

The Costs of Workplace Favoritism: Evidence from Promotions in Chinese High Schools

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Outline

Introduction

Background and Data

Social-Tie-Based Favoritism and Teachers' Perceived Unfairness in Promotions

Impacts of Perceived Promotion Unfairness

Transparency reform

Motivation

- ▶ The economic costs of discriminative management (favoritism) in organizations
 - ▶ Manager discretion vs rules: bias vs private information

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- ▶ Previous studies mostly about adverse *selection* (resource (mis-)allocation) consequences of managers' bias in hiring, task assignment, promotions, etc.
- ▶ Little evidence on the *incentive* effects on workers' effort choices, esp. in non-experimental settings
 - ▶ **Direct** effect of favoring/discriminating treatment

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 - ▶ Manager discretion vs rules: bias vs private information
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- ▶ Little evidence on the *incentive* effects on workers' effort choices, esp. in non-experimental settings
 - ▶ **Direct** effect of favoring/discriminating treatment
 - ▶ **Indirect** effect of unfair/non-meritocratic workplace "culture" (Benson et al 2019)
- ▶ Challenges:
 - 1 Measurement: workers' effort and perception of bias
 - 2 Identification: isolate (exogenous) variation in a manager's biased *behavior* from her other preferences/management styles

Research Questions

Does exposure to managers' favoritism affect workers' incentives and performance at work?

- ▶ If yes:
 - ▶ Direct or indirect? Mechanisms?
 - ▶ Implication for organization-wide performance?
 - ▶ Any personnel policy tool to help address this problem?

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This paper

- ▶ studies the impacts school principals' biased decisions on teacher promotion (title elevation) on teachers' value-added (VA) and turnover in Chinese public high schools, making use of
 - ▶ newly digitized administrative personnel records
 - ▶ a revealed preference type survey designed to retrospectively measure teachers' fairness notions

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4. **Mechanisms of adverse incentive spillovers:** VA effect explained by teachers' *horizontal social preferences* and *fairness norms*, quitting effect by *career concerns* and *employee learning*.
5. **Internal information transparency** reduced promotion favoritism and improved student test scores.

Related Literature

1. *Effects of top-down discrimination within organizations:*
 - ▶ (Adverse) selection effects of manager bias (e.g. Bandiera 2009, Beaman & Magruder 2012, Hjort 2014, Xu 2017)
 - ▶ **Workers' negative incentive-based responses**
2. *Fairness norms and their workplace implications:*
 - ▶ Workplace evidence on fairness violations towards oneself (e.g. Krueger & Mas 2004, Breza et al 2017)
 - ▶ Survey evidence on fairness norms for others (Falk et al 2018), workplace evidence on horizontal social preferences bet. co-workers (e.g. Bandiera et al. 2005, Charness & Kuhn, 2007)
 - ▶ **Workers' adverse response to fairness violations suffered by co-workers**
3. *Welfare implications of information transparency*
 - ▶ *external* transparency (e.g. media) on corruption and government accountability (e.g. Besley & Burgess 2002, Snyder & Strömberg 2010)
 - ▶ **Internal transparency within organizations as a personnel policy intervention.**
4. *Other related literature*
 - ▶ Important role of hometown and college ties in Chinese bureaucracy (Jia et al 2015) and academia (Fisman et al 2018)
 - ▶ Management matters in public sector (Bloom et al 2015, Bloom et al 2019)

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Institutional Background

Professional title evaluation system in Chinese public schools:

- ▶ Annual evaluation, 3 titles (2 elevations) for high school teachers (junior, middle and senior), "promotion" defined as middle-to-senior title elevation
- ▶ Increase in *fixed* wage following promotion
- ▶ Recommendation of school principals crucial for final decisions made by city-level committee
- ▶ Promotion competitive among applicants w/in school \times year due to quota
- ▶ Teachers can apply multiple times after fulfilling mandatory tenure requirement
- ▶ Promotion results does not instantaneously affect class assignment & workload

Transparency reform in sample cities:

- ▶ Mandatory disclosure of promotion application profiles (formatted CVs) to peer teachers w/in school
- ▶ Across-city policy roll out from 2005-2015

Administrative Data

- ▶ Sample:
 - ▶ 112 public high schools in the 4 largest cities in a Chinese province in 2001-2017
- ▶ Data:
 - 1 Newly digitized records of teachers' promotion application CVs and promotion results [Details](#)
 - ▶ Control for applicants qualifications, construct "promotability scores"
 - 2 Personnel records of teachers and principals
 - ▶ Construct social ties (hometown and college) bet. school principals and teachers
 - 3 Student test scores (class \times subject) in city-level end-of-year exams
 - ▶ Estimate (time-varying) value-added of each teacher

Survey Data and Teachers' Perceived Promotion Unfairness

Sample:

- ▶ 6 schools in 2 cities in 2018

Survey Design:

- ▶ Presented the de-identified application CVs of 2017 applicants in a school to teachers in another school, asked them to evaluate the CVs and pick N (# actual promotees) applicants they thought should be promoted
- ▶ Simulated teachers' post-transparency-reform info. set and decision to make about their applicant colleagues, eliciting revealed preferences
- ▶ Estimating respondents' preferences over virtual applicant characteristics (fairness notion), applying them to actual applicant characteristics in the past to infer perceived fair promotion results [Details](#)
- ▶ Contrasting the inferred fair promotion results with the actual results, the applicants can be grouped into 4 types: deservingly (undeservingly) promoted (denied)
- ▶ Constructing measure of perceived promotion unfairness $\text{Undeserving}\%_{it}$: % promotees regarded as undeserving by teacher i in her school in year t

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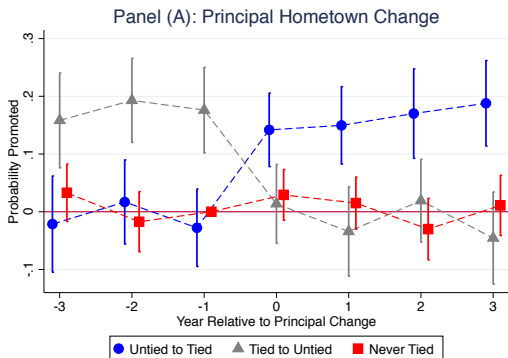
Impacts of Perceived Promotion Unfairness

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Hometown Ties and Promotion Prospects

- ▶ Identification: event studies exploiting school principal turnover
- ▶ Average effect of hometown tie is around 80%

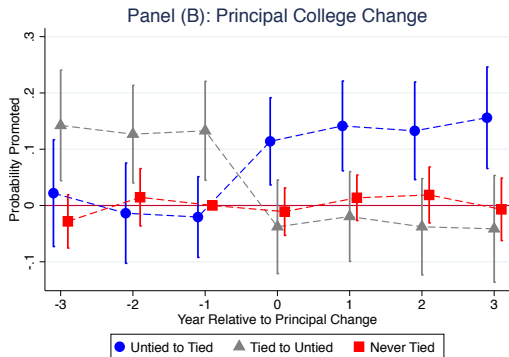
Details



Notes: This graph plots event studies of the applicants' promotion rates before and after the entry of a new principal of different hometown background from the previous one. $\phi_{\text{never-tied}, -1} = 0$ by construction. Application CV characteristics X , applicants' school-average VA, school-year FEs, share of same-subject applicants are controlled for.

College Ties and Promotion Prospects

- ▶ Identification: event studies exploiting school principal turnover
- ▶ Average effect of college tie (hometown or college tie) is around 60% (100%)



Notes: This graph plots event studies of the applicants' promotion rates before and after the entry of a new principal of different hometown background from the previous one. $\phi_{\text{never-tied}, -1} = 0$ by construction. Application CV characteristics X , applicants' school-average VA, school-year FEs, share of same-subject applicants are controlled for.

More on Teachers' Perceived Unfairness

- ▶ Surveyed teachers value teaching awards more and social ties less
 - ▶ Undeserving promotees are mainly low-quality applicants socially connected to the principal
- ▶ 60% variation in **Undeserving%** is within school-principal \times teacher
 - ▶ Driven mainly by variation in composition of applicants (wrt qualifications and social ties) across different promotion rounds

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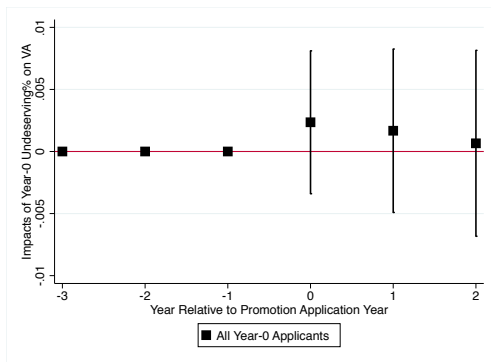
Impacts of Perceived Promotion Unfairness

Transparency reform

Average Incentive Effects on Applicants (Quitting)

- ▶ Identification: w/in school \times principal \times teacher event studies of different promotion rounds [Details](#)
- ▶ Trivial *average direct* effects of perceived promotion unfairness on *applicants'* quitting probability

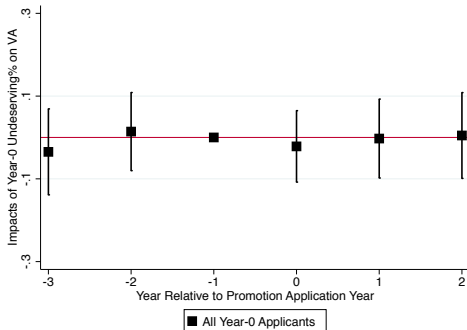
Impacts of Perceived Promotion Unfairness on Applicants' Quitting Probability



Average Incentive Effects on Applicants (VA)

- ▶ Trivial *average direct* effects of perceived promotion unfairness on applicants' VA

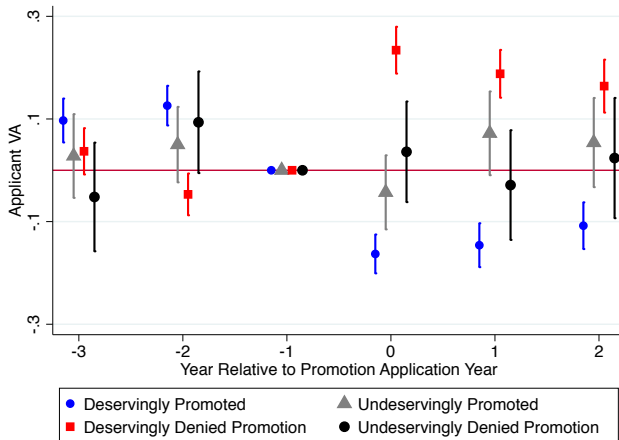
Impacts of Perceived Promotion Unfairness on Applicants' Quitting Probability



Unpacking Average Incentive Effects on Applicants

Promotion unfairness

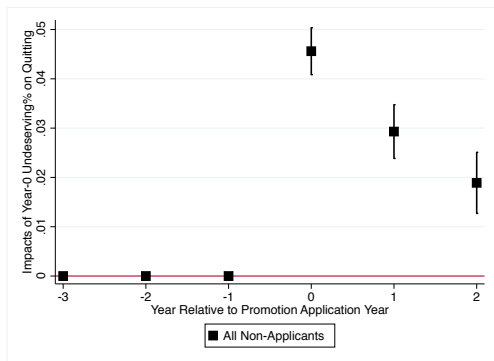
- ▶ motivates the *favored* (undeservingly v deservedly promoted)
- ▶ disincentivizes the *biased against* (undeservingly v deservedly denied)
- ▶ The two offset each other



Indirect Incentive Effects on Non-Applicants (Quitting)

- ▶ Non-applicants 78% of teachers
- ▶ Avg. quitting rate of *non-applicants* under avg. level of unfairness is 16% higher than the "fair" counterfactual in year 0

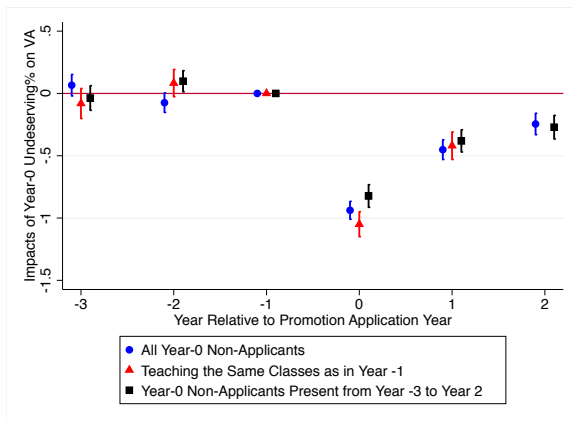
Spillover Impacts of Perceived Promotion Unfairness on Non-Applicants' Quitting Probability



Indirect Incentive Effects on Non-Applicants (VA)

- ▶ Non-applicants 78% of teachers
- ▶ Avg. VA of *non-applicants* under avg. level of unfairness is 0.28SD lower than the “fair” counterfactual in year 0

Spillover Impacts of Perceived Promotion Unfairness on Non-Applicants' Quitting Probability



Robustness Checks

- ▶ Sample choices (in the VA analysis)
 - ▶ (i) Balanced panel (2) drop teachers w/ re-assigned to new classes
- ▶ Instrumenting for $\text{Undeserving}\%_{it}$: figures
 - ▶ Using predicted promotion decisions from principal-specific estimates of principals' preferences on qualifications and social ties. IV def.
 - ▶ Using difference in. avg. promotability/qualifications bet. applicants tied to current and previous principals (and its higher-order terms). IV def.
- ▶ Observable job characteristics do not correlate w/ $\text{Undeserving}\%_{it}$ figures
- ▶ No immediate selection to middle-level leaders following title promotions

Mechanisms: VA

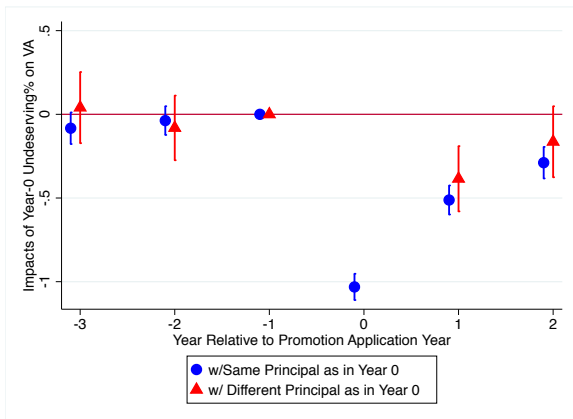
Suggestive evidence on the mechanisms of adverse incentive spillovers on non-applicants:

- ▶ VA effect likely driven by fairness norms and horizontal social preferences between peers at work
 - 1 Limited evidence of learning about principals
 - ▶ Effect not decreasing with principal's length of term, persistent even after principal has left
 - 2 Effect most pronounced among the already promoted
 - 3 Effect does not vary by whether socially connected to the principal (among all non-applicants and prospective applicants)
 - 4 Effect most pronounced among those who interact a lot with perceived victims of promotion unfairness
 - 5 Among already promoted teachers, those who were deservingly promoted in the past respond more harshly in VA

Mechanisms: Empirical Patterns (VA)

- ▶ Effect not decreasing with principal's length of term.
- ▶ Effect persistent when principal has left.

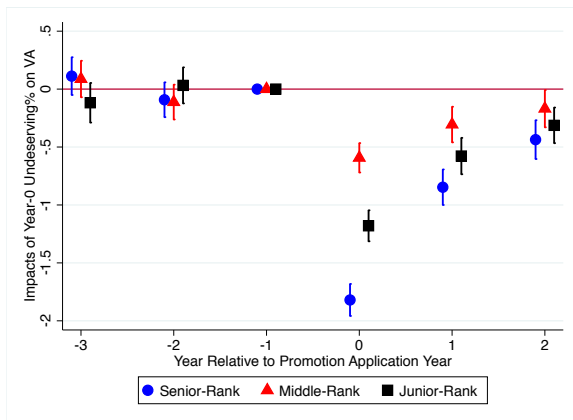
Spillover Impacts on Non-Applicants' VA: Principal's Presence



Mechanisms: Empirical Patterns (VA)

- ▶ Effect most pronounced among senior-ranked (already promoted) teachers.

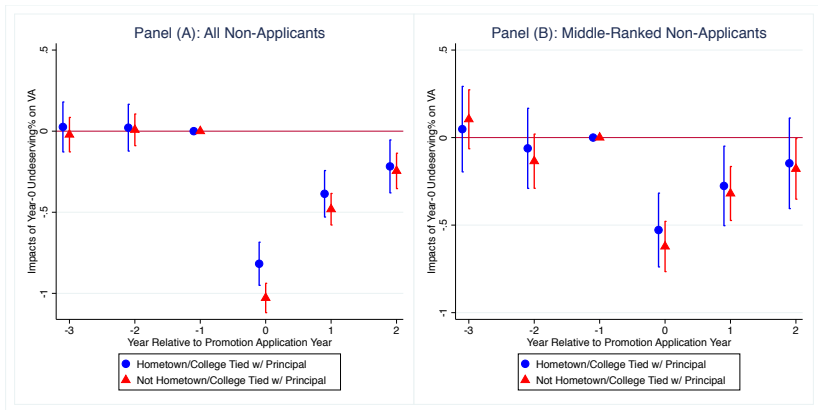
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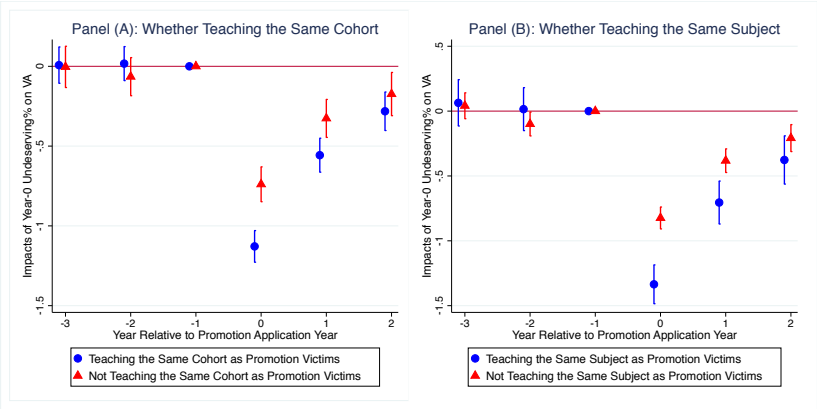
Spillover Impacts on Non-Applicants' VA: Social Ties w/ Principal



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- ▶ Effect most pronounced among those who interact a lot with perceived victims of promotion unfairness.

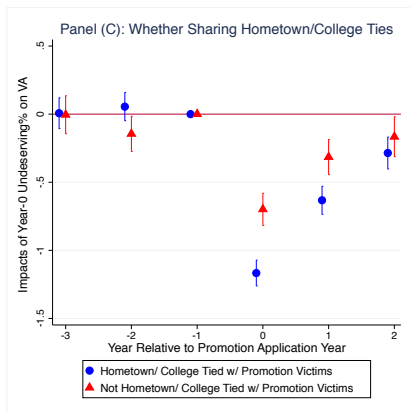
Spillover Impacts on Non-Applicants' VA: Interactions w/ Victims



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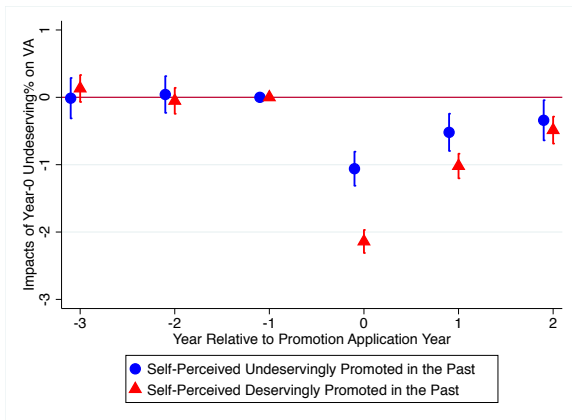
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Mechanisms: Empirical Patterns (VA)

- ▶ Among already promoted teachers, those who were deservedly promoted in the past respond more harshly in VA.

Spillover Impacts on Non-Applicants' VA: Self Past Promotion Experience



Mechanisms: Quitting

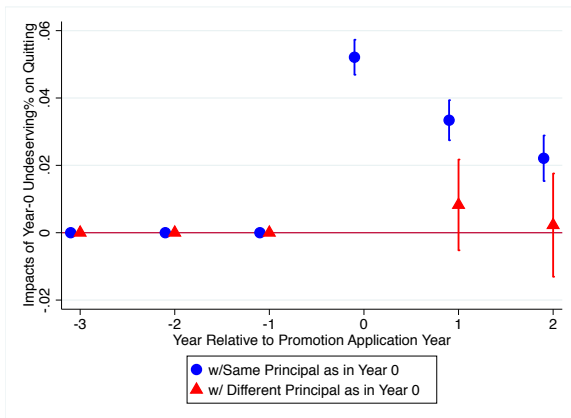
Suggestive evidence on the mechanisms of adverse incentive spillovers on non-applicants:

- ▶ Quitting effect likely driven by career concerns and learning about principal
 - 1 Evidence of information updating about principals
 - ▶ Effect decreasing with principal's length of term, disappearing after principal has left
 - 2 Effect most pronounced among the prospective applicants who are socially unconnected to the principal
 - 3 Effect more pronounced among high-value-added prospective applicants

Mechanisms: Empirical Patterns (Quitting)

- ▶ Effect decreasing with principal's length of term. [table](#)
- ▶ Effect disappears when principal has left.

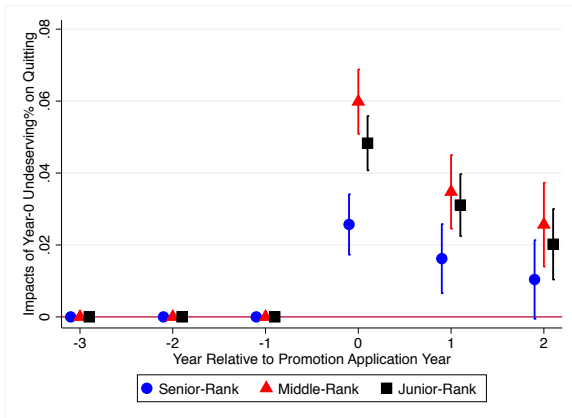
Spillover Impacts on Non-Applicants' Quitting: Principal's Presence



Mechanisms: Empirical Patterns (Quitting)

- ▶ Effect most pronounced among middle-ranked (prospective applicant) teachers.

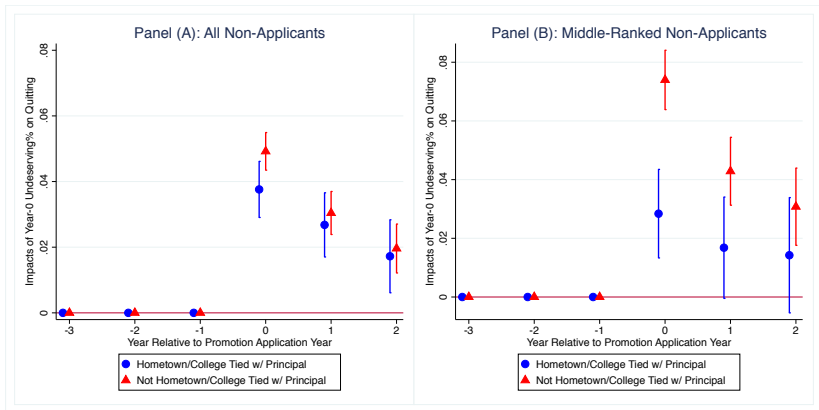
Spillover Impacts on Non-Applicants' Quitting: Professional Ranks



Mechanisms: Empirical Patterns (Quitting)

- ▶ Effect more pronounced among prospective applicants socially unconnected to the principal.

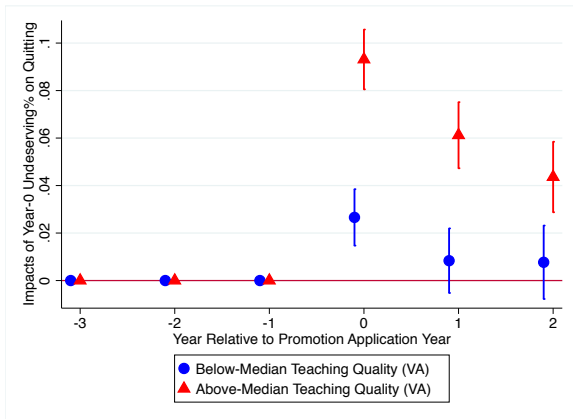
Spillover Impacts on Non-Applicants' Quitting: Social Ties w/ Principal



Mechanisms: Empirical Patterns (Quitting)

- ▶ Effect more pronounced among high-value-added prospective applicants.

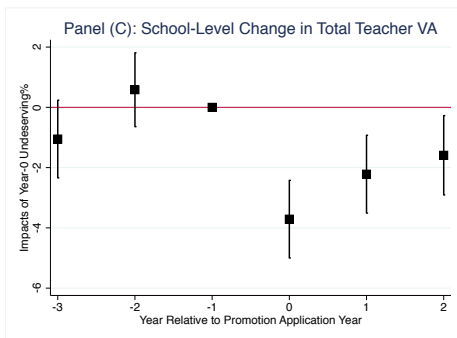
Spillover Impacts on Middle-Ranked Non-Applicants' Quitting: Social Ties w/
Principal



Impacts on School-Wide Performance: Teacher Quality

- Identification: w/in school \times principal event studies of different promotion rounds

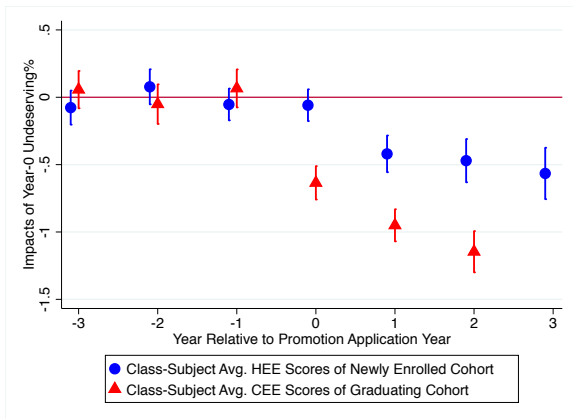
Impacts of Perceived Promotion Unfairness on Teacher Quality Change



$$\text{Change}_{ht}^{VA} := N_{ht}^{\text{New}} VA_{ht}^{\text{New}} - N_{ht}^{\text{Retired}} VA_{ht}^{\text{Retired}} - N_{ht}^{\text{Quit}} VA_{ht}^{\text{Quit}}.$$

Impacts on School-Wide Performance: Student Test Scores

Impacts of Perceived Promotion Unfairness on Students' Graduation Exam and Entrance Exam Scores



- ▶ Avg. (cumulative) decrease in CEE scores of a fully affected graduation cohort of 0.25SD
- ▶ Avg. decrease in HEE scores of the most affected enrollment cohort of 0.11SD

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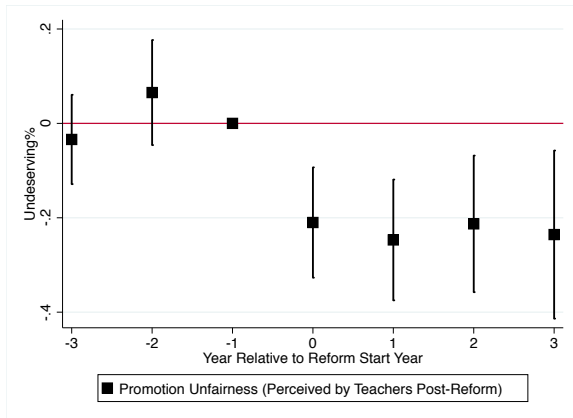
Impacts of Perceived Promotion Unfairness

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Impacts of Information Transparency

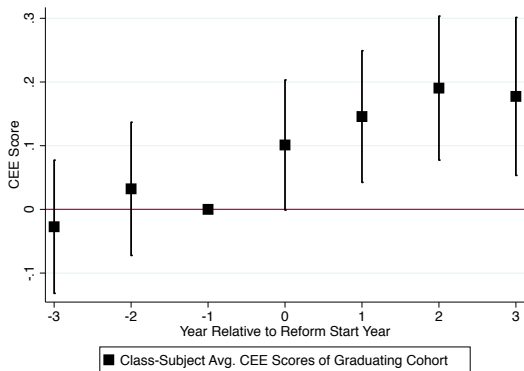
- ▶ Identification: DiD, DDD exploiting different timing of reform in each city
- ▶ Findings:
 - 1 (Non-applicant) teachers' response to (a given level of) promotion unfairness is around 40% harsher post-reform [Detail](#)
 - 2 Teachers' perceived promotion unfairness dropped by around 50% post-reform
 - 3 Student test scores in provincial-level graduation exam raised by 0.19 SD post-reform

Information Transparency on Promotion Unfairness



specification

Information Transparency on Graduation Test Scores



specification

Wrap-Up

- ▶ Take-away findings:
 - 1 Social-connection-based favoritism exists in teacher promotions in Chinese public high schools
 - 2 As a response, *non-applicant* teachers shirk and quit, leading to worsened school-wide performance
 - 3 Internal information transparency within schools can (partially) correct favoritism and its adverse consequences

Wrap-Up

- ▶ Take-away findings:
 - 1 Social-connection-based favoritism exists in teacher promotions in Chinese public high schools
 - 2 As a response, *non-applicant* teachers shirk and quit, leading to worsened school-wide performance
 - 3 Internal information transparency within schools can (partially) correct favoritism and its adverse consequences
- ▶ Implications:
 - 1 *Global* workplace "culture"/environment generated by *local* bad management practices has far-reaching worker incentive and productivity consequences
 - 2 Important to consider the incentive margin and 3rd-party co-workers in evaluation

Application profiles

- ▶ CVs include information on demographics and work performance measures within the past 6 years.
 - 1 **Demographics:** Gender, ethnicity, city of birth, year of birth, Communist Party membership status, college/grad school attended, subject taught, etc.
 - 2 **Experience:** Career teaching experience, years as middle-ranked, years in current school.
 - 3 **Workload:** Avg. # sessions taught per week, years as a class head teacher, etc.
 - 4 **Research:** Publications on national/provincial-level journals, etc.
 - 5 **Teaching:** (Value-added-based) teaching awards of different levels.
 - 6 **Other:** Awards from teaching demonstration contests, extra-curriculum activities, etc.

Estimation of Fairness Preferences

- ▶ Matching surveyed subsample to administrative sample based on rank (junior, middle, senior) and within-school-year-rank VA (above/below median), $f \in \mathbb{F}$.
- ▶ Estimating respondents' preferences $\{(\hat{\gamma}^f, \hat{\alpha}_H^f, \hat{\alpha}_C^f, \hat{\beta}^f)\}_{f \in \mathbb{F}}$.
- ▶ For virtual applicant l evaluated by survey respondent j' in group $f(j')$:

$$\mathbb{E} [\text{Yes}_{j'l}] = F \left(\mathbf{x}_l \gamma^{f(j')} + \alpha_H^{f(j')} \text{HomeTie}_{j'l} + \alpha_C^{f(j')} \text{CollegeTie}_{j'l} + \beta^{f(j')} \text{Controls}_l \right).$$

- ▶ Controls_l includes a fixed effect for the virtual school ($\lambda_{h(l)}$), the share of same-subject applicants ($\text{share}_{k(l), h(l)}$).
- ▶ Logit model.

back

Social Ties and Promotion Prospects: Event Studies

- ▶ Exploiting entry of a new principal to a school who comes from a different hometown or college than the old one, and dividing applicants into 3 types:

$\mathbb{Q} = \{\text{Tied before \& untied after, Untied before \& tied after, Untied before \& after}\}.$

- ▶ Estimating:

$$\text{Promoted}_{j,t+s} = \sum_{\tau=-3}^3 \sum_{q \in \mathbb{Q}} \mu_{q\tau} \mathbb{I}[q(j) = q, s = \tau] + \mathbf{X}_{j,t+s} \gamma^\mu + \beta^\mu \text{Controls}_{j,t+s} + \varepsilon_{j,t+s}^\mu.$$

where $\text{Controls}_{j,t+s}$ include school-year fixed effects ($\lambda_{h(j,t),t}$), share of same-subject applicants ($\text{share}_{k(j),h(j,t),t}$) and applicant's VA_{jh}. [back](#)

Estimation of Individual Incentive-Based Responses

Main estimation equation:

$$Y_{i,t+s} = \sum_{\tau=-3}^2 \theta_{\tau} \text{Undeserving}_{it} \times \mathbb{I}[s = \tau] + \sigma^{\theta} Y_{i,t-1} + g_h^{\theta}(t+s) + \mathbf{Z}_{i,t+s} \beta_i^{\theta} + \lambda_{i,P(i,t)}^{\theta} + \lambda_{i,P(i,t+s)}^{\theta} + \varepsilon_{i,t+s}^{\theta},$$

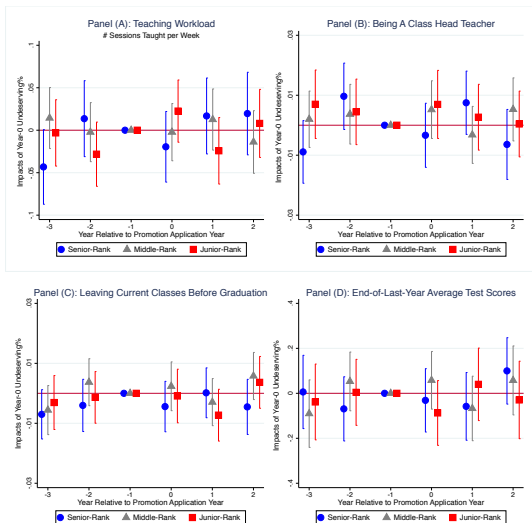
- ▶ $Y_{i,t+s} = \text{VA}_{i,t+s}$, $\text{Leave}_{i,t+s}$.
- ▶ **Teacher-current-principal FEs:** $\lambda_{j,P(j,t+s)}^{\theta}$.
- ▶ **Teacher-promoting-principal FEs:** $\lambda_{j,P(j,t)}^{\theta}$.
- ▶ School-specific time trends: $g_h^{\theta}(t+s)$.
- ▶ Lagged outcome variable (when $Y = \text{VA}$): $Y_{i,t-1}$.
- ▶ **Interaction bet. teacher FEs and job characteristics:** $\mathbf{Z}_{i,t+s} \beta_i^{\theta}$

$$\mathbf{Z}_{j,t+s} = \left\{ \lambda_{g(j,t+s)}, \text{workload}_{j,t+s}, \text{headteacher}_{j,t+s}, \text{break}_{j,t+s}, \bar{A}_{c,k,t+s-1}^{j(c,k,t+s)=j} \right\},$$

(grade(s) taught, # sessions taught/week, headteacher, unexpected class assignment change, end-of-last-year test scores).

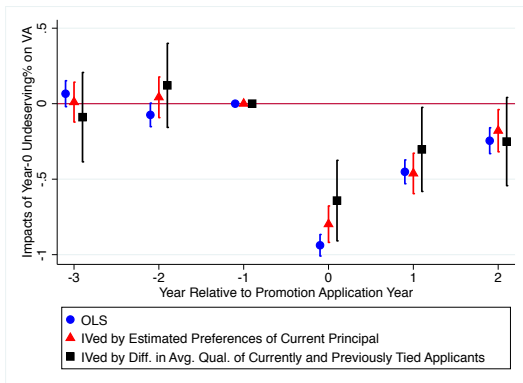
- ▶ Post-reform sample only, unbalanced panel (applicant-year obs. where the applicant works in the same school as the application year).

Spillover Impacts of Perceived Promotion Unfairness on Non-Applicants' Job Characteristics: Professional Ranks



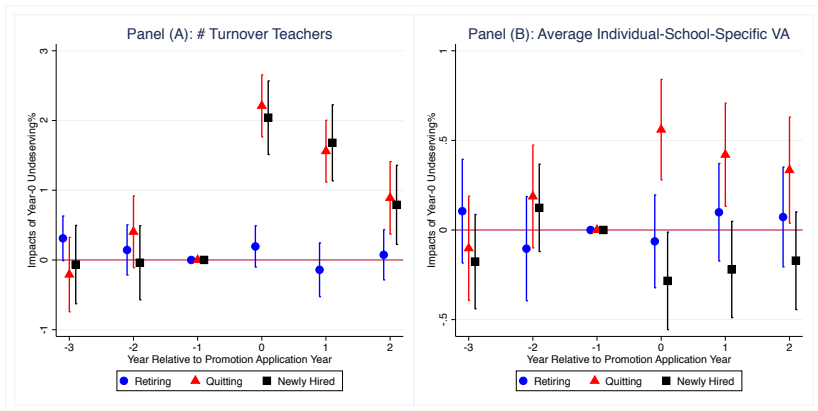
Spillover Incentive Effects on Non-Applicants (VA): Robustness

Spillover Impacts of Perceived Promotion Unfairness on Non-Applicants' Value-Added



Impacts on School-Wide Performance: Teacher Quality

Impacts of Perceived Promotion Unfairness on Teacher Turnover



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Transparency and Treatment Effect of Unfairness on VA

- 1 (Non-applicant) teachers' response to (a given level of) promotion unfairness (DDD):

$$VA_{it} = \theta^{Post} Post_{r(i,t),t} \times Undeserving\%_{it} + \theta^{Pre} (1 - Post_{r(i,t),t}) \times Undeserving\%_{it} + \pi^\theta Post_{r(i,t),t} + \sigma^\theta VA_{i,t-1} + g_{h(i,t)}^\theta(t) + \mathbf{Z}_{it} \beta_i^\theta + \lambda_{i,P(i,t)}^\theta + \varepsilon_{it}^\theta$$

- ▶ $\hat{\theta}^{Post} = -0.953^{***}$ (SE=0.029), $\hat{\theta}^{Pre} = -0.673^{***}$ (SE=0.024).
- ▶ Adverse VA response to principal's bias around 40% harsher post-reform.

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Transparency and Promotion Unfairness

2 Teachers' perceived promotion unfairness (DD, event studies):

$$\text{Undeserving}\%_{it} = \sum_{\tau=-3}^3 \chi_{\tau} \mathbb{I}[t - t_{r(i,t)}^0 = \tau] + g_{h(i,t)}^X(t) + \lambda_{i,P(i,t)}^X + \varepsilon_{it}^X,$$

- ▶ The reform reduced perceived promotion unfairness (Undeserving%) by half (around 40% to 20%).

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Transparency and Student Test Scores

3 Student test scores in provincial-level CEE (DD, event studies):

$$A_{ckt}^{CEE} = \sum_{\tau=-3}^3 \chi_{\tau} \mathbb{I} [t - t_{r(c)}^0 = \tau] + g_{h(c)}^x(t) + \lambda_{P(c,t), h(c)}^x + \varepsilon_{it}^x.$$

- ▶ The reform raised the CEE scores of the 1st fully affected cohort by 0.19SD (class) or 0.06SD (individual).

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