

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

*Alexander Guschanski and Özlem Onaran*



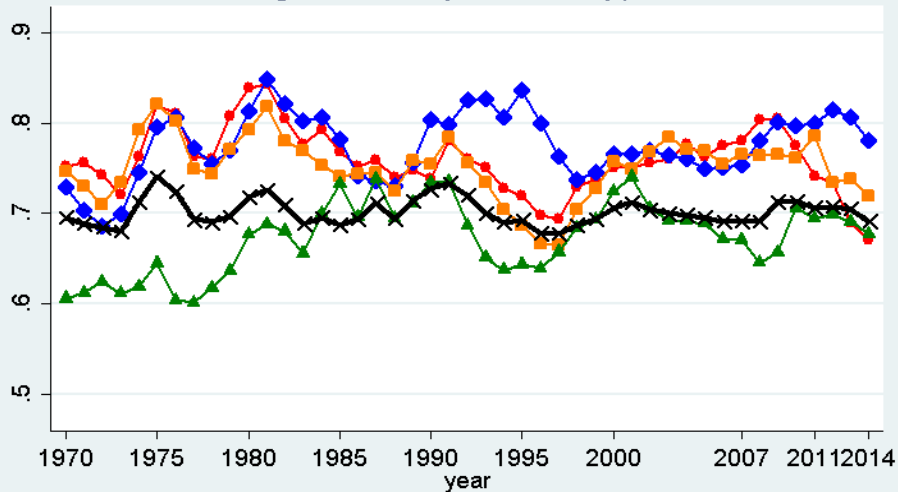
# Outline

- 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

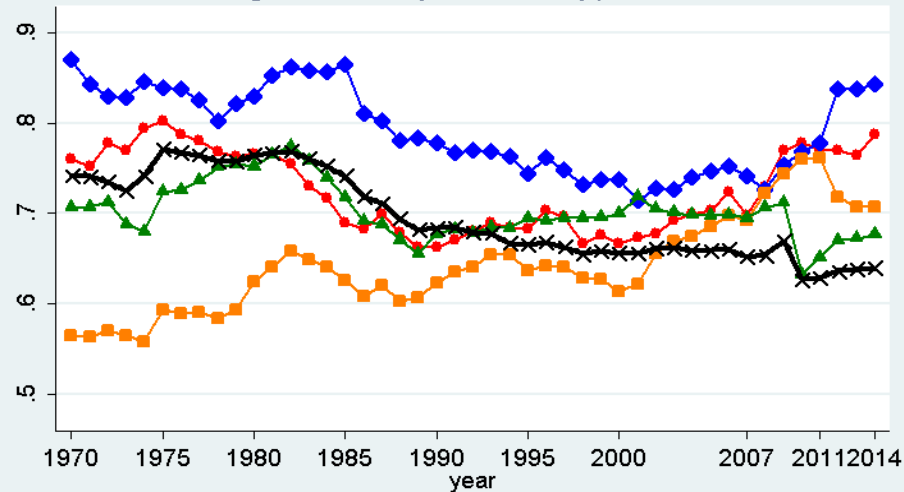
# Importance of functional income distribution

- 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

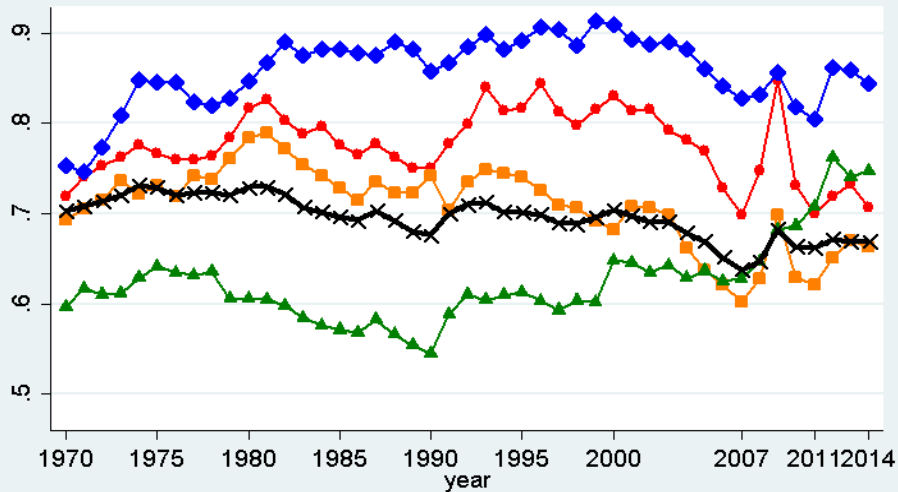
Wage Share by Sector Type UK



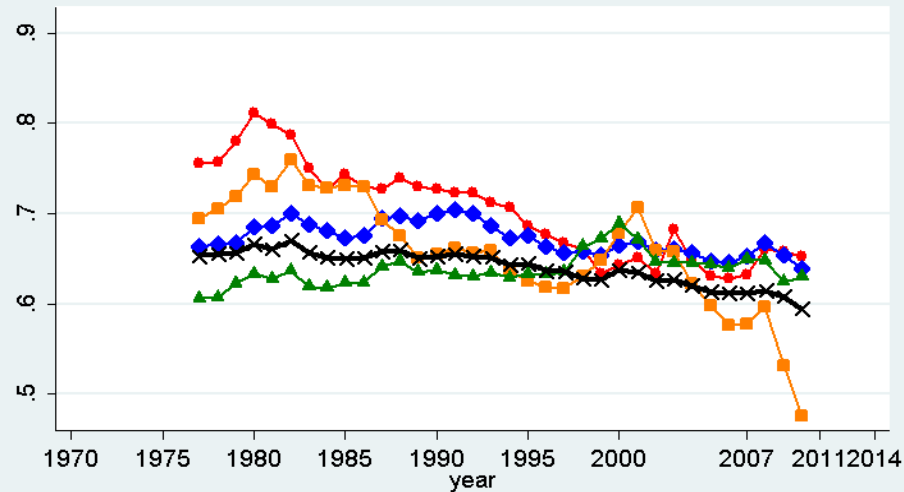
Wage Share by Sector Type France



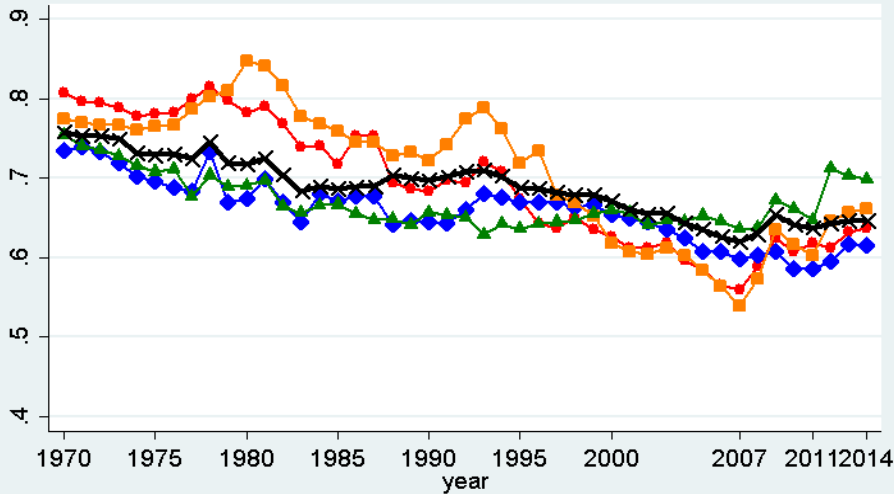
Wage Share by Sector Type Germany



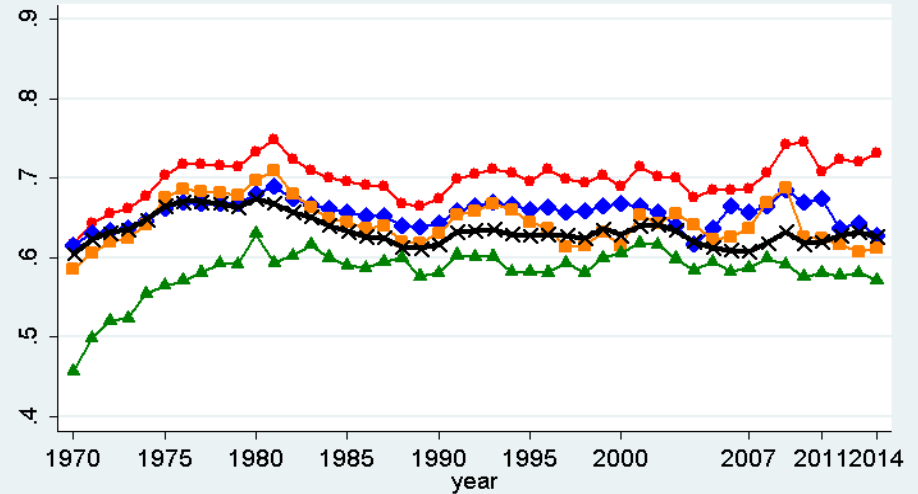
Wage Share by Sector Type USA



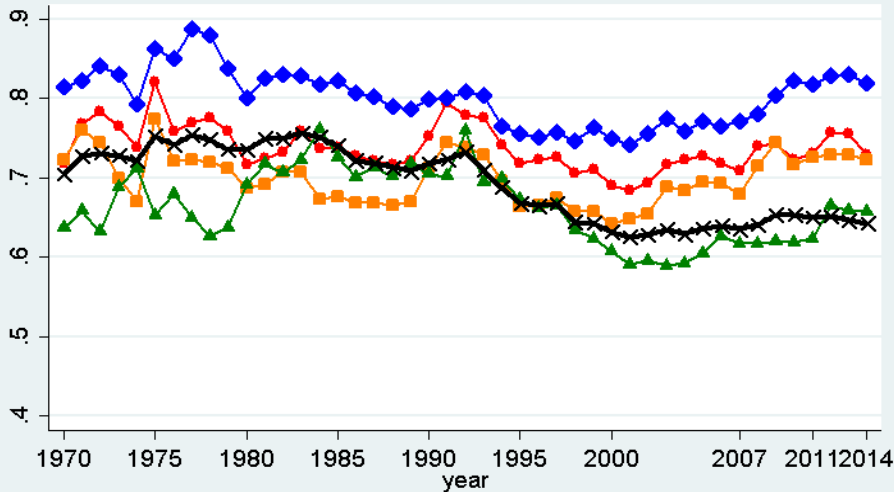
Wage Share by Sector Type Austria



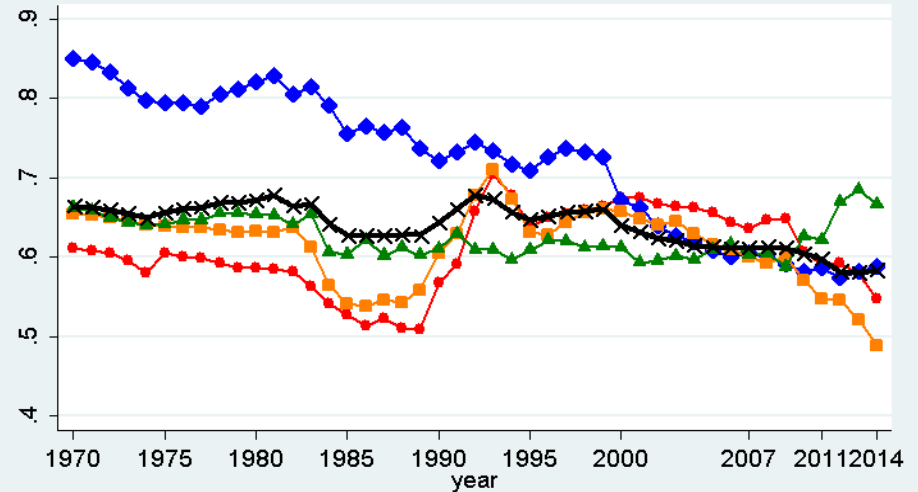
Wage Share by Sector Type Belgium



Wage Share by Sector Type Italy



Wage Share by Sector Type Spain



# The determinants of the wage share – Different theoretical approaches

## Production-function framework

- Optimising behaviour within a production function

### Technology

- Mechanism: relative price of capital & labour
- Hypothesis: Skill-biased technological change

### Globalisation

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

### Industrial relations

- Direct measures of bargaining power

## Political Economy

- Bargaining power of labour vs. capital

- Mechanism: Bargaining power
- Hypothesis: Not necessarily skill biased

- Mechanism: Bargaining power
- Negative in all countries

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

- Dataset: sector level data; 1970(1995) – 2014
  - 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

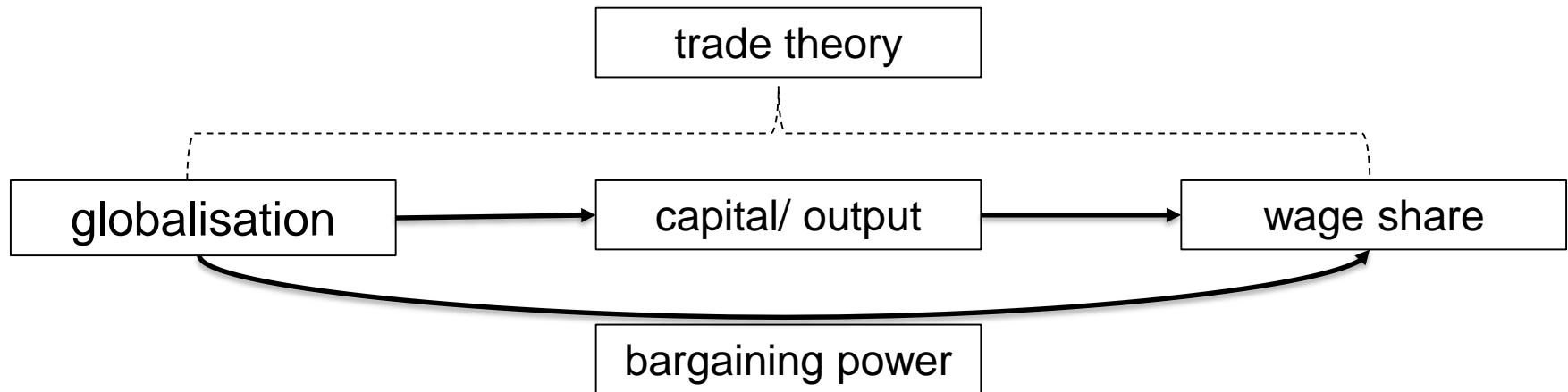
## Technological change – Theory and literature

- 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 - Guschanski 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?



- $WS=f(\text{Globalisation}, K/Y, \text{Productivity}, X)$
- Interpretation: impact of trade for a given capital-output ratio?  $\rightarrow$  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 → bargaining power
  - Migration has no significant effect & offshoring stays significant → 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 → 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 – Guschanski 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

Dependent variable: Sectoral Wage Share	(1) 1970- 2007	(2) 1970- 1996	(3) 1995- 2007	(4) 1995- 2007	(5) 2008- 2014	Dependent variable: Sectoral Wage Share in emerging economies	(6) 1995- 2007	(7) 1995- 2007
growth	-0.205***	-0.222***	-0.331**	-0.267**	-0.286***	growth	-0.200	-0.125
TFP	-0.242***	-0.234***	-0.072	-0.062	-0.035	capital intensity		
ICT	-0.041***	-0.042**		-0.001	-0.009		0.008	0.039
ICT_(t-1)	0.021*	0.021*	0.007			exports RoW	-0.214	
nonICT	-0.202***	-0.170***	-0.005	-0.053	-0.171*	exports RoW_(t-1)		-0.492
offshoring OECD_(t-1)				-0.364	1.179*	exports high income		
offshoring East_(t-1)				1.811	1.409	union density	-0.827**	-0.562*
offshoring RoW_(t-1)				-1.725**	-1.267	wage share_(t-1)	0.297***	0.200**
union density_(t-1)	0.141***	0.146***	0.060	0.084*	-0.201	Hansen_pval	0.602***	0.442*
wage share_(t-1)	0.640***	0.703***	0.646***	0.747***	0.580***	AR2_pval	0.033	0.117
Hansen_pval	0.200	0.423	0.201	0.154	0.808	Instruments	0.999	0.315
AR2_pval	0.760	0.976	0.326	0.952	0.266	Sectors		
Instruments	56	45	27	36	30		31	31
Sectors	300	276	300	300	153		141	89

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