Effects of Public Sector Employment on Inequality: An Analysis of the German Private-Public Wage Gap

Motivation

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- Government largest employer in Germany
 More than 4.6 million including approx. 1.77 million civil-servants
 - Share has decreased in the past decades
 - More marginal and irregular part-time
 positions
- Overall increasing wage inequality in Germany:
 Higher density in the lower and upper end of the wage distribution

• Previous studies:

→ Private-public wage gap varies highly along the wage distribution

Research guestion:

→ What influence has the government as an employer on the labor income inequality development?

. Wage gap

2. Share of employees

• Our contribution:

- → Large sample, including civil-servants
- Detailed information on sociodemographics, education, employment history and employment status
- → Detailed inequality decomposition

2 Data & Strategy

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- Data:
 - German Socio Economic Panel (SOEP): Years 1990 – 2011

• Observations:

- Between 4000 and 8000 observations per year
- Calculation of equivalent wages for civilservants

• Estimation strategy:

inequality

- Estimation of private and public sector wages for each subgroup
- The wage gap is then calculated as:

$$\Delta_{i} = \hat{w}_{priv} - \hat{w}_{pub} \Longrightarrow \Delta_{q} = \frac{E(\hat{w}_{priv} \mid q) - E(\hat{w}_{pub} \mid q)}{E(\hat{w}_{pub} \mid q)}$$

5 Theil

→ Equals 0 in the case of a uniform distribution

Theil index is a enthropy index for measuring

Increases with rising inequality

→ Nested decomposition in three steps:

1. decomposition by quartiles

Theil index of a population is defined as:

 $GE(1) = \sum_{i=1}^{N} \frac{1}{N} \frac{w_i}{\overline{w}} \ln(\frac{w_i}{\overline{w}})$

decomposition by type of employment

3 Wage Distribution

Private sector wage distribution is more spread
 Higher density of private sector wages at the lower tail → this effect increases with time
 Share of public sector employees:

 Number of public sector employees has decreased by approx. 5 percentage-points

4 Wage Gap



- For the lower quartiles, the private-public wage gap is negative
 - → Given their characteristics employees would earn more in the public sector

6 Theil Estimation

• The enthropy index differs for the estimated quartiles:



7 Conclusion

- Wage Gap for first quartile tends to become more negative
- In contrary, the private-public wage gap increases for the highest wage group
- Decline in number of employers working in the public sector
- Decomposition of Theil index:
- Inequality is higher for the lowest and highest quartile
 - → Equalizing effect of public sector employment?

(public/private)3. implementation of public private wage gap

8 Outlook

• Idea:

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- Influence of a 1% change of public private wage gap on inequality
- Influence of a 1% change of number of employees in the public sector on inequality

→ Calculation of Elasticity of Theil Index:

$$\begin{split} \eta_{\Delta,q} &= \frac{\partial GE(1)_q}{\partial \Delta_q} \;\; \frac{\Delta_q}{GE(1)_q} \\ \eta_{N,q} &= \frac{\partial GE(1)_q}{\partial N_q} \;\; \frac{N_q}{GE(1)_q} \end{split}$$

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