

THE CHANGING NATURE OF WORK

AND SKILLS IN THE DIGITAL AGE



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Santo Milasi

*Unit B.7 Knowledge for Finance,
Innovation and Growth*

Joint Research Centre

The European Commission's
in-house science service



European
Commission

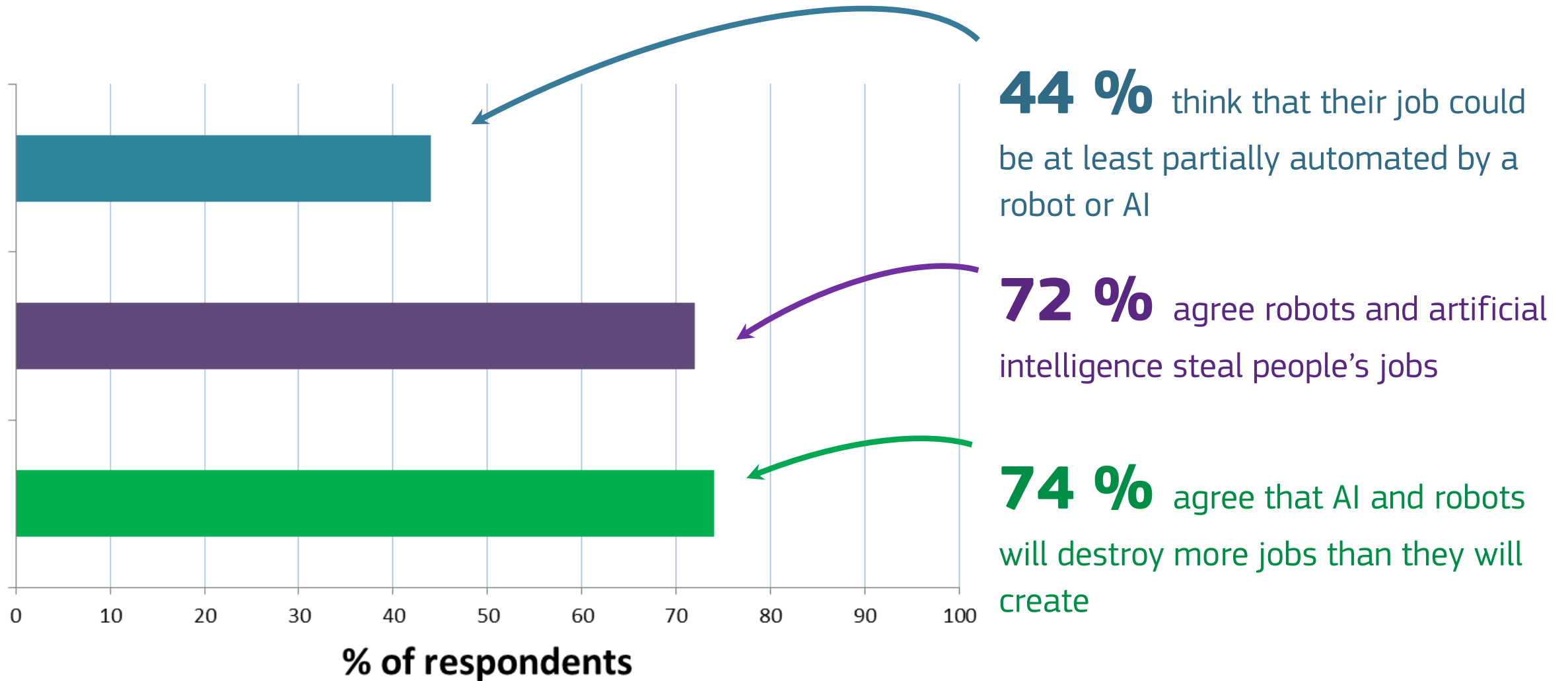
The future of work "hype" is constantly growing



Google Search Volume
for "Future of Work"
(Global level, peak=100).

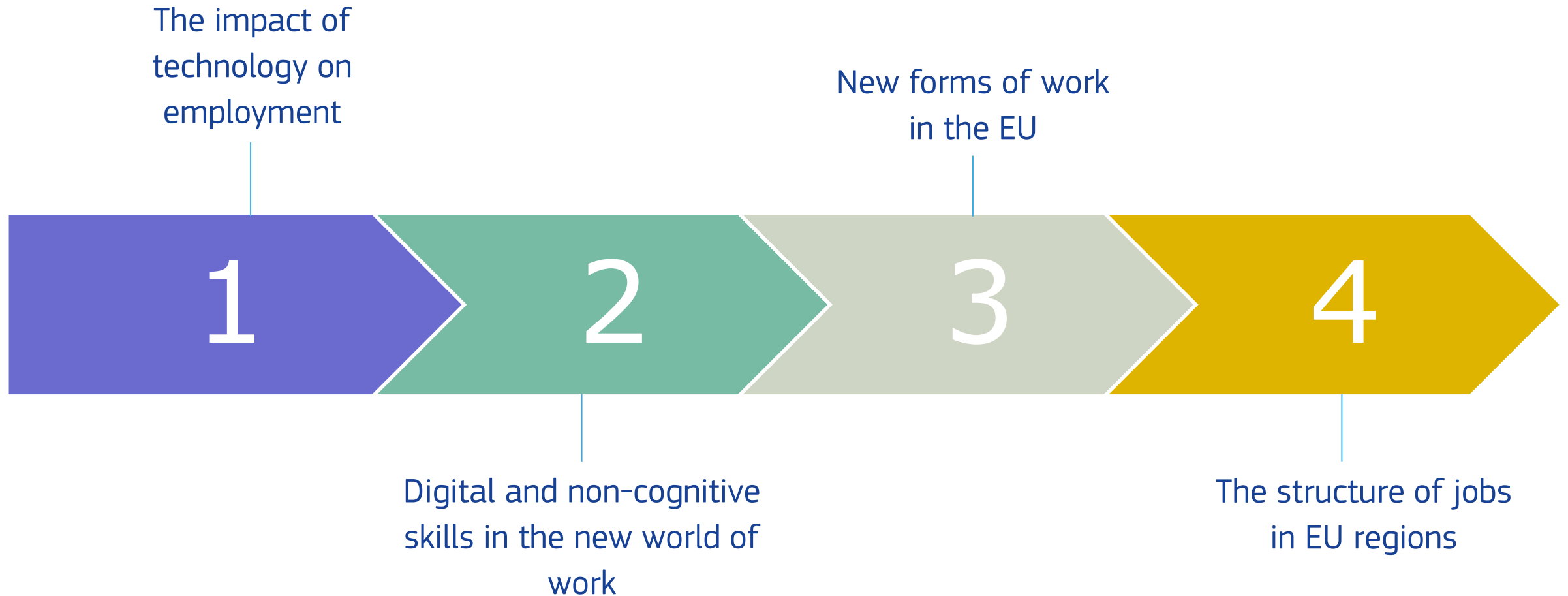
Source: JRC based on Google Trends data

Along with interest, **concerns have also grown**

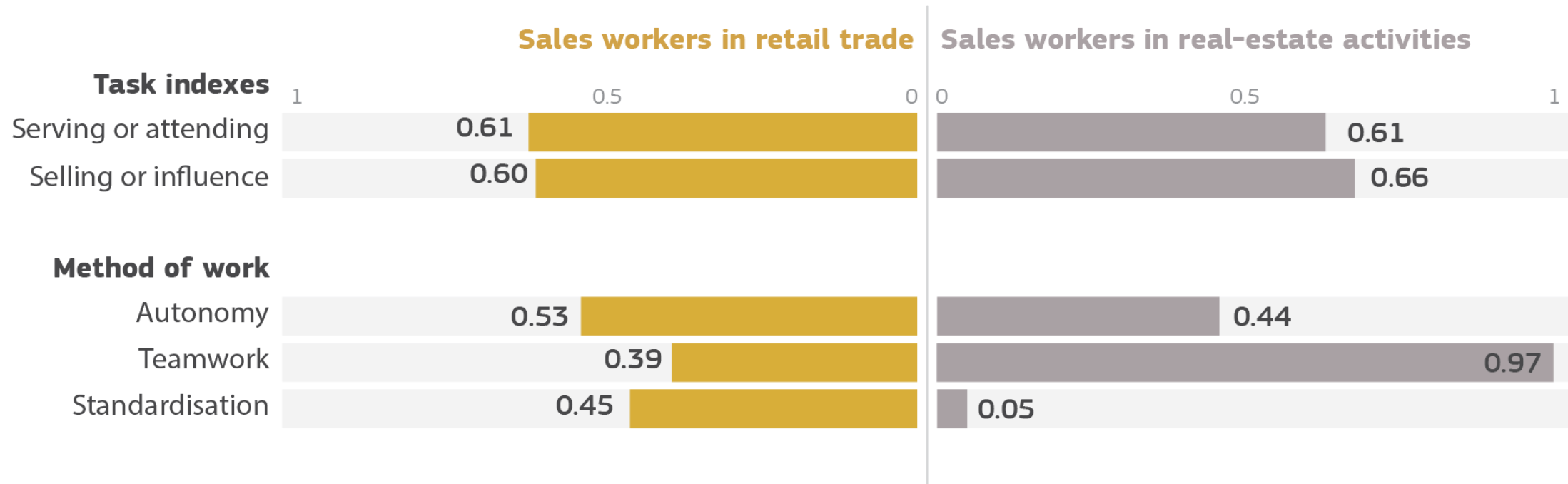


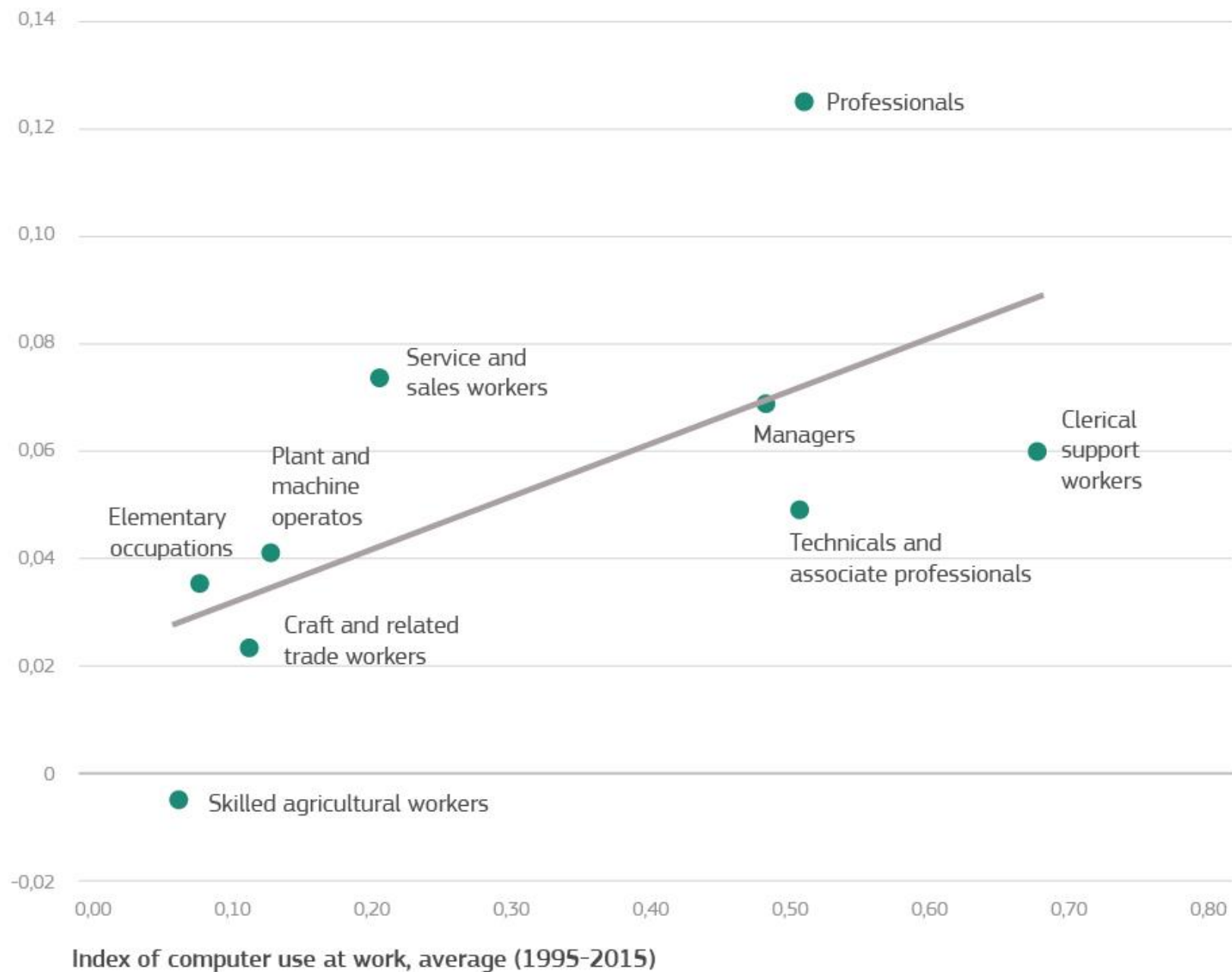
Going beyond the job automation debate

Technology, work and skills: a multifaceted story



Differences in how tasks are organised matters





Source: JRC based on Bisello et al. (2019)

The use of computers has standardised work in some high-skilled occupations, potentially paving the way for further automation

Indirect effect of technological change:
Even harder to predict?

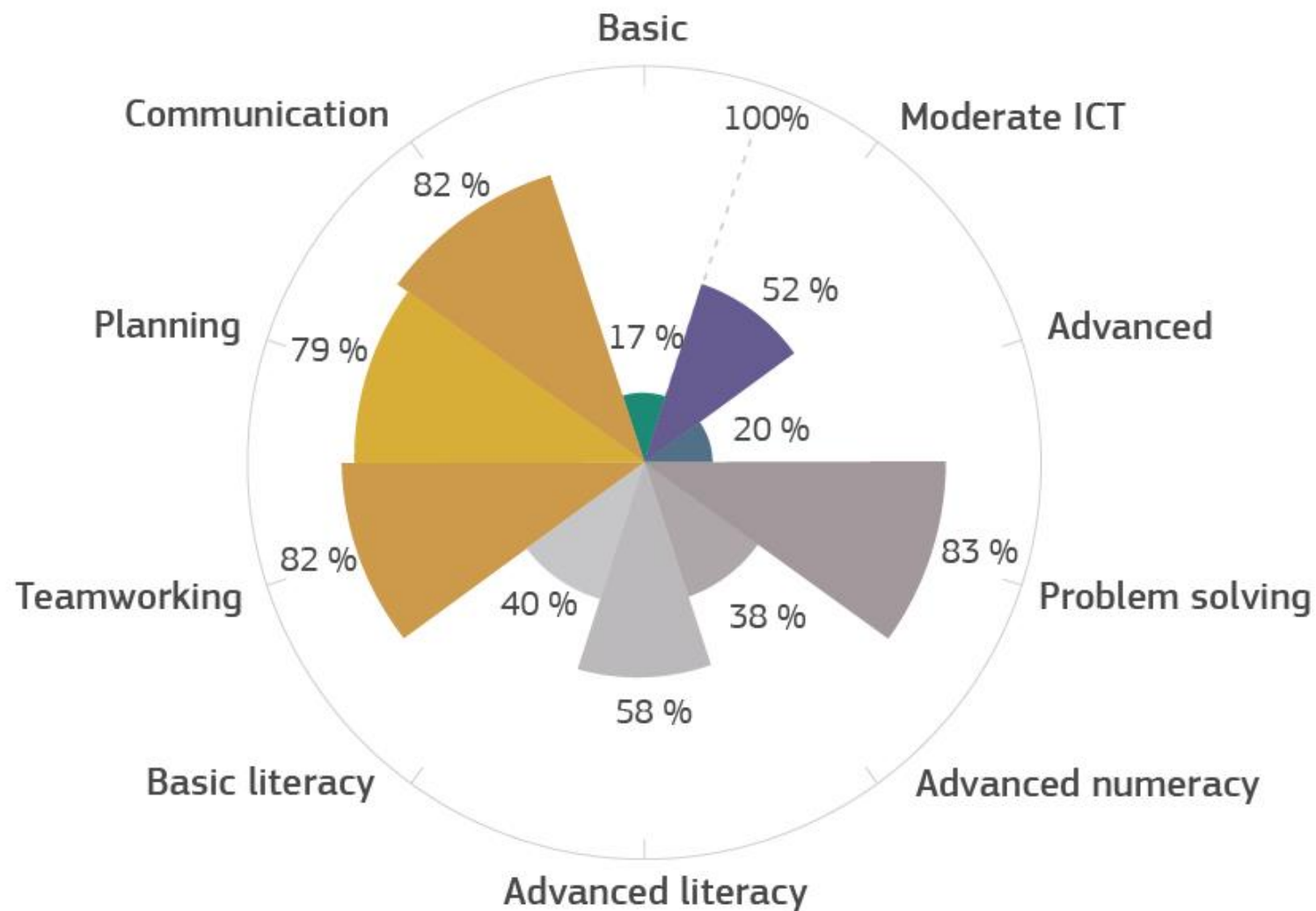
EU labour markets demand **more non-cognitive and ICT skills**



Almost all occupations that have expanded since 2011 required **above-average social interactions and use of computers at work**

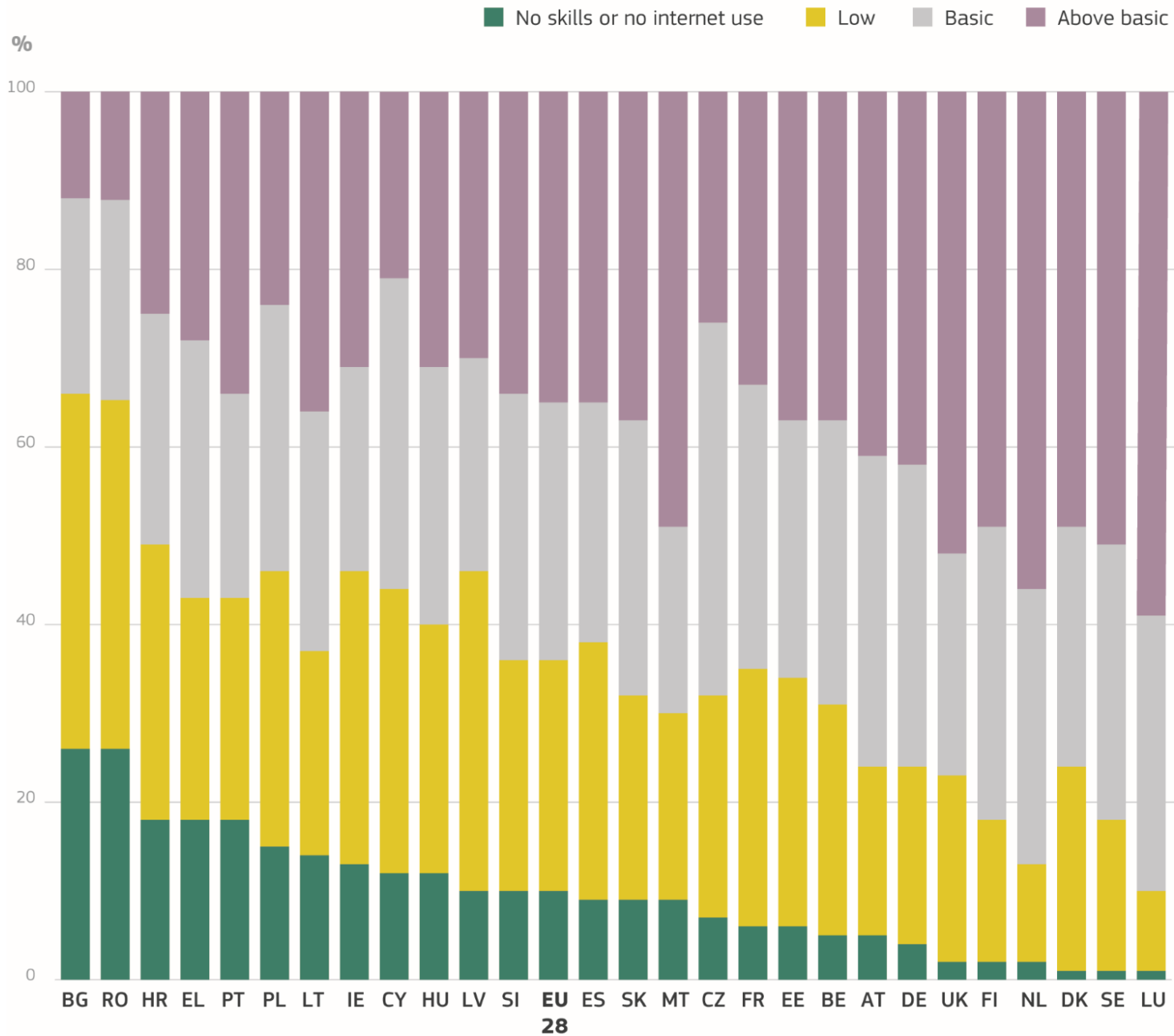
Source: JRC based on Cedefop employment forecasts and Bisello et al (2019)

● ICT KNOWLEDGE ● COGNITIVE SKILLS ● NON-COGNITIVE SKILLS



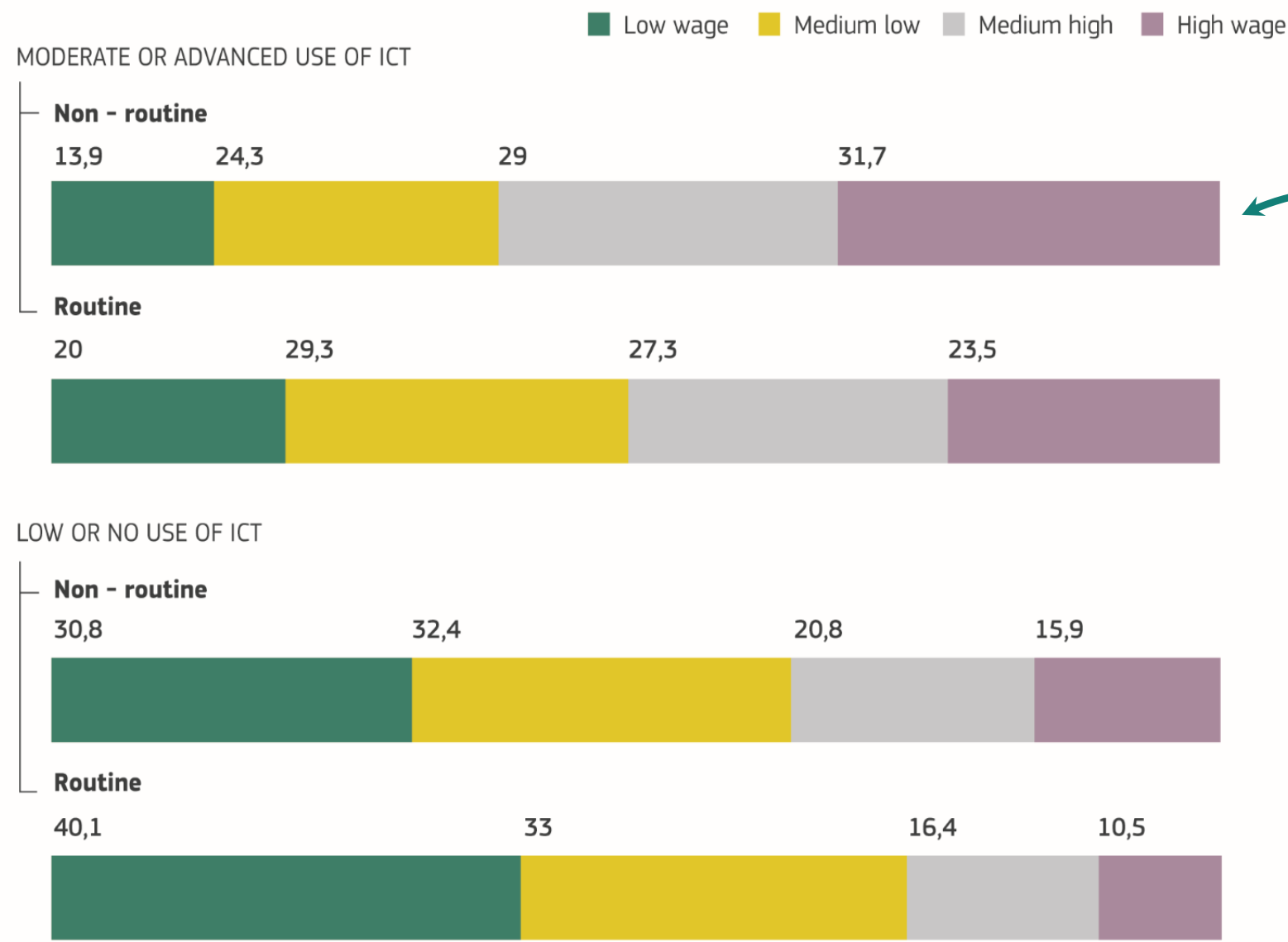
Demand for **complex skills sets** is expected to rise, requiring **problem solving** abilities, strong **non-cognitive skills**, and at least **moderate knowledge of ICT**

Digital skills of the EU labour force, 2017 (% individuals, by skills level)



In 2017
an important share of
the EU labour force had
low or no digital skills

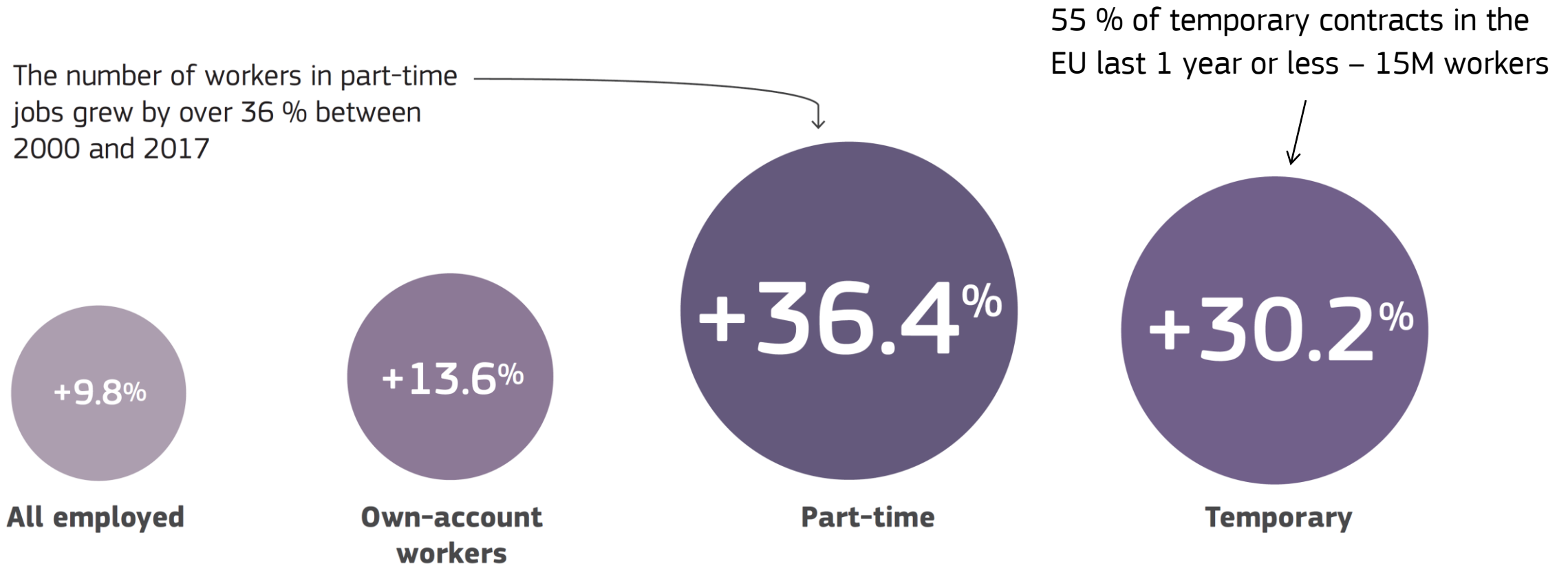
Distribution of workers by wage quartile, type of tasks and ICT use intensity, 2016

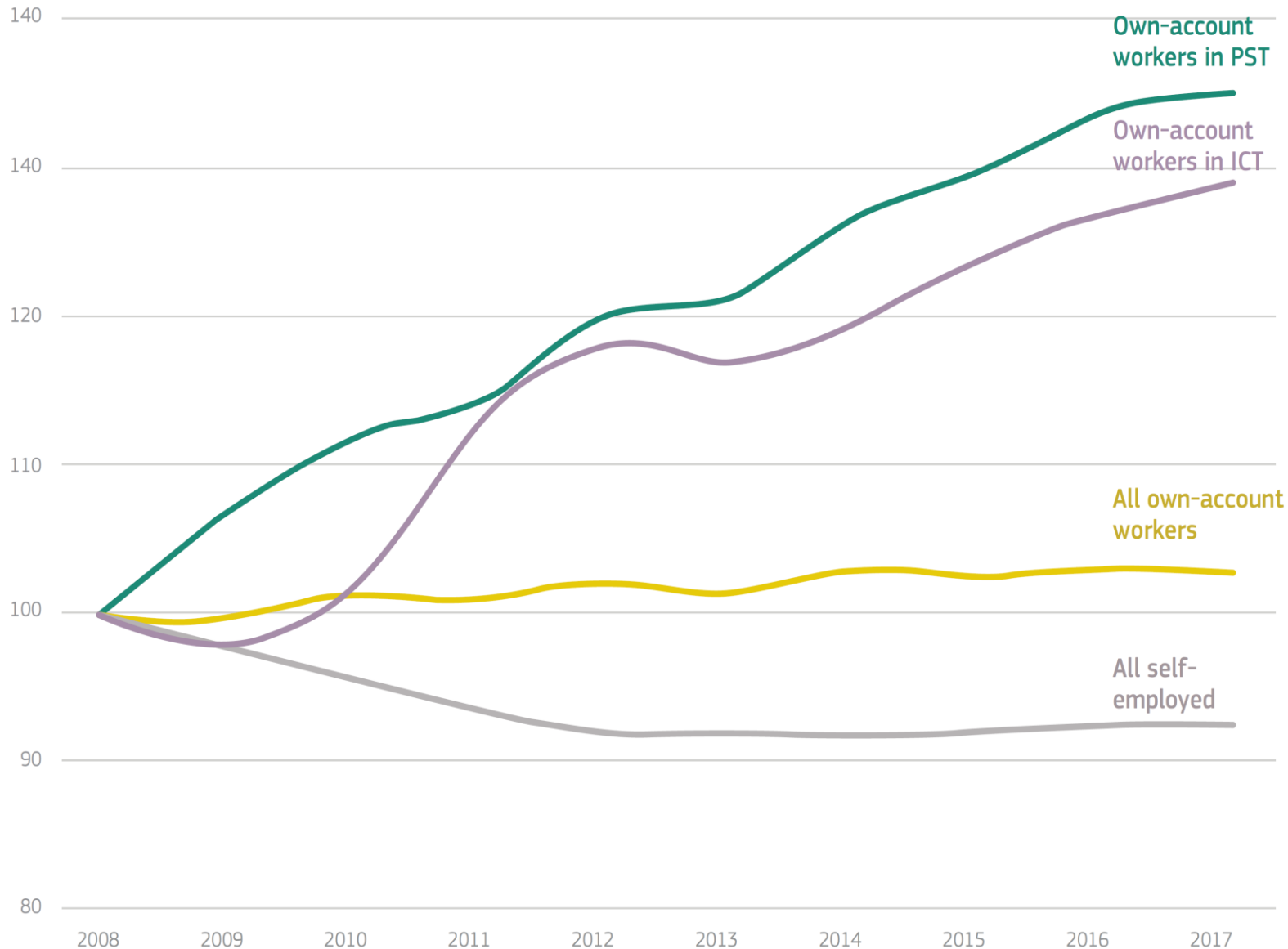


Jobs combining non-routine tasks with ICT use are the most likely to be high-paid

Source: JRC based CEDEFOP's European Skills and Jobs Survey (microdata, 2016)

Non-standard forms of employment have been **on the rise** for some time in the EU, but is their nature changing?





Source: JRC based on Eurostat

There is a rapid growth of high-skilled freelancers

Own-account workers in professional, scientific, and technical activities rose by over 35 % since 2008

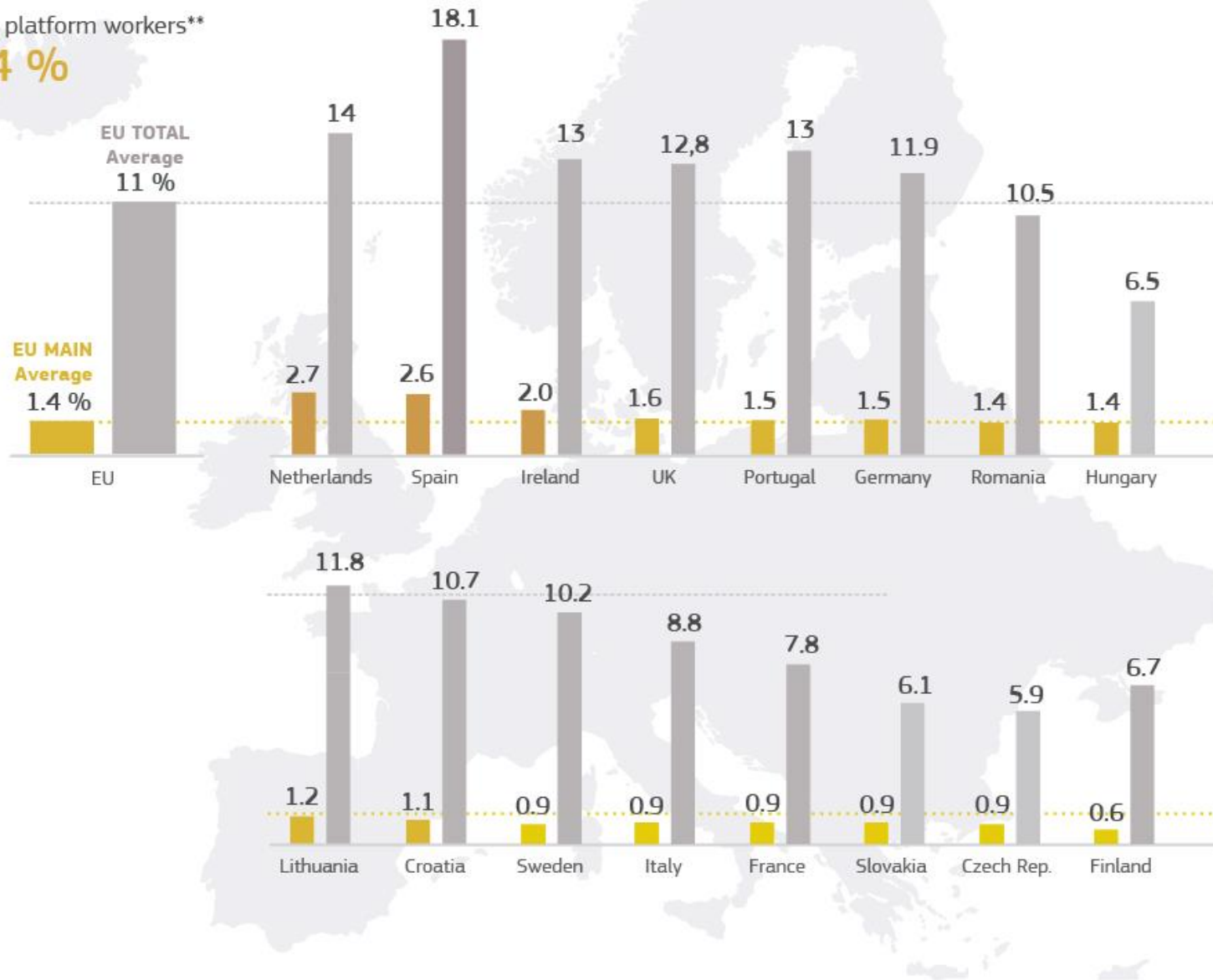
EU AVERAGE*

● Total platform workers

11 %

● Main platform workers**

1.4 %



11 % of adults in the EU worked through online platforms **at least once**

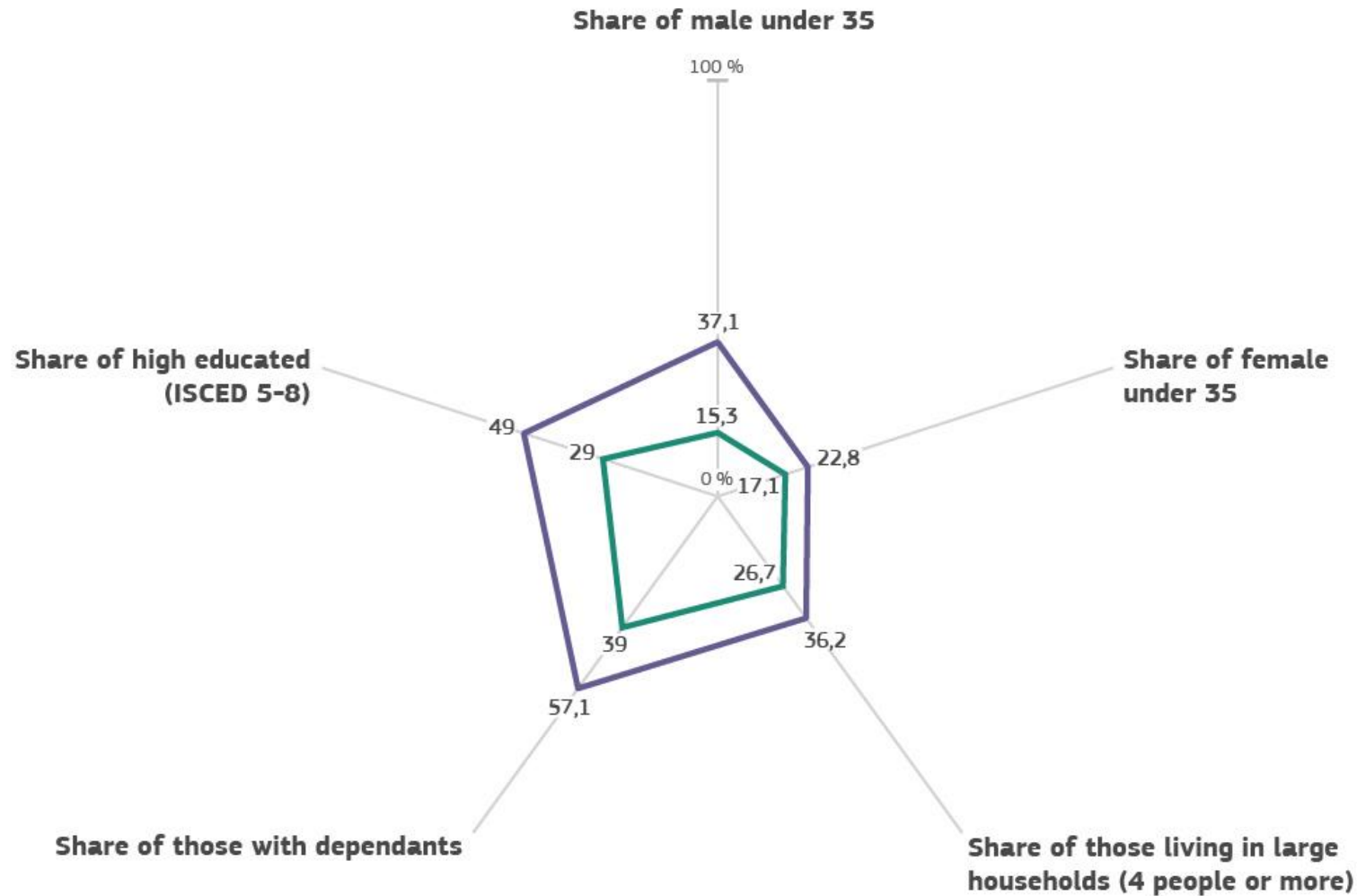
For **1.4%** of adults platform work is the **main activity** (for **4%** it is the **secondary** work activity)



Main platform workers

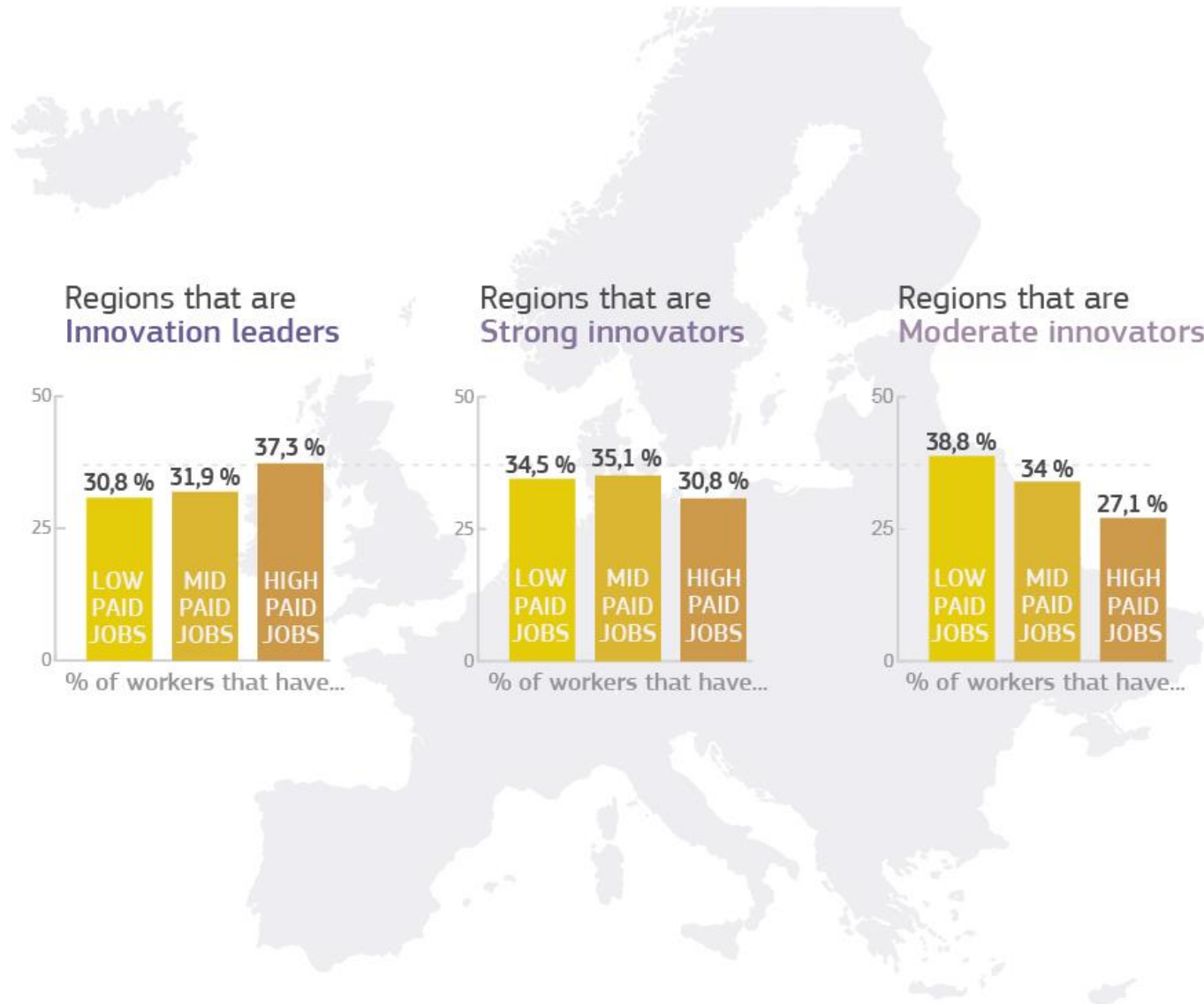


Offline workers



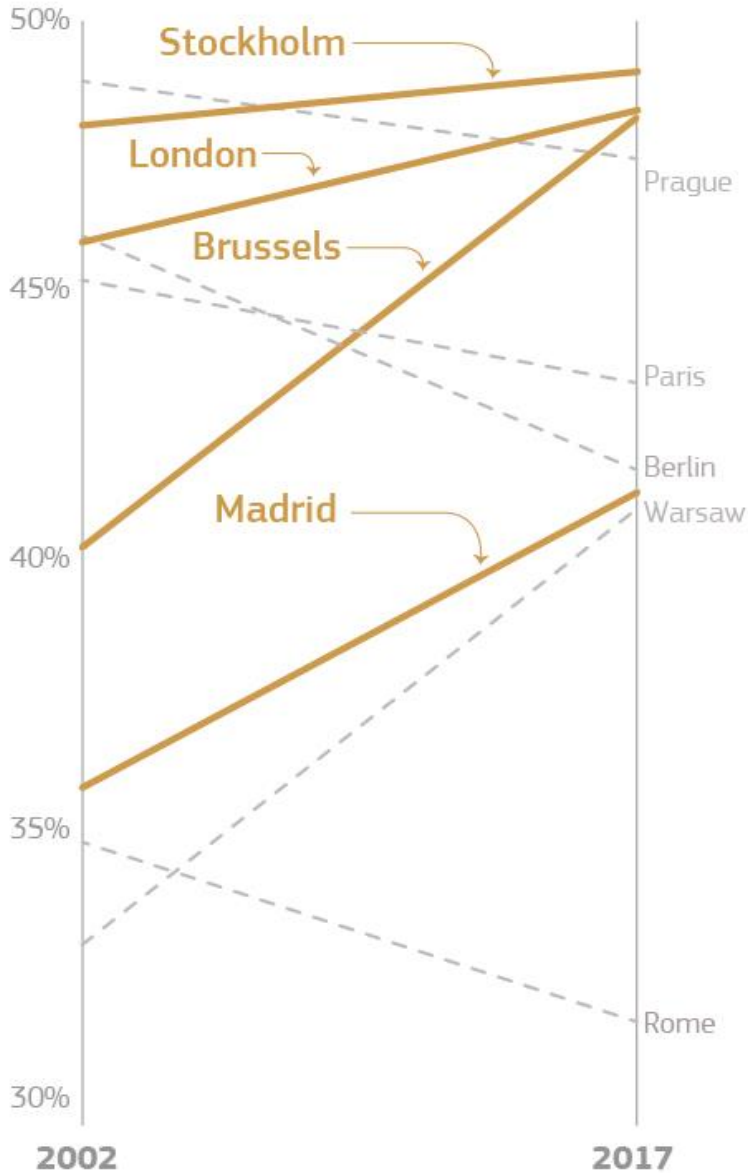
Male and highly educated workers are those who are most likely to work through platforms as their main job

Average share of employment by EU-9 wage tercile and groups of regions, 2017 (%)

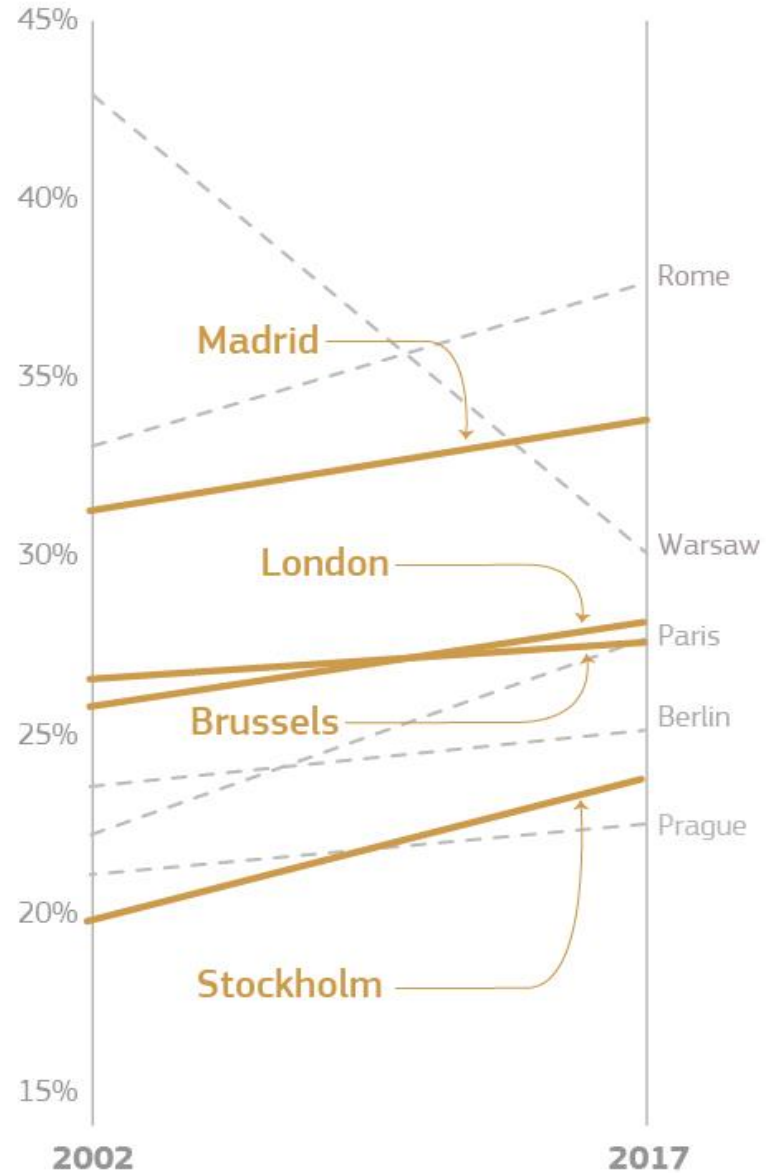


EU regions with higher innovation potential tend to have more "high-paid" jobs and less "low-paid" ones, while showing some signs of job polarisation

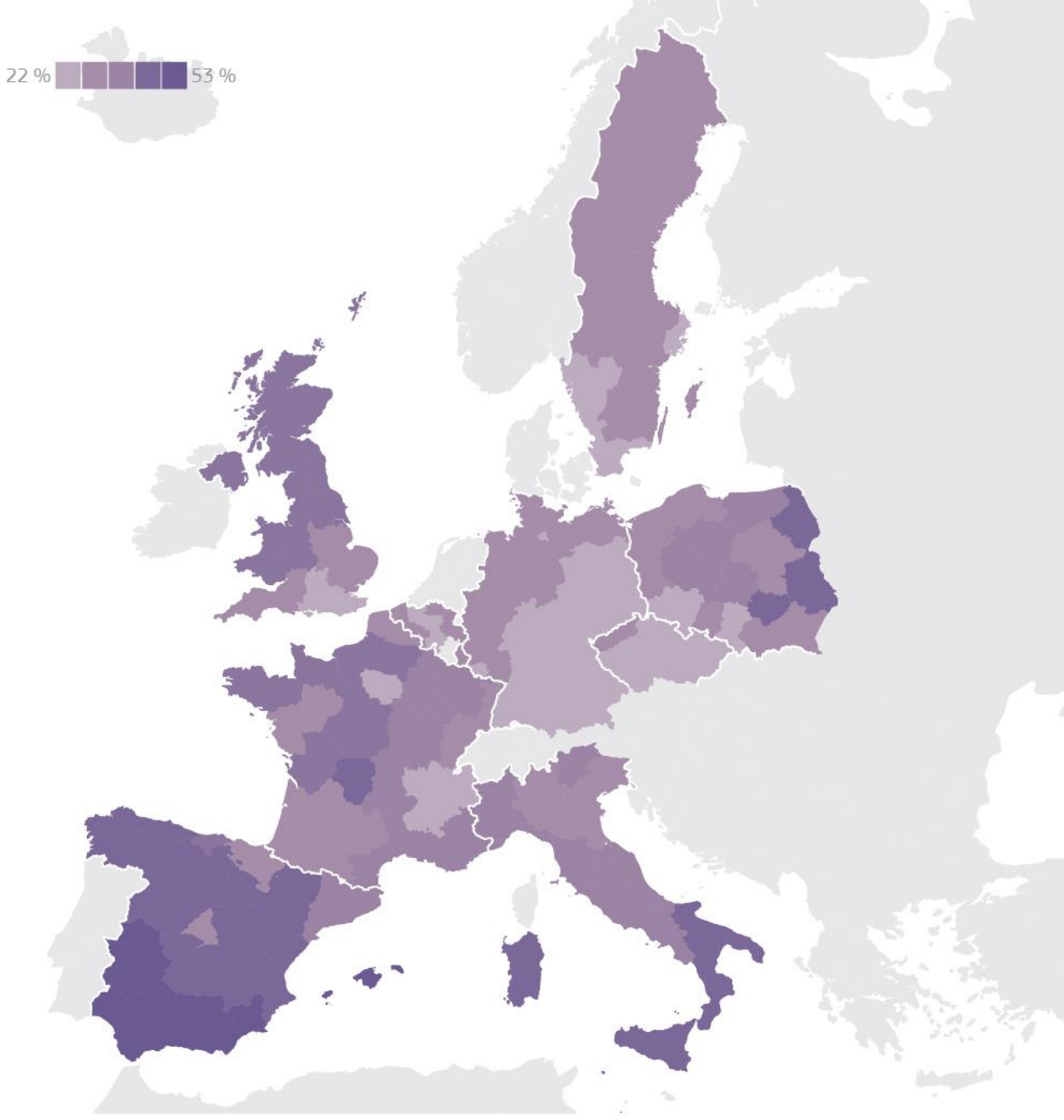
Share of **high-paid jobs**



Share of **low-paid jobs**



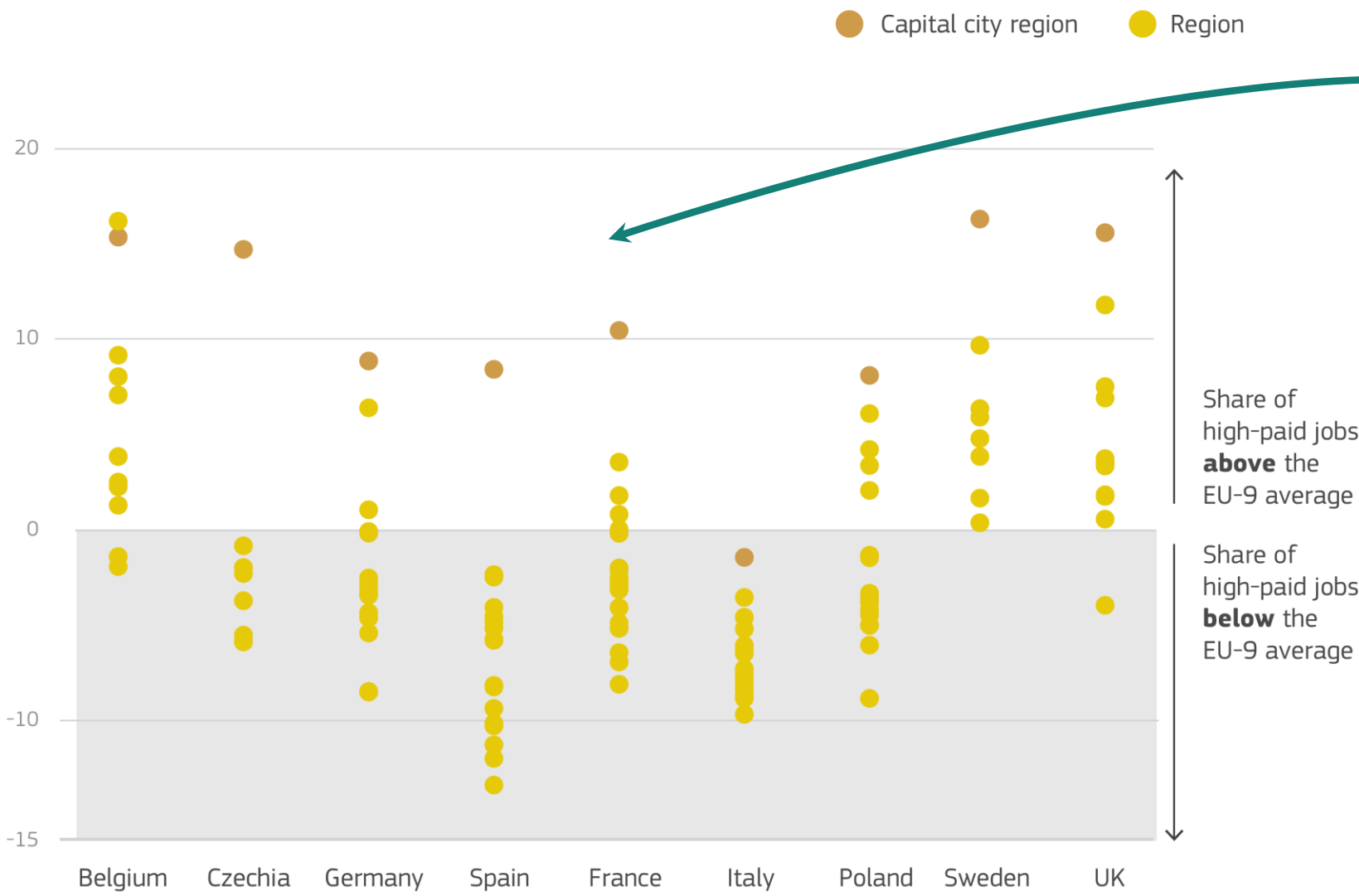
Some capital city regions have shown signs of **job polarisation** over the past 15 years



Regional disparities remain large, with peripheral regions showing much larger shares of "low-paid" jobs

Source: JRC and Eurofound calculations based on EU Labour force Surveys

Share of high-paid jobs (pp deviation from EU average), 2017



Capital city regions are by far the regions with the largest share of high-paid jobs

Source: JRC and Eurofound calculations based on EU Labour force Surveys



Thank you

Website: <https://ec.europa.eu/jrc/en/facts4eufuture/changing-nature-work-skills-digital-age>

JRC working paper series on Labour, Education and Technology:
<https://www.econstor.eu/handle/10419/202101>

