

UKRAINE

45th

Ukraine ranks 45th 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 Ukraine 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 Ukraine in the GII 2020 is between ranks 37 and 46.

Rankings of Ukraine (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	45	71	37
2019	47	82	36
2018	43	75	35

- Ukraine performs better in innovation outputs than innovation inputs in 2020.
- This year Ukraine ranks 71st in innovation inputs, higher than last year and higher compared to 2018.
- As for innovation outputs, Ukraine ranks 37th. This position is lower than last year and lower compared to 2018.

2nd

Ukraine ranks 2nd among the 29 lower middle-income group economies.

30th

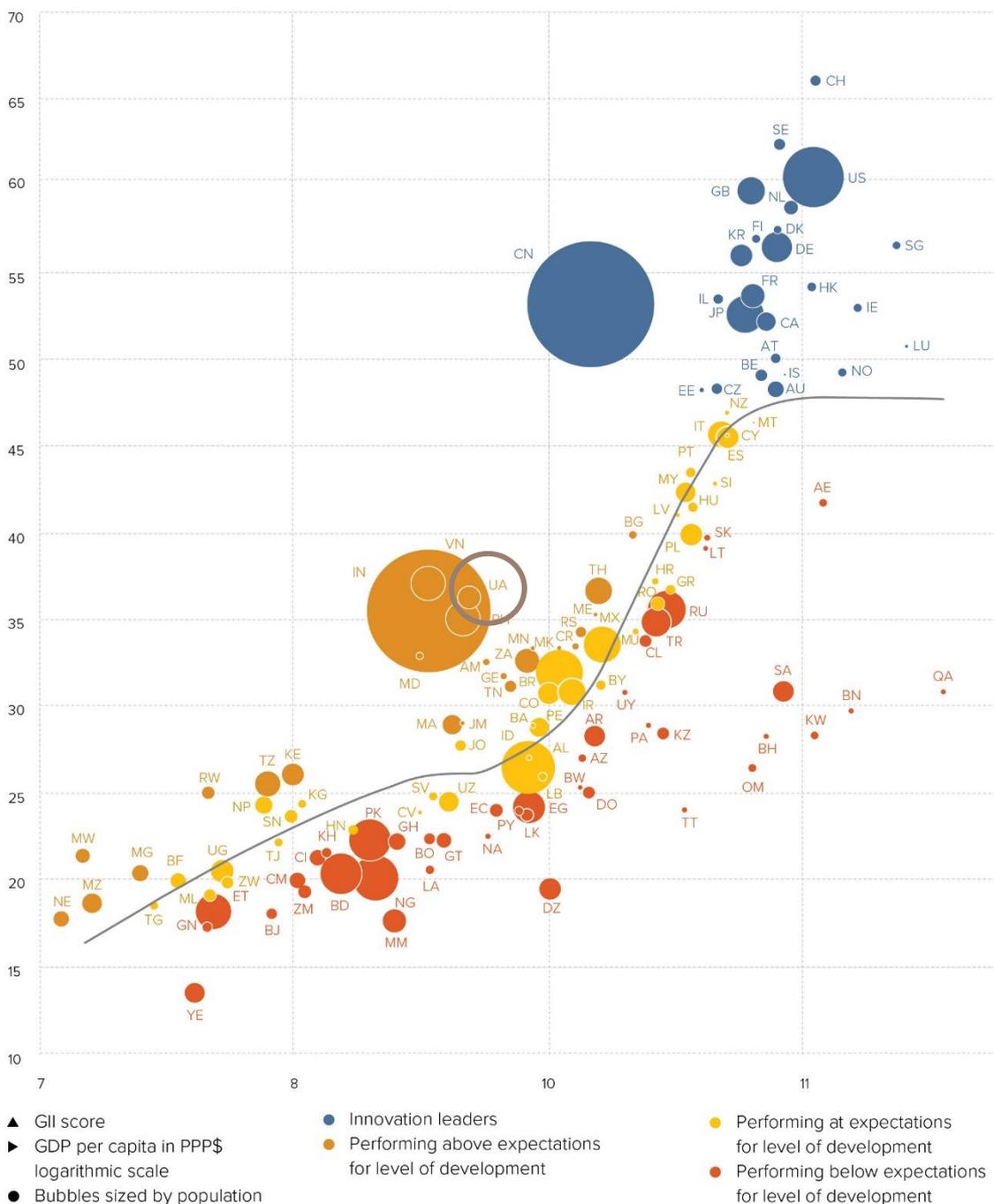
Ukraine ranks 30th among the 39 economies in Europe.

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, Ukraine is performing above expectations for its level of development.

The positive relationship between innovation and development

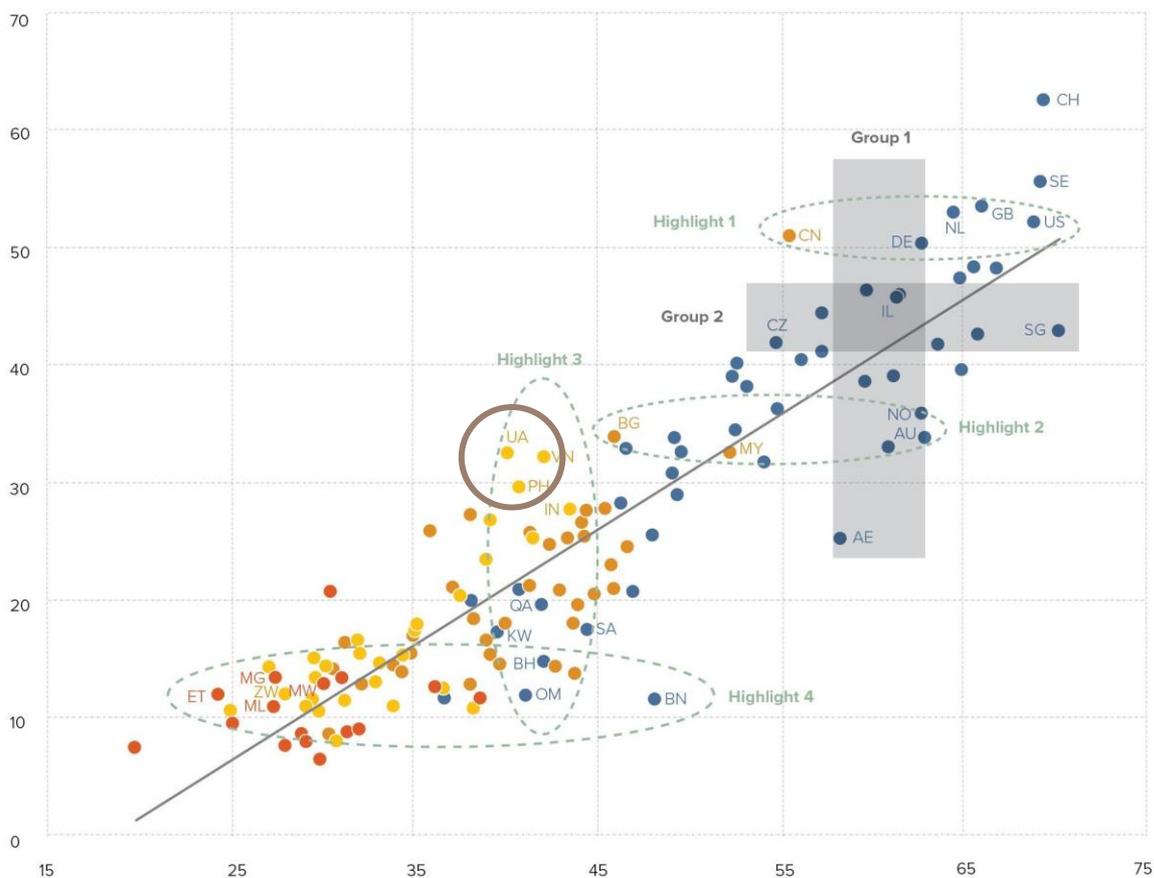


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

Innovation input to output performance, 2020

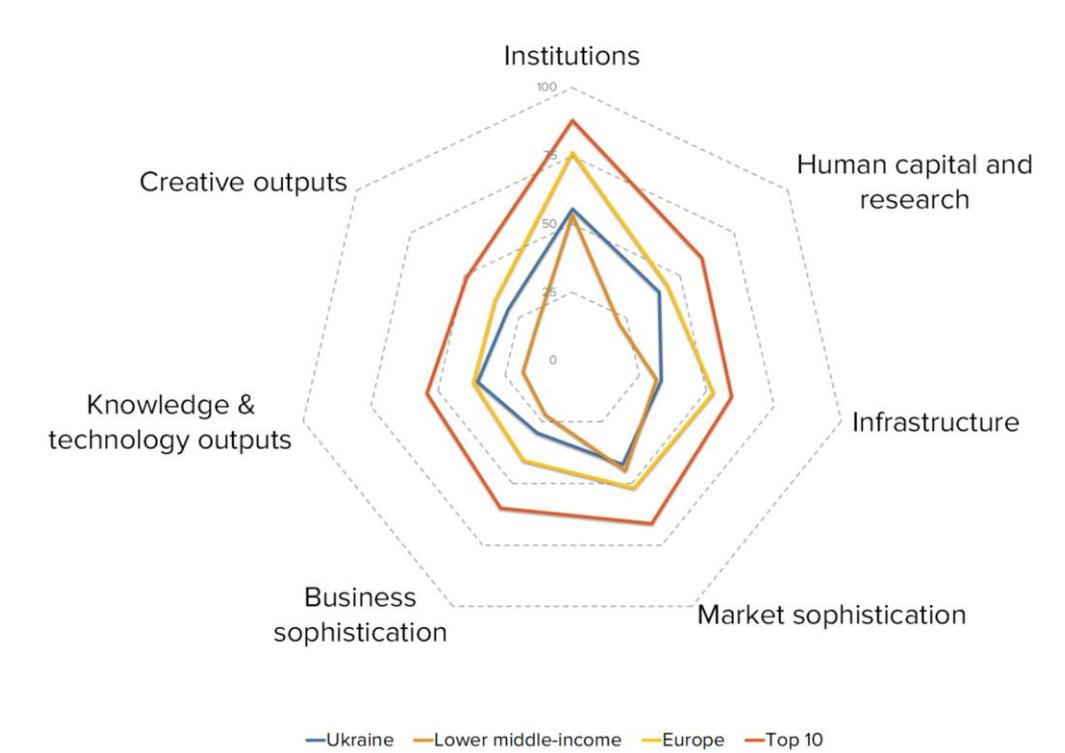


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

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 UKRAINE AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND EUROPE

Ukraine's scores in the seven GII pillars



Lower middle-income group economies

Ukraine has high scores in six out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, Business sophistication, Knowledge & technology outputs and Creative outputs, which are above average for the lower middle-income group.

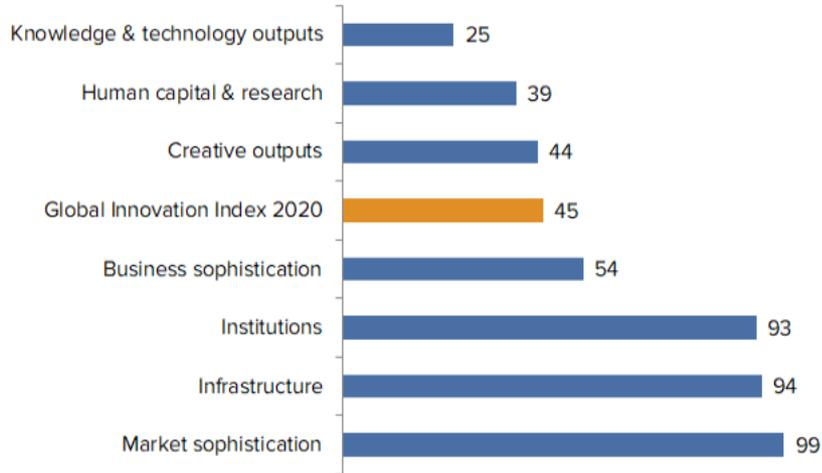
Conversely, Ukraine scores below average for its income group in one pillar: Market sophistication.

Europe

Compared to other economies in Europe, Ukraine performs below average in all seven of the GII pillars.

OVERVIEW OF UKRAINE RANKINGS IN THE SEVEN GII AREAS

Ukraine performs best in Knowledge & technology outputs 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 Ukraine in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.1.2	Government funding/pupil, secondary, % GDP/cap	12	1.1	Political environment	105
2.1.5	Pupil-teacher ratio, secondary	3	1.1.1	Political & operational stability*	123
2.2.1	Tertiary enrolment, % gross	14	1.2.2	Rule of law*	109
4.3.1	Applied tariff rate, weighted avg., %	18	1.3	Business environment	104
5.1.5	Females employed w/advanced degrees, %	3	1.3.2	Ease of resolving insolvency*	117
6.1.3	Utility models by origin/bn PPP\$ GDP	1	3.2.3	Gross capital formation, % GDP	102
6.3.3	ICT services exports, % total trade	9	3.3.1	GDP/unit of energy use	117
7.1.1	Trademarks by origin/bn PPP\$ GDP	5	4.1.3	Microfinance gross loans, % GDP	78
7.1.3	Industrial designs by origin/bn PPP\$ GDP	8	4.2	Investment	121
7.3.4	Mobile app creation/bn PPP\$ GDP	15	4.2.2	Market capitalization, % GDP	71
			4.2.3	Venture capital deals/bn PPP\$ GDP	64
			5.2.4	JV–strategic alliance deals/bn PPP\$ GDP	113
			7.2.2	National feature films/mn pop. 15–69	99

STRENGTHS

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

- Human capital & research (39): shows strengths in the indicators Government funding/pupil (12), Pupil–teacher ratio (3) and Tertiary enrolment (14).
- Market sophistication (99): the indicator Applied tariff rate (18) reveals a strength.
- Business sophistication (54): displays strength in the indicator Females employed w/advanced degrees (3).
- Knowledge & technology outputs (25): reveals strengths in the indicators Utility models by origin (1) and ICT services exports (9).
- Creative outputs (44): exhibits strengths in the indicators Trademarks by origin (5), Industrial designs by origin (8) and Mobile app creation (15).

WEAKNESSES

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

- Institutions (93): exhibits weaknesses in the sub-pillars Political environment (105) and Business environment (104) and in the indicators Political & operational stability (123), Rule of law (109) and Ease of resolving insolvency (117).
- Infrastructure (94): displays weaknesses in the indicators Gross capital formation (102) and GDP/unit of energy use (117).
- Market sophistication (99): shows weaknesses in the sub-pillar Investment (121) and in the indicators Microfinance gross loans (78), Market capitalization (71) and Venture capital deals (64).
- Business sophistication (54): the indicator JV–strategic alliance deals (113) demonstrates a weakness.
- Creative outputs (44): the indicator National feature films (99) reveals a weakness.

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank		
37	71	Lower middle	EUR	44.0	409.3	8,533.5	47		
				Score/Value	Rank				
INSTITUTIONS				55.6	93				
1.1	Political environment	44.5	105	○	5.1	Knowledge workers	39.0	47	◆
1.1.1	Political and operational stability*	51.8	123	○ ◇	5.1.1	Knowledge-intensive employment, %	37.7	32	◆
1.1.2	Government effectiveness*	40.9	93		5.1.2	Firms offering formal training, %	24.3	63	
1.2	Regulatory environment	61.0	76		5.1.3	GERD performed by business, % GDP	0.3	48	◆
1.2.1	Regulatory quality*	36.0	88		5.1.4	GERD financed by business, %	30.5	58	
1.2.2	Rule of law*	28.0	109	○	5.1.5	Females employed w/advanced degrees, %	30.4	3	● ◆
1.2.3	Cost of redundancy dismissal, salary weeks	13.0	41		5.2	Innovation linkages	18.8	81	
1.3	Business environment	61.2	104	○	5.2.1	University/industry research collaboration†	45.5	50	
1.3.1	Ease of starting a business*	91.1	52		5.2.2	State of cluster development†	40.9	91	
1.3.2	Ease of resolving insolvency*	31.4	117	○	5.2.3	GERD financed by abroad, % GDP	0.1	36	
					5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.0	113	○
					5.2.5	Patent families 2+ offices/bn PPP\$ GDP	0.1	52	◆
HUMAN CAPITAL & RESEARCH				40.5	39				
2.1	Education	56.9	23	◆	5.3	Knowledge absorption	30.6	59	
2.1.1	Expenditure on education, % GDP	5.4	26		5.3.1	Intellectual property payments, % total trade	0.8	48	
2.1.2	Government funding/pupil, secondary, % GDP/cap	30.3	12	● ◆	5.3.2	High-tech imports, % total trade	9.9	33	
2.1.3	School life expectancy, years	14.9	54	◆	5.3.3	ICT services imports, % total trade	1.0	74	
2.1.4	PISA scales in reading, maths, & science	462.7	40	◆	5.3.4	FDI net inflows, % GDP	2.7	63	
2.1.5	Pupil-teacher ratio, secondary	7.3	3	● ◆	5.3.5	Research talent, % in business enterprise	27.3	47	
2.2	Tertiary education	43.9	32	◆	5.3	Knowledge absorption	30.6	59	
2.2.1	Tertiary enrolment, % gross	82.7	14	● ◆	5.3.1	Intellectual property payments, % total trade	0.8	48	
2.2.2	Graduates in science & engineering, %	25.3	35		5.3.2	High-tech imports, % total trade	9.9	33	
2.2.3	Tertiary inbound mobility, %	3.1	65		5.3.3	ICT services imports, % total trade	1.0	74	
2.3	Research & development (R&D)	20.5	44	◆	5.3.4	FDI net inflows, % GDP	2.7	63	
2.3.1	Researchers, FTE/mn pop	988.1	52	◆	5.3.5	Research talent, % in business enterprise	27.3	47	
2.3.2	Gross expenditure on R&D, % GDP	0.5	69						
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US	39.8	38	◆					
2.3.4	QS university ranking, average score top 3*	21.2	49	◆					
INFRASTRUCTURE				33.1	94				
3.1	Information & communication technologies (ICTs)	58.8	82		6.1	Knowledge creation	41.6	23	◆
3.1.1	ICT access*	65.9	65	◆	6.1.1	Patents by origin/bn PPP\$ GDP	5.4	20	◆
3.1.2	ICT use*	43.7	89		6.1.2	PCT patents by origin/bn PPP\$ GDP	0.5	36	◆
3.1.3	Government's online service*	56.9	93		6.1.3	Utility models by origin/bn PPP\$ GDP	23.0	1	● ◆
3.1.4	E-participation*	68.5	74		6.1.4	Scientific & technical articles/bn PPP\$ GDP	9.5	55	
3.2	General infrastructure	20.2	95		6.1.5	Citable documents H-index	16.8	50	
3.2.1	Electricity output, kWh/mn pop	3,445.5	58	◆	6.2	Knowledge impact	28.7	45	◆
3.2.2	Logistics performance*	35.7	65		6.2.1	Growth rate of PPP\$ GDP/worker, %	2.4	39	
3.2.3	Gross capital formation, % GDP	19.3	102	○	6.2.2	New businesses/th pop. 15-64	1.7	61	
3.3	Ecological sustainability	20.2	99		6.2.3	Computer software spending, % GDP	0.0	19	◆
3.3.1	GDP/unit of energy use	3.7	117	○ ◇	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	4.5	58	◆
3.3.2	Environmental performance*	49.5	57	◆	6.2.5	High- and medium-high-tech manufacturing, %	16.8	61	
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.7	68		6.3	Knowledge diffusion	35.0	32	◆
MARKET SOPHISTICATION				42.1	99				
4.1	Credit	35.3	86		6.3.1	Intellectual property receipts, % total trade	0.1	46	
4.1.1	Ease of getting credit*	75.0	34		6.3.2	High-tech net exports, % total trade	1.9	56	
4.1.2	Domestic credit to private sector, % GDP	34.1	88		6.3.3	ICT services exports, % total trade	5.4	9	● ◆
4.1.3	Microfinance gross loans, % GDP	0.0	78	○	6.3.4	FDI net outflows, % GDP	0.2	96	
4.2	Investment	23.8	121	○	6.3	Knowledge diffusion	35.0	32	◆
4.2.1	Ease of protecting minority investors*	68.0	44		6.3.1	Intellectual property receipts, % total trade	0.1	46	
4.2.2	Market capitalization, % GDP	4.0	71	○	6.3.2	High-tech net exports, % total trade	1.9	56	
4.2.3	Venture capital deals/bn PPP\$ GDP	0.0	64	○	6.3.3	ICT services exports, % total trade	5.4	9	● ◆
4.3	Trade, competition, and market scale	67.2	45		6.3.4	FDI net outflows, % GDP	0.2	96	
4.3.1	Applied tariff rate, weighted avg., %	1.6	18	● ◆	6.3	Knowledge diffusion	35.0	32	◆
4.3.2	Intensity of local competition†	64.4	83		6.3.1	Intellectual property receipts, % total trade	0.1	46	
4.3.3	Domestic market scale, bn PPP\$	409.3	48		6.3.2	High-tech net exports, % total trade	1.9	56	
					6.3.3	ICT services exports, % total trade	5.4	9	● ◆
					6.3.4	FDI net outflows, % GDP	0.2	96	
				Score/Value	Rank				
BUSINESS SOPHISTICATION				29.5	54				
5.1	Knowledge workers	39.0	47	◆	6.1	Knowledge creation	41.6	23	◆
5.1.1	Knowledge-intensive employment, %	37.7	32	◆	6.1.1	Patents by origin/bn PPP\$ GDP	5.4	20	◆
5.1.2	Firms offering formal training, %	24.3	63		6.1.2	PCT patents by origin/bn PPP\$ GDP	0.5	36	◆
5.1.3	GERD performed by business, % GDP	0.3	48	◆	6.1.3	Utility models by origin/bn PPP\$ GDP	23.0	1	● ◆
5.1.4	GERD financed by business, %	30.5	58		6.1.4	Scientific & technical articles/bn PPP\$ GDP	9.5	55	
5.1.5	Females employed w/advanced degrees, %	30.4	3	● ◆	6.1.5	Citable documents H-index	16.8	50	
5.2	Innovation linkages	18.8	81		6.2	Knowledge impact	28.7	45	◆
5.2.1	University/industry research collaboration†	45.5	50		6.2.1	Growth rate of PPP\$ GDP/worker, %	2.4	39	
5.2.2	State of cluster development†	40.9	91		6.2.2	New businesses/th pop. 15-64	1.7	61	
5.2.3	GERD financed by abroad, % GDP	0.1	36		6.2.3	Computer software spending, % GDP	0.0	19	◆
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.0	113	○	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	4.5	58	◆
5.2.5	Patent families 2+ offices/bn PPP\$ GDP	0.1	52	◆	6.2.5	High- and medium-high-tech manufacturing, %	16.8	61	
5.3	Knowledge absorption	30.6	59		6.3	Knowledge diffusion	35.0	32	◆
5.3.1	Intellectual property payments, % total trade	0.8	48		6.3.1	Intellectual property receipts, % total trade	0.1	46	
5.3.2	High-tech imports, % total trade	9.9	33		6.3.2	High-tech net exports, % total trade	1.9	56	
5.3.3	ICT services imports, % total trade	1.0	74		6.3.3	ICT services exports, % total trade	5.4	9	● ◆
5.3.4	FDI net inflows, % GDP	2.7	63		6.3.4	FDI net outflows, % GDP	0.2	96	
5.3.5	Research talent, % in business enterprise	27.3	47		6.3	Knowledge diffusion	35.0	32	◆
KNOWLEDGE & TECHNOLOGY OUTPUTS				35.1	25				
6.1	Knowledge creation	41.6	23	◆	6.3	Knowledge diffusion	35.0	32	◆
6.1.1	Patents by origin/bn PPP\$ GDP	5.4	20	◆	6.3.1	Intellectual property receipts, % total trade	0.1	46	
6.1.2	PCT patents by origin/bn PPP\$ GDP	0.5	36	◆	6.3.2	High-tech net exports, % total trade	1.9	56	
6.1.3	Utility models by origin/bn PPP\$ GDP	23.0	1	● ◆	6.3.3	ICT services exports, % total trade	5.4	9	● ◆
6.1.4	Scientific & technical articles/bn PPP\$ GDP	9.5	55		6.3.4	FDI net outflows, % GDP	0.2	96	
6.1.5	Citable documents H-index	16.8	50		6.3	Knowledge diffusion	35.0	32	◆
6.2	Knowledge impact	28.7	45	◆	6.3.1	Intellectual property receipts, % total trade	0.1	46	
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6.2.3	Computer software spending, % GDP	0.0	19	◆	6.3.4	FDI net outflows, % GDP	0.2	96	
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	4.5	58	◆	6.3	Knowledge diffusion	35.0	32	◆
6.2.5	High- and medium-high-tech manufacturing, %	16.8	61		6.3.1	Intellectual property receipts, % total trade	0.1	46	
6.3	Knowledge diffusion	35.0	32	◆	6.3.2	High-tech net exports, % total trade	1.9	56	
6.3.1	Intellectual property receipts, % total trade	0.1	46		6.3.3	ICT services exports, % total trade	5.4	9	● ◆
6.3.2	High-tech net exports, % total trade	1.9	56		6.3.4	FDI net outflows, % GDP	0.2	96	
6.3.3	ICT services exports, % total trade	5.4	9	● ◆	6.3	Knowledge diffusion	35.0	32	◆
6.3.4	FDI net outflows, % GDP	0.2	96		6.3.1	Intellectual property receipts, % total trade	0.1	46	
CREATIVE OUTPUTS				29.9	44				
7.1	Intangible assets	42.8	23	◆	7.1	Intangible assets	42.8	23	◆
7.1.1	Trademarks by origin/bn PPP\$ GDP	131.1	5	● ◆	7.1.1	Trademarks by origin/bn PPP\$ GDP	131.1	5	● ◆
7.1.2	Global brand value, top 5,000, % GDP	1.3	79		7.1.2	Global brand value, top 5,000, % GDP	1.3	79	
7.1.3	Industrial designs by origin/bn PPP\$ GDP	13.5	8	● ◆	7.1.3	Industrial designs by origin/bn PPP\$ GDP	13.5	8	● ◆
7.1.4	ICTs & organizational model creation†	55.6	58		7.1.4	ICTs & organizational model creation†	55.6	58	
7.2	Creative goods and services	6.6	95		7.2	Creative goods and services	6.6	95	
7.2.1	Cultural & creative services exports, % total trade	0.5	48		7.2.1	Cultural & creative services exports, % total trade	0.5	48	
7.2.2	National feature films/mn pop. 15-69	0.6	99	○	7.2.2	National feature films/mn pop. 15-69	0.6	99	○
7.2.3	Entertainment & Media market/th pop. 15-69	n/a	n/a		7.2.3	Entertainment & Media market/th pop. 15-69	n/a	n/a	
7.2.4	Printing and other media, % manufacturing	0.8	70		7.2.4	Printing and other media, % manufacturing	0.8	70	
7.2.5	Creative goods exports, % total trade	0.2	80		7.2.5	Creative goods exports, % total trade	0.2	80	
7.3	Online creativity	27.3	39	◆	7.3	Online creativity	27.3	39	◆
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	4.5	56	◆	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	4.5	56	◆
7.3.2	Country-code TLDs/th pop. 15-69	5.1	54	◆	7.3.2	Country-code TLDs/th pop. 15-69	5.1	54	◆
7.3.3	Wikipedia edits/mn pop. 15-69	67.7	43	◆	7.3.3	Wikipedia edits/mn pop. 15-69	67.7	43	◆
7.3.4	Mobile app creation/bn PPP\$ GDP	33.8	15	● ◆	7.3.4	Mobile app creation/bn PPP\$ GDP	33.8	15	● ◆

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 Ukraine.

Missing data

Code	Indicator name	Country year	Model year	Source
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2018	PwC

Outdated data

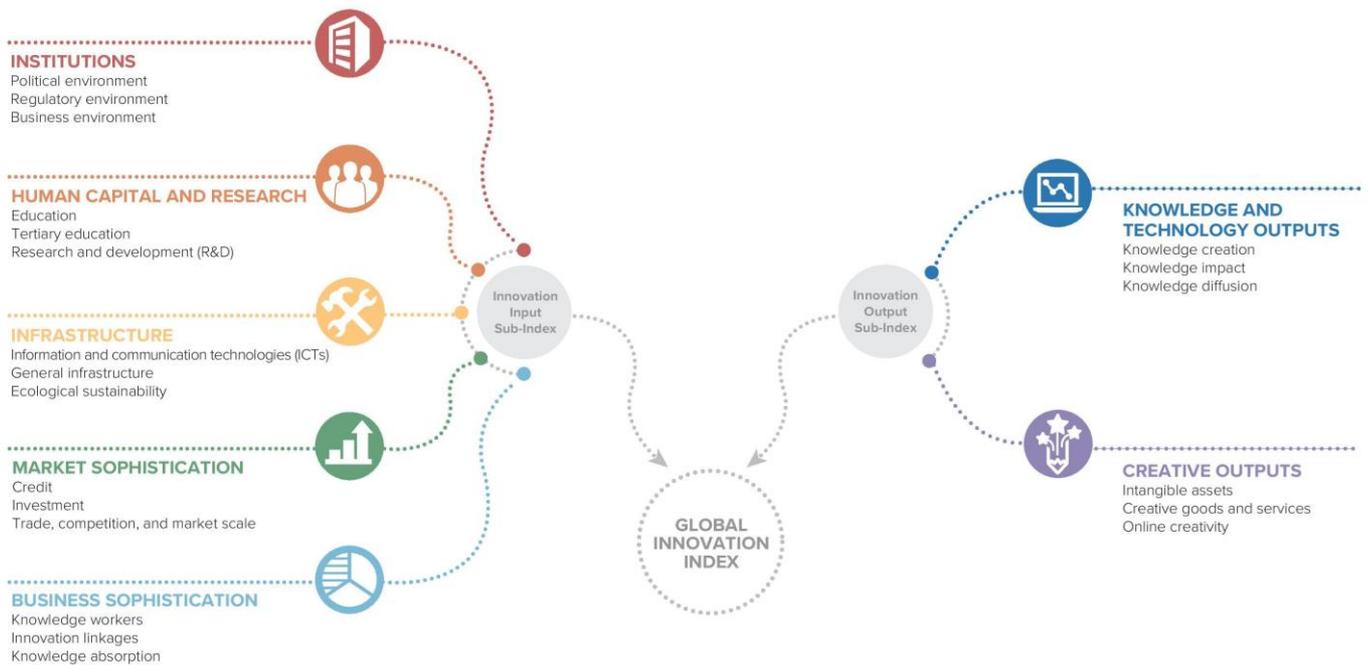
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2017	2018	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	2014	2017	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2014	2017	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	2015	2018	Microfinance Information Exchange
6.2.2	New businesses/th pop. 15–64	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.

