The political economy of income distribution: industry level evidence from 14 OECD countries

Alexander Guschanski and Özlem Onaran
Outline

• Functional income distribution – stylised facts
• Literature: the determinants of the wage share
• What do the data say?
  – Estimation strategy and Results
• Conclusion and policy implications
Importance of functional income distribution

- Wage share declining in most countries since 1980s
- As of 2016 about 8%-point below its peak in many countries (France: 8; Germany: 8; Italy 10; UK 5; US 7)
- Wages and salaries constitute 75% of household income
  - Decline in wage share important driver of personal inequality
  - Increasing wealth inequality suggests that this is going to continue
- Threat to social cohesion
- Relevance for growth
Figure 2: Wage Share by Sector Type in Selected OECD Countries

- **Austria**
- **Belgium**
- **Italy**
- **Spain**

- **LS Manufacturing**
- **LS Services**
- **HS Manufacturing**
- **HS Services**
- **Total**
# The determinants of the wage share – Different theoretical approaches

<table>
<thead>
<tr>
<th>Production-function framework</th>
<th>Political Economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimising behaviour within a production function</td>
<td>Bargaining power of labour vs. capital</td>
</tr>
</tbody>
</table>

**Technology**

- Mechanism: relative price of capital & labour
- Hypothesis: Skill-biased technological change
- Mechanism: Bargaining power
- Hypothesis: Not necessarily skill biased

**Globalisation**

- Mechanism: relative price change
- Hypothesis: Negative in capital abundant; ambiguous in labour abundant; skill bias
- Mechanism: Bargaining power
- Negative in all countries

**Industrial relations**

- Direct measures of bargaining power
- Direct measures of bargaining power

Indirect measures of bargaining power (fall-back options):

- Social government spending
- Financialisation
- Gender wage gap
What does the data say? Contribution of this paper

• Many factors determining the wage share, e.g. bargaining agreements, are negotiated on the sectoral level
• More detailed measures
  – Union density at the sectoral level
  – Narrow offshoring via input-output tables
  – Social government spending
• Country specific effects via interaction terms
  – Guided by single-country estimations
  – Rationale: effects differ
    → union density in highly centralised or decentralised bargaining
• 99% wage share
• Comparison between ‘high wage’ and ‘low wage’ countries
Data

  - Compiled from 7 international databases (EUKLEMS; WIOD; OECD STAN; …)
  - Excluded industries: mining and carrying, public sectors, real estate
  - Based on 1 & 2 digit level of ISIC4
- Country sample 1: 14 ‘high-wage’ OECD countries
  - Australia, Austria, Belgium, France, Finland, Germany, Ireland, Italy, Japan, the Netherlands, Spain, Sweden, the UK, the US
- Country sample 2: 7 emerging economies
  - Brazil, China, Indonesia, India, Korea, Mexico, Turkey
Estimation Strategy

\[ WS_{i,t} = \alpha_{WS} WS_{i,t-1} + \alpha_G GROWTH_{i,t} + \alpha_T TFP_{i,t} + \alpha_{KI} CAPITAL\ INTENSITY_{i,t} + \alpha_{barg} BARGAINING_{i,t-1} + \alpha_{glob} GLOBAL_{i,t-1} + \varepsilon_{i,t} \]

- Estimation method: Difference GMM (Arellano & Bond 1991) (Within-estimator for robustness)

- Conduct estimations by
  - Sectors (manufacturing, services)
  - Skill groups (high-, medium-, low-skilled)
  - Pool countries & interaction effects
  - Different measures: 99% Wage share
  - Before the Great Recession vs. full sample
Technological change – Theory and literature

• Production-function framework
  – Requires elasticity of substitution between capital and labour $>1 \Rightarrow$ most likely only for low-skilled workers, if any
  – Weak overall evidence: 7/13 studies with $e \leq 1$

• Political Economy
  – Bargaining position matters, could impact all skills

• Empirical measure
  – Total Factor Productivity or Information and Communication Technology (ICT) / Value added
Technological change - Guschanški and Onaran 2017

- Effects not robust after 1995
- No significant impact on low skilled workers
  - Neither in manufacturing nor services → little evidence for workers losing out in the race of technology vs. skills
  - Casts doubt on low elasticity of substitution
- Robust negative effects of TFP for medium-skilled workers only → automatization of routine tasks, but:
- No robust effect of ICT
- Potential bias in studies not accounting for endogeneity (IMF 2007, 2017; EC 2007)
- Accounting identity?
Relative Prices or Bargaining Power?

- WS = f(Globalisation, K/Y, Productivity, X)
- Interpretation: impact of trade for a given capital-output ratio? → impact of bargaining power
Globalisation- Guschanski and Onaran 2017

• Advanced economies:
  – Negative effect driven by offshoring to ‘low-wage’ countries on workers of all skills
  – Negative effect of offshoring to Eastern Europe in Austria, Germany, France and Finland, insignificant elsewhere
  – Robust when controlling for changes in the capital/output ratio \(\rightarrow\) bargaining power
  – Migration has no significant effect & offshoring stays significant \(\rightarrow\) capital rather than labour mobility
  – No significant impact of FDI or other imports

• Emerging Economies – destinations of offshoring
  – Negative effect of intra-industry intermediate exports to advanced economies on the WS \(\rightarrow\) labour loses worldwide
  – Robust when controlling for changes in the capital/output ratio
  – No evidence for change in the elasticity of substitution
Bargaining power – theory and literature

- Production-function framework: Effect on the wage share depends on elasticity of substitution
- Political Economy: positive effect expected
- Direct measures of bargaining power: union power, strike intensity, minimum wages
- Union density
  - Effects might be understated since collective bargaining coverage greatly exceeds union membership in some countries
  - Union density has shown to limit wage inequality by suppressing excessive managerial wages (Jaumotte & Buitron 2015)
  - No evidence for a negative effect of unions on employment (OECD 2006)
  - But new literature: excess coverage (>union density) can have negative impact if higher wage demands lead to higher unemployment (Jaumotte & Buitron/IMF 2015; Gal & Theising 2015/OECD)
Direct bargaining power – Guschaniski and Onaran 2017

- Union density (sector level)
  - Robust positive effect of union density on total WS and 99% WS
  - Driven by low-skilled workers in manufacturing sectors
  - Negative effect on WS of high-skilled workers → limits wage dispersion
  - Driven by countries with national or sectoral level of coordination
    - Austria, Belgium, Finland, Germany, Ireland, Italy, Japan, the Netherlands, Spain, and Sweden
  - Positive effect of excess bargaining coverage. Union density remains positive in this estimation
  - Positive effect in emerging economies

- Positive impact of minimum wages (ratio to sector wage)
  - Advanced economies, all sectors, all skill-groups
…Bargaining power - Indirect measures

• Increases ‘fall-back’ options for labour – positive effect on the WS
• Positive impact of social government spending, driven by
  – Countries with low (<50%) level of bargaining coverage (JPN, IRL, US, UK)
• Negative impact of higher female employment share (sector level), driven by
  – All countries
  – Manufacturing sectors → higher wage gap
  – Low skilled workers
• Negative effect of personal inequality (Gini) – command over resources
• No evidence of strictness of labour law regulation
• No significant effect of financialisation → firm level data
Conclusion

• Globalisation, industrial relations, technological change → all important for functional income distribution

• Technological change:
  – Little evidence for workers losing out in the race of technology vs. skills
  – Little evidence of elasticity of substitution <1 once we control for bargaining power & globalisation

• Support for political economy approach to income distribution → bargaining positions matter!

• Positive effect of union density in countries with higher level of coordination; minimum wages; social government spending

• Positive effect of ‘excess coverage’ on wage share

• Negative effect of female share in employment & personal inequality

• Globalisation: Capital rather than labour mobility has decreased the wage share → In advanced and emerging economies!

• Accounting for endogeneity is important
### Results

#### Dependent variable: Sectoral Wage Share

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>growth</td>
<td>-0.205***</td>
<td>-0.222***</td>
<td>-0.331**</td>
<td>-0.267**</td>
<td>-0.286***</td>
</tr>
<tr>
<td>TFP</td>
<td>-0.242***</td>
<td>-0.234***</td>
<td>-0.072</td>
<td>-0.062</td>
<td>-0.035</td>
</tr>
<tr>
<td>ICT</td>
<td>-0.041***</td>
<td>-0.042**</td>
<td>-0.001</td>
<td>-0.009</td>
<td></td>
</tr>
<tr>
<td>ICT_(t-1)</td>
<td>0.021*</td>
<td>0.021*</td>
<td>0.007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nonICT</td>
<td>-0.202***</td>
<td>-0.170***</td>
<td>-0.005</td>
<td>-0.053</td>
<td>-0.171*</td>
</tr>
<tr>
<td>offshoring OECD_(t-1)</td>
<td></td>
<td>-0.364</td>
<td>1.179*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>offshoring East_(t-1)</td>
<td></td>
<td>1.811</td>
<td>1.409</td>
<td></td>
<td></td>
</tr>
<tr>
<td>offshoring RoW_(t-1)</td>
<td></td>
<td>-1.725**</td>
<td>-1.267</td>
<td></td>
<td></td>
</tr>
<tr>
<td>union density_(t-1)</td>
<td>0.141***</td>
<td>0.146***</td>
<td>0.060</td>
<td>0.084*</td>
<td>-0.201</td>
</tr>
<tr>
<td>wage share_(t-1)</td>
<td>0.640***</td>
<td>0.703***</td>
<td>0.646***</td>
<td>0.747***</td>
<td>0.580***</td>
</tr>
<tr>
<td>Hansen_pval</td>
<td>0.200</td>
<td>0.423</td>
<td>0.201</td>
<td>0.154</td>
<td>0.808</td>
</tr>
<tr>
<td>AR2_pval</td>
<td>0.760</td>
<td>0.976</td>
<td>0.326</td>
<td>0.952</td>
<td>0.266</td>
</tr>
<tr>
<td>Instruments</td>
<td>56</td>
<td>45</td>
<td>27</td>
<td>36</td>
<td>30</td>
</tr>
<tr>
<td>Sectors</td>
<td>300</td>
<td>276</td>
<td>300</td>
<td>300</td>
<td>153</td>
</tr>
</tbody>
</table>

#### Dependent variable: Sectoral Wage Share in emerging economies

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>growth</td>
<td>-0.200</td>
<td>-0.125</td>
</tr>
<tr>
<td>capital intensity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>exports RoW</td>
<td>-0.214</td>
<td>-0.492</td>
</tr>
<tr>
<td>exports RoW_(t-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>exports high income</td>
<td>-0.827**</td>
<td>-0.562*</td>
</tr>
<tr>
<td>union density</td>
<td>0.297***</td>
<td>0.200**</td>
</tr>
<tr>
<td>wage share_(t-1)</td>
<td>0.602***</td>
<td>0.442*</td>
</tr>
<tr>
<td>Hansen_pval</td>
<td>0.033</td>
<td>0.117</td>
</tr>
<tr>
<td>AR2_pval</td>
<td>0.999</td>
<td>0.315</td>
</tr>
<tr>
<td>Instruments</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Sectors</td>
<td>141</td>
<td>89</td>
</tr>
</tbody>
</table>
References


• Onaran, Özlem (2017) *A Brexit deal that minimizes damage for working people?*. Greenwich Political Economy Research Centre Policy Brief
