

**Big Techday 12, 7. Juni 2019**

# Reflections on missing productivity growth in an era of digital transformation

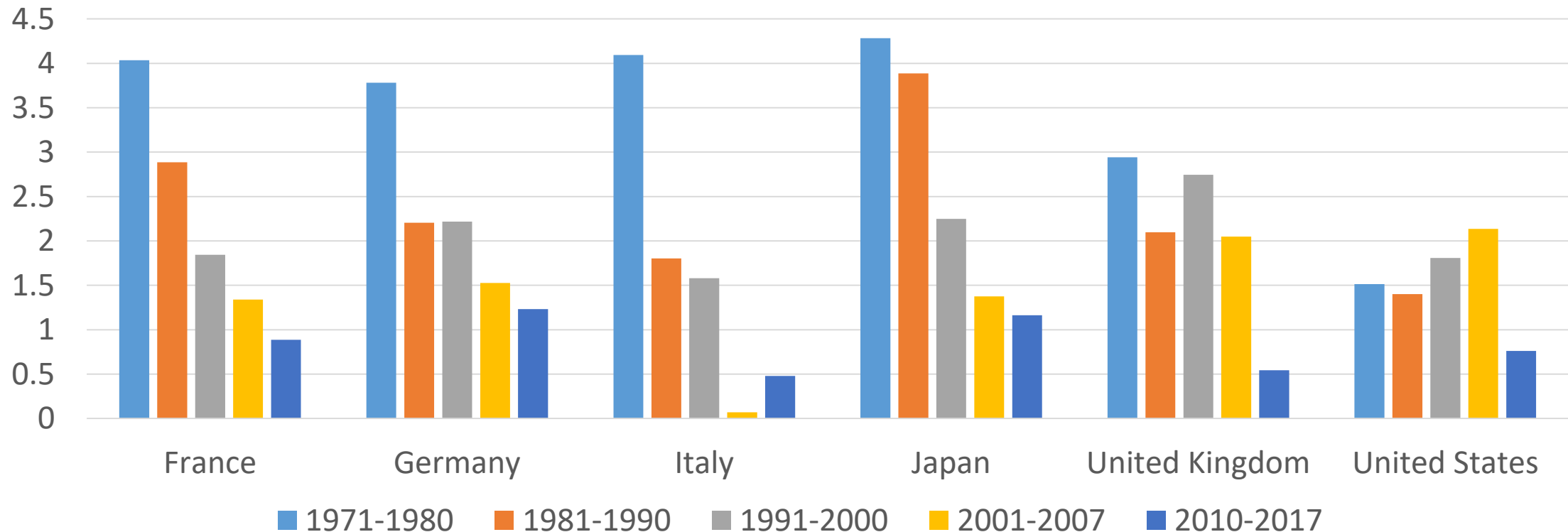
By Christina Timiliotis



ORGANISATION  
FOR ECONOMIC  
CO-OPERATION  
AND DEVELOPMENT

# Productivity growth has slowed down in major economies

GDP per hour worked, annual change





“You can see the computer age everywhere but in the productivity statistics.”

Robert Solow, 1987

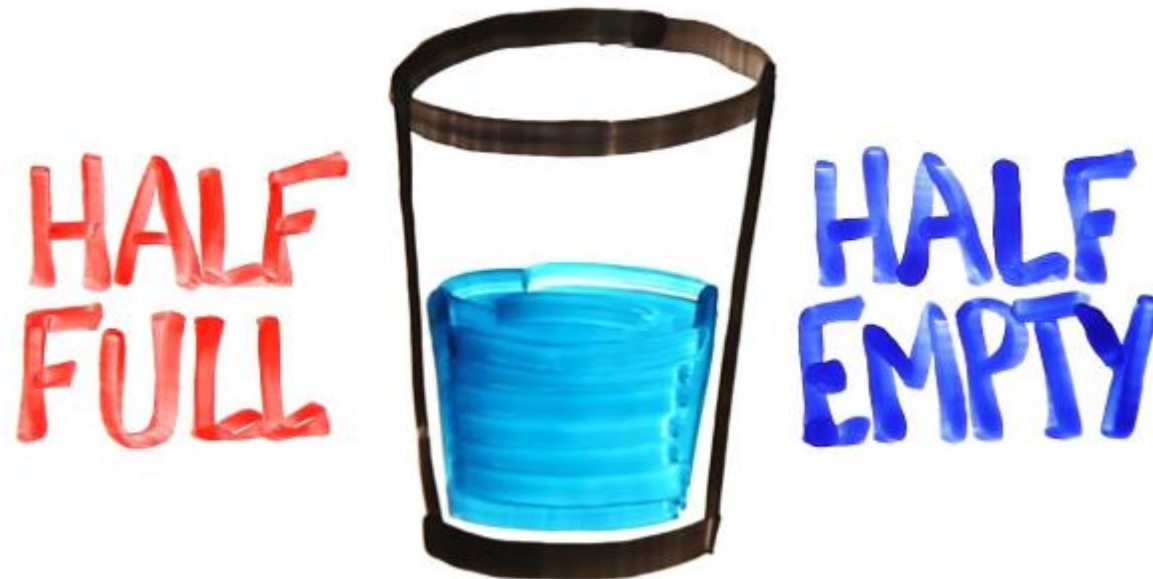


## Techno-optimists

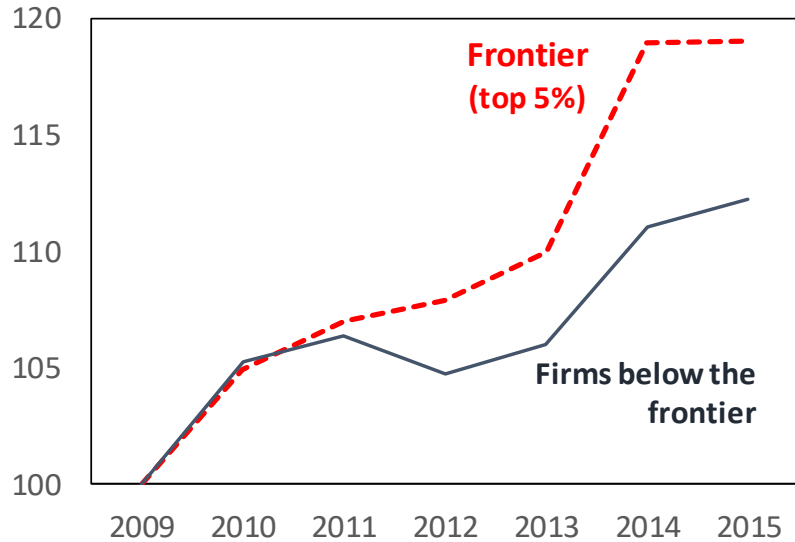
The world is in the middle of a technology-driven renaissance.

## Techno-pessimists

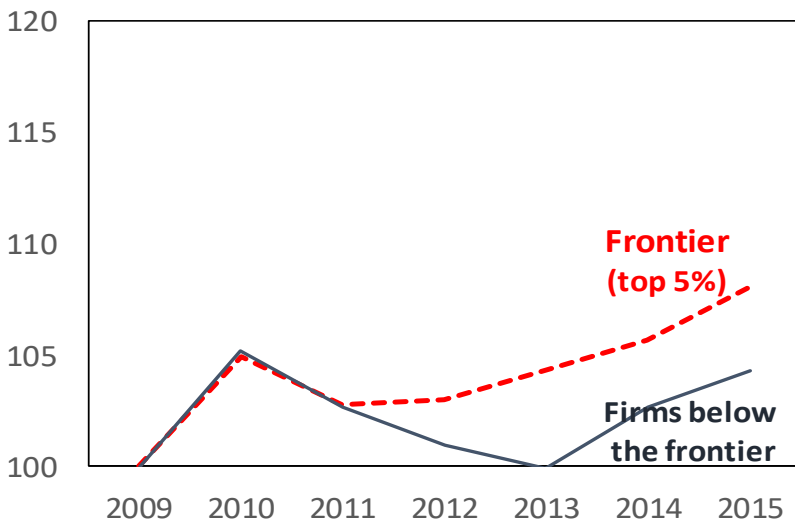
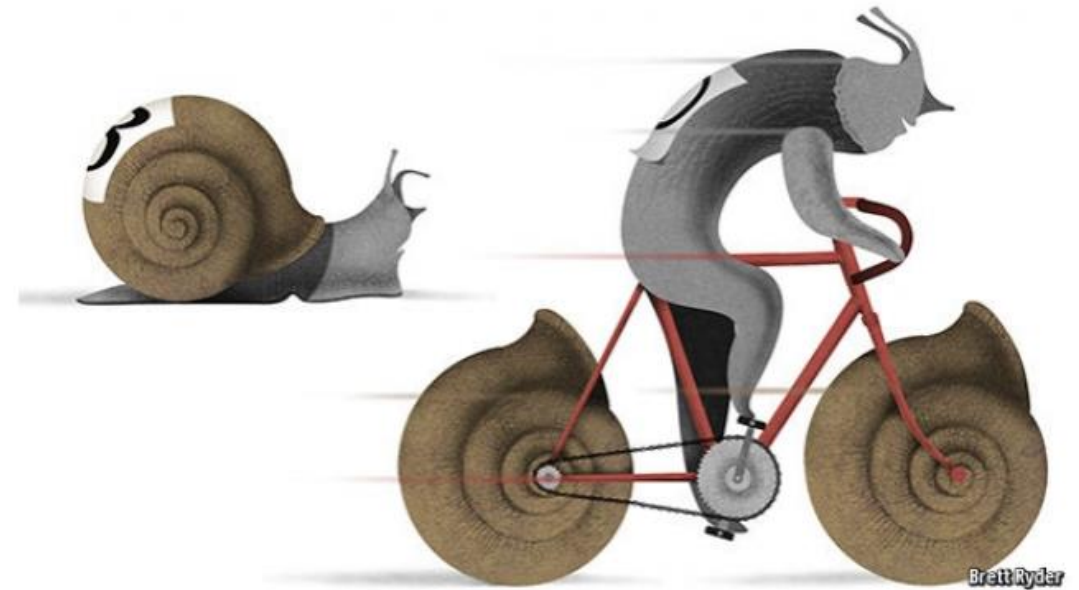
Few firms may be doing great, but the IT revolution has run out of steam and low hanging fruits have been picked.



# The great (productivity) divergence



Digital industries

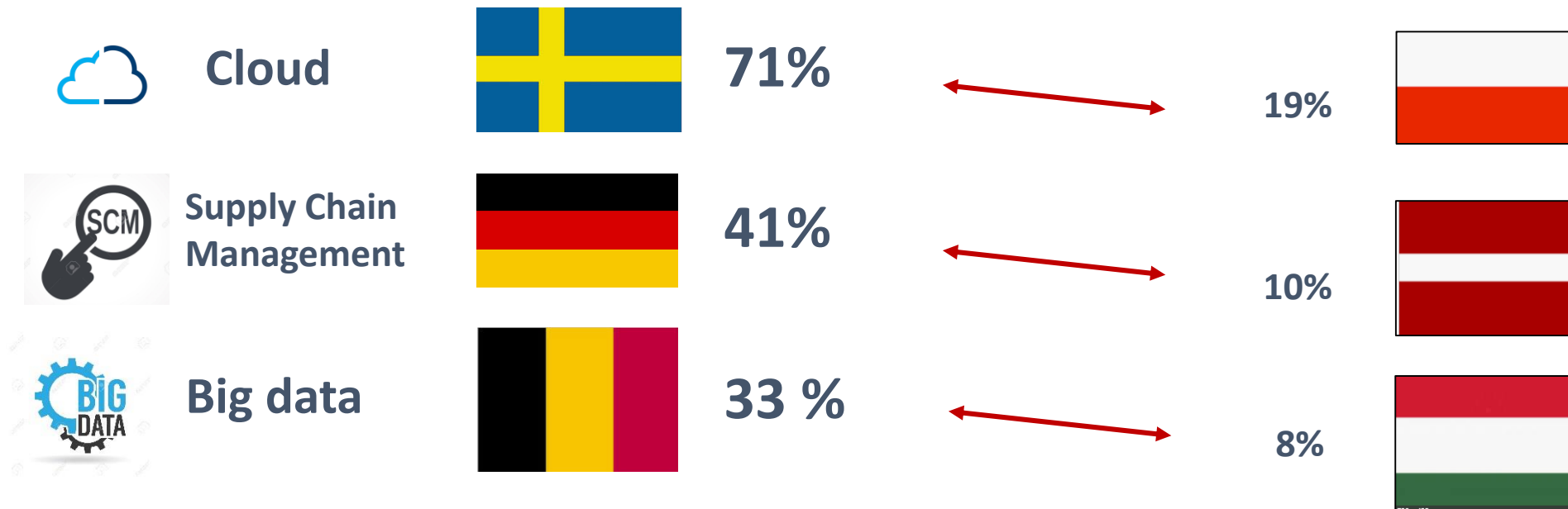


Less digital industries

Note: Multifactor productivity (MFP) at the productivity frontier and for the average non-frontier firm (2009=100); Source: Andrews et al. (2016)



# Digital adoption is uneven across countries



Note: for medium sized firms. Source: OECD Stat. ICT adoption of businesses.

# Digital adoption lags behind in small firms

Large firms (250+)



Medium sized firms (50-249)



Small firms (10-49)



Cloud

59%

41 %

27 %



Supply Chain Management

41%

24%

13%



Big data

34 %

19%

11 %



Uber



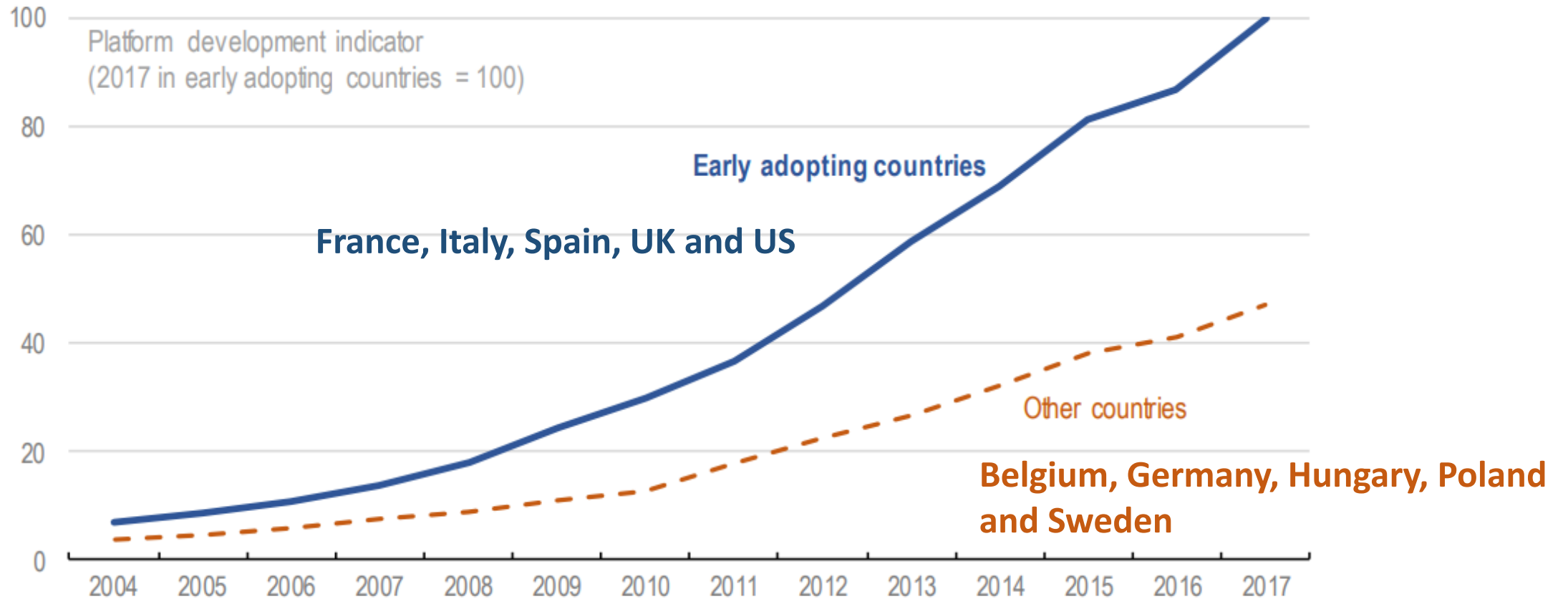
trivago



amazon

AliExpress

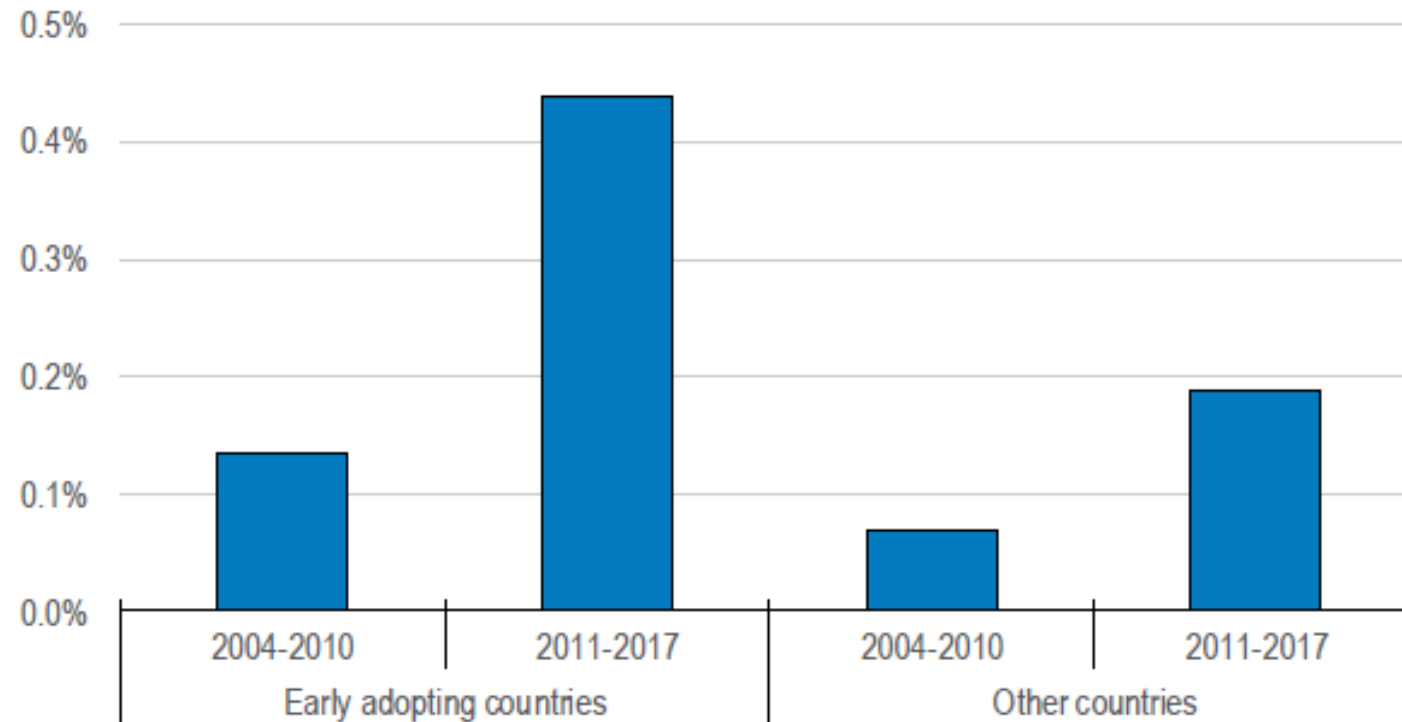
# Platforms are developing fast, but unevenly





# Online platforms can enhance the productivity of service firms

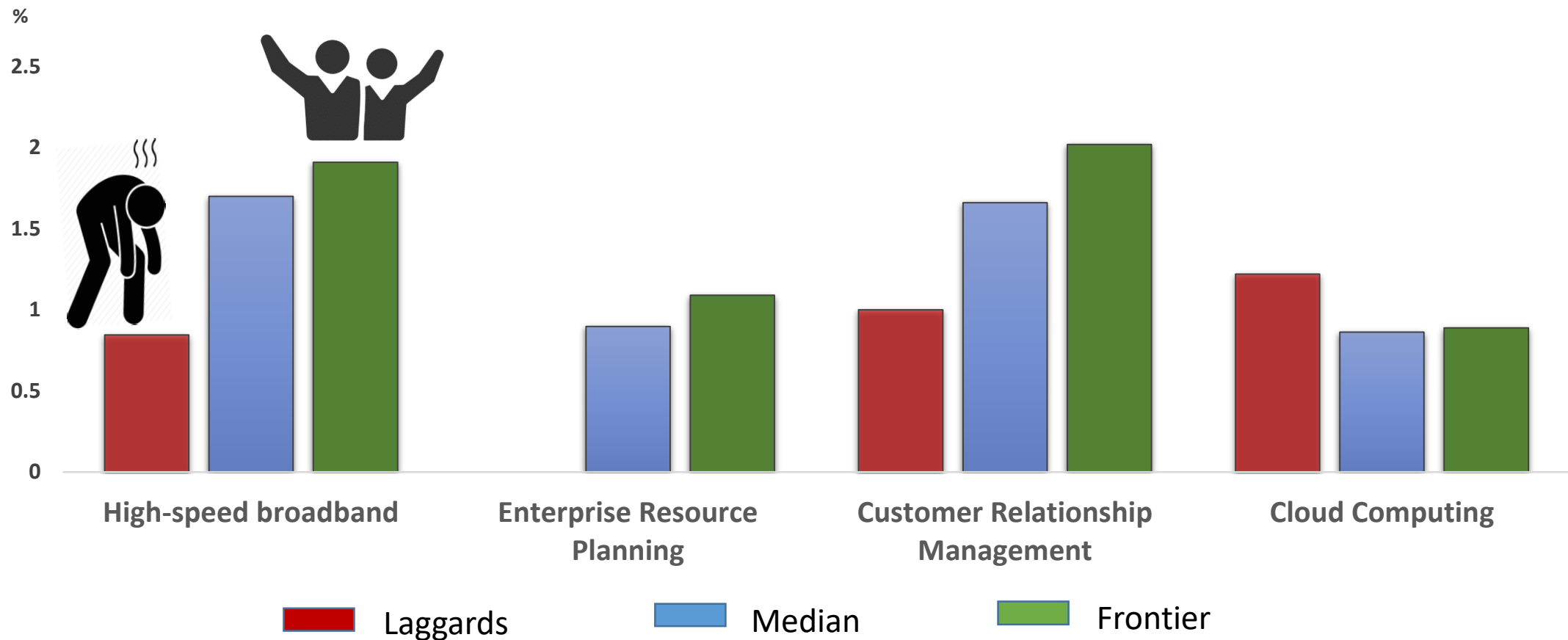
Annual gain in productivity of the average firm in selected service industries associated with online platform development in the hotel, restaurant, taxi and retail sector



Source: Bailin et al. (2019[19]).

# As do general digital technologies, but more productive firms benefit reap greater benefits

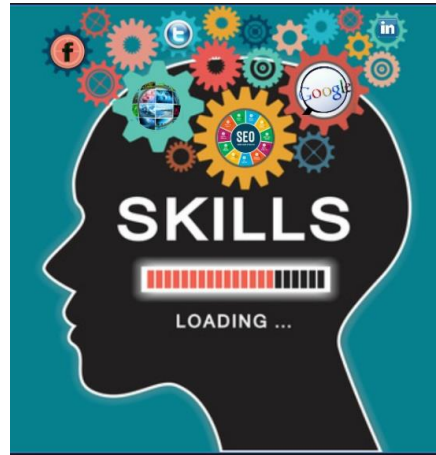
Firm-level increase in productivity from a 10 percentage point increase in digital adoption



**Skills** are crucial in a digitalized economy

**Organisational  
capital**

**Allocation of talent**

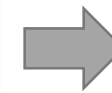
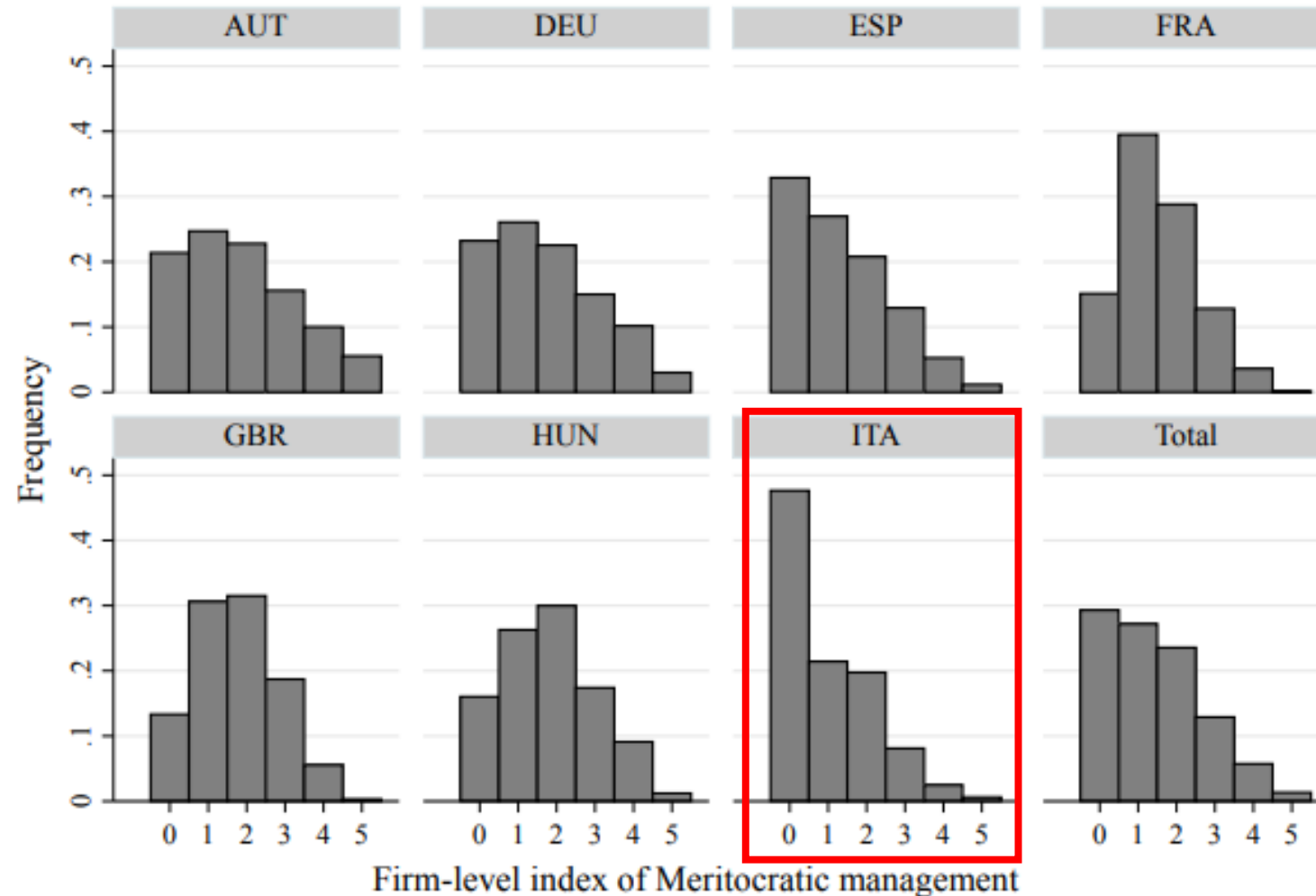


**Skilled labour**

Can “Americans do IT better”?



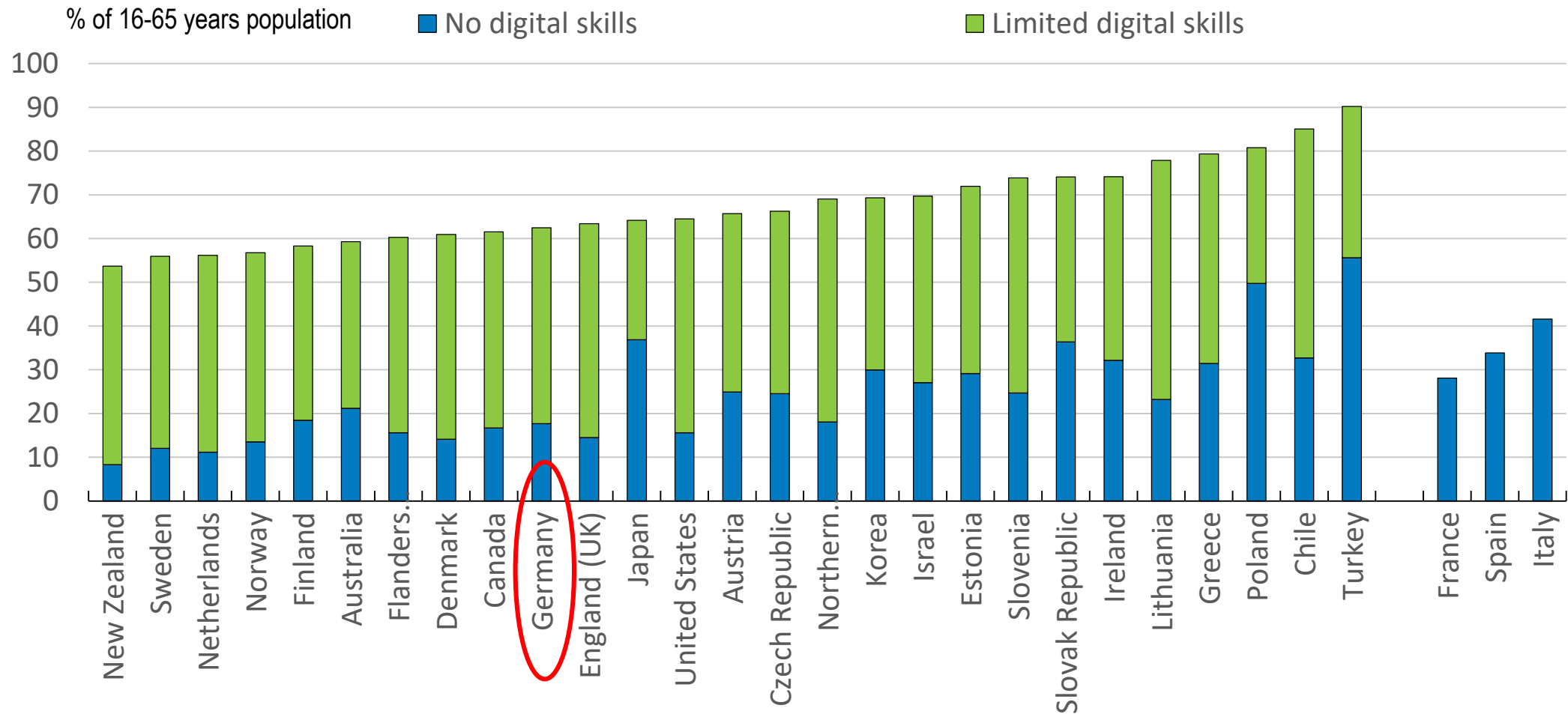
# Meritocracy still prevents the hiring of good managers, especially in Southern Europe



A higher score indicates that merit prevails over loyalty

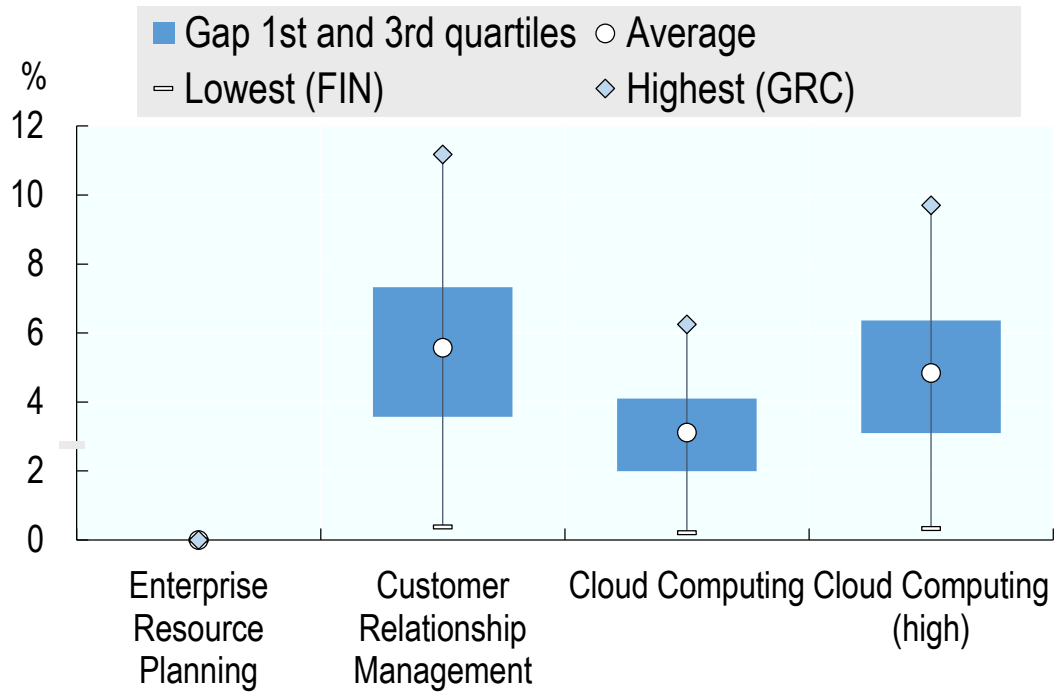
# Many adults lack digital skills in OECD countries

Share of adults lacking digital skills (2015)

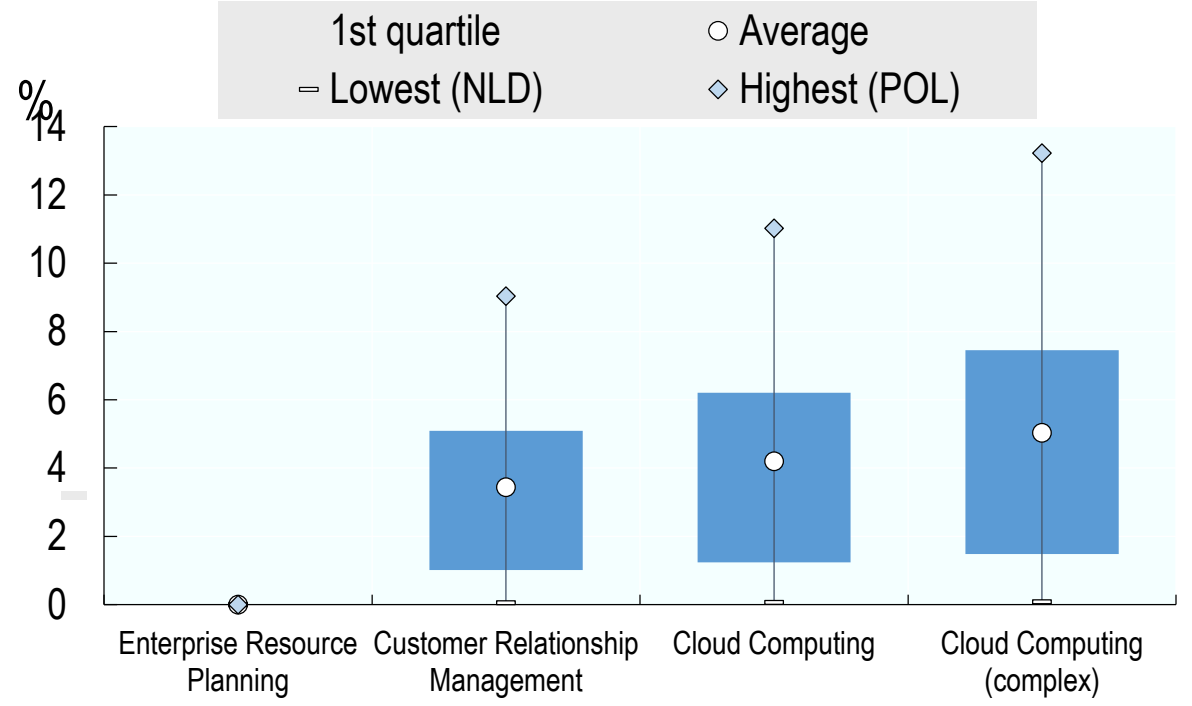


# Effects of boosting skills on digitalisation

I. Increase in digital adoption rate from increasing the share of workers using HPWP to sample maximum (DNK)



II. Increase in digital adoption rate from reducing the share of workers with no ICT skills (SWE)

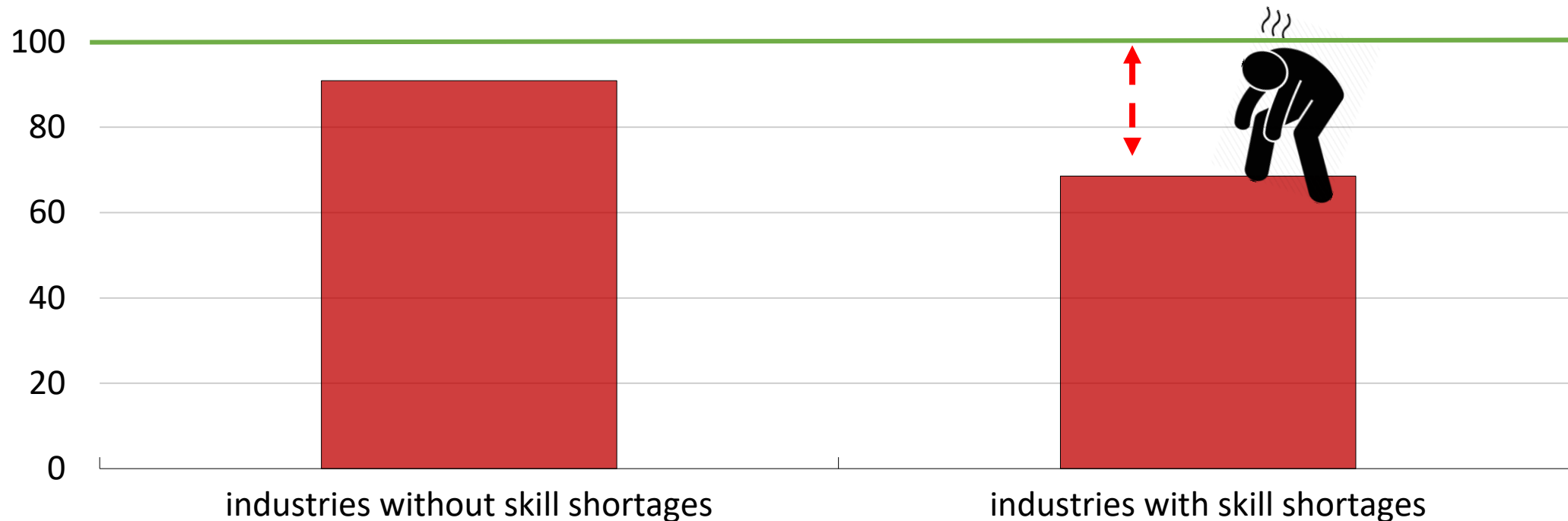


Note: Differential impact between industries with high and low knowledge intensity



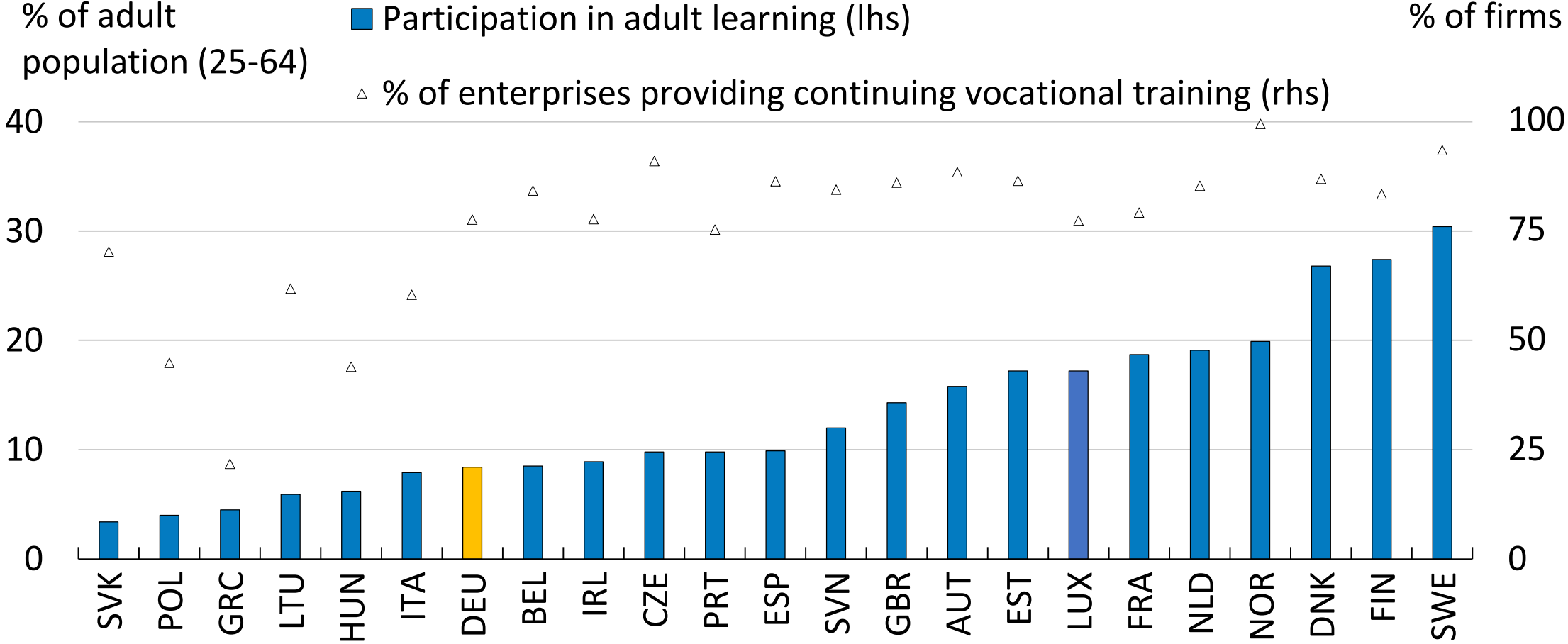
# Skill shortages reduce gains from a mix of all technologies in low productive firms

Productivity gain in most productive firms without shortages = 100

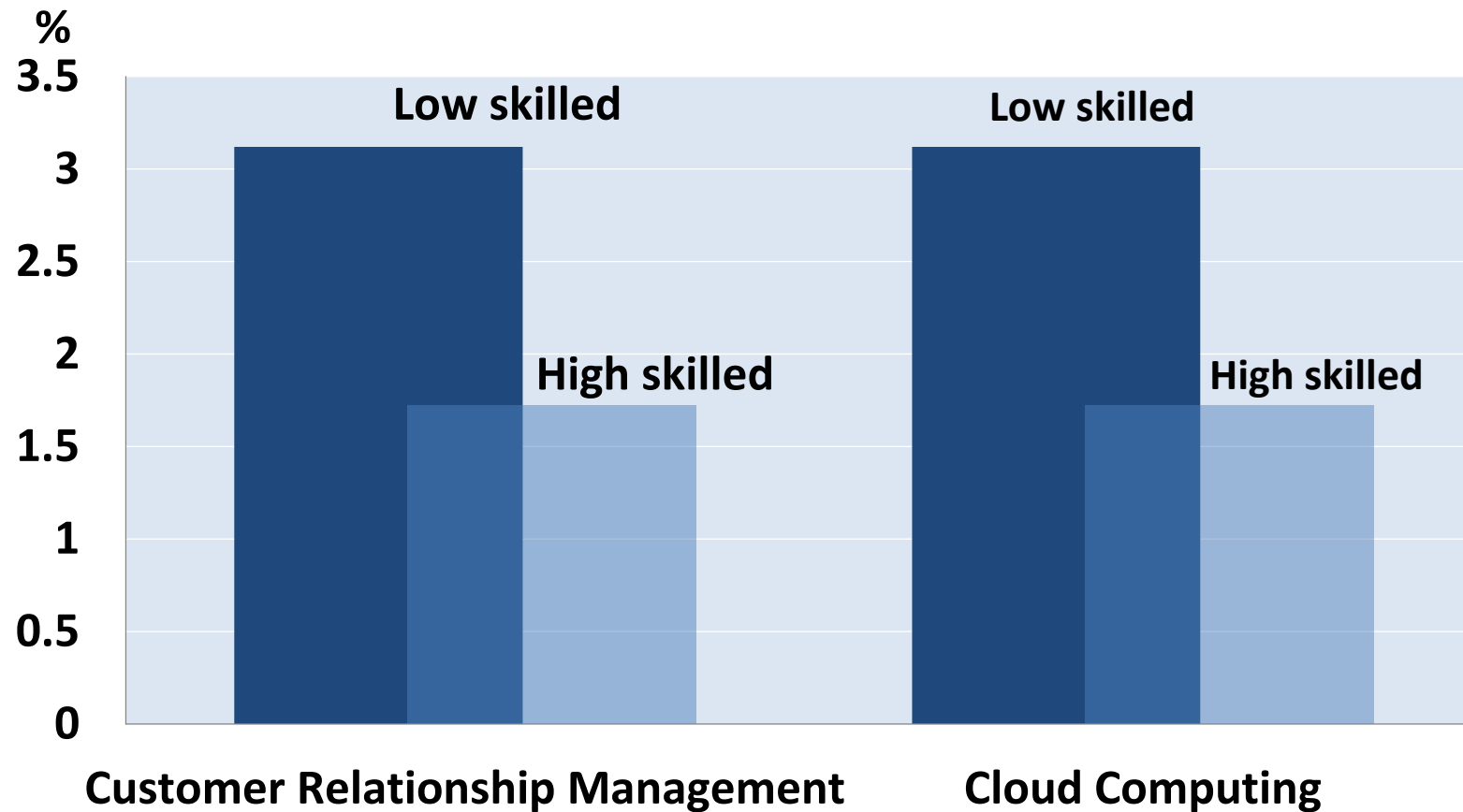




# Do **you** prepare your workforce for the future?



# The marginal effects of training on adoption are greater for low-skilled workers



*Note:* The differential impact of training provided to high and low skilled workers on the percentage of firms adopting CRM and cloud computing systems



**Lifelong learning**



**Adapt school systems**

What can be done about this?



**Involve all stakeholders**



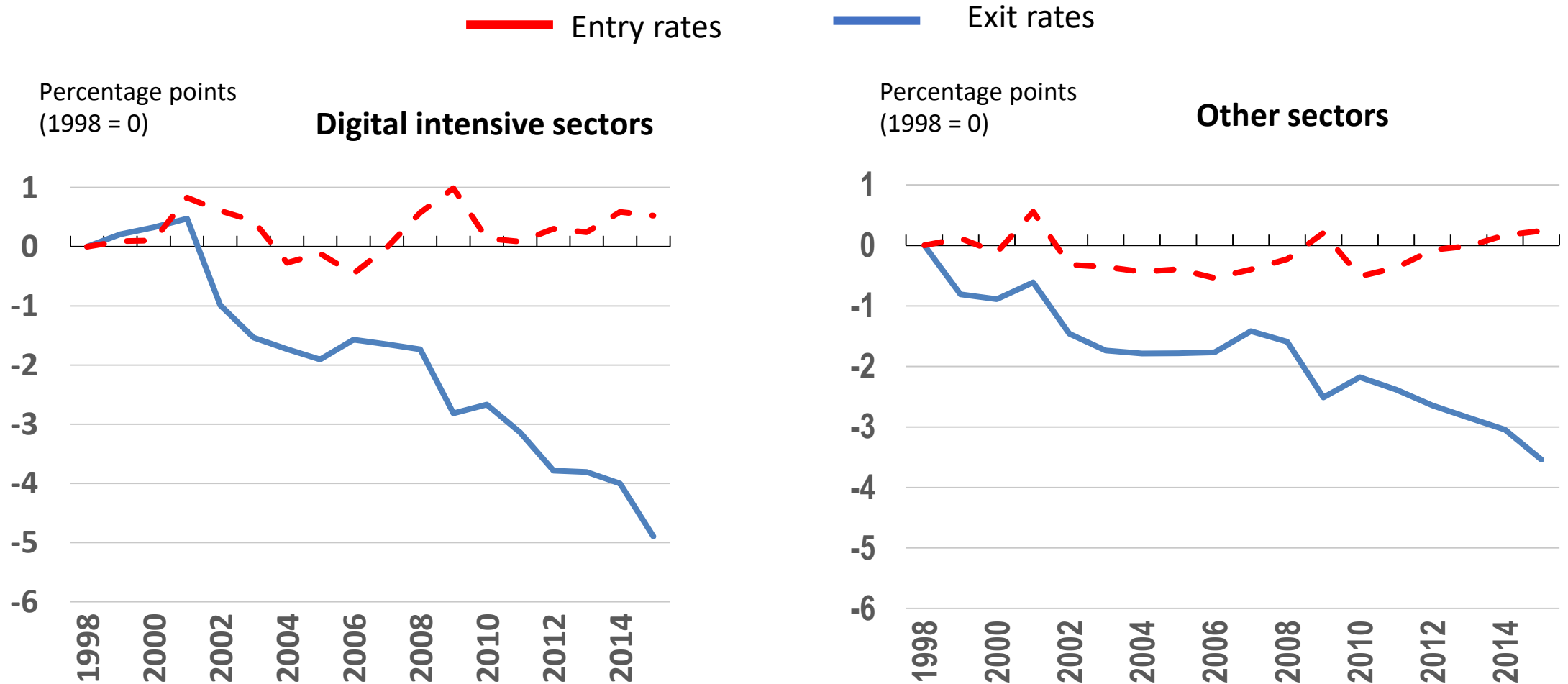
**Raise awareness**



What about regulations?



# The regulatory environment should promote the efficient reallocation of resources





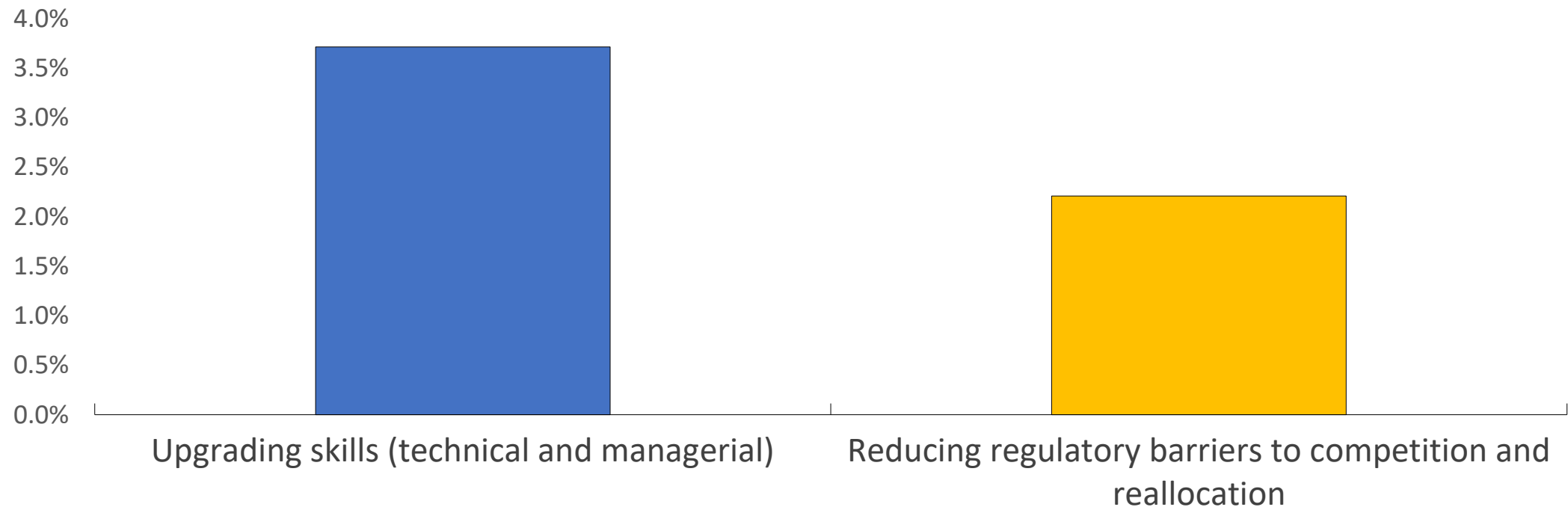
The rise of zombie firms

# Promoting the efficient reallocation of resources in 3 steps

- ✓ Facilitating a smooth exit of the least productive firms
- ✓ Reducing barriers to entry and growth of young firms
- ✓ Enabling fluid movements of labour and capital from declining to growing firms.

# Policy-makers have a range of tools to increase productivity through digital adoption

Effect on firm productivity (through digital adoption) of closing half of the gap with best performing countries in a range of areas. Average OECD country, effect after 3 years





# Digitalisation is a mixed blessing for competition

- Scale without mass
- Low marginal costs
- Strong multi-sided networks

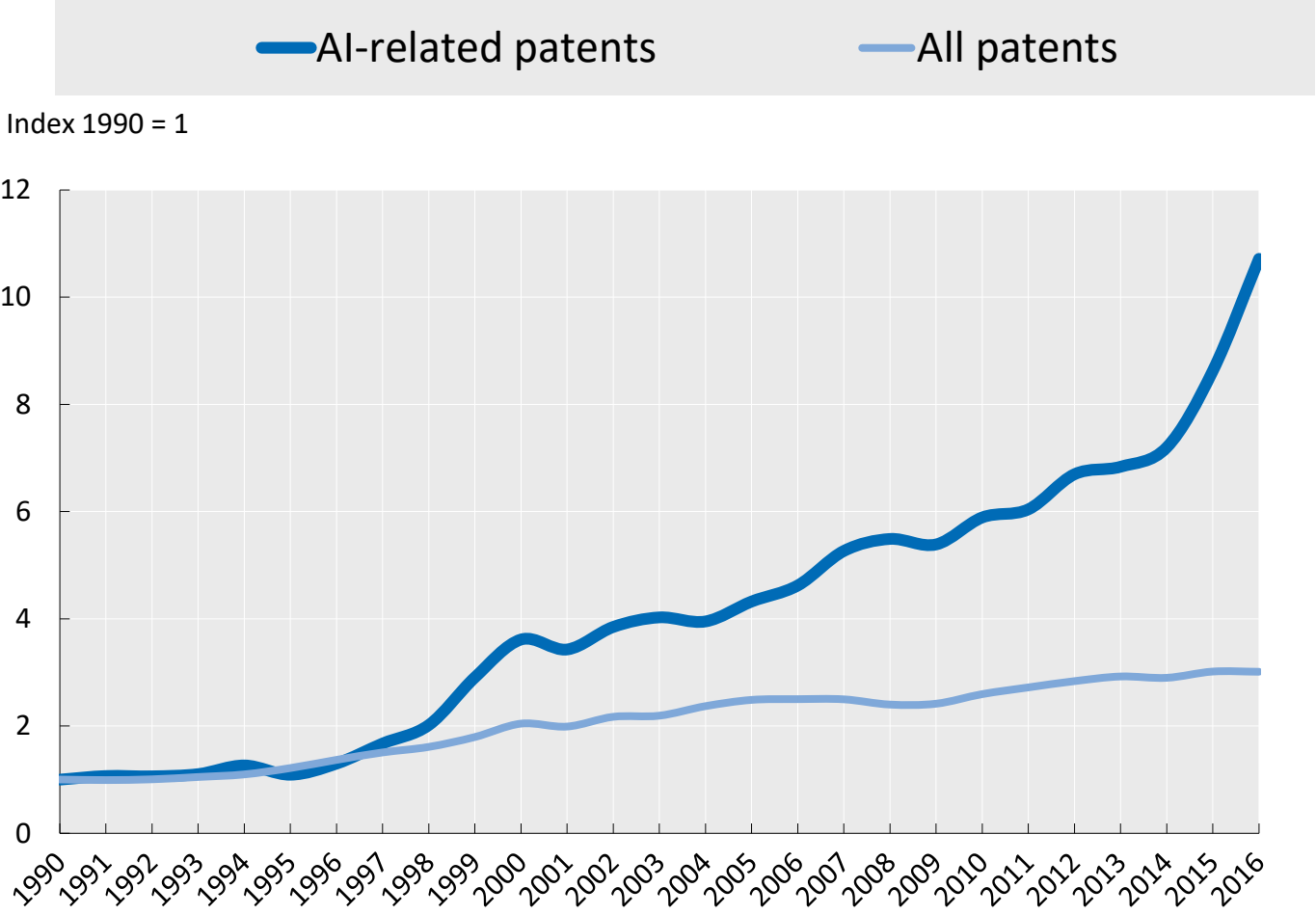


Market power can reflect a legitimate rent for past innovation and even be the sign of healthy competition

**BUT**

if too entrenched – also allow firms to use strategic patenting or buy smaller innovative firms to stifle competition , thus undermining innovation

# And Artificial Intelligence?



# In sum, all hope is not lost!

...but both, **governments and private actors** must take an active role in supporting the adoption of digital technologies and promoting their efficient use

- **Participation in training** – especially of low-skilled workers – and its quality, as well as promoting good cognitive, organisational and managerial **skills**;
- The **efficient reallocation of labour and capital across firms** and industries by reducing administrative burdens on start-ups, facilitating job transitions and improving the efficiency of insolvency regimes



Website:

<http://www.oecd.org/economy/growth/digitalisation-productivity-and-inclusiveness>

Contact:

[Christina.Timiliotis@oecd.org](mailto:Christina.Timiliotis@oecd.org)

Thank you

The screenshot shows the OECD website page for 'Policies to Harness the Productivity Potential of Digital Technologies'. The page features a navigation bar with 'OECD Home', 'About', 'Countries', and 'Topics'. Below the navigation, there is a breadcrumb trail: 'OECD Home > Economy > Productivity and long term growth > Policies to Harness the Productivity Potential of Digital Technologies'. The main heading is 'Policies to Harness the Productivity Potential of Digital Technologies'. On the left, a text box states: 'In addition to stimulating productivity, some of these policies can support inclusiveness to the extent that they help lagging firms to catch up, displaced workers to find other jobs and support wage growth.' On the right, a bar chart titled 'A range of policies can support digital adoption and productivity' shows the 'Effect of structural and policy factors on digital adoption'. The chart displays the 'Effect on firm productivity (through digital adoption) of closing half of the gap with best performing countries in a range of areas. Average OECD country, effect after 3 years'. The Y-axis is 'Effect on MP/P after 3 years' ranging from 0.0% to 4.0%. The X-axis categories and their approximate values are: Higher rates of broadband (3.5%), Upgrading skills (3.5%), Technical and managerial (3.0%), Reducing regulatory barriers to entry (2.0%), Easier financing (1.5%), Reducing barriers to competition and innovation (1.0%), Higher rates of R&D (0.5%), and Higher rates of government (0.5%). Below the chart is a series of navigation dots. Underneath the chart, there are two links: 'Digital Dividend: Policies to Harness the Productivity Potential of Digital Technologies, Main Paper' and 'Are digital technologies the new Holy Grail? Blog Post'.

