



# European Innovation Scoreboard **2024** Country Profile **Czechia**

## European Innovation Scoreboard 2024 – Country profile Czechia

European Commission

Directorate-General for Research and Innovation

Directorate G – Common Policy Centre

Unit G.1 – Common R&I Strategy & Foresight Service

Contact Alexandr Hobza, Chief Economist and Head of Unit G.1

Athina Karvounaraki

Alexis Stevenson

Email [RTD-STATISTICS@ec.europa.eu](mailto:RTD-STATISTICS@ec.europa.eu)

[RTD-PUBLICATIONS@ec.europa.eu](mailto:RTD-PUBLICATIONS@ec.europa.eu)

Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

Directorate A – Strategy and Economic Analysis

Unit A.1 – Chief Economist

Contact Román Arjona, Chief Economist and Head of Unit A.1

Xosé-Luís Varela-Irimia

Email [GROW-A1@ec.europa.eu](mailto:GROW-A1@ec.europa.eu)

European Commission

B-1049 Brussels

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## Moderate Innovator

Summary innovation index (relative to EU in 2017):

**98.7** Rank: **19**

Change vs 2023: **▲ 2.3** Change vs 2017: **▲ 15.6**

Czechia is a Moderate Innovator with performance at 89.7% of the EU average in 2024. Performance is above the average of the Moderate Innovators (84.8%). Performance is increasing more than the EU (+10%).

Indicator	Performance relative to the EU in 2024	Performance change 2017-2024	Performance change 2023-2024
<b>SUMMARY INNOVATION INDEX</b>	<b>89.7</b>	<b>15.6</b>	<b>2.3</b>
<b>Human resources</b>	<b>75.3</b>	<b>8.5</b>	<b>-0.3</b>
New doctorate graduates	100.0	0.0	0.0
Population with tertiary education	48.9	-7.2	-5.4
Population involved in lifelong learning	75.4	41.8	5.1
<b>Attractive research systems</b>	<b>82.0</b>	<b>29.5</b>	<b>4.1</b>
International scientific co-publications	101.1	41.7	-3.9
Scientific publications among the top 10% most cited	49.7	5.6	4.8
Foreign doctorate students as a % of all doctorate students	115.2	70.2	9.6
<b>Digitalisation</b>	<b>94.3</b>	<b>42.1</b>	<b>28.4</b>
Broadband penetration	64.9	33.2	5.5
Individuals with above basic overall digital skills	135.1	50.9	50.9
<b>Finance and support</b>	<b>84.2</b>	<b>9.2</b>	<b>-4.2</b>
R&D expenditure in the public sector	93.4	-29.6	-8.2
Venture capital expenditures	93.7	87.2	0.1
Direct and indirect government support of business R&D	61.8	-24.9	-3.3
<b>Firm investments</b>	<b>115.1</b>	<b>38.8</b>	<b>32.3</b>
R&D expenditure in the business sector	84.7	16.5	0.7
Non-R&D innovation expenditures	160.5	48.2	43.5
Innovation expenditures per person employed	105.6	53.5	55.3
<b>Use of information technologies</b>	<b>94.6</b>	<b>-0.8</b>	<b>-8.1</b>
Enterprises providing ICT training	104.1	8.3	-10.2
Employed ICT specialists	85.2	-9.7	-6.5
<b>Innovators</b>	<b>95.4</b>	<b>11.4</b>	<b>-54.3</b>
SMEs introducing product innovations	99.7	7.6	-52.2
SMEs introducing business process innovations	91.9	15.1	-56.2
<b>Linkages</b>	<b>86.3</b>	<b>21.7</b>	<b>-12.3</b>
Innovative SMEs collaborating with others	108.9	9.4	-14.0
Public-private co-publications	133.9	33.7	-10.9
Job-to-job mobility of HRST	47.9	26.4	-11.8
<b>Intellectual assets</b>	<b>66.3</b>	<b>-1.5</b>	<b>-0.6</b>
PCT patent applications	49.3	-6.9	0.3
Trademark applications	88.5	20.0	2.0
Design applications	68.6	-11.6	-4.1
<b>Employment impacts</b>	<b>101.7</b>	<b>19.7</b>	<b>20.3</b>
Employment in knowledge-intensive activities	89.9	1.2	4.8
Employment in innovative enterprises	112.2	37.0	34.6
<b>Sales impacts</b>	<b>89.9</b>	<b>7.5</b>	<b>3.2</b>
Exports of medium and high technology products	111.9	6.6	5.5
Knowledge-intensive services exports	54.4	15.1	-6.4
Sales of new-to-market and new-to-firm innovations	111.2	-1.1	13.2
<b>Environmental sustainability</b>	<b>93.5</b>	<b>14.6</b>	<b>-0.6</b>
Resource productivity	78.6	28.0	1.4
Air emissions by fine particulates	110.7	12.8	0.3
Environment-related technologies	83.6	6.9	-3.2

Emerging Innovators Moderate Innovators Strong Innovators Innovation Leaders

### Relative strengths

- Non-R&D innovation expenditures
- Individuals with above basic overall digital skills
- Public-private co-publications

### Relative weaknesses

- Job-to-job mobility of HRST
- Population with tertiary education
- PCT patent applications

### Strong increases since 2017

- Venture capital expenditures
- Foreign doctorate students as a % of all doctorate students
- Innovation expenditures per person employed

### Strong decreases since 2017

- R&D expenditure in the public sector
- Direct and indirect government support of business R&D
- Design applications

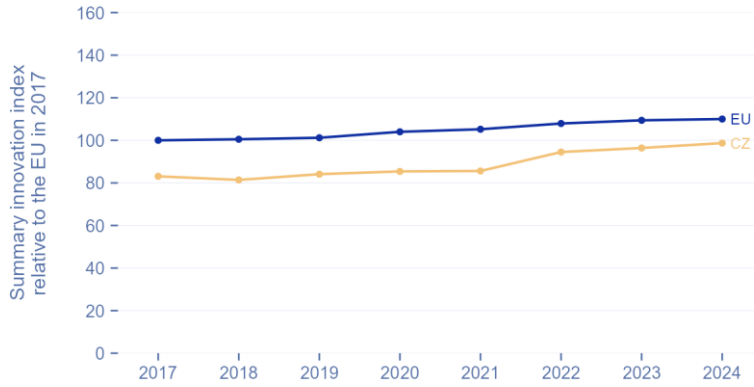
### Strong increases since 2023

- Innovation expenditures per person employed
- Individuals with above basic overall digital skills
- Non-R&D innovation expenditures

### Strong decreases since 2023

- SMEs introducing business process innovations
- SMEs introducing product innovations
- Innovative SMEs collaborating with others

**Footnote:** The first data column shows scores relative to the EU in 2024, with colour codes indicating performance levels. The subsequent columns show performance changes over time, with scores relative to the EU in 2017, coloured in purple for positive change and red for negative change. As reference years differ between the first column (2024) and the last two columns (2017), scores cannot be directly compared or subtracted across these columns.



### Summary innovation index

The line chart shows the evolution of the innovation performance of Czechia over time, relative to the performance of the EU in 2017.

**Footnote:** All performance scores (SII and dimensions below) are relative to that of the EU in 2017.

### Framework conditions

Since 2017, the framework conditions in Czechia have significantly improved. This improvement aligns with the implementation of the innovation strategy for Czechia for 2019–2030 and the government's rollout of 5G in municipalities and broadband to rural areas (Government of Czechia, 2021a). This has led to an increase in broadband penetration (+33.2%-points), although broadband penetration remains at only 64.9% of the EU average in 2024. Additionally, since 2017, efforts to provide better access to training, promoting lifelong learning (+41.8%-points) opportunities, and improving the system of vocational training have resulted in a higher percentage of individuals with above-basic overall digital skills (135.1% relative to the EU in 2024). Attractive research systems have improved in foreign doctorate students (+70.2%-points), and international scientific co-publications (+41.7%-points), however the quality of their research output is well below the EU average sitting at 49.7% of the EU average for scientific publications among the top 10% most cited.

#### Human resources



#### Attractive research systems



#### Digitalisation



### Investments

Since 2017, investments in research and development (R&D) have been increasing. However, there are different trends between the public and private sectors, with private investments being the main drivers of the overall increase, in particular the increase of venture capital expenditures (+87.2%-points between 2017 and 2024). Companies are also finding ways to be more efficient with their innovation spending by increasing innovation expenditures per employee (+53.5%-points since 2017) and significantly increasing non-R&D innovation spending (160.5% of the EU average in 2024), leading to improvements in current technologies, processes, and organisational methods.

However, there is a lack of government support for R&D spending in the public sector (-29.5%-points since 2017), and little direct and indirect government support for business R&D (61.8% of EU average in 2024), which indicates a heavy reliance on the private sector for investment. The use of information technologies has remained rather stable between 2017 and 2024 (-0.8%-points), due to diverging trends for enterprises providing ICT training (+8.3%-points) and employed ICT specialists (-9.7%-points).

Finance and support



Firm investments



Use of information technologies



### Innovation activities

Since 2017, Czechia has made notable progress in promoting innovation and collaboration. Public private co-publications have grown by 33.7%-points since 2017 and now stands at 133.9% of the EU average. The country has seen an increase in the proportion of SMEs introducing innovations, nonetheless they are still slightly below the EU average at 99.7% for product innovations and 91.9% for business process innovations. The collaboration between innovative SMEs has also increased (+9.4%-points since 2017) and is 108.9% of the EU average in 2024. These improvements run in parallel with Czechia’s government priority to support SMEs in Czechia for 2021–2027 (Government of Czechia, 2021b). However, Czechia performs poorly in intellectual assets sitting at 66.3% of the EU average in 2024, due to the low levels of PCT patent applications (49.3% of the EU average). Since 2017, trademark applications have gained 20.0%-points.

Innovators



Linkages



Intellectual assets



### Impacts

Since 2017, Czechia has seen positive changes in its employment landscape, particularly with a 37.0%-points increase in employment opportunities in innovative companies leading to a performance equal to 112.2% of the EU average in 2024. Sales impacts are visible through the above-EU-average exports of medium and high technology products (111.9% of the EU average), and sales of new-to-market and new-to-firm innovations (111.2% of the EU average). Exports of knowledge-intensive services lags behind at around half of the EU average, but has been increasing over years (+15.1%-points).

At the same time, Czechia’s progress towards environmental sustainability is shown by improvements in resource productivity (+28.1%-points since 2017), the development of environment-related technologies, and a gradual reduction in air emissions to bring it to 110.7% of the EU average in 2024.

Employment impacts



Sales impacts



Environmental sustainability



## Structural differences

### Performance and structure of the economy

Czechia stands out with the highest share of employment in manufacturing (25.8%), in the EU underscoring it as a leading manufacturer in the European Union. Moreover, Czechia has a larger share of high and medium high-tech employment (42.6%), highlighting its growing emphasis on technology-intensive industries. Despite a lower GDP per capita compared to the EU, Czechia has a significantly higher share of value added from foreign-controlled enterprises (28.6%) which is the third highest in the EU, which reflects Czechia's open, and export-driven economy that is dependent on foreign demand especially from the Eurozone.

### Business and entrepreneurship

Business and entrepreneurship is faltering in Czechia, with a lower enterprise birth rate than that of the EU average along with lower buyer sophistication. However, Czechia also attracts significant FDI (3.9% of GDP), strongly exceeding the EU average. This is due to the introduction of investment incentives, the presence of skilled and inexpensive labour, and the geographical advantages of Czechia, such as its location in the heart of Central Europe (KPMG).

### Innovation profiles

Czechia demonstrates a notable strength in in-house product innovation with market novelties (17.2%), and in in-house product innovation without market novelties (17.7%) indicating Czech companies might be excelling at incremental innovation, which involves making improvements to existing products rather than creating entirely new ones. It also exhibits a lower reliance on external innovators and a smaller percentage of innovation-active non-innovators. This is reflective of their strategies to support SMEs in Czechia for 2021–2027 and Innovation Strategy of Czechia 2019–2030.

### Governance and policy framework

Czechia is a parliamentary representative democracy with a lower Corruption Perceptions Index than that of the EU average (55.7 vs 64.0 for the EU), however the rule of law is approximately on par with that of the EU average. In terms of government procurement of advanced technology products, it slightly lags behind the EU in innovative public procurement and innovation procurement as a share of total public procurement (4.1%) is half that of the EU average (9.2%). However, Czechia's Recovery and Resilience Plan has a total allocation of EUR 7 billion in grants, out of which 22% will foster the digital transition, which should in turn improve innovative public procurement spending.

### Climate change

Czechia has lower greenhouse gas emissions (73.8) and eco-innovation index (111) compared to the EU average (82.8, 121.5). However, its circular material use is similar to the EU average. In Czechia's National Energy and Climate Plan, the main target is to reduce total greenhouse gas emissions by 30% by 2030 compared to 2005, which corresponds to a reduction of emissions by 44 million tonnes CO<sub>2</sub> eq.

### Demography

Czechia is a landlocked country with a population of around 10.6 million inhabitants. Its population is growing (1.6%) well above the EU average (0.3%). As a mostly urban country, Czechia has one of the higher population densities (138.3) in the EU (109).

## Structural indicators

The table below presents some structural differences between Czechia and the EU.

	CZ	EU
<b>Performance and structure of the economy</b>		
GDP per capita	91	100
Average annual GDP growth (2021-2023 average)	1	1.9
Employment share Manufacturing	25.8	15.8
Employment share High and Medium high-tech	42.6	37.9
Employment share Services	34.7	39.8
Employment share Knowledge-intensive services	28.3	28.6
Turnover share SMEs	13.6	12.6
Turnover share large enterprises	45.6	49.6
Foreign-controlled enterprises – share of value added	28.6	13.3
<b>Business and entrepreneurship</b>		
Enterprise births	0.5	0.8
FDI net inflows	3.9	1.9
Buyer sophistication	3	3.6
<b>Innovation profiles</b>		
In-house product innovators with market novelties	17.2	11.7
In-house product innovators without market novelties	17.7	13.7
In-house business process innovators	16.9	17.6
Innovators that do not develop innovations themselves	4.5	6.1
Innovation active non-innovators	0.7	4.2
Non-innovators with potential to innovate	17	17.8
Non-innovators without disposition to innovate	26.1	30.6
<b>Governance and policy frameworks</b>		
Corruption Perceptions Index	55.7	64
Government procurement of advanced technology products	3.1	3.4
Rule of law	1.1	1
Innovation procurement as a share of total public procurement	4.1	9.2
<b>Climate change</b>		
Circular material use rate	11.6	11.5
Greenhouse gas emissions intensity of energy consumption	73.8	82.8
Eco-Innovation Index	111	121.5
<b>Demography</b>		
Population size (in millions)	10.6	447
Average annual population growth (2021-2023 average)	1.6	0.3
Population density	138.3	109



## References

The country's relative strengths and weaknesses for each indicator, compared to other EU Member States and neighbouring countries, can be found in [Annex B](#).

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This report provides the Country profile from the 2024 European Innovation Scoreboard for Czechia

*Studies and reports*

