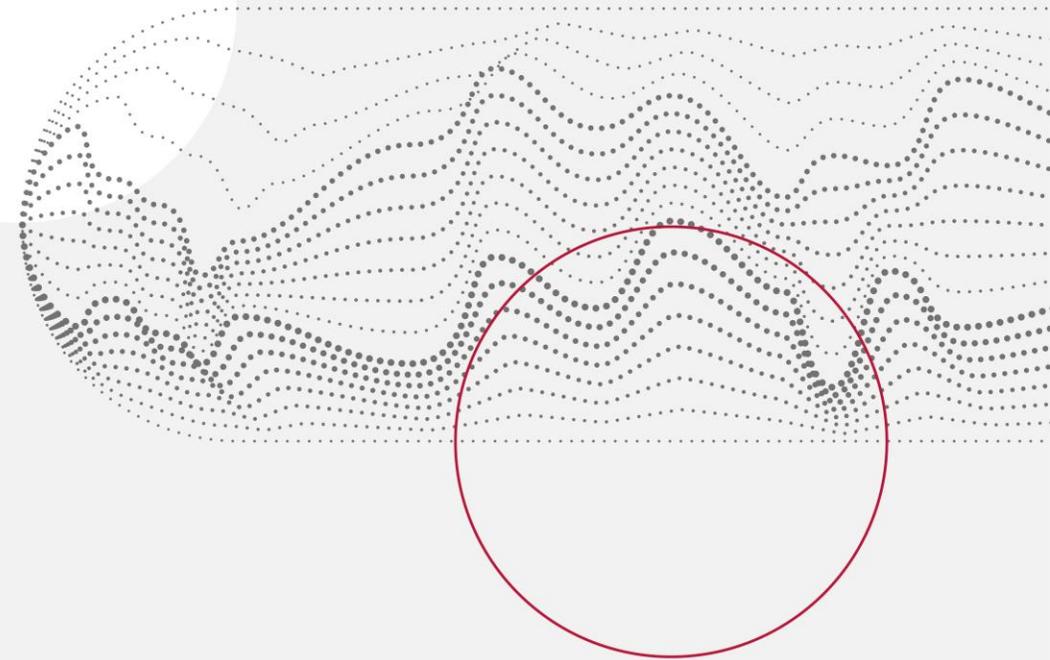


Are routine tasks getting old? Job tasks and demographics in Europe

Piotr Lewandowski (IBS, IZA)



Technology and globalization drive the shift away from routine and towards non-routine tasks / jobs -> job & wage polarization



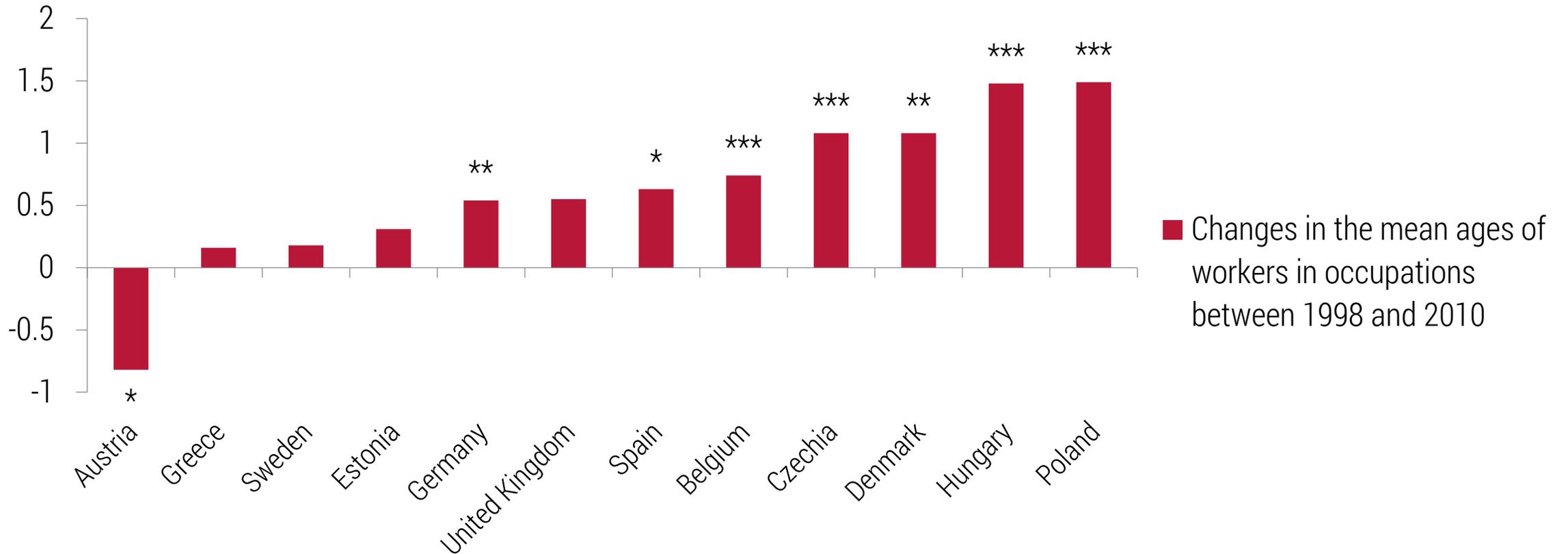
Differences between young and older workers can go either way

- Older workers (55-64) more likely to have low problem-solving and numeracy skills, and less likely to use information-processing skills at work than workers aged 25-54 (PIAAC)
- Older workers exhibit lower between-occupation mobility than younger workers
- Automation may reduce hiring and employment of young workers
- Population ageing can also impact technology adoption

European workforce was ageing more quickly in occupations that were initially more routine-intensive = had higher routine task intensity



The estimated effect of the initial (1998 RTI) routine task intensity of occupations on changes in mean age by 2010



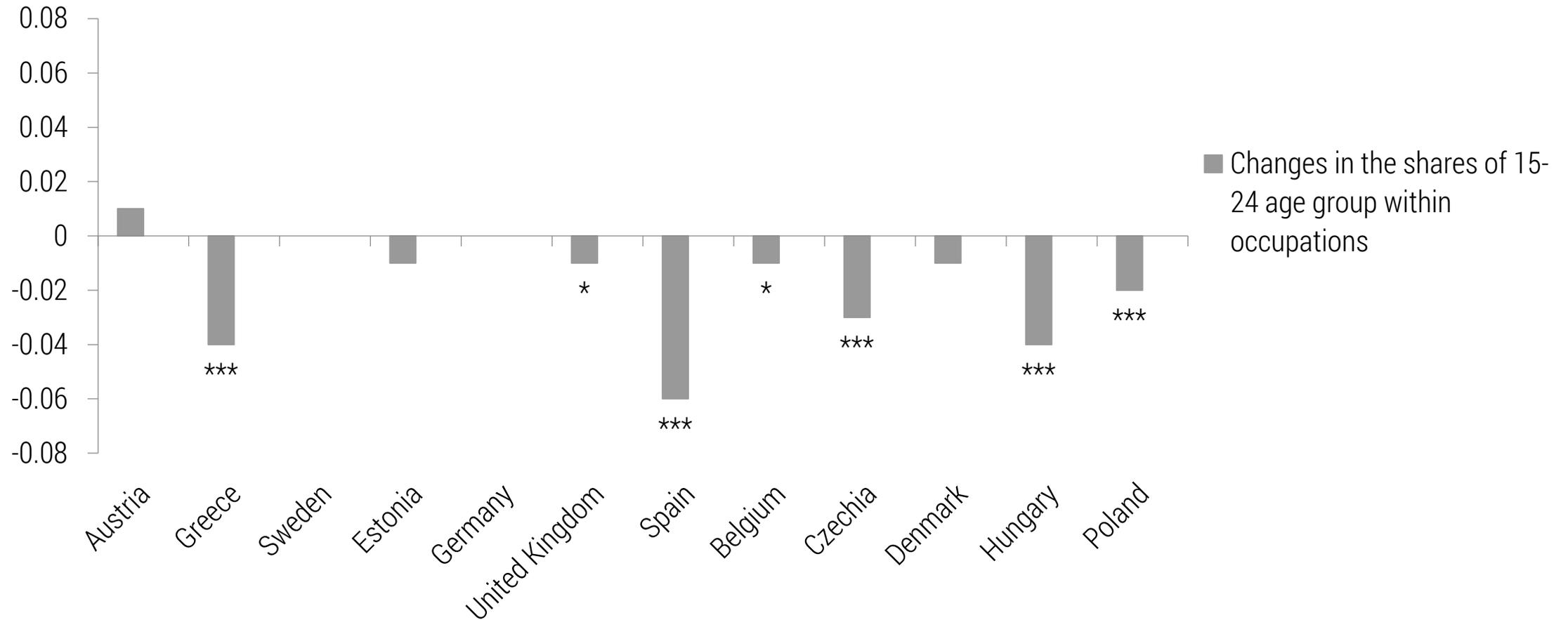
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Based on LFS & O*NET data.

Source: Lewandowski P., Keister R., Hardy W., Górká S., 2020. Ageing of routine jobs in Europe. *Economic Systems*, 44 (4), 100816

As the share of young workers in the more routine-intensive occupations was declining



The estimated effect of the initial routine task intensity of occupations in 1998 on changes in age structures by 2010



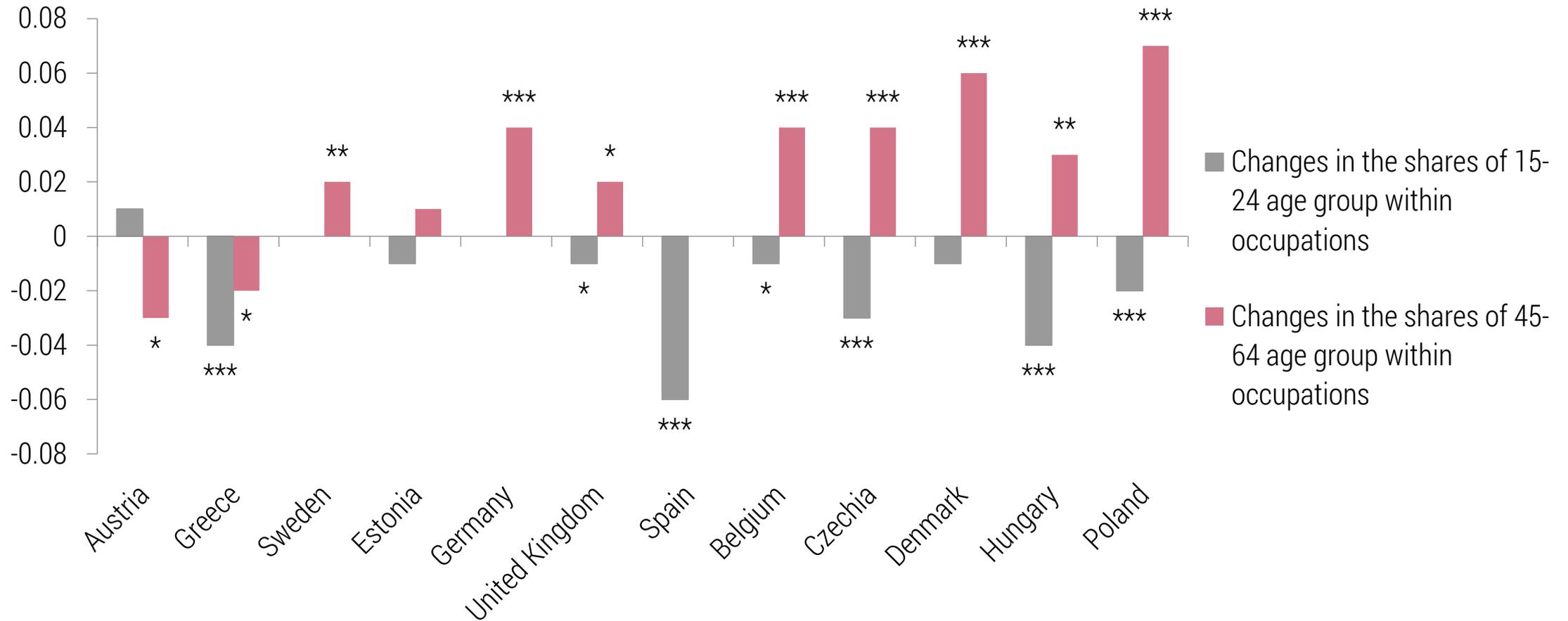
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Based on LFS & O*NET data.

Source: Lewandowski P., Keister R., Hardy W., Górká S., 2020. Ageing of routine jobs in Europe. *Economic Systems*, 44 (4), 100816

And the share of the oldest workers was increasing



The estimated effect of the initial routine task intensity of occupations in 1998 on changes in age structures by 2010



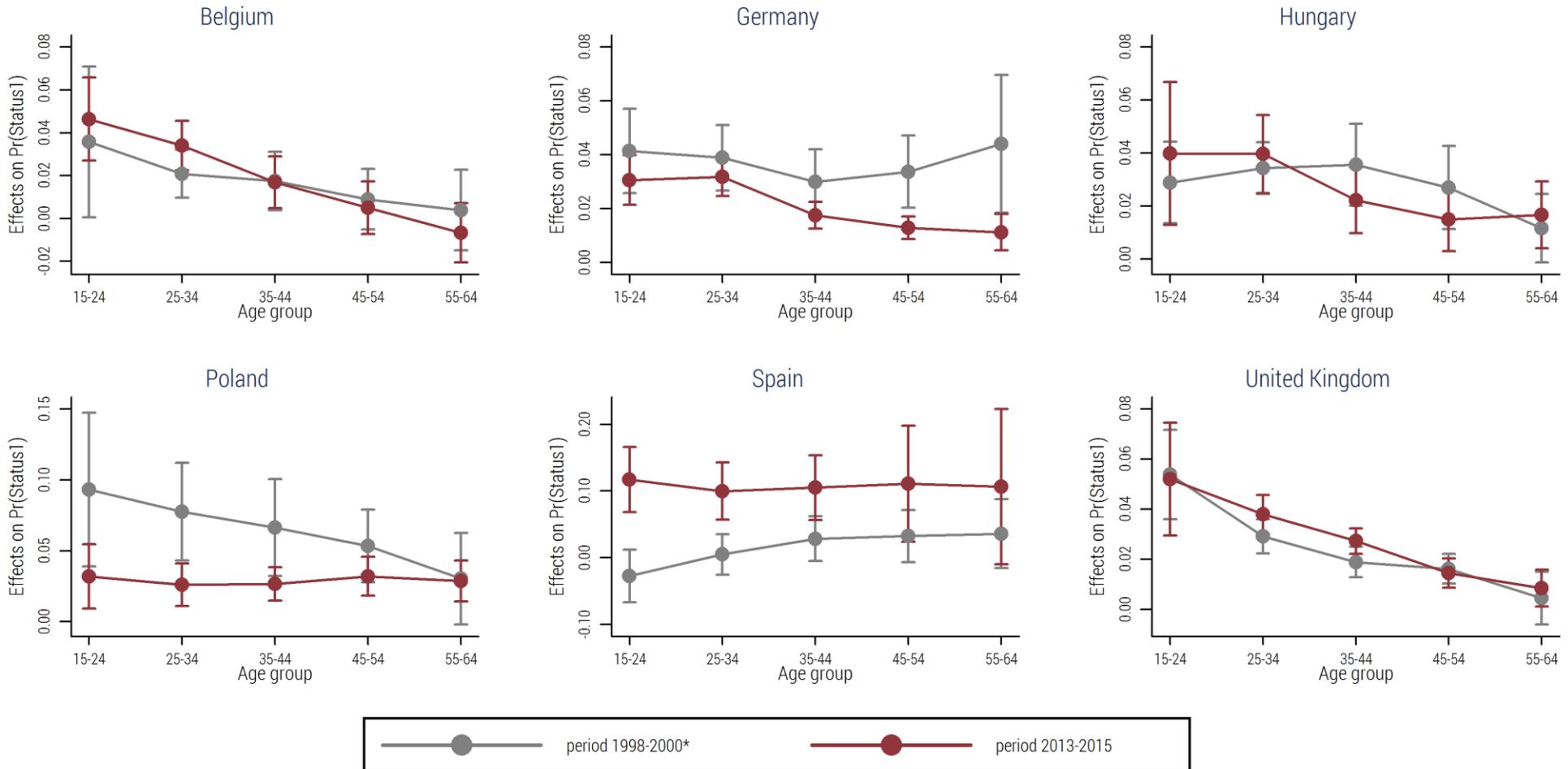
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Source: Lewandowski P., Keister R., Hardy W., Górká S., 2020. Ageing of routine jobs in Europe. *Economic Systems*, 44 (4), 100816

In several countries, the unemployment risk related to routine task intensity is higher among younger workers



The marginal effects of the routine task intensity (RTI) on the unemployment risk, by age



Logit regressions at individual level. Standard errors clustered at occupation level. Based on LFS & O*NET data.

Source: Lewandowski P., Keister R., Hardy W., Górká S., 2020. Ageing of routine jobs in Europe. *Economic Systems*, 44 (4), 100816

In high skilled occupations, older workers perform less routine-intensive tasks, but the opposite is true in other jobs



Diifferences in worker-level routine task intensity, in comparison to workers aged 25-34

	All workers	High-skilled occ. (ISCO 1-3)	Middle-skilled occ. (ISCO 4-5)	Low-skilled occ. (ISCO 7-9)
Ref. 25-44	Age 16-24	0.203***	0.211***	0.184***
	Age 35-44	-0.056***	-0.057***	-0.027*
	Age 45-54	-0.021*	-0.058***	0.008
	Age 55-64	0.022	-0.041**	0.097***
No. of obs. / R ²	166,542 / 0.22	68,027 / 0.12	52,906 / 0.09	45,609 / 0.08

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Based on PIAAC & STEP data.

Source: • Lewandowski P., Park A., Hardy W., Du Y., Wu S. 2019. *Technology, Skills, and Globalization: Explaining International Differences in Routine and Nonroutine Work Using Survey Data*, IBS Working Paper 04/2019

Many research questions remain



- Will the routine jobs become even older in the future?
- Are these patterns shaped by labour market institutions?
- What is the impact of deroutinisation on vertical (young vs. old) and horizontal (among young, among old) inequality in labour market outcomes?
- Does population ageing affect technology adoption and productivity?

We strive to answer some of them in Untangled



We aim to study:

- the effects of technology and globalisation on gaps in labour market outcomes between younger and older people, and the effects of population ageing on capital adoption and productivity
- the effects of population ageing on capital formation and productivity growth in European countries.

Data: EU-LFS, IFR, EU-KLEMS, UN Population data

Partners involved:

IBS, wiiw, KU Leuven, UNIPG

Thanks for listening

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