



European Innovation Scoreboard 2022

Questions and answers

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Manuscript completed in September 2022

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EUROPEAN COMMISSION

European Innovation Scoreboard 2022

Questions and answers

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, Israel, Montenegro, North Macedonia, Norway, Serbia, Switzerland, Turkey, 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, Mexico, Republic of Korea, 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. The Innovation Leaders are (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 nine Member States where performance is between 70% and 100% of the EU average. This group includes Czechia, Estonia, Greece, Italy, Lithuania, Malta, Portugal, Slovenia, and Spain.
- The fourth group of Emerging Innovators includes seven Member States that show a performance level below 70% of the EU average. This group includes Bulgaria, Croatia, Hungary, Latvia, Poland, Romania, and Slovakia.

Compared to last year’s edition (EIS 2021), two countries moved up to a higher performance group and one country moved down to a lower performance group: the Netherlands has become an Innovation Leader, Cyprus a Strong Innovator, and Estonia a Moderate Innovator. Performance in 2022 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 2015 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.

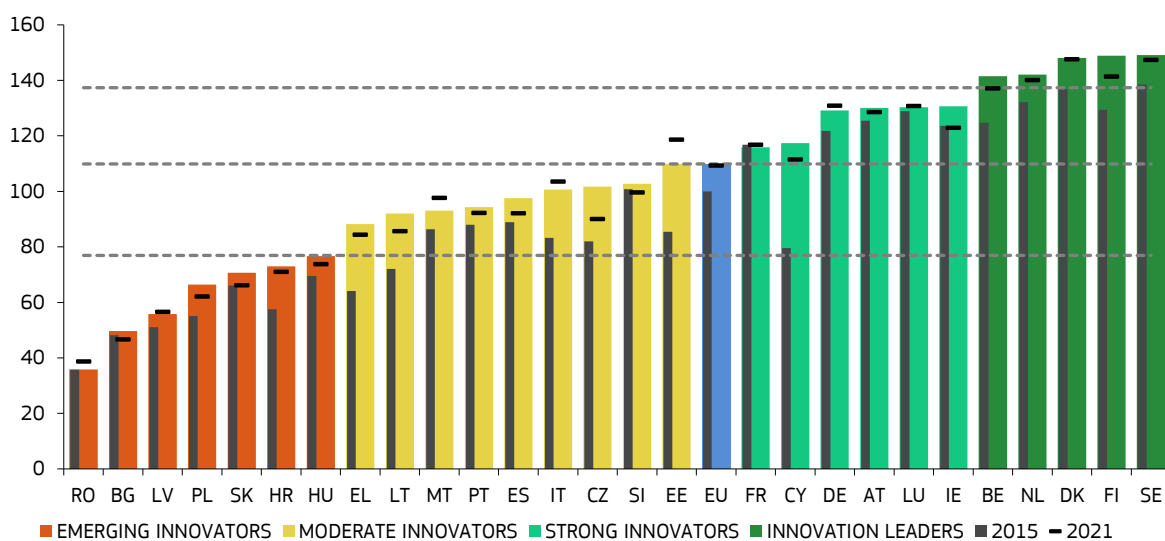


Figure 1: Performance of EU Member State's innovation systems

Have Member States improved their innovation performances?

The EIS 2022 shows that the EU experienced a 9.9 percentage points improvement in innovation performance between 2015 and 2022. This improvement was not the same for all Member States. Three Member States witnessed an improvement in performance of 20 percentage points or more (Cyprus, Estonia, Greece). Six Member States had a performance improvement of between 15 and 20 percentage points (Belgium, Croatia, Czechia, Finland, Italy, Lithuania). For three Member States, performance improved between 10 and 15 percentage points (Denmark, Poland, Sweden). The Netherlands experience a performance improvement just above that of the EU. The remaining 12 Member States witnessed an improvement in performance below that of the EU. For France innovation performance slightly declined between 2015 and 2022.

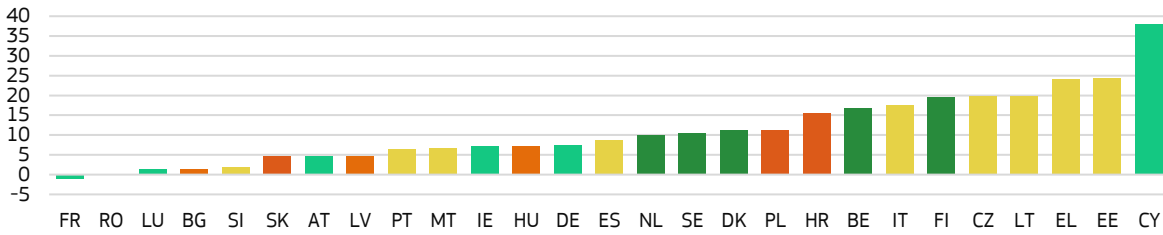


Figure 2: Performance changes from 2015 to 2022

Which innovation dimensions have improved over time in the EU?

For the EU, performance has improved in most innovation dimensions since 2015, as can be seen in Figure 3. Compared to 2015, performance has improved most in Innovators (39.8%) due to strong performance increases in both indicators, in Linkages (35.0%) due to strong performance increases in all three indicators, and in Finance and support (21.5%) due to a very strong increase in Venture capital expenditures. Performance declined in Human resources (-9.7%) due to a strong decline in New doctorate graduates (-22.9%), and in Intellectual assets (-5.6%) due to a decline in Patent applications and Design applications. Individual indicators showing a strong increase include Business process innovators (53.8%), International scientific co-publications (49.6%), Venture capital expenditures (49.5%), and Job-to-job mobility of Human Resources in Science and Technology (41.2%).

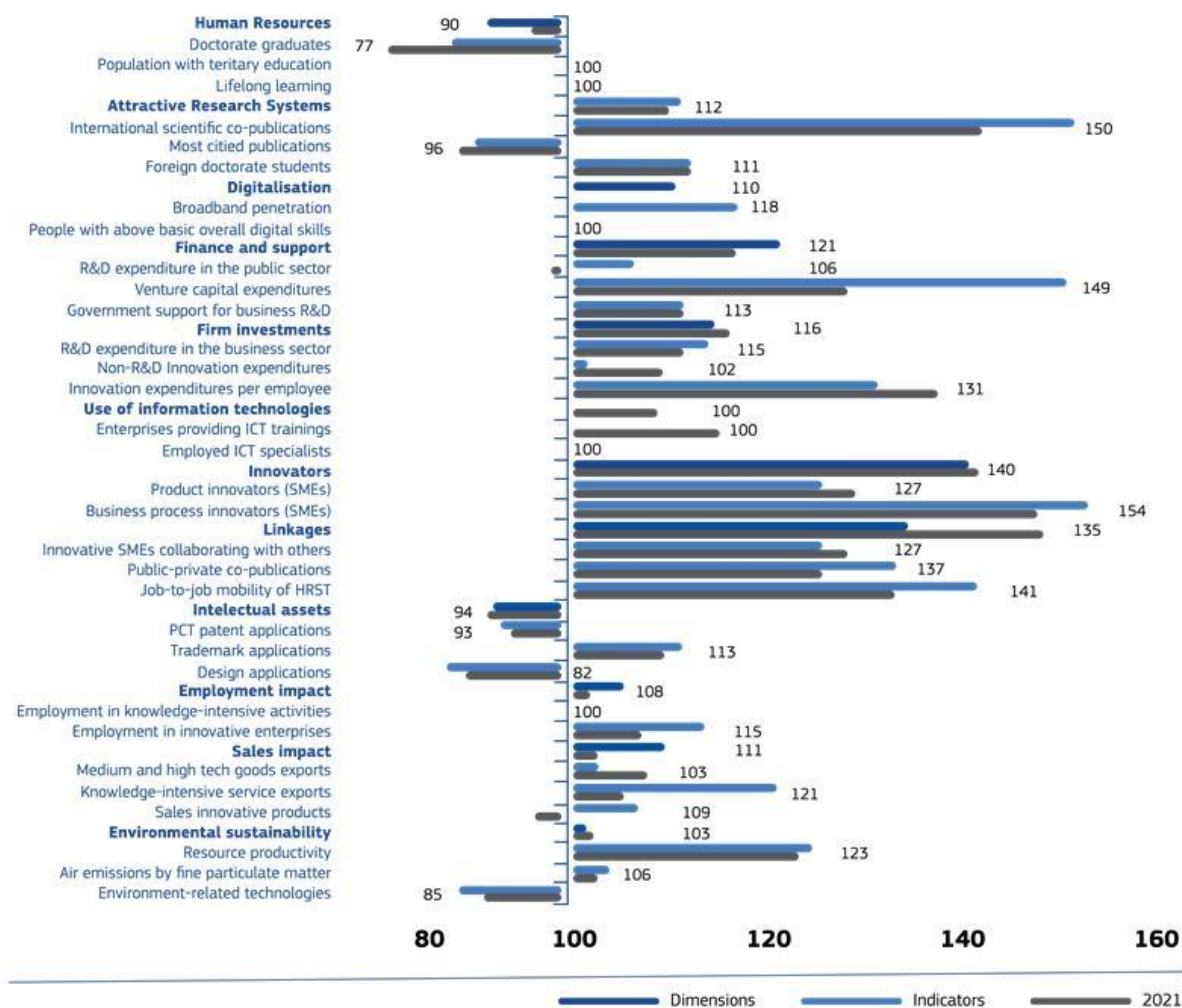


Figure 3: EU Performance change by dimension and indicator (2015-2022)

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 Republic of Korea is the most innovative country. Australia, Canada and the United States, also have a performance lead over the EU, as can be seen in figure 4.

Based on relative-to-EU performance in 2022, Australia, Canada, Republic of Korea, and the United States would be Strong Innovators, China and Japan would be a Moderate Innovator, and Brazil, Chile, India, Mexico and South Africa would be Emerging Innovators.

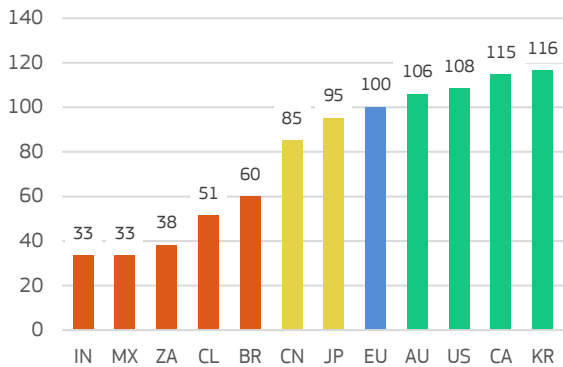


Figure 4: Global Performance

Performance between 2015 and 2022 has increased most in China (24.9%-points), followed by the EU. For seven global competitors, performance grew but at a lower rate than that of the EU. For three global competitors - Japan, India, and Mexico - performance worsened between 2015 and 2022.

Combining current performance and performance change between 2015 and 2022 shows that Australia, Canada, Republic of Korea, and the United States have a decreasing performance lead over the EU (Figure 5). The EU has an increasing performance lead over Brazil, Chile, India, Mexico, and South Africa.

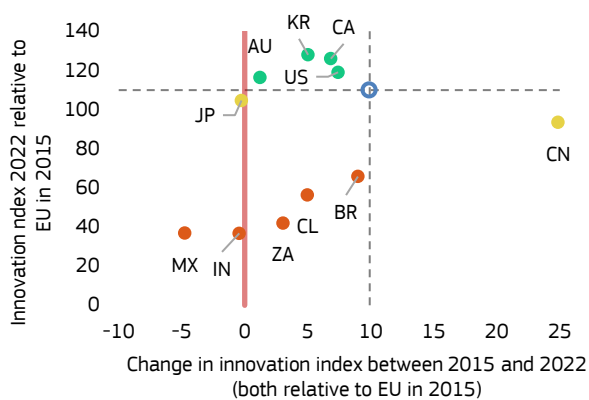


Figure 5 - Change in global performance since 2015

The vertical axis shows countries' performance in 2022 relative to that of the EU in 2015. The horizontal axis shows the change in performance between 2015 and 2022 relative to that of the EU in 2015. The intersection of the dashed lines shows the respective score for the EU (blue circle). The red vertical line indicates no performance change.

Which indicators are used for the Scoreboard?

The main measurement framework of the EIS 2022 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 2022):

- 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. Albania has been included for the first time in the European analysis. For the global competitors, two new countries are included: Chile and Mexico. The full list of indicators can be found in Table 1 of the European Innovation Scoreboard 2022.

The EIS 2022 also includes a number of additional 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 2022 Methodology Report.

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