



## UZBEKISTAN

### 93rd

Uzbekistan ranks 93rd 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 Uzbekistan, which is a new entry into the GII economy list in 2020.

The statistical confidence interval for the ranking of Uzbekistan in the GII 2020 is between ranks 85 and 109.

Rankings of Uzbekistan in 2020

	GII	Innovation inputs	Innovation outputs
2020	93	81	118

- Uzbekistan performs better in innovation inputs than outputs in 2020.
- This year Uzbekistan ranks 81st in innovation inputs and 118<sup>th</sup> in innovation outputs.

### 12th

Uzbekistan ranks 12th among the 29 lower middle-income group economies.

### 4th

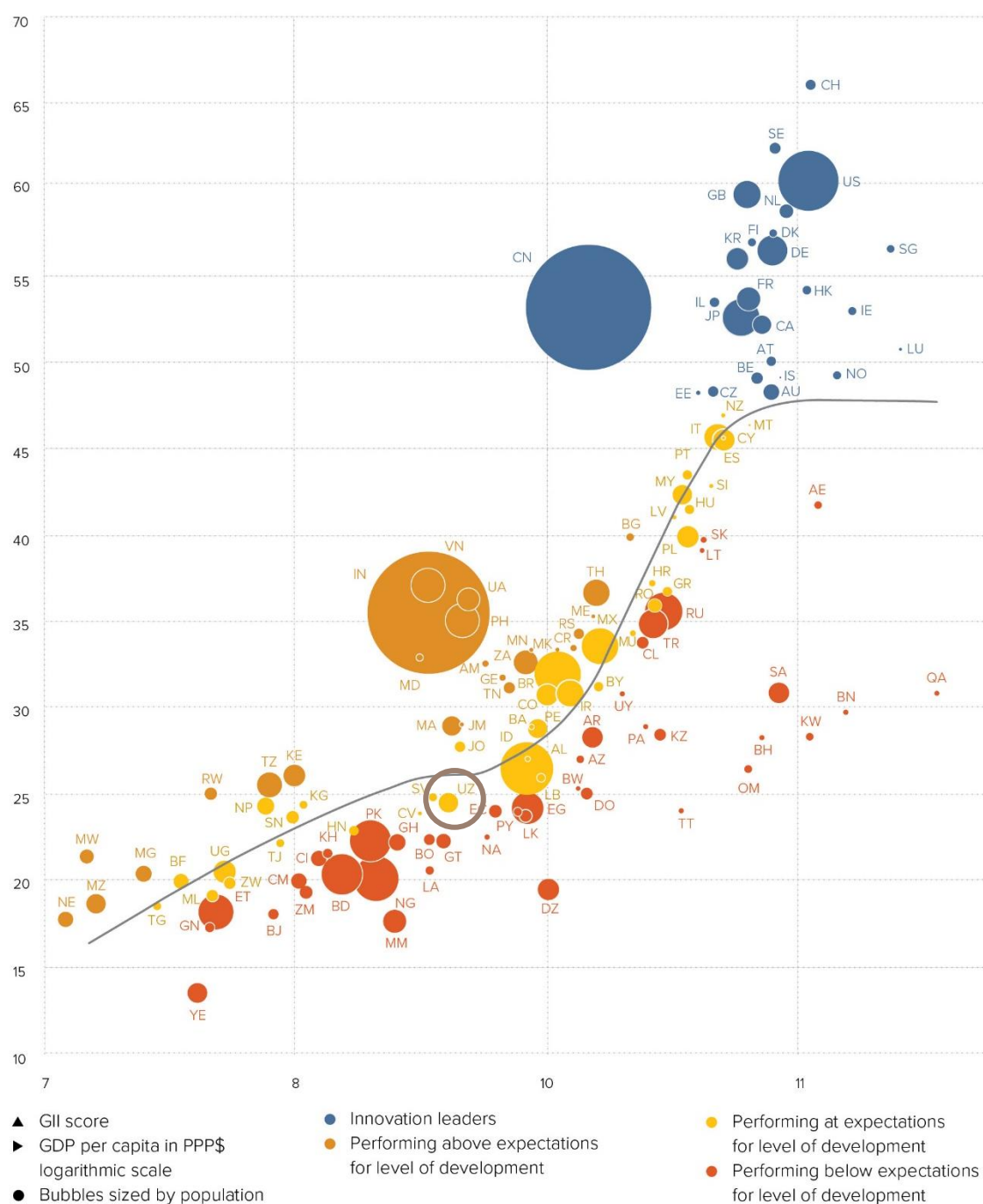
Uzbekistan ranks 4th among the 10 economies in Central and Southern Asia.

## 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, Uzbekistan's performance matches expectations for its level of development.

### The positive relationship between innovation and development

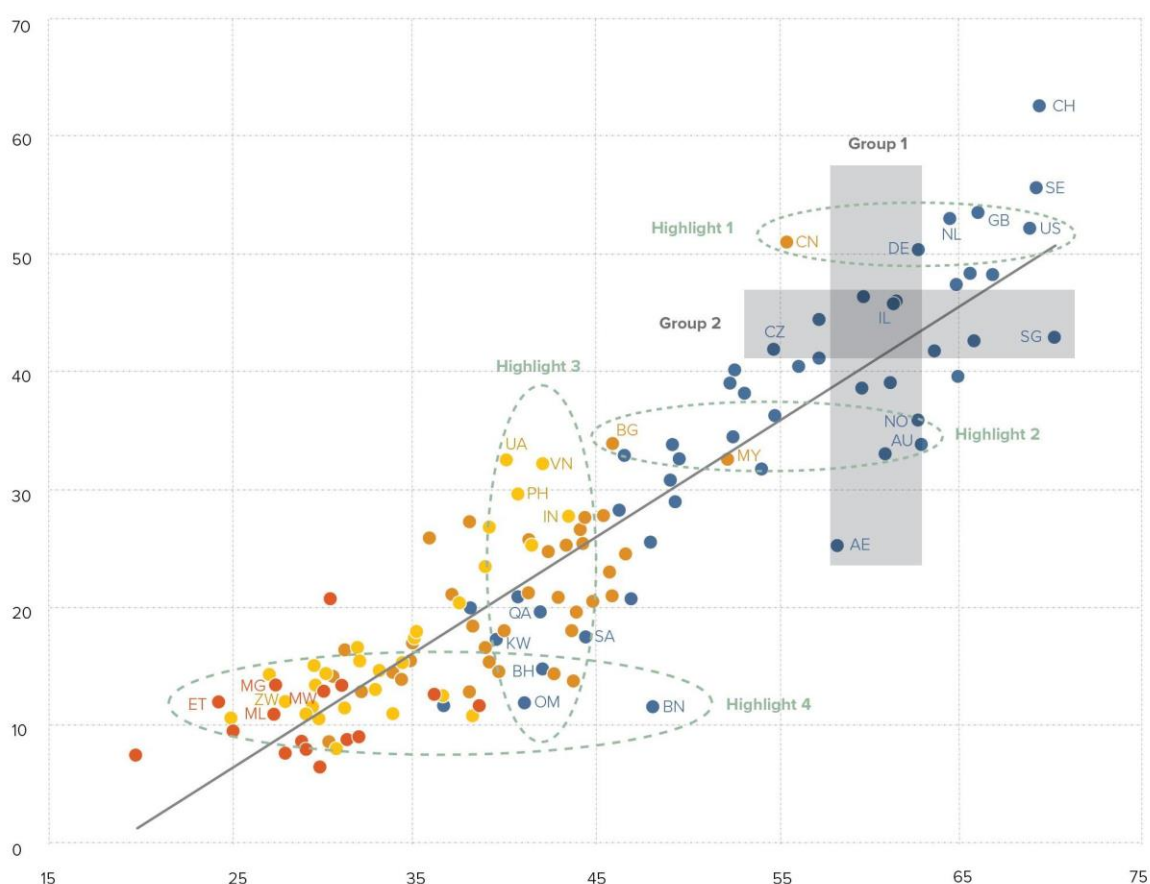


# EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Uzbekistan produces less innovation outputs relative to its level of innovation investments.

## Innovation input to output performance, 2020



▲ Output score  
► Input score

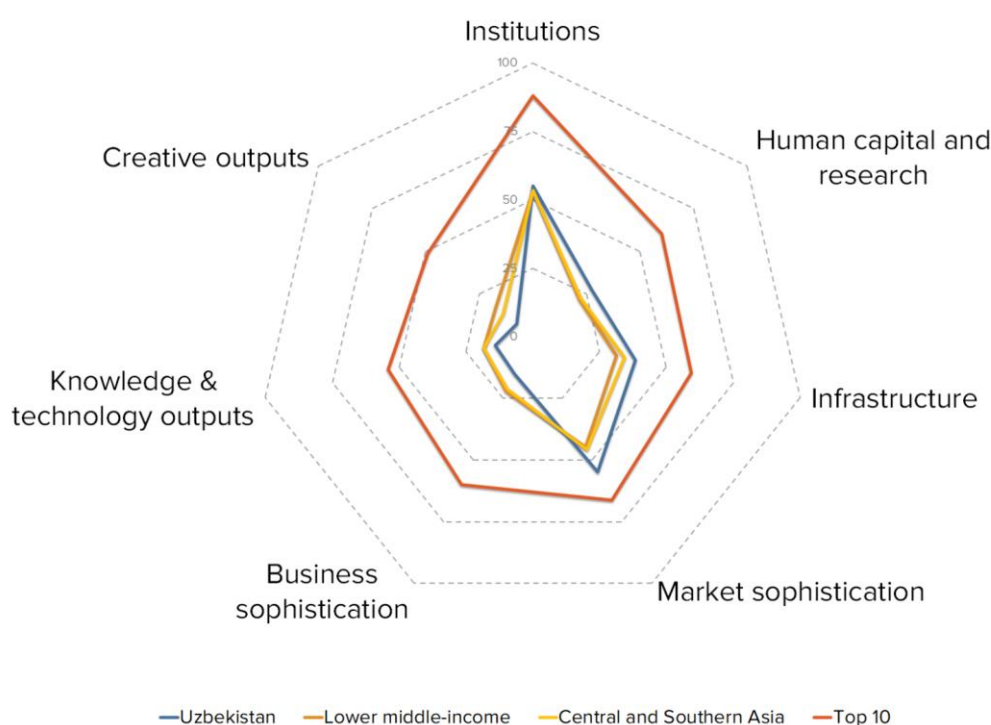
● High income group  
● Lower middle-income group  
● Upper middle-income group  
● Low income group

— 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 UZBEKISTAN AGAINST OTHER LOWER MIDDLE-INCOME ECONOMIES AND CENTRAL AND SOUTHERN ASIA

### Uzbekistan's scores in the seven GII pillars



### Lower middle-income group

Uzbekistan has high scores in four out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, and Market sophistication, which are above average for the lower middle-income group.

Conversely, Uzbekistan scores below average for its income group in Business sophistication, Knowledge & technology outputs and Creative outputs.

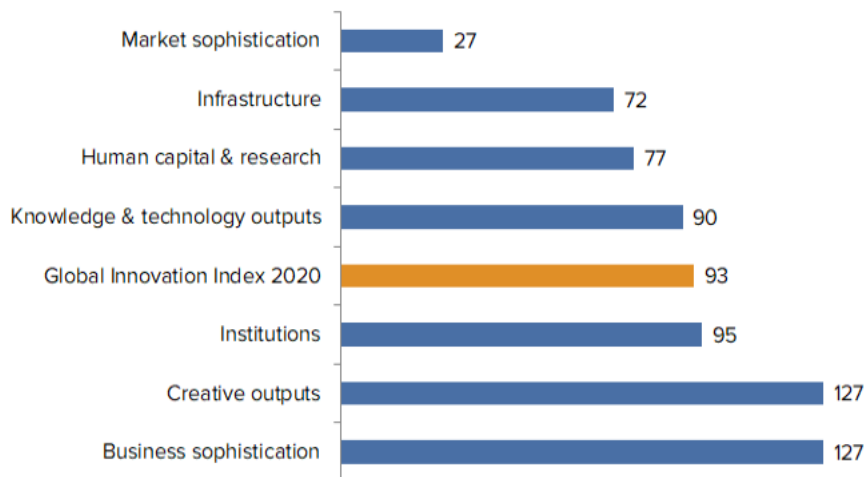
### Central and Southern Asia

Compared to other economies in Central and Southern Asia, Uzbekistan performs:

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

## OVERVIEW OF UZBEKISTAN RANKINGS IN THE SEVEN GII AREAS

Uzbekistan performs best in Market sophistication and its weakest performance is in Business sophistication and Creative outputs.



\*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 Uzbekistan in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.3.1	Ease of starting a business*	8	1.2.1	Regulatory quality*	127
2.1.1	Expenditure on education, % GDP	31	1.2.2	Rule of law*	124
2.1.5	Pupil-teacher ratio, secondary	38	2.3.3	Global R&D companies, top 3, mn US\$	42
2.2.2	Graduates in science & engineering, %	7	2.3.4	QS university ranking, average score top 3*	77
3.1.3	Government's online service*	48	4.1.3	Microfinance gross loans, % GDP	79
3.2	General infrastructure	41	5.2.3	GERD financed by abroad, % GDP	96
3.2.3	Gross capital formation, % GDP	8	5.3.3	ICT services imports, % total trade	130
4	Market sophistication	27	6.3	Knowledge diffusion	131
4.2.1	Ease of protecting minority investors*	36	6.3.3	ICT services exports, % total trade	129
6.1.1	Patents by origin/bn PPP\$ GDP	45	7	Creative outputs	127
6.2	Knowledge impact	49	7.3	Online creativity	126
6.2.1	Growth rate of PPP\$ GDP/worker, %	12	7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	131
7.2.1	Cultural & creative services exports, % total trade	33	7.3.4	Mobile app creation/bn PPP\$ GDP	98

NOTES: \* indicates an index; † indicates a survey question. Strengths and weaknesses are listed for pillars and/or sub-pillars where the data minimum coverage (DMC) requirements were not met. For the sake of caution, these ranks are shown in square brackets [ ] in the country profile. This is to ensure that incomplete data coverage does not lead to erroneous conclusions being made about strengths or weaknesses, in particular about strong or weak sub-pillar rankings.

## STRENGTHS








GII strengths for Uzbekistan are found in six of the seven GII pillars.

- Institutions (95): the indicator Ease of starting a business (8) is a strength.
- Human capital & research (77): shows strengths in the indicators Expenditure on education (31), Pupil–teacher ratio (38) and Graduates in science & engineering (7).
- Infrastructure (72): demonstrates strengths in the sub-pillar General infrastructure (41) and in the indicators Government’s online service (48) and Gross capital formation (8).
- Market sophistication (27): the indicator Ease of protecting minority investors (36) is a strength.
- Knowledge & technology outputs (90): reveals strengths in the sub-pillar Knowledge impact (49) and in the indicators Patents by origin (45) and productivity growth (12).
- Creative outputs (127): the indicator Cultural & creative services exports (33) is a strength.

## WEAKNESSES

GII weaknesses for Uzbekistan are found in six of the seven GII pillars.

- Institutions (95): exhibits weaknesses in the indicators Regulatory quality (127) and Rule of law (124).
- Human capital & research (77): has weaknesses in the indicators Global R&D companies (42) and QS university ranking (77).
- Market sophistication (27): the indicator Microfinance gross loans (79) is a weakness.
- Business sophistication (127): demonstrates weaknesses in the indicators GERD financed by abroad (96) and ICT services imports (130).
- Knowledge & technology outputs (90): displays weaknesses in the sub-pillars Knowledge diffusion (131) and in the indicator ICT services exports (129).
- Creative outputs (127): has weaknesses in the sub-pillar Online creativity (126) and in the indicators Generic top-level domains (TLDs) (131) and Mobile app creation (98).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
118	81	Lower middle	CSA	33.0	297.2	7,856.9	n/a
		Score/Value	Rank				
 <b>INSTITUTIONS.....</b>		<b>55.1</b>	<b>95</b>	 <b>BUSINESS SOPHISTICATION.....</b>			
<b>1.1</b>	<b>Political environment.....</b>	<b>46.7</b>	<b>98</b>	<b>5.1</b>	<b>Knowledge workers.....</b>	<b>22.9</b>	<b>[91]</b>
1.1.1	Political and operational stability*.....	64.3	83	5.1.1	Knowledge-intensive employment, %.....	n/a	n/a
1.1.2	Government effectiveness*.....	37.9	100	5.1.2	Firms offering formal training, %.....	16.9	82 ◇
				5.1.3	GERD performed by business, % GDP.....	0.1	72
<b>1.2</b>	<b>Regulatory environment.....</b>	<b>48.6</b>	<b>107</b>	5.1.4	GERD financed by business, %.....	42.4	43 ◆
1.2.1	Regulatory quality*.....	12.7	127 ○ ◇	5.1.5	Females employed w/advanced degrees, %.....	n/a	n/a
1.2.2	Rule of law*.....	18.7	124 ○ ◇	<b>5.2</b>	<b>Innovation linkages.....</b>	<b>3.9</b>	<b>[128]</b>
1.2.3	Cost of redundancy dismissal, salary weeks.....	17.3	69	5.2.1	University/industry research collaboration*.....	n/a	n/a
<b>1.3</b>	<b>Business environment.....</b>	<b>69.8</b>	<b>72</b>	5.2.2	State of cluster development.....	n/a	n/a
1.3.1	Ease of starting a business*.....	96.2	8 ◆	5.2.3	GERD financed by abroad, % GDP.....	0.0	96 ○
1.3.2	Ease of resolving insolvency*.....	43.5	90	5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....	0.0	48
				5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....	0.0	96
 <b>HUMAN CAPITAL &amp; RESEARCH.....</b>		<b>27.5</b>	<b>77</b>	<b>5.3</b>	<b>Knowledge absorption.....</b>	<b>18.9</b>	<b>109</b>
				5.3.1	Intellectual property payments, % total trade.....	0.2	90
<b>2.1</b>	<b>Education.....</b>	<b>49.7</b>	<b>[52]</b>	5.3.2	High-tech imports, % total trade.....	7.8	60
2.1.1	Expenditure on education, % GDP.....	5.3	31 ●	5.3.3	ICT services imports, % total trade.....	0.0	130 ○ ◇
2.1.2	Government funding/pupil, secondary, % GDP/cap.....	n/a	n/a	5.3.4	FDI net inflows, % GDP.....	2.1	80
2.1.3	School life expectancy, years.....	12.1	92	5.3.5	Research talent, % in business enterprise.....	12.9	60
2.1.4	PISA scales in reading, maths, & science.....	n/a	n/a	 <b>KNOWLEDGE &amp; TECHNOLOGY OUTPUTS....</b>		<b>14.1</b>	<b>90</b>
2.1.5	Pupil-teacher ratio, secondary.....	10.3	38 ◆	<b>6.1</b>	<b>Knowledge creation.....</b>	<b>7.3</b>	<b>84</b>
<b>2.2</b>	<b>Tertiary education.....</b>	<b>30.9</b>	<b>73</b>	6.1.1	Patents by origin/bn PPP\$ GDP.....	1.7	45 ●
2.2.1	Tertiary enrolment, % gross.....	10.1	110	6.1.2	PCT patents by origin/bn PPP\$ GDP.....	0.0	97
2.2.2	Graduates in science & engineering, %.....	35.2	7 ◆	6.1.3	Utility models by origin/bn PPP\$ GDP.....	0.7	30
2.2.3	Tertiary inbound mobility, %.....	0.2	106	6.1.4	Scientific & technical articles/bn PPP\$ GDP.....	1.2	123
<b>2.3</b>	<b>Research &amp; development (R&amp;D).....</b>	<b>2.0</b>	<b>94</b>	6.1.5	Citable documents H-index.....	4.5	112
2.3.1	Researchers, FTE/mn pop.....	476.2	70	<b>6.2</b>	<b>Knowledge impact.....</b>	<b>28.0</b>	<b>49 ●</b>
2.3.2	Gross expenditure on R&D, % GDP.....	0.1	99	6.2.1	Growth rate of PPP\$ GDP/worker, %.....	4.7	12 ●
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US.....	0.0	42 ○ ◇	6.2.2	New businesses/th pop. 15-64.....	1.6	63
2.3.4	QS university ranking, average score top 3*.....	0.0	77 ○ ◇	6.2.3	Computer software spending, % GDP.....	n/a	n/a
 <b>INFRASTRUCTURE.....</b>		<b>38.5</b>	<b>72</b> ◆	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....	1.4	93
				6.2.5	High- and medium-high-tech manufacturing, %.....	22.8	49
<b>3.1</b>	<b>Information &amp; communication technologies (ICTs)....</b>	<b>63.9</b>	<b>72</b> ◆	<b>6.3</b>	<b>Knowledge diffusion.....</b>	<b>7.1</b>	<b>131</b> ○ ◇
3.1.1	ICT access*.....	54.3	83	6.3.1	Intellectual property receipts, % total trade.....	0.0	95
3.1.2	ICT use*.....	46.2	82	6.3.2	High-tech net exports, % total trade.....	0.1	117
3.1.3	Government's online service*.....	79.2	48 ◆	6.3.3	ICT services exports, % total trade.....	0.0	129 ○
3.1.4	E-participation*.....	75.8	59	6.3.4	FDI net outflows, % GDP.....	0.0	116
<b>3.2</b>	<b>General infrastructure.....</b>	<b>32.0</b>	<b>41</b> ◆	 <b>CREATIVE OUTPUTS.....</b>		<b>7.5</b>	<b>127</b> ○ ◇
3.2.1	Electricity output, kWh/mn pop.....	1,907.7	80 ◆	<b>7.1</b>	<b>Intangible assets.....</b>	<b>9.3</b>	<b>[128]</b>
3.2.2	Logistics performance*.....	23.8	95	7.1.1	Trademarks by origin/bn PPP\$ GDP.....	26.8	82
3.2.3	Gross capital formation, % GDP.....	41.4	8 ◆	7.1.2	Global brand value, top 5,000, % GDP.....	n/a	n/a
<b>3.3</b>	<b>Ecological sustainability.....</b>	<b>19.6</b>	<b>101</b>	7.1.3	Industrial designs by origin/bn PPP\$ GDP.....	1.1	64
3.3.1	GDP/unit of energy use.....	5.9	102	7.1.4	ICTs & organizational model creation*.....	n/a	n/a
3.3.2	Environmental performance*.....	44.3	77 ◆	<b>7.2</b>	<b>Creative goods and services.....</b>	<b>11.2</b>	<b>75</b>
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....	0.2	118	7.2.1	Cultural & creative services exports, % total trade.....	0.8	33 ◆
 <b>MARKET SOPHISTICATION.....</b>		<b>54.9</b>	<b>27</b> ◆	7.2.2	National feature films/mn pop. 15-69.....	4.2	47
				7.2.3	Entertainment & Media market/th pop. 15-69.....	n/a	n/a
<b>4.1</b>	<b>Credit.....</b>	<b>43.3</b>	<b>57</b>	7.2.4	Printing and other media, % manufacturing.....	0.9	63
4.1.1	Ease of getting credit*.....	65.0	61	7.2.5	Creative goods exports, % total trade.....	0.1	92
4.1.2	Domestic credit to private sector, % GDP.....	n/a	n/a	<b>7.3</b>	<b>Online creativity.....</b>	<b>0.3</b>	<b>126</b> ○ ◇
4.1.3	Microfinance gross loans, % GDP.....	0.0	79 ○	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....	0.0	131 ○ ◇
<b>4.2</b>	<b>Investment.....</b>	<b>70.0</b>	<b>[8]</b>	7.3.2	Country-code TLDs/th pop. 15-69.....	1.0	85
4.2.1	Ease of protecting minority investors*.....	70.0	36 ●	7.3.3	Wikipedia edits/mn pop. 15-69.....	n/a	n/a
4.2.2	Market capitalization, % GDP.....	n/a	n/a	7.3.4	Mobile app creation/bn PPP\$ GDP.....	0.0	98 ○
4.2.3	Venture capital deals/bn PPP\$ GDP.....	n/a	n/a				
<b>4.3</b>	<b>Trade, competition, and market scale.....</b>	<b>51.3</b>	<b>108</b>				
4.3.1	Applied tariff rate, weighted avg., %.....	8.7	109				
4.3.2	Intensity of local competition*.....	n/a	n/a				
4.3.3	Domestic market scale, bn PPP\$.....	297.2	59				

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 Uzbekistan.

### Missing data

Code	Indicator name	Country year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2016	UNESCO Institute for Statistics
2.1.4	PISA scales in reading, maths & science	n/a	2018	OECD Programme for International Student Assessment (PISA)
4.1.2	Domestic credit to private sector, % GDP	n/a	2018	International Monetary Fund
4.2.2	Market capitalization, % GDP	n/a	2018	World Federation of Exchanges
4.2.3	Venture capital deals/bn PPP\$ GDP	n/a	2019	Thomson Reuters
4.3.2	Intensity of local competition <sup>†</sup>	n/a	2018	World Economic Forum
5.1.1	Knowledge-intensive employment, %	n/a	2018	Source: International Labour Organization
5.1.5	Females employed w/advanced degrees, %	n/a	2018	International Labour Organization
5.2.1	University/industry research collaboration <sup>†</sup>	n/a	2019	World Economic Forum
5.2.2	State of cluster development <sup>†</sup>	n/a	2019	World Economic Forum
6.2.3	Computer software spending, % GDP	n/a	2019	IHS Global Insight
7.1.2	Global brand value, top 5000, % GDP	n/a	2019	Brand Finance
7.1.4	ICTs & organizational model creation <sup>†</sup>	n/a	2018	World Economic Forum
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2018	PwC
7.3.3	Wikipedia edits/mn pop. 15–69	n/a	2019	Wikimedia Foundation

### Outdated data

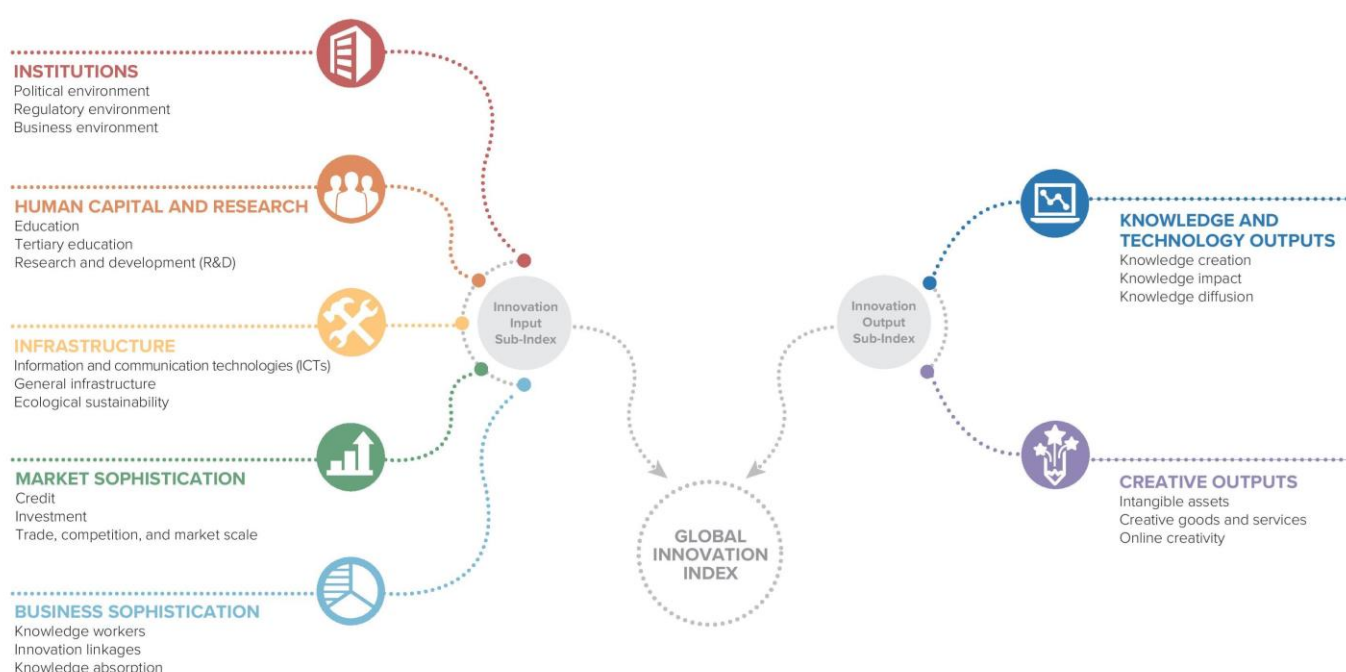
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2017	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2017	2018	UNESCO Institute for Statistics
4.3.1	Applied tariff rate, weighted avg., %	2015	2018	World Bank

## 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 13<sup>th</sup> 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.

