European Commission

European Innovation Scoreboard **2024**
Executive Summary

Innovation

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The European Innovation Scoreboard (EIS), published annually since 2001, provides a comparative assessment of the research and innovation (R&I) performance of EU Member States, neighbouring European countries and selected third countries (global competitors). It helps stakeholders assess areas in which they need to concentrate their efforts to boost innovation performance, considering the national socio-economic context (which is captured by a complementary set of structural indicators to help interpret the results). The EIS results can help reveal which dimensions of national innovation systems are especially weak or strong and thus should be the subject of attention from policymakers.

The EIS 2024 is the fourth edition applying the current measurement framework, introduced in 2021, of 32 indicators. The report uses updated data for the period 2017-2024 for all EU Member States and 12 neighbouring European countries, including Moldova, for the first time.

It also compares the EU's performance, using a smaller set of 19 indicators, with that of 11 global competitors.

Since 2017, the EU's innovation performance has increased by 10%-points

Most EU Member States have increased their innovation performance since 2017. Although all Member States, except Luxembourg, have experienced an increase in their innovation performance since 2017, the extent to which they have improved varies strongly. On the one hand, Romania, France, Ireland, Slovakia, Latvia, Bulgaria, Germany, Portugal, Austria and Slovenia displayed increases of less than 5%-points over the period 2017-2024.

On the other hand, 11 Member States experienced faster performance growth than the EU over the same period, with Cyprus and Estonia displaying the most notable improvements (+39%-points and +27%-points respectively).

Figure 1: Improvement in performance of the EU over time
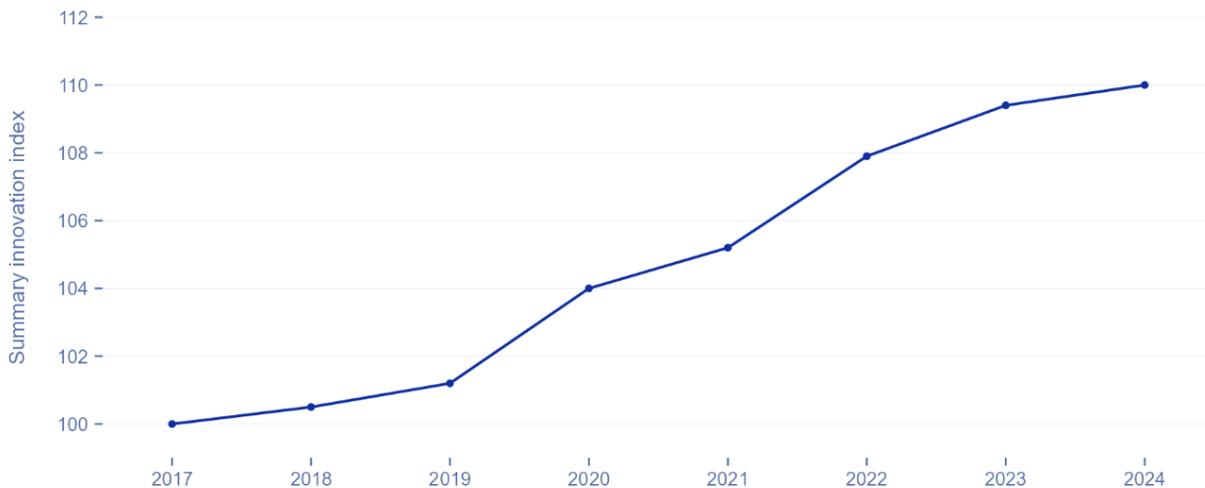
Compared to 2022-2023, the EU's innovation performance is growing at a similar pace

The EU's annual innovation performance has improved at a rate of 0.6%-points from 2023 to 2024 as was the case from 2022 to 2023. Innovation performance increased in 15 Member States, with Lithuania, Poland and Cyprus recording an increase of more than 3%, and declined in 11 Member States. Croatia remained stable.

The innovation divide persists despite a slight decrease in the disparities in innovation performance across Europe

Based on their performance relative to the EU average in 2024, EU 27 Member States fall into four different performance groups (see Figure 2). In performance

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

Between 2017 and 2024, the coefficient of variation which indicates whether lower performing Member States are catching up with other Member States

shows a modest positive convergence trend at the EU level. This suggests that the innovation divide persists and only a slight decrease in the disparities in innovation performance is observed across the EU. A more detailed analysis is required to confirm this trend.

This modest convergence in innovation performance is primarily observed in reduced differences within the groups of Strong Innovators and Moderate Innovators. However, divergence in innovation performance has increased within the Innovation Leaders and the Emerging Innovators between 2017 and 2024.

Figure 2: Innovation performance of the EU27, relative to the EU 2017 and compared to national performance in 2023
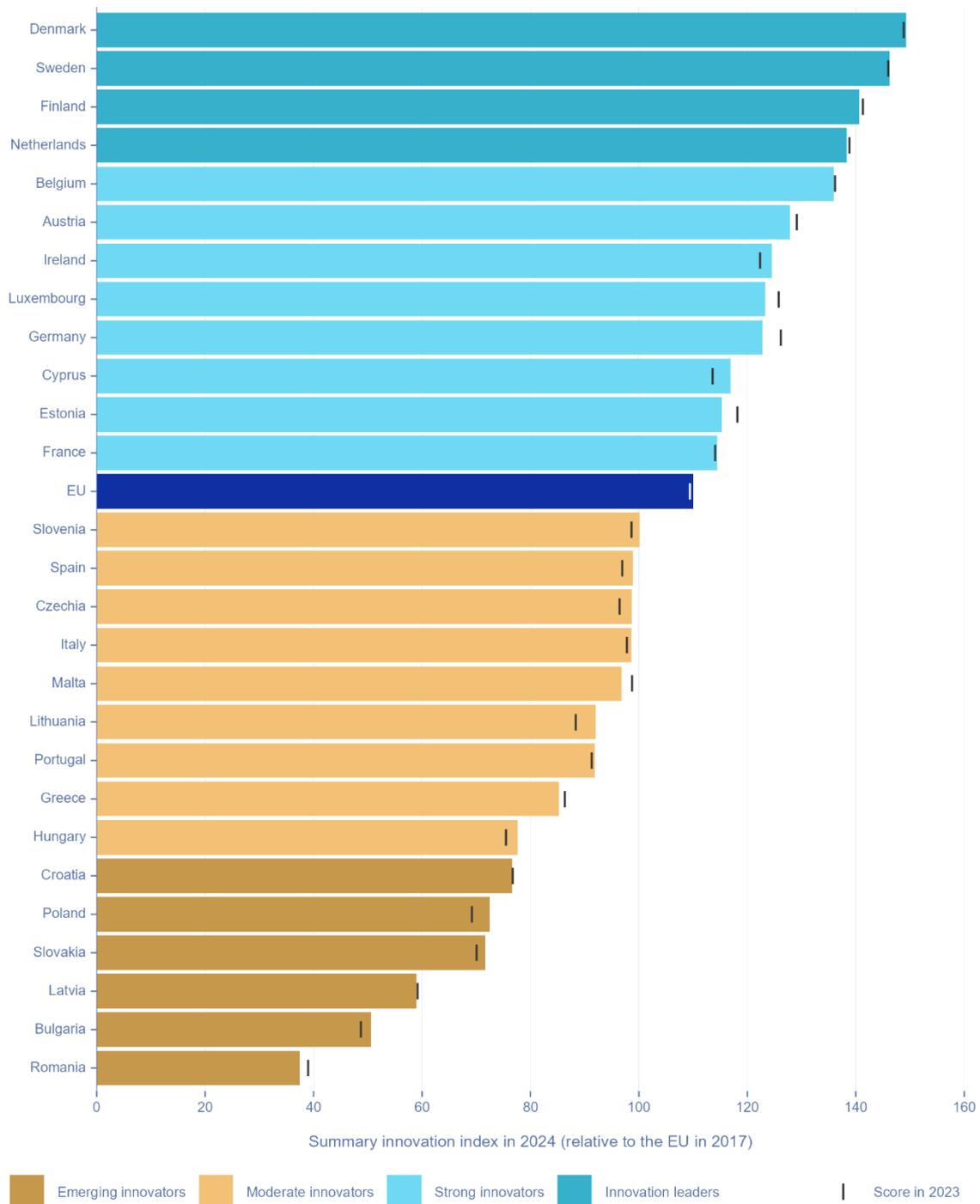
Note: All performance scores are relative to that of the EU in 2017. Coloured bars show countries' performance in 2024, using the most recent data for 32 indicators. The vertical bars show performance in 2023, using the next most recent data.

Denmark retains its position as the top EU innovation performer

Denmark retained first position as the most innovative Member State, ahead of Sweden which was the leading EU Member State from 2017-2022. Two of the top three indicators (driving a 2 to 5%-point increase in Denmark's score in 2024 compared to 2023) are from the Community Innovation Survey (CIS): *Sales of new-to-market and new-to-enterprise innovations*, and *Non-R&D innovation spending*. The third indicator is *Training to develop or upgrade ICT skills of their personnel provided by enterprises*. In contrast, Sweden's innovation performance remained almost unchanged between 2023 and 2024 and improved by slightly less than the EU as a whole (9.3%-points compared to 10%-points) during the period 2017-2024.

Estonia becomes a Strong Innovator following a steady growth pattern since 2017

Estonia has moved up to the Strong Innovators group, with a performance increase of 26.8%-points (compared to the EU27's increase of 10%-points) during the period 2017-2024.

The three indicators contributing the most to the Estonian performance (improving by 2 to 5%-points compared to 2023), are *Individuals with above basic overall digital skills*, *Air emissions in Industry* and *Exports of medium and high technology products as a share of total product exports*.

Belgium leads the group of Strong Innovators in 2024

Belgium leads the Strong Innovators in 2024, which is a change in performance group compared to the EIS 2023, when the country was an Innovation Leader. However, Belgium's performance rank (5th in the EU27) remains the same and this change in performance group is explained largely by Belgium's proximity to the cut-off value used for the performance groups. The three indicators that most negatively impact Belgium's score, with a decline of 2 to 5%-points between 2023 and 2024, are *non-R&D innovation expenditures*, a CIS indicator using data from CIS 2020, *Development of environment-related technologies* and *Job-to-job mobility of Human Resources in Science & Technology.*

Figure 3: Innovation performance change from 2017 to 2024 – EU versus global competitors

Change in summary innovation index between 2017 and 2024

← Negative change   → Positive change
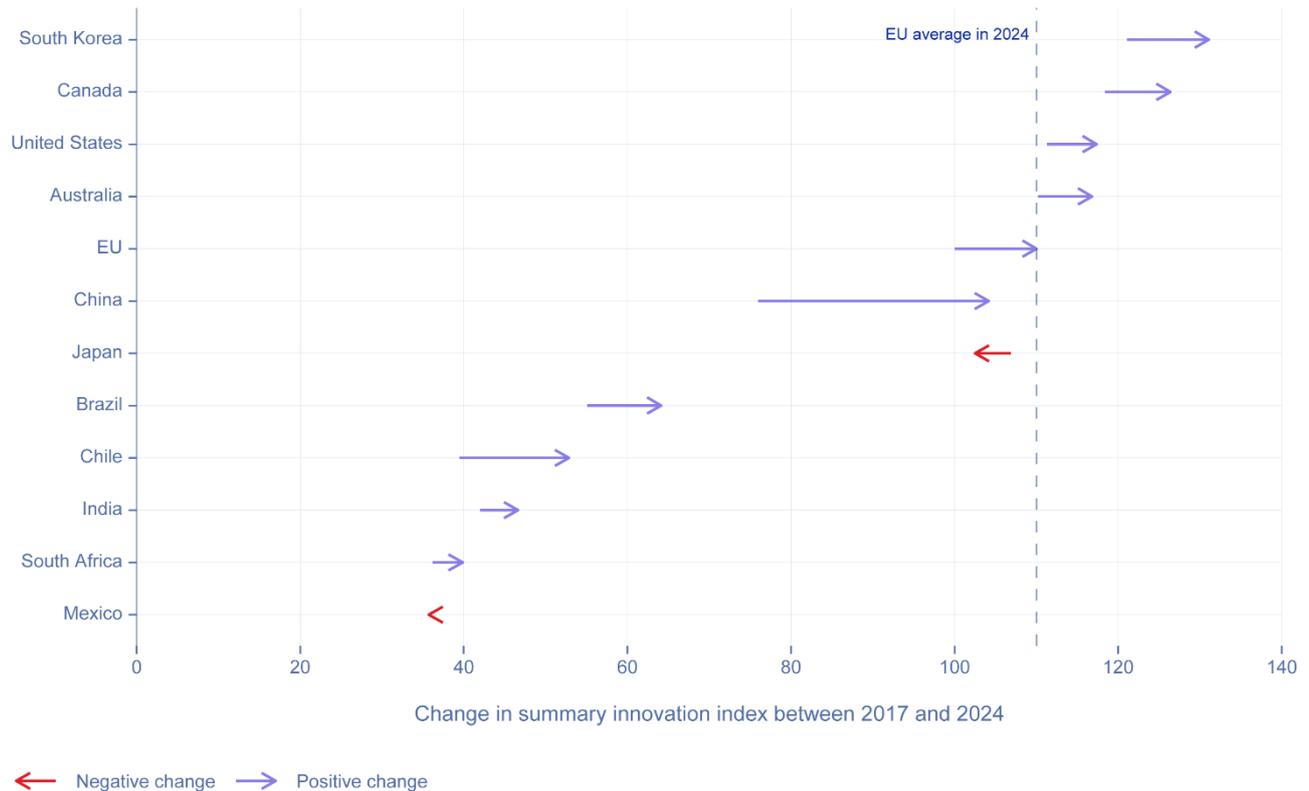
Note: Performance change is measured as the difference between 2024 and 2017 scores, relative to that of the EU in 2017. Due to limited data availability for global competitors, scores are calculated using a smaller set of indicators.

Switzerland ranks as the most innovative European country

An extended analysis, which includes the EU and 12 other European countries, finds that Switzerland is the most innovative European country due to its high performance on several dimensions including human resources, attractive research systems, firm investments and intellectual assets.

South Korea remains the most innovative global competitor in 2024

South Korea remains the most innovative global competitor in 2024 outperforming the EU by 21.1-% points. Three other competitors, Canada, the United States and Australia lead over the EU, similarly to 2023. China has shown a notable increase in innovation performance: it has increased the most since 2017 (+28.2%-points), it has overtaken Japan, and is catching up with the EU.

Methodological continuity and refinement

All performance scores described in this report are relative to that of the EU in 2017 to facilitate the tracking of progress and trends that enable policymakers to identify specific areas requiring attention through strategies and programmes at national level. This report applies the same logic and exact methodology as previous EIS editions, advancing by one year compared to the 2023 EIS which included performance scores relative to the EU in 2016.

The data collection and calculation process for the EIS has been automated for the 2024 release. The construction of the Summary Innovation Index (SII) for 2024 has been performed using the COINr package[i] developed by the European Commission's Competence Centre for Composite Indicators and Scoreboards[ii]. The approach provides a highly replicable and easy to follow data pipeline, which feeds into the COINr package and automatically provides the main outputs of the EIS.

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[i] See: https://bluefoxr.github.io/COINr/
[ii] See: https://composite-indicators.jrc.ec.europa.eu/