

**92.6**

Change over time: 19.8

89.7 Moderate Innovators

Czechia	Performance relative to EU in 2022	Performance change 2015-2022	Performance change 2021-2022
SUMMARY INNOVATION INDEX	92.6	19.8	11.7
Human resources	75.9	0.0	0.0
Doctorate graduates	114.8	0.0	0.0
Population with tertiary education	61.5	0.0	0.0
Lifelong learning	44.4	0.0	0.0
Attractive research systems	82.2	34.6	7.7
International scientific co-publications	103.6	72.5	15.9
Most cited publications	44.6	5.5	1.4
Foreign doctorate students	126.9	63.0	13.8
Digitalisation	75.8	6.3	6.3
Broadband penetration	64.1	12.1	12.1
People with above basic overall digital skills	90.9	0.0	0.0
Finance and support	86.2	12.0	21.7
R&D expenditures in the public sector	98.5	-12.9	6.5
Venture capital expenditures	83.6	82.9	64.0
Government support for business R&D	74.0	-27.3	-1.2
Firm investments	94.0	28.8	19.0
R&D expenditure in the business sector	78.4	14.7	1.6
Non-R&D Innovation expenditures	158.8	49.8	45.0
Innovation expenditures per employee	56.9	21.2	9.8
Use of information technologies	118.5	9.8	0.0
Enterprises providing ICT training	131.3	18.8	0.0
Employed ICT specialists	104.5	0.0	0.0
Innovators	138.2	104.6	65.9
Product innovators (SMEs)	136.3	66.1	55.8
Business process innovators (SMEs)	139.8	145.7	76.8
Linkages	92.2	45.8	10.7
Innovative SMEs collaborating with others	127.8	55.6	34.5
Public-private co-publications	130.8	70.7	14.8
Job-to-job mobility of HRST	47.9	26.5	-11.8
Intellectual assets	62.9	1.7	2.9
PCT patent applications	43.5	-5.8	-3.7
Trademark applications	83.7	20.5	10.7
Design applications	67.3	-3.6	4.8
Employment impacts	106.1	21.1	19.7
Employment in knowledge-intensive activities	96.1	0.0	0.0
Employment in innovative enterprises	114.1	40.5	37.8
Sales impacts	97.4	7.3	6.5
Medium and high-tech goods exports	124.1	4.3	-5.8
Knowledge-intensive services exports	61.7	17.9	13.7
Sales of innovative products	110.4	-1.2	14.3
Environmental sustainability	98.8	15.2	1.0
Resource productivity	78.9	29.0	4.6
Air emissions by fine particulate matter	115.4	15.1	1.9
Environment-related technologies	93.7	6.0	-2.7

The second column shows performance relative to that of the EU in 2022. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2022; light green: between 100% and 125%; yellow: between 70% and 100%; orange: below 70%. Normalised performance uses the data after a possible imputation of missing data and transformation of the data. The next columns show performance change over time between 2015 and 2022 and between 2021 and 2022, with scores relative to those of the EU in 2015. Positive performance changes are shown in green, negative performance changes in red.

CZECHIA is a **Moderate Innovator** with performance at 92.6% of the EU average. Performance is above the average of the Moderate Innovators (89.7%). Performance is increasing (19.8%-points) at a rate higher than that of the EU (9.9%-points). The country's performance gap to the EU is becoming smaller.

Relative strengths

- Non-R&D Innovation expenditures
- Business process innovators
- Product innovators
- Enterprises providing ICT training
- Public-private co-publications

Relative weaknesses

- PCT patent applications
- Lifelong learning
- Most cited publications
- Job-to-job mobility of HRST
- Innovation expenditures per employee

Strong increases since 2015

- Business process innovators
- Venture capital expenditures
- International scientific co-publications

Strong decreases since 2015

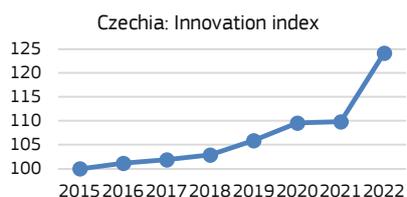
- Government support for business R&D
- R&D expenditures in the public sector
- PCT patent applications

Strong increases since 2021

- Business process innovators
- Venture capital expenditures
- Product innovators

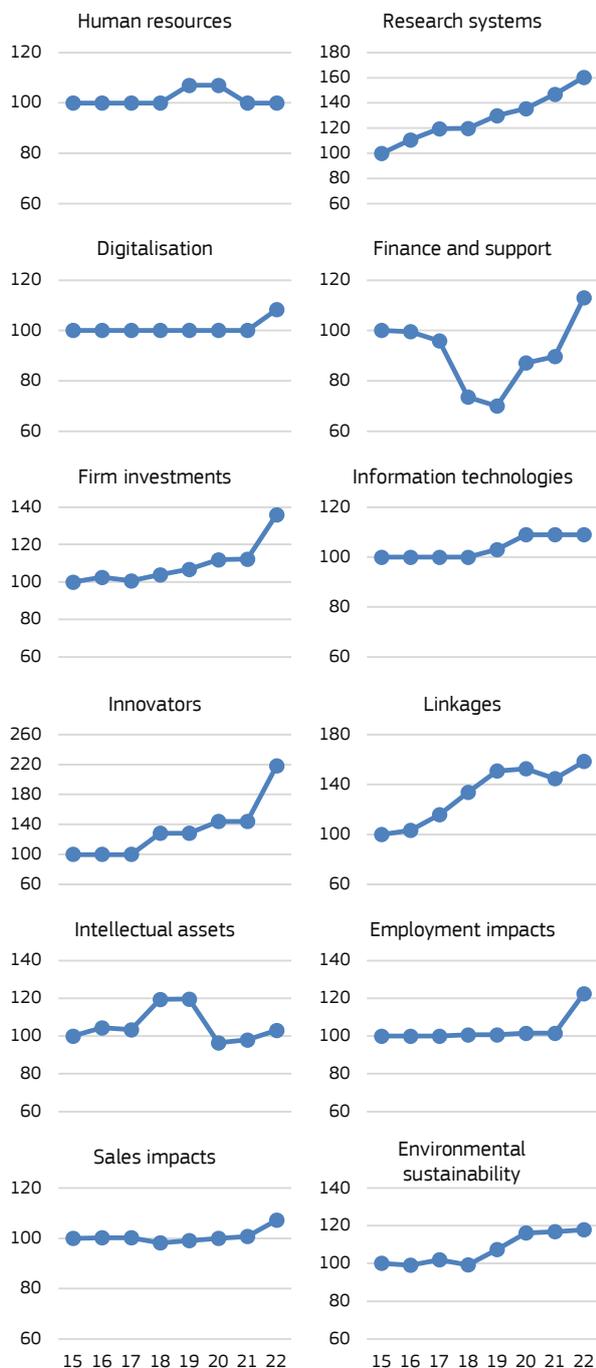
Strong decreases since 2021

- Job-to-job mobility of HRST
- Medium and high-tech goods exports
- PCT patent applications



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2015. Innovation performance increased strongly over time being 24% higher in 2022. Performance increased most in 2022.

The graphs below show the evolution of innovation performance in the different **innovation dimensions** against the performance of the country in 2015. There are strong increases for Research systems, Firm investments and Innovators. Only for Human resources and Intellectual assets performance did not or almost not improve.



Performance is measured relative to that of the country in 2015 (=100).

Structural differences with the EU are shown below:

- Czechia has lower per capita income and a slower growing economy. Manufacturing takes up a larger share of the economy, with SMEs accounting for a larger share of turnover.
- FDI net inflows adds positively to the innovation climate, enterprise births, top R&D spenders and buyer sophistication add negatively.
- Czechia has an above average share of In-house product innovators with market novelties.
- Entrepreneurial training and government procurement are below the EU average as drivers of research and innovation.
- Czechia shows a below average performance on Climate change related indicators with a much lower share of material resources coming from recycled waste materials.

	CZ	EU
Performance and structure of the economy		
GDP per capita (PPS)	28,800	31,200
Average annual GDP growth (%)	-1.2	-0.4
Employment share Manufacturing (NACE C) (%)	26.8	16.4
of which High and Medium high-tech (%)	42.7	38.0
Employment share Services (NACE G-N) (%)	35.6	41.1
of which Knowledge-intensive services (%)	36.9	35.8
Turnover share SMEs (%)	37.5	34.8
Turnover share large enterprises (%)	45.3	48.2
Foreign-controlled enterprises – share of value added (%)	21.9	11.7
Business and entrepreneurship		
Enterprise births (10+ employees) (%)	0.6	1.0
Total Entrepreneurial Activity (TEA) (%)	7.3	7.3
FDI net inflows (% GDP)	3.7	1.0
Top R&D spending enterprises per 10 mln. population	0.9	18.3
Buyer sophistication (1 to 7 best)	3.0	3.7
Innovation profiles		
In-house product innovators with market novelties	13.2	10.7
In-house product innovators without market novelties	9.8	12.3
In-house business process innovators	12.6	11.0
Innovators that do not develop innovations themselves	8.6	11.6
Innovation active non-innovators	2.6	3.3
Non-innovators with potential to innovate	17.3	19.9
Non-innovators without disposition to innovate	35.9	31.3
Governance and policy framework		
Ease of starting a business (0 to 100 best)	76.4	76.5
Basic school entrepreneurial education and training	2.6	3.5
Govt. procurement of advanced tech. products	3.1	3.5
Rule of law (-2.5 to 2.5 best)	1.1	1.1
Climate change indicators		
Circular material use rate	2.5	12.2
Greenhouse gas emissions intensity of energy consumption	73.8	82.8
Eco-Innovation Index	91.4	100.0
Demography		
Population size	10.7	447.0
Average annual population growth (%)	0.2	0.1
Population density	137.7	108.8