

**80.2**

Change over time: 24.1

89.7 Moderate Innovators

Greece	Performance relative to EU in 2022	Performance change 2015-2022	Performance change 2021-2022
<b>SUMMARY INNOVATION INDEX</b>	<b>80.2</b>	<b>24.1</b>	<b>3.7</b>
<b>Human resources</b>	<b>72.4</b>	<b>4.8</b>	<b>-4.8</b>
Doctorate graduates	70.3	11.4	-11.4
Population with tertiary education	118.3	0.0	0.0
Lifelong learning	18.9	0.0	0.0
<b>Attractive research systems</b>	<b>66.8</b>	<b>9.8</b>	<b>-1.2</b>
International scientific co-publications	84.2	42.1	8.3
Most cited publications	89.6	1.5	0.5
Foreign doctorate students	1.4	-2.1	-13.9
<b>Digitalisation</b>	<b>57.3</b>	<b>0.0</b>	<b>0.0</b>
Broadband penetration	38.5	0.0	0.0
People with above basic overall digital skills	81.8	0.0	0.0
<b>Finance and support</b>	<b>60.7</b>	<b>35.2</b>	<b>7.9</b>
R&D expenditures in the public sector	101.5	40.3	17.7
Venture capital expenditures	48.1	49.5	1.5
Government support for business R&D	25.7	13.6	1.0
<b>Firm investments</b>	<b>71.0</b>	<b>24.8</b>	<b>5.5</b>
R&D expenditure in the business sector	43.2	32.6	7.8
Non-R&D Innovation expenditures	106.2	9.0	-6.0
Innovation expenditures per employee	66.8	33.1	15.0
<b>Use of information technologies</b>	<b>37.0</b>	<b>3.3</b>	<b>-9.8</b>
Enterprises providing ICT training	50.0	6.3	-18.8
Employed ICT specialists	22.7	0.0	0.0
<b>Innovators</b>	<b>167.3</b>	<b>106.9</b>	<b>15.1</b>
Product innovators (SMEs)	179.0	123.7	16.6
Business process innovators (SMEs)	157.0	89.0	13.5
<b>Linkages</b>	<b>114.3</b>	<b>59.2</b>	<b>-8.8</b>
Innovative SMEs collaborating with others	174.8	56.6	-16.0
Public-private co-publications	134.4	92.1	19.2
Job-to-job mobility of HRST	58.3	47.1	-14.7
<b>Intellectual assets</b>	<b>53.8</b>	<b>12.8</b>	<b>5.1</b>
PCT patent applications	44.5	8.7	3.1
Trademark applications	91.0	29.9	8.5
Design applications	27.4	4.7	5.0
<b>Employment impacts</b>	<b>124.2</b>	<b>38.1</b>	<b>22.6</b>
Employment in knowledge-intensive activities	80.5	0.0	0.0
Employment in innovative enterprises	158.9	73.0	43.3
<b>Sales impacts</b>	<b>90.6</b>	<b>39.6</b>	<b>8.2</b>
Medium and high-tech goods exports	27.1	14.1	-9.8
Knowledge-intensive services exports	99.3	45.1	46.1
Sales of innovative products	158.0	66.6	-12.2
<b>Environmental sustainability</b>	<b>71.1</b>	<b>-6.3</b>	<b>1.1</b>
Resource productivity	86.3	45.5	17.1
Air emissions by fine particulate matter	71.8	7.4	2.6
Environment-related technologies	55.2	-57.9	-11.7

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.

**GREECE** is a **Moderate Innovator** with performance at 80.2% of the EU average. Performance is below the average of the Moderate Innovators (89.7%). Performance is increasing (24.2%-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

- Product innovators
- Innovative SMEs collaborating with others
- Employment in innovative enterprises
- Sales of innovative products
- Business process innovators

### Relative weaknesses

- Foreign doctorate students
- Lifelong learning
- Employed ICT specialists
- Government support for business R&D
- Medium and high-tech goods exports

### Strong increases since 2015

- Product innovators
- Public-private co-publications
- Business process innovators

### Strong decreases since 2015

- Environment-related technologies
- Foreign doctorate students

### Strong increases since 2021

- Knowledge-intensive services exports
- Employment in innovative enterprises
- Public-private co-publications

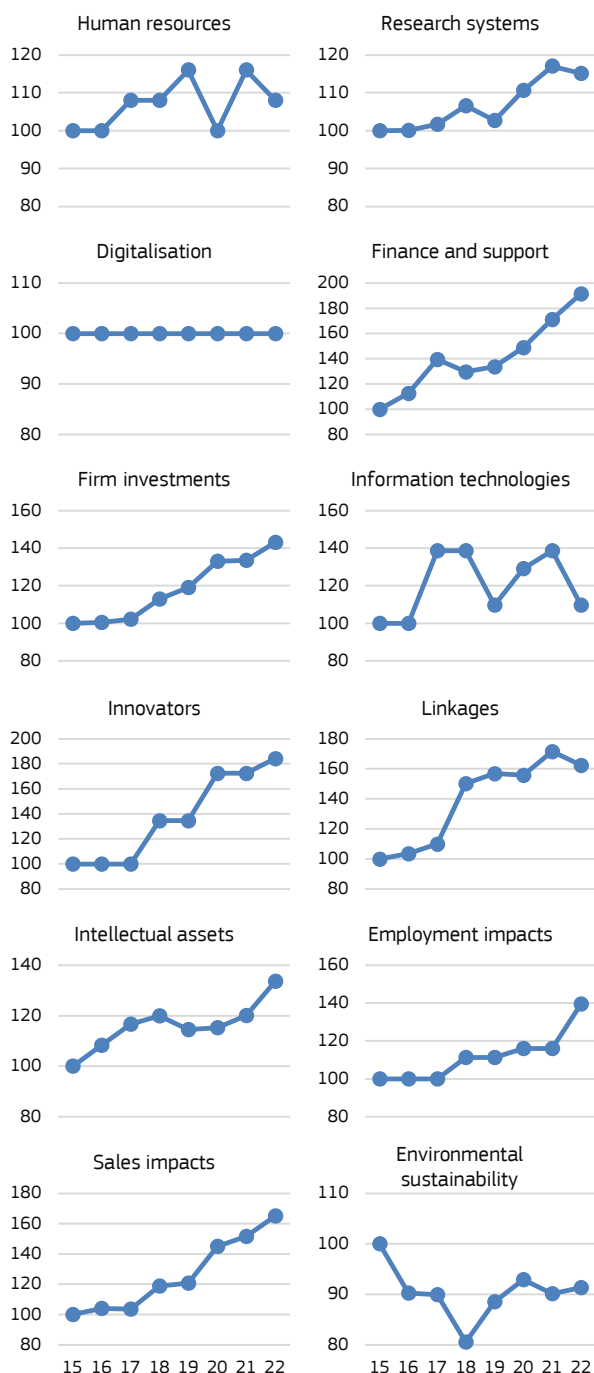
### Strong decreases since 2021

- Enterprises providing ICT training
- Innovative SMEs collaborating with others
- Job-to-job mobility of HRST



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 with highest annual increases in 2018 and 2020. In both 2021 and 2022 performance increased with 6%-point.

The graphs below show the evolution of innovation performance in the different **innovation dimensions** against the performance of the country in 2015. Performance increased strongly for Finance and support, Innovators and Sales impacts. Performance did not change for Digitalisation and declines for Environmental sustainability.



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

**Structural differences** with the EU are shown below:

- Greece has lower per capita income and a slightly slower growing economy. Business services takes up a larger share of the economy, with SMEs accounting for a larger share of turnover.
- Enterprise births and FDI net inflows add positively to the innovation climate, top R&D spenders add negatively.
- Greece has a higher share of In-house product innovators with market novelties and a much higher share of non-innovators with potential to innovate.
- It is more difficult to start a new business in Greece and entrepreneurial training and government are below the EU average.
- Greece shows a below average performance on Climate change related indicators, particularly on the circular material use rate.

	EL	EU
<b>Performance and structure of the economy</b>		
GDP per capita (PPS)	20,100	31,200
Average annual GDP growth (%)	-0.5	-0.4
Employment share Manufacturing (NACE C) (%)	9.7	16.4
of which High and Medium high-tech (%)	16.8	38.0
Employment share Services (NACE G-N) (%)	45.8	41.1
of which Knowledge-intensive services (%)	28.8	35.8
Turnover share SMEs (%)	39.4	34.8
Turnover share large enterprises (%)	34.0	48.2
Foreign-controlled enterprises – share of value added (%)	5.4	11.7
<b>Business and entrepreneurship</b>		
Enterprise births (10+ employees) (%)	2.3	1.0
Total Entrepreneurial Activity (TEA) (%)	7.5	7.3
FDI net inflows (% GDP)	2.0	1.0
Top R&D spending enterprises per 10 mln. population	4.3	18.3
Buyer sophistication (1 to 7 best)	3.3	3.7
<b>Innovation profiles</b>		
In-house product innovators with market novelties	16.7	10.7
In-house product innovators without market novelties	20.5	12.3
In-house business process innovators	12.8	11.0
Innovators that do not develop innovations themselves	8.5	11.6
Innovation active non-innovators	1.8	3.3
Non-innovators with potential to innovate	31.8	19.9
Non-innovators without disposition to innovate	7.9	31.3
<b>Governance and policy framework</b>		
Ease of starting a business (0 to 100 best)	67.6	76.5
Basic school entrepreneurial education and training	3.1	3.5
Govt. procurement of advanced tech. products	2.6	3.5
Rule of law (-2.5 to 2.5 best)	0.2	1.1
<b>Climate change indicators</b>		
Circular material use rate	1.7	12.2
Greenhouse gas emissions intensity of energy consumption	76.4	82.8
Eco-Innovation Index	83.6	100.0
<b>Demography</b>		
Population size	10.7	447.0
Average annual population growth (%)	-0.2	0.1
Population density	82.4	108.8