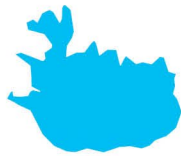




European
Commission

European Innovation Scoreboard **2023**



Executive Summary



Innovation

Executive summary

The annual European Innovation Scoreboard (EIS) provides a comparative assessment of the research and innovation performance of EU Member States and selected third countries, and the relative strengths and weaknesses of their research and innovation systems. It helps countries assess areas in which they need to concentrate their efforts in order to boost their innovation performance.

The EIS 2023 is the third edition based on the new measurement framework introduced in 2021. The EIS 2023 covers all EU Member States, 11 other European countries, and, at a less detailed level, 11 global competitors. Compared to previous reports, Israel is no longer included due to a lack of statistical data.

Innovation performance of EU Member States

Based on their performance relative to the EU average, Member States fall into four different performance groups (Figure 1).

Belgium, Denmark, Finland, the Netherlands, and Sweden are *Innovation Leaders* with innovation performance well above the EU average (>125% of EU average). Austria, Cyprus, France, Germany, Ireland, and Luxembourg are *Strong Innovators* with performance above the EU average. Czechia, Estonia, Greece, Hungary, Italy, Lithuania, Malta, Portugal, Slovenia, and Spain are *Moderate Innovators* with performance below the EU average. Bulgaria, Croatia, Latvia, Poland, Romania and Slovakia are *Emerging Innovators* with performance well below the EU average (<70% of EU average).

Most EU Member States have increased their innovation performance over past 8 years

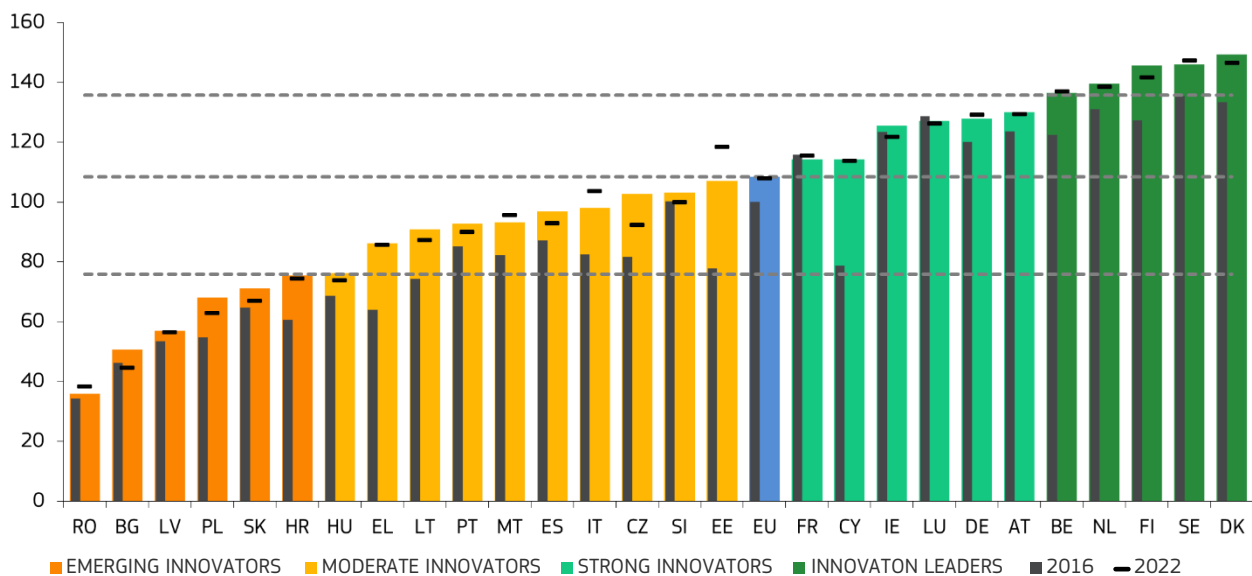
The innovation performance of the EU has increased by 8.5 percentage points since 2016. Innovation performance increased in 25 EU Member States. Performance has increased most in Cyprus, Estonia, Greece, and Czechia (by 20 percentage points or more). Overall, the following indicators recorded the highest improvements: business process innovators, international scientific co-publications, job-to-job mobility of human resources in science & technology, and venture capital expenditures.

Between 2016 and 2023, performance differences among the 27 Member States have become somewhat smaller. Performance differences have narrowed most within the groups of Strong Innovators and Moderate Innovators. At the same time, the performance differences within the group of Emerging Innovators have not narrowed and they are not catching up to the next group of Moderate Innovators.

Compared to last year, innovation performance is growing at a slower pace

Between 2022 and 2023, the annual innovation performance of the EU has improved at a reduced rate of 0.6 percentage points. Innovation performance increased in 19 Member States, most in Czechia, Bulgaria and Poland (by 5 percentage points or more) and has declined in eight Member States.

Figure 1: Performance of EU Member States' innovation systems



All performance scores are relative to that of the EU in 2016. Coloured columns show countries' performance in 2023, using the most recent data for 32 indicators. The horizontal hyphens show performance in 2022, using the next most recent data. Grey columns show countries' performance in 2016. The dashed lines show the threshold values between the performance groups, where the threshold values of 70%, 100%, and 125%, when using the latest 2023 data, have been adjusted upward by multiplying with 1.085 to reflect the performance increase of the EU between 2016 and 2023 as the graph shows performance scores relative to the EU in 2016.

Compared to the results of the EIS 2022, the top EU innovation performer has changed

Denmark has become the most innovative Member State, overtaking Sweden, which was leading for many years. This was partly due to much stronger performance on indicators of non-R&D innovation expenditures and sales of innovative products, and partly due to a decline in the innovation performance of Sweden between 2022 and 2023.

Additionally, Hungary has progressed to a group of Moderate Innovators, mainly due to improved performance on indicators of foreign doctorate students and broadband penetration. Otherwise, the results have been stable.

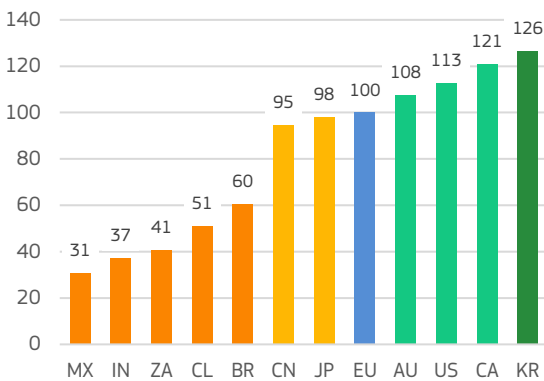
Switzerland is the most innovative European country

An extended analysis, which also includes 11 other European countries, shows that Switzerland is the most innovative country in Europe thanks to the highest performance on education-related indicators, scientific publications, and environment-related indicators.

At the global level, the EU has closed part of its performance gap to some of its other competitors

In international comparison, the EU has an innovation performance gap with Korea, which is the best performing country in EIS 2023, as well as Canada, the United States and Australia (Figure 2). The EU has a performance lead over China and Japan as well as a group of Emerging Innovators, which includes Brazil, Chile, India, Mexico and South Africa.

Figure 2: Performance global competitors



Coloured columns show performance in 2023 relative to that of the EU in 2023.

Between 2016 and 2023, the innovation performance of the EU has grown at a faster rate than that of five global competitors (Australia, India, Japan, Mexico, and South Africa) and at a lower rate than that of six global competitors (Brazil, Canada, Chile, China, South Korea, and United States). (Figure 3).

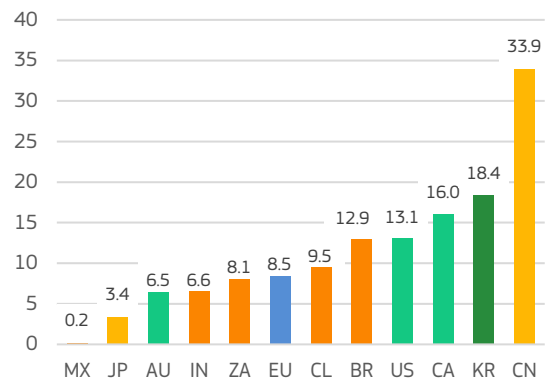
Impact of external factors on innovation performance

The report discusses several factors that may impact the EU's innovation performance, including Russia's war of aggression against Ukraine, the resulting energy crisis, and the current period of high inflation. Analysis on the impact of the Covid-19 pandemic confirms that the Covid-19 pandemic has had a negative impact on several indicators such as innovation expenditures, innovative sales, and venture capital expenditures, all of which experienced a decline in 2020.

Methodological continuity and refinement

After the revision of the measurement framework in 2021, no fundamental changes have been made to the methodology in this year's report.

Figure 3: Performance change between 2016 and 2023



Performance change is measured as the difference between the 2023 and 2016 scores relative to that of the EU in 2016.