Wage gaps in Europe

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Wage gaps: Nominal compensation per employee, % of German level

Source: AMECO
Wage gaps: Compensation per employee, *adjusted for price levels*, % of German level

Source: calculated from AMECO
Compositions of workforces: differ, convergence through upgrading, but also increase in routine-cognitive jobs

The evolution of routine cognitive tasks between 1998-2013

Beyond country averages: Actual wage gaps?

ETUI Working Paper 2017.04, with Agnieszka Piasna

- Large differences in average nominal wages in Europe, wages much lower in the East
  - But it costs much less to live in Slovakia than in Sweden
  - Some might well say ‘well Slovak workers are less skilled and work in less complex industries and occupations’ (e.g. assembly workers vs. engineers)
  - ‘Wages (must) reflect productivity differences’ (hence look at unit labour costs)
- Hence we
  - Adjust wages to reflect price differences (PPP)
  - Compare wages of similar workers in similar firms (control for differences in work and workplace characteristics)
  - These capture also some productivity differences (but not all)
Once we account for structural differences, differences in wages between high-wage countries disappear. However: The wage gaps between high-wage and low-wage countries become bigger once differences in worker, work and workplace characteristics are controlled for.
## Occupations

<table>
<thead>
<tr>
<th></th>
<th>North-west</th>
<th>South</th>
<th>CZ HU PL SK</th>
<th>BG RO</th>
<th>EE LT LV</th>
<th>SI HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers</td>
<td>0.0</td>
<td>-410.3</td>
<td>-932.1</td>
<td>-1014.0</td>
<td>-640.8</td>
<td>-893.8</td>
</tr>
<tr>
<td>Professionals</td>
<td>0.0</td>
<td>-360.1</td>
<td>-893.1</td>
<td>-1164.5</td>
<td>-796.7</td>
<td>-727.3</td>
</tr>
<tr>
<td>Technicians and associate professionals</td>
<td>0.0</td>
<td>-362.9</td>
<td>-719.4</td>
<td>-1080.9</td>
<td>-761.5</td>
<td>-791.2</td>
</tr>
<tr>
<td>Clerical support workers</td>
<td>0.0</td>
<td>-245.8</td>
<td>-559.9</td>
<td>-906.6</td>
<td>-484.4</td>
<td>-643.6</td>
</tr>
<tr>
<td>Services and sales workers</td>
<td>0.0</td>
<td>-190.4</td>
<td>-496.2</td>
<td>-838.1</td>
<td>-565.0</td>
<td>-617.5</td>
</tr>
<tr>
<td>Skilled agricultural, forestry and fishery workers</td>
<td>0.0</td>
<td>-451.8</td>
<td>-712.6</td>
<td>-1145.1</td>
<td>-984.7</td>
<td>-956.9</td>
</tr>
<tr>
<td>Craft and related trades workers</td>
<td>0.0</td>
<td>-361.3</td>
<td>-653.8</td>
<td>-1073.3</td>
<td>-611.5</td>
<td>-765.4</td>
</tr>
<tr>
<td>Plant and machine operators, and assemblers</td>
<td>0.0</td>
<td>-269.2</td>
<td>-644.1</td>
<td>-1000.9</td>
<td>-465.8</td>
<td>-711.3</td>
</tr>
<tr>
<td>Elementary occupations</td>
<td>0.0</td>
<td>-64.4</td>
<td>-453.5</td>
<td>-757.0</td>
<td>-396.9</td>
<td>-583.6</td>
</tr>
</tbody>
</table>

*Note:* Marginal means estimated from the regression model, adjusted for all control variables. In bold differences from the negative return for professionals that are statistically significant ($p \leq 0.05$). Armed forces occupations not displayed because of the low numbers of respondents in this category.
Conclusions

- Perfect LM competition/productivity explanation: not supported
- Low relative returns in manufacturing & higher returns in some nontradeable services seem to support the importance of international wage competition
- But public sector undervaluated as much as manufacturing
- Moreover: nontradeable complex services also undervalued
- In fact: differences with north-west driven by relative position of sectors in north-west
- Hence: a generalized low-wage model, with returns particularly low on higher skills
APPENDIX
Our approach: wages = \( f(\text{work, worker, and workplace characteristics, sectors, occupation, \\& country effect}) \)

- EWCS 2015 (and 2010)
  - Detailed information on worker and workplace, recent data, wide coverage of income data (structure of earnings survey not public sector, not small firms)
- Net monthly wage in PPP
- Regression (OLS [MLM]): EU wide controls + country dummies
  - Controls for composition/structural differences
  - **Country dummies** capture average return on skills in a country (= institutional & market-power differences between countries) + differences in unobservable variables
- Controls 1: work and workplace characteristics
  - Occupation (ISCO2), sector (NACE2), size of establishment, professional status, weekly working hours, tenure at current employer, supervisory role, use of new technology at work, complex tasks
- Controls 2: individual worker characteristics
  - gender, age, educational attainment
- Second step: interactions sectors, occupations and country groups
  - decompose returns effect for country groups
1. *What value created?* The perfect LM competition model
   - Marginal productivity of labour (separable from the marginal productivity of capital)
   - Informs much of policy discussion (ULC)
   - Productivity not directly measurable (payroll enters into value added)
   - Hence typically operationalized as worker skills and tasks

2. *How value distributed?* Institutionalist, bargaining, and structural models (Value measurement problem still there)
   - Bargaining, institutional and political factors
     - Non-political factors should still influence factor shares (e.g. capital intensity)
   - Oligopolies and market power (division of rents)
   - The dependent market economy model
State of the art: Empirical research

1. Wage differences across countries (Behr/Pötter 2010, Brandolini et al 2011, Pereira/Galego 2016)
   - Workforce composition vs. return on skills/attributes
   - Decomposing wage functions in individual countries, omitted variables?, explanation?

2. Differences between sectors (within countries) (e.g. Martins 2004, Magda 2008, Du Caju et al. 2010)
   - Workplace and workforce characteristics
   - Large residuals, hierarchy between sectors even after endowments controlled for
   - Role of profits (+), import competition (-), export intensity (+), product market regulation (+)

   - Endowments (workplace and workforce characteristics) vs. returns on endowments
   - Leuven et al 2004: net supply
   - Equivocal, but use of cognitive tests produces support for supply factors

   - Productivity 0, unemployment -, FDI +(-), trade 0, intermediate goods exports

5. Literature on wage share
   - Autor et al. 2017 on ‘superstar firms’