

Job polarisation and job quality in the European labour markets

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Preliminary work

Introduction and background

Job polarisation: the relative decline of middling occupations

Possible explanations:

- Labour market institutions
- Offshoring
- Technological change, computerisation

-> Routine-biased

What are the implications?

Routine occupations are easily substituted by technology/offshore workers

Complementary to non-routine cognitive work

What about manual non-routine?

Question: what happens to those remaining in occupations?

Job quality

More than money

Important implications for wellbeing and productivity

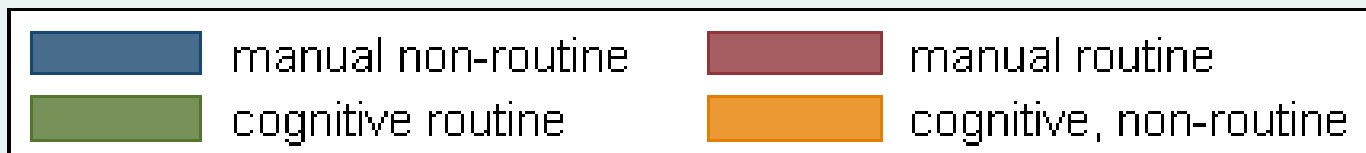
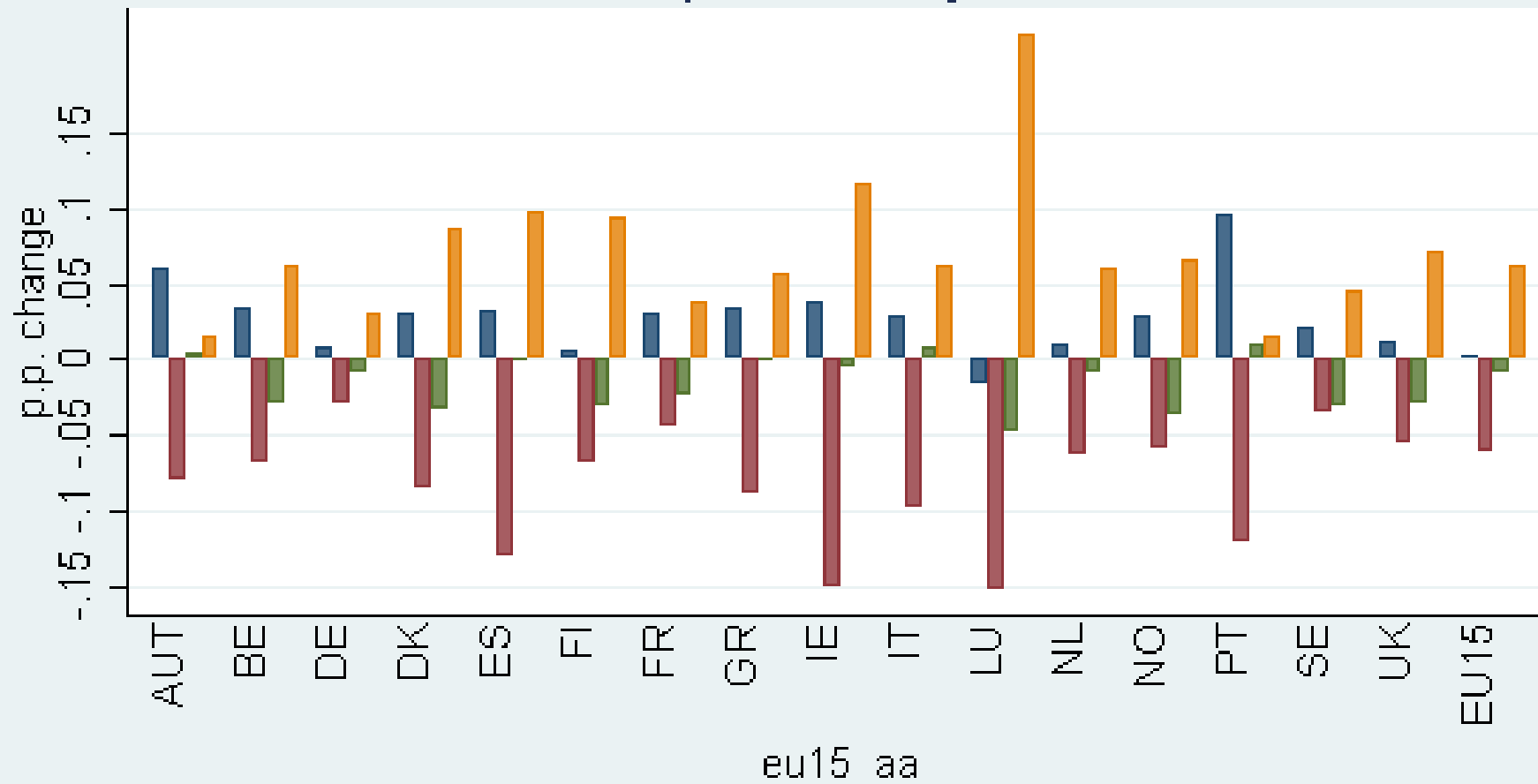
We estimate changes in job quality in a polarising labour market, explained by computerisation/technological change

Data (1/3)

Job polarisation

- EU-LFS 1993-2010: employment shares
- ECHP (1991-1999) and EU-SILC (2004-2010) for wage rankings: first observed year
- Occupations grouped by task content (Acemoglu & Autor 2011) :
cognitive - manual and (non-)routine
- and by wage quintiles (unique by country)
- Grouped by country-year-occupation

Difference in empl. share by class 1995-2010



difference in percentage points between employment shares in 2010 and 1995
 exception of DE (begin 2002) and Sweden, Norway, Finland and the EU15 (begin 1997)

Data (2/3)

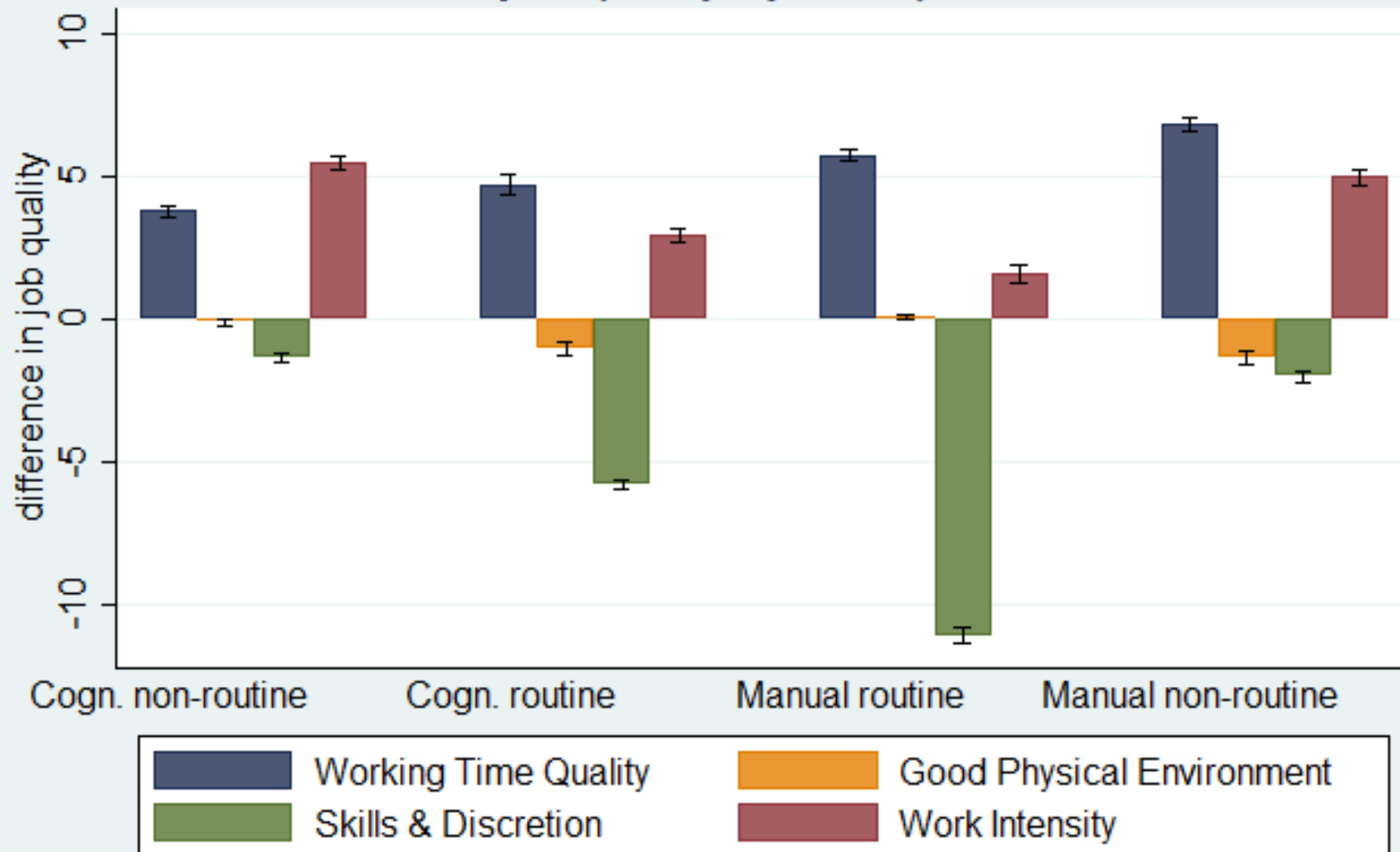
Job quality

EWCS (1995; 2000; 2005; 2010)

Green & Mostafa: Eurofound 2012

- Work intensity
- Skills and discretion
- Good physical environment
- Working time quality
- Grouped by country-year-industry-occupation

Difference in job quality by occupation, 1995-2010



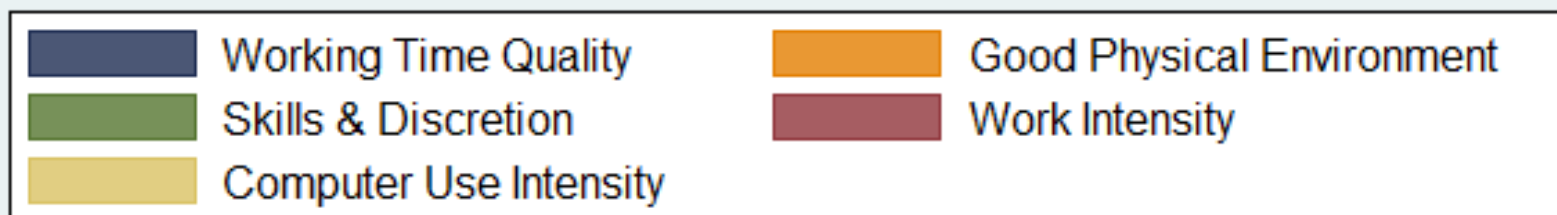
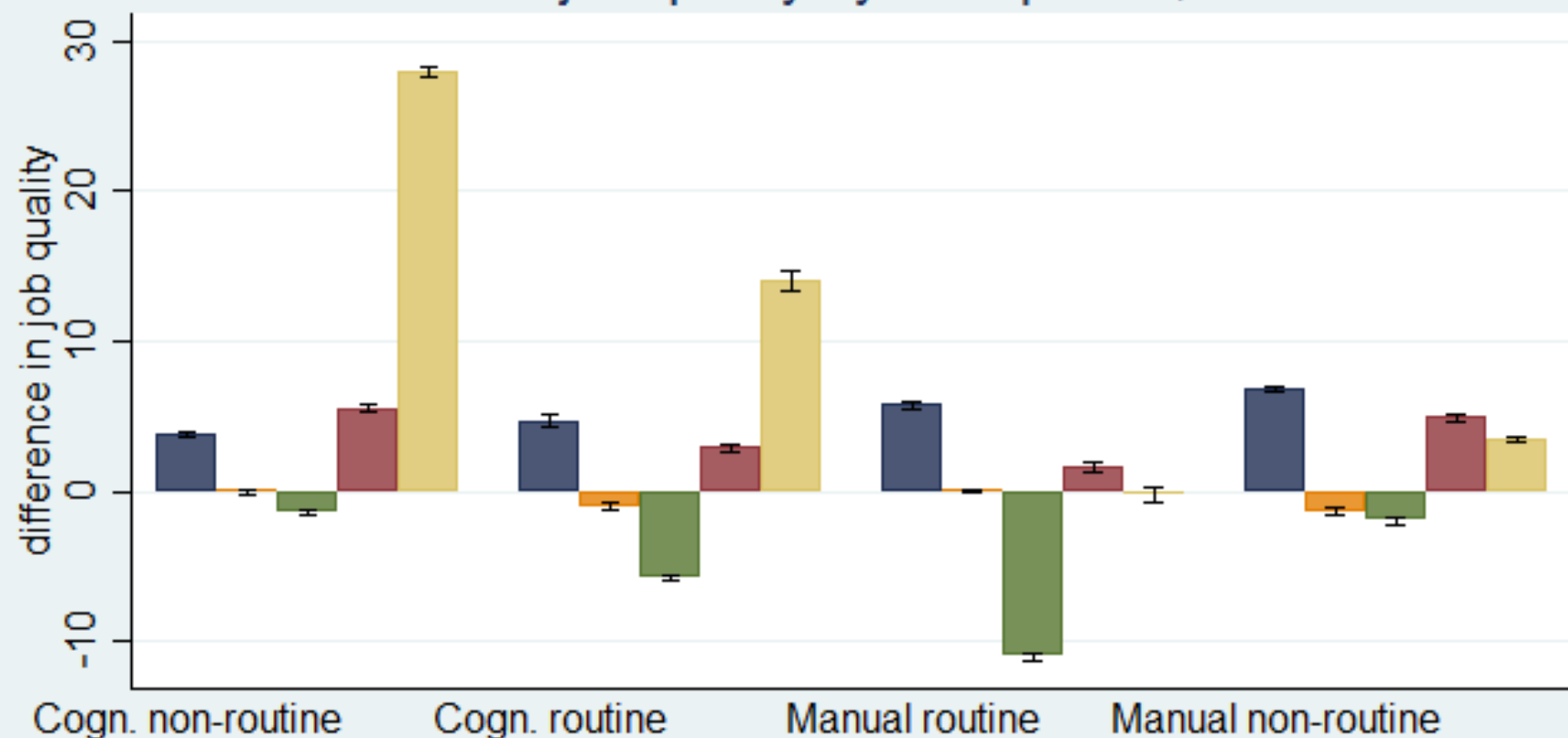
Difference in average job quality within an occupation between 2010 and 1995
95% Confidence intervals, weighted

Data (3/3)

Technological change

- EU-KLEMS: 1990-2007
- Investment in IT (as a share of value added of capital)
 - Grouped by country-year-industry
- EWCS: intensity of computer use
 - Grouped by country-year-occupation-industry

Difference in job quality by occupation, 1995-2010



Difference in average job quality within an occupation between 2010 and 1995
95% Confidence intervals, weighted

IT investment / computer use

	IT investment (proportion of value added)	Computer use
Cognitive non-routine	0.0285	50.32
Cognitive routine	0.0374	66.17
Manual routine	0.0256	21.90
Manual non-routine	0.0258	11.95

Correlation differences in IT investment and job quality

	skills and discretion	working time quality	working intensity	computer usage
cognitive, non-routine	-0.03	-0.01	-0.13	0.01
cognitive routine	-0.23	-0.07	-0.06	-0.08
manual routine	-0.11	0.06	-0.01	-0.02
manual non-routine	-0.05	0.03	-0.07	0.06

differences in average IT investment (over last 5 years) correlated with differences in job quality 1995-2010*

*: Germany from 2005-2010; Sweden and Finland 2000-2010

Correlation between differences in computer intensity and job quality

	skills and discretion	working time quality	work intensity
cognitive, non-routine	0.12	0.14	0.28
cognitive routine	0.20	0.05	0.14
manual routine	0.21	0.09	0.23
manual non-routine	0.21	-0.12	0.13

differences in intensity of computer use correlated with differences in jq 1995-2010*

*: Germany from 2005-2010; Sweden and Finland 2000-2010

regression

$$JQ_{o,i,c,y} = Occ_o + Year_y + Ind_i + Country_c + Dem_{o,i,c,y} + TC_{i,c,y}$$

Technological change (TC) as changes in IT investment and as changes in computer intensity

Robustness: country*year, year*industry, country*industry

Preliminary results

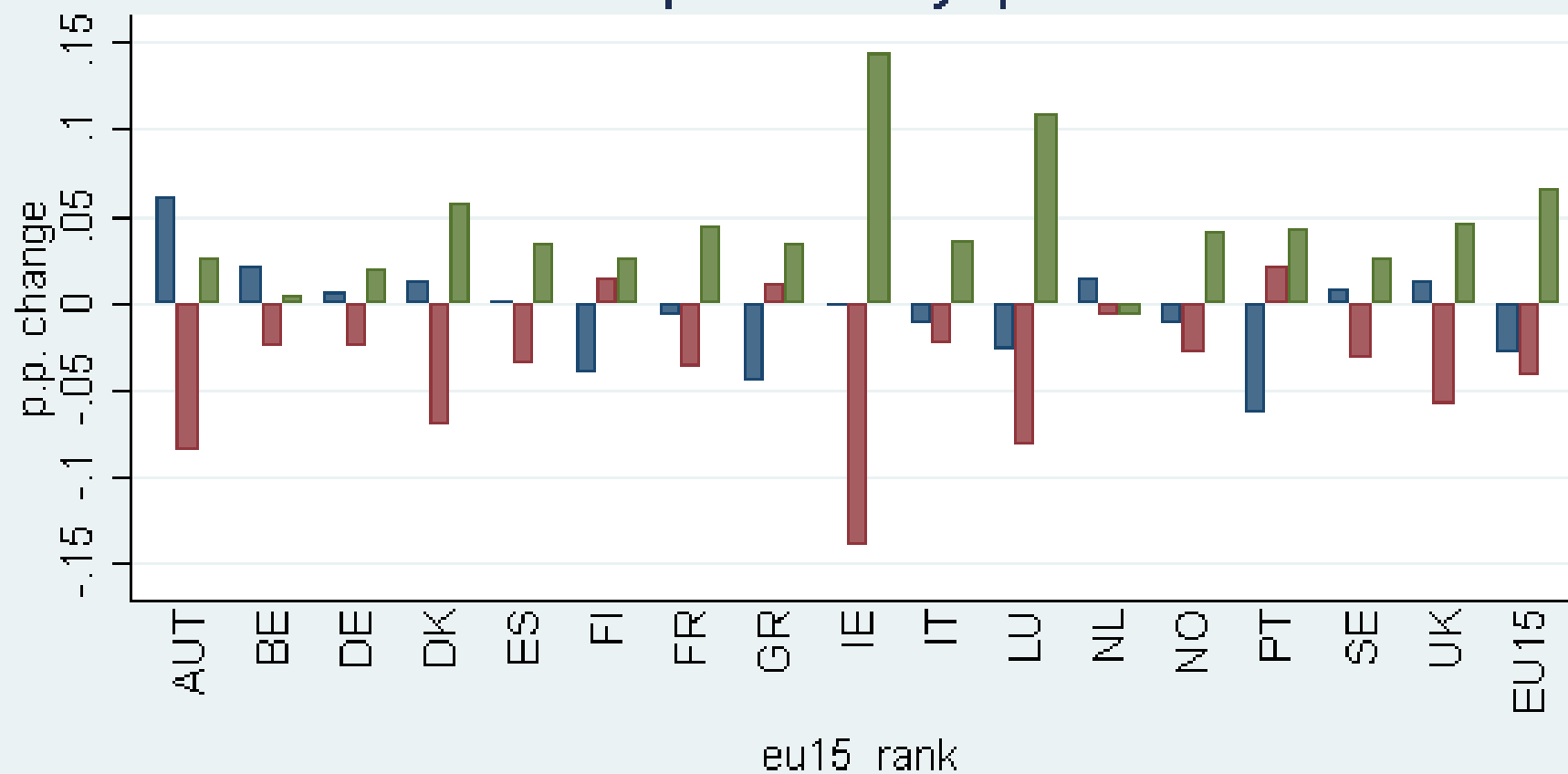
	Skills and discretion		Work intensity		Working time quality	
Cognitive routine	-11.23** (0.73)	-13.43** (0.68)	0.56 (0.63)	-0.91 (0.61)	9.27** (0.54)	9.21** (0.54)
Manual routine	-16.03** (0.82)	-12.05** (0.75)	-1.83** (0.63)	0.69 (0.63)	1.02 (0.81)	1.12 (0.85)
Manual non-routine	-22.57** (0.69)	-16.06** (0.68)	2.07** (0.71)	6.16** (0.68)	4.56** (0.57)	4.75** (0.62)
Average IT investment	-28.58* (15.05)		-10.09		41.29** (14.79)	
Computer intensity		0.17** (0.01)		0.10** (0.01)		0.00 (0.01)

*:p<0.1 **:p<0.05

Conclusions and discussions

- Differences between occupations
- Technological change does not explain differences, but is differently distributed and does affect job quality
- Extension to new member states
- How to identify effect?

Difference in empl. share by quintiles 1995-2010



lowest quintile occupations

middle 60%

best paying occupations

manual non-routine

difference in percentage points between employment shares in 2010 and 1995
 exception of DE (begin 2002) and Sweden, Norway, Finland and the EU15 (begin 1997)
 quintiles based on average pay in occupations