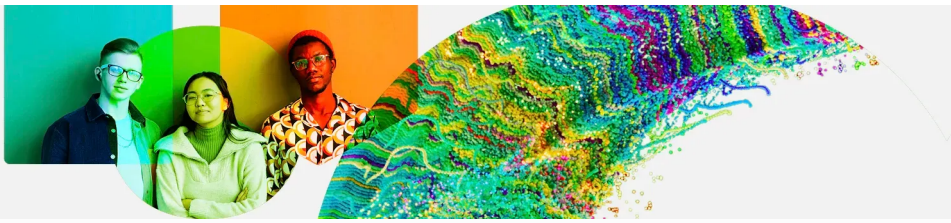
Global Innovation Index 2024



Greece ranking in the Global Innovation Index 2024

Greece ranks 45th among the 133 economies featured in the GII 2024.

The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.

Greece ranks 38th among the 51 high-income group economies.

Greece ranks 28th among the 39 economies in Europe.

Greece GII Ranking (2020-2024)

The table shows the rankings of Greece over the past four years. Data availability and changes to the GII model framework influence year-on-year comparisons of the GII rankings. The statistical confidence interval for the ranking of Greece in the GII 2024 is between ranks 42 and 46.

Year	GII Position	Innovation Inputs	Innovation Outputs
2020	43rd	40th	52nd
2021	47th	39th	60th
2022	44th	44th	49th
2023	42nd	42nd	41st
2024	45th	43rd	43rd

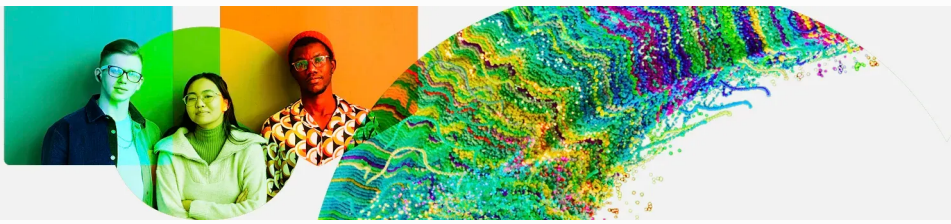
Greece performs the same in innovation outputs as in innovation inputs in 2024.

This year **Greece ranks 43rd in innovation inputs.** This position is lower than last year.

Greece ranks 43rd in innovation outputs. This position is lower than last year.

Greece has no clusters in the top 100 S&T clusters of the Global Innovation Index.

Global Innovation Index 2024



> Global Innovation Tracker

The Global Innovation Tracker 2024 shows what is the current state of innovation in Greece, how rapidly is technology being embraced and what are the resulting societal impacts.

For Greece, 9 indicators have improved in the short-term and 4 indicators have worsened.

Science and innovation investment

Scientific publications	R&D investments	Venture capital		International patent filings
		Deal numbers	Deal values	
▼ -3.4% 2022 - 2023	▲ 8.1% 2021 - 2022	▲ 100% 2022 - 2023	▼ -28.9% 2022 - 2023	▼ -12.6% 2022 - 2023
▲ 2.3% 2013 - 2023	▲ 8.3% 2012 - 2022	▲ 13.9% 2013 - 2023	▲ 45.5% 2013 - 2023	▲ 0.6% 2013 - 2023

Technology adoption

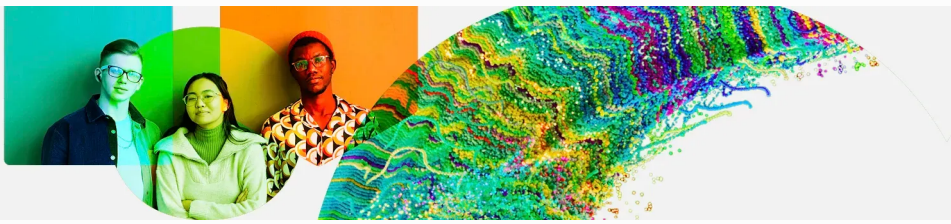
Safe sanitation	Connectivity		Robots	Electric vehicles
	Fixed broadband	5G		
▲ 0.1% 2021 - 2022	▲ 1.4% 2021 - 2022	▲ 49% 2021 - 2022	▲ 14.8% 2021 - 2022	▲ 75.3% 2022 - 2023
▲ 0.8% 2012 - 2022	▲ 5.8% 2012 - 2022		▲ 10.9% 2012 - 2022	▲ 154.4% 2013 - 2023
92.2 per 100 inhabitants in 2022	43 per 100 inhabitants in 2022	89.4 per 100 inhabitants in 2022		0.9 per 100 inhabitants in 2023

Socioeconomic impact

Labor productivity	Life expectancy	Temperature change
▲ 0.3% 2022 - 2023	▲ 0.7% 2021 - 2022	▲ 1.8°C 2023
▲ 0.3% 2013 - 2023	0% 2012 - 2022	n/a
84,808 USD in 2023	80.6 years in 2022	

Notes: Not all indicators of the Global Innovation Tracker are used to calculate the Global Innovation Index. Long-term annual growth refers to the compound annual growth rate (CAGR) over the indicated period. For each variable, a one-year growth rate is set for the short run, and ten-year CAGR is set for the long run; time windows might differ when gaps exist in data availability. The end period corresponds to the most recent available observation, which may differ among countries. Temperature change is an exception: it indicates the change in degrees Celsius with respect to the average temperature in the country from 1951–1980. Figures are rounded.

Global Innovation Index 2024

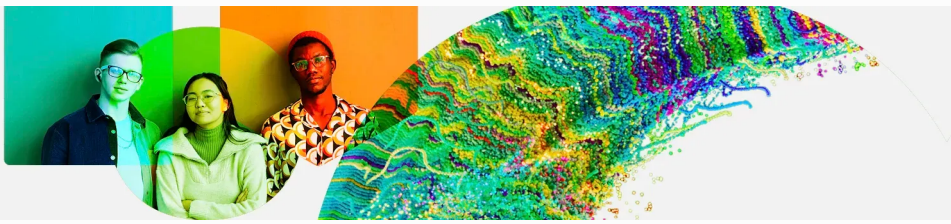


Expected vs. observed innovation performance

The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.

Relative to GDP, Greece's performance is at expectations for its level of development.

> Innovation overperformers relative to their economic development



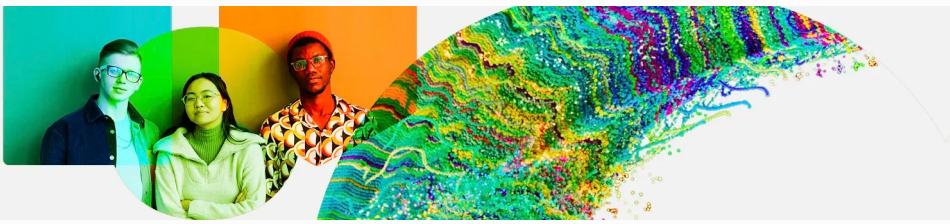
Effectively translating innovation investments into innovation outputs

The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

Greece produces more innovation outputs relative to its level of innovation investments.

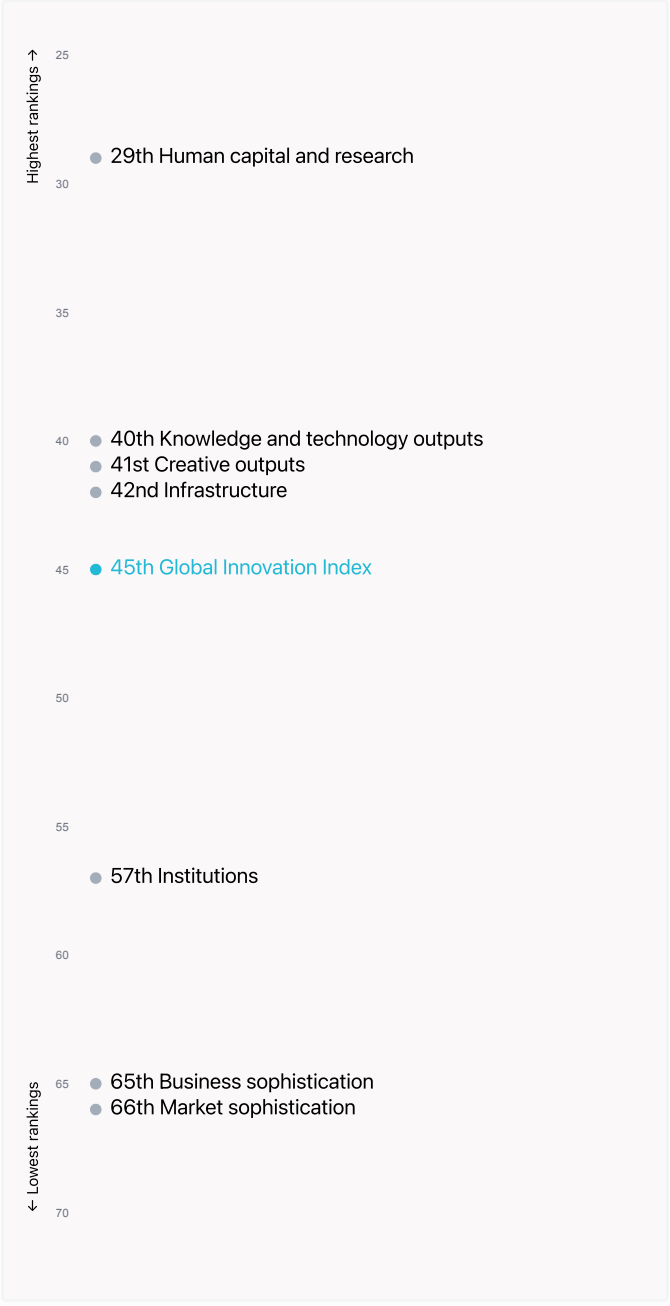
> Relationship between innovation inputs and outputs

Global Innovation Index 2024



Overview of Greece's rankings in the seven areas of the GII in 2024

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Greece are those that rank above the GII (shown in blue) and the weakest are those that rank below.



Highest rankings

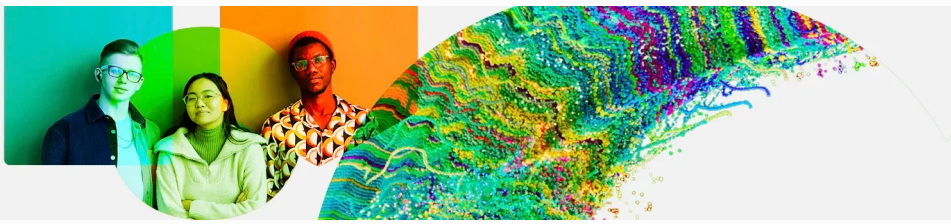
Greece ranks highest in Human capital and research (29th), Knowledge and technology outputs (40th), Creative outputs (41st) and Infrastructure (42nd).

Lowest rankings

Greece ranks lowest in Market sophistication (66th), Business sophistication (65th) and Institutions (57th).

The full WIPO Intellectual Property Statistics profile for Greece can be found on this link.

Global Innovation Index 2024



Benchmark of Greece against other economy groupings for each of the seven areas of the GII Index

The charts shows the relative position of Greece (blue bar) against other economy groupings (grey bars), for each of the seven areas of the GII Index.

High-Income economies

Greece performs below the high-income group average in all pillars.

Europe

Greece performs above the regional average in Human capital and research.

Institutions

- Top 10 | Score: 80.81
- High income | Score: 67.41
- Europe | Score: 59.14
- Greece | Score: 50.50

Human capital and research

- Top 10 | Score: 61.30
- High income | Score: 46.99
- Greece | Score: 46.74
- Europe | Score: 44.92

Infrastructure

- Top 10 | Score: 58.57
- High income | Score: 51.96
- Europe | Score: 51.74
- Greece | Score: 49.33

Market sophistication

- Top 10 | Score: 62.12
- High income | Score: 44.90
- Europe | Score: 42.79
- Greece | Score: 32.76

Business sophistication

- Top 10 | Score: 63.64
- High income | Score: 44.71
- Europe | Score: 42.68
- Greece | Score: 26.73

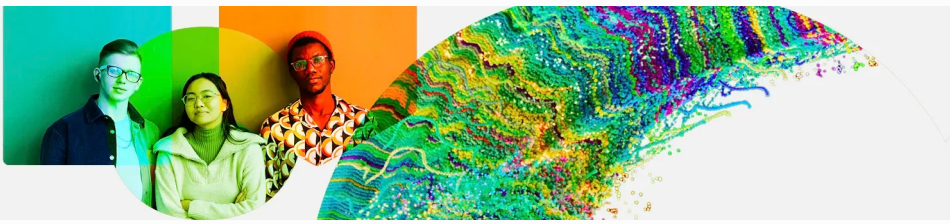
Knowledge and technology outputs

- Top 10 | Score: 57.29
- Europe | Score: 36.30
- High income | Score: 35.79
- Greece | Score: 29.62

Creative outputs

- Top 10 | Score: 56.54
- High income | Score: 39.44
- Europe | Score: 39.15
- Greece | Score: 32.56

Global Innovation Index 2024



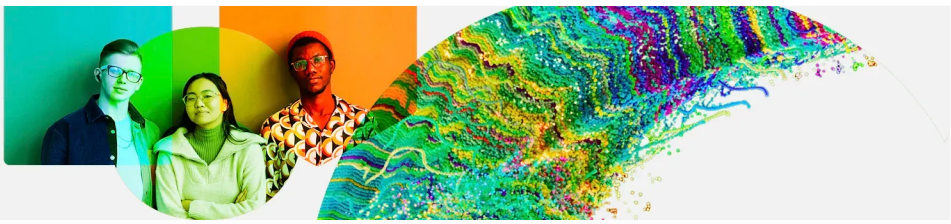
Innovation strengths and weaknesses in Greece

The table below gives an overview of the indicator strengths and weaknesses of Greece in the GII 2024.

Greece's main innovation strengths are **Tertiary enrolment, % gross** (rank 1), **School life expectancy, years** (rank 2) and **ISO 9001 quality/bn PPP$ GDP** (rank 8).

Strengths			Weaknesses		
Rank	Code	Indicator name	Rank	Code	Indicator name
1	2.2.1	Tertiary enrolment, % gross	118	5.2.3	State of cluster development†
2	2.1.3	School life expectancy, years	106	5.2.2	University-industry R&D collaboration†
8	6.3.5	ISO 9001 quality/bn PPP$ GDP	100	3.2.3	Gross capital formation, % GDP
14	6.2.3	Software spending, % GDP	91	5.1.2	Firms offering formal training, %
15	2.1.5	Pupil–teacher ratio, secondary	90	5.3.3	ICT services imports, % total trade
16	3.3.3	ISO 14001 environment/bn PPP$ GDP	72	6.2.4	High-tech manufacturing, %
18	6.1.4	Scientific and technical articles/bn PPP$ GDP	65	1.3.2	Entrepreneurship policies and culture†
23	2.3.1	Researchers, FTE/mn pop.	63	6.1.3	Utility models by origin/bn PPP$ GDP
26	7.1.4	Industrial designs by origin/bn PPP$ GDP	55	4.1.1	Finance for startups and scaleups†
28	6.2.2	Unicorn valuation, % GDP	41	2.3.3	Global corporate R&D investors, top 3, mn USD

Global Innovation Index 2024



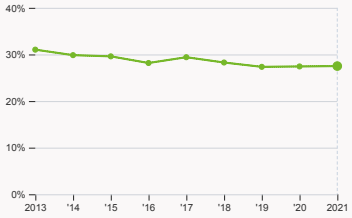
Greece's innovation system

As far as practicable, the plots below present unscaled indicator data.

Innovation inputs in Greece

2.1.1 **Expenditure on education**

was equal to 4.09 % GDP in 2021, down by 0.42 percentage points from the year prior – and equivalent to an indicator rank of 68.



2.2.2 **Graduates in science and engineering**

was equal to 27.5 % of total graduates in 2021, up by 0.08 percentage points from the year prior – and equivalent to an indicator rank of 33.

2.3.1 **Researchers**

was equal to 4776.42 FTE per million population in 2022, up by 12.48% from the year prior – and equivalent to an indicator rank of 23.

2.3.2 **Gross expenditure on R&D**

was equal to 1.49 % GDP in 2022, up by 0.04 percentage points from the year prior – and equivalent to an indicator rank of 26.

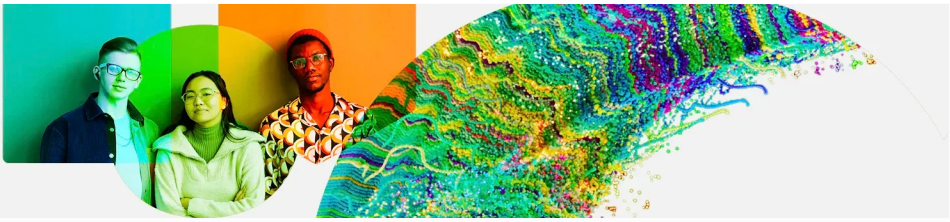
2.3.4 **QS university ranking**

was equal to an average score of 26.43 for the top three universities in 2023, up by 15.41% from the year prior – and equivalent to an indicator rank of 47.

4.2.4 **VC received, value**

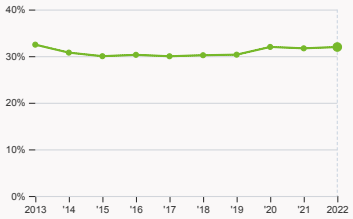
was equal to 83.77 thousand USD in 2023, down by 28.86% from the year prior – and equivalent to an indicator rank of 61.

Global Innovation Index 2024



4.3.2 Domestic industry diversification

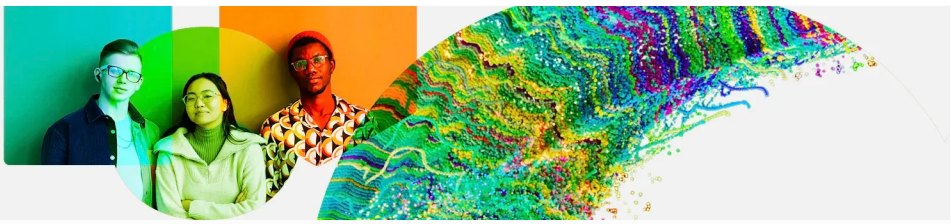
was equal to an index score of 0.13 in 2020, down by 11.28% from the year prior – and equivalent to an indicator rank of 47.



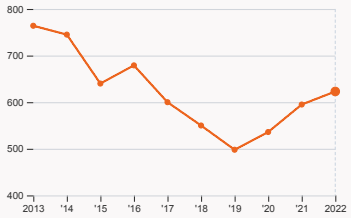
5.1.1 Knowledge-intensive employment

was equal to 31.96 % in 2022, up by 0.28 percentage points from the year prior – and equivalent to an indicator rank of 47.

Global Innovation Index 2024

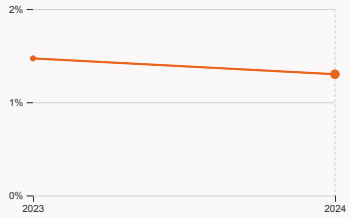


Innovation outputs in Greece



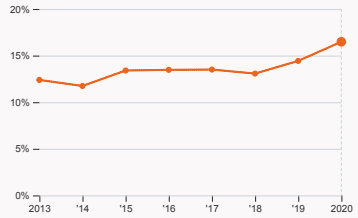
6.1.1 Patents by origin

was equal to 623 patents in 2022, up by 4.71% from the year prior – and equivalent to an indicator rank of 38.



6.2.2 Unicorn valuation

was equal to 1.3 % GDP in 2024, down by 0.17 percentage points from the year prior – and equivalent to an indicator rank of 28.

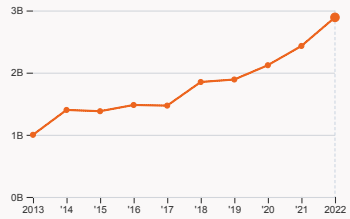


6.2.4 High-tech manufacturing

was equal to 16.48 % of total manufacturing output in 2020, up by 2.05 percentage points from the year prior – and equivalent to an indicator rank of 72.

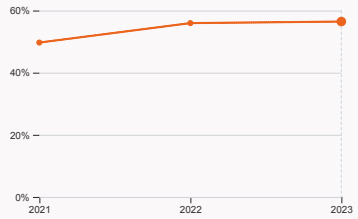
6.3.2 Production and export complexity

was equal to a score of 0.25 in 2021, up by 38.89% from the year prior – and equivalent to an indicator rank of 50.



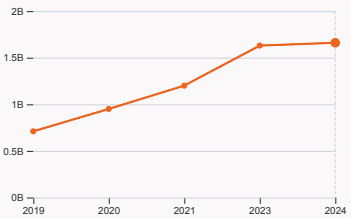
6.3.3 High-tech exports

was equal to 2.89 billion USD in 2022, up by 18.93% from the year prior – and equivalent to an indicator rank of 54.



7.1.1 Intangible asset intensity

was equal to 56.45 % for the top 15 companies in 2023, up by 0.5 percentage points from the year prior – and equivalent to an indicator rank of 37.

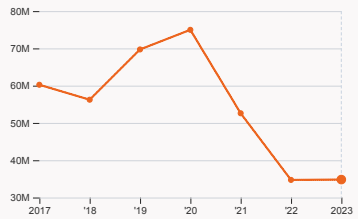


7.1.3 Global brand value

was equal to 1.66 billion USD for the brands in the top 5,000 in 2024, up by 1.84% from the year prior – and equivalent to an indicator rank of 60.

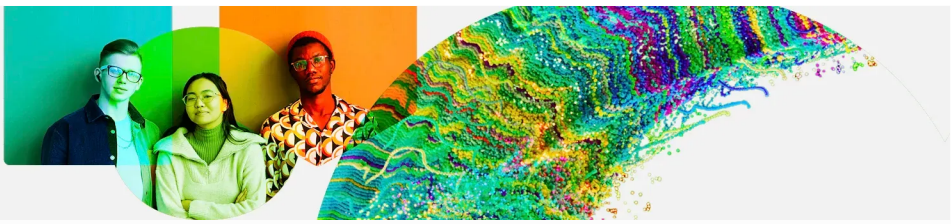
7.2.2 National feature films

was equal to 35 films in 2022 with no change from the year prior – and equivalent to an indicator rank of 26.



7.3.3 Mobile app creation

was equal to 34.81 million global downloads of mobile apps in 2023, up by 0.26% from the year prior – and equivalent to an indicator rank of 79.



Greece's innovation top performers

2.3.4 QS university ranking of Greece's top universities

Rank	University	Score
347	NATIONAL TECHNICAL UNIVERSITY OF ATHENS	31.40
444	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS	25.80
530	ARISTOTLE UNIVERSITY OF THESSALONIKI	22.10

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2023).
Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100].
Ranks can represent a single value "x", a tie "x=" or a range "x-y".

6.2.2 Top Unicorn Companies in Greece

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	VIVA WALLET	Financial Services	Athens	2
2	PEOPLECERT	Enterprise Tech	Athens	1

Source: CBInsights, Tracker – The Complete List of Unicorn Companies: https://www.cbinsights.com/research-unicorn-companies

7.1.1 Top 15 intangible-asset intensive companies in Greece

Rank	Firm	Intensity, %
1	HELLENIC TELECOMMUNICATIONS ORGANIZATION S.A.	79.54
2	MYTILINEOS S.A.	49.47
3	JUMBO S.A.	42.79

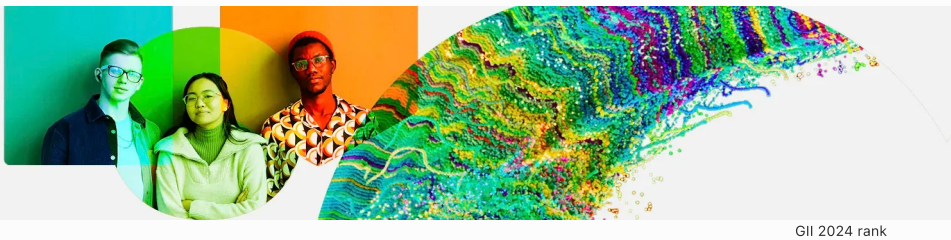
Source: Brand Finance (https://brandirectory.com/reports/gift-2022).
Note: Brand Finance only provides within economy ranks.

7.1.3 Top 5,000 companies in Greece with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	OTE	Commercial Services	311.5
2	COSMOTE GROUP	Telecoms	301.9
3	PIRAEUS BANK	Banking	239.2

Source: Brand Finance (https://brandirectory.com).
Note: Rank corresponds to within economy ranks.

Global Innovation Index 2024



Greece

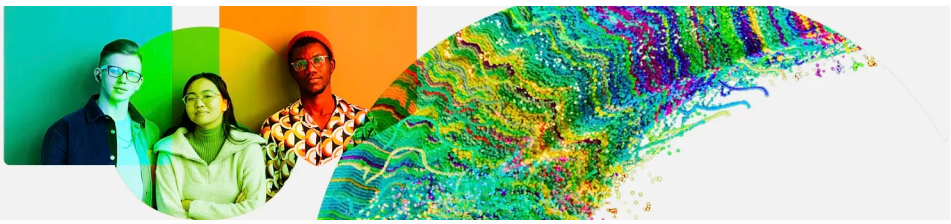
GII 2024 rank **45**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
43	43	High	EUR	10.2	417	39,864.1

	Score / Value	Rank	
Institutions	**50.5**	**57**	◇
1.1 Institutional environment	**62.2**	**48**	◇
1.1.1 Operational stability for businesses*	68.7	42	
1.1.2 Government effectiveness*	55.7	49	◇
1.2 Regulatory environment	**53.6**	**51**	◇
1.2.1 Regulatory quality*	54	50	◇
1.2.2 Rule of law*	53.2	52	◇
1.3 Business environment	**35.7**	**90**	○ ◇
1.3.1 Policy stability for doing business†	49.2	65	
1.3.2 Entrepreneurship policies and culture†	22.2	65	○ ◇
Human capital and research	**46.7**	**29**	
2.1 Education	**59.8**	**38**	
2.1.1 Expenditure on education, % GDP	4.1	68	
2.1.2 Government funding/pupil, secondary, % GDP/cap	20.1	50	
2.1.3 School life expectancy, years	20	2	● ◆
2.1.4 PISA scales in reading, maths and science	436.5	45	
2.1.5 Pupil–teacher ratio, secondary	8.2	15	● ◆
2.2 Tertiary education	**55.5**	**7**	● ◆
2.2.1 Tertiary enrolment, % gross	150.2	1	● ◆
2.2.2 Graduates in science and engineering, %	27.5	33	
2.2.3 Tertiary inbound mobility, %	2.8	68	
2.3 Research and development (R&D)	**24.9**	**40**	
2.3.1 Researchers, FTE/mn pop.	4,776.4	23	● ◆
2.3.2 Gross expenditure on R&D, % GDP	1.5	26	
2.3.3 Global corporate R&D investors, top 3, mn USD	0	41	○ ◇
2.3.4 QS university ranking, top 3*	26.8	47	
Infrastructure	**49.3**	**42**	
3.1 Information and communication technologies (ICTs)	**76.9**	**51**	
3.1.1 ICT access*	92.6	57	
3.1.2 ICT use*	79.5	58	
3.1.3 Government's online service*	75.2	48	
3.1.4 E-participation*	60.5	55	
3.2 General infrastructure	**36.5**	**47**	
3.2.1 Electricity output, GWh/mn pop.	4,690.6	47	
3.2.2 Logistics performance*	72.7	18	
3.2.3 Gross capital formation, % GDP	20.1	100	○
3.3 Ecological sustainability	**34.6**	**29**	
3.3.1 GDP/unit of energy use	15.4	28	
3.3.2 Low-carbon energy use, %	19.2	58	
3.3.3 ISO 14001 environment/bn PPP$ GDP	5.9	16	● ◆
Market sophistication	**32.8**	**66**	
4.1 Credit	**28.9**	**60**	
4.1.1 Finance for startups and scaleups†	40.5	55	○ ◇
4.1.2 Domestic credit to private sector, % GDP	52.6	62	
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
4.2 Investment	**7.5**	**70**	
4.2.1 Market capitalization, % GDP	27.3	54	
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	0.09	46	
4.2.3 VC recipients, deals/bn PPP$ GDP	0.03	69	
4.2.4 VC received, value, % GDP	0.0006	61	
4.3 Trade, diversification and market scale	**61.9**	**42**	
4.3.1 Applied tariff rate, weighted avg., %	1.1	21	
4.3.2 Domestic industry diversification	86.4	47	
4.3.3 Domestic market scale, bn PPP$	417	53	

	Score / Value	Rank	
Business sophistication	**26.7**	**65**	◇
5.1 Knowledge workers	**38.3**	**53**	
5.1.1 Knowledge-intensive employment, %	32	47	
5.1.2 Firms offering formal training, %	13.7	91	○ ◇
5.1.3 GERD performed by business, % GDP	0.7	35	
5.1.4 GERD financed by business, %	38.3	48	
5.1.5 Females employed w/advanced degrees, %	19.9	33	
5.2 Innovation linkages	**18**	**91**	○ ◇
5.2.1 Public Research-Industry co-publications, %	2.3	34	
5.2.2 University-industry R&D collaboration†	25.2	106	○ ◇
5.2.3 State of cluster development†	20.8	118	○ ◇
5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP	0.03	37	
5.2.5 Patent families/bn PPP$ GDP	0.4	37	
5.3 Knowledge absorption	**23.8**	**75**	◇
5.3.1 Intellectual property payments, % total trade	0.4	81	
5.3.2 High-tech imports, % total trade	7.2	85	
5.3.3 ICT services imports, % total trade	0.8	90	○ ◇
5.3.4 FDI net inflows, % GDP	2.6	61	
5.3.5 Research talent, % in businesses	30.3	46	
Knowledge and technology outputs	**29.6**	**40**	
6.1 Knowledge creation	**25**	**37**	
6.1.1 Patents by origin/bn PPP$ GDP	1.6	38	
6.1.2 PCT patents by origin/bn PPP$ GDP	0.3	42	
6.1.3 Utility models by origin/bn PPP$ GDP	0.03	63	○
6.1.4 Scientific and technical articles/bn PPP$ GDP	29	18	● ◆
6.1.5 Citable documents H-index	33.9	29	
6.2 Knowledge impact	**38.6**	**28**	● ◆
6.2.1 Labor productivity growth, %	0.8	62	
6.2.2 Unicorn valuation, % GDP	1.3	28	● ◆
6.2.3 Software spending, % GDP	0.6	14	● ◆
6.2.4 High-tech manufacturing, %	16.5	72	○
6.3 Knowledge diffusion	**25.3**	**52**	
6.3.1 Intellectual property receipts, % total trade	0.08	64	
6.3.2 Production and export complexity	49.4	50	
6.3.3 High-tech exports, % total trade	2.5	54	
6.3.4 ICT services exports, % total trade	1.1	80	
6.3.5 ISO 9001 quality/bn PPP$ GDP	19.8	8	● ◆
Creative outputs	**32.6**	**41**	
7.1 Intangible assets	**38**	**40**	
7.1.1 Intangible asset intensity, top 15, %	56.5	37	
7.1.2 Trademarks by origin/bn PPP$ GDP	n/a	n/a	
7.1.3 Global brand value, top 5,000, % GDP	0.6	60	
7.1.4 Industrial designs by origin/bn PPP$ GDP	3.2	26	● ◆
7.2 Creative goods and services	**20.3**	**55**	
7.2.1 Cultural and creative services exports, % total trade	0.5	55	
7.2.2 National feature films/mn pop. 15–69	4.9	26	
7.2.3 Entertainment and media market/th pop. 15–69	21.8	29	
7.2.4 Creative goods exports, % total trade	1.3	37	
7.3 Online creativity	**34**	**46**	
7.3.1 Top-level domains (TLDs)/th pop. 15–69	16.8	33	
7.3.2 GitHub commits/mn pop. 15–69	23.2	42	
7.3.3 Mobile app creation/bn PPP$ GDP	62	79	

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question, 🕓 that the economy's data is outdated. Square brackets [ ] indicate the the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level; n/a represents missing values; a dash - indicates an indicator which is not relevant to this economy and thus not considered for DMC thresholds.



Data availability

The following tables list indicators that are either missing or outdated for Greece.

Greece has missing data for two indicators and outdated data for eight indicators.

Missing data for Greece

Code	Indicator name	Economy Year	Model Year	Source
4.1.3	Loans from microfinance institutions, % GDP	n/a	2022	International Monetary Fund, Financial Access Survey (FAS)
7.1.2	Trademarks by origin/bn PPP$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund

Outdated data for Greece

Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2021	2022	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2019	2020	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2021	2022	UNESCO Institute for Statistics
2.1.5	Pupil–teacher ratio, secondary	2021	2022	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2021	2022	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2021	2022	UNESCO Institute for Statistics
4.3.2	Domestic industry diversification	2020	2021	United Nations Industrial Development Organization (UNIDO), Industrial Statistics Database (INDSTAT) Rev.3 and 4
6.2.4	High-tech manufacturing, %	2020	2021	United Nations Industrial Development Organization

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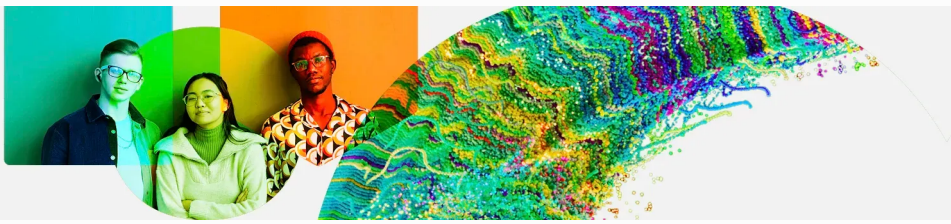

About the Global Innovation Index

- The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.
- Recognizing that innovation is a key driver of economic development, the GII aims to provide an innovation ranking and rich analysis referencing around 130 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a "tool for action" for economies that incorporate the GII into their innovation agendas.

Source: Global Innovation Index Database, WIPO, 2024.

The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that include institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs.

The GII has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each consisting of three sub-pillars.