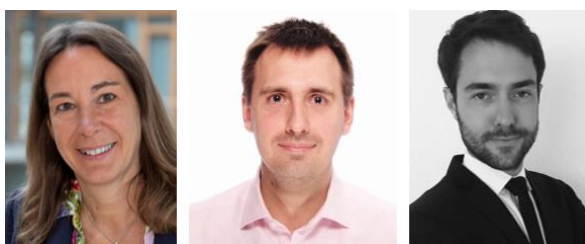


Europe's position in the global AI landscape



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Abstract

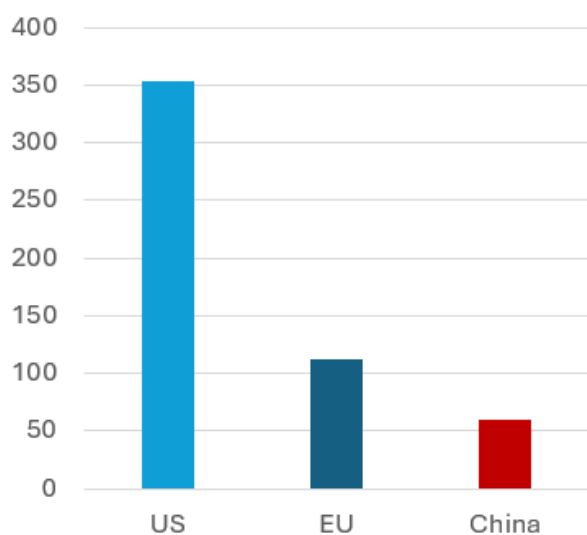
The global race for leadership in digital technologies and artificial intelligence (AI) is reshaping economic competitiveness. US tech companies lead in areas such as cloud computing, AI and digital platforms, while China has developed its own digital ecosystems. The European Union has been catching up by investing heavily in digital infrastructure, but it remains reliant on imported technologies, including software developed by US companies. Nonetheless, with its strong industrial base and growing share of digital adopters, Europe is well positioned to capture substantial productivity gains from technology diffusion. Drawing on the findings from the recent EIB Investment Report 2025/2026, this policy brief provides an overview of the global digital landscape and sets out guidelines for maximising the EU's productivity dividend from AI while strengthening its digital sovereignty.

Disclaimer: This policy brief is based on the [EIB investment report 2025/2026](#). The views expressed are those of the authors and not necessarily those of the institutions the authors are affiliated with.

Investment in ICT is transforming global economy

More than €350 billion were invested in software in the US in 2024, compared to €110 billion in the EU and €60 billion in China (Figure 1a). Germany is ranked third among individual countries, with approximately €20 billion invested in 2024. The boom in ICT strongly contributed to the GDP growth in the United States in 2025, reflecting strong demand for investment in data centres, cloud computing and AI (EIB, 2026). Global stock markets have also become more dependent on the performance of the ICT companies. Between 2016 and 2025, the share of the sector in total market capitalisation doubled in both the United States and China, reaching 45% and 22% of the main stock market indices in 2025, respectively (Figure 1b). During the same period, the weight of the ICT sector in the main European stock market indices remained relatively stable, at around 9%.

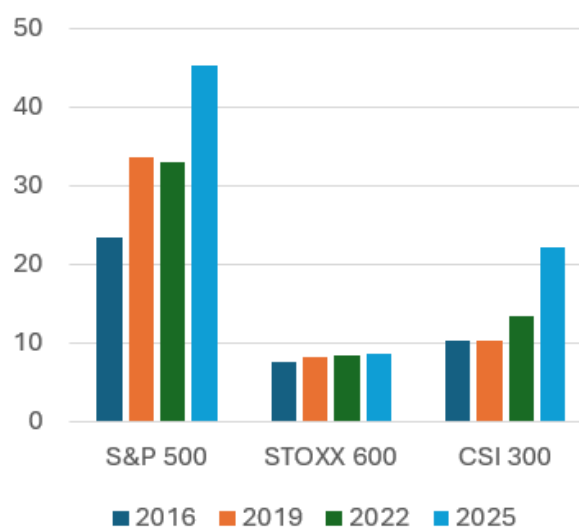
Figure 1a. Investment in software (€ billion), 2024



Source: EIB staff calculations based on the S&P Global Market Intelligence Database and the World Intellectual Property Organization (WIPO) Global Innovation Index.

Note: US dollar values converted into euros based on the exchange rate at the end of 2024.

Figure 1b. ICT sector market capitalisation in the United States, the European Union and China (% of total market capitalisation)

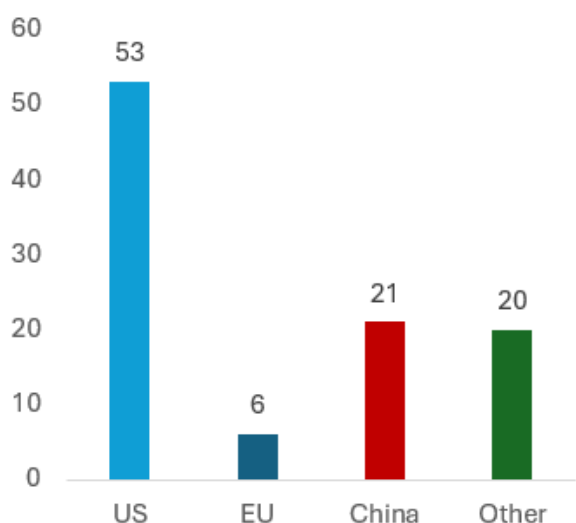


Source: EIB staff calculations based on Bloomberg.

Note: 2025 capitalisation is based on data until 26 November 2025. The ICT sector share is constructed as the total capitalisation of information communication and technology services indices.

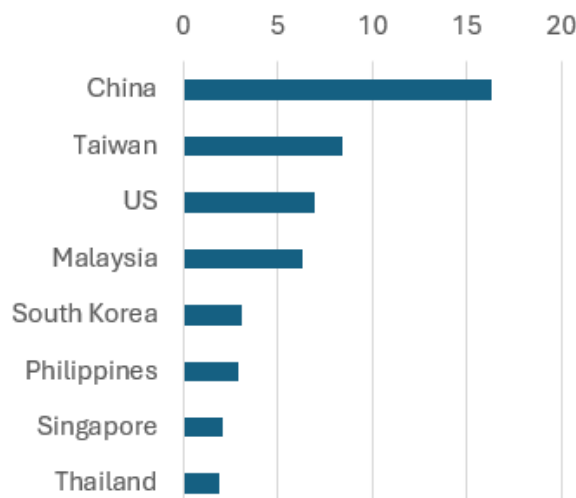
US has become the global digital powerhouse, with limited competition from other countries. For example, the majority of top 100 digital platform companies are located in the US, with only a few domiciled in the EU (Figure 2a). Beyond digital platforms, dependence on US firms may constrain Europe's strategic autonomy in critical software, cloud computing and the development of new large language models (LLMs). At the same time, the hardware underpinning Europe's digital infrastructure is predominantly imported from East Asia (Figure 2b). For the European Union, this creates two key vulnerabilities. First, dependence on US firms may constrain Europe's strategic autonomy in critical software and cloud computing. Second, sudden shifts in US corporate strategy, regulation or geopolitics could expose the EU tech sector to external decisions beyond its control, potentially undermining the European Union's ability to shape its own digital future.

Figure 2a. Location of the top 100 digital platform companies, 2024



Source: EIB staff calculations based on Schmidt and Hosseini (2025).
 Note: The country associated with a digital platform is based on the location of its corporate headquarters.

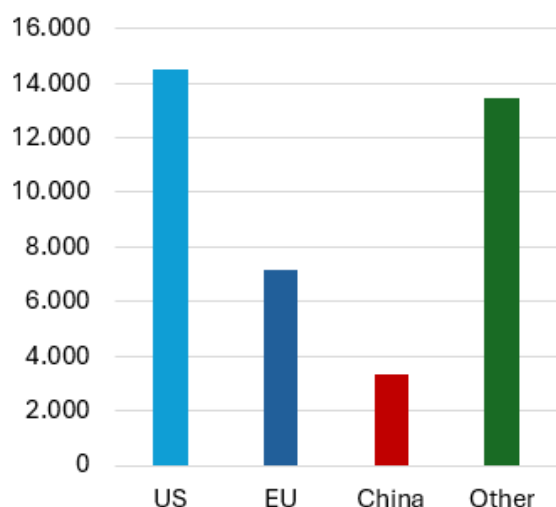
Figure 2b. Origin of computing power hardware imports to the European Union (% of total EU imports), 2020-2023



Source: EIB staff calculations based on BACI. Note: Computing power is an aggregate of data-processing units, electronic integrated circuits, processors, memories, other electronic integrated circuits, parts for data-processing machines and other automatic data machines.

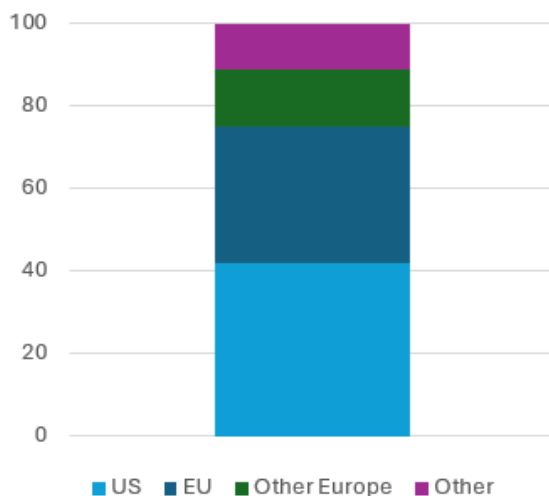
Europe has the potential to expand its digital capacity yet it needs to leverage the power of its single market and accelerate the integration of its capital markets. The EU houses more than 7,000 companies actively participating in the global AI race (Figure 3a). EU startups tend to focus on applied AI solutions, industrial AI, and specialised domains where Europe has comparative advantages, such as manufacturing, healthcare, and regulatory-compliant AI applications. However, financing for early-stage AI innovation in the European Union remains dependent on US venture capital (42% of total VC funding for EU firms over the past decade; Figure 3b). While the EU has a growing AI startup base, bridging the gap from financing private innovation to large-scale, globally competitive firms remains a challenge.

Figure 3a. Location of privately-owned AI companies, third quarter of 2025



Source: EIB staff calculations based on S&P Capital IQ. Note: The sample consists of 38 438 privately-owned companies, classified as AI topic by S&P Capital IQ.

Figure 3b. Venture capital investment in AI and data companies with headquarters in the European Union (% of total venture capital funds)

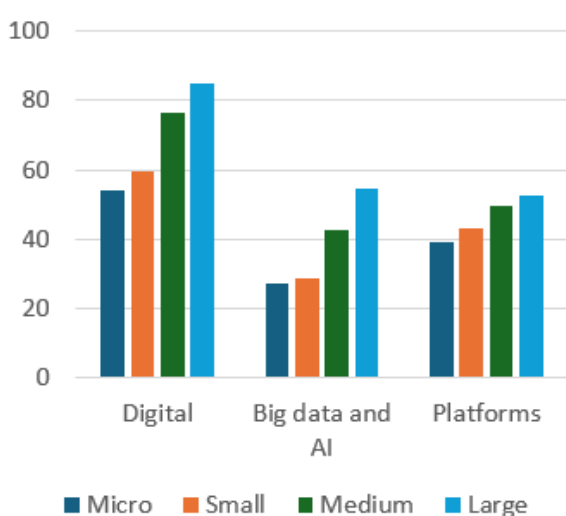


Source: EIB staff calculations based on Pitchbook. Note: Aggregate data over 2014-2024. Other Europe includes Norway, Switzerland and the United Kingdom.

AI as a chance to recharge productivity in the EU

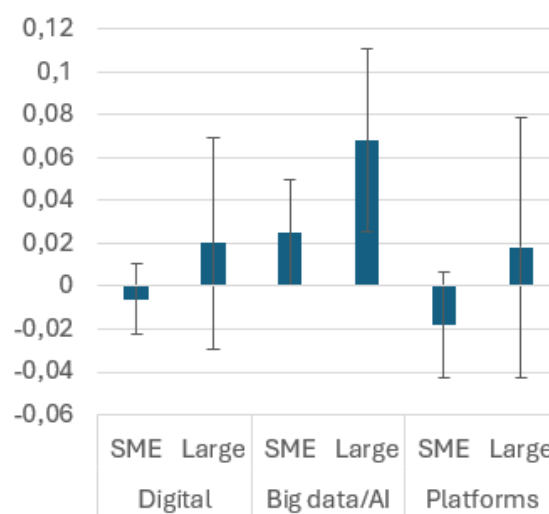
EU firms are accelerating the adoption of digital technologies. For example, 46% of EU firms used big data analytics and AI in 2025, compared to 40% in the US (EIB, 2025). However, adoption rates remain lower among SMEs, which underscores the need for enabling conditions and targeted support for broad-based digital transformation. Around 85% of EU firms with more than 250 employees use digital technologies, compared with about 54% of EU firms with fewer than ten employees (Figure 4a). This gap is likely to slow Europe's digital transformation, as businesses in the region are on average smaller than those in the United States (Revoltella et al., 2020).

Figure 4a. EU firms' use of digital technologies (% of firms), by firm size



Source: EIB staff calculations based on EIBIS 2025.
 Note: Firms are weighted by value added.

Figure 4b. Effects of adopting digital technologies on TFP (log linear approximation, 0.01=1% increase), by company size

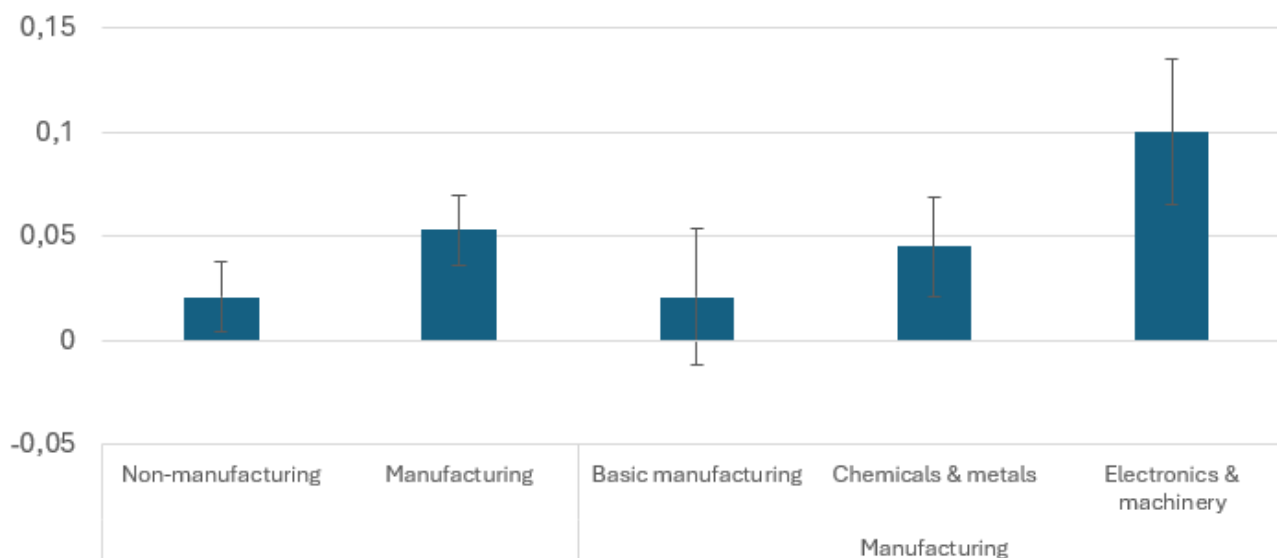


Source: EIB staff calculations based on EIBIS 2019-2025.
 Note: Firm-level panel regression estimates with firm fixed effects based on firms that adopted digital technologies during the period 2019-2025. Error bars show 95% confidence interval based on robust standard errors. Firm-level total factor productivity is calculated as the residual from a Cobb-Douglas production function, using turnover as output, the number of employees as labour input, and total fixed assets as capital input. In Figure 17b, non-manufacturing includes firms in services and infrastructure. The last three bars show three sub-categories of the manufacturing sector.

The adoption of big data analytics and AI is associated with higher productivity levels, unlike other digital technologies (Figure 4b). While larger firms currently capture the bulk of the benefits of AI adoption, SMEs also stand to gain in terms of TFP (Aldaroso et al., 2026). The productivity effects are already visible on the macro scale. Using weighted firm-level panel regressions we estimate that the realised average TFP growth between 2019 and 2025 was 0.34 percentage points higher than the growth rate under the counterfactual scenario of no adoption. This suggests that the rollout of big data and AI accounted for some 12% of aggregate TFP gains between 2019 and 2025.

Although the European Union is not a global leader in AI technology development, its strong industrial base means that the potential benefits of adopting and adapting AI to business needs are substantial. EU firms – particularly in manufacturing (Figure 5) – can use AI to optimise processes, improve quality control, reduce downtime and strengthen supply chain management. Productivity gains from big data and AI adoption are greater in high-tech manufacturing, where digital transformation complements capital-intensive production and structured operational processes. This demonstrates that Europe's industrial environment and technological capabilities enable EU companies to capture the productivity benefits of AI and reinforce their position in global value chains, even without leading in cutting-edge AI research.

Figure 5. Total factor productivity effects of adopting AI in the manufacturing sector
(log linear approximation, 0.01=1% increase)



Source: EIB staff calculations based on EIBIS 2019-2025. Note: Firm-level panel regression estimates with firm fixed effects based on firms that adopted digital technologies during the period 2019-2025. Error bars show 95% confidence interval based on robust standard errors. Firm-level total factor productivity is calculated as the residual from a Cobb-Douglas production function, using turnover as output, the number of employees as labour input, and total fixed assets as capital input. In Figure 17b, non-manufacturing includes firms in services and infrastructure. The last three bars show three sub-categories of the manufacturing sector.

A pan-European approach is the only path forward

The new digital and AI era presents opportunities and challenges for Europe. As innovation accelerates, the EU continues to invest to remain a global player, while leveraging its scale and market opportunities to build resilience against external dependencies. A long-term strategy should combine effective regulation measures to strengthen research and innovation. Priorities include boosting public and private R&D investment, fostering cooperation between academia, industry and public institutions and creating incentives for high-risk, high-reward innovation. Scaling up cross-border research initiatives – such as Horizon Europe – will accelerate breakthroughs in AI, robotics and digital manufacturing. Cultivating a pipeline of skilled talent through education, training and international cooperation is equally vital to ensure that Europe remains a hub for cutting-edge research and a magnet for global talent.

In the current geopolitical landscape there is a clear advantage of taking up the digitalisation challenge through a pan-European perspective. A unified approach enables Europe to mobilise the scale needed to compete globally in AI and digital technologies. Coordinated investment in frontier compute infrastructure — bringing together HPC, AI accelerators, energy systems, cooling and secure data environments — allows Member States to share fixed costs, improve utilisation and lower unit costs for both training and inference. Likewise, EU-wide data spaces transform fragmented national datasets into a strategic collective asset, providing the breadth and diversity essential for training next-generation AI models while ensuring adherence to European governance standards. By pooling resources, demand and regulatory frameworks, the EU can act as a genuine force multiplier, accelerating innovation and reinforcing its competitive position relative to the United States and China.

A pan-European approach is also indispensable for strengthening digital security and fostering a resilient innovation ecosystem. Cyber threats and digital vulnerabilities are inherently cross-border, and Europe's interconnected economies mean that weaknesses in one Member State can quickly propagate across the European Union. Common cybersecurity frameworks and integrated capabilities help reduce systemic risk, protect critical infrastructure and bolster Europe's strategic autonomy by supporting the emergence of trusted EU-based solutions. At the same time,

EU-level venture capital instruments ensure that funding is channelled efficiently into priority areas such as AI and deep tech, avoiding fragmentation and enabling firms to scale across borders. By aggregating resources, these instruments expand the availability of risk capital, attract private investment and support innovative companies throughout their growth cycle—addressing Europe's historical under-financing of high-potential technology firms.

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Debora Revoltella is Director of the Economics Department of the European Investment Bank, serving as Chief Economist. Since her arrival in 2011, Debora has designed and led the work for flagship publications such as the EIB Investment Report. She launched the idea and led the process for the design and implementation of the EIB Investment Survey, a survey covering 12,500 European firms which has become a unique asset in understanding investment dynamics in Europe. Debora holds a degree in Economics, a Master in Economics from Bocconi University and a PhD in Economics from the University of Ancona, Italy. She is member of the Steering Committees of the Vienna Initiative and the CompNet, an alternate member of the Board of the Joint Vienna Institute and a member of the Boards of the SUERF and the Euro 50 Group.

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