



European Innovation Scoreboard 2023

Questions & Answers

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Report

European Innovation Scoreboard 2023 - Questions and Answers

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European Innovation Scoreboard 2023

Questions and Answers

The report was prepared by

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What is the European Innovation Scoreboard?

The annual European Innovation Scoreboard (EIS) provides a comparative assessment of research and innovation performance of the EU Member States and selected third countries, and the relative strengths and weaknesses of their research and innovation systems. It allows policymakers to assess relative strengths and weaknesses of national research and innovation systems, track progress, and identify priority areas to boost innovation performance.

The EIS covers the EU Member States as well as Albania, Bosnia and Herzegovina, Iceland, Montenegro, North Macedonia, Norway, Serbia, Switzerland, Türkiye, Ukraine and the United Kingdom. On a more limited number of globally available indicators, the EIS compares the EU with Australia, Brazil, Canada, Chile, China, India, Japan, South Korea Mexico, South Africa, and the United States.

What is the latest innovation performance of EU countries?

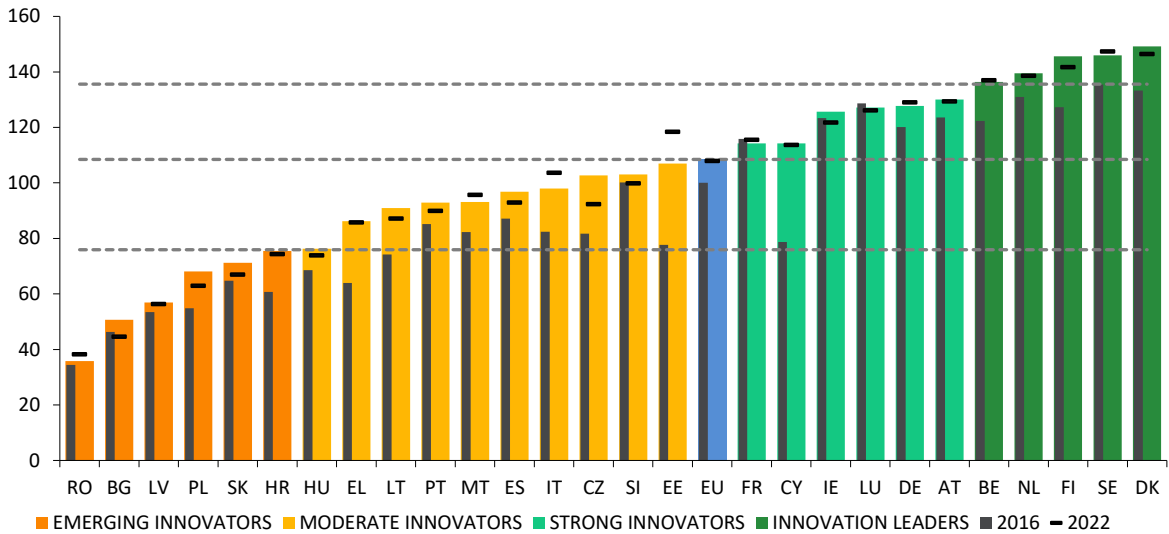
Based on their scores, EU countries fall into four performance groups:

- The first group of Innovation Leaders includes five Member States where performance is above 125% of the EU average. This group includes (in alphabetical order) Belgium, Denmark, Finland, the Netherlands, and Sweden.
- The second group of Strong Innovators includes six Member States with a performance between 100% and 125% of the EU average. This group includes Austria, Cyprus, France, Germany, Ireland, and Luxembourg.
- The third group of Moderate Innovators includes 10 Member States where performance is between 70% and 100% of the EU average. This group includes Czechia, Estonia, Greece, Hungary, Italy, Lithuania, Malta, Portugal, Slovenia, and Spain.
- The fourth group of Emerging Innovators includes six Member States that show a performance level below 70% of the EU average. This group includes Bulgaria, Croatia, Latvia, Poland, Romania, and Slovakia.

Compared to last year's edition (EIS 2022), one Member State has climbed to a higher performance group (Hungary is now a Moderate Innovator) and the top EU innovation performer has changed (Denmark is now the top innovation performer). Performance has improved for 19 Member States and worsened for eight Member States.

The relative innovation performance of Member States is shown in Figure 1. In addition to the overall ranking, the graph also shows that performance relative to 2016 has improved for most Member States. The performance groups tend to be geographically concentrated, with the Innovation Leaders and most of the Strong Innovators located in Northern and Western Europe, and most of the Moderate and Emerging Innovators in Southern and Eastern Europe.

Figure 1 - Performance of EU Member States' innovation systems

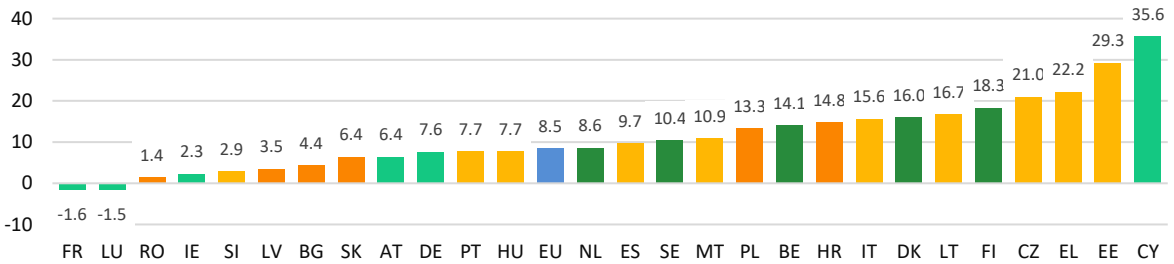


Have Member States improved their innovation performances?

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%-points or more). 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.

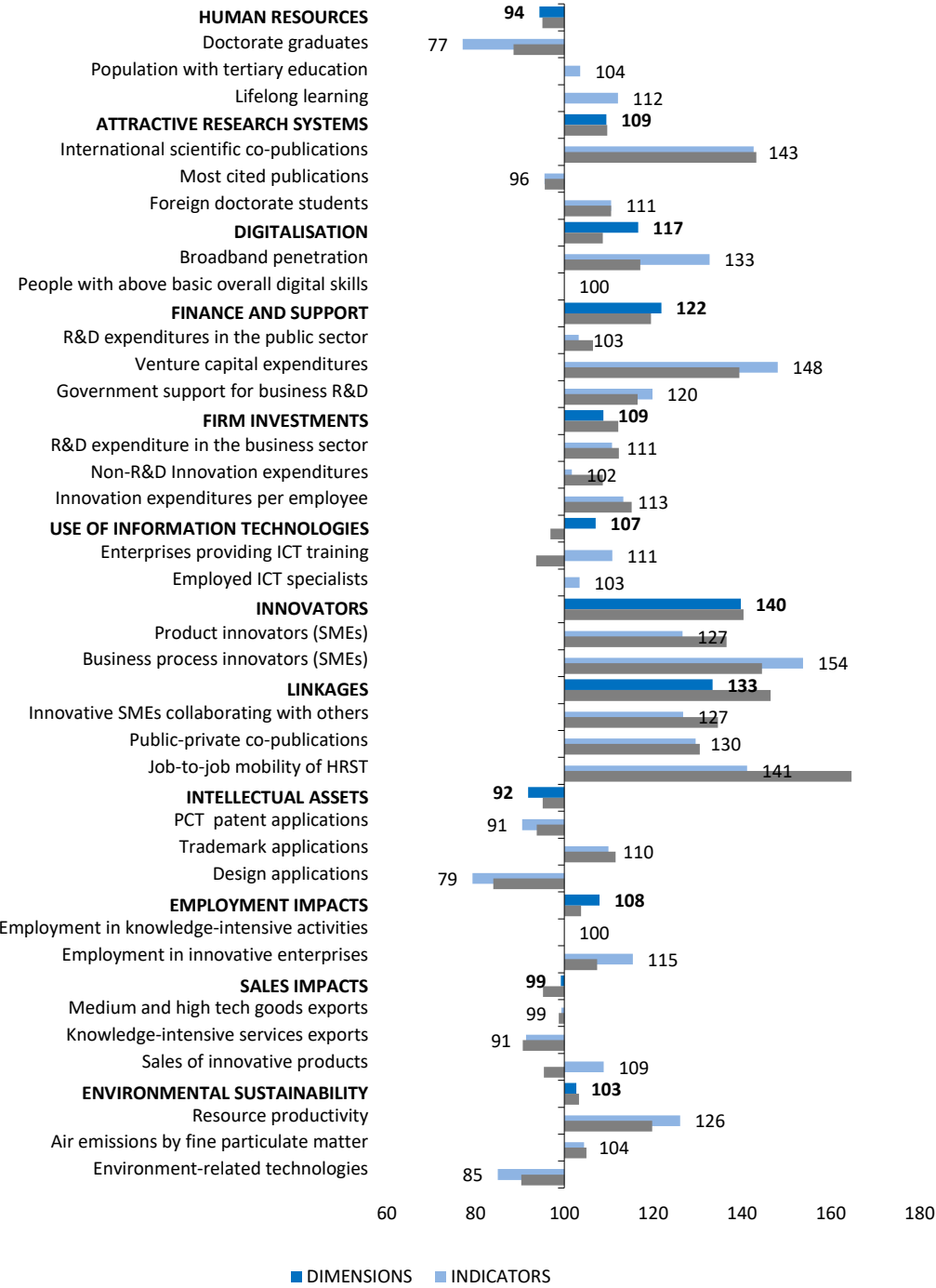
Between 2016 and 2023, performance differences between the 27 Member States have become smaller. However, there are differences within the performance groups. Performance differences have narrowed most strongly within the groups of Strong Innovators and Moderate Innovators. At the same time, the Emerging Innovators did not succeed in reducing their performance differences and they are not catching up to the next group of Moderate Innovators.

Figure 2 - Performance change between 2016 and 2023



Performance of the EU innovation system, has improved by 8.5 percentage points between 2016 and 2023, showing a modest increase between 2016 and 2018, a more rapid increase between 2019 and 2022, followed by a smaller increase in 2023. The score of the innovation index is measured as the average of the normalised scores of the 32 indicators included in the measurement framework. Compared to 2016, performance has improved most in Innovators due to strong performance increases in both indicators, in Linkages due to strong performance increases in all three indicators, and Finance and support due to a strong increase in both Venture Capital expenditures and government support for business R&D. Performance declined in Human resources due to a strong decline in New doctorate graduates, and in Intellectual assets due to a decline in Design applications.

Figure 3 - EU Performance change by dimension and indicator



Normalised scores in 2023 (blue coloured bars) and 2022 (grey coloured bars) relative to those in 2016 (=100). Bars will not be visible when relative results are very close to 100.

What are the key drivers of innovation?

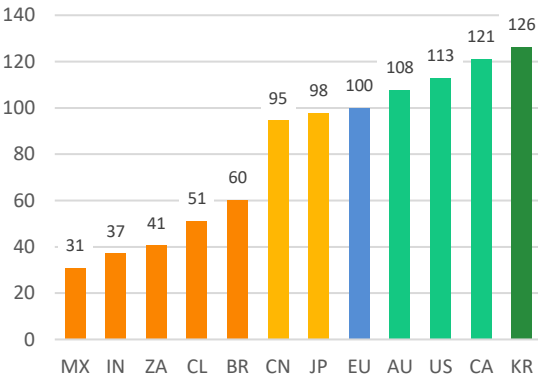
The most innovative countries generally perform best in a range of innovation areas. To achieve a high level of innovation performance, countries need a balanced innovation system performing well across all dimensions. They need an appropriate level of public and private investment in education, research and skills development, effective innovation partnerships among companies and with academia, as well as an innovation-friendly business environment, including strong digital infrastructure and skills. These

key areas correspond largely to the dimensions and indicators used for the European Innovation Scoreboard.

How does the EU's performance compare to other countries?

Comparing the EU average to a selection of global competitors, it can be seen that South Korea is the most innovative country. Australia, Canada and the United States, also have a performance lead over the EU. The EU has a performance lead over Brazil, Chile, China, India, Japan, Mexico and South Africa. Based on relative-to-EU performance in 2023, South Korea would be an Innovation Leader, Australia, Canada, and the United States would be Strong Innovators, China and Japan would be Moderate Innovators, and Brazil, Chile, India, Mexico, and South Africa would be Emerging Innovators.

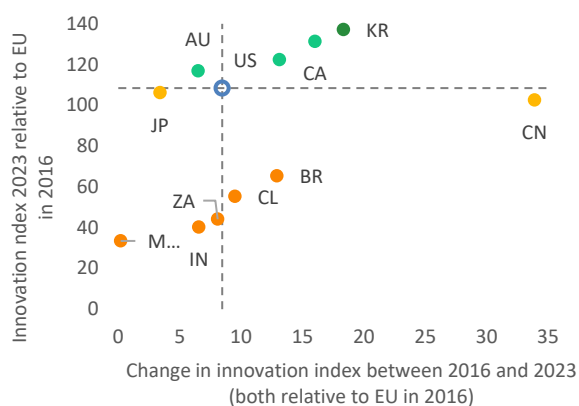
Figure 4 - Performance global competitors



Performance between 2016 and 2023 has increased most in China, followed by South Korea and Canada. For five global competitors, performance grew but at a lower rate than that of the EU. For all global competitors, performance improved between 2016 and 2023

Combining current performance in 2023 and performance change between 2016 and 2023 shows that Canada, South Korea, and the United States have an increasing performance lead over the EU, whereas the performance lead of Australia is declining. The EU has an increasing performance lead over India, Japan, Mexico, and South Africa, but a declining performance lead over Brazil, China and Chile.

Figure 5 - EU is catching up compared to the most innovative global competitors



The vertical axis shows countries' performance in 2023 relative to that of the EU in 2016. The horizontal axis shows the change in performance between 2016 and 2023 relative to that of the EU in 2016. The intersection of the dashed lines shows the respective score for the EU (blue circle).

Which indicators are used for the Scoreboard?

The main measurement framework of the EIS 2023 is composed of 32 performance indicators, distinguishing between 12 innovation dimensions in four main categories (for a full overview of the indicators, see Table 1 of the European Innovation Scoreboard 2023):

- Framework conditions capture the main drivers of innovation performance external to the firm and cover three innovation dimensions: human resources, attractive research systems, and digitalisation.
- Investments capture investments made in both the public and business sector and differentiates between three innovation dimensions: finance and support, firm investments, and use of information technologies.
- Innovation activities capture different aspects of innovation in the business sector and differentiates between three innovation dimensions: innovators, linkages, and intellectual assets.
- Impacts capture the effects of enterprises' innovation activities and differentiate between three innovation dimensions: employment impacts, sales impacts and environmental sustainability

Has the EIS measurement framework changed?

After the revision of the measurement framework in 2021, no fundamental changes have been made to the methodology in this year's report. Country coverage has reduced as Israel is not included to due a lack of data. The full list of indicators can be found in Table 1 of the European Innovation Scoreboard 2023.

The EIS 2023 also includes a number of contextual indicators, complementing those from the previous edition and covering economic structure and performance, business and entrepreneurship, demography, and governance and policy framework in a series of country profiles.

A full description of the measurement framework is provided in the accompanying EIS 2023 Methodology Report.

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This report provides answers to several questions on the 2023 edition of the European Innovation Scoreboard.

Studies and reports