Public Sector Jobs

“Working in the public sector. Evidence from Europe and the US”

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Working in the public sector
Evidence from Europe and the US

“This crisis has reminded us that Government matters, has reminded us that good Government matters has reminded us that facts and science matter”
(Barak Obama, 14/4/2020)

- Covid-19 crisis has put the State and its functions back at the center stage of the political debate
- public sector has a unique role in coordinating activities, regulating market behavior, mobilizing resources across sectors and areas
- improving public sector efficiency is one of the main challenge for most countries
- this part of the report focuses on the way internal labour market and personnel policies contribute to public service provision
  - such as education, health care and other government services

1. Public sector jobs
2. Personnel economics of the State: Stylized facts
3. Evidence from case studies

Policy implications and conclusions
Public sector jobs
Public sector jobs
Features and Challenges of the Public Sector

- public service delivery is regulated by a rigid mix of legislative and executive acts
- public services are often multi-dimensional and their output imprecisely measured
- public sector employees have permanent contracts and (more) stable jobs
- public sector employees possess specific information and have considerable discretion in performing their task
“Government agencies are not the sum of their individual members but the product of the interactions between its affiliates and the inefficiencies and complementarities that come with it” (Williams, 2019)

Three challenges to studying State capacity

- information and incentive problems that hinders the extent to which individuals collaborate efficiently
- not clear how to best allocate talent in the presence of complementarities
- multiple equilibria

**Consensus**: bureaucrats are the core of State capacity and they have quantitatively meaningful impacts on the performance of the organizations they oversee (Best et al., 2019; Fenizia, 2020; Xu, 2018)
Main objective: align the agent’s objective with the principal’s ones in the presence of asymmetric information (principal-agent problem).

- multitasking
  (Holmstörn and Milgrom, 1991)

- multiple principals
  (Bernheim and Whinston, 1986; Holmstörn and Milgrom, 1988; Dixit 1996, 1997 and 2002)

- measurement of government performance
The Measurement Curse

- There are many government services where the output is not easy to define (e.g., defense and public administration)

- Governments provide a wide variety of public services whose relative values are hard to assess

- Services are exchanged in markets where prices are either absent (e.g., defense) or are heavily subsidized (e.g., school tuitions)

- Hard to define a “good outcome" (efficiency vs equity)

- Performance data is available at the team level rather than at the individual level ⇒ free-riding (Holmström 1982)
Evidence from Field Studies

Teacher performance-pay program (Muralidharan and Sundararaman 2011)

- **context**: Schools in rural India
- monetary incentives for teachers
- students in incentivised schools performed significantly better than those in control schools by 0.27 and 0.17 standard deviations in math and language tests
- no adverse effects on non-incentivised subjects

Performance-based posting (Khan et al 2019)

- **context**: property tax agency in Punjab
- non-monetary incentives for tax collectors
- incentives raised tax revenues by 31 – 40%
Managerial Practices

- **Weberian model of bureaucracy**
  - formal procedures to limit bureaucrats’ discretion
  - implement policies in a uniform and efficient manner
  - promotions are a function of tenure and qualifications
  - employees enjoy strong job security

- **New Public Management (NPM) in the ‘90s**
  - managerial practices that resemble private sector ones
  - improved efficiency and reduced costs
  - managers given greater discretionary powers and tighter control over personnel
  - increase in pay levels but held accountable for performance
Performance and Managerial Practices

- Large productivity differentials between units operating in narrowly defined markets (Bloom et al 2015a; Kessler and McLennan, 2000; Hall et al, 2008)

- Managers and managerial practices are often brought forward as one of the main drivers of performance differentials (World Management Survey)

- Only recently quantitative studies have emerged in this area
  - Bloom and Van Reenen (2007): data WMS methodology
  - Bloom et al (2009): management scores correlate positively with a wide range of performance measures (e.g., mortality rates, waiting lists, staff turnover etc.)
  - Bloom et al (2015a): higher values of management practices index correlate positively with pupil outcomes
Internal Labor Markets

Internal labor markets (ILMs) “*involve the administrative policies and practices that determine the way human resources are used and rewarded within an organization. [...]*” (Wise, 1996).

- multiple ILMs within the same institution (job ladders)
- ILS have been deeply impacted by NPM and decentralization
- ILMs differ greatly between countries that have a career-based vs a position-based system
- ILMs are characterized by customs and informal rules that may favor some groups over others
Personnel economics of the State
investigate the main determinants of the likelihood of being employed in the public or private sector of the economy (i.e. Public dummy recording individual’s affiliation)

use data from 6th European Working Conditions Survey and 2nd American Working Conditions Survey (both fielded in 2015)

estimate a linear probability model regressing public sector affiliation, on demographic characteristics and personality traits
  - pro-social attitudes to contribute to a “social cause”
  - intrinsic motivation for “useful work” as an implicit reward (Bénabou & Tirole 2006)
In **Europe** (and Italy) the public sector generally attracts more women, employees are older, more educated and more likely to be unionized, while immigrants are less represented

- sorting in the public sector is significant in Europe (more in Nordic and less in Mediterranean countries)
- prosocial behavior and intrinsic motivation matter

In the **US** individuals’ characteristics are more evenly distributed across public-private, with non-white minorities more likely to be represented in the public sector

- prosocial behavior and intrinsic motivation play a much smaller role
Cross-country correlation: public sector employment propensity (score) and prosocial behavior and intrinsic motivation (score) where commitment to societal problems and motivation to do useful work is stronger also propensity to work in the public sector is higher (caution: reverse causality).
the analysis of pay and sector choice constitutes a formidable challenge for public-private sector comparison

pay differentials can make public sector jobs relatively attractive (or unattractive) with implications for recruiting and retaining employees
  - note: differences between public and private sector jobs go beyond pay levels (i.e. job attributes, working conditions and pension rights)

better-quality job, higher intrinsic motivation, more satisfaction from work, etc. involve trade-offs between pay and the utility associated with the non-pecuniary aspects of the job
  - i.e. more risk-averse individuals may value job protection and regulated career advancements and willing to sacrifice some pay for that

depending on the distribution of job amenities and pecuniary incentives, the attractiveness of public sector jobs may change (i.e. with job type and along the wage distribution)
Empirical Strategy

- we compare the distribution of pay levels in the public and private sector in both Europe and the US
- we specify a standard wage equation

\[
\log Y_{ic} = \alpha_c + \beta Public_{ic} + X'_{ic}\delta_c + \theta_c + \epsilon_{ic}
\]

- \(\log Y_{ic}\) is the outcome of worker \(i\) in country \(c\) (e.g. log of gross monthly wages)
- \(X'_{ic}\) is a vector of individual characteristics (gender, age, citizenship, education) and job attributes (part-time, type of contract, main occupation and industry dummies)
- \(\theta_c\) are country fixed-effects
- \(\hat{\beta}\) is the coefficient of interest (i.e. public-private differential)
- use sampling weights and cluster standard errors by country
- also estimate separate equations by country clusters: US vs. Europe (Nordic, Continental, Anglo-Saxon, Mediterranean and Eastern)
Public-private pay differential
Europe vs. US

- compare a “typical” public vs. private-sector employee (EU28 & US)

1. baseline: public sector dummy + country fe
2. baseline+covariates (individual & job controls)
3. baseline+covariates+PS strata (matching with propensity score)
EU28 clusters: Nordic, Anglo-Saxon, Mediterranean, Continental and Eastern

Source: AWCS and EWCS data. See Table A2 in the appendix for controls included and SE clustering.
Public-private pay differential
Healthcare, Education and Public Administration

- US vs. EU28 (Healthcare, Education and Public Administration)

Source: AWCS and EWCS data. The reference category for each service is given by comparable private sector employees. See Table A2 in the appendix for controls included and SE clustering.
Incentives, Pay and Performance-Related-Pay

Occupations and skills

- focus on the “typical” employee can be misleading given the wide range of skills
  - healthcare service - wide range of occupations (& skills) such as nurses, technicians, physicians, scientist, administrative staff, etc. which the public and private sector have to recruit on the market
  - education - porters, teachers, school principals, university professors and researchers

- if pay dispersion is larger in private sector, “high skilled” employees less likely to apply to public sector jobs, or move to private sector jobs (the reverse applies to the “low skilled”)
  - due to high unionization rates, collective bargaining and equal pay policies, in general the public sector pays more low-skilled employees, less the high-skilled
  - simple Roy model predicts positive (negative) selection at the bottom (top) of the skill distribution
Personnel economics of the State
public-private pay differential along the skill distribution

- Public-private sector pay differentials along the skill distribution

![Graph showing public and private sector pay differentials along the skill distribution.](image)
Incentives, Pay and Performance-Related-Pay

Europe

![Graphs showing pay and performance-related pay in Europe with and without covariates and by public service sectors.](image_url)
Incentives, Pay and Performance-Related-Pay

Source: AWCS and EWCS data. Each regression controls for broad industry fixed-effects.
Performance appraisal, monitoring

- in US 2 out of 3 of workers have a performance-related pay scheme, in Europe only 1 out of 4
- union presence is more likely in Europe, compared to the US
public sector may attract those with greater motivation, wanting more autonomy, better work-life balance and willing to trade “job quality” and pay

analyze “job quality” (perceived) between the public and private sector

JQ attributes: work satisfaction, work intensity (working high speed, tight deadlines, work-life balance), autonomy (routine task, involvement), intrinsic motivation, skill and training

Results public sector employees perceive:

comparable levels of satisfaction, a more relaxed work pace and a better work-life balance
more autonomy & lower routinization but lament less involvement (i.e. “responsibility without having a say”) higher intrinsic motivation and social usefulness inadequacy of skill level but more on-the-job training
Employment prospects and absenteeism

- public jobs are characterized by stronger job security (at least in Europe)
- better prospects in terms of employability
- career paths are typically based on seniority and not on competences and merit
  - public employees perceive the labour market as segmented: a typical employee enters the public sector and progresses in the ILM

**Results**

- public employees are less concerned about losing the job
- net of compositional effects they work less hours per week (approximately 1.7)
  - in terms of “desired” hours of work in Europe they report to be satisfied, in the US they would like to work more (almost an additional hour)
- across all Europe public employees tend to be more absent
- across all Europe public employees tend to be more absent (not so in the US)
Discrimination and obnoxious behaviors

- The State is expected to be a “fair” employer
- access and career development regulated through public competitions lower discretion
- unions presence should prevent discriminatory behavior
  - use as “fairness” indicators: cooperation, respect, discrimination, harassment
- Results
  - in Europe public employees do not report higher employer fairness (not statistically significant difference)
  - in US public employees perceive to be more discriminated relative to the private sector
  - evidence of obnoxious attitudes and harassment
    - threats and humiliating behavior (in US), verbal abuse (in Europe)

Checchi, Fenizia, and Lucifora (2020)
Case Studies (in Italy)
Four case studies on the performance of public sector agencies:

- **education** (1. merit pay for teachers, 2. incentives for academics)
- **healthcare** (3. managerial practices in hospitals)
- **social security administration** (4. incentives for managers)

**Common problems:**

- measurement of output
- individual or group incentives
- managerial practices matter
- where and when the incentives bite
Case 1: Merit-pay for teacher

- In 2016 all Italian state schools were offered the opportunity to distribute wage premia to deserving teachers,
  - earmarked funds (a nationwide total of 200 million Euros)
  - an average of 250 euro per teacher (less than 1% of the salary)
  - 82% schools appointed ad hoc committees and distributed the premia (on average to one teacher out of three)

- This merit-pay experiment was clearly not intended as an output-based incentive
  - not announced in advance
  - no track of individual teachers’ performance
  - bonuses not linked to student performance
  - teachers’ characteristics seem unrelated to the award criteria
  - positive correlation with cheating in Invalsi tests (i.e. more premia awarded where cheating is higher)
Merit-pay for teacher

- Share of tenured teachers obtaining a premium was 41% (out of 7,281 schools), with a median of 36% (i.e. in half of the schools one out of three teachers obtained a premium)
Case 2: Incentives in Universities

- in Universities productivity measurement is more transparent, since core activities (teaching and research) are clearly defined and measurable

- incentives related to performance are easier to introduce

- implicit or explicit competition with private providers

- In Italian Academia monetary incentives are limited, as pay scales are mainly driven by seniority, and career advancements occurs through public competition
Incentives in Universities

- Checchi, DeFraja and Verzillo (2020) propose a model of academic productivity, where candidates to professorship exerts effort in research taking into account
  - the number of potential competitors,
  - the number of vacancies available,
  - the extent to which selecting committees use research productivity as criterion
  - effort declines (in a non-linear way) with the relative position in the ability distribution

- Implications in terms of optimal institutional design: do 370 SSD make sense in terms of incentives?
Individuale appraisal is preconditional for introducing incentives to elicit productivity

- disclosing individual differences may have polarizing effects (i.e., more effort among the already more productive, discouraging effort among the least productive).

In this sense collectiv incentives may be preferable, since they do not impose differential treatments among participants.

- the individual “blame and shame” effect is attenuated

Performance Based Funding Systems (PBFS) in universities are a good example of this type of group incentive
Results in a sample of OECD countries (over three decades):

- PBFS are found to increase the number of publications, though the effect is only temporary and fades out after some years.
- PBFS exhibit a negligible effect on excellence as measured by the share of articles published in the top journals.
- PBFS influence average research quality, as measured by the number of citations per paper normalised with respect to the field.

- when PBFS funding is associated with the number of published papers ⇒ academics will respond with writing more papers.
- when PBFS funding is associated with citation ⇒ academics will increase the number of citations (including self-citations).

The risk is the Goodhart law “When a measure becomes a target, it ceases to be a good measure.”.

Checchi, Fenizia, and Lucifora (2020)
Case 3: Management practices in Hospitals

- Managers and management practices are important drivers of productivity (Bloom and Van Reenen 2010).

- Despite the “New Public Management” (NMP) revolution of the nineties, managerial practices in the public sector still show lower standards compared to the private sector.

- **Hospitals behavior** is an interesting case to study for a number of reasons:
  - Hospitals as ultimate safety net for health assistance to the population.
  - Public hospitals experienced pressure to improve quality standards, while facing cuts in their financing.
  - Institutional setting and hospitals regulation may differ significantly.
  - Public and private hospitals coexist and, to some extent, compete on the market.
Data

- Information on management practices from WMS initiative data (collected by Bloom and Van Reenen 2007).
- Management practices collected in telephone interviews with clinical service leads (in cardiology and orthopedics units) in acute care hospitals.
- Management practices for 1,183 hospitals (in United States, Canada, United Kingdom, Sweden, Germany, France and Italy).
- Hospitals surveyed have a public ownership (70 percent).
- The public-private hospital shares, vary substantially across countries.
- The average size of surveyed hospital is close to 350 beds (i.e. larger in France, smaller in the US).
Table 3.6 Management Practice indicators

<table>
<thead>
<tr>
<th>Performance monitoring</th>
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<tbody>
<tr>
<td>1) Layout of patient flow</td>
<td>how well the patient pathway is configured at the infrastructure</td>
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<td></td>
<td>level and whether staff proactively improve their own workplace</td>
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<td>organisation</td>
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<td>2) Rationale for introducing standardization / pathw ay management</td>
<td>motivation and impetus behind changes to operations and what</td>
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<td></td>
<td>change story was communicated</td>
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<td>3) Standardisation and protocols</td>
<td>standardised procedures (e.g. integrated clinical pathways) that</td>
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<td></td>
<td>are applied and monitored systematically</td>
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<td>4) Performance tracking</td>
<td>performance is tracked using meaningful metrics and with</td>
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<td></td>
<td>appropriate regularity</td>
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<tr>
<td>5) Performance review</td>
<td>performance is reviewed with appropriate frequency and</td>
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<td></td>
<td>communicated to staff</td>
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<td>6) Performance dialogue</td>
<td>quality of review conversations</td>
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<tr>
<td>Target setting</td>
<td></td>
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<td>7) Consequence management</td>
<td>differing levels of performance (NOT personal but plan/ process</td>
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<td></td>
<td>based) lead to different consequence</td>
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<tr>
<td>8) Target balance</td>
<td>targets cover a sufficiently broad set of metrics</td>
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<td>9) Target interconnection</td>
<td>targets are tied to hospital objectives and how well they cascade</td>
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<tr>
<td></td>
<td>down the organisation</td>
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<tr>
<td>10) Target time horizon</td>
<td>whether hospital has a ‘3 horizons’ approach to planning and</td>
</tr>
<tr>
<td></td>
<td>targets</td>
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<tr>
<td>11) Targets are stretching</td>
<td>targets are appropriately difficult to achieve</td>
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<tr>
<td>12) Performance clarity</td>
<td>easily understandable performance measures and performance</td>
</tr>
<tr>
<td></td>
<td>openly communicated</td>
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<tr>
<td>Incentives</td>
<td></td>
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<tr>
<td>13) Managing human capital</td>
<td>senior managers evaluated and held accountable for attracting,</td>
</tr>
<tr>
<td></td>
<td>retaining, and developing talent throughout the organization</td>
</tr>
<tr>
<td>14) Rewarding high performance</td>
<td>good performance is rewarded proportionately</td>
</tr>
<tr>
<td>15) Removing poor performers</td>
<td>hospital is able to deal with underperformers</td>
</tr>
<tr>
<td>16) Promoting high performers</td>
<td>promotion is performance based</td>
</tr>
<tr>
<td>17) Attracting human capital</td>
<td>strength of the employee value proposition</td>
</tr>
<tr>
<td>18) Retaining human capital</td>
<td>hospital will go out of its way to keep its top talent</td>
</tr>
</tbody>
</table>

Note: The questionnaires and questions associated to each practice are available on the World Management Survey website (https://worldmanagementsurvey.org/). See also Bloom and Van Reenen (2007).
Public-Private Average Management Practices Scores

Checchi, Fenizia, and Lucifora (2020)
A larger hospital is always associated with better management practices.
INPS (Italian Social Security Agency) developed a sophisticated quality control and an internal monitoring system aimed at tracking every step of the production process and increasing accountability.

**Quantity**: office output measured by the (weighted) average of the claims processed by the office, weighted by their complexity.
- Productivity at each office as ratio of output to full time equivalent employment.

**Quality**: timeliness of claim processing and error rates.
- Proxies for consumer satisfaction (customers’ self-reported satisfaction) and wait times.
Distribution of quarterly office productivity

- significant variability in office productivity
  - offices at the 90th percentile of the productivity distribution appear to be 2.6 times more productive than those at the 10th percentile
INPS provides an ideal setting to study the impact of managers on office performance:

- managers are in charge of all office operations
- managers have little control over personnel decisions
- bonuses represent a significant share of managers’ earnings (i.e. 15% to 30% total pay)
- the same rules apply to all social security offices
- all sites produce a homogenous product
- all employees work on the same software

The incentive pay scheme computes bonuses as a function of productivity and quality of service (and improvements relative to the previous year).
Research question: evaluate managers’ ability taking into account the performance of the office they oversee

if evaluations purely based on the performance of their office:

- ability of managers in charge of highly productive offices → overstated
- ability of managers who oversee poorly performing offices → understated

Fenizia (2020) implements a two-way fixed effect framework which exploits manager rotation across sites to decompose productivity effects into a “manager” and an “office” component

- test for match-driven sorting and sorting based on office-specific pre-trends provides no evidence of sorting
Incentive schemes for managers INPS: Results

- **Main results:**
  - Managers have a quantitatively meaningful impact on office performance even in this very constrained environment.
    - A standard-deviation increase in managerial quality is associated with a 10% increase in office productivity.
  - Productivity gains are mostly driven by the exit of older white-collar workers who appear to retire when the new manager takes over.
    - More productive managers keep up output without any new hiring or more overtime hours to compensate for the reduction in the office workforce.
  - **Optimal assignment** would pair the best managers with larger and more productive offices.
    - If managers were to be reallocated on this basis, aggregate productivity would increase by about 7%.

Checchi, Fenizia, and Lucifora (2020)
Conclusions
Conclusions

- After decades of retrenchment, financial and epidemiological crises have renewed attention to the importance of the State.
- The unprecedented change in the size and importance of the Public sector has shown its unique role in coordinating activities, regulating market behavior, mobilizing resources across sectors and areas, most of which the private sector is unwilling or unable to do.
- This report has focused attention on public sector’s internal labour market and personnel policies.
  - We have shown that most public sector employees have permanent contracts with a special statute, typically enjoy lifetime job, enjoy better working conditions, lower working time and higher pay (though not in all countries).
  - Such mix of privileges coupled with an imperfect observability of employees’ performance often makes standard incentive schemes ineffective or even counter-productive.
Policy implications

- Improving public sector’s efficiency has been one of the main challenges for most countries, though achieving it has proven extremely difficult.

- One message of this report is that the reforms inspired by the “New Public Management”, fell short of expectations:
  - gave public sector managers more autonomy, incentives and power, without really holding them responsible for achieving results.
  - failed to incorporate important functions such as coordinating resources and acting as insurer of last resort.

- A second message is that intrinsic motivation and prosocial attitudes are important features of public sector employment and a key element of public sector efficiency (especially in Europe):
  - reliance on impersonal public competitions (in recruitment) and on seniority (in promotions), may crowd-out motivation and personal attitudes.
Policy implications

- **A third message** is that the more compressed wage distribution, compared to the private sector, implies that public sector employees receive a pay premium at the bottom end of the wage distribution, and a negative differential at the top
  - this creates a perverse self-selection of employees, whereby low-skilled queue up to be selected in public sector jobs
  - while the high-skilled shy away for better remunerated private sector jobs

- **Fourth** we document a striking difference between Europe and the US in terms of performance-pay-related schemes
  - in US two out of three employees have their pay linked to performance
  - in Europe only one out of four has pay linked to performance

- **Last** we found no clear evidence that the public sector ensures a fairer environment
  - cooperation at the workplace is rather poor
  - discrimination (US) or obnoxious attitudes (Europe) appear to be quite diffused
Thank you!