



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

## European Innovation Scoreboard 2024 – Country profile Greece

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## Moderate Innovator ●

Summary innovation index (relative to EU in 2017): **85.3**

Rank: **24**

Change vs 2023: ▼ -1 Change vs 2017: ▲ 16

Greece is a Moderate Innovator with performance at 77.5% of the EU average in 2024. Performance is below 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>77.5</b>	<b>16.0</b>	<b>-1.0</b>
<b>Human resources</b>	<b>74.1</b>	<b>10.1</b>	<b>-1.5</b>
New doctorate graduates	86.9	23.1	0.0
Population with tertiary education	107.6	1.8	-4.2
Population involved in lifelong learning	20.4	-1.0	-1.0
<b>Attractive research systems</b>	<b>67.7</b>	<b>13.5</b>	<b>2.1</b>
International scientific co-publications	92.8	40.9	1.2
Scientific publications among the top 10% most cited	91.9	5.3	0.3
Foreign doctorate students as a % of all doctorate students	7.3	6.3	7.1
<b>Digitalisation</b>	<b>50.5</b>	<b>2.5</b>	<b>9.1</b>
Broadband penetration	37.5	12.7	26.1
Individuals with above basic overall digital skills	68.7	-7.5	-7.5
<b>Finance and support</b>	<b>74.4</b>	<b>33.4</b>	<b>6.1</b>
R&D expenditure in the public sector	103.3	18.1	-1.6
Venture capital expenditures	57.3	35.3	2.5
Direct and indirect government support of business R&D	61.9	53.3	22.0
<b>Firm investments</b>	<b>72.8</b>	<b>22.5</b>	<b>-0.6</b>
R&D expenditure in the business sector	47.9	30.8	3.0
Non-R&D innovation expenditures	108.3	9.7	-4.9
Innovation expenditures per person employed	67.0	27.7	0.3
<b>Use of information technologies</b>	<b>38.7</b>	<b>-4.2</b>	<b>2.7</b>
Enterprises providing ICT training	48.3	-8.9	8.9
Employed ICT specialists	29.4	0.0	-3.2
<b>Innovators</b>	<b>183.0</b>	<b>67.1</b>	<b>-9.8</b>
SMEs introducing product innovations	203.2	86.1	-10.3
SMEs introducing business process innovations	166.4	49.0	-9.5
<b>Linkages</b>	<b>92.8</b>	<b>-8.4</b>	<b>-34.8</b>
Innovative SMEs collaborating with others	104.2	-119.9	-79.2
Public-private co-publications	153.1	75.9	2.4
Job-to-job mobility of HRST	58.4	47.1	-14.7
<b>Intellectual assets</b>	<b>53.4</b>	<b>7.3</b>	<b>-1.7</b>
PCT patent applications	42.9	1.5	0.4
Trademark applications	93.6	27.4	-2.1
Design applications	25.5	-0.9	-4.0
<b>Employment impacts</b>	<b>115.8</b>	<b>33.2</b>	<b>20.8</b>
Employment in knowledge-intensive activities	71.9	-3.6	0.0
Employment in innovative enterprises	153.3	66.7	39.6
<b>Sales impacts</b>	<b>72.1</b>	<b>21.2</b>	<b>-9.2</b>
Exports of medium and high technology products	22.9	2.5	4.4
Knowledge-intensive services exports	66.8	13.4	-11.0
Sales of new-to-market and new-to-firm innovations	159.2	61.6	-28.1
<b>Environmental sustainability</b>	<b>70.5</b>	<b>-2.6</b>	<b>0.7</b>
Resource productivity	83.3	45.9	11.7
Air emissions by fine particulates	77.3	14.7	4.3
Environment-related technologies	49.3	-66.8	-13.5

### Relative strengths

- SMEs introducing product innovations
- SMEs introducing business process innovations
- Sales of new-to-market and new-to-firm innovations

### Relative weaknesses

- Foreign doctorate students as a % of all doctorate students
- Population involved in lifelong learning
- Exports of medium and high technology products

### Strong increases since 2017

- SMEs introducing product innovations
- Public-private co-publications
- Employment in innovative enterprises

### Strong decreases since 2017

- Innovative SMEs collaborating with others
- Environment-related technologies
- Enterprises providing ICT training

### Strong increases since 2023

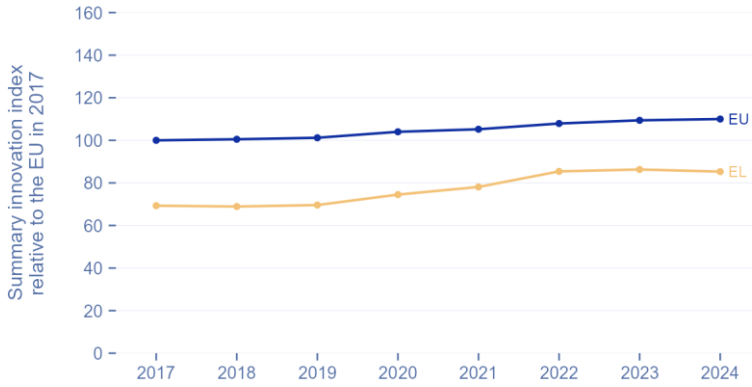
- Employment in innovative enterprises
- Broadband penetration
- Direct and indirect government support of business R&D

### Strong decreases since 2023

- Innovative SMEs collaborating with others
- Sales of new-to-market and new-to-firm innovations
- Job-to-job mobility of HRST

**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.

Emerging Innovators Moderate Innovators Strong Innovators Innovation Leaders



**Summary innovation index**

The line chart shows the evolution of the innovation performance of Greece 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**

Greece's performance in framework conditions is generally below the EU average in 2024 across most dimensions. This includes its human resources, at 74.1% of the EU average, its research systems, at 67.7% of the EU average, and its digitalisation, at 50.5% of the EU average in 2024. One exception is the percentage of population aged 25-34 with tertiary education at 44% and hence slightly above the EU average of 43%. Equally, in international scientific co-publications per million population, Greece has 1 182 publications per million population compared to the EU average of 1 268 publications. A significant weakness is the consistently low 3.5% participation rate in lifelong learning among the population aged 25 to 64 since 2017.

Another significant challenge for Greece is its low broadband penetration, with 37.5% of the EU average in 2024. To accelerate the digital transformation of the country, Greece has introduced its National Broadband Plan 2021-2027 and the Digital Transformation Bible 2020-2025, which outline strategies to promote the use of high-capacity fixed and 5G networks.

Positive trends over the period 2017-2024 include International scientific co-publications per million population, which have increased by 41%-points. Equally, the number of new doctorate graduates in science, technology, engineering, and mathematics (STEM) per 1 000 population has increased by 23%-points. The Hellenic Foundation for Research & Innovation (HFRI) effort to support PhDs and postdocs and promote research in research organisations is expected to sustain and enhance this positive trend.

**Human resources**



**Attractive research systems**



**Digitalisation**



**Investments**

Greece's performance in finance and support and firm investments is below the EU average, with 74.4% and 72.8% of the EU average in 2024, respectively. An exception is R&D expenditure in the public sector (including government and the higher education sectors), which is around the EU average (103.3% of the EU average in 2024). Persistent weaknesses in the private sector include low business R&D investment (47.9% of the EU average in 2024) and limited access to venture capital (57.3% of the EU average in 2024). This is further exacerbated by inadequate public support, both in terms of direct government funding and tax incentives for business R&D. Challenges in Greece's performance in investments were identified in the evaluation of actions to support R&D and innovation investments (over the period 2007-2013) of the General Secretariat for Research and Innovation (GSRI). The evaluation found that companies were challenged by payment delays, contributing to companies' liquidity issues (Planet et al., 2024). The same study pointed out the overall limited budget considering the sizeable needs of businesses and the tendency towards supporting low-risk proposals.

Despite the low levels of investment, R&D expenditures in the public and business sectors have shown significant growth, with an increase of 18%-points and 31%-points, respectively, since 2017. The highest growth is recorded for Direct government funding and government tax support for business R&D with a 53%-points increase.

To further promote research and innovation, the Recovery and Resilience Facility (RRF) and ERDF include a set of measures. Some examples include co-funding research projects in RIS3 sectors and Horizon 2020 proposals with the 'Seal of Excellence', funding for basic and promising applied research projects, and upgrading the infrastructure of Greece's research centres. The loan facility, which provides loans to SMEs under favourable conditions for digital and green investments, is also expected to boost innovation capacity.

Another notable weakness is the low share of ICT specialists in total employment (29.4% of the EU average in 2024), combined with the poor and deteriorating performance of enterprises in providing training to develop or upgrade the ICT skills of their personnel (48.3% of the EU average in 2024 and with a 9%-point decrease since 2017). However, measures funded by the Greek Recovery and Resilience Plan are being implemented, focusing on the digital transformation of SMEs and the digital and green upskilling of the workforce.

**Finance and support**



**Firm investments**



**Use of information technologies**



## Innovation activities

The performance of Greece in innovation activities notably exceeds the EU average for several indicators, especially those measured through the Community Innovation Survey (CIS). This includes indicators such as SMEs introducing product innovations (203.2% of the EU average in 2024) and business process innovations (166.4% of the EU average in 2024). Regarding collaboration between Innovative SMEs and others, Greece performs about the EU average (104.2% of the EU average in 2024) but has experienced a sharp decline since 2017 of 120%-points. According to the National Documentation Centre (2022) these results are driven by the year of the pandemic, during which Greek businesses have shown improved performance due to the requirements for new products and business processes imposed by the economic and social conditions.

The evaluation of GSRI's actions over the period 2007-2013 has highlighted that Greek businesses have made limited investments in R&D and that their innovative activities rely much less on new knowledge compared to other EU countries. Consequently, there is an emphasis on relatively low-risk incremental innovations that improve existing products and business models, rather than pioneering radical innovations that create new markets.

Since 2017, the collaboration between innovative SMEs and other entities has decreased significantly by 120%-points. Differing objectives between research and industry in Greece generally limit the utilisation of scientific results, while collaborations tend to be sporadic (European Commission, 2022). This highlights the need for increased efforts in collaborative research, aligning with the 2021-2027 Smart Specialisation Strategy and the 'research, create, innovate' investment from the Recovery and Resilience Fund. Moreover, job-to-job mobility is below the EU average but has demonstrated a 47%-point increase since 2017.

Additionally, low performance in R&D expenditures and inefficiency in converting scientific knowledge and research results into commercially viable technologies is reflected in innovation outputs with a below average performance in PCT patent applications, trademarks and designs. GSRI actions including the 'Research-Create-Innovate' initiative, financed by the Recovery and Resilience Plan, are expected to increase collaboration between the local research and business communities and innovation outputs.

**Innovators**



**Linkages**



**Intellectual assets**



**Impacts**

The impact of innovation in Greece is constrained by systemic challenges within its innovation system. EIS indicators show Greece’s below-EU-average performance in exports of medium and high technology products (22.9% of the EU average in 2024), as well as knowledge-intensive services exports (66.8% of the EU average in 2024). Structural features of Greece’s economy as a predominantly services-based economy, along with the low sophistication of the product portfolio produced and exported help explain its moderate innovation performance as measured by the EIS. Nevertheless, according to the 2023 National Reform Programme Greek exports in goods have started to increase and reveal an increasing diversification across sectors including increasing volumes of high-tech exports. Employment impacts are driven by the employment in innovative enterprises with a performance notably above the EU average in 2024 at 153.3%.

Greece falls below the EU average in air emissions (77.3% of the EU average in 2024) and the development of environment-related technologies (49.3% of the EU average in 2024) coupled with low R&D investments and IPR activity. However, the gap with the EU in resource productivity is narrowing with an encouraging positive trend since 2017 of 46%-points. Several measures have been launched under the Recovery and Resilience Plan (RRP) including waste and water management, electric vehicles and renewable energy sources etc. which are expected to contribute to Greece’s green transition.

**Employment impacts**



**Sales impacts**



**Environmental sustainability**



## Structural differences

### Performance and structure of the economy

The economy in Greece experienced a rapid recovery from the pandemic in 2020-2021 recording a positive average annual growth of 3.8% above the 1.9% growth of the EU. Further growth is expected in 2024 and 2025 according to the 2024 European Semester report driven largely by EU Funding and stronger investments due to the easing of credit conditions.

### Business and entrepreneurship

According to Kalogirou et al. (2021), business activity in Greece is primarily individual or family-run and characterised by a weak entrepreneurial culture and a lack of networking. EIS structural indicators show that Greece's total entrepreneurial activity is slightly below the EU average. This suggests that fewer individuals in Greece are in the process of starting a business or are managing a business of less than four years compared to the EU average.

Greece has higher Foreign Direct Investment (FDI) net inflows compared to the EU average. According to data from the Bank of Greece this is predominantly driven by real estate which has increased significantly after the introduction of the Gold Visa Scheme in 2013. Additionally, a new fund is created by the Hellenic Corporation of Assets to mobilise additional FDI.

Buyer sophistication data indicates that Greek purchasing decisions balance quality performance attributes and price, but this sophistication level is slightly below the EU average.

### Innovation profiles

Overall, Greece shows strong innovation activity, particularly in product and process innovation, compared to the EU average. Above EU performance is reported for in-house product innovators with market novelties and without market novelties and in-house business process innovators. On the other hand, Greece's potential for improvement compared to the EU is comparatively more limited given the fewer non-innovators with potential to innovate.

### Governance and policy framework

Overall, the indicators under governance show systemic challenges in Greece, particularly in the areas of corruption, rule of law, and government support for innovation through procurement. Strengthening the national anti-corruption framework is one of the measures in Greece's Recovery and Resilience Plan.

### Climate change

Concerning eco-innovation, Greece is categorised as an average performer ranking 18th and hence behind the Eco Innovation Leaders. Greece also faces significant challenges in material reuse compared to the EU average. It has a significantly lower circular material use rate compared to the EU average, which indicates inefficiencies in recycling and reusing materials within the economy. Structural problems in waste management and the use of circular materials in industry and construction represent Greece's priorities. Moreover, according to the Eco Innovation country report in 2022, energy is largely dependent on non-renewable sources and efficiency is relatively low. Renewable energy sources equally represent a key priority for Greece's reform according to the country's Recovery and Resilience Plan.

### Demography

Greece is experiencing a population decline at an average annual rate of -1.2% compared to a modest growth of 0.3% in the EU. It also has a lower population density compared to the EU average. Due to its mountainous and island geography the density varies considerably. There is however a high concentration with almost one out of two people living in either the Attica region namely Athens or in Central Macedonia namely Thessaloniki.



## Structural indicators

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

	EL	EU
<b>Performance and structure of the economy</b>		
GDP per capita	65.7	100
Average annual GDP growth (2021-2023 average)	3.8	1.9
Employment share Manufacturing	10	15.8
Employment share High and Medium high-tech	16.5	37.9
Employment share Services	43.9	39.8
Employment share Knowledge-intensive services	26.7	28.6
Turnover share SMEs	16.7	12.6
Turnover share large enterprises	33.3	49.6
Foreign-controlled enterprises – share of value added	6.6	13.3
<b>Business and entrepreneurship</b>		
Enterprise births		0.8
Total Entrepreneurial Activity	5.7	6.8
FDI net inflows	2.8	1.9
Buyer sophistication	3.3	3.6
<b>Innovation profiles</b>		
In-house product innovators with market novelties	19.9	11.7
In-house product innovators without market novelties	23.3	13.7
In-house business process innovators	21.1	17.6
Innovators that do not develop innovations themselves	7.3	6.1
Innovation active non-innovators	1	4.2
Non-innovators with potential to innovate	12.1	17.8
Non-innovators without disposition to innovate	15.3	30.6
<b>Governance and policy frameworks</b>		
Corruption Perceptions Index	50	64
Basic-school entrepreneurial education and training	2.9	2.6
Government procurement of advanced technology products	2.6	3.4
Rule of law	0.3	1
Innovation procurement as a share of total public procurement	6.6	9.2
<b>Climate change</b>		
Circular material use rate	3.6	11.5
Greenhouse gas emissions intensity of energy consumption	76.4	82.8
Eco-Innovation Index	101.6	121.5
<b>Demography</b>		
Population size (in millions)	10.5	447

	EL	EU
Average annual population growth (2021-2023 average)	-1.2	0.3
Population density	81.7	109

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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 Greece

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