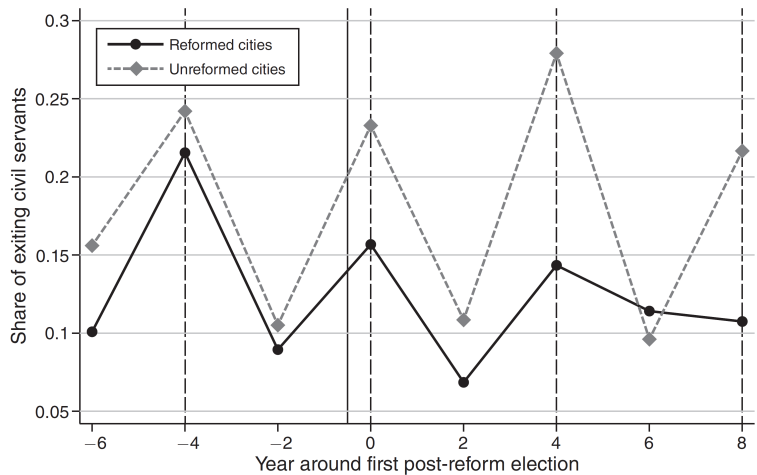
Protection from Political Interference

Performance and Protection for Politics

TABLE 8—PERFORMANCE, ELECTORAL CYCLES, AND CIVIL SERVICE REFORM

	Error rate	Volume/carrier	Cost/volume
	(1)	(2)	(3)
Mean of dependent variable:	0.278	12.59	1.019
Reform × Post	0.002	−0.003	−0.066
	(0.034)	(0.117)	(0.109)
Reform × Election	0.060	−0.090	0.078
	(0.040)	(0.038)	(0.041)
Reform × Post × Election	−0.075	0.194	−0.157
	(0.041)	(0.072)	(0.073)
Reform wave × City FEs	✓	✓	✓
Reform wave × Year × State FEs	✓		
Reform wave × Year FEs		✓	✓
Reform wave × Year × PDS controls	✓	✓	✓
Balanced panel	✓	✓	✓
Sample	All waves	1883 reform wave	
Observations	9,902	1,085	1,088

▶ Consistent with patterns in exit rates, performance improvements were especially large in election years.

Downstream Effect: Fall of Local Partisan Newspapers

Table 10—Civil Service Reform and the Decline in Local Partisan Newspapers

	Newspaper number		Circulation		Circ. share political
	Political	Independent	Political	Independent	
	(1)	(2)	(3)	(4)	(5)
Mean of dependent variable:	1.821	0.191	5.578	0.834	0.907
Reform × Post	−0.195	0.085	−0.266	0.800	−0.044
	(0.079)	(0.043)	(0.779)	(0.477)	(0.025)
Sample	Election years				
Reform waves	All reform waves				
Data	Gentzkow et al. (2011)				
Reform wave × City FEs	✓	✓	✓	✓	✓
Reform wave × State × Year FEs	✓	✓	✓	✓	✓
Reform wave × Year × PDS controls	✓	✓	✓	✓	✓
Observations	4,235	4,235	3,758	3,758	3,758

Summary

▶ Aneja and Xu (2024) find that the Pandleton Act improved postal workers' performance.

▶ The main explanation is that protection from politics enhances incentives to exert efforts.

▶ Additional thought: Aneja and Xu (2024)'s results speak to the short run. The incentive effects might fade in the long term?

Zoopia's Flash
Picture source

On Effective Bureaucracy

- ▶ Aneja and Xu (2024) emphasize the role of incentives, driven by protection from politics.

- ▶ Many other factors can also affect the effectiveness of bureaucracy. For instance:
  - Ability
  - Motivation:
    - Bureaucrats may be motivated to exert efforts because they care about the meaning of their jobs, besides monetary compensations (Prendergast, 2007).
  - Monitoring:
    - We want to make sure bureaucrats do not abuse their powers.

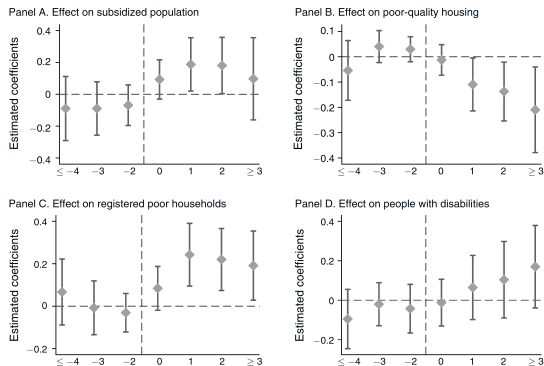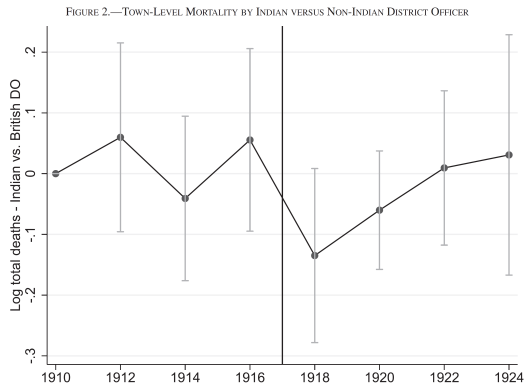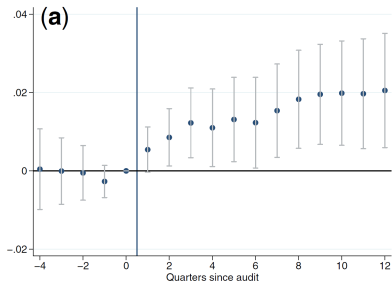- ▶ A growing literature in personnel economics of the state!

Ability: He and Wang (2017)

Panel A. Effect on subsidized population

Panel B. Effect on poor-quality housing

Panel C. Effect on registered poor households

Panel D. Effect on people with disabilities

FIGURE 2. ESTIMATED EFFECT OF IMPLIED CGVO TREATMENT FOR YEARS BEFORE AND AFTER ACTUAL TREATMENT

► In rural China, appointing college graduates as village officials improves implementation of social assistance programs (living subsidies, housing improvements, pro-poor assistance, and disability assistance).
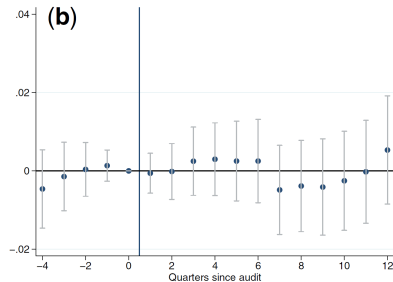
Motivation: Xu (2023)

FIGURE 2.—TOWN-LEVEL MORTALITY BY INDIAN VERSUS NON-INDIAN DISTRICT OFFICER

▶ During the 1918 influenza pandemic in India, towns headed by Indian (rather than British) officers had fewer deaths.

Monitoring: Colonnelli and Prem (2022)

GD-Proc: Estab.

Non-GD-Proc: Estab.

► Brazil's anti-corruption audits increased firm growth in sectors more reliant on government connections (public procurements).

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He, Guojun and Shaoda Wang (2017). "Do college graduates serving as village officials help rural China?" *American Economic Journal: Applied Economics* 9.4, pp. 186–215.

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