



Global Innovation Index 2021



TAJIKISTAN

103rd Tajikistan ranks 103rd among the 132 economies featured in the GII 2021.

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 Tajikistan 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 Tajikistan in the GII 2021 is between ranks 98 and 107.

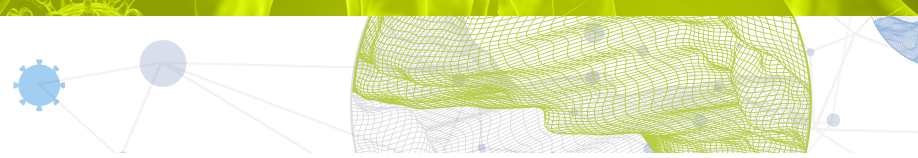
Rankings for Tajikistan (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	103	104	96
2020	109	108	99
2019	100	107	83

- Tajikistan performs better in innovation outputs than innovation inputs in 2021.
- This year Tajikistan ranks 104th in innovation inputs, higher than both 2020 and 2019.
- As for innovation outputs, Tajikistan ranks 96th. This position is higher than last year but lower than 2019.

2nd Tajikistan ranks 2nd among the 13 low-income group economies.

8th Tajikistan ranks 8th among the 10 economies in Central and Southern Asia.

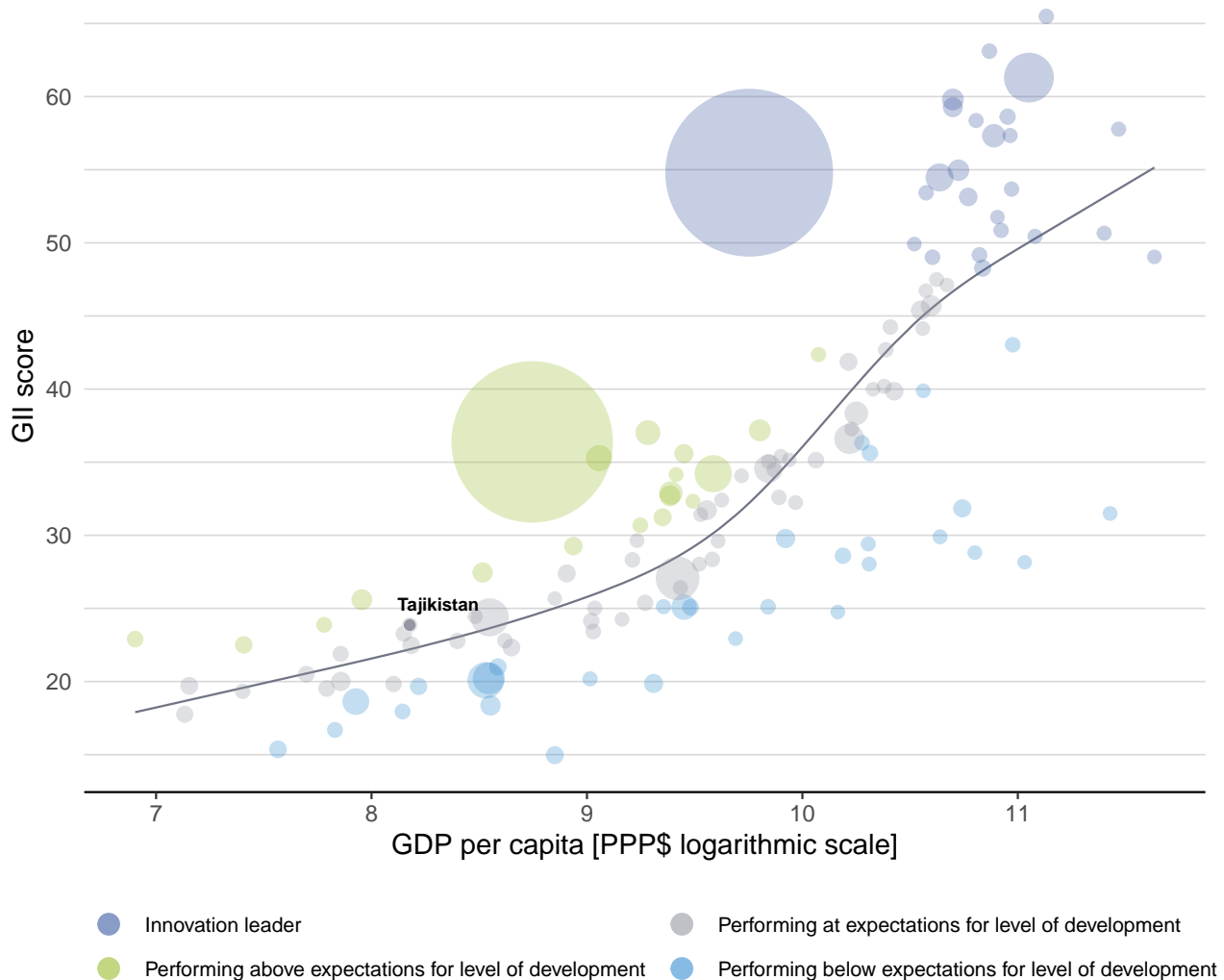


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, Tajikistan's performance is at expectations for its level of development.

The positive relationship between innovation and development



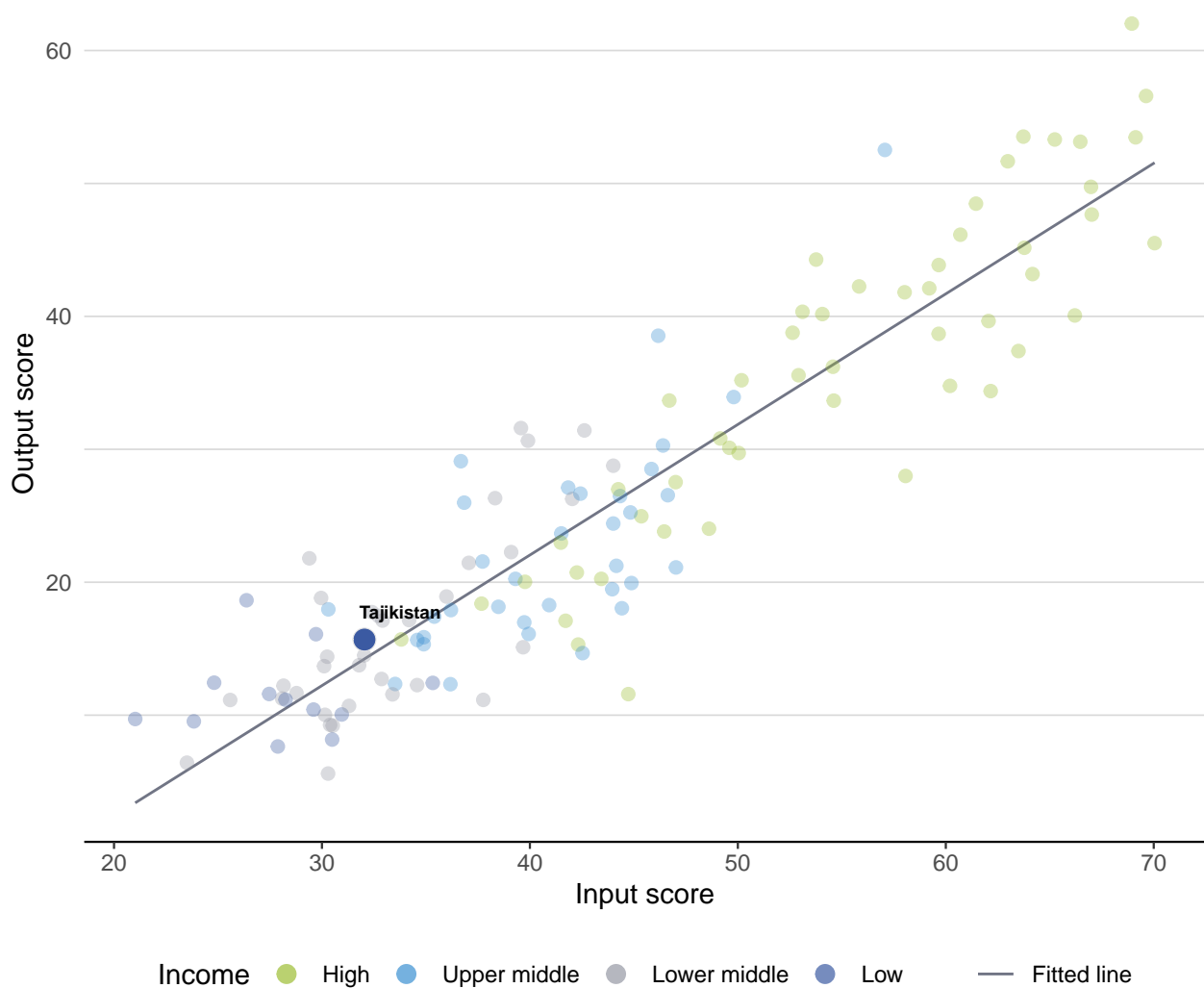


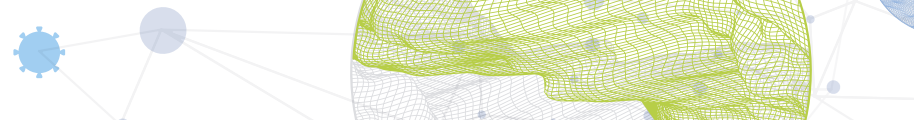
EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

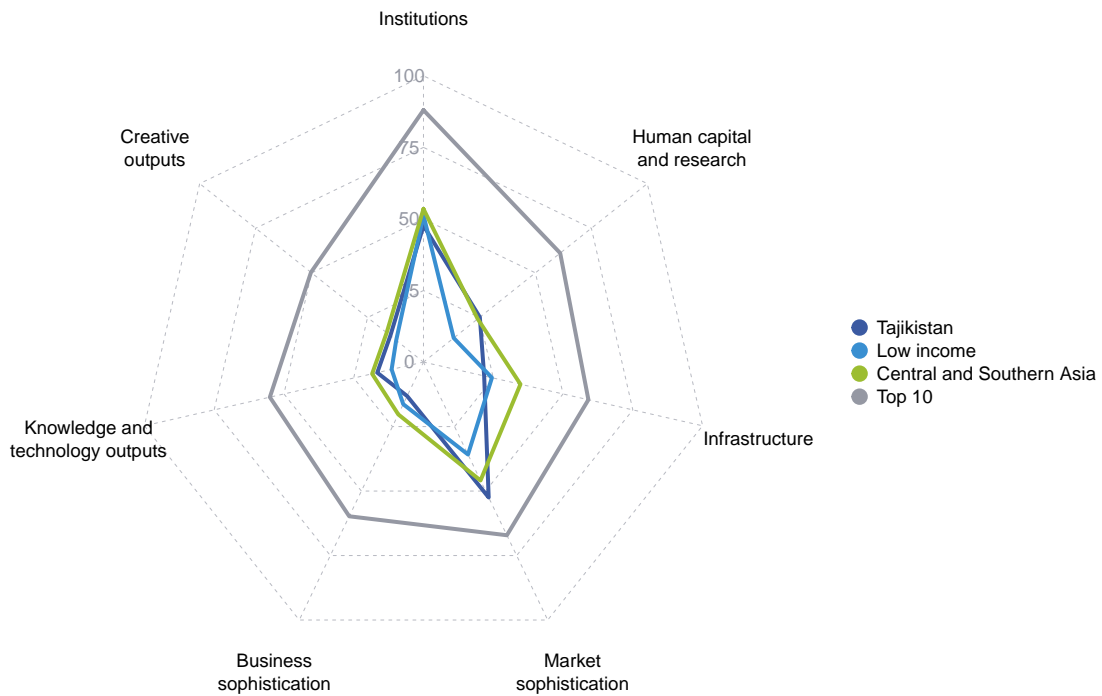
Innovation input to output performance





BENCHMARKING AGAINST OTHER LOW-INCOME GROUP ECONOMIES AND CENTRAL AND SOUTHERN ASIA

The seven GII pillar scores for Tajikistan

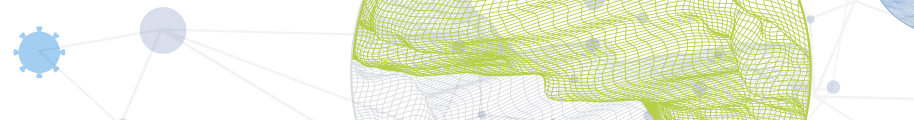


Low-income group economies

Tajikistan performs above the low-income group average in four pillars, namely: Human capital and research; Market sophistication; Knowledge and technology outputs; and, Creative outputs.

Central and Southern Asia

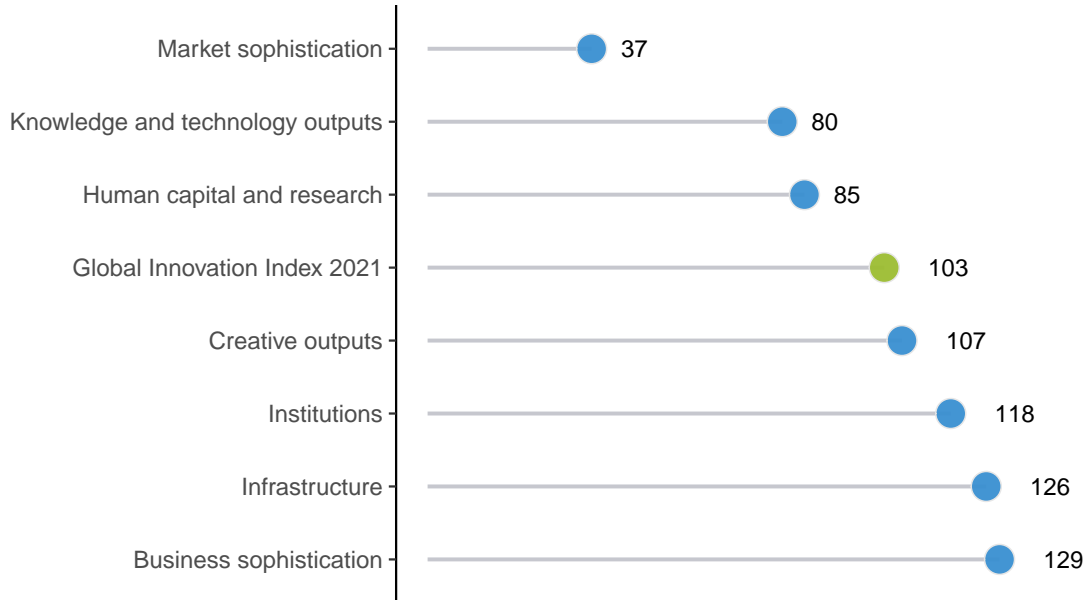
Tajikistan performs above the regional average in two pillars, namely: Human capital and research; and, Market sophistication.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Tajikistan performs best in Market sophistication and its weakest performance is in Business sophistication.

The seven GII pillar ranks for Tajikistan



Note: The highest possible ranking in each pillar is one.




INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Tajikistan in the GII 2021.

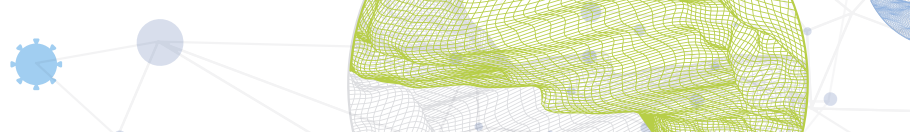
Strengths and weaknesses for Tajikistan

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.3.1	Ease of starting a business	34	1.2.2	Rule of law	130
2.1.1	Expenditure on education, % GDP	30	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
2.2.2	Graduates in science and engineering, %	60	2.3.4	QS university ranking, top 3	74
4.1	Credit	18	5.2.5	Patent families/bn PPP\$ GDP	100
4.1.1	Ease of getting credit	10	6.1.2	PCT patents by origin/bn PPP\$ GDP	98
4.1.3	Microfinance gross loans, % GDP	1	6.1.5	Citable documents H-index	131
5.2.1	University-industry R&D collaboration	47	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	132
5.3.4	FDI net inflows, % GDP	64	6.2.5	High-tech manufacturing, %	108
6.1	Knowledge creation	44	7.1.2	Global brand value, top 5,000, % GDP	80
6.1.3	Utility models by origin/bn PPP\$ GDP	5	7.1.3	Industrial designs by origin/bn PPP\$ GDP	119
6.2.1	Labor productivity growth, %	7			
7.2.4	Printing and other media, % manufacturing	24			

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
96	104	Low	CSA	9.5	33.7	3,560	109

	Score/ Value	Rank		Score/ Value	Rank
 Institutions	47.7	118	 Business sophistication	13.2	[129]
1.1 Political environment	37.9	124	5.1 Knowledge workers	13.6	[114]
1.1.1 Political and operational stability*	58.9	100	5.1.1 Knowledge-intensive employment, %	n/a	n/a
1.1.2 Government effectiveness*	27.3	125	5.1.2 Firms offering formal training, %	24.3	64
1.2 Regulatory environment	44.3	118	5.1.3 GERD performed by business, % GDP	n/a	n/a
1.2.1 Regulatory quality*	17.1	128	5.1.4 GERD financed by business, %	1.6	90
1.2.2 Rule of law*	14.4	130	5.1.5 Females employed w/advanced degrees, %	n/a	n/a
1.2.3 Cost of redundancy dismissal	21.7	93	5.2 Innovation linkages	13.7	115
1.3 Business environment	60.8	105	5.2.1 University-industry R&D collaboration†	47.2	47
1.3.1 Ease of starting a business*	93.2	34	5.2.2 State of cluster development and depth†	32.5	119
1.3.2 Ease of resolving insolvency*	28.4	122	5.2.3 GERD financed by abroad, % GDP	0.0	98
Human capital and research	25.2	85	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	75
2.1 Education	51.5	[64]	5.2.5 Patent families/bn PPP\$ GDP	0.0	100
2.1.1 Expenditure on education, % GDP	5.2	30	5.3 Knowledge absorption	12.2	[131]
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a	5.3.1 Intellectual property payments, % total trade	0.0	119
2.1.3 School life expectancy, years	11.4	97	5.3.2 High-tech imports, % total trade	n/a	n/a
2.1.4 PISA scales in reading, maths and science	n/a	n/a	5.3.3 ICT services imports, % total trade	0.3	121
2.1.5 Pupil-teacher ratio, secondary	15.4	76	5.3.4 FDI net inflows, % GDP	2.7	64
2.2 Tertiary education	23.4	89	5.3.5 Research talent, % in businesses	n/a	n/a
2.2.1 Tertiary enrolment, % gross	31.3	85	Knowledge and technology outputs	16.6	80
2.2.2 Graduates in science and engineering, %	22.0	60	6.1 Knowledge creation	23.1	44
2.2.3 Tertiary inbound mobility, %	0.8	92	6.1.1 Patents by origin/bn PPP\$ GDP	0.4	83
2.3 Research and development (R&D)	0.6	113	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.0	98
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	6.1.3 Utility models by origin/bn PPP\$ GDP	3.6	5
2.3.2 Gross expenditure on R&D, % GDP	0.1	107	6.1.4 Scientific and technical articles/bn PPP\$ GDP	4.3	116
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0	41	6.1.5 Citable documents H-index	1.1	131
2.3.4 QS university ranking, top 3*	0.0	74	6.2 Knowledge impact	20.7	100
Infrastructure	21.7	126	6.2.1 Labor productivity growth, %	4.7	7
3.1 Information and communication technologies (ICTs)	30.7	123	6.2.2 New businesses/th pop. 15–64	0.2	114
3.1.1 ICT access*	41.4	106	6.2.3 Software spending, % GDP	0.1	95
3.1.2 ICT use*	15.0	122	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	0.2	132
3.1.3 Government's online service*	31.8	124	6.2.5 High-tech manufacturing, %	2.8	108
3.1.4 E-participation*	34.5	119	6.3 Knowledge diffusion	5.9	115
3.2 General infrastructure	14.9	118	6.3.1 Intellectual property receipts, % total trade	0.0	105
3.2.1 Electricity output, GWh/mn pop.	2,169.2	78	6.3.2 Production and export complexity	18.7	112
3.2.2 Logistics performance*	13.6	118	6.3.3 High-tech exports, % total trade	n/a	n/a
3.2.3 Gross capital formation, % GDP	17.8	100	6.3.4 ICT services exports, % total trade	0.3	111
3.3 Ecological sustainability	19.6	103	Creative outputs	14.8	107
3.3.1 GDP/unit of energy use	8.5	86	7.1 Intangible assets	16.5	114
3.3.2 Environmental performance*	38.2	95	7.1.1 Trademarks by origin/bn PPP\$ GDP	18.1	96
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.1	124	7.1.2 Global brand value, top 5,000, % GDP	0.0	80
Market sophistication	52.5	37	7.1.3 Industrial designs by origin/bn PPP\$ GDP	0.0	119
4.1 Credit	57.1	18	7.1.4 ICTs and organizational model creation†	44.4	99
4.1.1 Ease of getting credit*	90.0	10	7.2 Creative goods and services	12.3	[72]
4.1.2 Domestic credit to private sector, % GDP	11.8	125	7.2.1 Cultural and creative services exports, % total trade	0.0	103
4.1.3 Microfinance gross loans, % GDP	5.7	1	7.2.2 National feature films/mn pop. 15–69	1.8	72
4.2 Investment	40.0	[35]	7.2.3 Entertainment and media market/th pop. 15–69	n/a	n/a
4.2.1 Ease of protecting minority investors*	40.0	110	7.2.4 Printing and other media, % manufacturing	1.6	24
4.2.2 Market capitalization, % GDP	n/a	n/a	7.2.5 Creative goods exports, % total trade	n/a	n/a
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	n/a	n/a	7.3 Online creativity	13.9	77
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	n/a	n/a	7.3.1 Generic top-level domains (TLDs)/th pop. 15–69	0.0	128
4.3 Trade, diversification, and market scale	60.3	93	7.3.2 Country-code TLDs/th pop. 15–69	0.4	104
4.3.1 Applied tariff rate, weighted avg., %	5.0	84	7.3.3 Wikipedia edits/mn pop. 15–69	42.3	82
4.3.2 Domestic industry diversification	80.8	74	7.3.4 Mobile app creation/bn PPP\$ GDP	n/a	n/a
4.3.3 Domestic market scale, bn PPP\$	33.7	119			

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 IV 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 Tajikistan.

Missing data for Tajikistan

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2017	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths and science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.3.1	Researchers, FTE/mn pop.	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.2.2	Market capitalization, % GDP	n/a	2019	World Federation of Exchanges
4.2.3	Venture capital investors, deals/bn PPP\$ GDP	n/a	2020	Refinitiv Eikon
4.2.4	Venture capital recipients, deals/bn PPP\$ GDP	n/a	2020	Refinitiv Eikon
5.1.1	Knowledge-intensive employment, %	n/a	2019	International Labour Organization
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.5	Females employed w/advanced degrees, %	n/a	2019	International Labour Organization
5.3.2	High-tech imports, % total trade	n/a	2019	United Nations, COMTRADE
5.3.5	Research talent, % in businesses	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.3.3	High-tech exports, % total trade	n/a	2019	United Nations, COMTRADE
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC
7.2.5	Creative goods exports, % total trade	n/a	2019	United Nations, COMTRADE
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2020	App Annie



Outdated data for Tajikistan

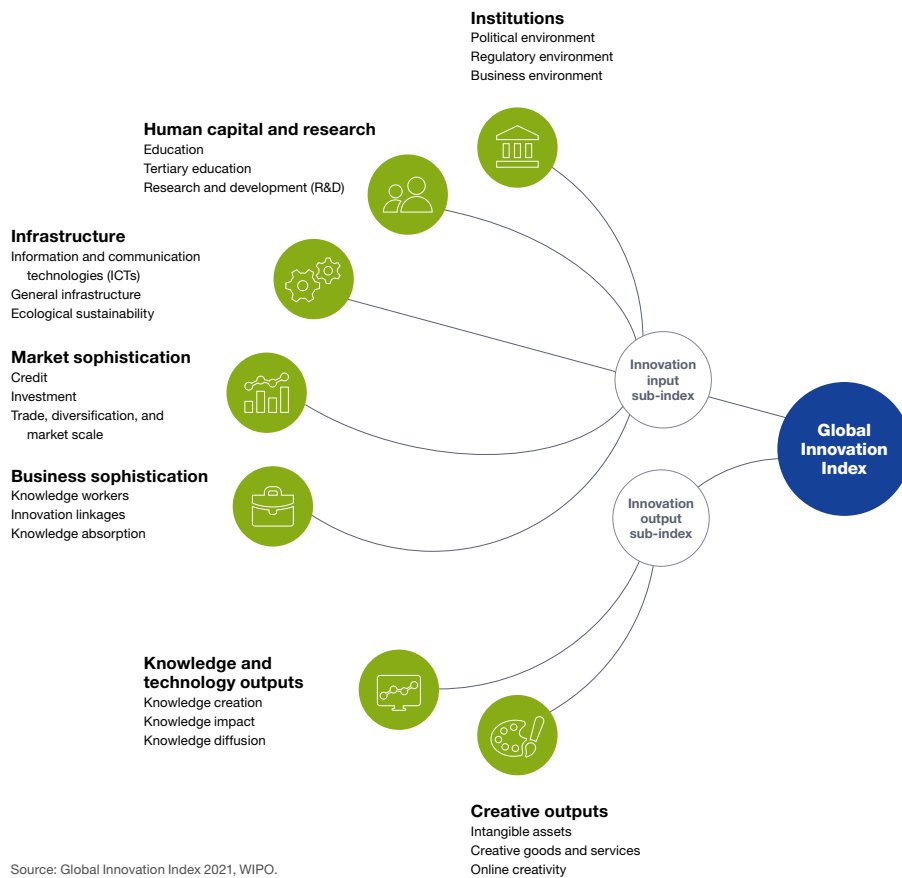
Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2015	2017	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2013	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2011	2019	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2017	2018	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2017	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.2.3	Tertiary inbound mobility, %	2017	2018	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.3.1	Applied tariff rate, weighted avg., %	2017	2019	World Bank
5.1.4	GERD financed by business, %	2011	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	2013	2018	UNESCO Institute for Statistics
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	2019	2020	Refinitiv
6.1.3	Utility models by origin/bn PPP\$ GDP	2015	2019	World Intellectual Property Organization
7.1.3	Industrial designs by origin/bn PPP\$ GDP	2015	2019	World Intellectual Property Organization
7.2.2	National feature films/mn pop. 15–69	2013	2017	UNESCO Institute for Statistics



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.



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.