

Digital adoption in Europe and the United States

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1. Introduction

- Digitalisation is nothing new, but recent technological developments are.
- The global innovation landscape is changing rapidly due to the growing importance of digitalisation.
- The fact that firms that have implemented digital technologies tend to perform better than non-digital firms has led to discussions around digitalisation's true impact.
- Digitalisation is also associated with a decline in labour shares and rising inequalities.
- The perception is that the EU is lagging the US when it comes to digitalisation.

2. EIB Investment Survey

- 12 500 firms in the 28 EU member states + 800 US firms, annual frequency
- Survey of non-financial corporate sector (firms with 5+ employees)
 - Covering manufacturing, services, construction and infrastructure sector.
- Qualitative and quantitative information on:
 - firm characteristics and performance;
 - past investment activities and future plans;
 - sources of finance; and
 - challenges that businesses face.
- In 2019: Question on digitalisation
 - Manufacturing: Advanced robotics, 3D-printing, IoT + Cognitive technologies.
 - Services: Augmented or virtual reality, Platform technologies, IoT, Cognitive technologies.
 - Construction: 3-D printing, Drones, Augmented or virtual reality, IoT.
 - Infrastructure: 3-D printing, Platform technologies, IoT, Cognitive technologies.

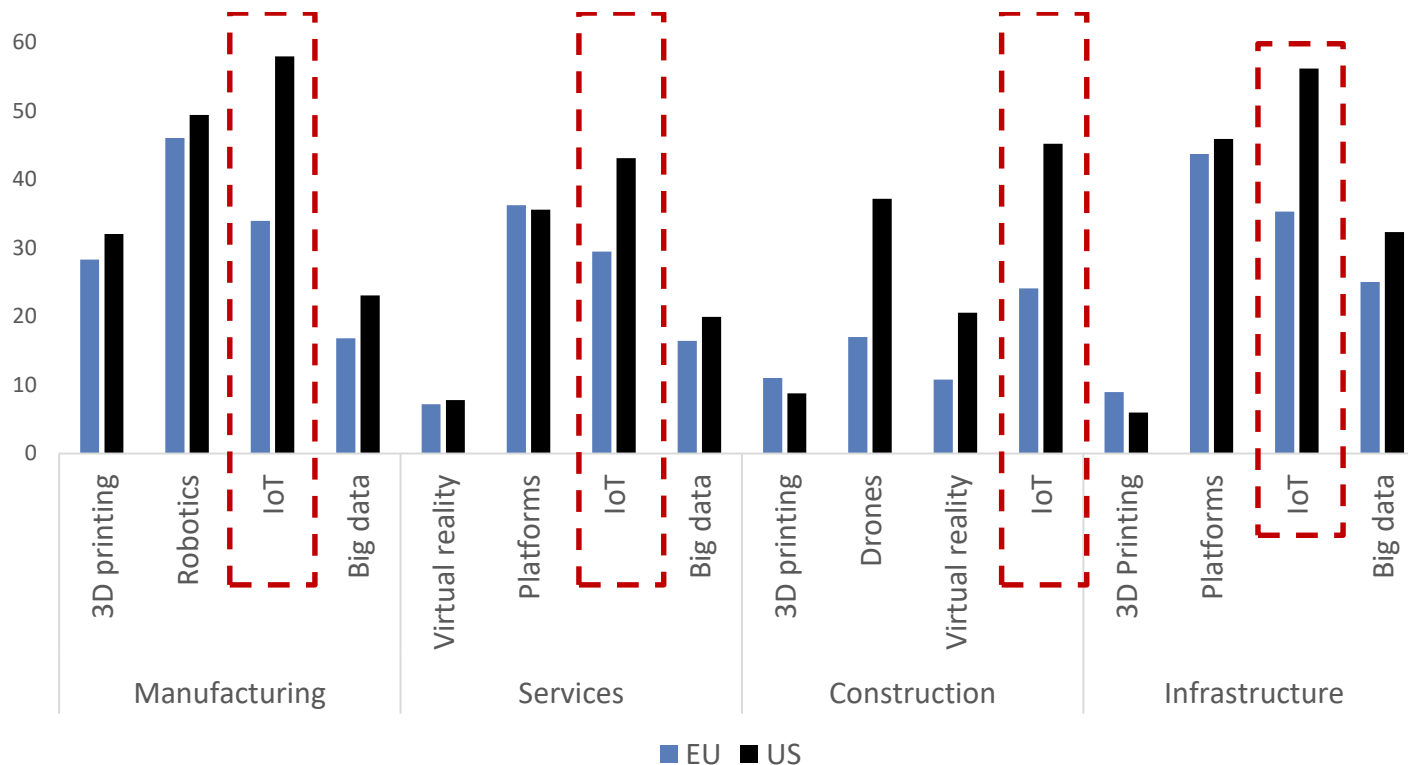


Available at:

<https://www.eib.org/en/publications/investment-report-2019.htm>

3. Where does the EU stand in comparison to the US?

Adoption rates by types of technologies (in%), EU vs US



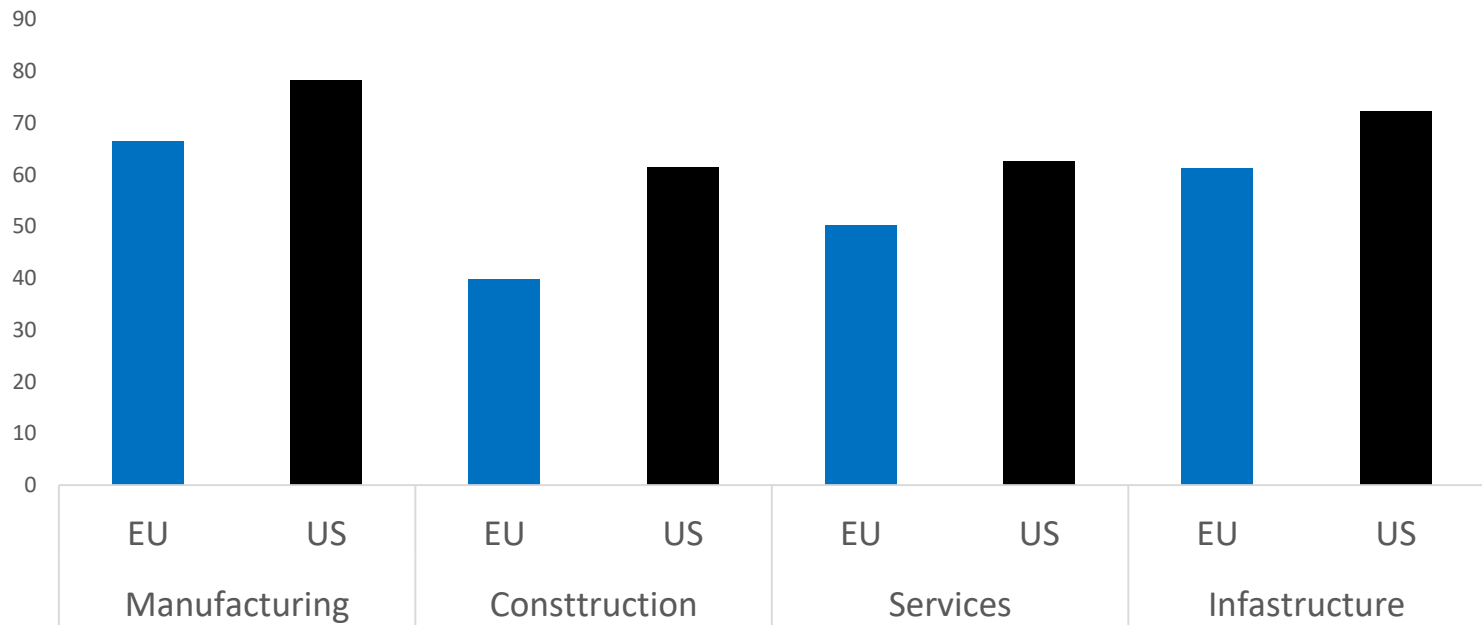
Note: The figure shows the share of firms that have implemented (or organised their entire business around) each technology. Firms are weighted using value added.

Source: EIBIS 2019.

EU firms less digital for all sectors

- Digital adoption rates in the EU are lower than in the US.
- The difference is particularly large in the construction sector.

Share of firms that adopted at least one digital technology (in%), by sector



Note: A firm is identified as digital if at least one digital technology was implemented in parts of the business or if the entire business is organised around at least one digital technology. Firms are weighted using value added.

Source: EIBIS 2019.

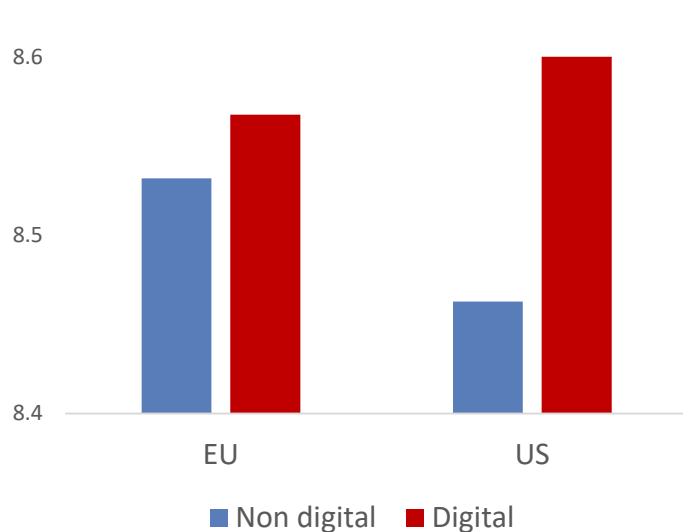
4. Why digitalisation matters?

Digitalisation & firm performance are linked

➤ Digital firms tend to be more productive

8.7

Total factor productivity, by digital intensity

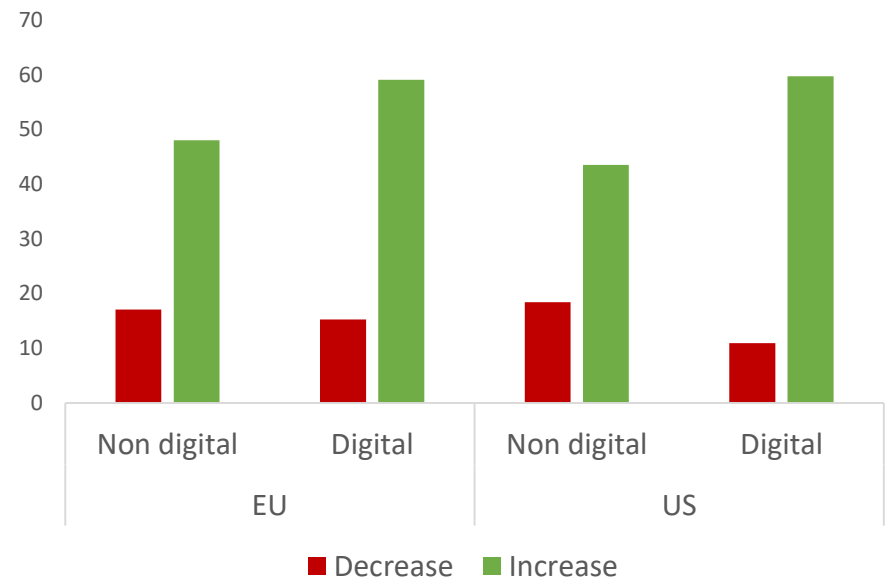


Note: total factor productivity is based on sector by sector ordinary least squares (OLS) regressions of value added on number of hours worked and firms' total fixed assets plus country fixed effects. Distribution plots are weighted.

Source: EIBIS 2019.

➤ Digital firms are more likely to grow

Employment growth over the past three years (in%)



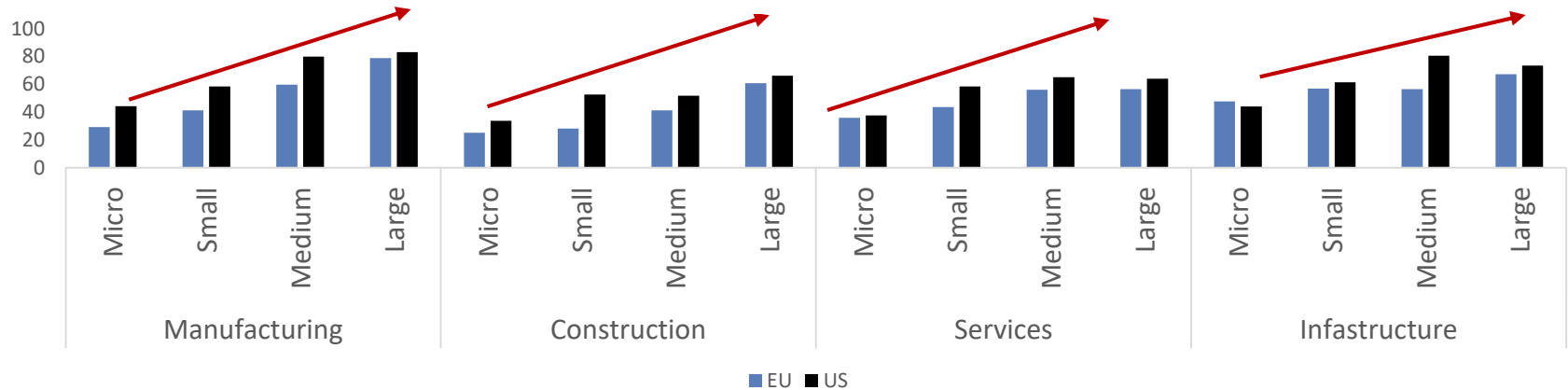
Note: Share of firms with negative, stable and positive employment growth over the past three years. Firms are weighted with value added.

Source: EIBIS 2019.

5. Where are the barriers?

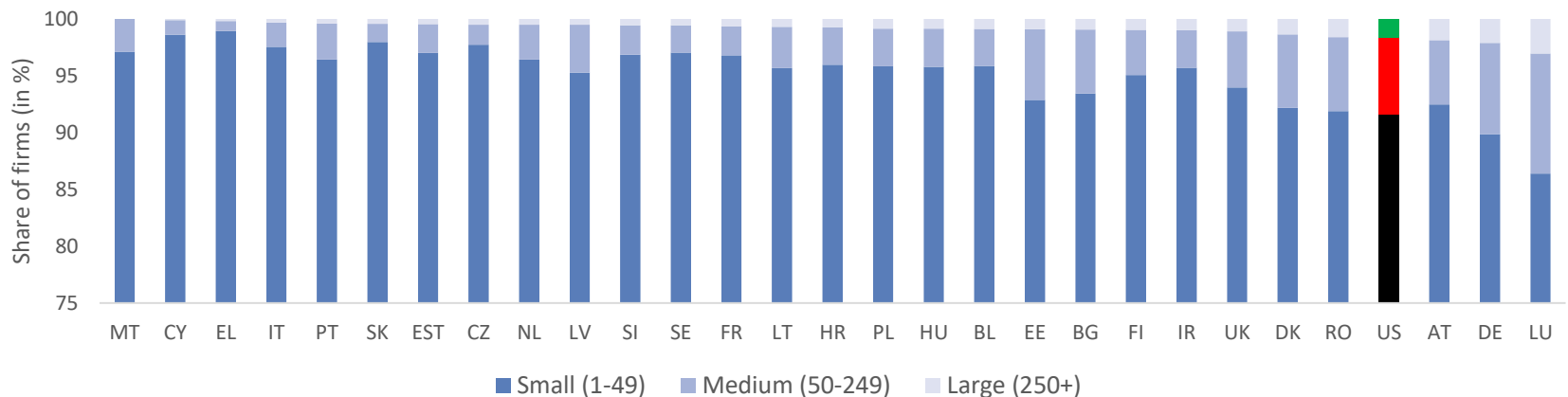
Structural barrier: firm size

➤ Digital adoption (in%), by firm size



Note: The figure shows the share of firms that have implemented (or organised their entire business around) at least one digital technology. Firms are weighted using value added. Source: EIBIS 2019.

➤ European firms tend to be smaller

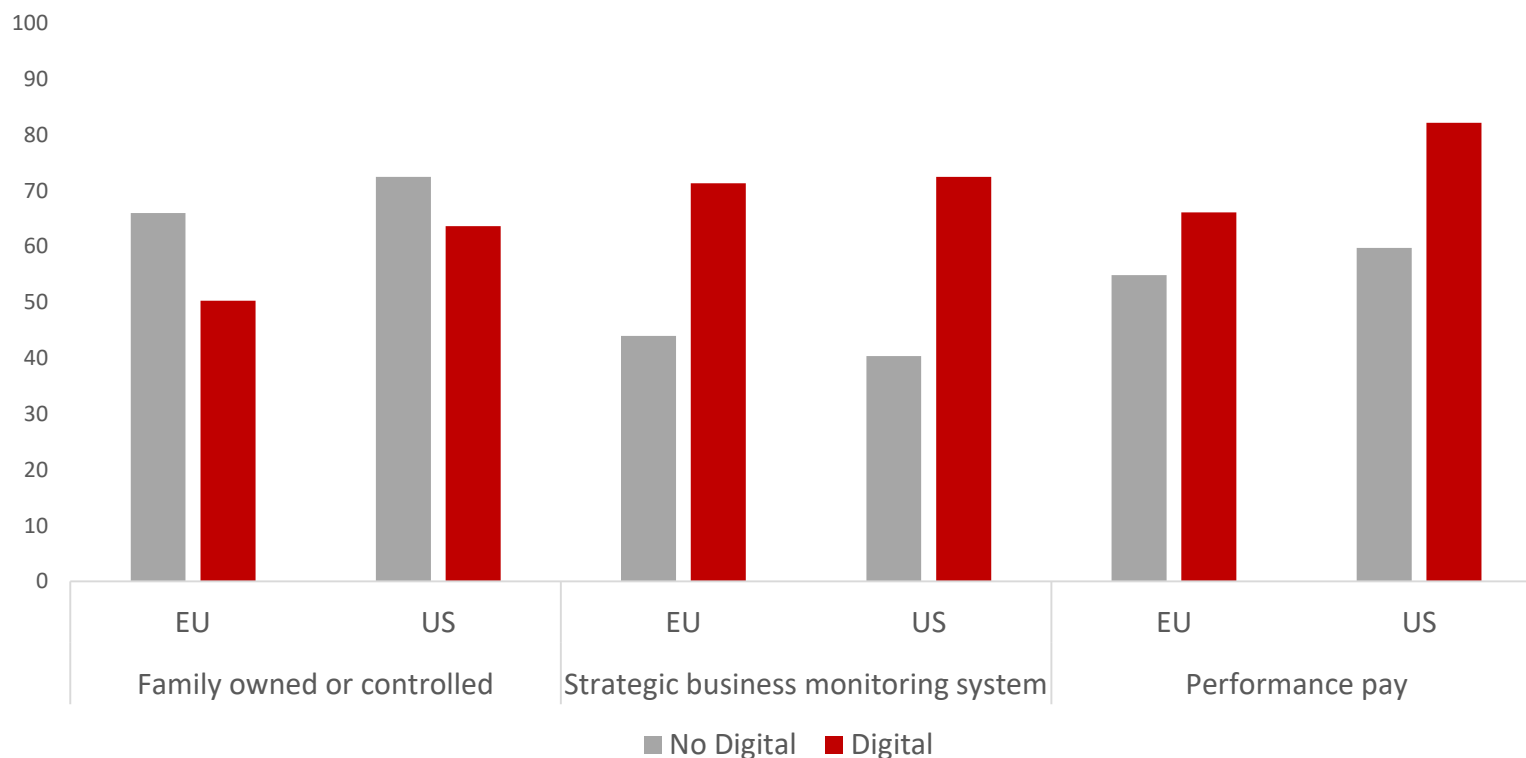


Source: OECD (2018); Enterprises by business size (indicator).

Managerial skills as barrier to digitalisation

- Digital firms tend to have better management practices

Management practices (in%), by digital intensity

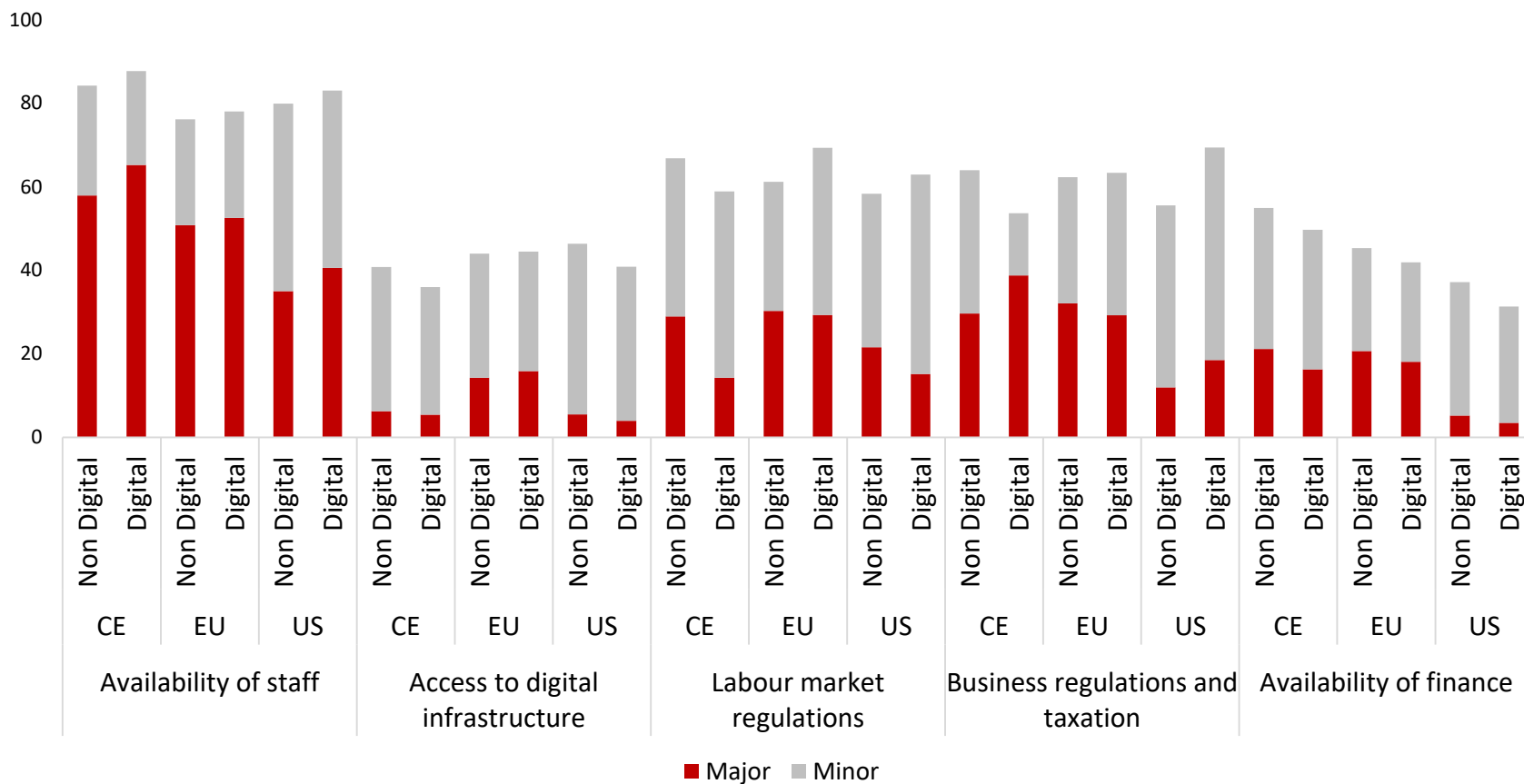


Note: The figure shows the share of firms that have implemented (or organised their entire business around) at least one digital technology. Firms are weighted using value added.

Source: EIBIS 2019.

Availability of skilled staff is major barrier

Obstacles to investment (in %), by digital intensity

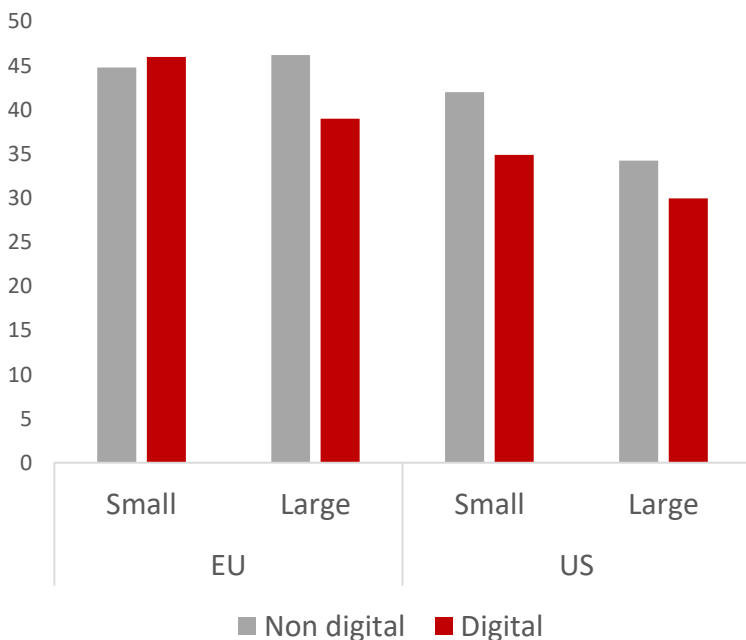


Note: Share of firms that report the issue as a major or minor obstacle to investment. The figure shows the share of firms that have implemented (or organised their entire business around) at least one digital technology. Firms are weighted using value added.

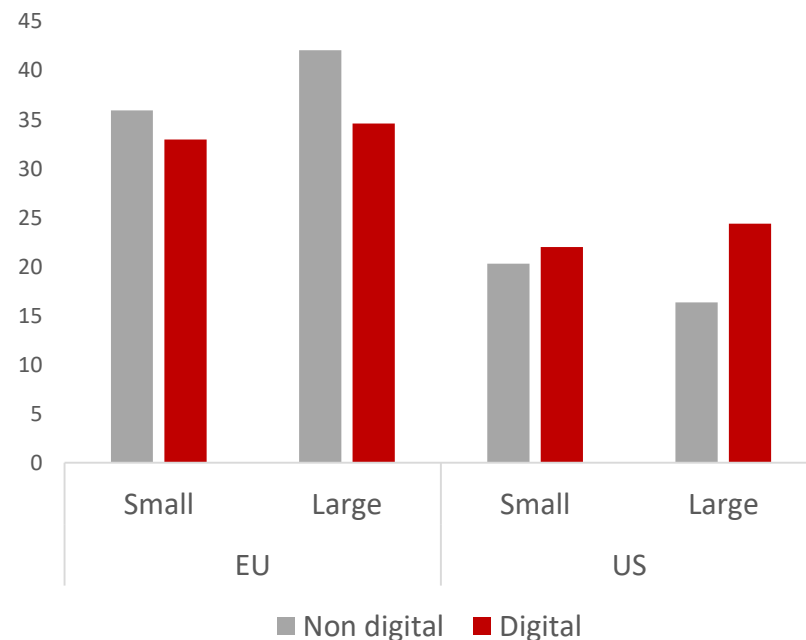
Source: EIBIS 2019

- Access to growth capital may be one reason why small digital firms in the EU tend to rely less on external finance than non-digital firms.

Share of firms reporting availability of finance as an obstacle to investment (in %)



Share of external finance to finance investment (in %)



Source: The figure shows the share of firms that have implemented (or organised their entire business around) at least one digital technology. Firms are weighted using value added. Source: EIBIS 2019.

6. Conclusion

Cannot “miss out” on digital transformation:

- Digital firms have higher productivity.
- Digital firms invest more and are more active innovators.
- Strong “winner takes all” tendencies mean disproportionate advantage of early adopters.
- Overall, also positive effect on employment.

Policy makers need to pay equal attention to measures:

- aimed at facilitating the adoption of digital technologies, including measures to overcome market-fragmentation, access to finance problems and the labour shortages among “high skilled” staff;
- that can help managing potential downside risks of further digitalisation.

Risks that need to be managed:

- Labour market polarisation where former mid-level wage jobs disappear or lose in value.
- Negative effect of digitalisation on competition for fully digital high-productivity firms.
- Cybersecurity