Managers and Productivity in the Public Sector

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The findings and conclusions expressed are solely those of the author and do not represent the views of INPS.

Can The Public Sector Do More With Less?

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  - 18% of workers in OECD countries Employment
  - 28% - 57% of gov. spending on GDP in OECD countries Public Sector

Can The Public Sector Do More With Less?

- The public sector is a large share of modern economies
  - 18% of workers in OECD countries Employment
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- Growing literature on managers and managerial practices in the private sector, less is known about their impact in the public sector
  - limited tools (e.g. firing, promotions, incentive-pay schemes)
  - important role due to the lack of incentives for employees to perform

This Paper

- Question: Do managers matter in the public sector? How?
- Data: Administrative data from the Italian Social Security Agency
- Main outcome: complexity-adjusted measure of claims processed per worker (direct measure of productivity, P)
- Strategy: Exploit manager rotation across offices
- Findings:
  - Managers matter: $\uparrow$ managerial quality by $1\sigma \Rightarrow \uparrow$ office P by 10%
  - Main channel: old white-collar workers retire
  - Aggregate Y $\uparrow$ by 6.9% by optimally reallocating managers (lower bound)

Data

Data

Office-level administrative quarterly data from INPS (2011-2017)

- 851 managers and 494 offices
- inputs: number of workers assigned to each team, absences, training, over-time
- output: number of claims processed weighted by their complexity
- composite "quality" index (timeliness + error rate)

Matched employer-employee data (2005-2017)

- trace careers (promotions, hiring, firing, transfers etc.)

These are administrative data recorded by INPS for internal monitoring purposes. These data are also used to pay wages (incentive pay).

Productivity Measure

$$P_{it} = \frac{Y_{it}}{FTE_{it} \times 3} = \frac{\sum_{k=1}^{K} c_{k,it} \times w_{k,t}}{FTE_{it} \times 3}$$

- $c_{k,it}$: # claims of type k processed at time t by office i
- $w_{k,t}$: weight of type k claim at time t
- FTE_{it}: Full Time Equivalent Employment
- there are more than 1,000 products and hence weights
- it is analogous to the SMV (or SAM)

Intuitively, weights represent how many hours it **should take** on average to process each claim.

Empirical Strategy

Two-Way FE Model

Two-way fixed effects model:

$$\ln(P)_{it} = \alpha_i + \tau_t + \theta_{m(i,t)} + u_{it}$$

- i: office, t: quarter
- $\ln(P)_{it} = \ln \frac{Y_{it}}{FTE_{it}}$
- α_i office FE, τ_t time FE, and $\theta_{m(i,t)}$ manager FE

Exclude the quarter of the switch.

I can separately identify the office from the manager component thanks to manager rotation.

Two-Way FE Model

Identifying assumption:

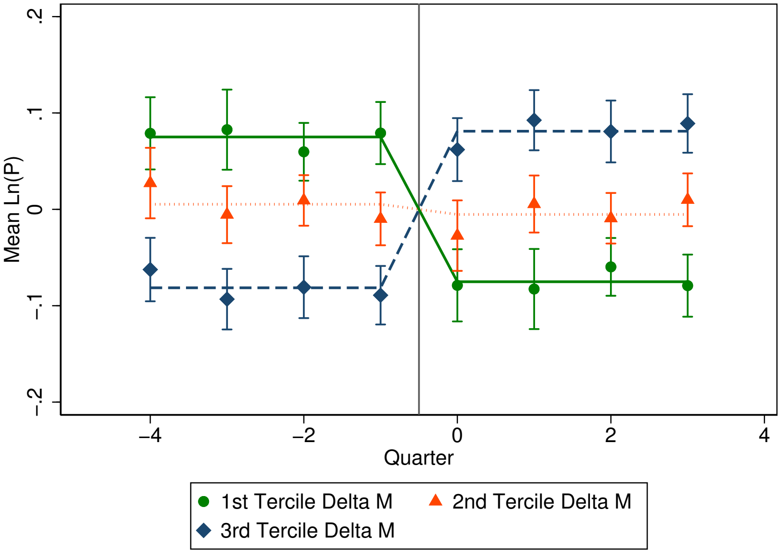
Manager mobility is as-good-as random conditional on office and time fixed effects.

- sorting on α_i is not a threat
- sorting on u_{it} is a violation of the identifying assumption

Threats to Identification:

- endogenous mobility (mitigated by institutional constraints)
  $\widehat{\Delta M}_i = \hat{\theta}_{incoming} - \hat{\theta}_{outgoing}$
- model misspecification

No Sorting on the Error Component



Results

I. **Do managers matter?**

II. **How do managers matter?**

III. **Counterfactual Exercises**

Do Managers Matter?

Biased Corrected Variance-Covariance decomposition

	Component	Share of Total
Var(Ln(P))	0.1106	100 %
Var(Manager)	0.0102	9.22%
Var(Office)	0.0319	28.84 %
Var(Time)	0.0408	36.89%
Cov(Manager, Office)	-0.0096	-8.68%
Cov(Time, Manag. + Office)	0.0015	1.39%
N	2,735	

Note: The sample includes the largest connected set, 2011q1-2017q2.

Results

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III. Counterfactual Exercises

Manager's Duties

Managers are in charge of office operations and their main duty consists in operating the office as **efficiently** as possible.

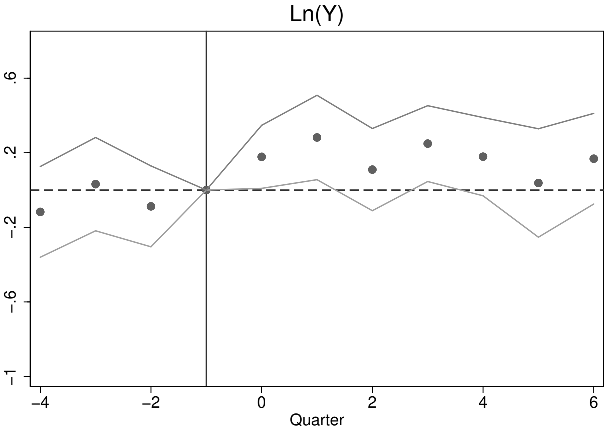
What can they do?

- reallocate tasks within the office
- might better motivate/monitor employee
- very limited scope in hiring/firing/moving workers against their will
- training
- contrast absenteeism
- authorize overtime

Good managers may be those who are better at matching workers with tasks and use indirect strategies to elicit workers' effort and make unproductive workers quit or retire.

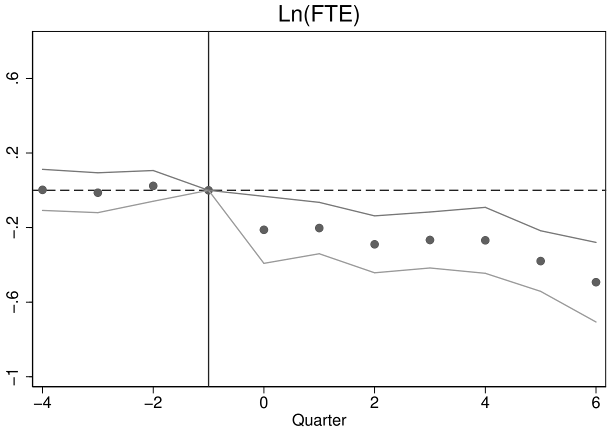
Decomposition

Decomposition: Output



1%$\uparrow$ in P (induced by a change in leadership) $\Rightarrow \uparrow Y$ by 0.25% (at k=6)

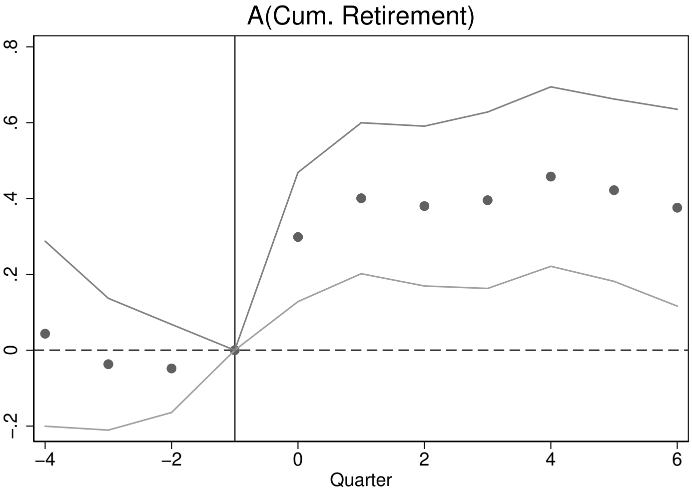
Decomposition: FTE



1%↑ in P (induced by a change in leadership) ⇒ ↓ FTE by 0.75% (at k=6)

Mechanism

Mechanism: Retirement



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Counterfactual Exercises

Evaluate the efficiency gains from four policies:

1. reallocate existing managers to offices: **6.9%** $\uparrow$ in Y (lower bound).
2. fire the bottom 20% of managers and replace them with the median manager: **3%** $\uparrow$ in Y
3. fire the bottom 20% of managers and replace them with the median manager AND reallocate them: **7.4%** $\uparrow$ in Y (lower bound).
4. randomly assign managers (i=1000): **2%** $\uparrow$ in Y

Conclusions

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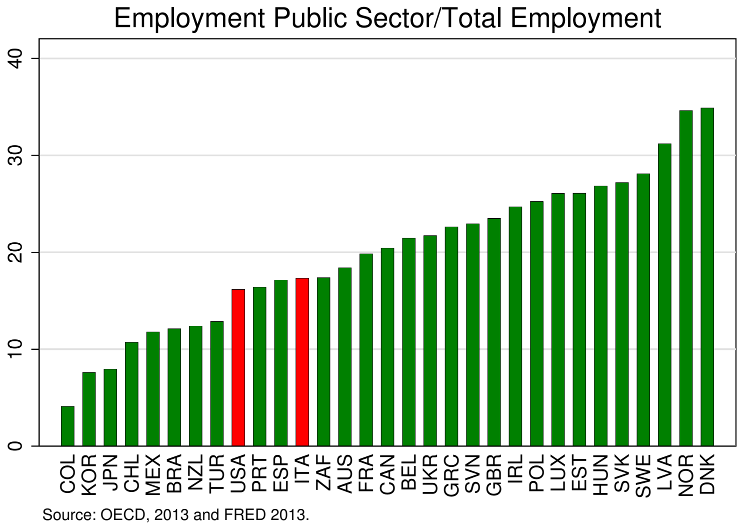
- I study the impact of public sector managers on office productivity
- Managers have a quantitatively meaningful impact on productivity: $\uparrow$ managerial talent by $1\sigma \Rightarrow\uparrow$ office P by 10%. This effect is mainly driven by the exit of older workers (retirement)
- By optimally reallocating managers aggregate $Y \uparrow$ by 6.9%
- I view these results as broadly relevant for agencies where officers primarily engage in back-office duties and process paperwork (SSA, Taxation Authorities, immigration agencies, national and local agencies dispensing welfare transfers, and offices granting licenses and permits)

Thank you!

Motivation



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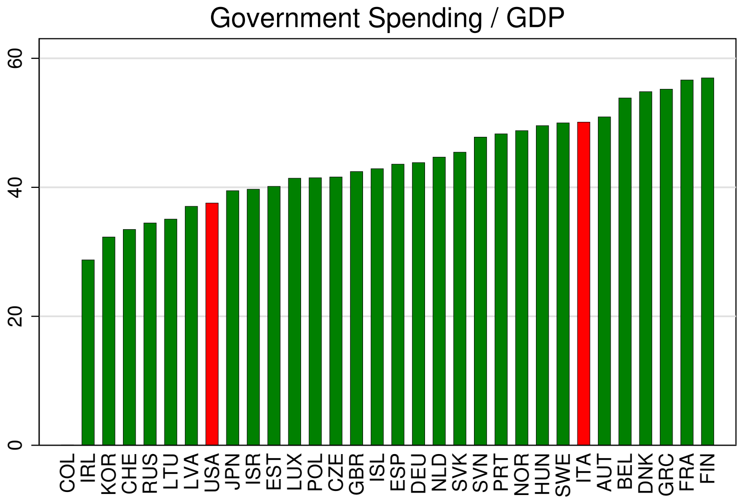
Motivation



Source: OECD, 2015.

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