

	Performance	Performance	Performance
D	relative to EU in	change	change
Denmark	2022	2015-2022	2021-2022
SUMMARY INNOVATION INDEX	134.8	11.3	0.4
Human resources	170.1	-14.5	-9.7
Doctorate graduates	144.5	-34.3	-22.9
Population with tertiary education	148.3	0.0	0.0
Lifelong learning	228.9	0.0	0.0
Attractive research systems	195.6	28.3	-1.1
International scientific co-publications	259.6	110.9	0.0
Most cited publications	145.2	-14.1	1.2
Foreign doctorate students	210.8	44.1	-7.3
Digitalisation	152.2	0.0	0.0
Broadband penetration	153.8	0.0	0.0
People with above basic overall digital skills	150.0	0.0	0.0
Finance and support	111.2	39.4	16.5
R&D expenditures in the public sector	143.9	0.0	0.0
Venture capital expenditures	130.3	122.2	50.3
Government support for business R&D	43.6	7.4	3.9
Firm investments	83.1	-21.9	-37.4
R&D expenditure in the business sector	120.9	-3.1	0.0
Non-R&D Innovation expenditures	101.6	47.6	25.3
Innovation expenditures per employee	37.3	-109.1	-135.4
Use of information technologies	156.5	0.0	-3.3
Enterprises providing ICT training	162.5	0.0	-6.3
Employed ICT specialists	150.0	0.0	0.0
Innovators	117.2	63.4	-2.0
Product innovators (SMEs)	120.2	46.2	-0.1
Business process innovators (SMEs)	114.5	81.7	-4.0
Linkages	218.0	21.6	2.2
Innovative SMEs collaborating with others	127.6	15.7	5.9
Public-private co-publications	471.5	143.5	0.0
Job-to-job mobility of HRST	181.3	-26.5	0.0
Intellectual assets	143.3	-0.8	-5.1
PCT patent applications	130.6	-8.3	-2.9
Trademark applications	114.7	13.8	-0.6
Design applications	190.6	-3.1	-11.1
Employment impacts	108.4	6.7	-5.5
Employment in knowledge-intensive activities	122.1	0.0	0.0
Employment in innovative enterprises	97.5	12.8	-10.6
Sales impacts	104.2	26.6	37.1
Medium and high-tech goods exports	89.4	11.8	-5.3
Knowledge-intensive services exports	110.0	5.6	14.2
Sales of innovative products	115.0	70.5	119.0
Environmental sustainability	127.8	5.6	1.2
Resource productivity	66.2	12.3	2.7
Air emissions by fine particulate matter	126.3	6.5	1.4
Environment-related technologies	190.8	0.0	0.0

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.

DENMARK is an **Innovation Leader** with performance at 134.8% of the EU average. Performance is just above the average of the Innovation Leaders (134.4%). Performance is increasing (11.3%-points) at a rate higher than that of the EU (9.9%-points). The country's performance lead over the EU is becoming larger.

Relative strengths

Public-private co-publications
International scientific co-publications
Lifelong learning
Foreign doctorate students
Environment-related technologies

Relative weaknesses

Innovation expenditures per employee Government support for business R&D Resource productivity Medium and high-tech goods exports Employment in innovative enterprises

Strong increases since 2015

Public-private co-publications

Venture capital expenditures

International scientific co-publications

Strong decreases since 2015

Innovation expenditures per employee Doctorate graduates Job-to-job mobility of HRST

Strong increases since 2021

Sales of innovative products Venture capital expenditures Non-R&D Innovation expenditures

Strong decreases since 2021

Innovation expenditures per employee Doctorate graduates Design applications



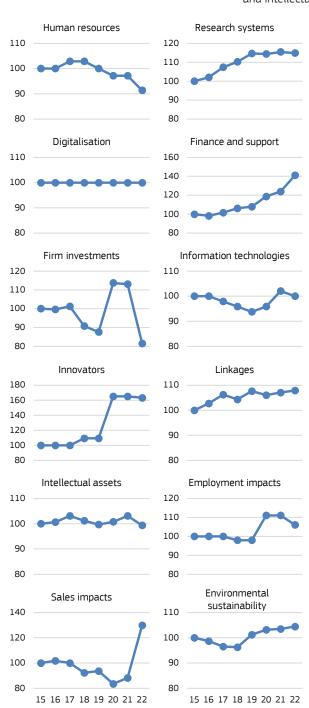
The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2015. Innovation performance did not change between 2015 and 2019 and then started to increase with a declining rate of increase in 2021 and 2022.

The graphs below show the evolution of innovation performance in the different **innovation dimensions** against the performance of the country in 2015. Performance improved strongly for Finance and support and Innovators, declined for Human resources and Firm investments, and did not change for Digitalisation and Intellectual assets.

Structural differences with the EU are shown below:

- Denmark has higher per capita income and a faster growing economy. Manufacturing takes up a smaller share of the economy, with SMEs accounting for a larger share of turnover.
- The presence of top R&D spenders adds positively to the innovation climate, enterprise births and entrepreneurial activities add negatively.
- Information on Innovation profiles is not available.
- Easy of starting a business and entrepreneurial training are above the EU average as drivers of research and innovation.
- Denmark shows a mixed performance on Climate change related indicators with below average shares of material resources coming from recycled waste materials and an above average score on environmental innovation.

average score on environmental innovation.		
	DK	EU
Performance and structure of the economy		
GDP per capita (PPS)	41,100	31,200
Average annual GDP growth (%)	1.1	-0.4
Employment share Manufacturing (NACE C) (%)	11.3	
of which High and Medium high-tech (%)	43.1	38.0
Employment share Services (NACE G-N) (%)	41.3	41.1
of which Knowledge-intensive services (%)	36.0	35.8
Turnover share SMEs (%)	41.0	34.8
Turnover share large enterprises (%)	44.9	48.2
Foreign-controlled enterprises – share of value added (%)	11.5	11.7
Business and entrepreneurship		
Enterprise births (10+ employees) (%)	0.3	1.0
Total Entrepreneurial Activity (TEA) (%)	5.5	7.3
FDI net inflows (% GDP)	0.6	1.0
Top R&D spending enterprises per 10 mln. population	89.6	18.3
Buyer sophistication (1 to 7 best)	3.9	3.7
Innovation profiles		
In-house product innovators with market novelties	n/a	10.7
In-house product innovators without market novelties	n/a	12.3
In-house business process innovators	n/a	11.0
Innovators that do not develop innovations themselves	n/a	11.6
Innovation active non-innovators	n/a	3.3
Non-innovators with potential to innovate	n/a	19.9
Non-innovators without disposition to innovate	n/a	31.3
Governance and policy framework		
Ease of starting a business (0 to 100 best)	85.0	76.5
Basic school entrepreneurial education and training	5.2	3.5
Govt. procurement of advanced tech. products	3.5	3.5
Rule of law (-2.5 to 2.5 best)	1.9	1.1
Climate change indicators		
Circular material use rate	11.7	12.2
Greenhouse gas emissions intensity of energy consumption	64.7	82.8
Eco-Innovation Index	137.9	100.0
Demography		
Population size	5.8	447.0
Average annual population growth (%)	0.3	0.1
Population density	137.9	108.8



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