



Future Skills for Accelerating Strong and Sustainable Growth

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The future will always surprise us

Impact



Uncertainty

Mathematics (PISA)

Student performance

OECD average

580
570
560
550
540
530
520
510
500
490
480
470
460
450
440
430
420
410
400
390
380
370
360
350
340
330

2003

2006

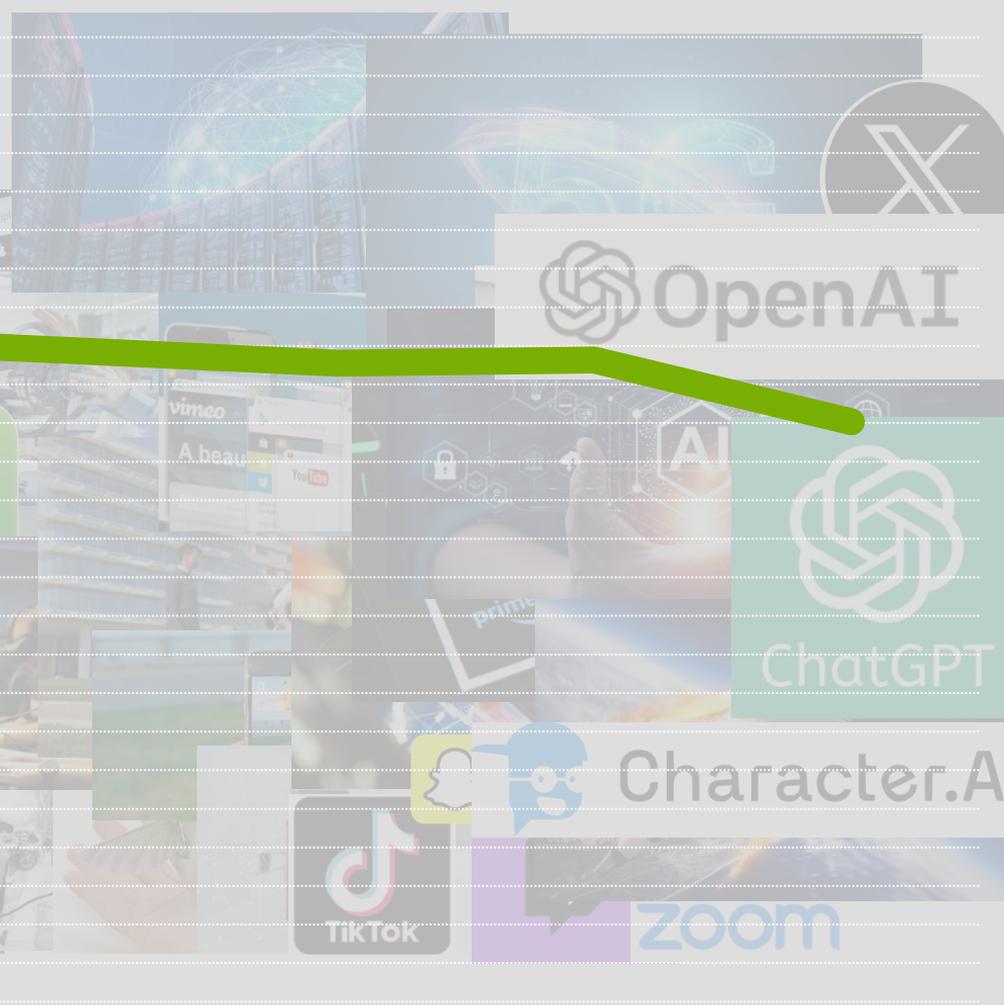
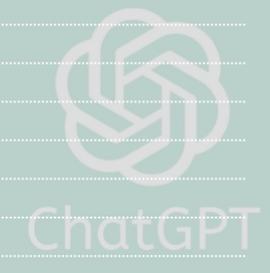
2009

2012

2015

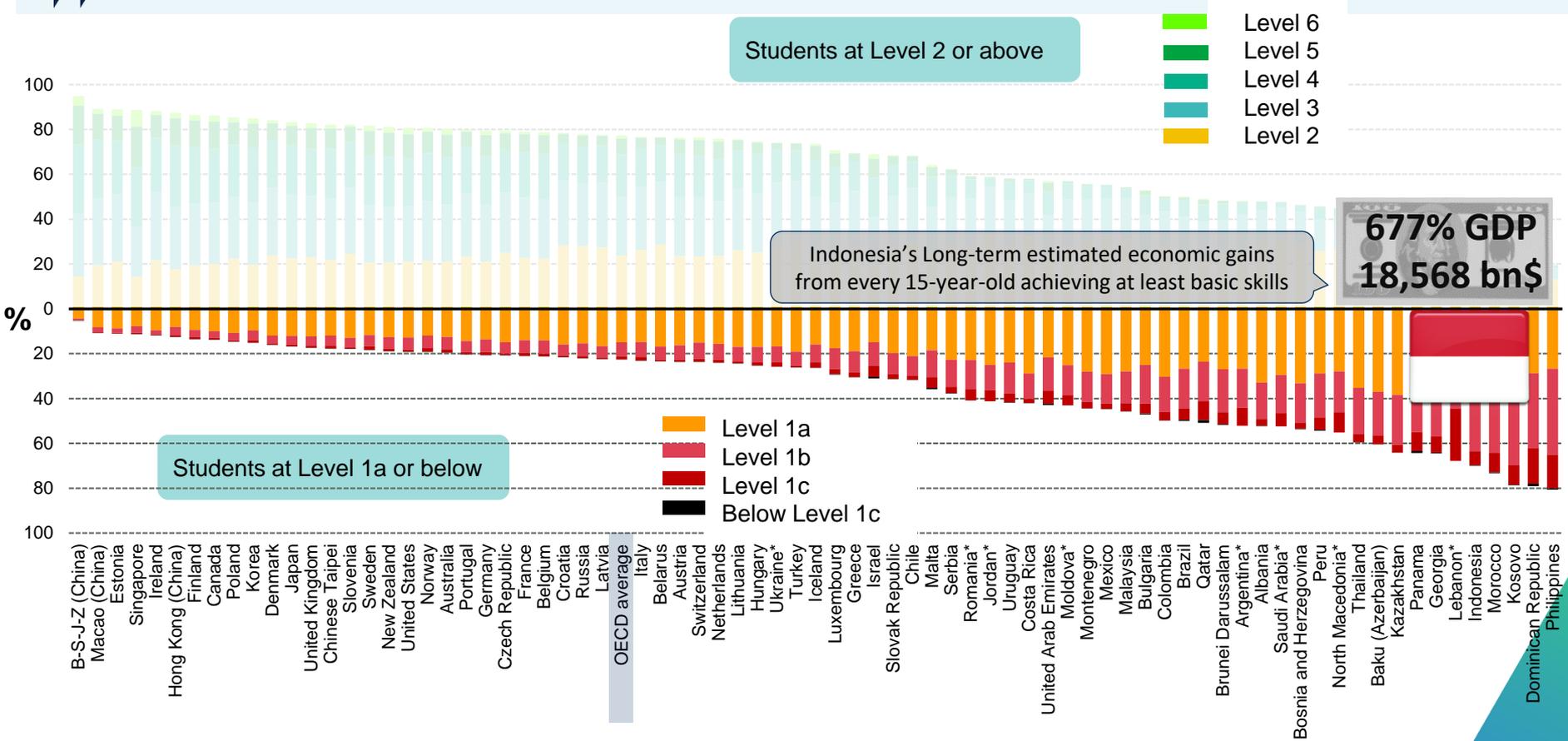
2018

2022





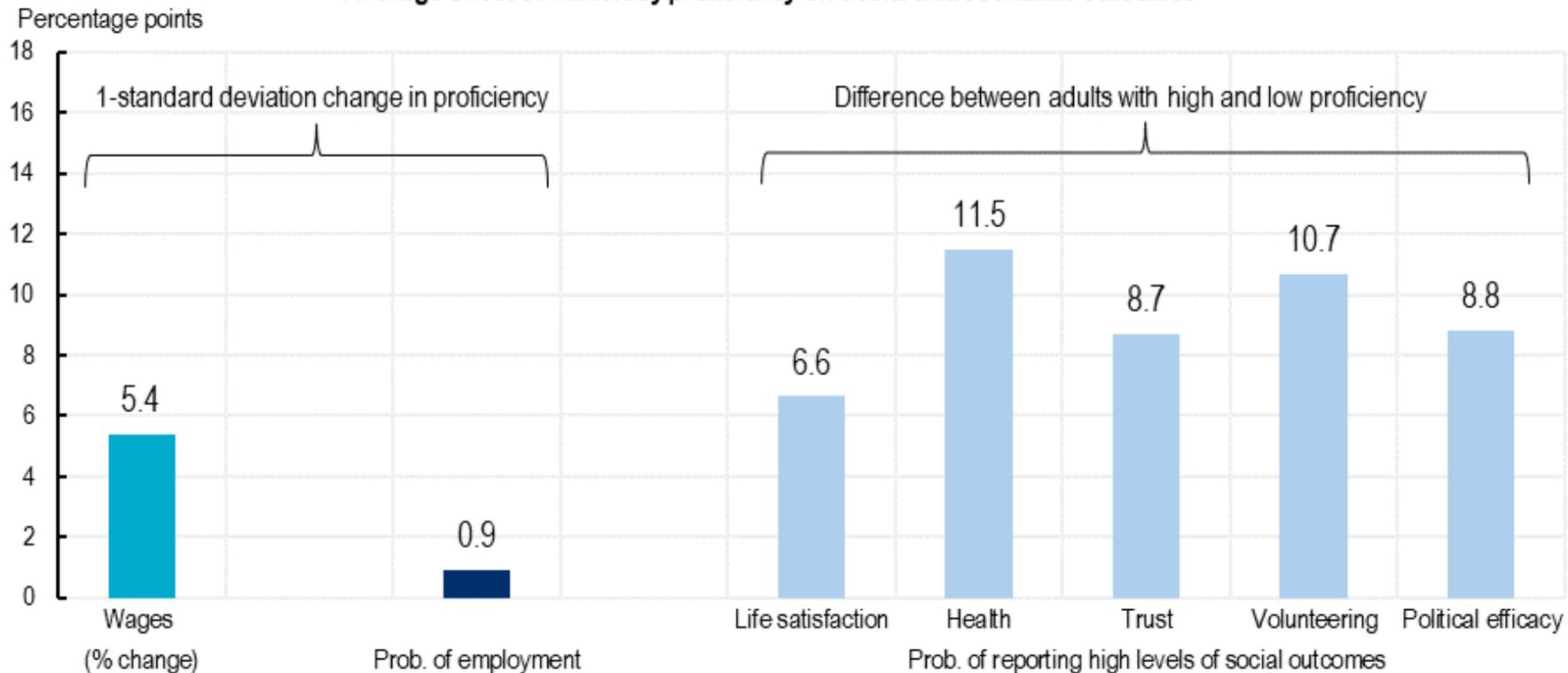
The high cost of low educational performance





Social and economic outcomes

Average effect of numeracy proficiency on social and economic outcomes



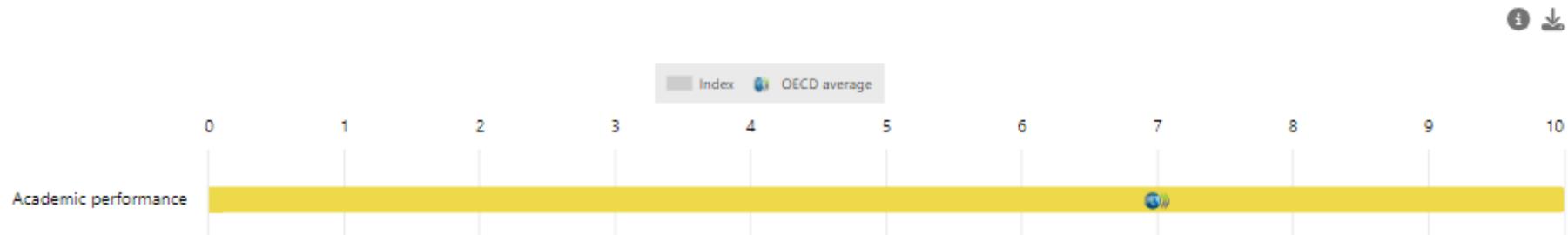
* Averages refer to the participating OECD countries and economies.



PISA 2022: Singapore



» What are Singapore's strengths and areas for improvement





» What are Indonesia's strengths and areas for improvement

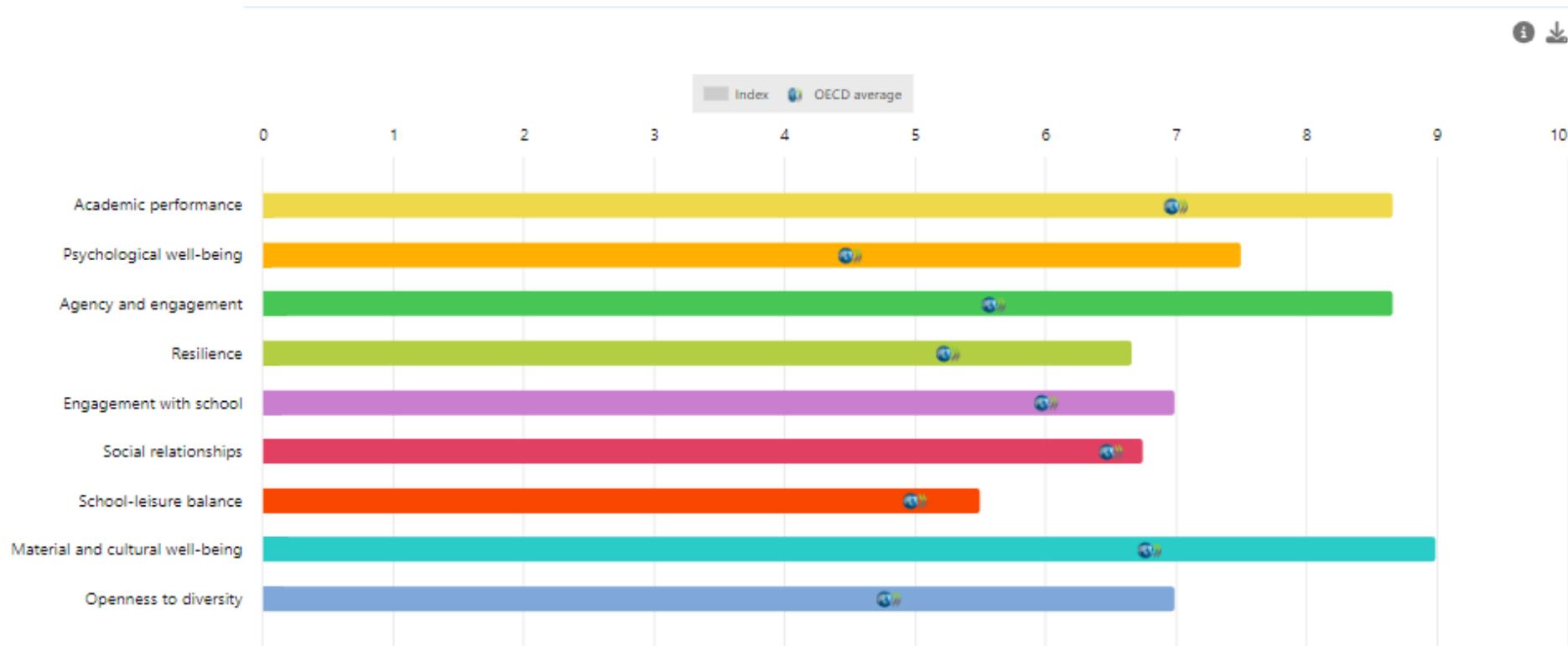




PISA 2022: Denmark



What are Denmark's strengths and areas for improvement

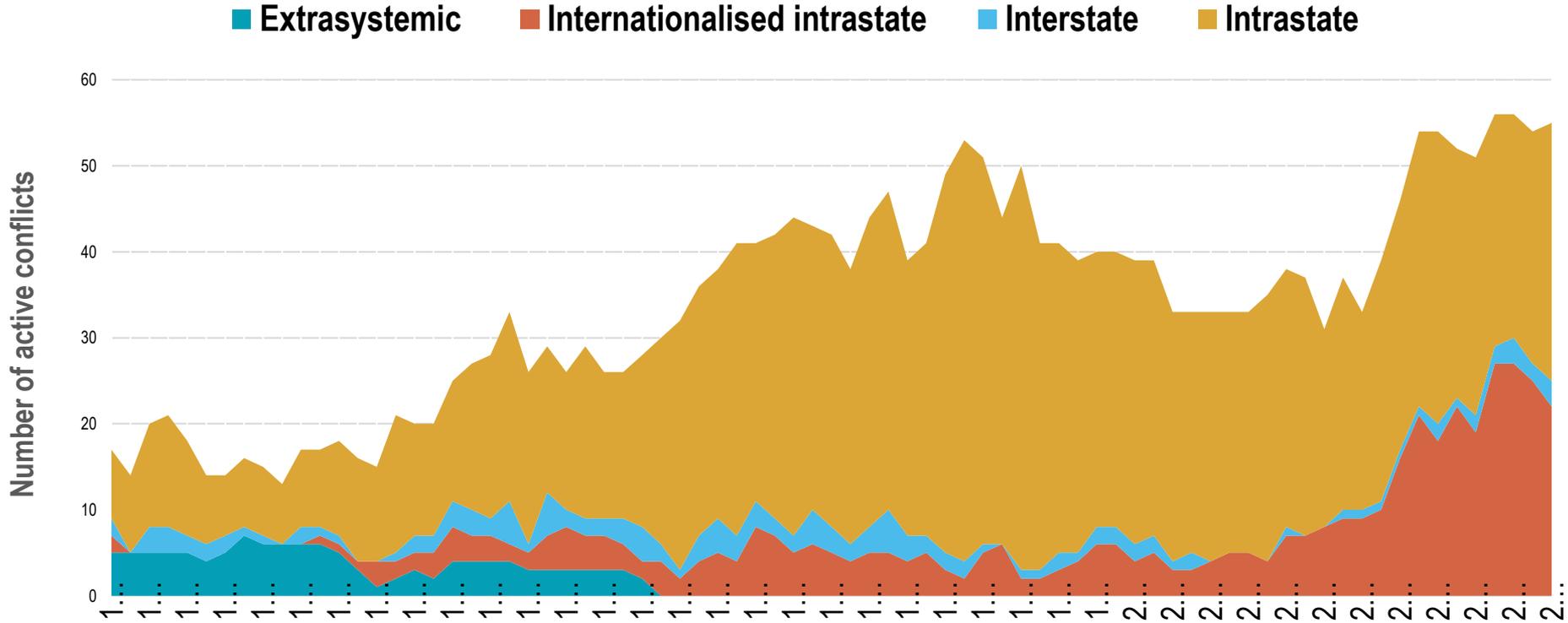




Global conflict on the rise

Figure 1.1.

State-based armed conflict by type, worldwide (1946-2022)



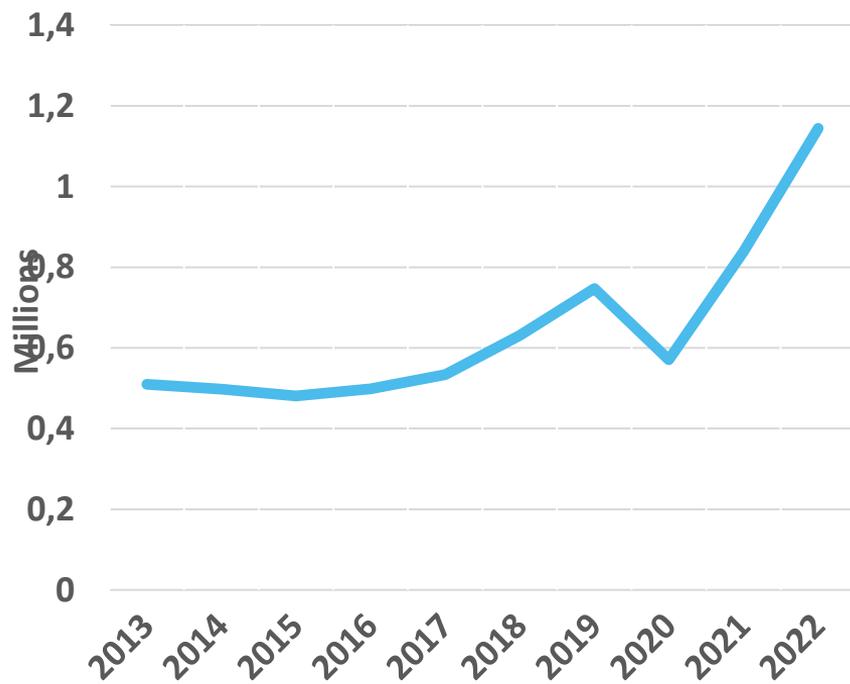


The return of international migration

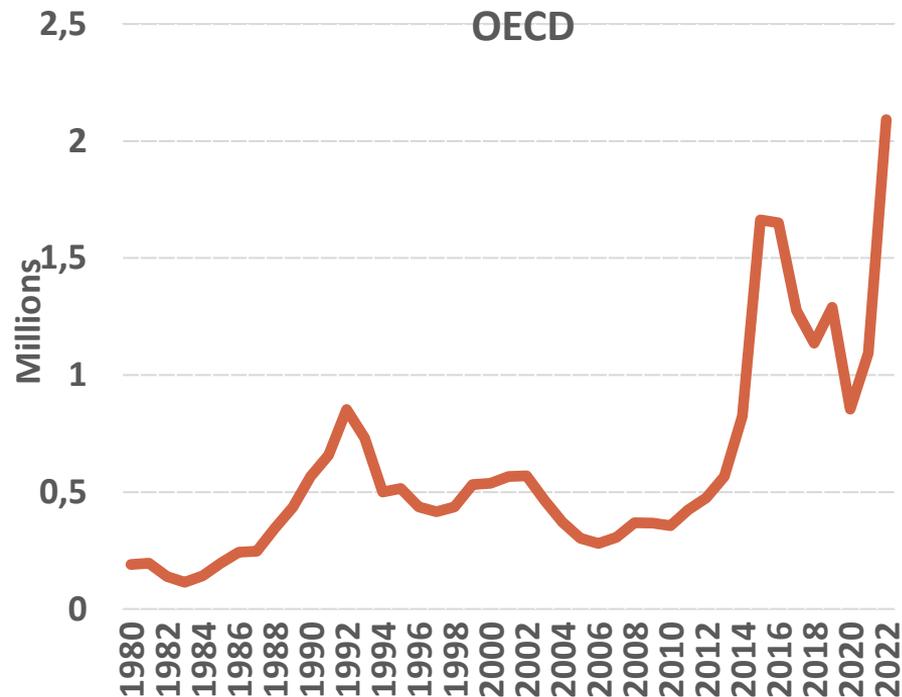
Figure 1.3.

A. Permanent-type labour migration ; B. New asylum applications, OECD countries (2013-2022)

A. Labour migration



B. New asylum applications to the OECD

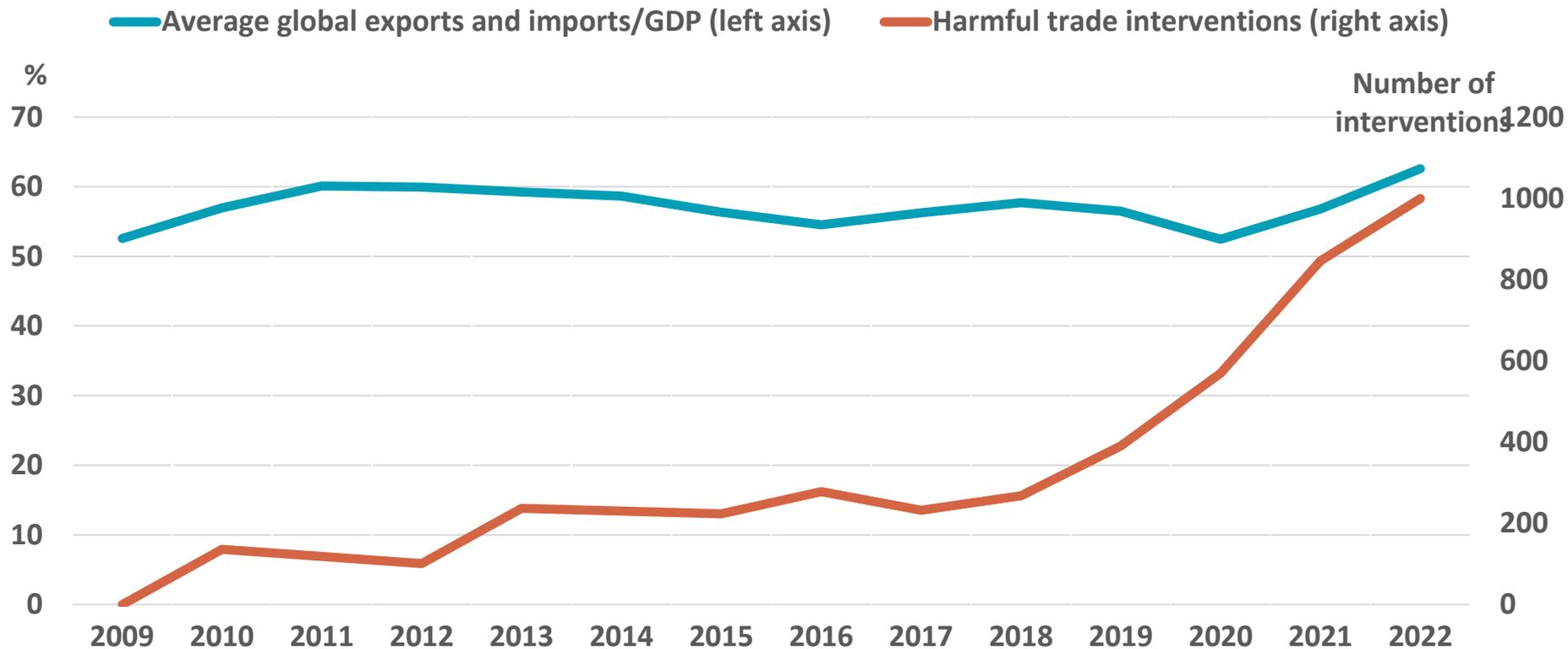




Global trade slowing, restrictions rising

Figure 1.5.

Average global trade as a share of GDP; global trade restrictions (2009-2022)





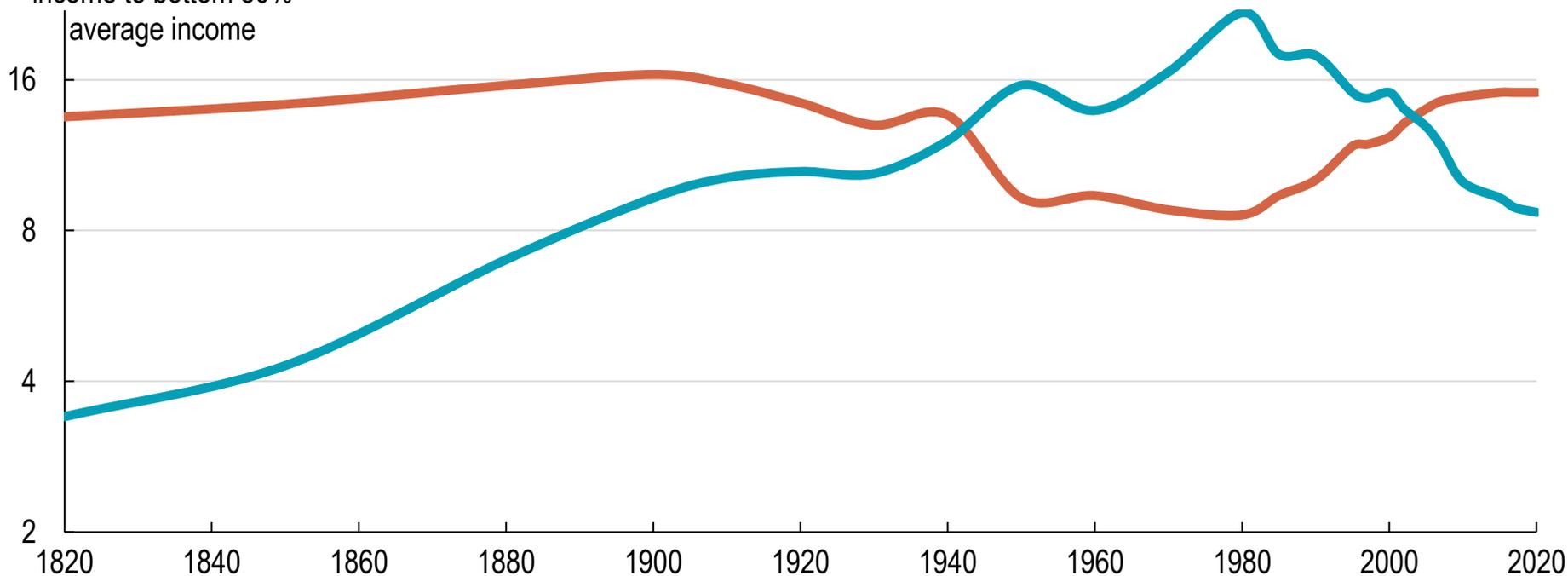
Converging world, unequal societies

Income inequality, within and between countries, global (1820-2020)

— Within-country inequality

— Between-country inequality

Ratio of top 10% average
income to bottom 50%
average income



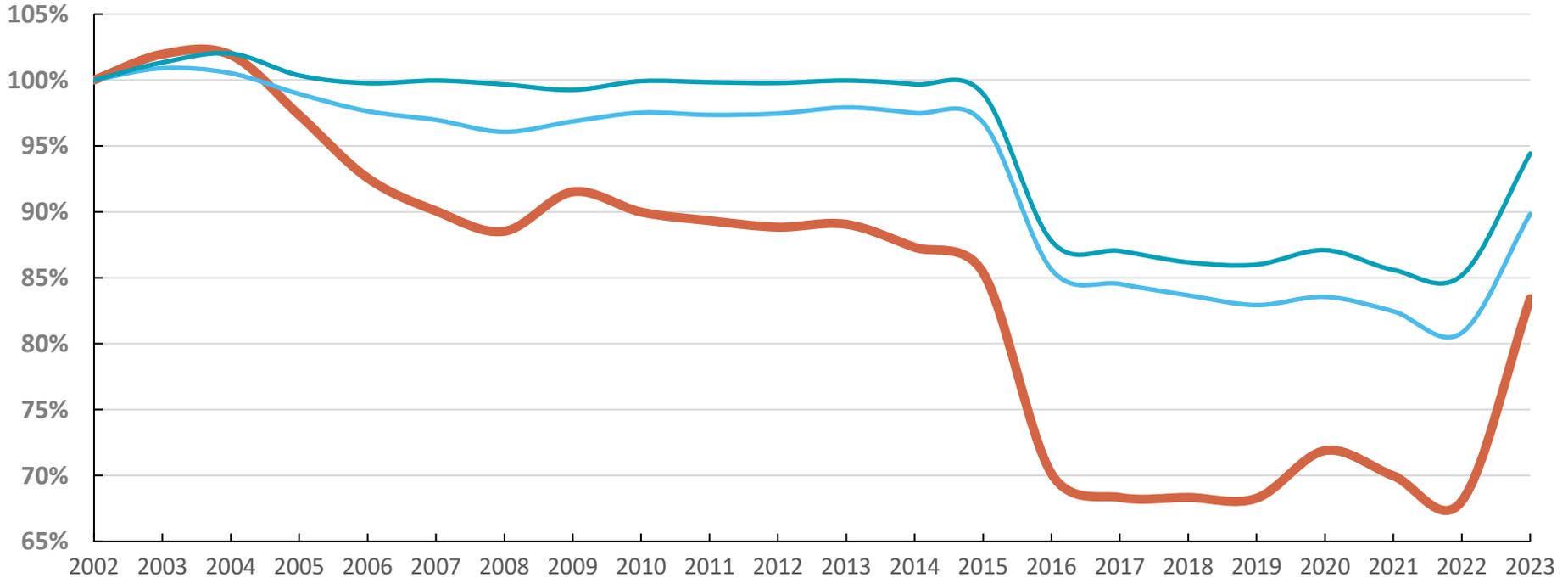


Young people change jobs increasingly more often than older cohorts

Figure 2.4

Change in average job tenure by age group, OECD average (2002-2022)

15 to 24 25 to 54 55 to 64

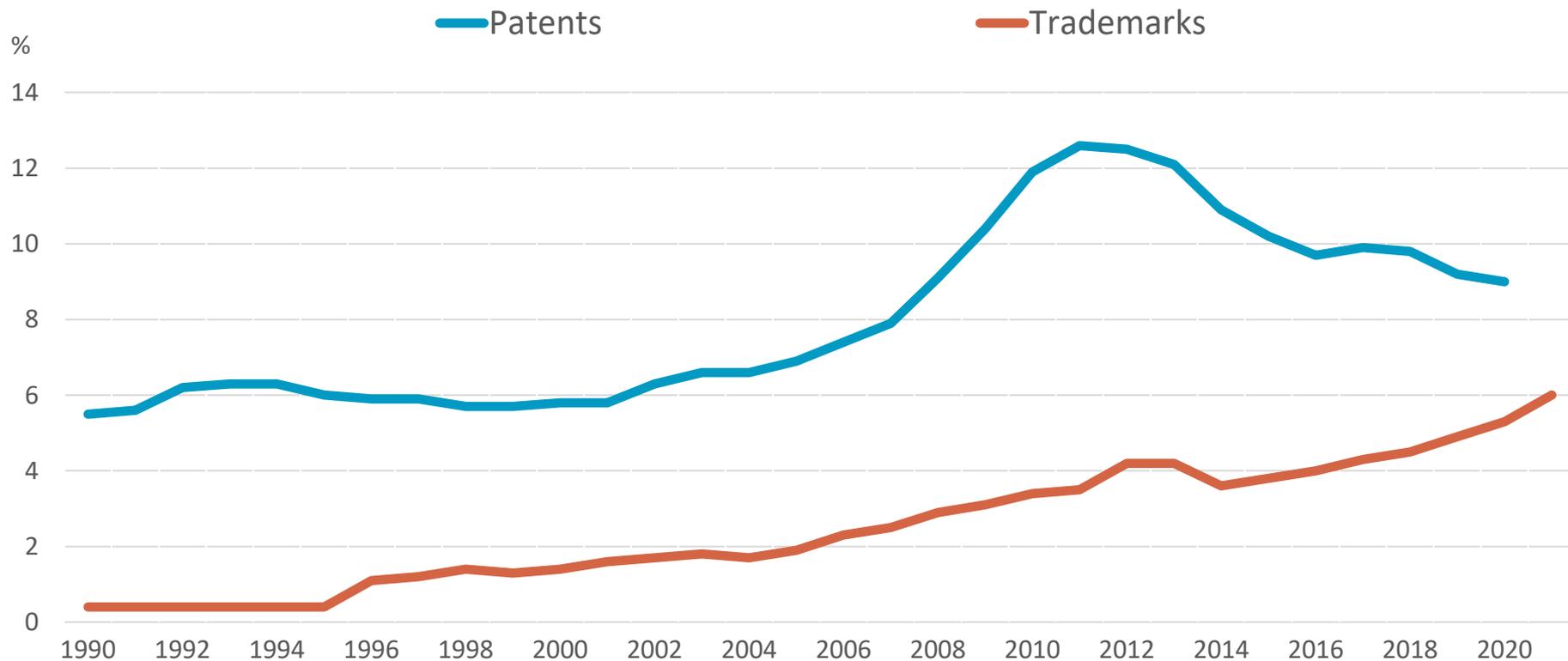




Rising commercialisation, falling innovation

Figure 1.11

Share of global patents and trademark filings in climate-related technologies (1990-2021)





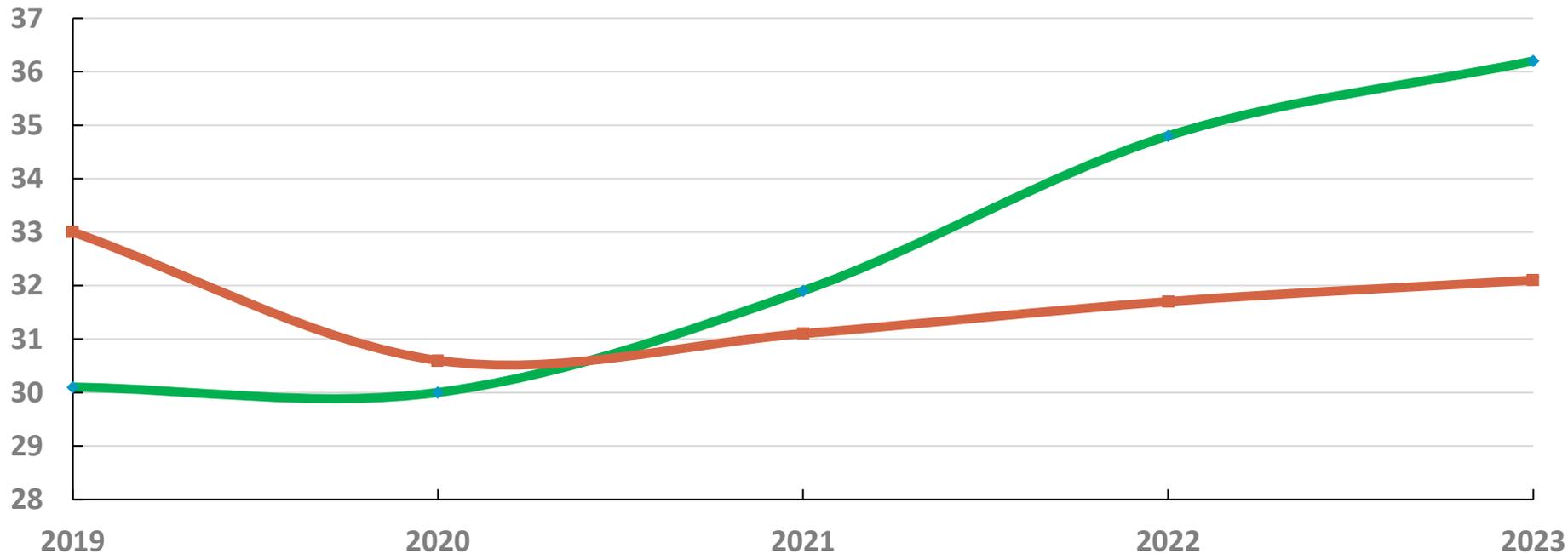
Employment in clean energy surpasses employment in fossil fuels

Figure 2.1.

Total employment by energy sector, worldwide (2019-2023)

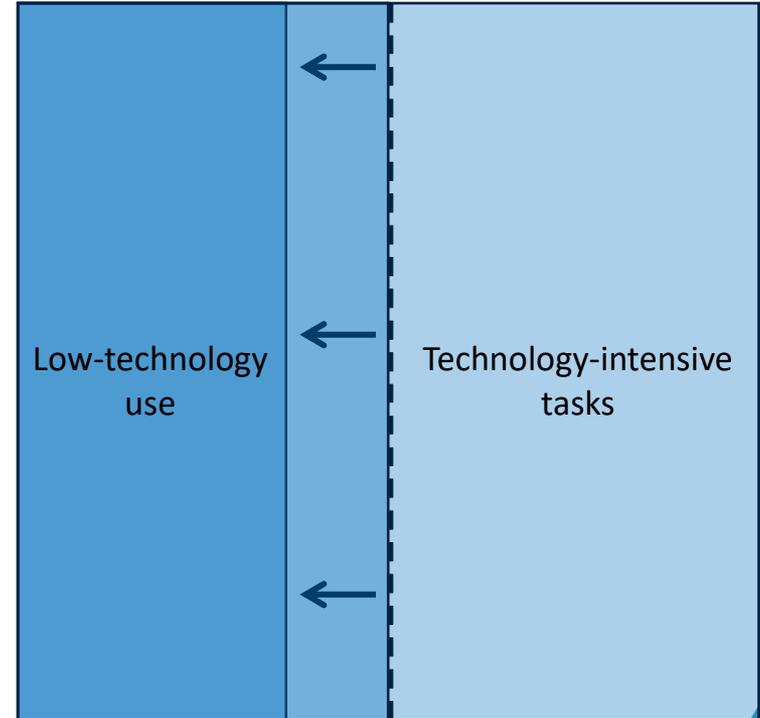
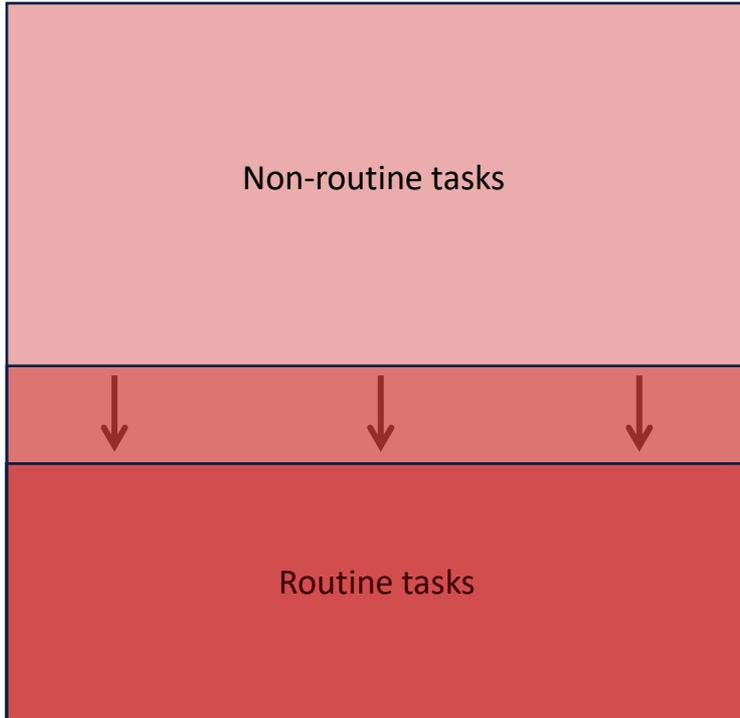
Clean energy Fossil fuels

Million workers



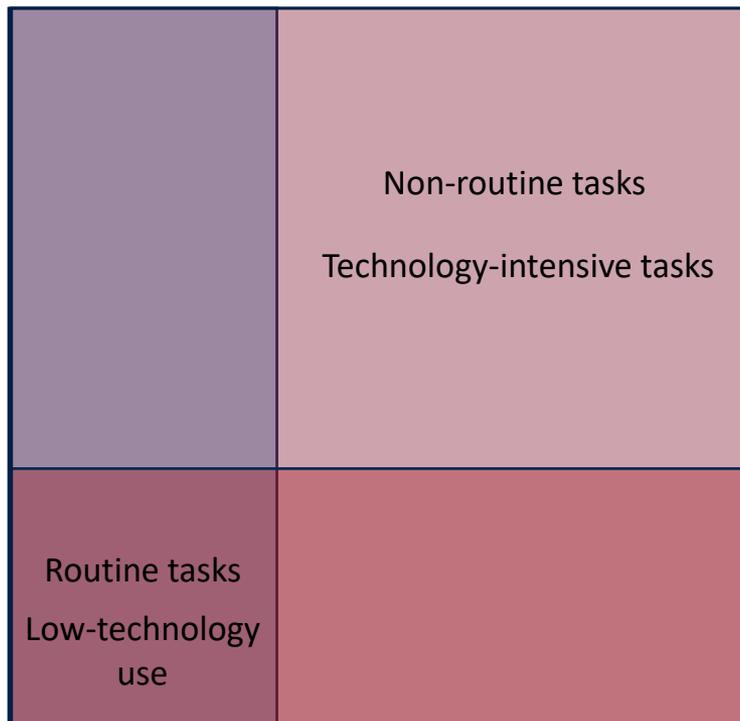


The kinds of things that are easy to teach...
... have now become easy to digitise and automate





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... have now become easy to digitise and automate

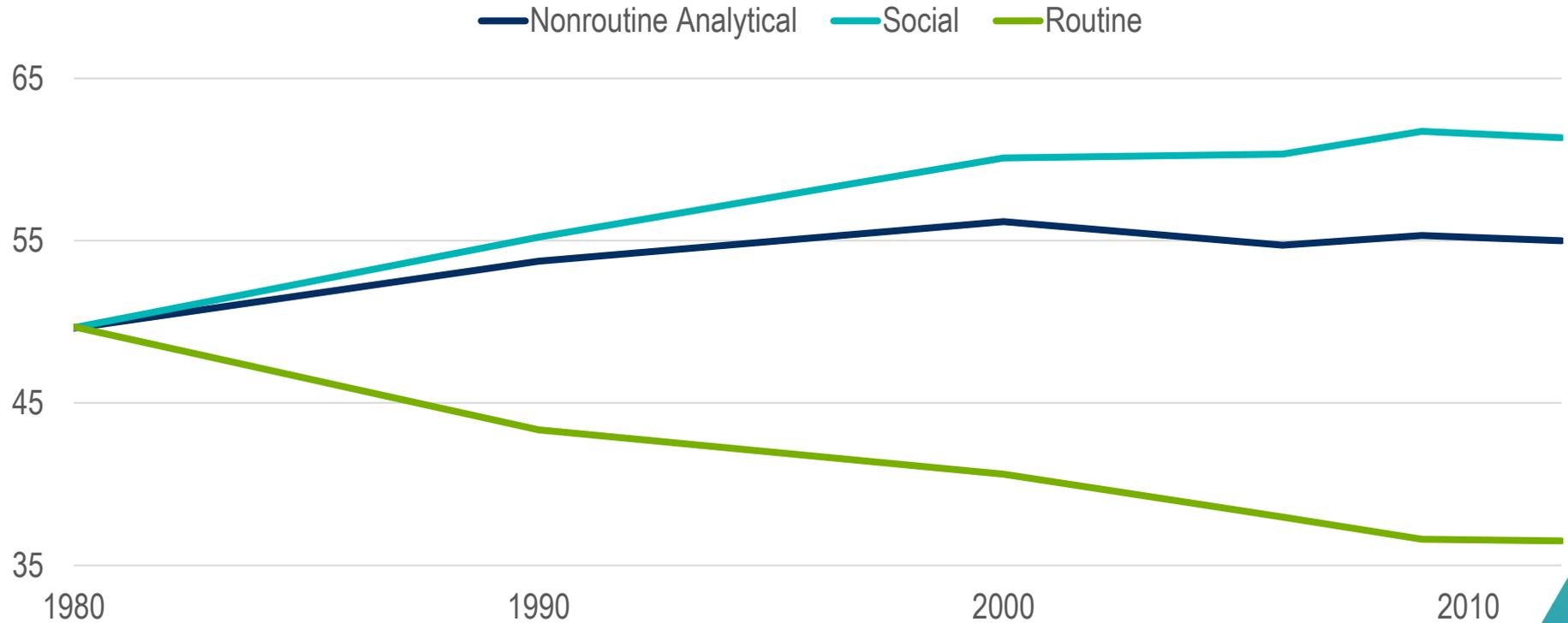




Demand for routine tasks has continued to decline

Figure 1.1

Evolution of tasks performed by workers in the United States, 1980-2012



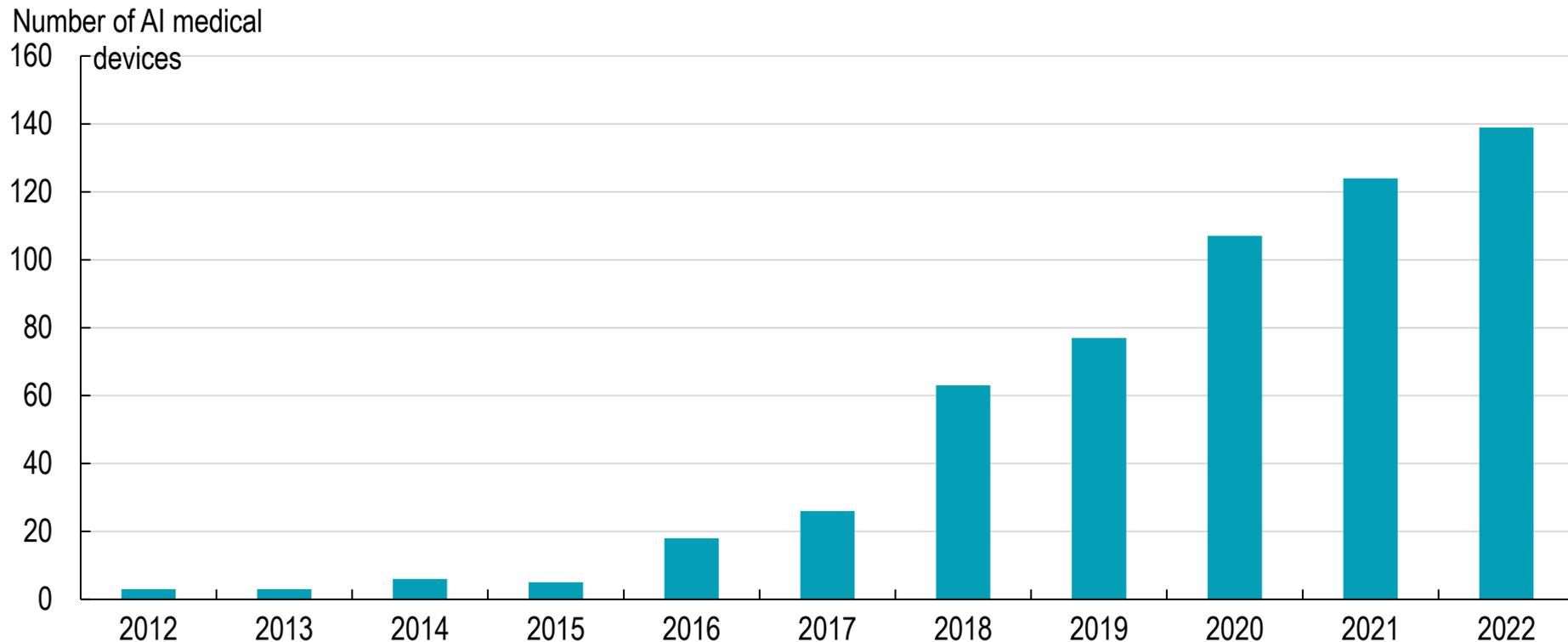
Adapted from Figure III “Worker Tasks in the U.S. Economy, 1980-2012” (Update of Figure I by Autor, Levy and Murnane (2003), “The Skill Content of Recent Technological Change: An Empirical Exploration”) in Deming (2017) “The Growing Importance of Social Skills in the Labor Market”



AI is boosting medical technologies

Figure 4.10

Number of AI medical devices approved by the United States Food and Drug Administration (2012-2022)

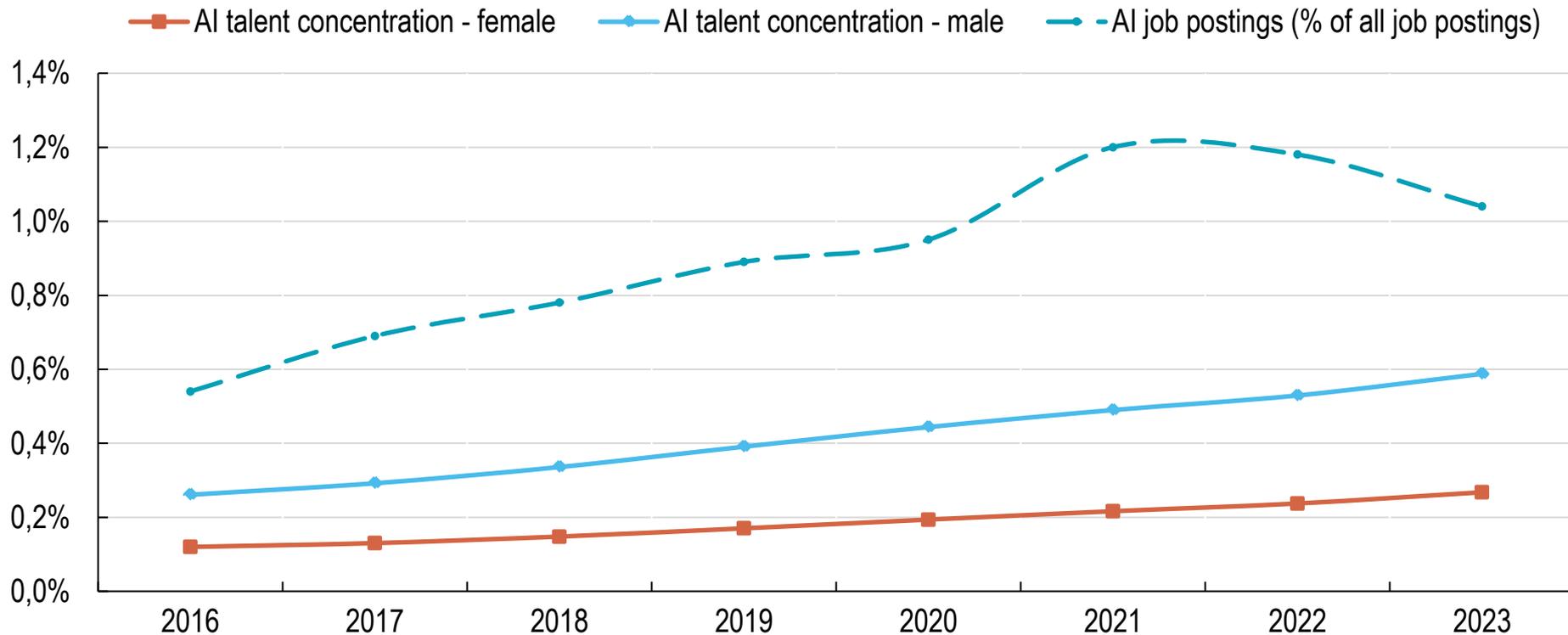




AI skills are more common and demand for AI labour is rising, but both still low

Figure 2.2

Share of LinkedIn users who are AI talents across 30 countries, by gender; Share of job postings demanding AI skills across 14 countries (2016-2023)





AI adoption changes the mix of skills demanded by firms

Figure 1.2

How skill demand evolved in establishments most likely to have adopted AI relative to other establishments

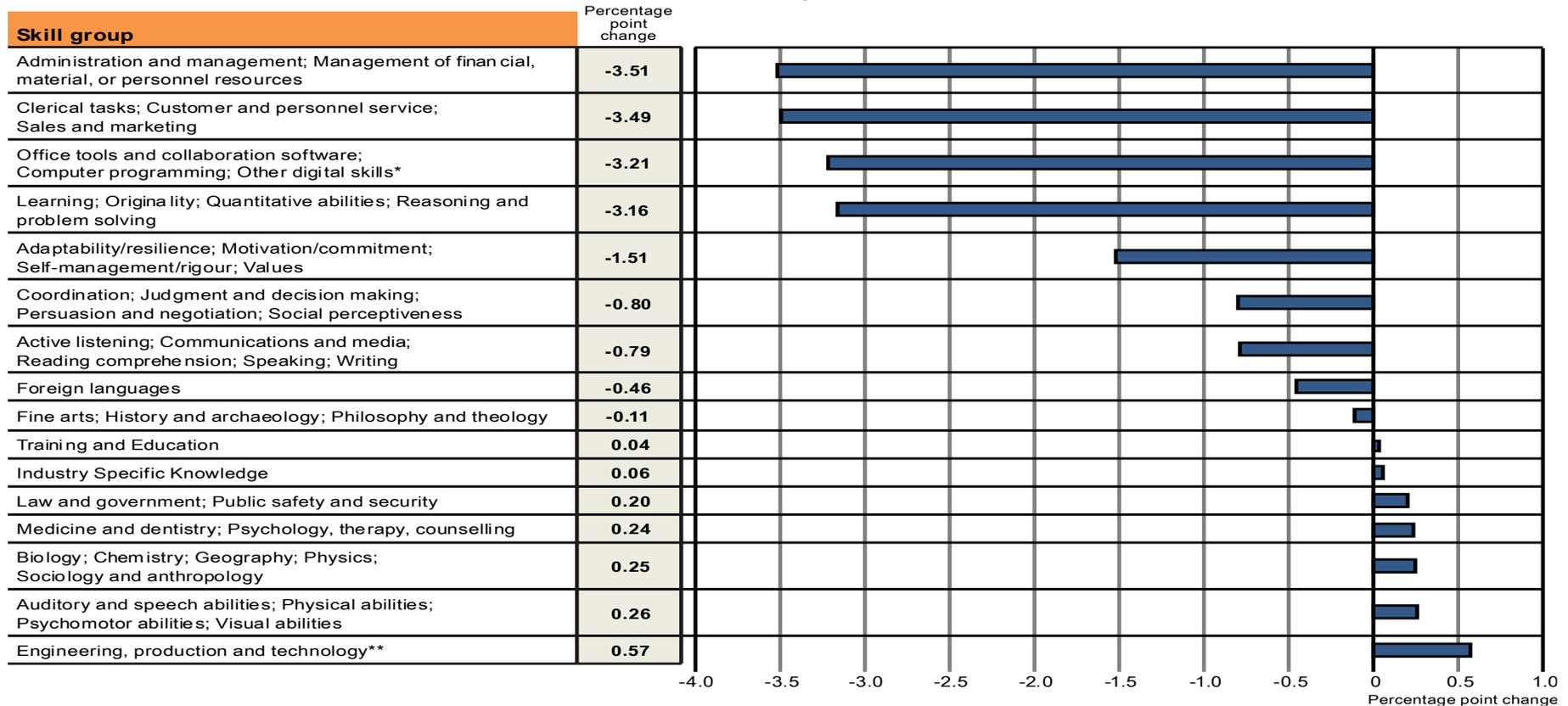


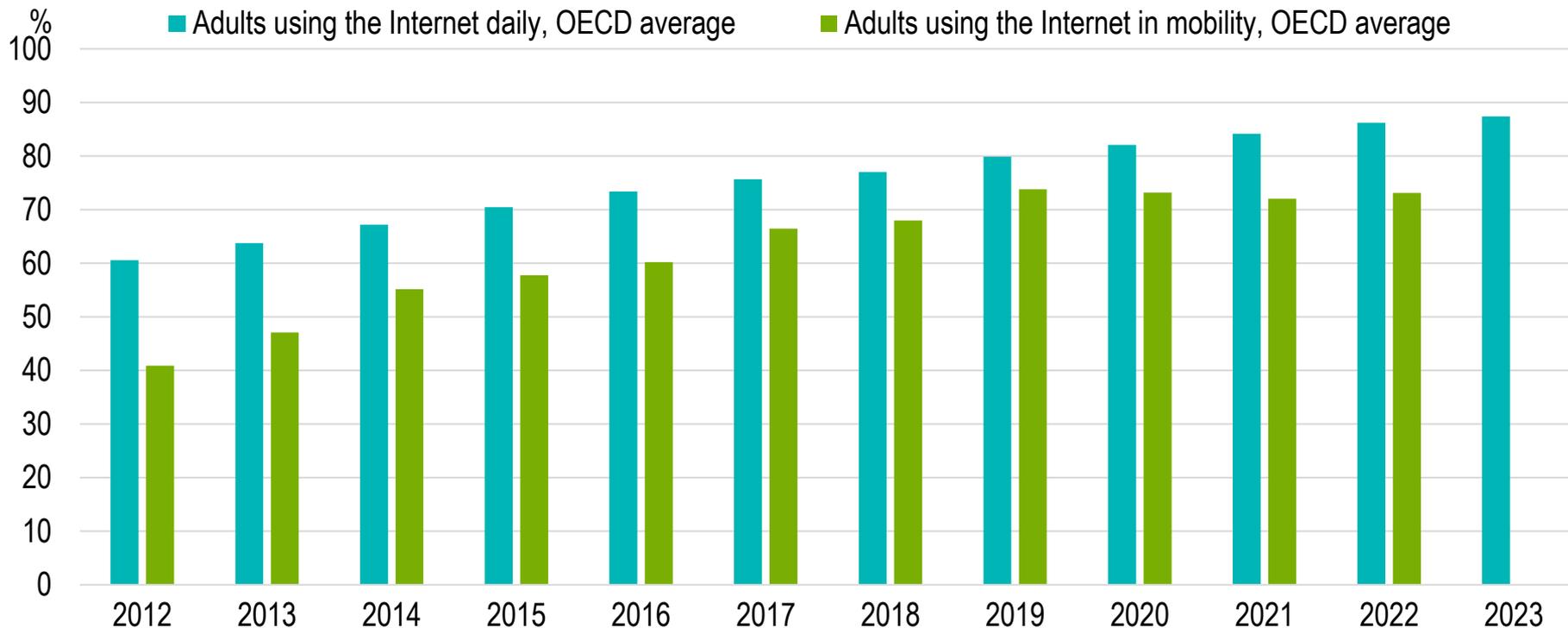
Figure 4.1 in Green (2024), "Artificial intelligence and the changing demand for skills in the labour market"



Diffusion of internet has changed how adults access information

Figure 1.3

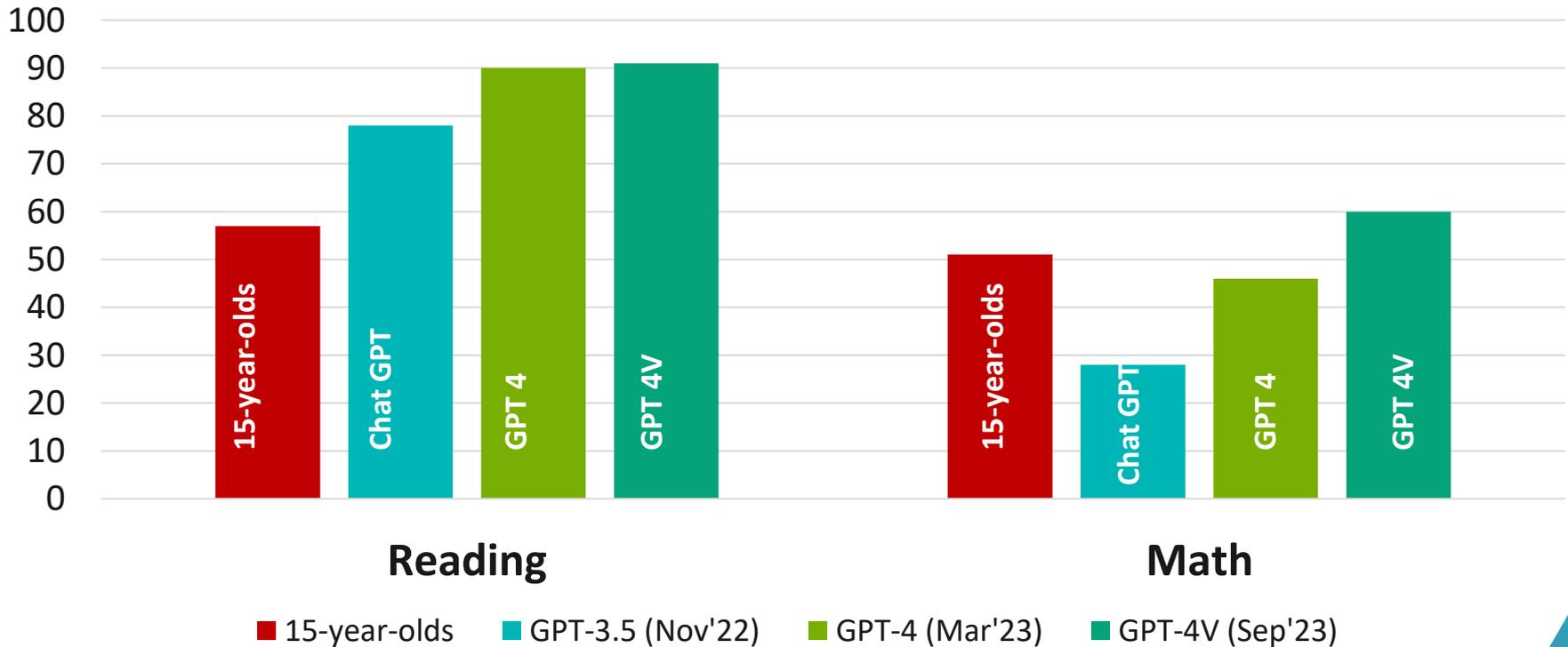
Evolution of Internet usage, 2012-23





Putting AI to the test: chatGPT and student performance on PISA

Share of questions correctly answered by...



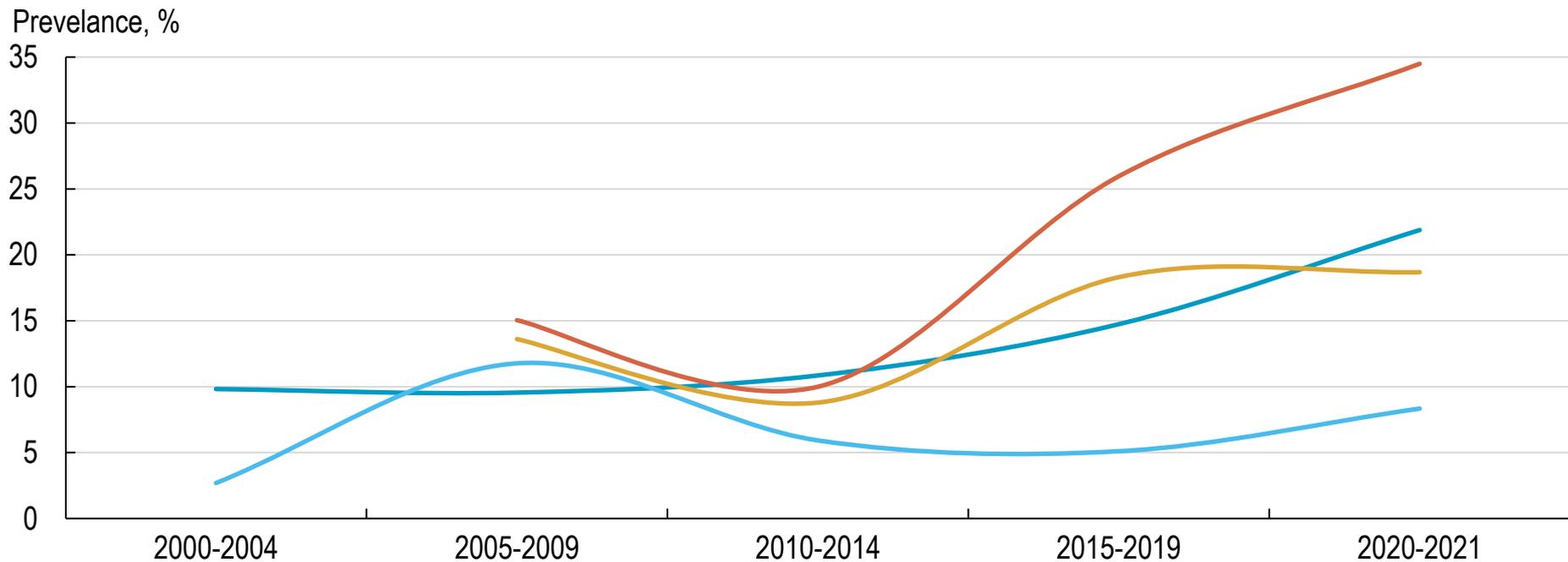


Digital addictions are on the rise globally

Figure 4.4

Prevalence estimates of digital addictions by period of publication, meta-analysis of studies, global (2004-2021)

— Internet Addiction — Game Addiction — Smartphone Addiction — Social Media Addiction

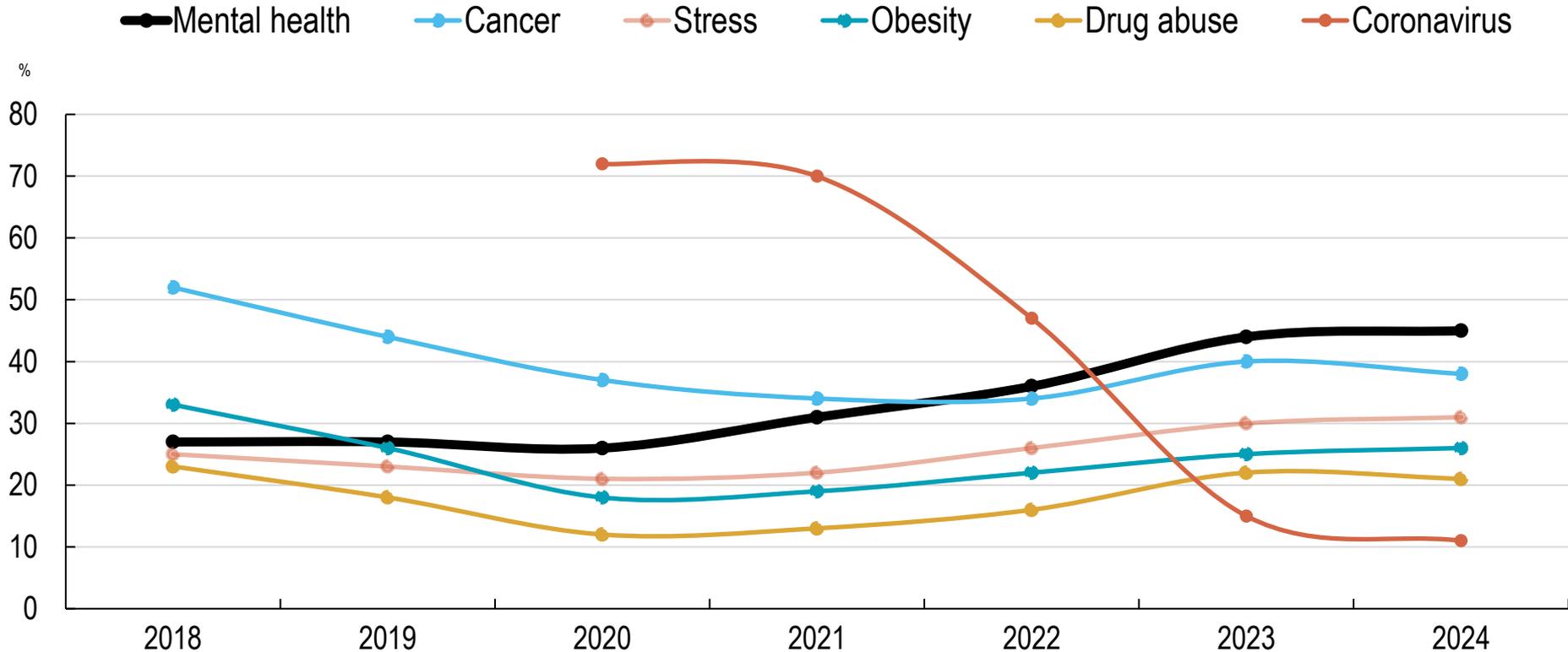




Mental health the top health concern

Figure 4.1

Biggest health problem according to survey respondents across 31 countries (2018-2024)



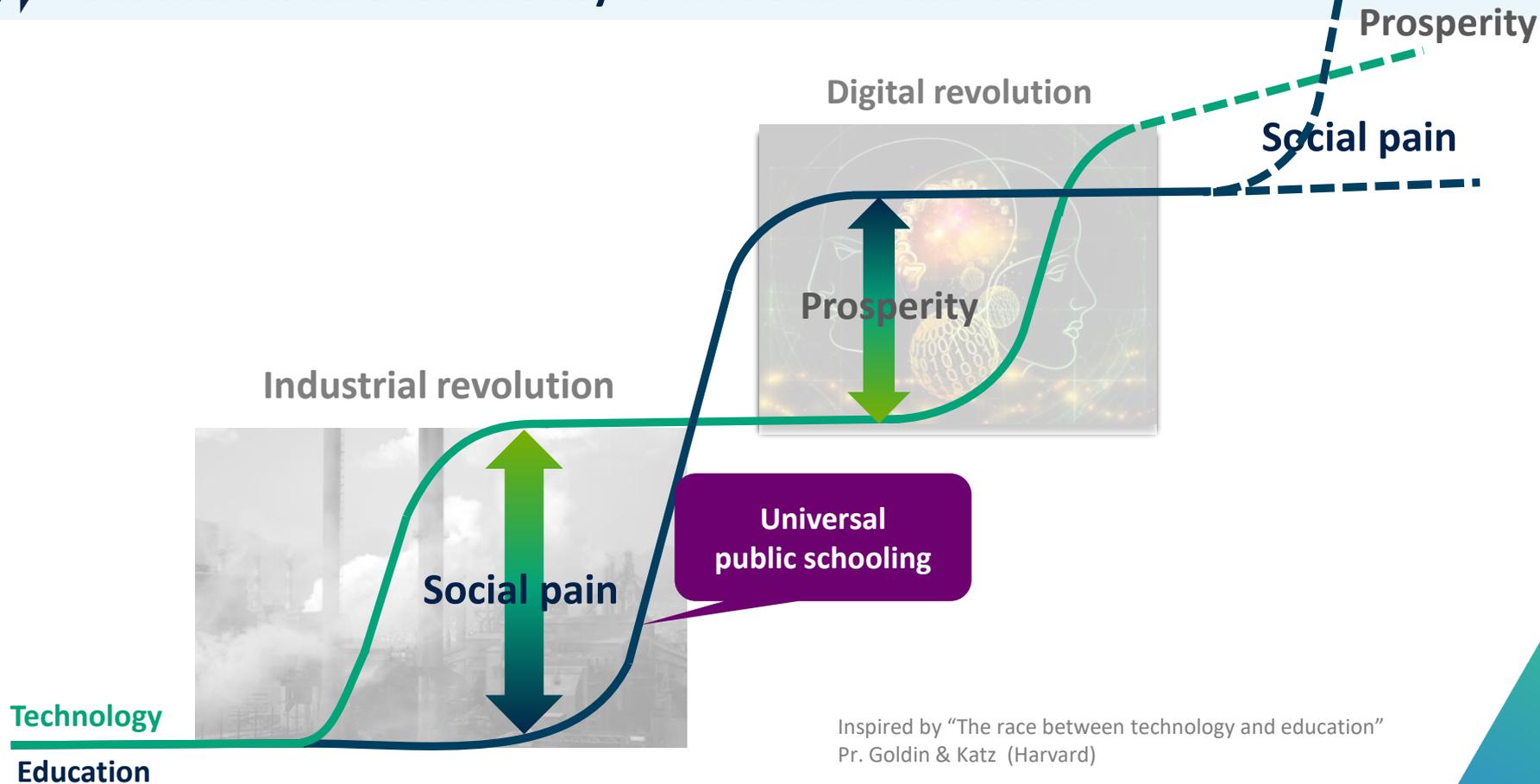


A balancing act





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



Digital revolution

Prosperity

Social pain

Prosperity

Industrial revolution

Social pain

Universal public schooling

Technology

Education

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



Find out more about our work at www.oecd.org/pisa



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PISA Country notes

