

Global trends in higher education

Annual HEPI lecture

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- **The state of higher education**
 - ◆ Better skills, better jobs, better lives
 - ◆ Some challenges
 - ◆ Mobilising resources
- **Future trends**
 - ◆ Emerging skill demands
 - ◆ Learner ownership
 - ◆ Making lifelong learning a reality for all
- **Some conclusions**

The state of higher education

Better skills, better jobs, better lives

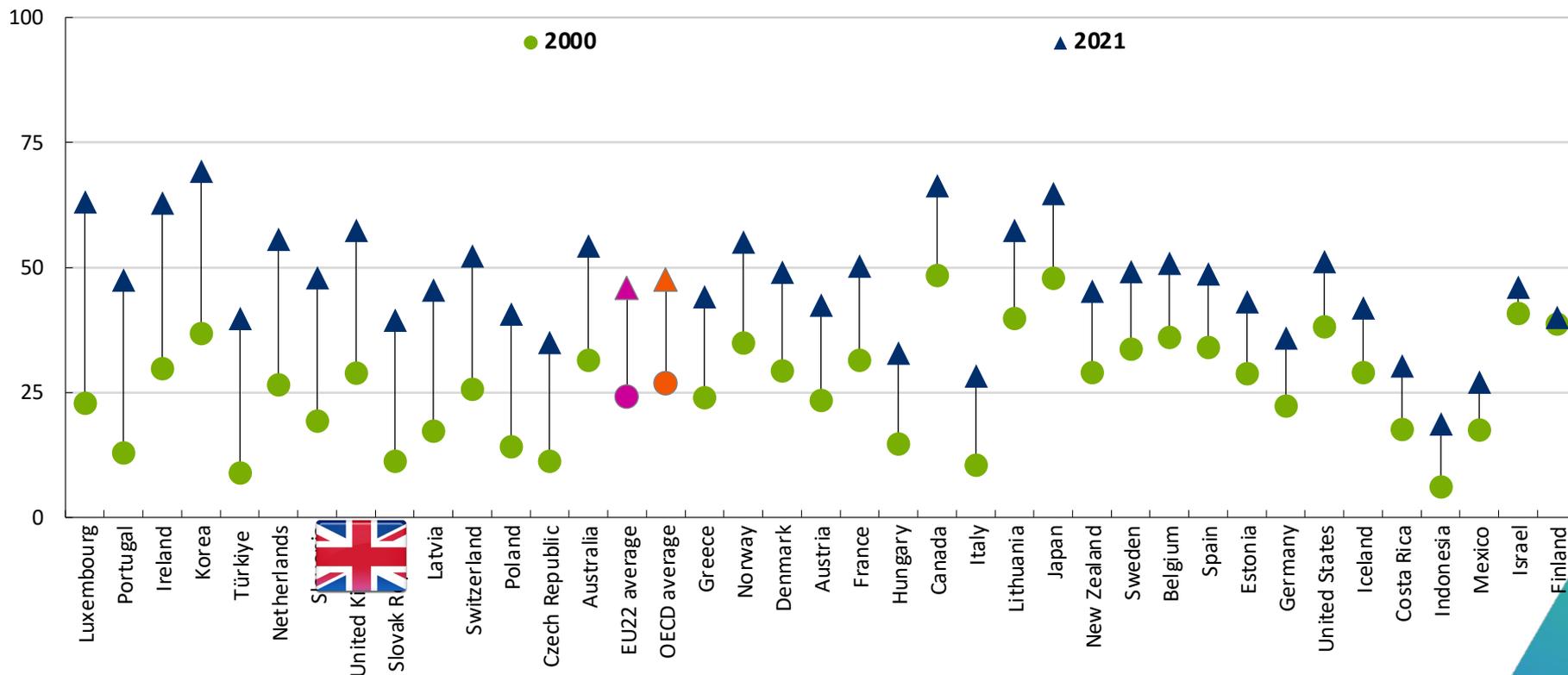




The rise in tertiary attainment continues...

Figure A1.1

Trends in the share of tertiary-educated 25-34 year-olds (2000 and 2021)



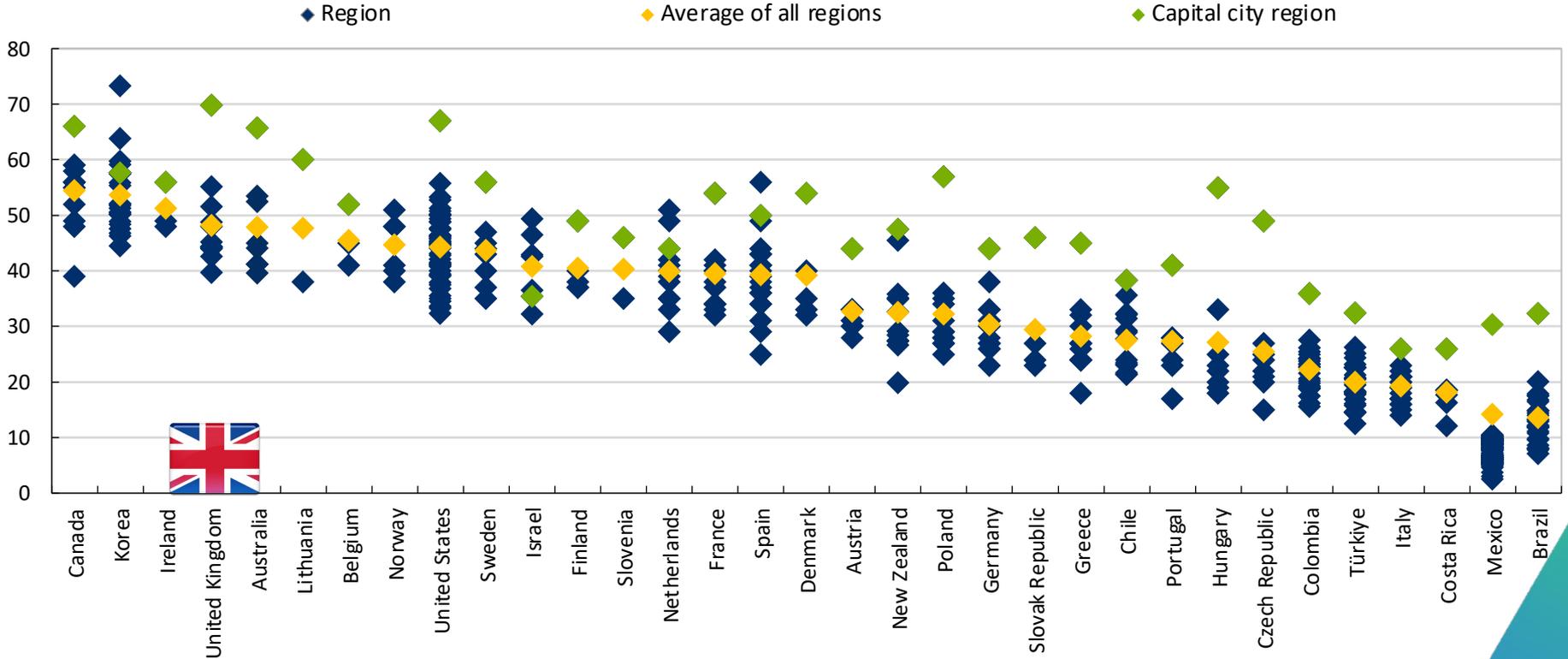
Note: Countries sorted in descending order of growth



...even if there are large differences within and across countries

Figure A1.4

Percentage of 25-64 year-olds with tertiary attainment, by subnational region (2021)

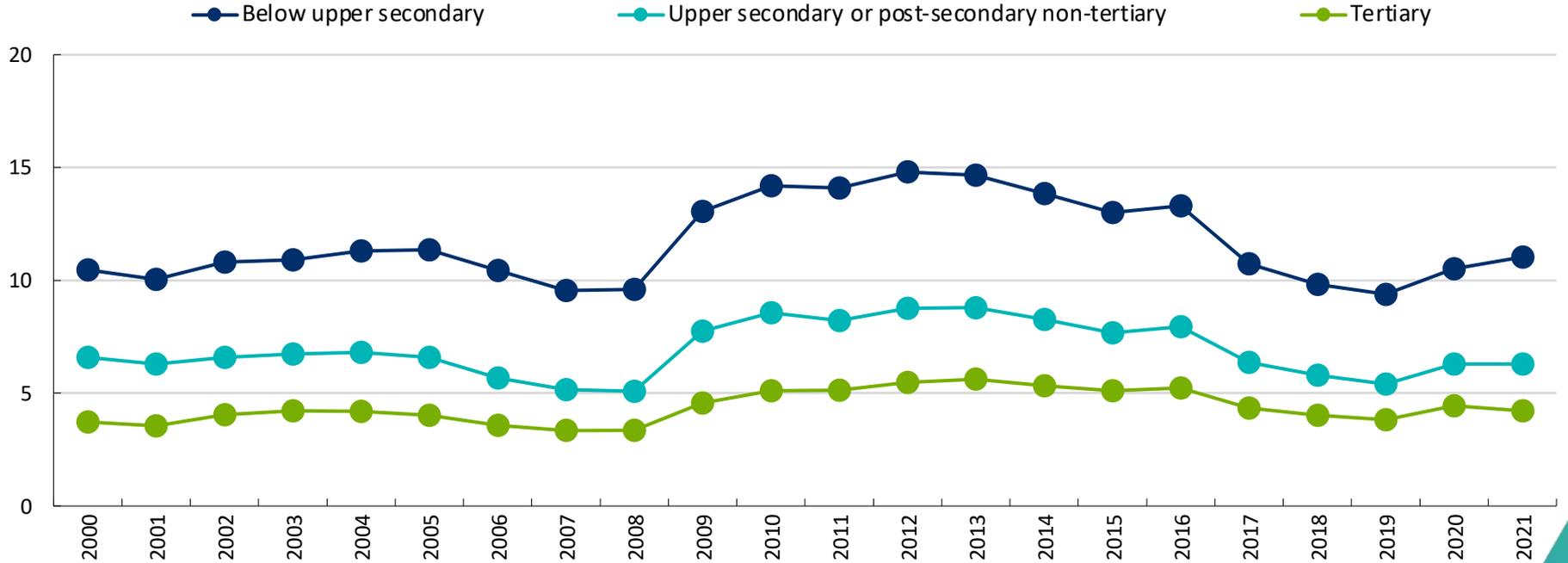




Higher educational attainment protects from unemployment – especially during economic crises

Figure A3.3.

Trends in unemployment rates, by educational attainment (2000 to 2021)

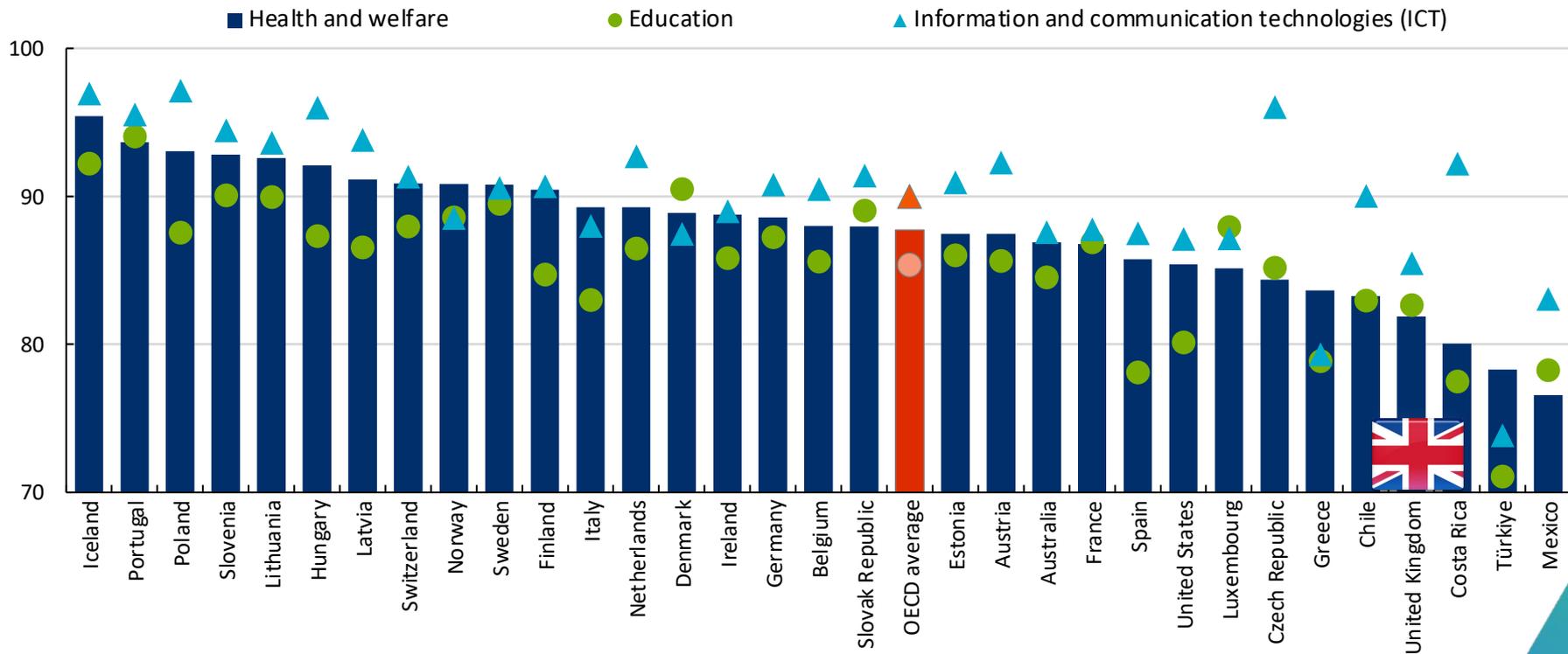




Employment rates of tertiary-educated individuals vary by field of study

Figure A3.1.

Employment rates of tertiary-educated adults, by field of study (2021)



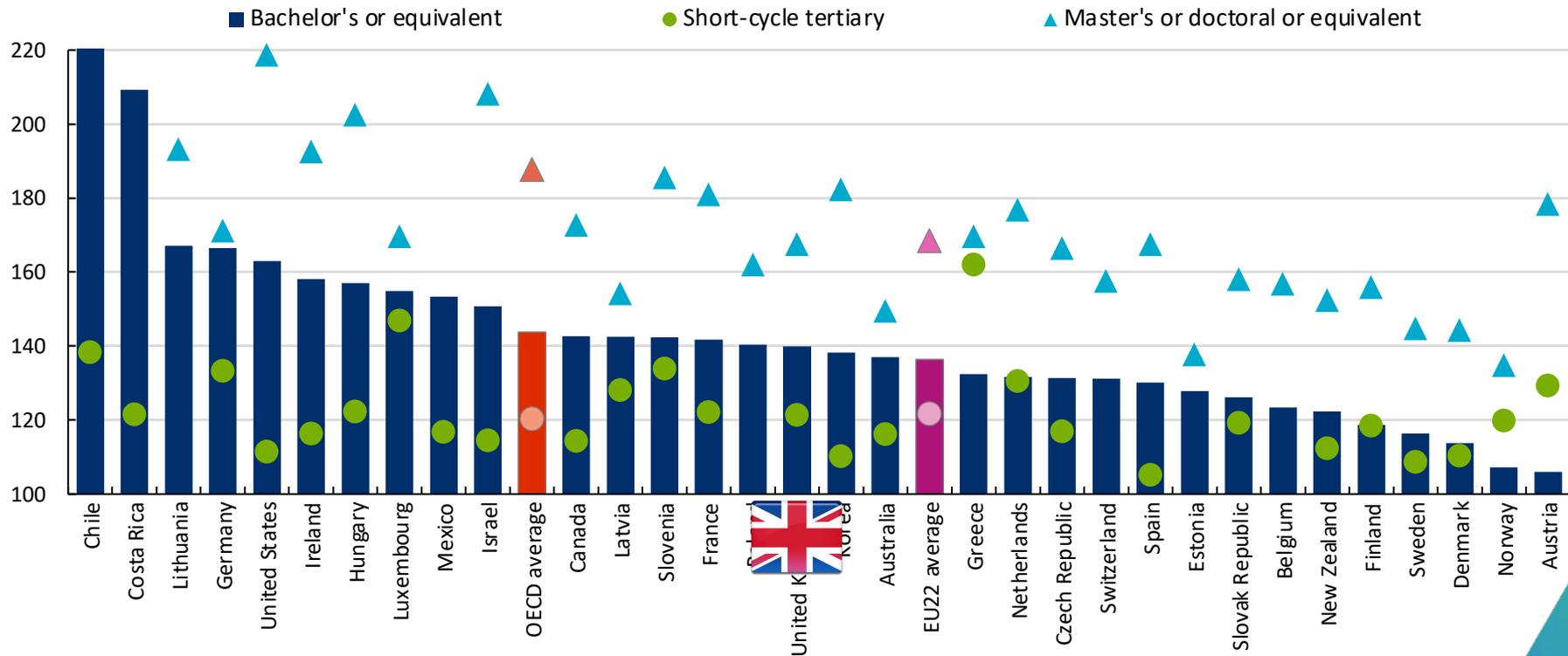


The wage premium from tertiary education remains high

Figure A4.2.

Relative earnings of tertiary-educated adults, by level of tertiary attainment (2020)

Upper secondary attainment = 100

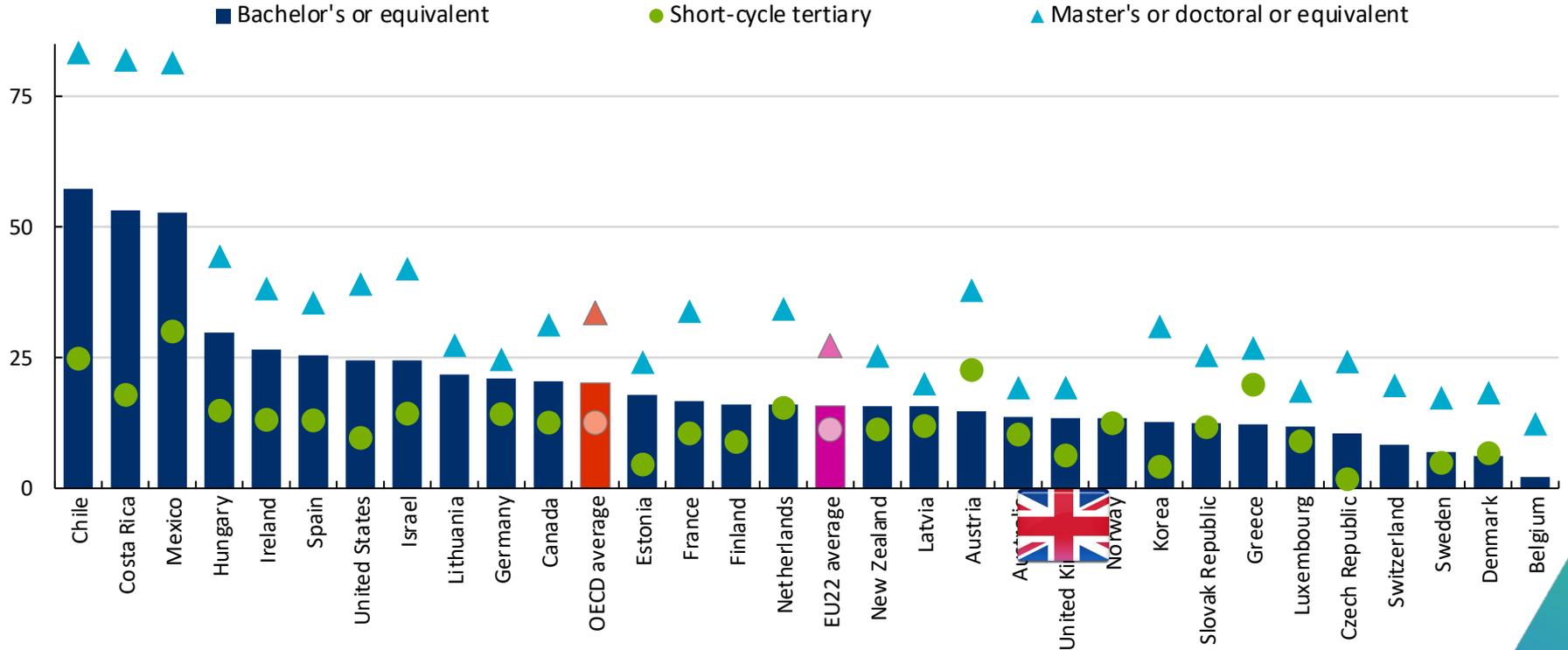




Many tertiary-educated workers earn more than twice the median wage

Figure A4.6.

Percentage of tertiary-educated adults earning more than twice the median, by level of tertiary attainment (2020)

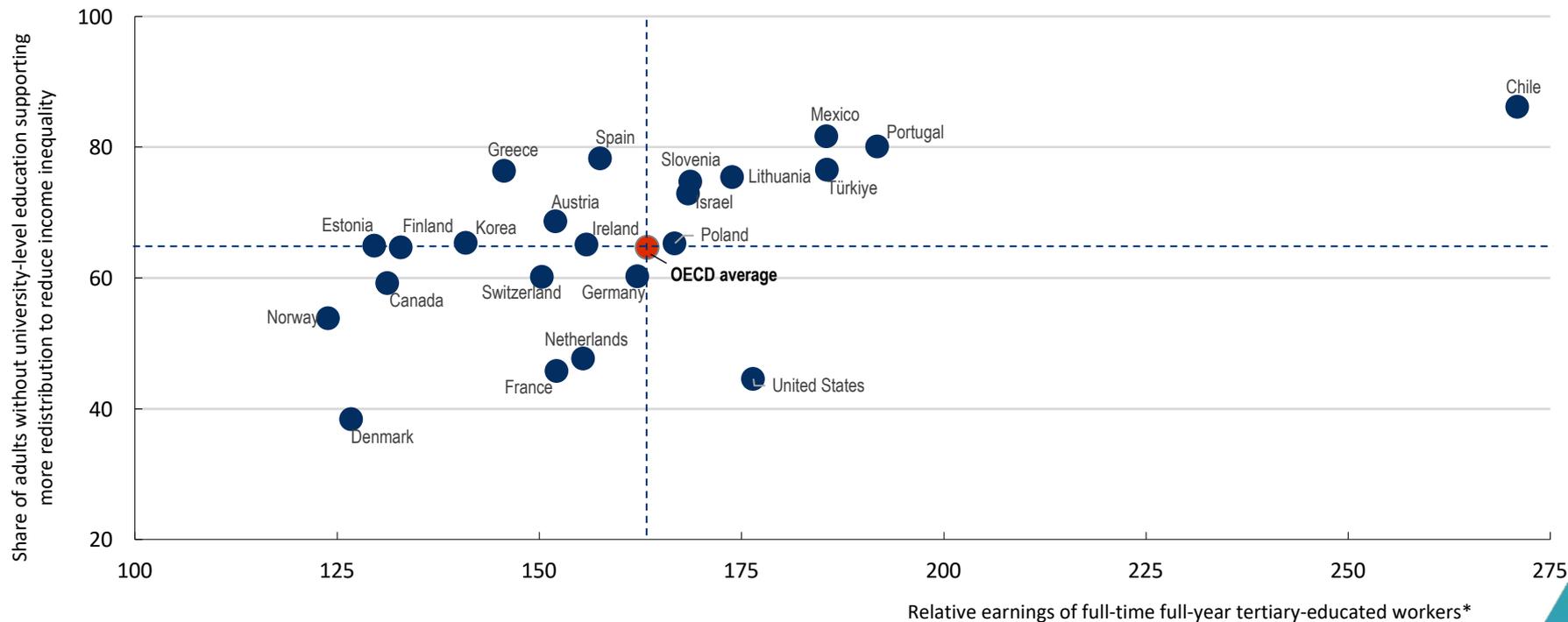




The wage gap between attainment levels is correlated with public support for redistribution

Figure A4.5.

Relative earnings of tertiary-educated workers and share of adults without tertiary-level education supporting more redistribution to reduce income inequality (2020)



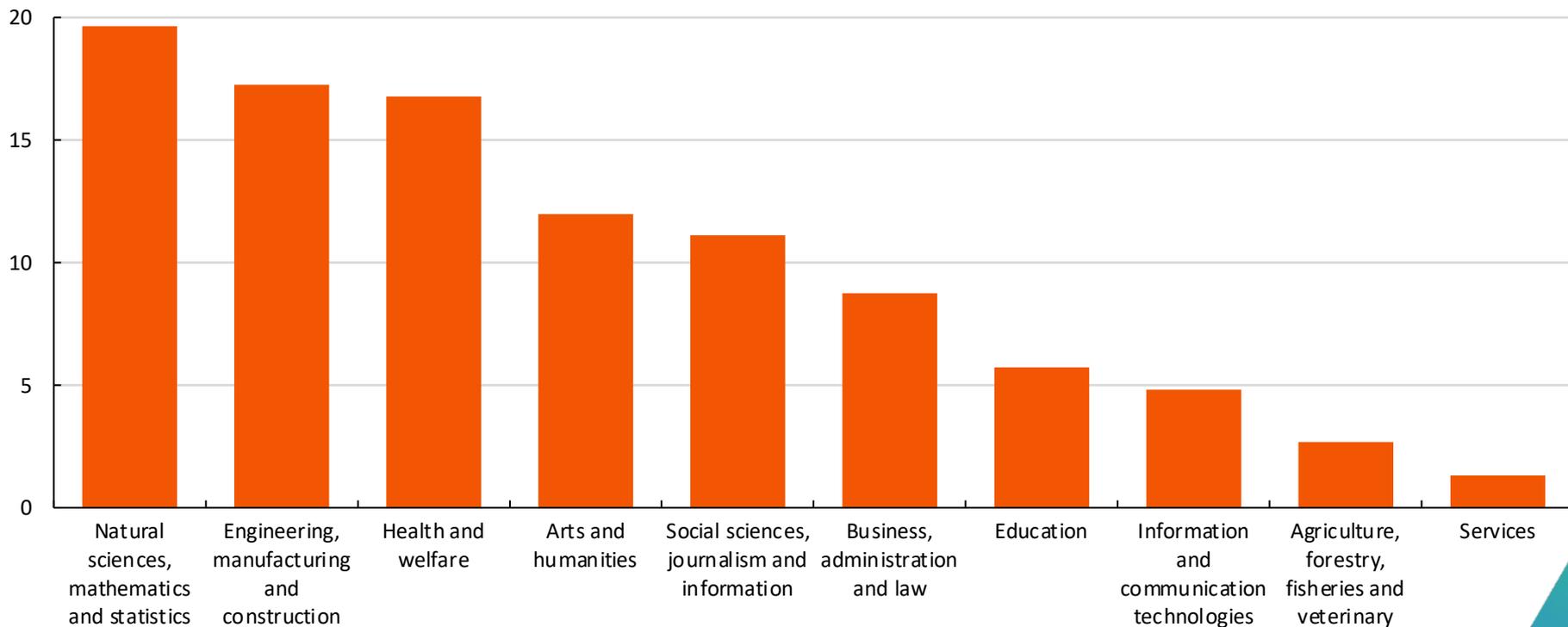
* Below tertiary = 100



STEM fields attract the largest share of doctoral students

Figure B4.6.

Distribution of new entrants to doctoral programmes, by field of study (2020)

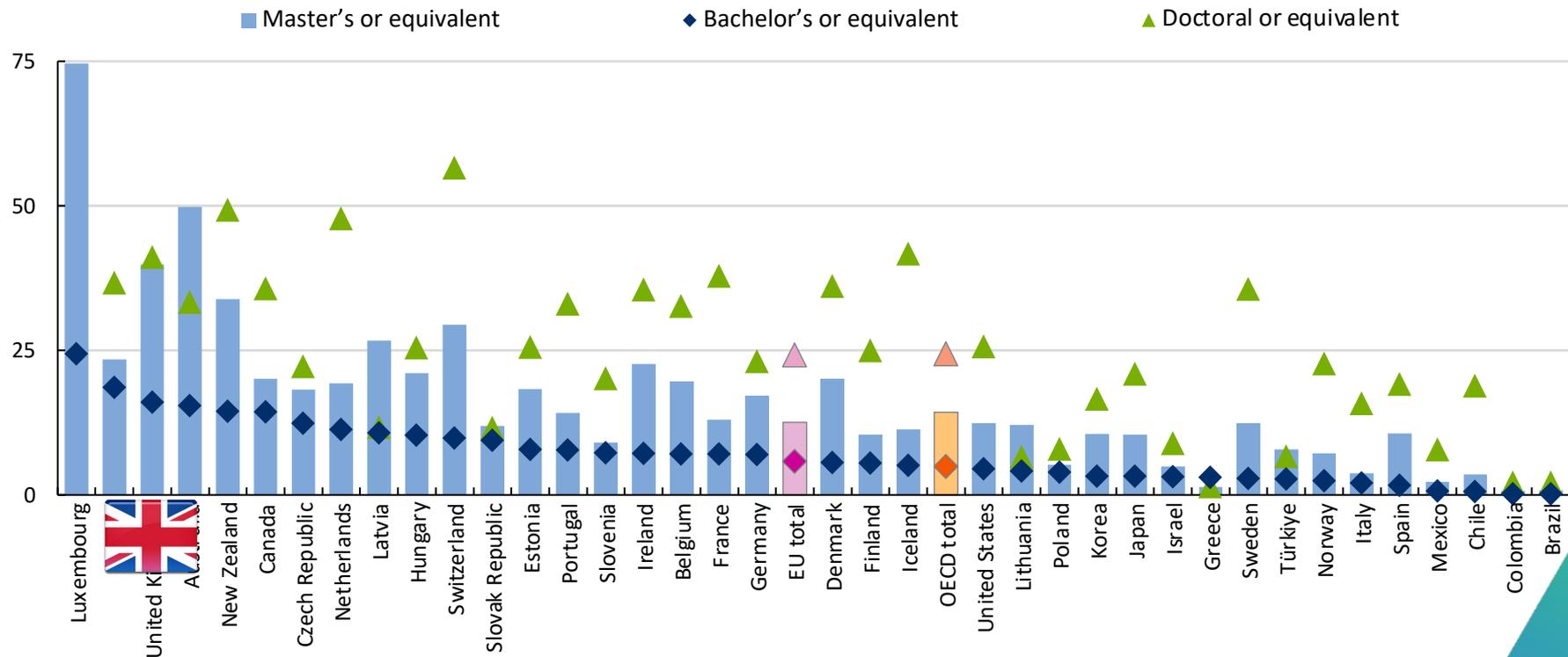




International mobility increases with the level of tertiary education

Figure B6.2.

Incoming student mobility in tertiary education, by level of study (2020)



The state of higher education

Some challenges



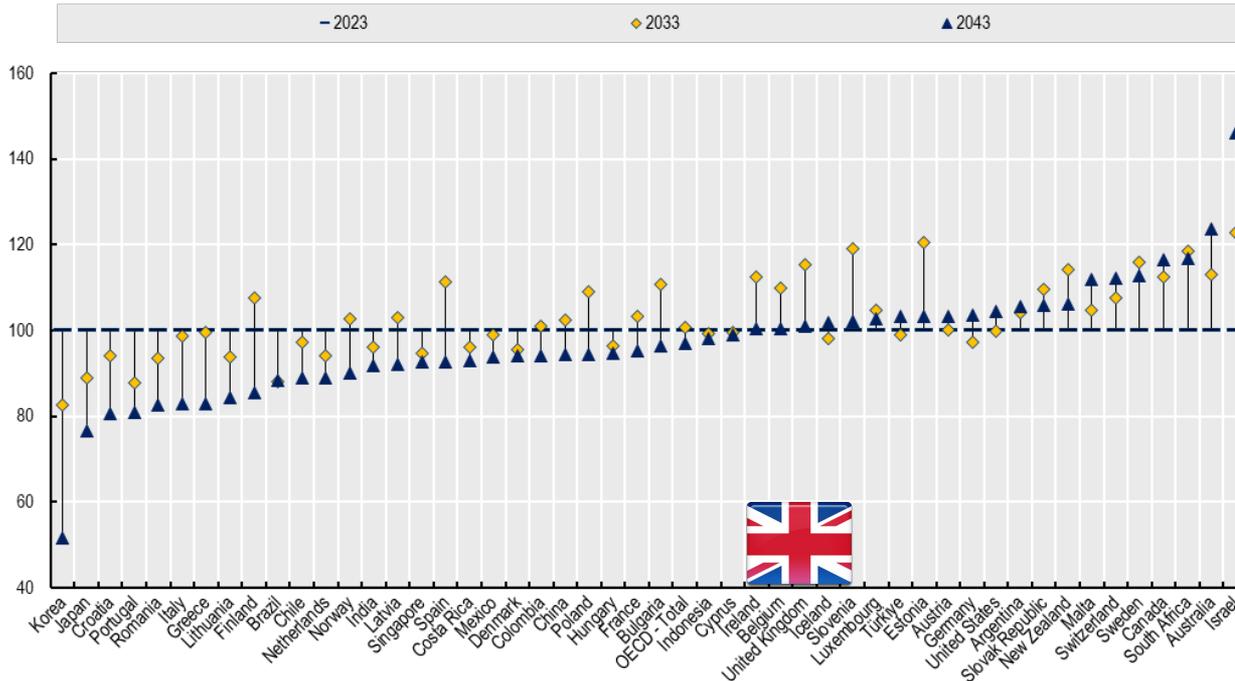


Demographic change is a disruptive force

Aging reduces the flow of young people into tertiary education

Change in the population aged 20-24 in the next two decades

Projected population aged 20-24 in 2033 and 2044 compared to 2023 (=100)

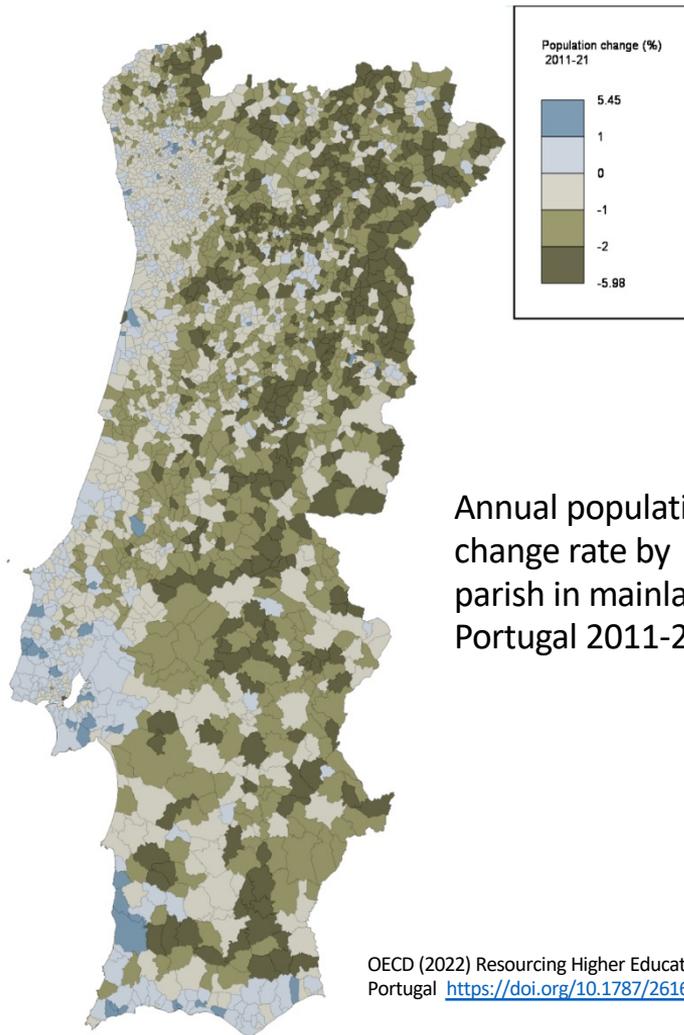


Source: OECD (2022), Population Projections, <http://stats.oecd.org/>.

- OECD population aged 20-24 will decline by 3% by 2043 compared with 2023
- Decline of over 15% in
 - ◆ Lithuania
 - ◆ Greece
 - ◆ Italy
 - ◆ Romania
 - ◆ Portugal
 - ◆ Croatia
 - ◆ Japan
 - ◆ Korea

Tertiary education will have to adapt

Many systems must adapt to cater to more diverse populations



- The population of Portugal shrank at an average rate of 0.17% annually between 2011 and 2021
- The population aged 20-29 will shrink by 13.5% between 2020 and 2035 – particularly in the north and interior of the country
- To maintain the supply of skills, tertiary education must widen access further and cater more effectively to adults seeking to upskill and reskill

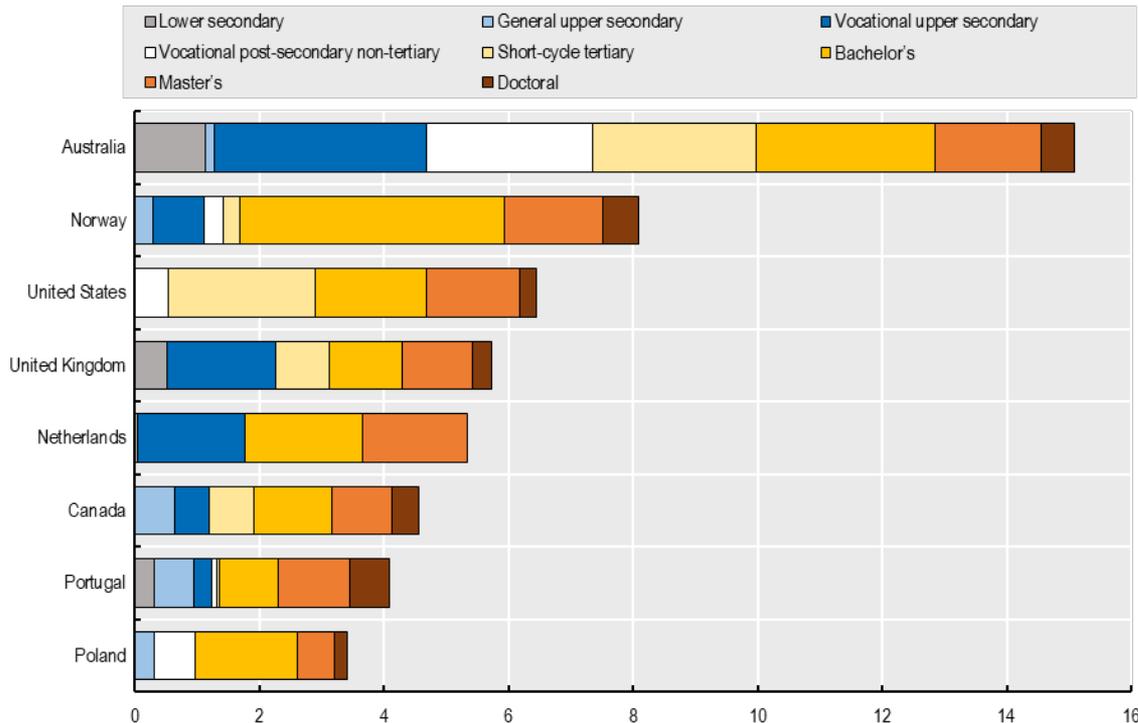


Comparatively few adults engage in HE

Participation rates in formal tertiary education among adults are low across the OECD

Proportion of 30-39-year-olds enrolled in different levels of education

(%, 2019 or most recent)

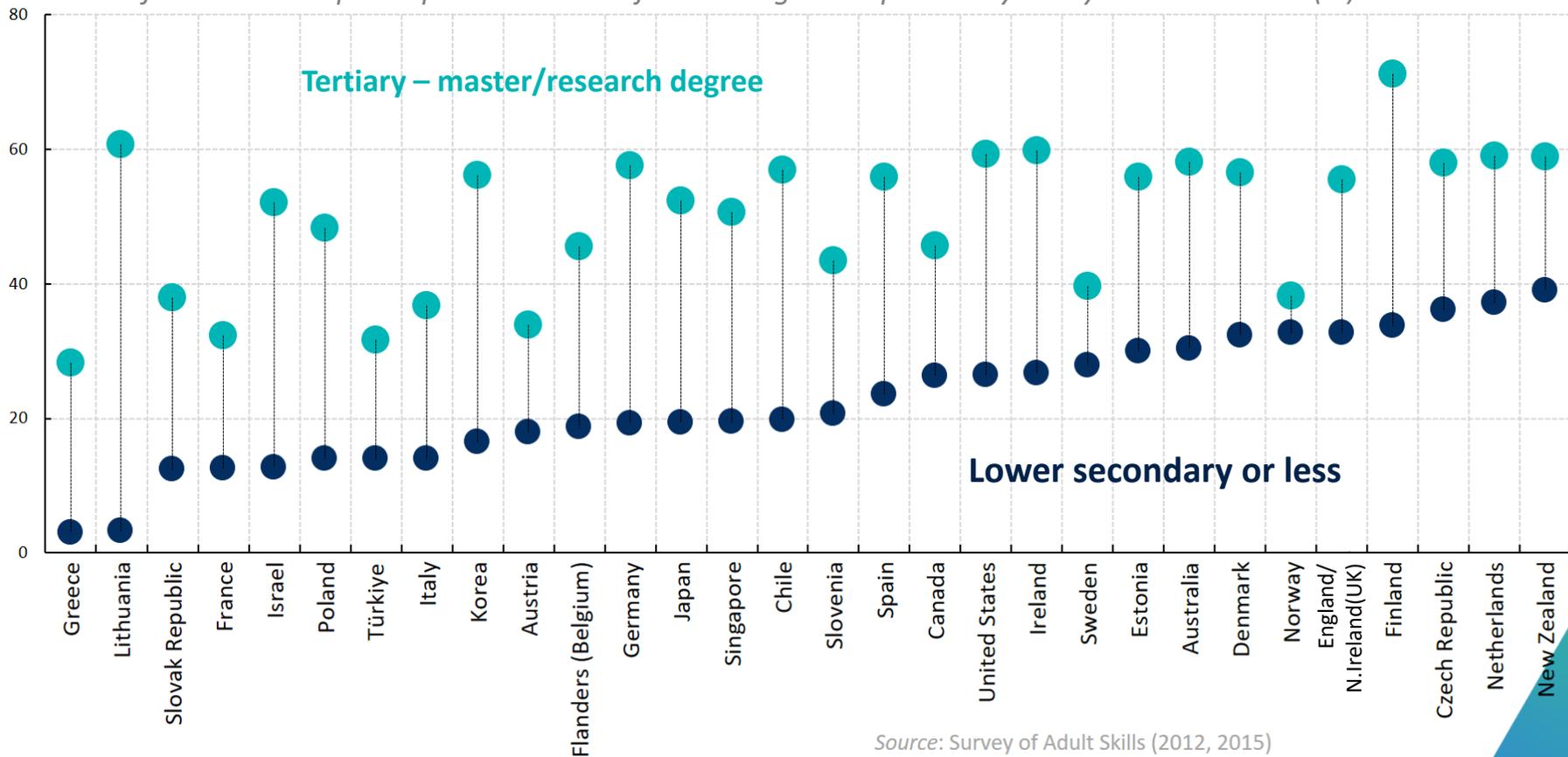


- Even in countries like Australia, a comparatively small share of adults engage in formal education of any form at tertiary level
- Skills demands and population ageing mean this has to change



But: Low-skilled much less likely to participate in on-the-job training

Share of workers who participated in on-the-job training in the previous year by education level (%)



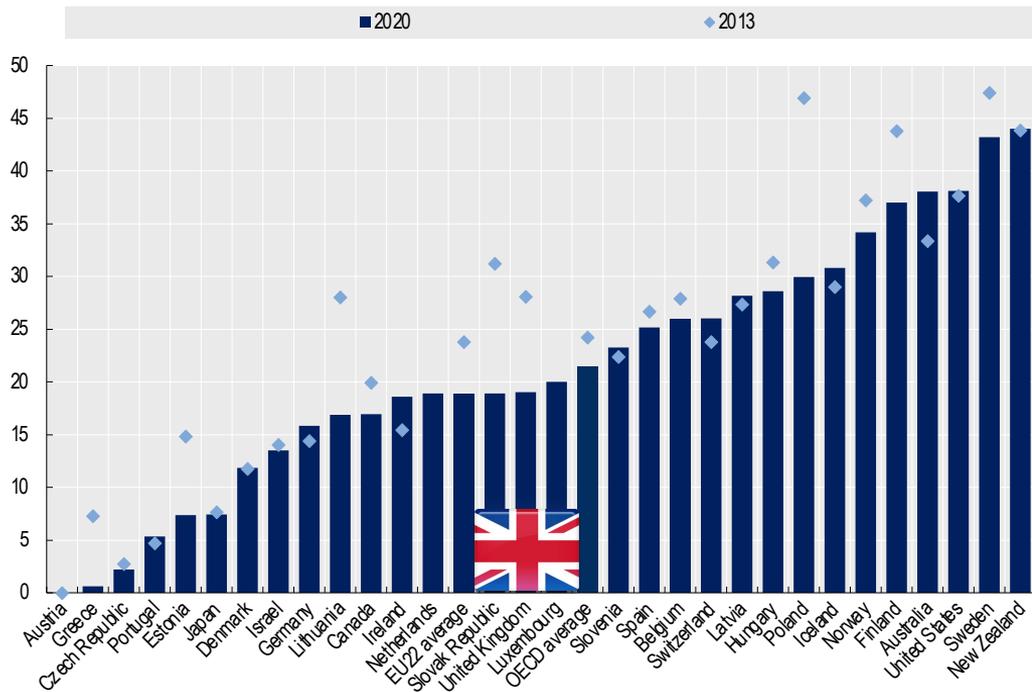
Source: Survey of Adult Skills (2012, 2015)



The proportion of part-time students has declined

Despite the flexibility offered, part-time study in the OECD is now less popular

Share of tertiary students studying part time (2013 and 2020)



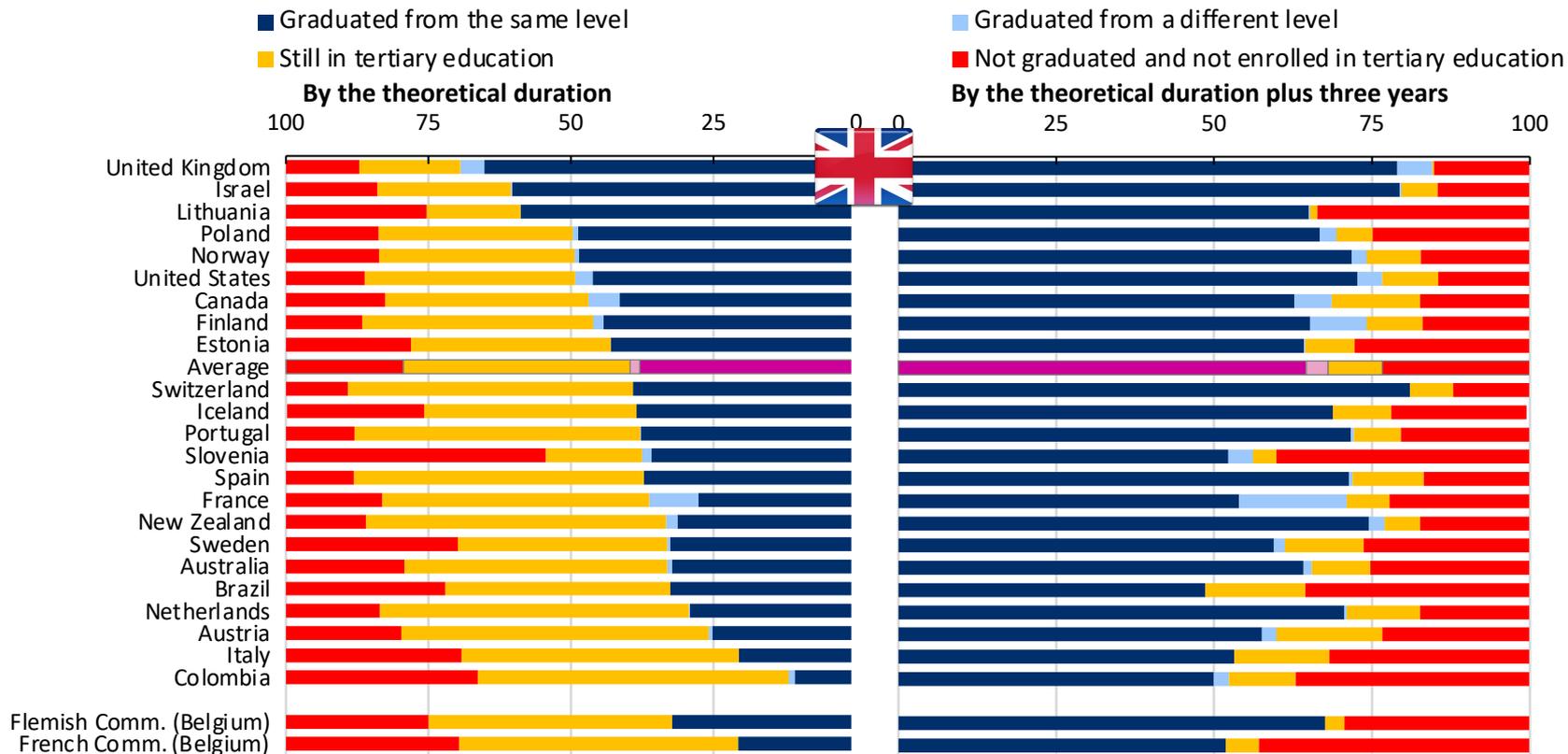
- Some OECD systems already offer flexible, modularised tertiary-level learning opportunities at scale – e.g. New Zealand, Sweden, US and Australia
- Many systems are more rigid
- On average, the share of part-time students in the OECD declined from 24% to 21% between 2013 and 2020
- Going in the wrong direction?



Nearly one-third of bachelor's students have not graduated within three years of the end of the programme duration

Figure B5.2.

Status of full-time bachelor's students, by timeframe (2020)

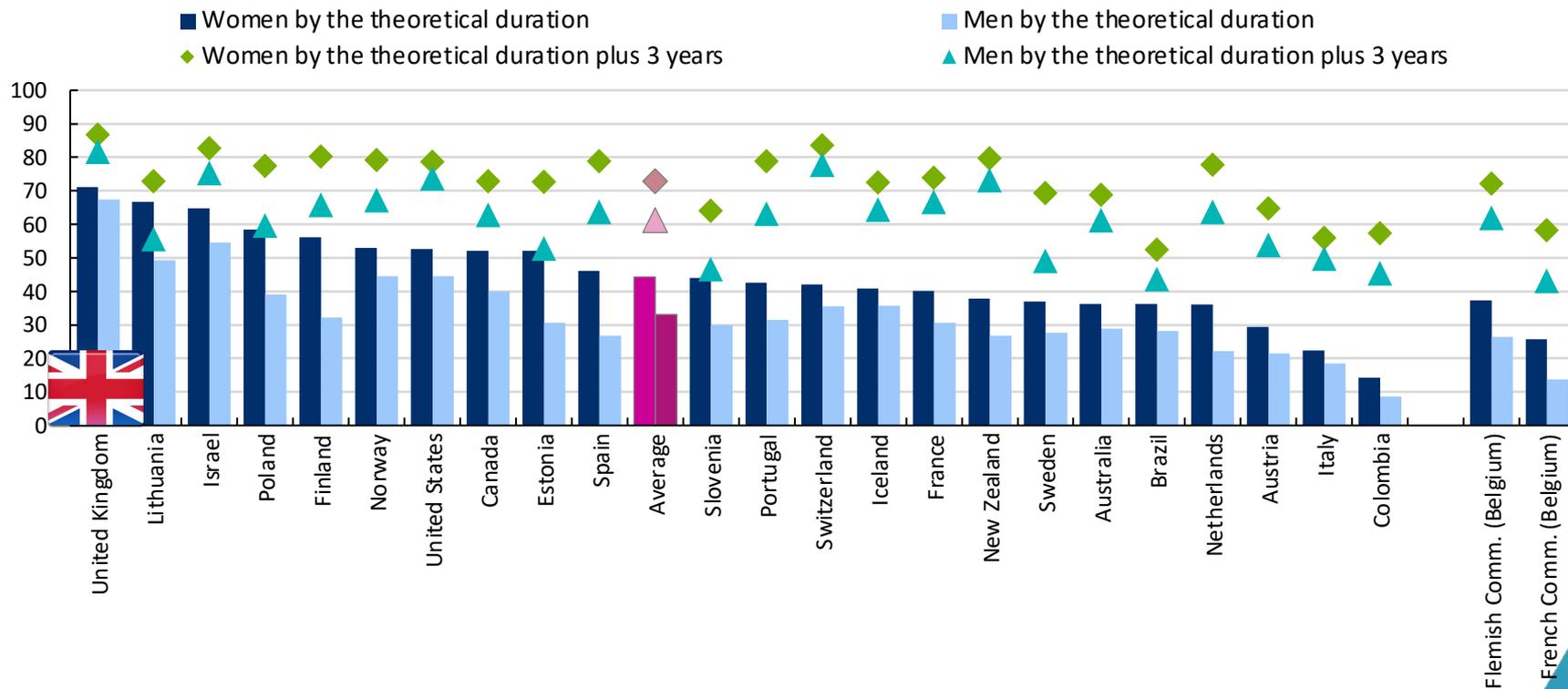




Tertiary completion rates are especially low for men

Figure B5.1.

Completion rates of full-time students who entered a bachelor's (or equivalent level) programme, by gender and timeframe (2020)

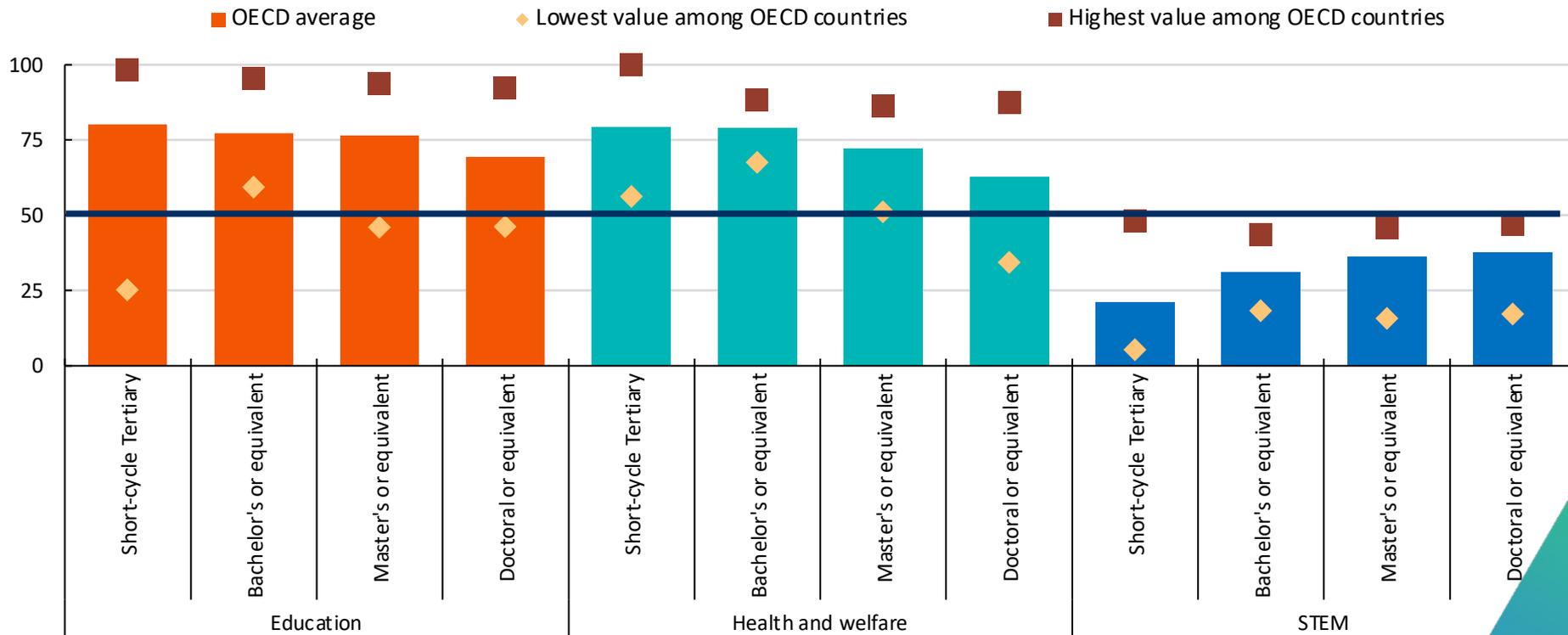




Large gender gaps by field of study persist among new entrants

Figure B4.1.

Share of women among new entrants to tertiary education, by selected fields of study and level of education (2020)

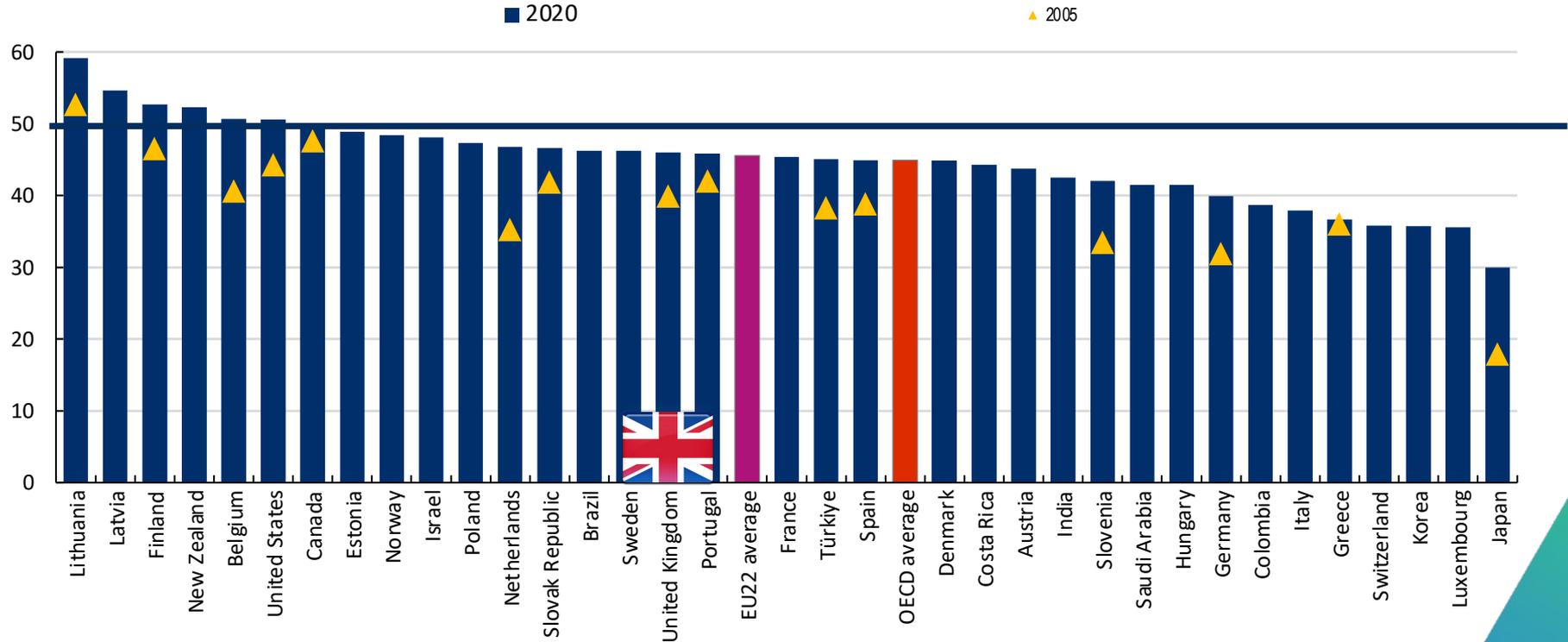




Women are a minority among tertiary staff

Figure D8.3.

Share of women among academic staff (2005, 2015 and 2020)



The state of higher education

Investing in the future



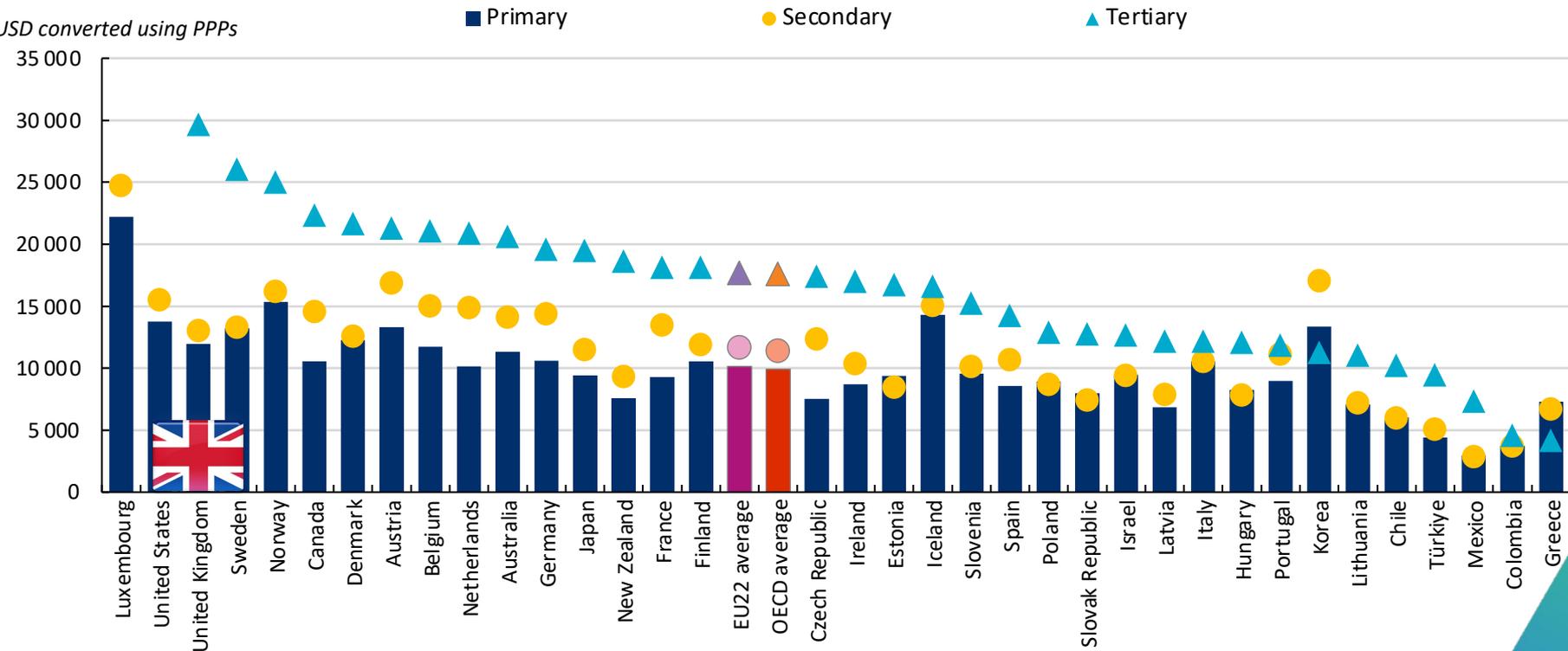


Spending per student

Figure C1.1.

Total expenditure per full-time equivalent student by level of education (2019)

USD converted using PPPs

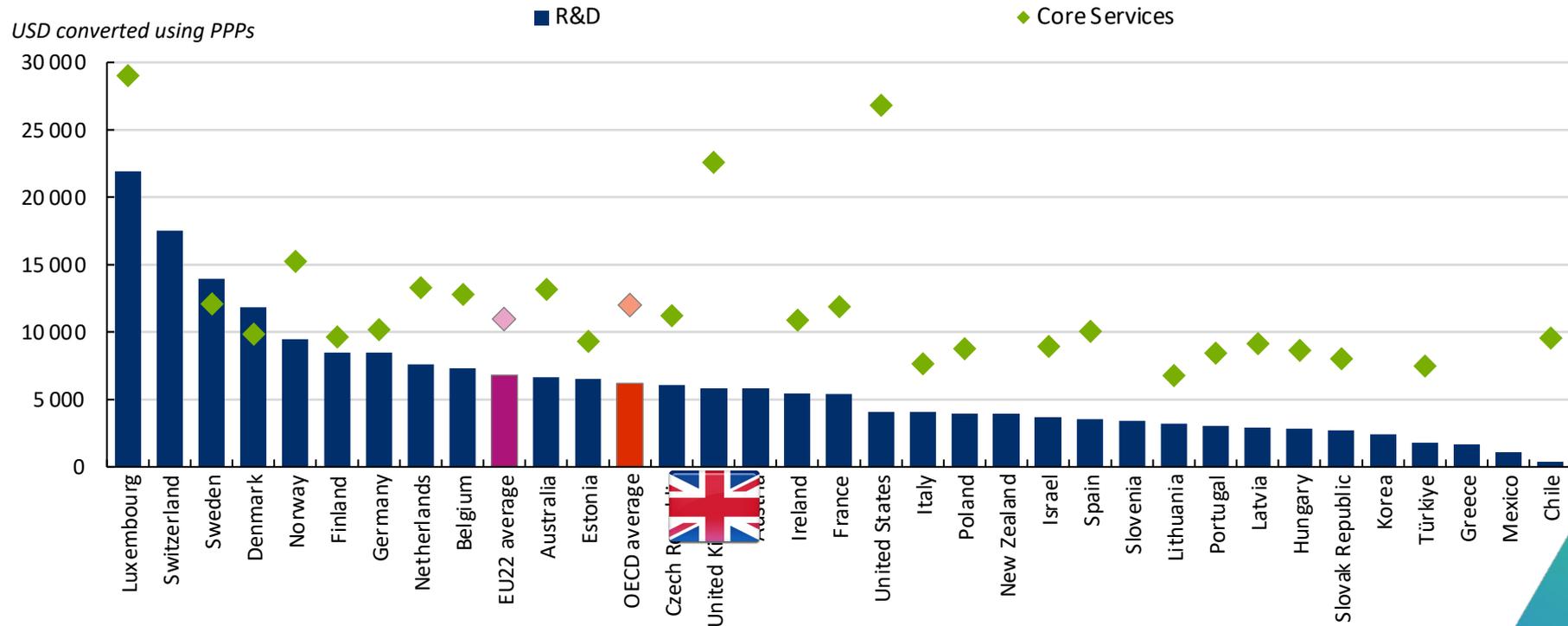




Differences in R&D spending are an important reason for cross-country differences in the costs of tertiary education

Figure C1.3.

Total expenditure per full-time equivalent student on tertiary educational institutions for R&D and core educational services (2019)

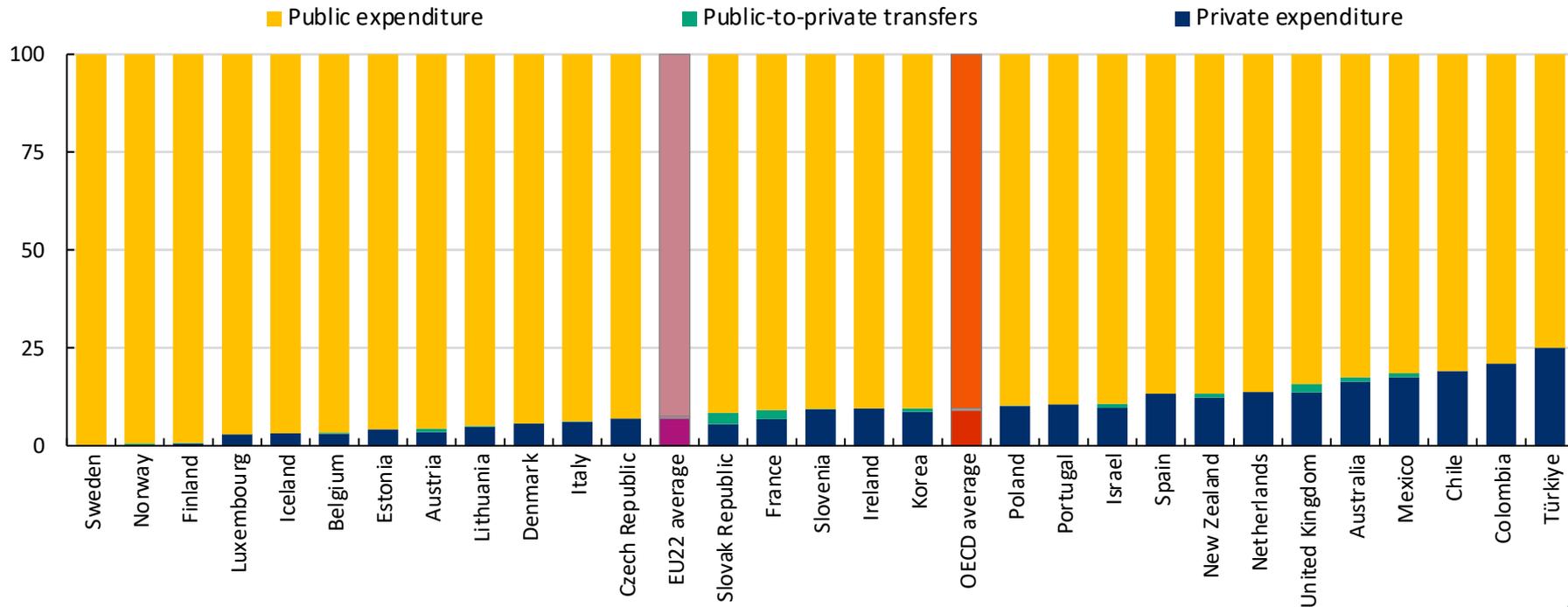




At below-tertiary levels of education public spending dominates in all OECD countries...

Figure C3.3.

Distribution of public and private expenditure on primary to post-secondary non-tertiary educational institutions (2019)

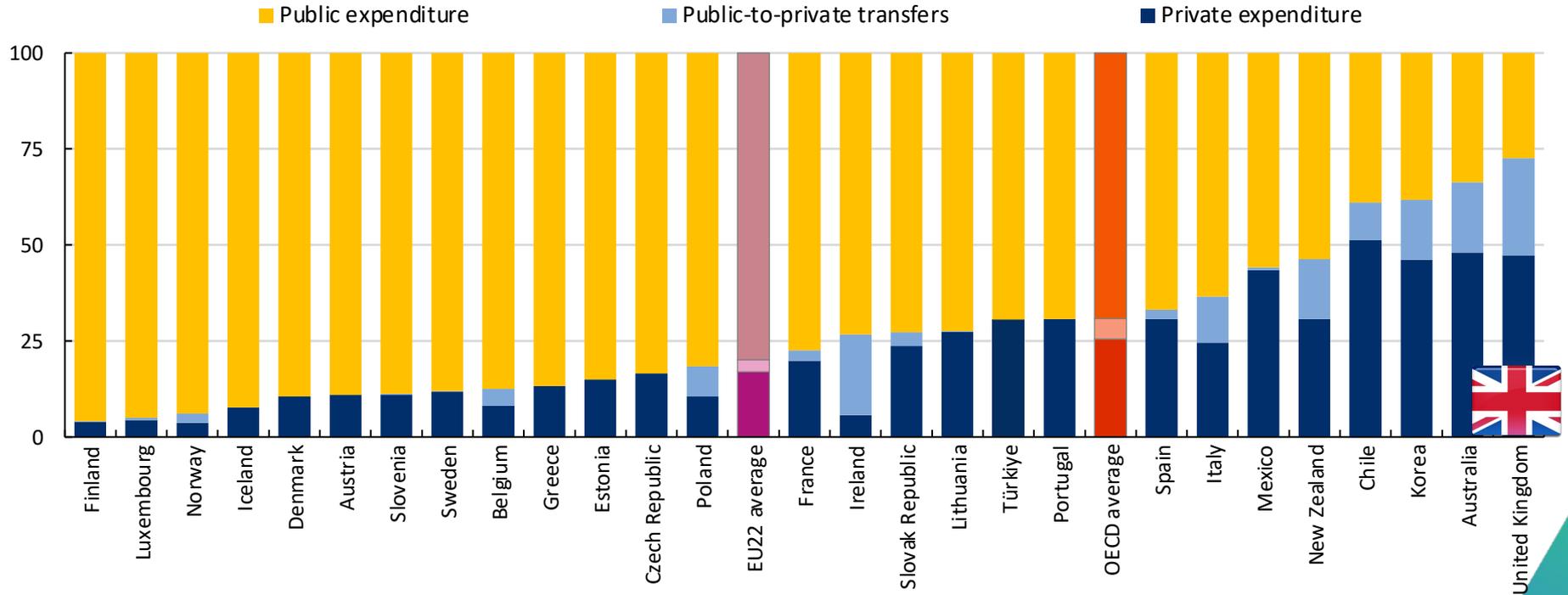




...but at tertiary level private spending is more important

Figure C3.1.

Distribution of public and private expenditure on tertiary educational institutions (2019)

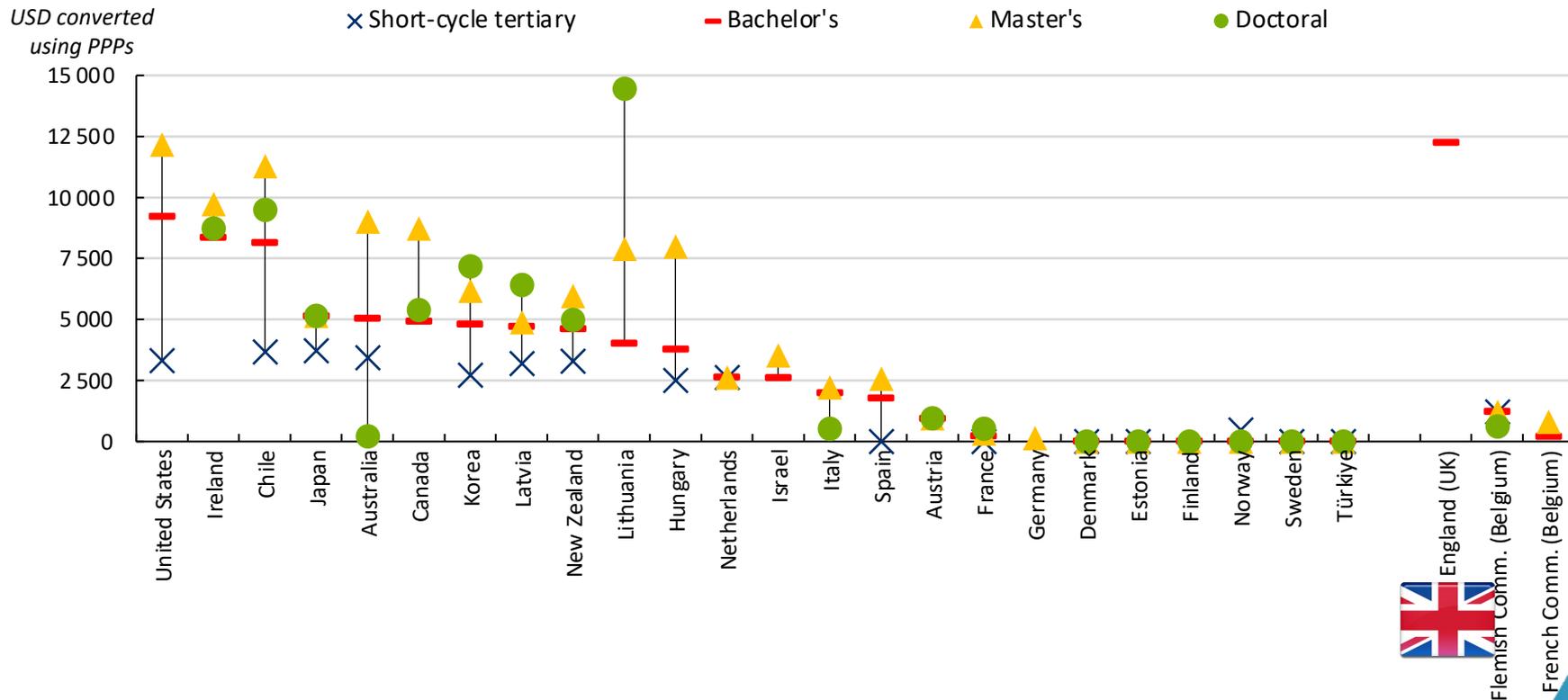




Tuition fees tend to be higher at master's level than at bachelor's level

Figure C5.1.

Annual average tuition fees charged by public institutions to national students, by level of education (2019/20)

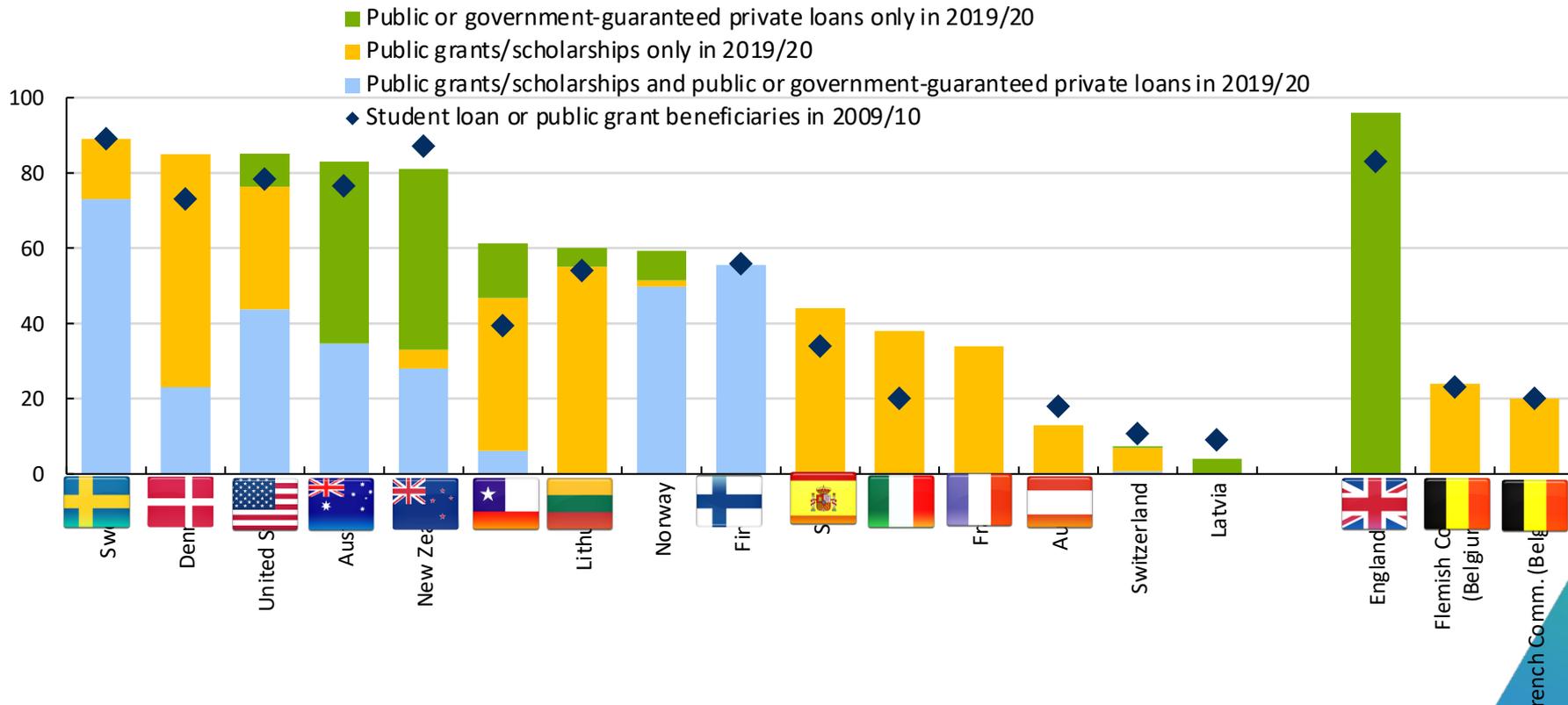




Many countries with high tuition fees also provide high levels of financial support to students

Figure C5.4.

Share of national tertiary education students enrolled full-time and receiving public financial support (2009/10 and 2019/20)





The authority to set tuition fees varies across countries

Figure C5.5.

Authority to set tuition fees for national students, by level of tertiary education (2020)

- The level of tuition fees is established by a public authority
- The level of tuition fees is set forth in legislation
- Institutions may set the level of tuition fees, subject to government-imposed limits
- Institutions may set the level of tuition fees independently, without government-imposed limits



Future trends

Emerging skill demands





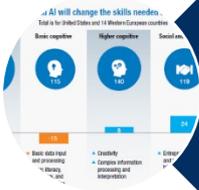
Demand for skills is changing

Technological change and demographics reinforce the case for higher skills levels



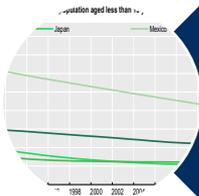
AI, digitalisation and automation

Many routine and medium-skilled occupations disappear or evolve



Technology-driven economic change

Increases demand for advanced skills



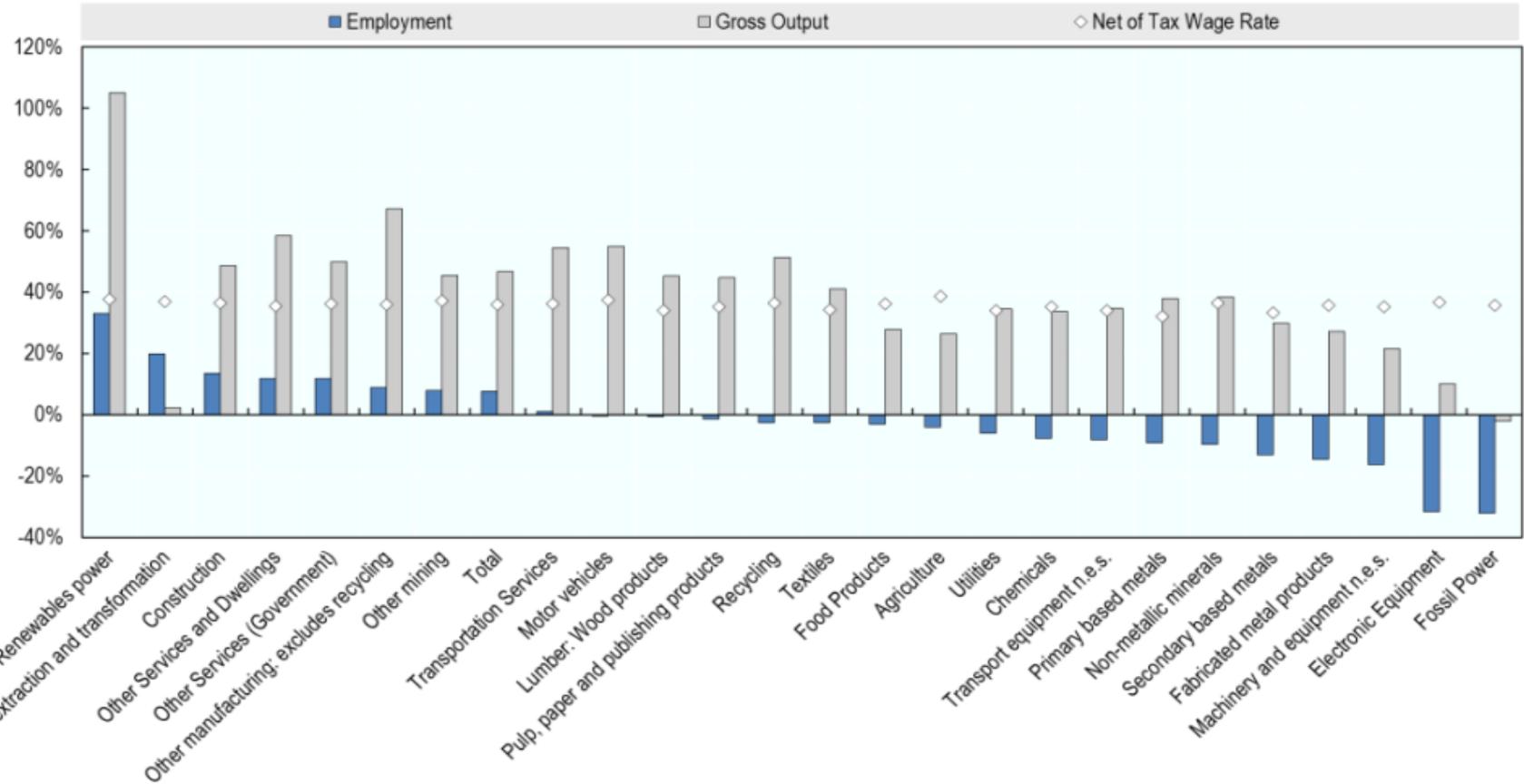
Population ageing

Increases need to maximise the skills potential of the working-age population



The green transition will impact certain sectors more than others

Projected changes in sectoral composition of employment and output following a policy-driven transition towards a more resource-efficient and circular economy (2040 baseline projection relative to 2017 values)



Source: Chateau, J. and E. Mavroei (2020), "The jobs potential of a transition towards a resource efficient and circular economy", OECD Environment Working Papers, No. 167, OECD Publishing, Paris, <https://doi.org/10.1787/28e768df-en>.

The new nature of the firm

- Digital “**platform**” **technology** drives the (re)organisation of firms
- **Small units** of employment with global reach require re-think of what “small” means (employment or revenue to market share)
- Peer-to-peer markets are **blurring the distinction between a consumer and a business**
- Governments **work with platforms** to implement policies

Democratizing

Particularizing

Empowering

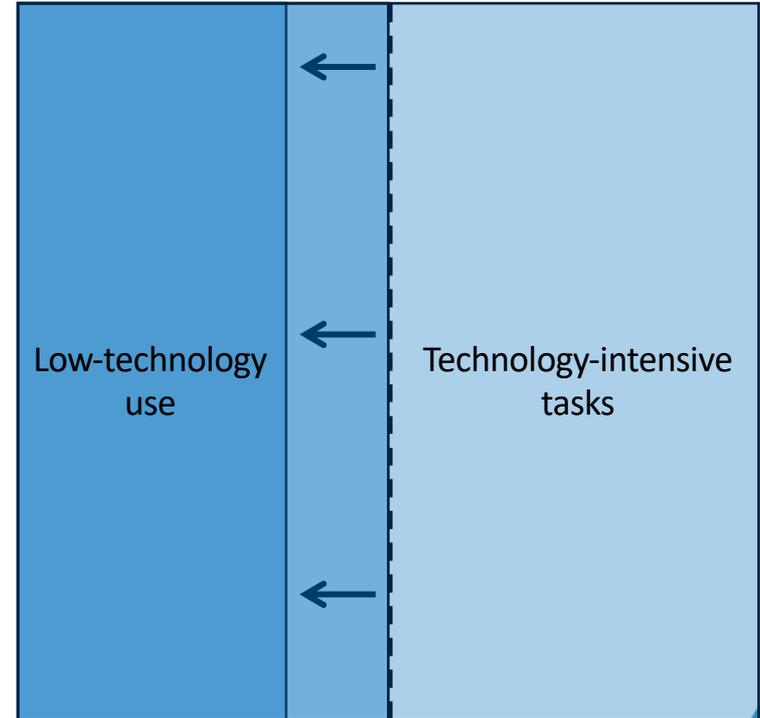
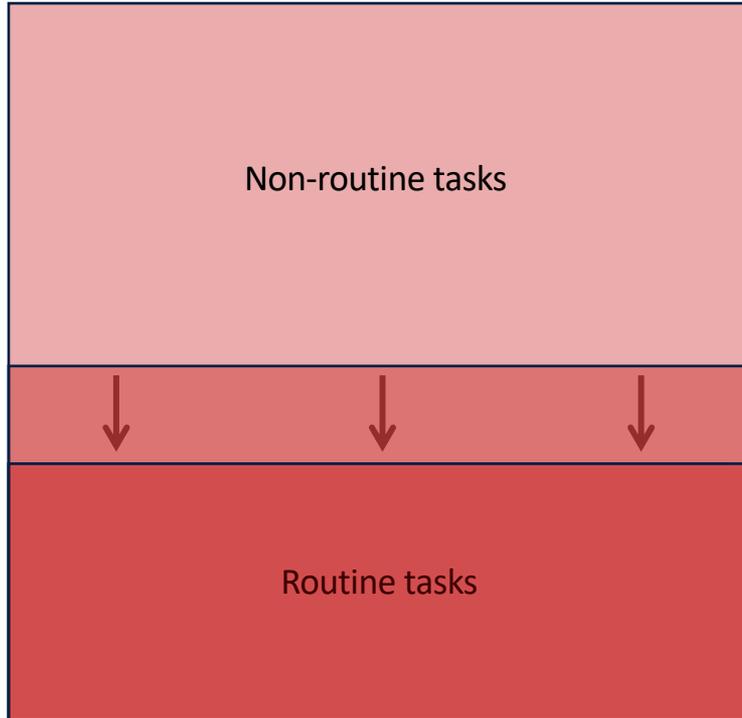
Concentrating

Homogenizing

Disempowering

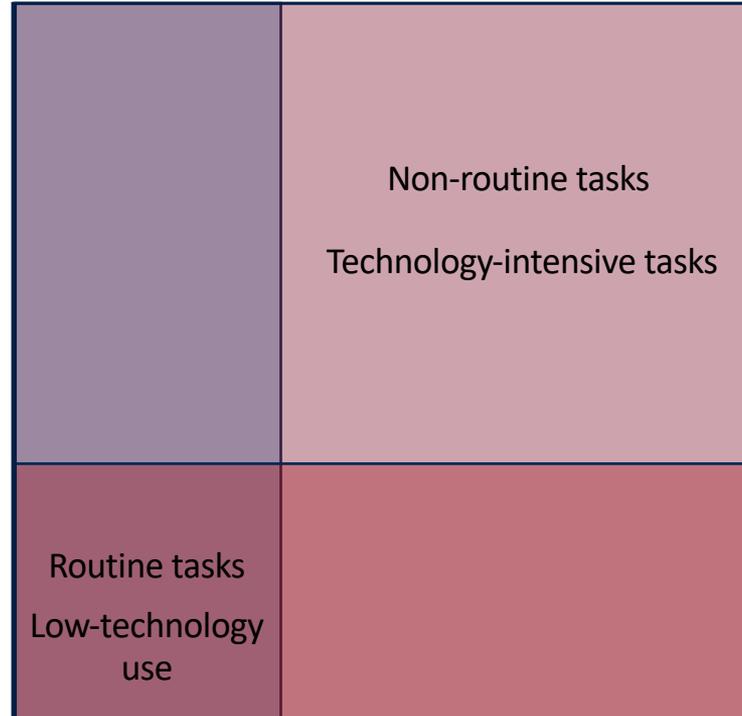


The kinds of things that are easy to teach...
... have now become easy to digitise and automate





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... have now become easy to digitise and automate

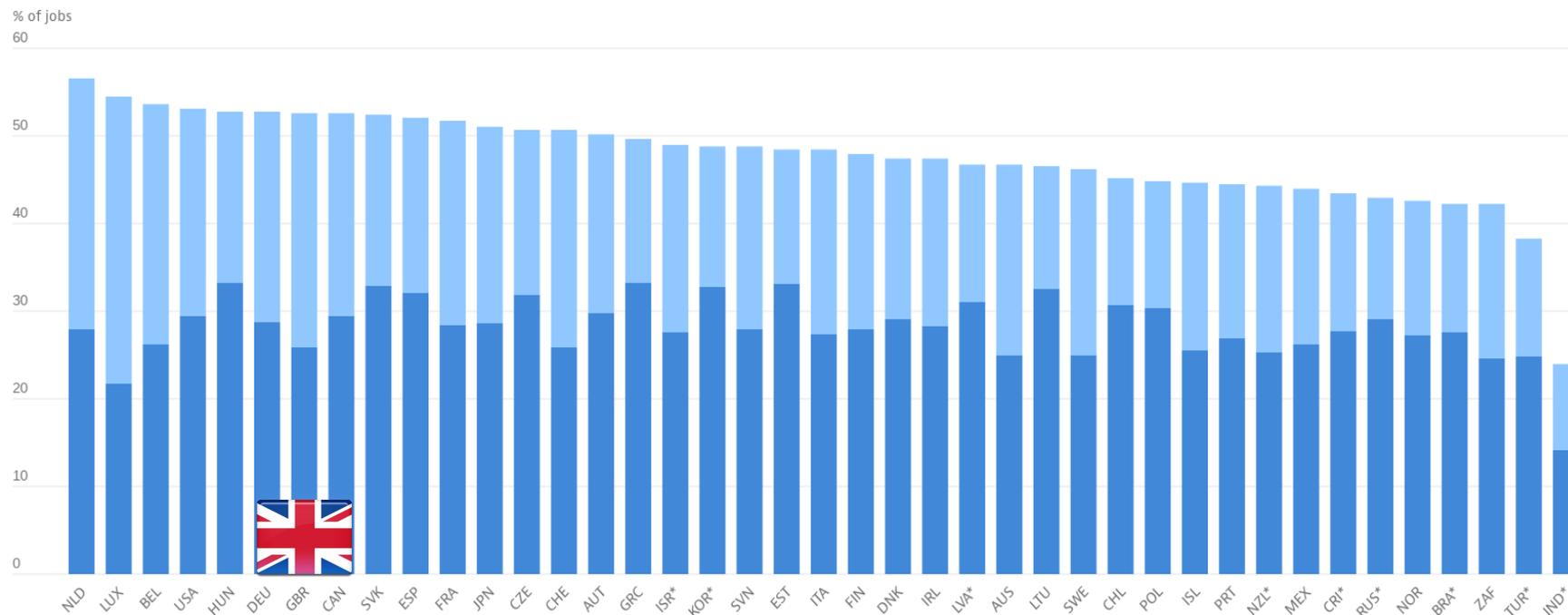




Many jobs are digitally-intensive

Employment in digital-intensive sectors as a share of total employment (2016)

■ High digital-intensive industries ■ Medium-high digital-intensive industries

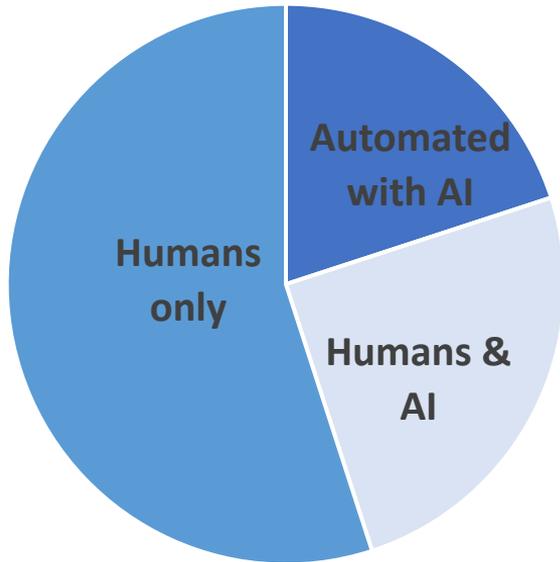




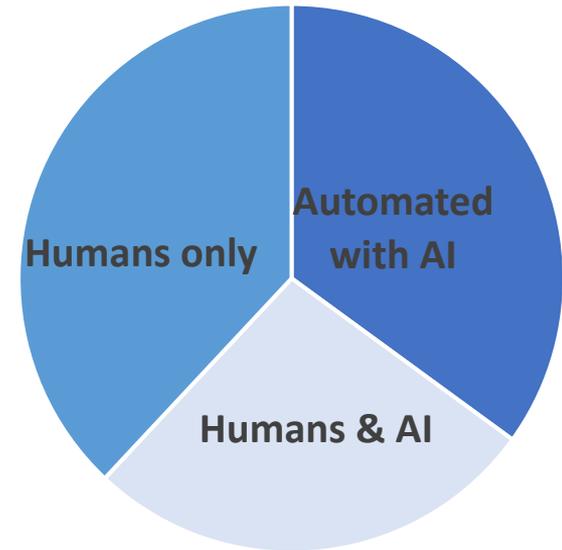
Human tasks are shifting

With many human tasks now automated with AI

Distribution of types of tasks



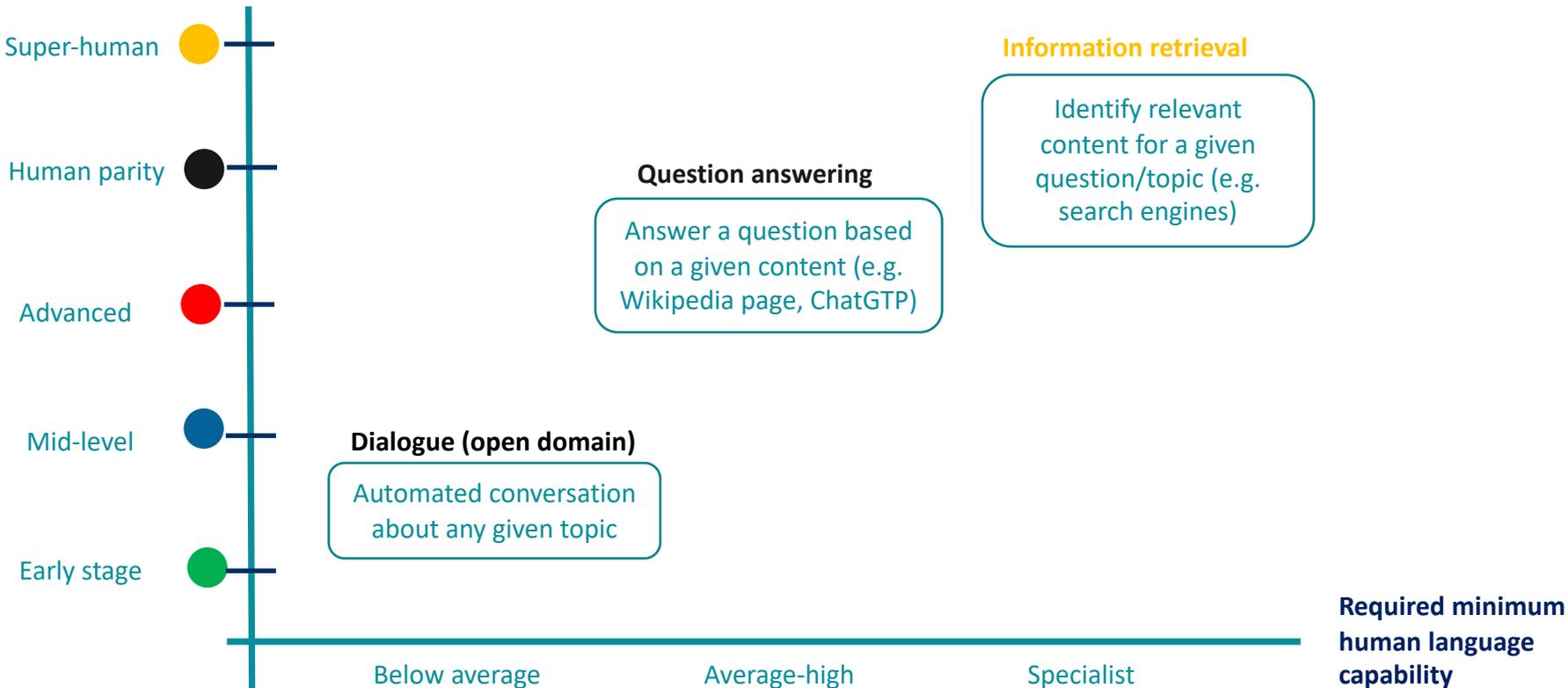
Distribution of types of tasks
with new AI capabilities





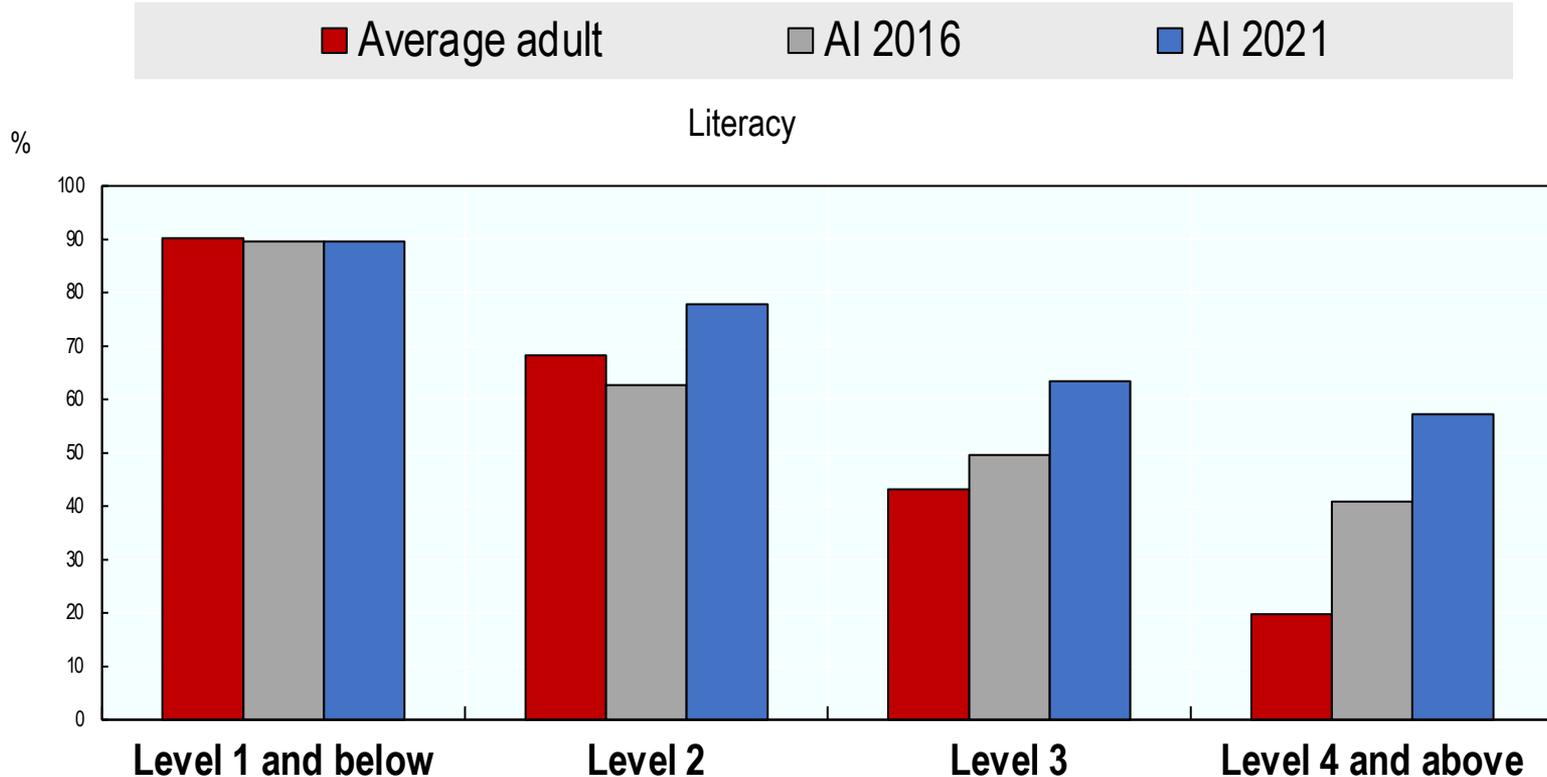
AI versus humans – benchmarks

State of the art Natural Language Processing performance



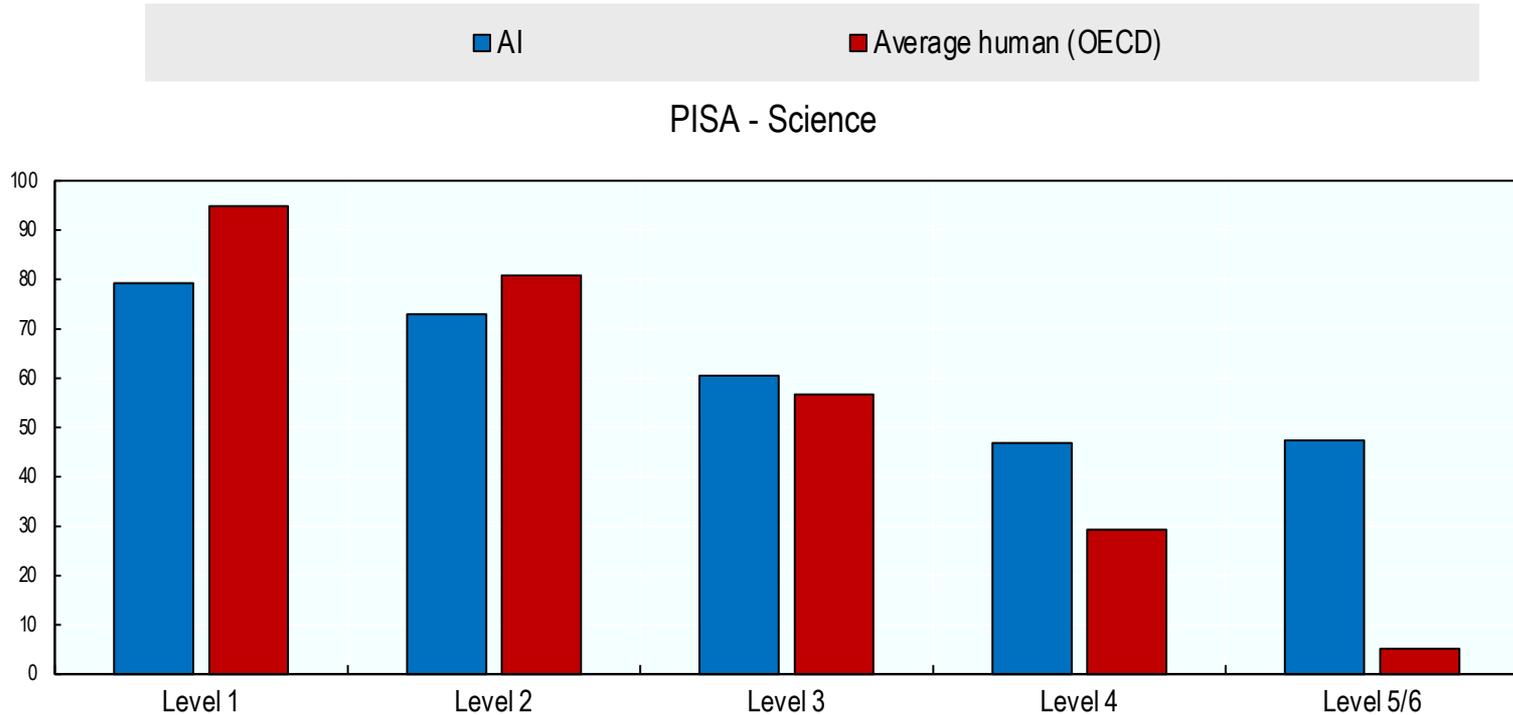


AI versus humans – OECD Survey of Adult Skills (PIAAC)



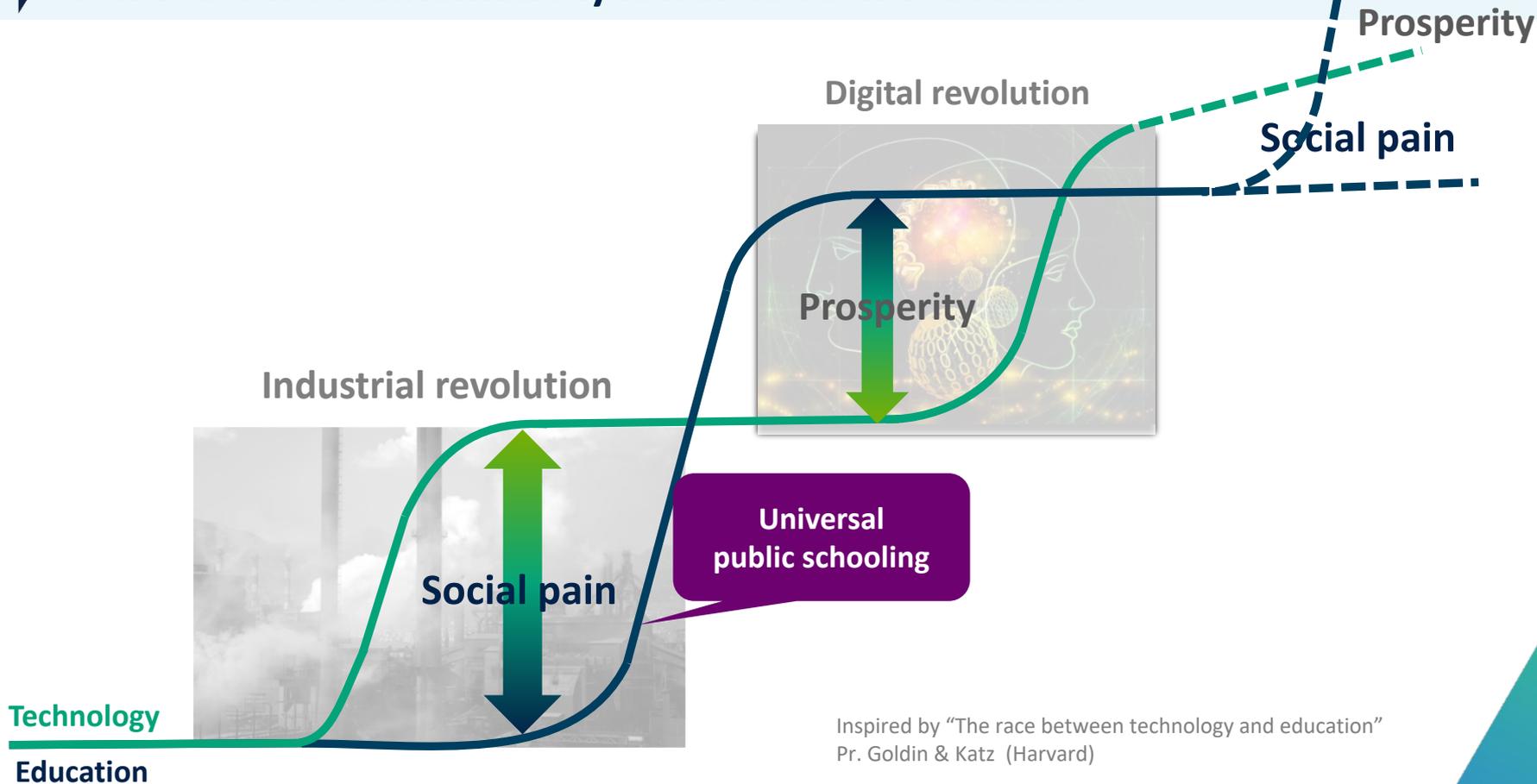
Source: OECD calculations based on data from the "AI and the Future of Skills" survey

2022 AI on PISA science





Education won the race with **technology** throughout history, but there is no automaticity it will do so in the future



Digital revolution

Prosperity

Industrial revolution

Social pain

Universal public schooling

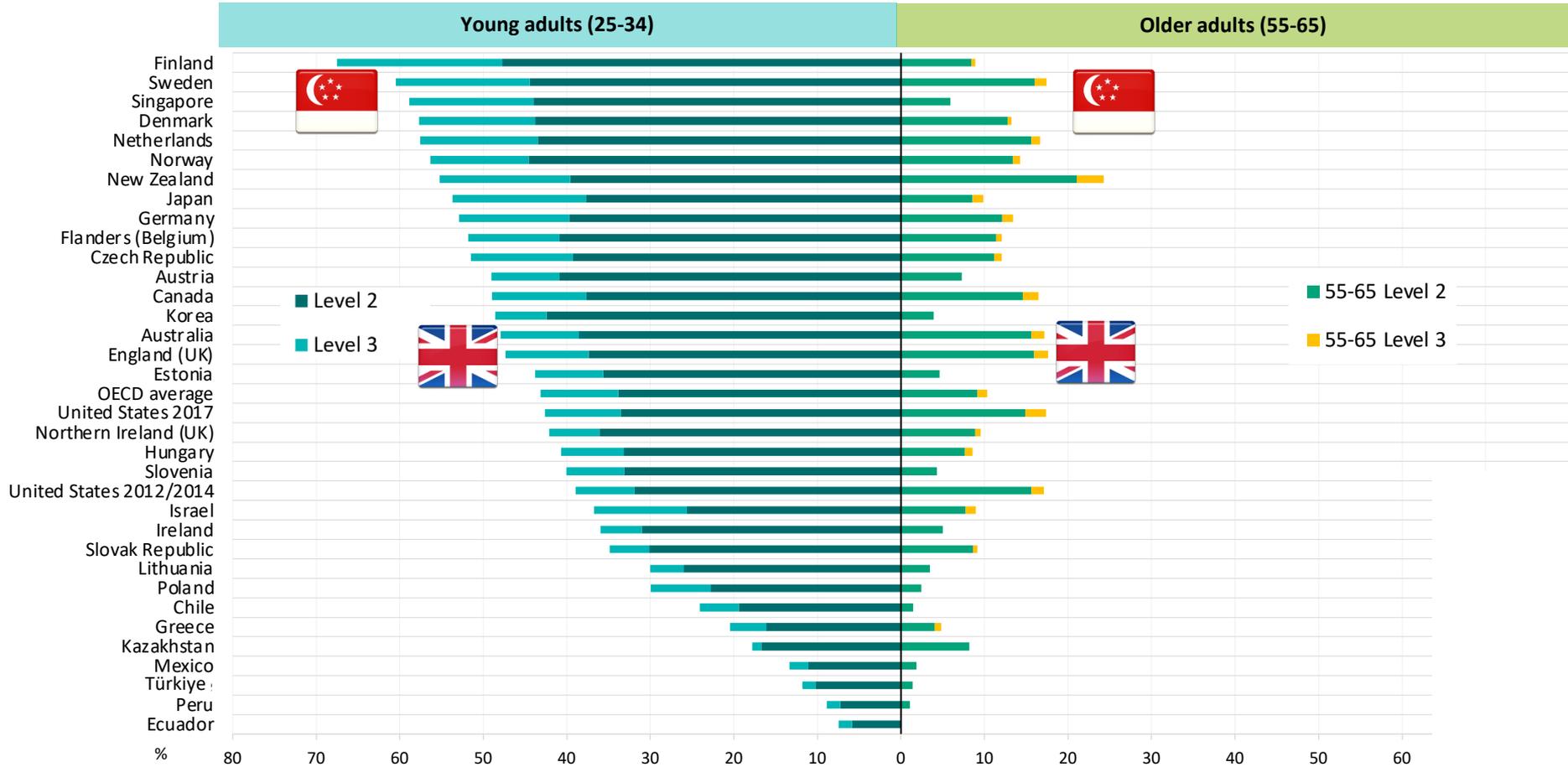
Social pain

Prosperity

Inspired by "The race between technology and education"
Pr. Goldin & Katz (Harvard)



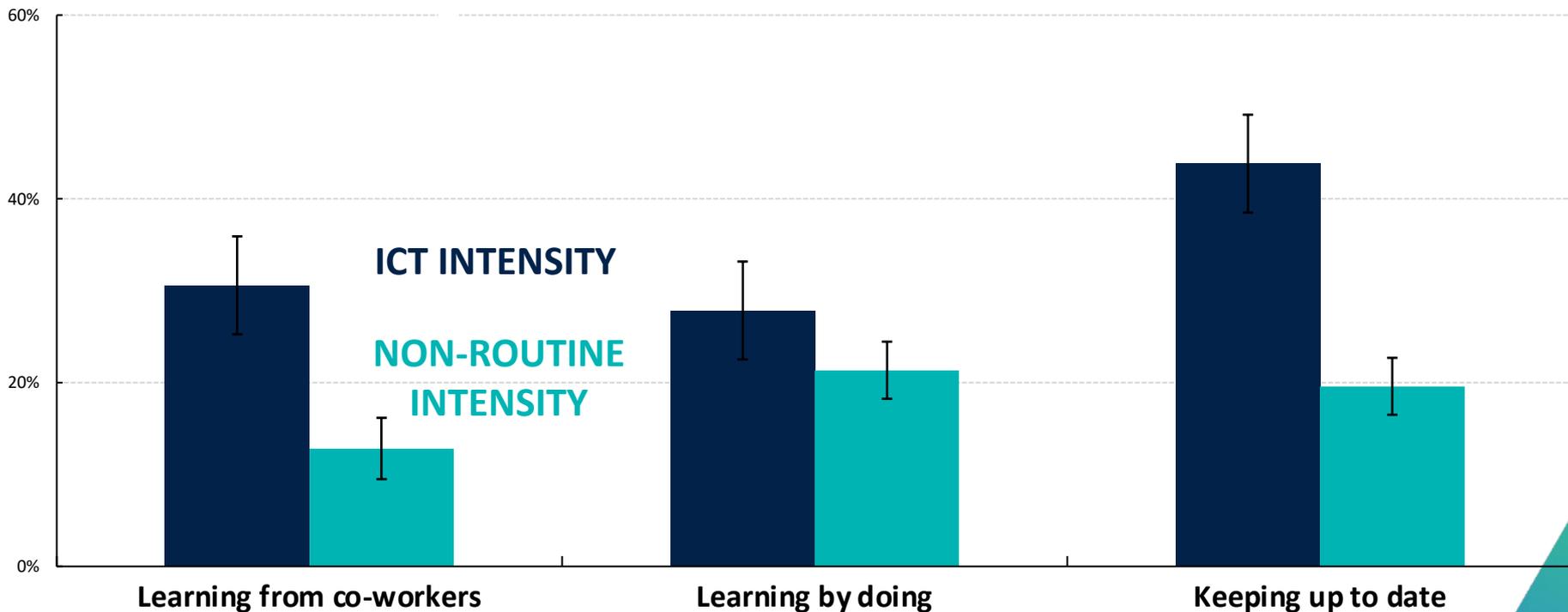
Skills to manage complex digital information





ICT use and Non-routine intensity enhance forms of learning

Expected effect of increase from 50th to 75th pctile of digital exposure on probability of learning at least once a week



Future trends

Giving learners greater ownership over what they learn, how they learn, where they learn and when they learn





Digitalisation offers opportunities and carries risks

Online and hybrid provision will complement, but not replace campus-based provision

Benefits

Wider access for non-traditional learners

Improved learning through individualised and adaptive instruction

Improved **student support** with learning analytics

Reduced costs through economies of scale

More **varied** and **flexible** learning opportunities (e.g. microcredentials)



New digital **inequalities**

Diminished social interaction, peer learning, work-based learning

Inadequate protection for **confidentiality** of student information

Specialist subjects/institutions harmed by **scale economies pressures**

New digital credentials **lack sufficient quality guarantees**

Risks



Why are micro-credentials on the rise?

What?

Compared to traditional degree programmes, micro-credentials are:

Smaller in volume (in study duration or load)

More targeted in terms of skills or study topics

More flexible in delivery

Why?

Different offerings have distinct, but often overlapping purposes

Educational advancement



Employment and wage advancement



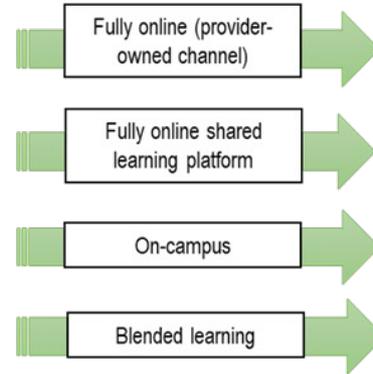
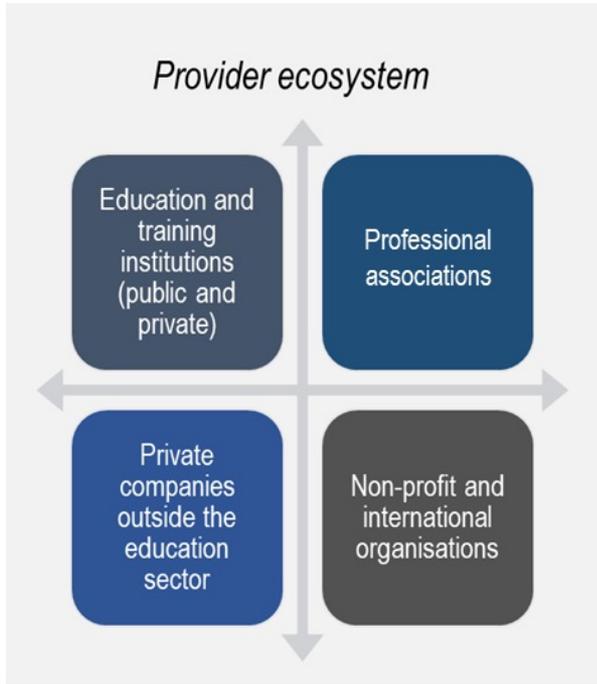
Enjoyment and personal growth





Key features:

1) Active private sector involvement & 2) Online



Delivery channels





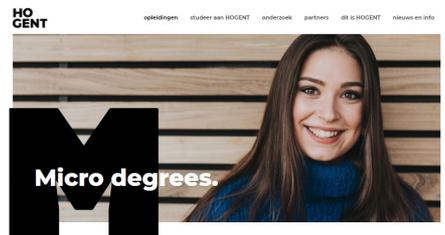
Wide variation WITHIN and AMONG HE systems

Micro-credential offerings by HEIs can be

Initiative of individual institution

Learning platform

Government-led





What should micro-credentials do? - Desired characteristics -

Targeted [breadth]

Rapid [duration]

Flexible [sequencing
or timing]

Stackable [within
institution]

Learning outcomes
assessed [using
sectoral or national
assessment
framework]

External assurance of
programme or
provider

Portable [applicable
to study programmes
in other HEIs]

Study load expressed
in credits

Located with
National
Qualifications
Framework

Employer role in
credential
design/approval

Wage and occupation
reporting

Self-sovereign digital
identity [recipient
ownership, vendor
independence]



Who are the leaners?

Evidence on learner profile is limited but micro-credential leaners tend to:

be of working age



be a higher education
degree holder



be from more privileged
socio-demographic group



have a higher level of
digital competence



have some knowledge
related to the course topic





The promises, risks, and policy challenges of micro-credentials

Promises	Risks	Policy Challenges
MCs can create new pathways to degree completion by permitting the accumulation of recognised learning in small and portable increments	Widespread recognition of MCs by academic institutions is not yet well-established, making MCs that may be neither stackable nor portable	What should be done to assure the quality and recognition of MCs?
MCs can increase the flexibility of education and training provision and widen access to non-traditional learners	MCs could deepen inequalities in access to higher education and lifelong learning if MCs are available only on a fee basis or with employer funding	Should there be public funding? If so, what share of the cost should be borne by public, how should funding be provided, for which persons, and which MCs?
MCs can swiftly and efficiently reduce the mismatch between skills supply and demand	Learners may have poor information about the MC offer, and MCs may not be well-understood or trusted by employers	How do we provide information to support good learners' choices, and how do we promote understanding and trust among employers?

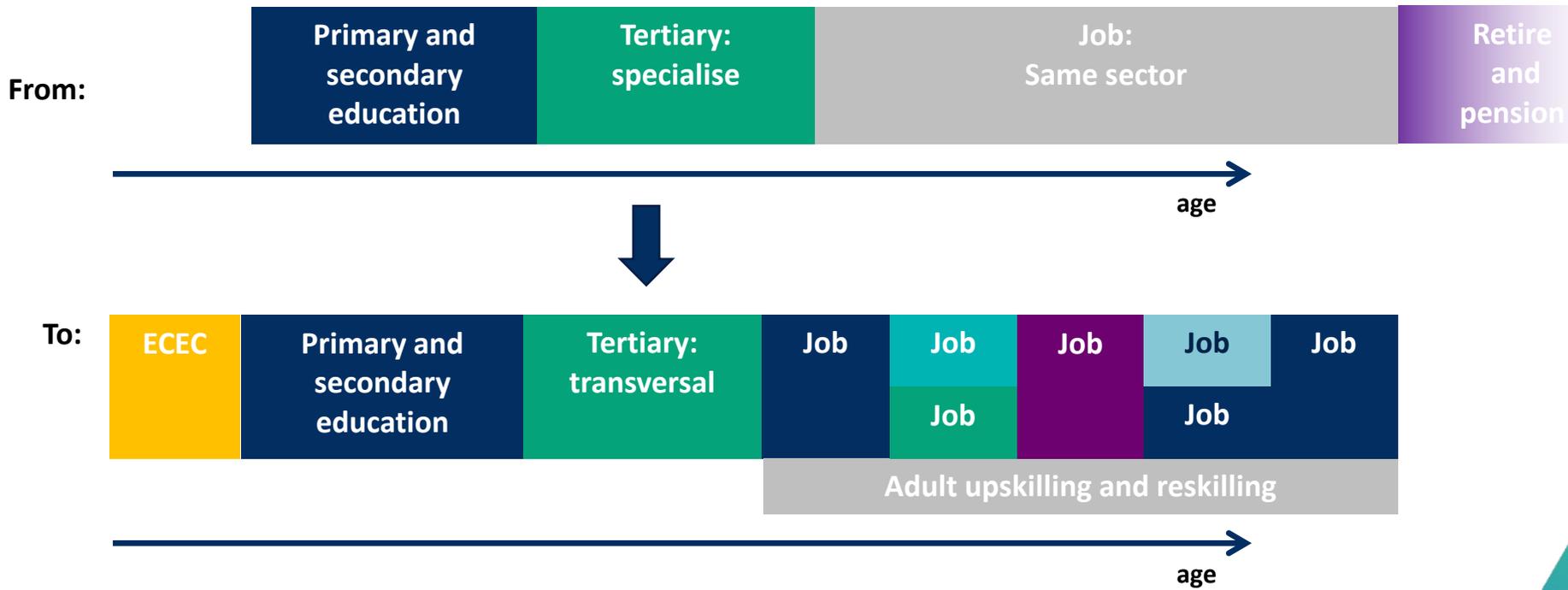
Future trends

Making lifelong learning a reality for all





We used to learn to do the work, now learning is the work





Firms as learning environments

- **How is the additional funding shared between Governments, employers and beneficiaries?**
- **What are the incentives?**
- **Who sets the standards?**
- **How are the levels of skills recognised?**
- **Who trains the trainers?**



Certifying skills in a digital world

- The digital **transformation expands and diversifies education, training and learning opportunities.**
- The **certification of skills becomes increasingly important:** employers need clear signals on workers' skills.
- Firms are increasingly testing skills on their own while relying less on diplomas. **How to certify skills and who should be in charge?**
- Preferred option: **Independent regulated systems for skills certification?**



People outside firms

- **Unemployed**: Government. Funding for unemployment benefits, used for training?
- **People at high risk of losing their jobs**: firms or Government?
- People who want to **change jobs**
- Gig economy



Some governance challenges

- **New forms of work:** fewer taxes raised
- **Ageing societies:** higher expenditure in health and pensions
- **Decentralised information:** less control
- **Link between education and jobs weakened:** the role of Governments risks been diminished
- **Need to predict rapid changes in skills demands and respond to them**



Looking forward



Provide more flexible and resilient education



Increase use of technology in education



Focus more on future-proof sectors and occupations



Enhance broader range of cognitive, social and emotional skills



Some questions for UK nations

Towards a more flexible, integrated tertiary education system?

1. Do you develop the **right bundles of skills** in the different parts of your post-secondary education systems?
2. Do you have the **right formats and pathways** in place? Are more flexible, short, stackable programmes needed?
3. What role do digital **provision and alternative providers** have to play?
4. How can **incentive structures and financial supports** be adapted to promote greater take up of upskilling and reskilling among adults?
5. How do **core institutional funding systems** need to adapt to support more flexible, integrated tertiary education?

Thank you

<https://www.oecd.org/education/higher-education-policy/>