



“Innovation is any change, big or small, that makes a difference.”

Thomas Smith, 18th century Scottish engineer

Innovation and technology are the beating heart of human progress. They can improve well-being, drive prosperity and work for the benefit of future generations. Until the 19th century, an average working week was over 60 hours long, and for much of history, life expectancy was around 30 years. Thanks to the dramatic changes brought about by technology and innovation, most people now have more leisure time and live longer.

The world today is facing challenges that threaten this progress and our way of life. The climate crisis, growing populations, ageing societies and dwindling resources are prompting us to transform the way we live, learn, work and produce. Innovation and technology are crucial to this transformation.

Innovation is also key to economic growth and employment. It has driven about two-thirds of Europe’s economic growth in recent decades. Emerging technologies such as artificial intelligence, quantum computing and advanced manufacturing are already driving global competition and will have a profound impact on the economy and employment. To thrive in this competitive, digitalising and decarbonising world, Europe must stay ahead of new technological developments. It needs a robust and innovation-driven economy and a highly skilled workforce to guarantee its leading global role in building vibrant, sustainable and greener societies.



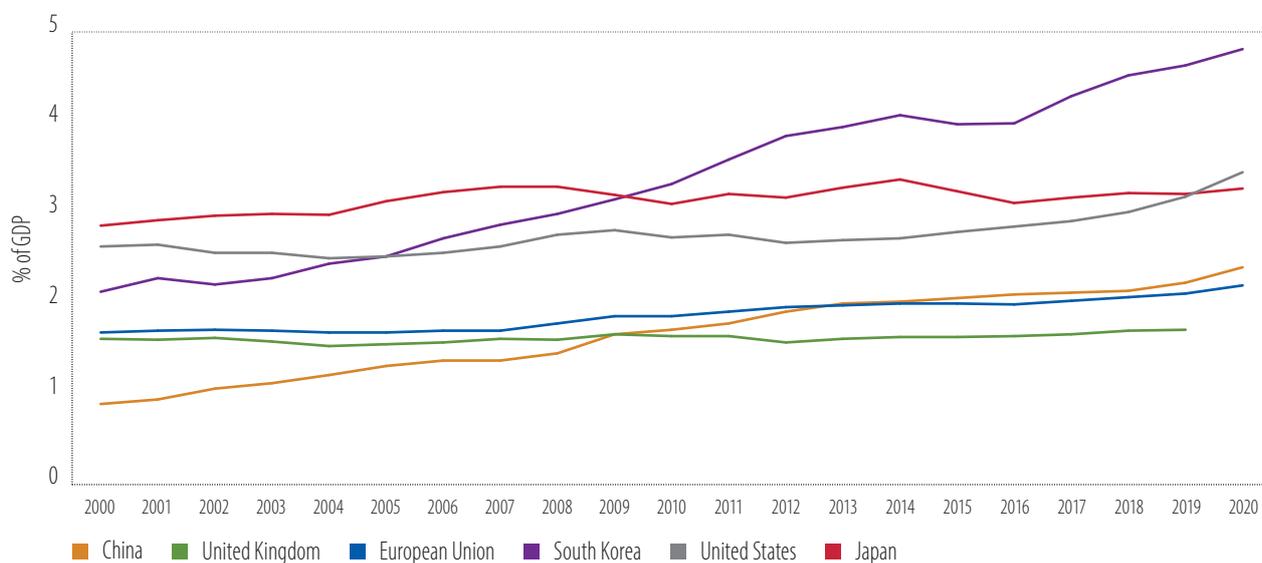
EIB supports cancer research and development at Anocca, a leading European cell therapy company.

INNOVATION IN THE EUROPEAN UNION

Europe is a global research and innovation powerhouse and a leading economy in terms of investment in research and development (R&D) and number of researchers.

Still, the European Union lags behind competitors such as the United States and China in R&D investment levels and has fewer new companies that are considered world leaders. And although Europe has increased its R&D investments over the past two decades, it is still below its target of 3% of gross domestic product (GDP), which was meant to be reached by 2020. In addition, R&D spending is highly concentrated in only a few EU Member States, resulting in a scientific and technological divide among countries.

R&D intensity (R&D expenditure as % of GDP), 2000-2020



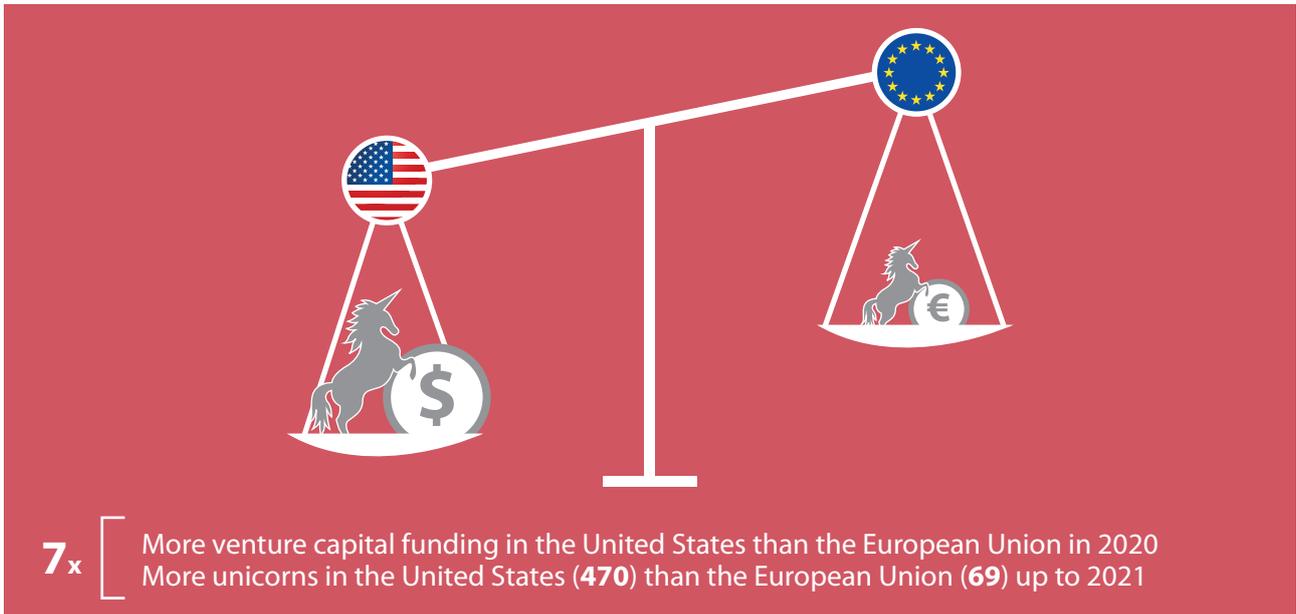
Science, research and innovation performance of the EU 2022

Source: OECD Main Science and Technology Indicators (MSTI) database. (Link).
Statistics link: <https://ec.europa.eu/assets/rtd/srip/2022/figure-5-2-1.xlsx>

Europe appears to currently be limited in its ability to capitalise on its excellent scientific base to spur innovation, adopt new technologies and bring its ideas to the market. Yet economic growth is expected to increasingly depend on innovation. The [World Economic Forum](#) estimates that 70% of new value created in the global economy over the next ten years will be digitally enabled, a trend further accelerated by the coronavirus pandemic.

Investment plays a crucial role in explaining Europe's constrained innovation performance. European investors appear far more risk-averse than their counterparts elsewhere, adopting a wait-and-see attitude. This matters, as innovation today is happening at a faster pace, has a deeply transformative character and is increasingly science-based and complex. The lack of risk capital and other investment makes it difficult for European innovators to adopt new technologies or grow new, disruptive businesses. In 2020, venture capital funding in the EU market was seven times lower than in the United States. This has resulted in a much smaller number of so-called unicorns in the European Union than in the United States. It also hampers Europe's competitiveness and delays its transformation into a green and digital economy.

The European Investment Bank (EIB) Group is committed to breaking down investment barriers and enabling the European Union to lead the next wave of innovation. Our goal is to drive new technologies that solve the challenges of our time and help Europe's innovators to become global technology leaders.



Source: European Commission, Directorate-General for Research and Innovation (2022). *Science, Research and Innovation performance of the EU, 2022 (SRIP)*. Publications Office of the European Union.

THE EIB GROUP'S ROLE

The EIB Group is one of the largest public supporters of innovation in the European Union. It provides long-term capital and advisory support.

Since 2000, the EIB Group has invested over €270 billion in innovation and skills to unleash and connect the millions of innovative minds across the European Union and beyond, advance innovation and address the social and economic challenges of today and tomorrow.

The EIB Group is also the largest provider of venture capital in the European Union, through its subsidiary, the European Investment Fund (EIF). The EIF has supported almost half of Europe's unicorns (young companies valued over \$1 billion) that have emerged in the past 15 years, mostly in the early stages of their development. Skype, Skyscanner, UiPath, WeTransfer, Wise, BlaBlaCar, Spotify, Shazam, Just Eat, Farfetch, Rovio and Zalando are some examples of companies supported by the EIF.

Together with the European Commission and other partners, the EIB Group designs financial instruments that absorb some of the risks that banks and other investors take when they finance less certain, innovative endeavours. When the EIB lends to a project it is seen as an endorsement or seal of excellence, because of the technical viability and quality assessment we carry out. This backing encourages banks to lend, and funds and other private sector players to invest, creating a sustainable financing environment for European innovation.

The EIB Group has a broad portfolio of **financial products** to address different challenges for innovation and skill development. They include loans to help universities build research infrastructure, support for vocational training, financing for startups, and money to help large companies scale up, innovate and develop digital infrastructure, particularly in rural areas.

EU-backed financial instruments like **InvestEU** and the **European Fund for Strategic Investments** (EFSI) have transformed the innovation finance landscape in Europe. They enable the EIB Group to develop new instruments, such as **InnovFin (venture debt)**, for highly innovative firms. These instruments combine the advantages of long-term loans with a remuneration model based on a company's performance.

In addition to financing, the EIB provides technical assistance and advisory services for innovative projects. In cooperation with the European Commission, under the **InnovFin Advisory** programme, the EIB provides guidance to innovative companies on how to structure their R&D to improve their access to finance. InnovFin advisors also support public and semi-public entities in specific fields destined to shape the future, such as space, deep tech and supercomputing technologies, by providing insights into market needs, gaps and failures from a project financing and EU policy perspective.

The EIB plays an important role by:

- **supporting** innovative firms in their development and commercialisation of new products, processes and services;
- **promoting** public and private sector investment in R&D;
- **helping** to complete Europe's digital network;
- **investing in fundamental research**, research infrastructure and education;
- **investing in the digital transformation** of industry (industry 4.0), including skill improvement and training;
- **supporting** the digitalisation of all other sectors of the economy;
- **investing** in cutting-edge technologies, including new space, artificial intelligence, quantum technologies, new materials, semi-conductors, etc.



With the €35 million loan it received from the EIB, the Finnish company IQM can accelerate the development and commercialisation of its quantum processors.



LAYING THE FOUNDATIONS OF TOMORROW: FINANCING DIGITAL NETWORKS

Continuous access to information, commerce, communication, friends and entertainment – among a myriad of other things – has become a daily necessity of life for billions of people. Other areas such as industry, healthcare, education and government services are increasingly becoming digital, boosting the demand for fast and reliable networks. The EIB is backing investment in digital networks to support and accelerate the development of new network technologies such as 5G and improve digital access in rural areas.

INVESTING IN NEW AND CLEANER ENERGY

To mitigate the consequences of the climate crisis for future generations, nearly all greenhouse gas emissions must be eliminated by the middle of this century. This implies a radical transformation of our energy systems on several levels. The EIB Group backs companies that develop cutting-edge technologies to help stop climate change.

IMPROVING EDUCATION AND RESEARCH INFRASTRUCTURE

Ideas increasingly power economic growth in Europe. Investment in higher education and research infrastructure provides the basis to generate them. Highly skilled individuals and quality research underpin the European Union's ability to innovate successfully.

DIGITALISING THE ECONOMY

The rise of digital technologies such as artificial intelligence or the internet of things and their increasing convergence with the physical world has brought about rapid, wide-ranging changes to entire industries. The EIB is supporting projects that develop cutting-edge digital technologies and applications to ensure that the European Union has the digital capabilities to keep up and even lead this accelerating transformation.

PUSHING THE FRONTIERS OF LIFE SCIENCES

Small and medium-sized companies account for most of the innovation in the life sciences industry. These innovative businesses are developing new medicines for life-threatening diseases, and health management devices and solutions that significantly improve quality of life and longevity. But innovation, particularly in the life sciences, is a lengthy, complex and costly process. The transformation of promising research into commercial products takes time and resources, which can deter investors seeking faster payback. The EIB Group helps to provide long-term financing for companies developing life science innovations.

PROJECT HIGHLIGHTS

Financing strategic research centres in Greece

The European Investment Bank has agreed to provide a €119 million 25-year loan for the upgrade and expansion of strategic R&D infrastructure in Greece. The new financing will be used to support six of the country's most prominent research centres, for the construction of several new research buildings, the renovation of existing ones, and the purchase of scientific equipment. The new investment is also expected to create more than 700 full-time jobs, including 525 positions for highly skilled research professionals.

[More information online](#)

Helping improve education facilities in Finland

The municipality of Turku, Finland, plans to build new schools and refurbish existing schools with a €190 million loan from the EIB. The financing will enable Turku to accelerate the modernisation of its teaching and learning environments and improve the energy efficiency and health and safety standards of its schools. The project, among the most ambitious school redesign endeavours in Europe, plans to modernise and adapt school infrastructure to ultimately strengthen children's soft skills, such as teamwork, project management and collaboration.

[More information online](#)

Making electric bicycles safer in Italy

Blubrake, an Italian startup specialised in the development of next-generation anti-lock braking systems (ABS) for electric bicycles, hopes to expand internationally and become a leader in the ABS market with the help of a €10 million venture debt loan it received from the European Investment Bank. Blubrake expects ABS technology to become an essential safety standard for all light electric vehicles, as it has become in the automotive sector.

[More information online](#)

Upgrading digital connectivity to the Southern Neighbourhood

The European Commission signed an agreement with EIB Global, the Bank's specialised arm dedicated to

increasing the impact of international partnerships and development finance beyond Europe, for a €40 million EU grant to support a fibre-optic connection under the Mediterranean. The EU grant, part of the MEDUSA project supported by the European Union's economic and investment plan for the Southern Neighbourhood, will secure direct high-speed connectivity between the research and education communities and users in North African countries and the European Union.

[More information online](#)

Expanding the cloud in Europe

The EIB signed a €200 million loan agreement with OVH cloud, a leading European cloud provider. This financing will support the company's plan to ramp up international development by opening 15 new data centres, ten of which will be in Europe, by the end of 2024. This is the EIB's first operation with a cloud market player.

[More information online](#)

Strengthening Dutch R&D for digital manufacturing

The EIB is providing €16 million in financing to support R&D investment by Airborne International, a Dutch company specialising in the development and production of advanced composite products. Airborne expects the EIB venture debt loan to help the company strengthen its innovation of new composites and unlock exciting new applications, reduce energy use and create 114 highly skilled jobs.

[More information online](#)

Danish biotech firm developing a new maternal vaccine

MinervaX ApS, a privately held Danish biotechnology company developing a novel, protein-based vaccine against Group B Streptococcus (GBS), has received a boost from the EIB in the form of a €50 million loan. The financing will enable MinervaX to advance the late-stage development of its GBS vaccine candidate, which was awarded PRIME status by the European Medicines Agency for its potential to prevent life-threatening infections in newborn babies caused by GBS transmission during delivery.

[More information online](#)



RESOURCES

CORPORATE INFORMATION

- [EIB innovation homepage](#)
- [European Fund for Strategic Investments](#)
- [InnovFin](#)
- [InnovFin Advisory](#)
- [EIB venture debt](#)
- [EIB investment report](#)

EDITORIAL

- [Climate Solutions \(podcast\)](#)
- [Blog stories](#)
- [Future Europe \(podcast\)](#)

VIDEOS

- [EIB venture debt](#)
- [Small business support](#)
- [Innovation in the Mediterranean](#)
- [Clean energy](#)



With EIB support, the Italian cable technology firm Prysmian Group is undertaking new R&D for ultra-rapid telecom networks and smarter, more sustainable power grids.



Innovation OVERVIEW 2023



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