# Denmark and the EU in the global tech race – strengths, opportunities, and threats

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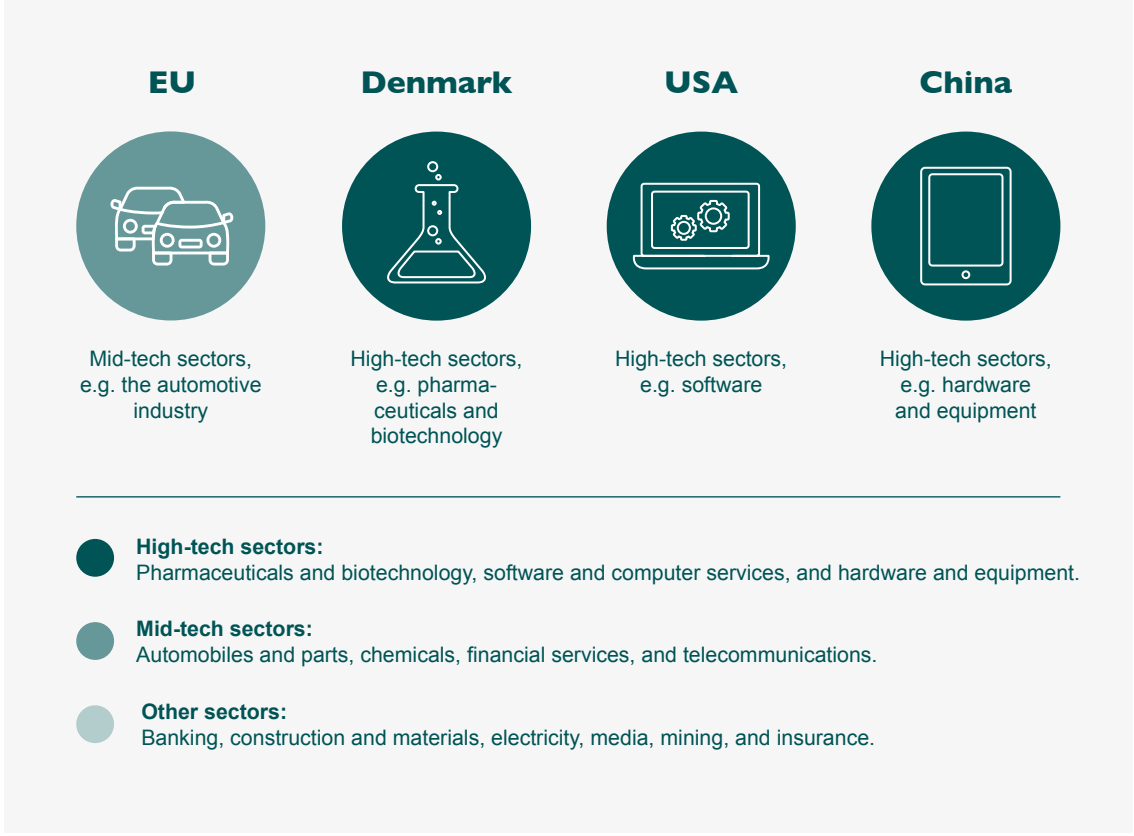
**While Denmark is keeping up, the EU is lagging behind in the global tech race**
In a world marked by geopolitical tensions, fierce international competition, rising tariffs, and new trade barriers, the race to develop and produce the technologies of tomorrow has intensified.

Technology is not merely a driver of economic growth; it is a strategic resource. New technologies such as artificial intelligence (AI), quantum technology, and advanced microchips drive innovation and productivity, but they also bring vulnerabilities and new threats.

While the EU as a whole struggles to keep up with the substantial high-tech investments seen in the US and China, a new analysis from the Ministry of Industry, Business and Financial Affairs shows that Denmark is keeping pace. 78 per cent of Danish investments in research and development (R&D) are made in high-tech sectors, particularly by companies in the pharmaceutical and biotechnology industries, as illustrated in figures 1 and 2. This level of investment is nearly comparable to the US and is the driving force behind Denmark's strong position in the technology competition.

**Figure 1: Denmark primarily invests in high-tech sectors, while the EU allocates funds to medium-tech (mid-tech) industries, 2023**



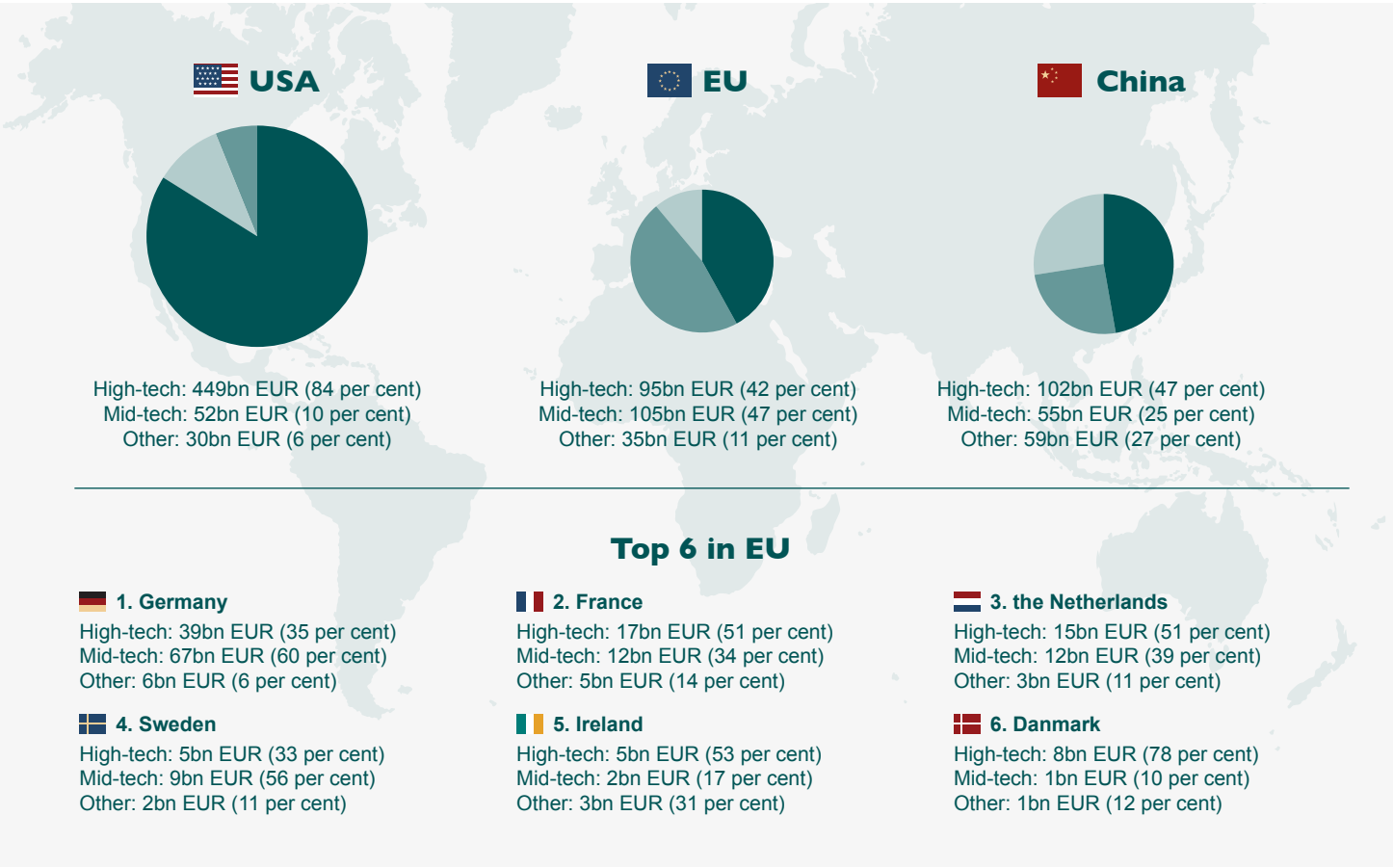

Note: The figure displays sectors with the highest R&D investments across different countries. The examples of sectors categorized by technology level are not exhaustive.

*Source: EU Industrial R&D Investment Scoreboard 2024.*

The EU has traditionally excelled in mid-tech industries – such as the automotive sector – whereas the US has a significant lead and is increasingly investing in new and high-tech technologies with substantial growth potential.

After lagging considerably behind in the early 2000s, China has over the past decade caught up and, in certain areas, even surpassed the EU and USA, particularly in R&D and commercialization of new high-tech.

**Figure 2: The USA and China Invest Significant Sums in High-Tech Sectors, 2023**




Note: See figure 1 for description of the technology categories.

*Source: EU Industrial R&D Investment Scoreboard 2024.*

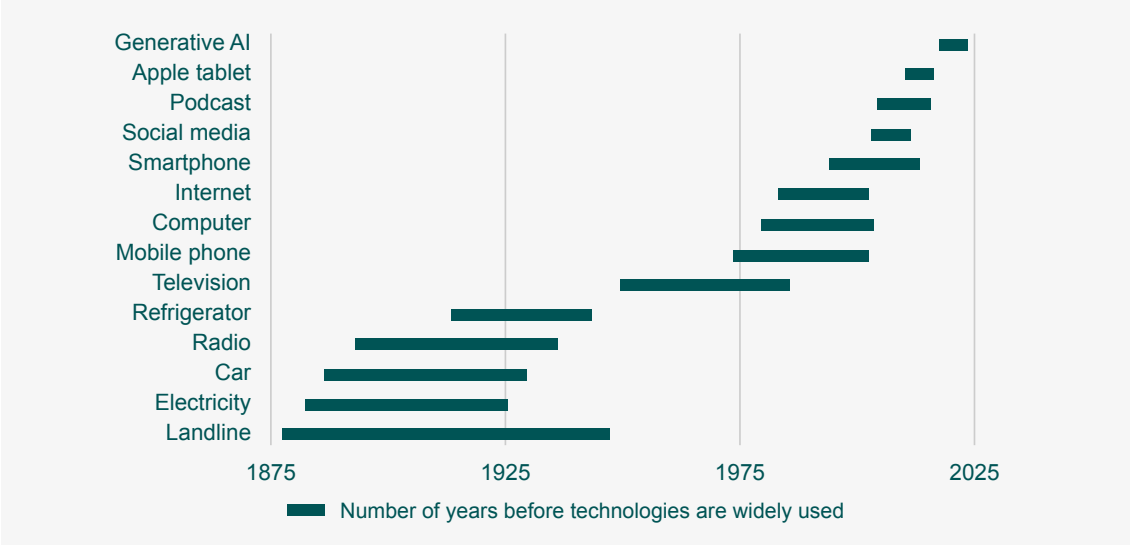
### AI can boost Danish productivity

New technologies are adopted faster than ever before, as shown in figure 3. However, technological advancement alone does not automatically lead to increased productivity. This requires that the technology is widely adopted and utilized in ways that fundamentally change how work is done. Only certain technologies have this transformative potential because they can be applied across various sectors and diverse work processes.

In earlier technological breakthroughs, such as the electric motor or the personal computer, productivity gains were realized only when these technological solutions were broadly implemented in society[1].

Goldman Sachs, 2023: Global Economics Analyst: The Potentially Large Effects of Artificial Intelligence on Economic Growth (Briggs/Kodnani): https://publishing.gs.com/content/research/en/reports/2023/03/27/d64e052b0f6e45d7967bd7be35fabd16

**Figure 3: The pace of technology adoption is speeding up**




Note: Widespread usage is defined as usage in over 50 per cent of American households.

*Source: Widespread usage defined after Our World in Data, Share of United States households using specific technologies, while year of invention is based on different sources.*

AI, particularly generative AI (GenAI), is expected to be among the technologies capable of driving future productivity growth, much like the electric motor and the computer in their time. According to IMF[2], once widely adopted, AI could boost Denmark's productivity by nearly 2 per cent over the next five years. Realizing this potential will require targeted investments, upskilling of the workforce, and new organizational approaches.

**Technological advancements bring new security challenges**

Technology is a catalyst for growth and productivity but also introduces increased vulnerabilities. For instance, since 2019, the number of malicious cyber incidents worldwide has doubled, potentially costing companies millions and, in severe cases, leading to bankruptcy. Advanced dual-use technologies such as AI, drones, and quantum computing can lead to new types of attacks, surveillance, and manipulation, putting the security of companies, governments, and citizens at risk. Additionally, these new technologies rely heavily on critical raw materials, and the complex global supply chains make technology production especially vulnerable to geopolitical tensions.

**Denmark can – if we have the courage to act**

Denmark is well-positioned in the global technology race. However, as competition intensifies, maintaining and expanding our position requires prioritization and willingness to take risks. The EU risks falling behind, and Denmark must take part in setting a strategic course that ensures our technological expertise, relevance, and independence in the future. The Danish government has already initiated several measures:

- ***The AI supercomputer Gefion*** – Developed in collaboration with among others the Novo Nordisk Foundation and NVIDIA, and available to both researchers and businesses.
- ***National Strategy for Quantum Technology*** and the establishment of Quantum Denmark enhancing research, commercialization, and international collaboration.
- ***Increase in R&D Deduction to 120 per cent*** and an allocation of 1.2 billion DKK for research in critical technologies, supporting Denmark's strong research capabilities.

[2] Florian Misch, Ben Park, Carlo Pizzinelli, and Galen Sher. "AI and Productivity in Europe", IMF Working Papers 2025, 067 (2025)