GLOBAL INNOVATION INDEX 2020

GREECE

43rd Greece ranks 43rd among the 131 economies featured in the GII 2020.

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.

The following table shows the rankings of Greece over the past three years, noting that 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 2020 is between ranks 42 and 46.

Rankings of Greece (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	43	40	52
2019	41	40	54
2018	42	40	52

- Greece performs better in innovation inputs than innovation outputs in 2020.
- This year Greece ranks 40th in innovation inputs, the same as last year and the same compared to 2018.
- As for innovation outputs, Greece ranks 52nd. This position is higher than last year and the same as 2018.

39th Greece ranks 39th among the 49 high-income group economies.

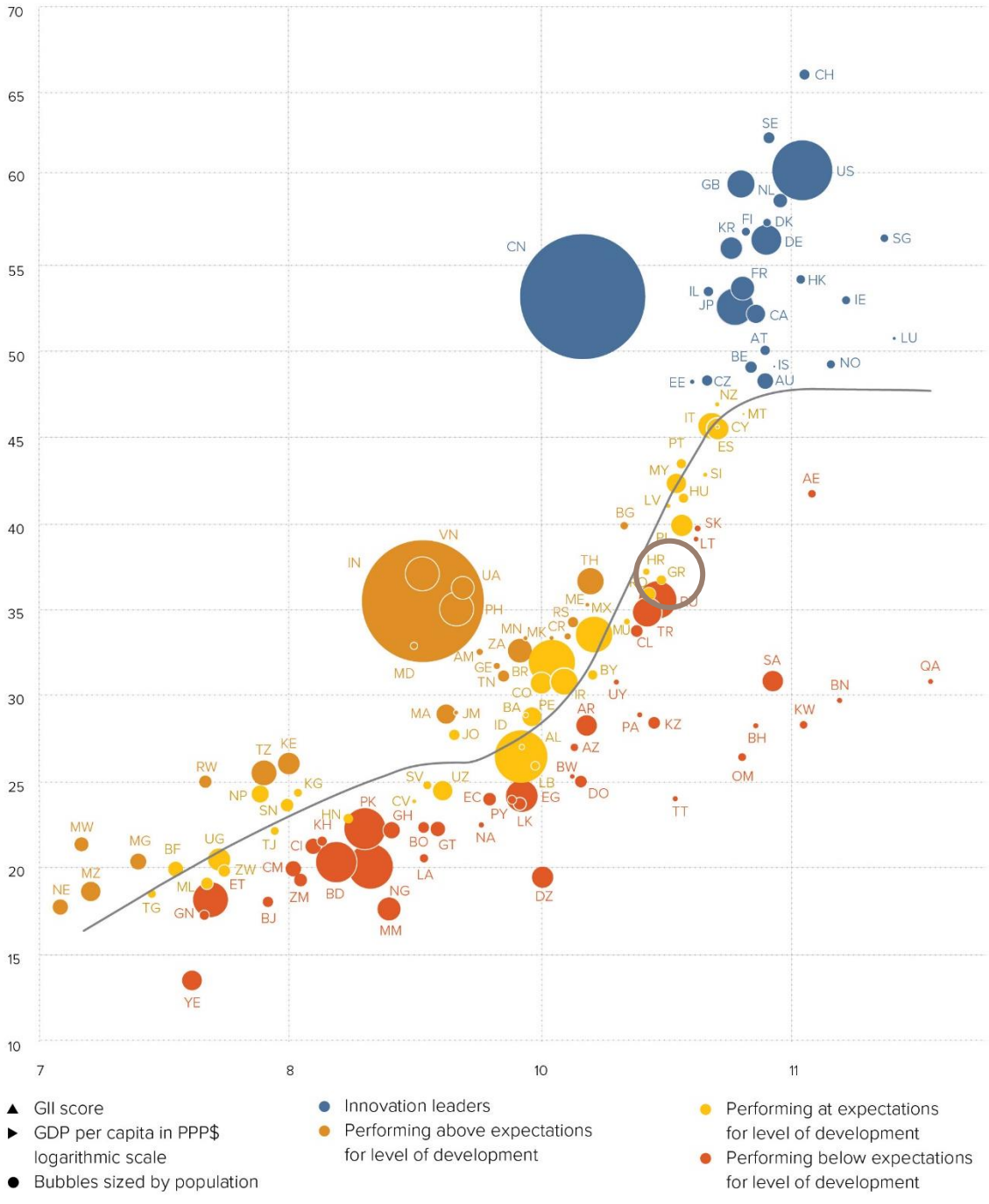
29th Greece ranks 29th among the 39 economies in Europe.

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 matches expectations for its level of development.

The positive relationship between innovation and development

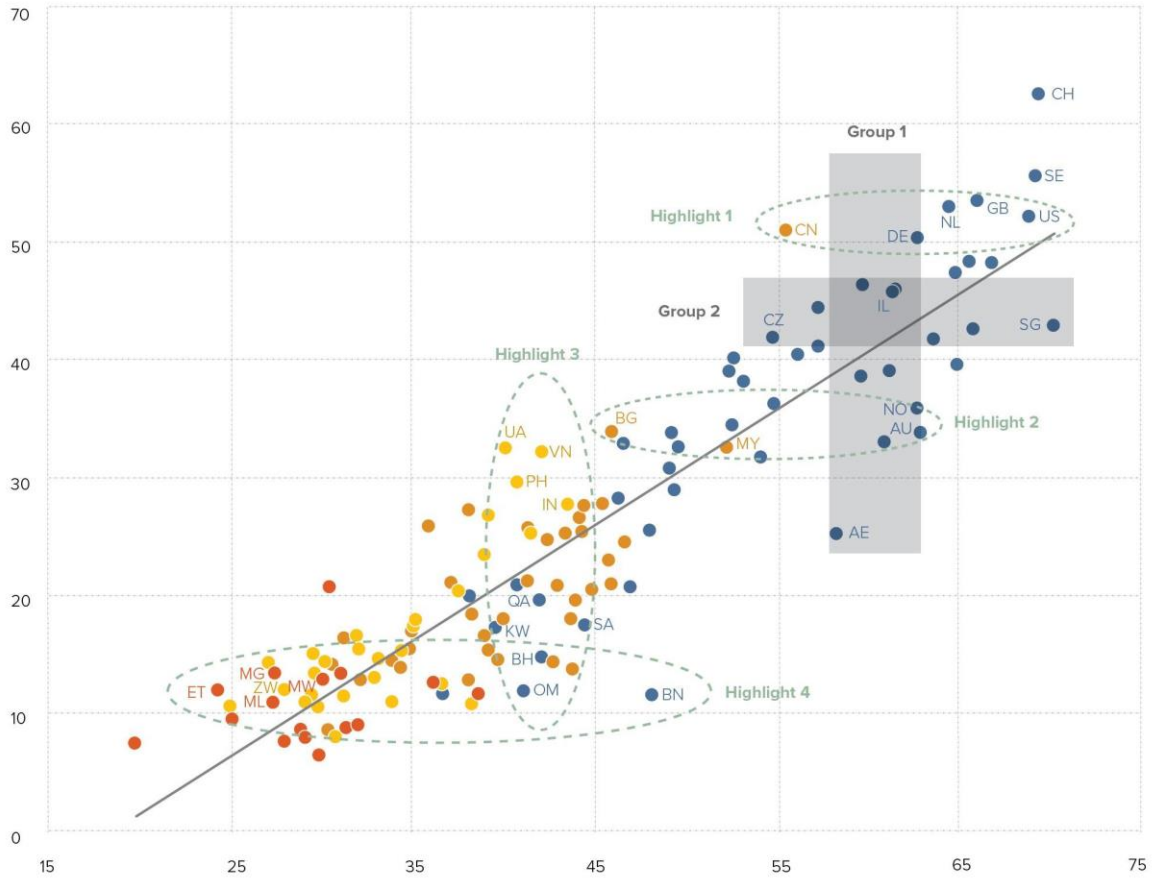


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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 less innovation outputs relative to its level of innovation investments.

Innovation input to output performance, 2020



▲ Output score
► Input score

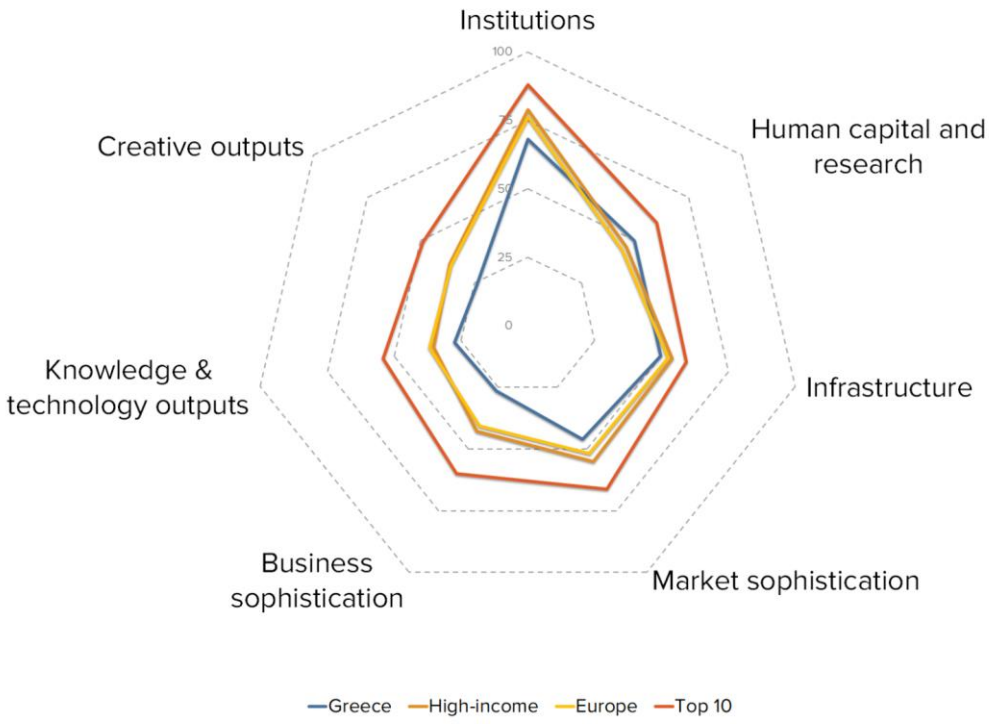
● High income group
● Upper middle-income group
● Lower middle-income group
● Low income group

— Fitted values

AU	Australia	IN	India	NL	Netherlands	CH	Switzerland
BH	Bahrain	IL	Israel	NO	Norway	UA	Ukraine
BN	Brunei Darussalam	KW	Kuwait	OM	Oman	AE	United Arab Emirates
BG	Bulgaria	MG	Madagascar	PH	Philippines	GB	United Kingdom
CN	China	MW	Malawi	QA	Qatar	US	United States of America
CZ	Czech Republic	ML	Mali	SA	Saudi Arabia	VN	Viet Nam
ET	Ethiopia	MY	Malaysia	SG	Singapore	ZW	Zimbabwe
DE	Germany			SE	Sweden		

BENCHMARKING GREECE AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

Greece's scores in the seven GII pillars



High-income group economies

Greece has high scores in one of the seven GII pillars: Human capital & research, which are above average for the high-income group.

Conversely, Greece scores below average for its income group in six pillars: Institutions, Infrastructure, Market sophistication, Business sophistication, Knowledge & technology outputs and Creative outputs.

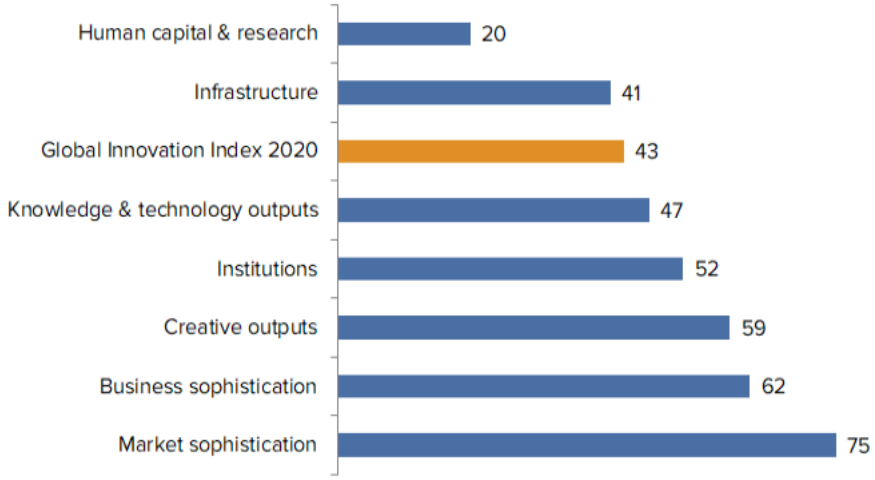
Europe

Compared to other economies in Europe, Greece performs:

- above average in one of the seven GII pillars: Human capital & research; and
- below average in six out of the seven GII pillars: Institutions, Infrastructure, Market sophistication, Business sophistication, Knowledge & technology outputs and Creative outputs.

OVERVIEW OF GREECE RANKINGS IN THE SEVEN GII AREAS

Greece performs best in Human capital & research and its weakest performance is in Market sophistication.



*The highest possible ranking in each pillar is 1.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Greece in the GII 2020.

Strengths

Code	Indicator name	Rank
1.3.1	Ease of starting a business*	11
2	Human capital & research	20
2.1.3	School life expectancy, years	5
2.1.5	Pupil-teacher ratio, secondary	15
2.2	Tertiary education	3
2.2.1	Tertiary enrolment, % gross	1
2.2.2	Graduates in science & engineering, %	17
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	21
6.1.4	Scientific & technical articles/bn PPP$ GDP	23
6.2.3	Computer software spending, % GDP	13
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	13
7.2.2	National feature films/mn pop. 15–69	14

Weaknesses

Code	Indicator name	Rank
3.2.3	Gross capital formation, % GDP	122
4.1.1	Ease of getting credit*	101
4.2	Investment	101
4.2.2	Market capitalization, % GDP	58
5.2.1	University/industry research collaboration†	119
5.2.2	State of cluster development†	118
5.3.2	High-tech imports, % total trade	104
6.1.3	Utility models by origin/bn PPP$ GDP	62
6.2.1	Growth rate of PPP$ GDP/worker, %	91
6.3.4	FDI net outflows, % GDP	122
7.1.4	ICTs & organizational model creation†	97

STRENGTHS

GII strengths for Greece are found in five of the seven GII pillars.

- Institutions (52): the indicator Ease of starting a business (11) exhibits a strength.
- Human capital & research (20): shows strengths in the sub-pillar Tertiary education (3) and in the indicators School life expectancy (5), Pupil–teacher ratio (15), Tertiary enrolment (1) and Graduates in science & engineering (17).
- Infrastructure (41): the indicator ISO 14001 environmental certificates (21) reveals a strength.
- Knowledge & technology outputs (47): shows strengths in the indicators Scientific & technical articles (23), Computer software spending (13) and ISO 9001 quality certificates (13).
- Creative outputs (59): displays strength in the indicator National feature films (14).

WEAKNESSES

GII weaknesses for Greece are found in five of the seven GII pillars.

- Infrastructure (41): the indicator Gross capital formation (122) reveals a weakness.
- Market sophistication (75): shows weaknesses in the sub-pillar Investment (101) and in the indicators Ease of getting credit (101) and Market capitalization (58).
- Business sophistication (62): demonstrates weaknesses in the indicators University/industry research collaboration (119), State of cluster development (118) and High-tech imports (104).
- Knowledge & technology outputs (47): displays weaknesses in the indicators Utility models by origin (62), Growth rate of PPP (91) and FDI net outflows (122).
- Creative outputs (59): the indicator ICTs & organizational model creation (97) demonstrates a weakness.

GREECE

GII 2020 rank

43

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2019 rank
52	40	High	EUR	10.5	324.1	26,410.8	41

		Score/Value	Rank	
INSTITUTIONS		**68.0**	**52**	◇
1.1	**Political environment**	**62.3**	**53**	◇
1.1.1	Political and operational stability*	71.4	59	◇
1.1.2	Government effectiveness*	57.7	51	◇
1.2	**Regulatory environment**	**67.2**	**59**	◇
1.2.1	Regulatory quality*	49.6	57	◇
1.2.2	Rule of law*	50.7	55	◇
1.2.3	Cost of redundancy dismissal, salary weeks	15.9	64	
1.3	**Business environment**	**74.6**	**53**	
1.3.1	Ease of starting a business*	96.0	11	● ◆
1.3.2	Ease of resolving insolvency*	53.1	66	
HUMAN CAPITAL & RESEARCH		**49.9**	**20**	●
2.1	**Education**	**53.7**	**42**	
2.1.1	Expenditure on education, % GDP	3.9	77	
2.1.2	Government funding/pupil, secondary, % GDP/cap	22.4	32	
2.1.3	School life expectancy, years	19.1	5	● ◆
2.1.4	PISA scales in reading, maths, & science	453.5	43	
2.1.5	Pupil-teacher ratio, secondary ⏲	8.6	15	●
2.2	**Tertiary education**	**64.6**	**3**	● ◆
2.2.1	Tertiary enrolment, % gross	136.6	1	● ◆
2.2.2	Graduates in science & engineering, %	29.4	17	●
2.2.3	Tertiary inbound mobility, %	3.4	61	
2.3	**Research & development (R&D)**	**31.3**	**37**	
2.3.1	Researchers, FTE/mn pop	3,482.7	28	
2.3.2	Gross expenditure on R&D, % GDP	1.2	34	
2.3.3	Global R&D companies, avg. exp. top 3, mn $US	38.4	40	
2.3.4	QS university ranking, average score top 3*	21.6	47	
INFRASTRUCTURE		**49.9**	**41**	
3.1	**Information & communication technologies (ICTs)**	**80.6**	**32**	
3.1.1	ICT access*	80.6	26	
3.1.2	ICT use*	72.4	36	
3.1.3	Government's online service*	81.9	41	
3.1.4	E-participation*	87.6	34	
3.2	**General infrastructure**	**22.0**	**87**	◇
3.2.1	Electricity output, kWh/mn pop	4,898.0	43	
3.2.2	Logistics performance*	53.2	41	
3.2.3	Gross capital formation, % GDP	13.9	122	○ ◇
3.3	**Ecological sustainability**	**46.9**	**26**	
3.3.1	GDP/unit of energy use	11.6	37	
3.3.2	Environmental performance*	69.1	25	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	4.5	21	●
MARKET SOPHISTICATION		**46.0**	**75**	
4.1	**Credit**	**42.1**	**63**	
4.1.1	Ease of getting credit*	45.0	101	○ ◇
4.1.2	Domestic credit to private sector, % GDP	89.2	29	
4.1.3	Microfinance gross loans, % GDP	n/a	n/a	
4.2	**Investment**	**28.5**	**101**	○
4.2.1	Ease of protecting minority investors*	70.0	36	
4.2.2	Market capitalization, % GDP	20.5	58	○
4.2.3	Venture capital deals/bn PPP$ GDP	0.0	41	
4.3	**Trade, competition, and market scale**	**67.6**	**43**	
4.3.1	Applied tariff rate, weighted avg., %	1.7	22	
4.3.2	Intensity of local competition+	67.9	69	
4.3.3	Domestic market scale, bn PPP$	324.1	55	

		Score/Value	Rank	
BUSINESS SOPHISTICATION		**26.4**	**62**	◇
5.1	**Knowledge workers**	**36.0**	**56**	
5.1.1	Knowledge-intensive employment, %	30.0	46	
5.1.2	Firms offering formal training, % ⏲	21.6	71	
5.1.3	GERD performed by business, % GDP	0.6	35	
5.1.4	GERD financed by business, %	42.6	41	
5.1.5	Females employed w/advanced degrees, %	18.0	35	
5.2	**Innovation linkages**	**18.8**	**80**	◇
5.2.1	University/industry research collaboration+	27.9	119	○ ◇
5.2.2	State of cluster development+	31.8	118	○ ◇
5.2.3	GERD financed by abroad, % GDP	0.2	24	
5.2.4	JV-strategic alliance deals/bn PPP$ GDP	0.0	62	
5.2.5	Patent families 2+ offices/bn PPP$ GDP	0.3	38	
5.3	**Knowledge absorption**	**24.5**	**80**	◇
5.3.1	Intellectual property payments, % total trade	0.5	68	
5.3.2	High-tech imports, % total trade	5.5	104	○
5.3.3	ICT services imports, % total trade	1.1	66	
5.3.4	FDI net inflows, % GDP	1.6	94	
5.3.5	Research talent, % in business enterprise	27.4	45	
KNOWLEDGE & TECHNOLOGY OUTPUTS		**27.3**	**47**	
6.1	**Knowledge creation**	**24.5**	**42**	
6.1.1	Patents by origin/bn PPP$ GDP	1.8	43	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.4	37	
6.1.3	Utility models by origin/bn PPP$ GDP	0.0	62	○
6.1.4	Scientific & technical articles/bn PPP$ GDP	22.2	23	●
6.1.5	Citable documents H-index	32.7	29	
6.2	**Knowledge impact**	**35.0**	**26**	
6.2.1	Growth rate of PPP$ GDP/worker, %	0.0	91	○
6.2.2	New businesses/th pop. 15-64	1.4	71	
6.2.3	Computer software spending, % GDP	0.0	13	●
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	20.7	13	● ◆
6.2.5	High- and medium-high-tech manufacturing, %	13.3	73	◇
6.3	**Knowledge diffusion**	**22.3**	**69**	
6.3.1	Intellectual property receipts, % total trade	0.1	53	
6.3.2	High-tech net exports, % total trade	2.1	53	
6.3.3	ICT services exports, % total trade	1.5	69	
6.3.4	FDI net outflows, % GDP	-0.2	122	○
CREATIVE OUTPUTS		**23.8**	**59**	◇
7.1	**Intangible assets**	**22.1**	**87**	◇
7.1.1	Trademarks by origin/bn PPP$ GDP	n/a	n/a	
7.1.2	Global brand value, top 5,000, % GDP	3.3	73	◇
7.1.3	Industrial designs by origin/bn PPP$ GDP	3.7	34	
7.1.4	ICTs & organizational model creation+	44.6	97	○ ◇
7.2	**Creative goods and services**	**23.4**	**43**	
7.2.1	Cultural & creative services exports, % total trade	0.8	32	
7.2.2	National feature films/mn pop. 15-69	11.5	14	●
7.2.3	Entertainment & Media market/th pop. 15-69	23.9	28	
7.2.4	Printing and other media, % manufacturing	1.2	39	
7.2.5	Creative goods exports, % total trade	1.3	39	
7.3	**Online creativity**	**27.4**	**38**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	12.8	35	
7.3.2	Country-code TLDs/th pop. 15-69	19.2	30	
7.3.3	Wikipedia edits/mn pop. 15-69	74.8	31	
7.3.4	Mobile app creation/bn PPP$ GDP	4.4	57	

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; + a survey question. ⏲ indicates that the economy's data are older than the base year; see Appendix II for details, including the year of the data, at http://globalinnovationindex.org. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

DATA AVAILABILITY

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

Missing data

Code	Indicator name	Country year	Model year	Source
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
7.1.1	Trademarks by origin/bn PPP$ GDP	n/a	2018	World Intellectual Property Organization

Outdated data

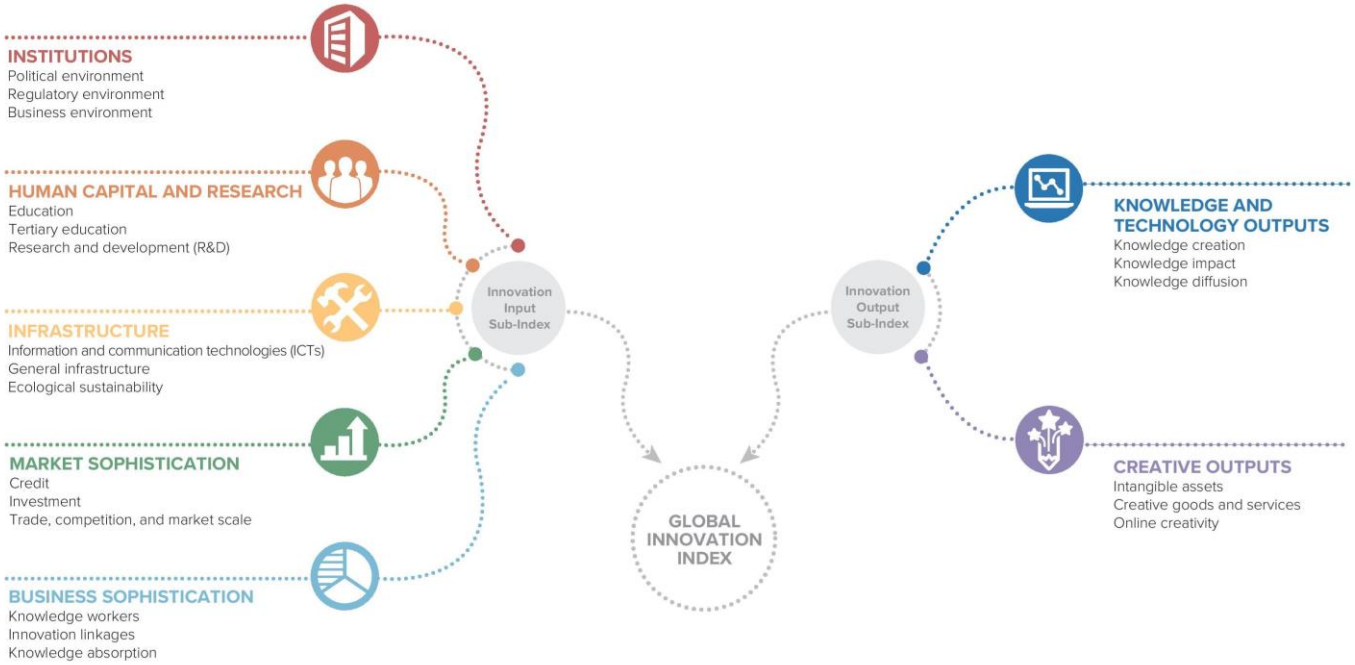
Code	Indicator name	Country year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2017	2018	UNESCO Institute for Statistics
5.1.2	Firms offering formal training, %	2017	2018	World Bank

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2020, the GII presents its 13th edition devoted to the theme *Who Will Finance Innovation?*

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.

Framework of the Global Innovation Index 2020



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.