Center for Economic Research

UNIVERSITÉ DE LYON

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Topics in Economic History

Class 4

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Outline

1. Bureaucracy and economic development
2. Selection and performance for lower-level bureaucrats
3. Selection and performance for higher-level bureaucrats
4. Presentation and discussion
5. Reproducibility practice

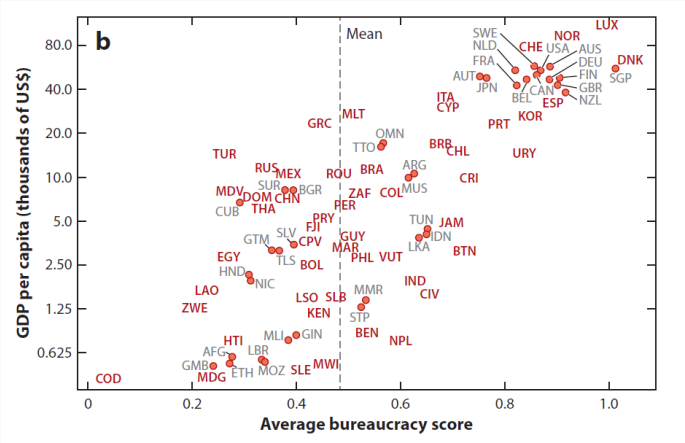
Bureaucracy and economic development

Bureaucracy and economic development

- Besley et al. (2022): wide agreement that effective public administration plays a central role to foster economic growth and development
  - Bureaucrat: paid officials who are responsible for carrying out the core functions of public administration
  - Bureaucrats $\neq$ politicians who are picked in elections
  - Include high-level (senior) officer but also individuals at the front-line of public services provisions
- Why should be we care?
  - Δ in bureaucrat efficiency $\Rightarrow$ level of taxation, implementation of regulation, delivery of public goods, etc.
  - In turns, impact on economic activity in the short-run and economic development in the long-run

Bureaucracy and economic development

Crosssectional relationship between (log) GDP p.c. and the average bureaucracy score in 2016



$\Longrightarrow$ average of 2 subindices: (i) meritocratic recruitment; (ii) impartial and rigorous admin.

Bureaucrats and the principal-agents problems

- How to select and manage bureaucrat within your public administration?
- Weber's ideal type of a public bureaucracy
  - Meritocratic recruitment: skills and merit rather than personal and political connections
  - Rigorous and impartial public administration: abidance by the law and limited arbitrariness and bias
- There is still an issue on how to monitor your bureaucrat $\Rightarrow$ principal-agent problems

Bureaucrats and the principal-agents problems

- Classical approach to the principal-agent problems

$$y_{it} = g(\Theta_i, e_{it}, \nu_{J(it)}) \tag{1}$$

- y_{it}: performance indicator depends on:
  - Θ_i: bureaucrat's type
  - e_{it}: amount of effort
  - $\nu_{J(it)}$: features affecting the nature of the task

- e_{it} is usually hard to observe $\Rightarrow$ state can choose a level of incentives $I(y_{it})$ to affect e
  - Agents try to maximise their utility which should be $\nearrow$ in I (the reward) and $\searrow$ in e

Research on bureaucracy and state capacity

- Most of the research on bureaucracy will focus on one aspect at a time of the principal-agent problems

- e.g. research on the selection of bureaucrat
  - To identify processes that help influencing the type of bureaucrats Θ_i...
  - ... which could impact the performance of bureaucracies
  - e.g. Xu (2018): colonial governors appointed through patronage were more likely to provide more tax exemptions, raise less revenue, and invest less

- ... or at the intersection of selection and incentives
  - e.g. Spenkuch et al. (2023): a sizable share of bureaucrats is ideologically misaligned with their political leaders $\Rightarrow$ greater cost overruns and delays in the implementation of procurement contracts $\Rightarrow$ bureaucrats are less motivated when 'misaligned'

Selection and performance for lower-level bureaucrats

Patronage and performance of police officers

- Lukas Leucht (2023). 'Jobs for Votes: Patronage and Performance in Tammany Hall's NYPD'. Job Market Paper

- Motivation: Selecting and incentivizing talented employees is fundamental to the performance of organisations
  - Patronage could have benefits: alignment, gains electoral support, etc.

- Question: Do politicians select public sector employees via patronage to win votes while sacrificing performance?

- Challenge $\Rightarrow$ one needs detailed information on individuals benefiting from patronage jobs and their voting behaviour
  - New York City Police Department (NYPD) between 1900 and 1916

The paper

- Focus on New-York city in the early 20th century
  - Democrats are ruling the city
  - The main faction of the party is nicknamed Tammany Hall, after their former headquarters
  - William Tweed, leader from 1858 to 1871: 'to the victor belongs the spoils'
  - The faction had local leaders in each district of the city
- Combine newly digitized personnel records of NYPD agents with geo-referenced voter registry information of all voters

$\Rightarrow$ 3 key innovations in the paper

The paper

- Identification of patronage
  - Municipal civil service rules: all patrolmen had to be selected through standardised exams
  - ... but 21% of the 5,795 hires failed to have the required test scores $\Rightarrow$ connection and patronage still enables them to enter NYPD
  - Connection with Tammany Hall's leaders $\Rightarrow$ 'shared country of origin based on their last names'
- Individual-level measure of performance
  - Reports of the police administration: complaints against individual officers + are they fined as a result?
  - Amount of fines $\Rightarrow$ proxy for the (mis-)performance of each agent

The paper

- Political alignment
  - In NY, individuals had to register few weeks before each election...
  - ... and declare their party identification
  - $\Rightarrow$ strong predictor of actual vote shares per polling place $\Rightarrow$ proxy of electoral support
- Methodology: match below test scores policemen with other ineligible and unsuccessful applicants with similar scores (control group)
  - Spillover effects $\Rightarrow$ investigate the Δ in number of registered Democrats at each individual address and immediate neighborhood

The paper

- Results:
  - After the appointment of patronage policemen, number of registered Democrats ↗ by 3.0 voters within a 50 meter radius of the patronage employee's address (+ 10.3%)
  - The effect vanished after 140 m ⇒ immediate neighbourhood matters!
  - No more patronage after higher electoral support ⇒ no rewards for voters
  - The effect persisted during 6 year...
  - ... Employees promotions ↗ if more registered Democrats among the neighbours, regardless of performance
  - ⚠ no effect for meritocratically selected employee

The identification of the patronage

Figure 2. How to Identify Patronage Appointments, Stylized Example

Applicant:	Score:	Rank:
William F. Gill	90.51%	1
James H. Kearns	87.61%	2
John A. McCarthy	86.78%	3
Cornelius B. Corcoran	85.42%	4
Walter P. Robertson	83.15%	5
William D. I. Waters	82.86%	6
Augustin F. Sexton	81.83%	7
John F. Byrne	80.38%	8
Samuel W. Noble	77.29%	9
Daniel J. Foley	76.20%	10
Grover C. Brown	75.98%	11
Frederick C. Struss	72.24%	12
Andrew J. Dillon	71.87%	13
Timothy Donovan	70.28%	14
John F. Cook	70.15%	15
Frank B. Zabriskie	70.04%	16

Notes: This figure presents a stylized example of an eligible list with ten appointments (marked with green background). Three employees received the job despite having test scores that placed them outside of the top ten. These patronage employees are marked in bold font. I refer to the other seven names as "merit employees". Other applicants had the necessary scores (i.e. Rank ≤ 10) to be appointed but did not receive jobs (white background), and I refer to them as being "passed over".

- *Eligible List* is a ranked list of applicants according to their composite score in the civil service exam (100% = best score)

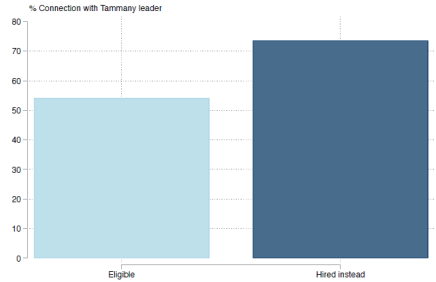
- Link these lists for 8 hiring period between 1901 and 1913 to the 22,761 applications received by NYPD
  - Total numbers of hires is 5,795

$\Longrightarrow$ Bottom 3 green cells should not have been hired!

The identification of the patronage

Hired patrolmen are ≈ 20 p.p. more likely to be connected to their local Tammany leaders than the eligible applicant pool

Figure 3. Connections Between Applicants and Local Tammany Hall Leaders



Notes: This figure presents the share of connected applicants among those who were eligible to receive patrolman jobs but were passed over (left bar), and among the applicants who actually received the jobs instead (right bar). Connections are measured as sharing a (predicted) country of origin with the Tammany Hall leader of their local Assembly District. The country of origin is predicted as the most common country of birth for immigrants with the same last name in the 1900 Decennial Census.

Empirical framework

$\Longrightarrow$ Analyse how the distribution of patronage jobs affect voter behaviour

- Event study design around the date at which recipients of patronage begin their service as patrolmen in the NYPD
  - Compare voters in the neighbourhood of patronage recipients to the neighbours of applicants, who were unsuccessful and ineligible
  - Repeat it for each recipient of patronage for each hiring period
- Identifying assumption: support in neighbourhoods with and without patronage recipients would have followed parallel trends in the absence of patronage
  - Concern if patronage is not randomly assigned because applicants that received patronage $\neq$ those that do not

Empirical framework

$$y_{j(i)t} = \sum_{k \neq -1} \beta_k \, patronage_i \times \lambda_k + \eta_i + \lambda_t + \mu \, X_{it} + \varepsilon_{it} \tag{2}$$

- where
  - applicant i, neighbourhood j, year t
  - $patronage_i = 1$ if applicant applicant i receives a patronage job
  - Each λ_k variable is defined as an indicator function $1(t = k)$ for event year k
  - 1st period $k = -1$ the leave-out category $\Rightarrow$ β_k is year-by-year effects of patronage
  - η_i and λ_t are individuals and time FE
  - X_{it} time-varying characteristics of applicants $\Rightarrow$ only in some specifications

Baseline results

Table 1. Patronage Jobs and Democratic Registration

	(1) All	(2) All	(3) All	(4) Close	(5) Far
Patronage Appointment	2.02***	1.95***	2.95***	2.99***	2.93***
	(0.57)	(0.58)	(0.57)	(0.68)	(0.86)
Outcome Mean	28.67	28.67	28.67	28.67	28.67
R-squared	0.84	0.84	0.85	0.84	0.85
Observations	72492	72492	72492	70296	67320
Patronage Employees	614	614	614	431	183
Control Applicants	5427	5427	5427	5427	5427
Individual FE	Yes	Yes	Yes	Yes	Yes
Event Year FE	Yes	Yes	Yes	Yes	Yes
Application Period x Year FE	No	Yes	Yes	Yes	Yes
Borough x Year FE	No	No	Yes	Yes	Yes

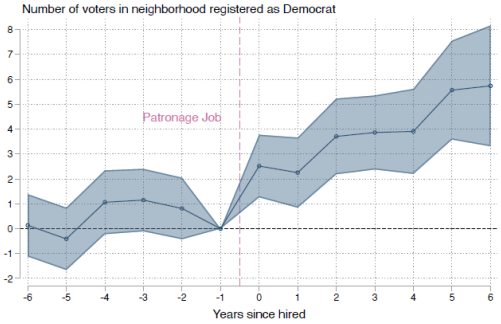
Notes: This table reports difference-in-difference estimates of the effect of patronage (i.e. coefficient β of Equation 1). The outcome for all columns is the number of registered Democrats within a 50 meter neighborhood around the applicant. I winsorize the outcome at 1%. Observations are at the neighborhood-year level. *Patronage Appointment* is a dummy variable equal to 1 starting in the year that the applicant receives their patronage job, and equal to zero before and for all control applicants. Columns 1-3 include all patronage recipients, while column 4 focuses on patronage recipients with test scores close to the eligibility cut-off, and column 5 only includes recipients of patronage who are far from the cut-off or did not apply at all. Starting in column 3, I include fixed effects for the application period interacted with event-year dummies. In column 4, I additionally include fixed effects for borough by year time trends. Standard errors in parenthesis are clustered at the level of applicants' neighborhoods. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

- Run classical DiD
  - $\lambda_k \Rightarrow post_t = 1$ in the year that individuals in the applicant's cohort receive patronage jobs
- Patronage appointments ↗ Democrats registration by 2-3 voters compared to neighbourhoods around unsuccessful applicants who in the same borough
  - Mean of 29 voters $\Rightarrow$ electoral return of 7-10 %
  - Result is stable if close or far from the passing grade

Pre-trends

Electoral support ↗ exactly in the first election after patronage employees begin their service as patrolmen

Figure 4. Event Study of Democratic Registration Around Receipt of Patronage

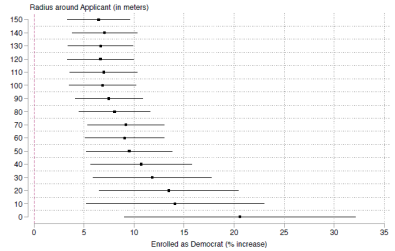


Notes: This figure presents the dynamic treatment effect of patronage on electoral support with 95% confidence intervals (i.e. the event-study coefficients β_k of Equation 2). The outcome is the number of registered Democrats within a 50 meter neighborhood. See the notes of Table 1, column 3, for details on the specification.

Exposure to the treatment

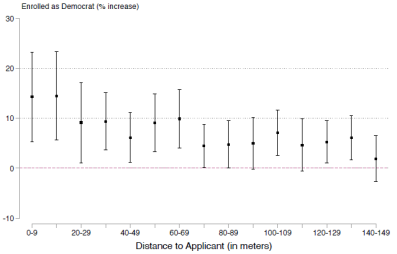
Effect is larger at the exact residential address of patronage recipients and then ↘

Figure 5. Electoral Return to Patronage, by Size of Neighborhood Around Applicants



Notes: This figure presents coefficients and 95% confidence intervals for the effect of patronage on electoral support; with choices for the neighborhood around applicants between 0 (i.e. same address) and 150 meters. See the notes of Table 1, column 3, for details on the underlying regression.

Figure 7. Electoral Return to Patronage, by Distance to Recipient

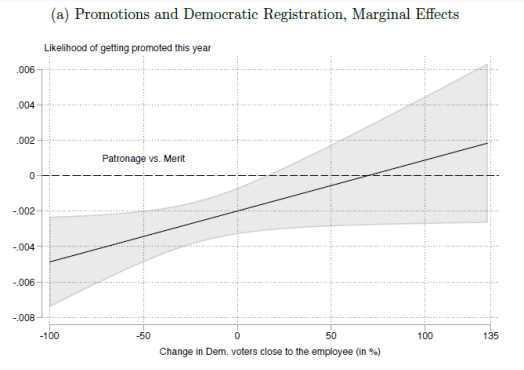


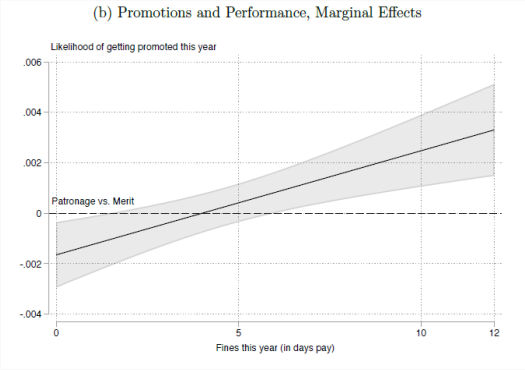
Notes: This figure presents coefficients and 95% confidence intervals for the effect of patronage on electoral support in rings of 10 meter width at increasing distances from the address of recipients (from less than 10 meters around the address to 140-149 meters). See the notes of Table 1, column 3, for details on the underlying regression. For comparison, treatment effects are transformed to percentage increases over the baseline mean number of registered Democrats in each ring around the address.

$\Longrightarrow$ patronage mobilises voters who are private acquaintances of the recipient

What are the incentives for patronage policemen?

Promotion rates of patronage and merit employees at the same level of electoral support





$\Longrightarrow$ When electoral support drops or performance is the highest, patronage employees are less likely to get promoted than merit employees!

What are the consequences?

$\Longrightarrow$ Do test scores in civil service entrance exams predict the performance of appointed patrolmen?

$\Longrightarrow$ Do patrolmen who received the job through patronage with those who received the job by their own merit perform differently?

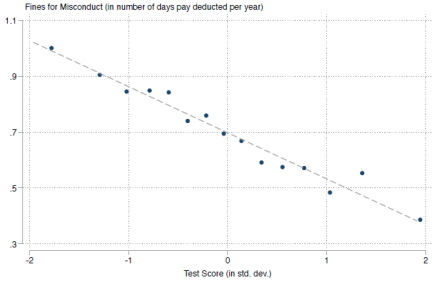
$$perform_{it} = \beta\ Entry_i + \mu\ X_{it} + \varepsilon_{it} \tag{3}$$

- where
  - policemen i, year t
  - $perform_{it}$ the amount of fines for misconduct (nb of days pay deducted) of officer i in year t
  - $Entry_i \Rightarrow$
    - $scores_i$ the entrance exam results of officer i
    - $patronage_i$ a dummy $= 1$ if officer i was appointed through patronage i
  - X_{it} includes hiring period FE and police precinct FE

Test scores and police performance

One $\sigma \searrow$ in test scores $\Rightarrow$ 23.9% reduction in performance

Figure 10. Binned Scatter Plot of Performance and Test Scores



Notes: This figure presents the relationship between test scores in the civil service entrance exam and the performance of hired police officers as a binned scatter plot. Test scores are standardized to mean zero and standard deviation one. Performance is measured as the number of days pay deducted in fines, with greater fines suggesting worse performance. See Appendix Table A4, column 5, for regression output from the underlying specification of this figure. The relationship between test scores and performance is estimated following Equation 5 and includes fixed effects for police precinct and year interactions, as well as fixed effects for the period in which patrolmen were hired.

Patronage and police performance

Patronage employees get 0.16 extra days pay deducted in fines per year $\Rightarrow$ mostly due to negligence

Table 2. Relationship Between Patronage Status and Performance

	(1)	(2)	(3)	(4)	(5)
Patronage	0.174***	0.151***	0.152***	0.147***	0.157***
	(0.055)	(0.053)	(0.052)	(0.054)	(0.053)
Outcome Mean	0.691	0.691	0.691	0.691	0.691
Observations	38439	38438	38438	38364	38364
R-squared	0.000	0.013	0.018	0.052	0.052
Precinct FE	No	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes
Precinct-Year FE	No	No	No	Yes	Yes
Hiring Period FE	No	No	No	No	Yes

Notes: This table reports regression results from estimating the association of patronage status with performance following Equation 6. The outcome for all columns is yearly performance, measured as the number of days pay deducted in fines. Greater fines proxy for worse performance. Police officers are coded as *Patronage* if they received their job without having the required test scores. Columns 2-5 phase in fixed effects for the police precinct (col. 1), the year (col. 2), precinct-year interactions (col. 4), and the period during which the officer got hired (col. 5). Observations are at the police officer-year level. Standard errors in parenthesis are clustered at the level of the police precinct. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

$\Longrightarrow$ Patronage employees faced weaker performance incentives given their career opportunities

$\Rightarrow$ it could explain weaker performance instead of the test scores

Selection, incentives and police performance

When ncluding both patronage status and test scores (col. 3), patronage employees still perform worse!

Table 3. Patronage and Performance, Controlling for Test Scores

	(1)	(2)	(3)	(4)
Patronage	0.254***		0.158**	0.165**
	(0.077)		(0.075)	(0.080)
Test Score		-0.097***	-0.076***	-0.074***
		(0.023)	(0.021)	(0.022)
Test Score Squared				-0.006
				(0.015)
Outcome Mean	0.696	0.696	0.696	0.696
Observations	36019	36019	36019	36019
R-squared	0.054	0.054	0.054	0.054
Precinct FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Precinct-Year FE	Yes	Yes	Yes	Yes
Hiring Period FE	No	No	No	No

Notes: This table reports regression results from estimating the association of patronage status with performance in the sample of patrolmen with test score information following Equation 6. The outcome for all columns is yearly performance, measured as the number of days pay deducted in fines. Greater fines proxy for worse performance. Police officers are coded as *Patronage* if they received their job without having the required test scores. *Test Score* are standardized z-scores with mean 0 and standard deviation 1 of the civil service entry exams. All columns include controls for precinct fixed effects, yearly fixed effects, and their interaction. Observations are at the police officer-year level. Standard errors in parenthesis are clustered at the level of the police precinct. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

$\Longrightarrow$ Patronage employees faced weaker performance incentives given their career opportunities

$\Rightarrow$ it could explain weaker performance instead of the test scores

Take-away

- Civil servants recruitment in NY was only partially meritocratic in the early 20th century
- Quantitative evidence on the electoral returns to patronage
  - Patronage jobs were incentivized to mobilise the votes of their neighbours
  - It was attractive for politicians to undermine meritocratic selection
- Net effect on the quality of public service ($\Rightarrow$ Welfare for the society)
  - Patronage jobs performed their tasks worse than meritocratic employees
  - Resulting reduced electoral competition $\Rightarrow$ could lead to under-provide public goods
- The implementation of modern (meritocratic) civil service is not always sufficient to overcome patronage
  - $\Rightarrow$ implications for modern-day scenario where states attempt to build state capacity

Selection and performance for higher-level bureaucrats

Selection and performance of district officers

- Guo Xu (2023). 'Bureaucratic Representation and State Responsiveness during Times of Crisis: The 1918 Pandemic in India'. 105.2, pp. 482–491. DOI: 10.1162/rest_a_01060

- Motivation: States play a central role in the process of economic development by providing public goods
  - During crises, all the more important because can foster the resilience of communities (e.g. provision of better public goods to solve market failures)

- Question: What is the impact of bureaucratic representation on state responsiveness during the 1918 influenza pandemic in colonial India?
  - Can the spatial Δ in exposure to British (rather Indian) district officer explains such discrepancies?

The paper

- Death toll in India lies between 10 and 20 million deaths (50 million worlwide)
  - Substantial Δ in mortality across different towns and areas of India
- India was the first British colony to allow locals to enter the civil service through open examinations
  - Once selected, officers are promoted and assigned to districts based on seniority
- Methodology: Combine the exogenous timing of the pandemic with the cross-sectional pattern of Indian versus British district officers allocated just before 1918 with information on mortality and relief
  - Officer-level panel covering the allocation of 978 DO across 205 districts of India, 1910-1925
  - Information on education and experience of officers
  - Town-level data on mortality for c. 1,300 towns
  - Subdistrict-level information on hospitals and famine relief measures

Empirical framework

$\Longrightarrow$ What is the impact of bureaucratic representation on town-level mortality during the 1918 pandemic?

$$log(deaths_{it}) = \beta\ Indian_{J(i)} \times Pandemic_i + \Theta_i + \tau_t + \varepsilon_{it} \tag{4}$$

- where
  - town i, district j, year t
  - $deaths_{it}$ total number of deaths in town i in year t to the presence of an Indian DO
  - $Indian_{J(i)} = 1$ if the town district officer is Indian in 1918
  - $Pandemic_t = 1$ during the year of the pandemic (1918-9)
  - Θ_i and τ_t are town and year FE

Empirical framework

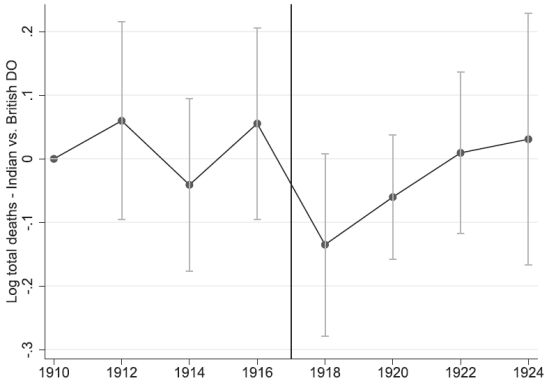
- Threat to causality of β if officers were not randomly allocated across districts
  - Indian DOs could be allocated to less developed districts (+ bias)
  - Indian DOs could be more remote/less exposed district (- bias)

- Identifying assumption: The interaction between the timing of the pandemic and the spatial distribution of Indian DOs in 1918 is (conditionally) unrelated to the pandemic shock
  - No statistically significant $\neq$ in the allocation pattern between Indian versus British DOs in 1918 compared to all other years of the study period 1910 to 1925

Results

Towns in districts under Indian DOs experienced 15 p.p. lower deaths during the pandemic (50% reduction)

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



Difference in (log) deaths in towns under the jurisdiction of an Indian versus non-Indian district officer in 1918, before and after the 1918 pandemic (solid line). The coefficients are estimated using the specification of table 2, column 3 where the pandemic dummy is replaced with biannual year dummies. Standard errors clustered at the district level. Reporting 95% confidence intervals.

Further results

- No significant differences on observable measures of education and experience $\Rightarrow$ Results are not driven by differential ability
  - Indian DOs were equally likely to hold a BA or MA degree
  - In 1918, Indian DOs had also served a comparable number of years
- Role of information frictions $\Rightarrow$ many British had never seen India before their first appointment
  - Use Δ in numbers years DOs serving at the onset of the pandemic
  - Towns in districts with newly appointed British officers $\Rightarrow$ larger $\nearrow$ in mortality
  - ... but not in towns under the jurisdiction of newly appointed Indian DOs
- What about state policies?
  - No difference in the provision of health cares (admission to hospitals)
  - ... but significantly more public works and provision of (food) relief after Nov. 1918

Presentation and discussion

Presentation

- Saumitra Jha and Steven Wilkinson (2023). *Revolutionary Contagion*. Stanford GSB Research Paper 4084. DOI: 10.2139/ssrn.4406390

Reproducibility exercise

Questions?

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