Wage inequality in Europe: The role of pay setting.

Wouter Zwysen, ETUI
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Introduction

- Earnings inequality increases
- Reflects widening differences in pay between firms
Introduction: widening gaps between firms

Contribution to the change 2006-2014, from a decomposition of log earnings into firm component, socio-demographic and work-related individual characteristics, residual part, and covariances.
Source: SES 2006-2014: weighted by country population
Research question: what is the role of pay setting

Performance pay is increasingly used – differentiates wages and varies more between firms.

- Incentivize worker effort
- Control worker behaviour (principal-actor)
- Increase flexibility in pay
- But costly
Research question: what is the role of pay setting

Performance pay is increasingly used – differentiates wages and varies more between firms. As it increases pay of more productive workers – inequality increases.

What drives change over time?
- Macro-economic factors
- Institutional factors
- How does representation fit in

How is inequality affected?
Data: EWCS

- EWCS 2000-2015, employees aged 18-64
  - Do earnings include: a basic salary, bonuses related to productivity or effort (after review), team-based performance; shares, or bonuses related to firm performance)
  - Piece-rate pay, individual performance pay, team performance pay, firm gains sharing
- Robustness: use SES
- Individual level:
  - education, gender, age, migrant status, dependent children, cohabiting,
  - occupation, routineness, abstraction, intensity of manual tasks, firm size, hours of work, temporary contract.
  - Pc-use, exposure to machines
  - Representation
Data: country-sector

- Drivers (Country-year-sector + individual)
  - Technology:
    - aggregate computer use and machines
    - digitalisation indices based on investment and human capital at sectoral level (TiVA, LFS)
  - Trade:
    - trade openness, import ratio (TiVA, world input-output)
  - Worker representation
    - Aggregate access to representative
    - Union density (ICTWSS)
    - Collective pay agreements (SES coverage by cpa)
  - EPL (regular contracts, OECD)
Performance pay most likely at the top

- Performance pay increased mainly at the top of the earnings distribution, with the gap widening over time.
- This inequality is mainly driven by individual performance pay, and by firm gains sharing.
- Piece-rate pay is mainly at the bottom, and team performance pay is quite equally distributed.
Bonuses most important at the top

- Annual earnings
- Bonuses
- Base pay
Individual performance pay

Note: Coefficients and 95% confidence interval from multilevel linear probability model with random coefficient at country-sector-year level, weighted, and controlling for age, gender, gender by age, family situation, occupation, education, type of work.
Contextual factors

Source: EWCS 2000-2015
Contextual factors on individual PP – firm gains sharing

- EPL
- CPA: other
- CPA: firm
- CPA: sectoral
- CPA: national

Job-level representation
Representation
Union density
Import orientation
Trade intensity
Digitalisation
Job-level machine
Exposure to machines
Job-level computer
Computer use

Individual performance pay

Firm gains sharing
Premium to performance pay

![Bar chart showing the percentage of workers with any performance pay, piece-rate performance pay, individual performance pay, team performance pay, and financial participation.](chart)

Source: EWCS 2015, controlling for year and sector fixed effects, all individual and work-related controls
Premium higher at the top

Source: EWCS 2015, including fixed effects and all controls. Quantile regression on log monthly earnings
Contribution of performance pay to inequality

Actual and counterfactual distribution

Difference

Wage inequality: the role of pay setting
## Contribution to wage inequality

<table>
<thead>
<tr>
<th></th>
<th>Any performance pay</th>
<th>Piece-rate pay</th>
<th>Individual performance pay</th>
<th>Team performance pay</th>
<th>Firm gains sharing</th>
<th>SES: bonuses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variance</td>
<td>6.4%</td>
<td>-0.8%</td>
<td>2.1%</td>
<td>2.1%</td>
<td>3.0%</td>
<td>0.2%</td>
</tr>
<tr>
<td>p99-p90</td>
<td>1.4%</td>
<td>-5.0%</td>
<td>-3.6%</td>
<td>-4.9%</td>
<td>6.6%</td>
<td>-9.9%</td>
</tr>
<tr>
<td>p90-p50</td>
<td>4.8%</td>
<td>3.3%</td>
<td>0.0%</td>
<td>3.6%</td>
<td>3.2%</td>
<td>0.4%</td>
</tr>
<tr>
<td>p50-p10</td>
<td>5.6%</td>
<td>-6.9%</td>
<td>0.6%</td>
<td>-1.0%</td>
<td>-0.3%</td>
<td>7.0%</td>
</tr>
<tr>
<td>p90-p10</td>
<td>5.2%</td>
<td>-2.3%</td>
<td>0.3%</td>
<td>1.1%</td>
<td>1.3%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Counterfactual analysis: compare actual distribution to the counterfactual distribution (not receiving performance pay, weighted by inverse of probability of receiving performance pay), following Lemieux et al. 2009.
Representation provides protection against wage inequality

### Workplace representation

<table>
<thead>
<tr>
<th>Variance</th>
<th>P90-P50</th>
<th>P50-P10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>Share</td>
</tr>
<tr>
<td>No</td>
<td>0.32</td>
<td>10%</td>
</tr>
<tr>
<td>Yes</td>
<td>0.23</td>
<td>1%</td>
</tr>
</tbody>
</table>
Link between performance pay and variance

Change in sectoral variance and performance pay

Note: effect of changes in between-firm variance and within-firm variance (at country, industry, firm-size, year level: 10% increase), on probability of receiving performance pay. Controlling for year fixed effects and changes in shares of education, occupation, gender, natives, childless, single, temporary contracts, fulltime workers, average age, and hours worked.
Conclusions

- Earnings inequality increasing between but also within firms.
- Performance pay mainly goes to the higher-earning workers and contributes to wage inequality.
- Has increased substantially over time, partly driven by digitalisation, trade openness, and to some extent the decrease in collective pay agreement coverage.
- Institutions matter in reducing the wage inequality.