

RUSSIAN FEDERATION

47th The Russian Federation ranks 47th 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 the Russian Federation 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 the Russian Federation in the GII 2020 is between ranks 46 and 50.

Rankings of Russian Federation (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	47	42	58
2019	46	41	59
2018	46	43	56

- The Russian Federation performs better in innovation inputs than innovation outputs in 2020.
- This year the Russian Federation ranks 42nd in innovation inputs, lower than last year and higher compared to 2018.
- As for innovation outputs, the Russian Federation ranks 58th. This position is higher than last year and lower compared to 2018.

6th The Russian Federation ranks 6th among the 37 upper middle-income group economies.

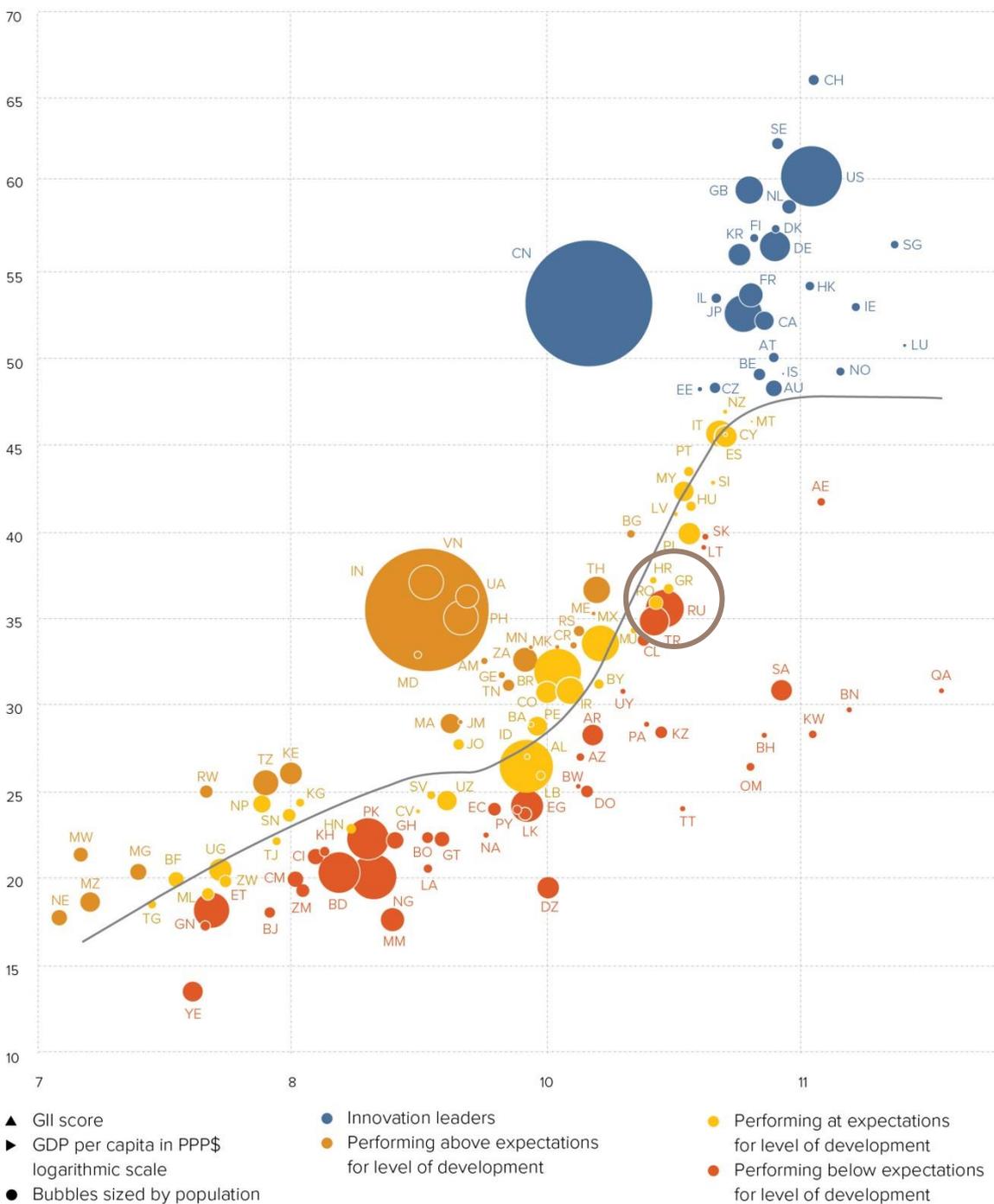
32nd The Russian Federation ranks 32nd among the 39 economies in Europe.

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, the Russian Federation's performance is below expectations for its level of development.

The positive relationship between innovation and development

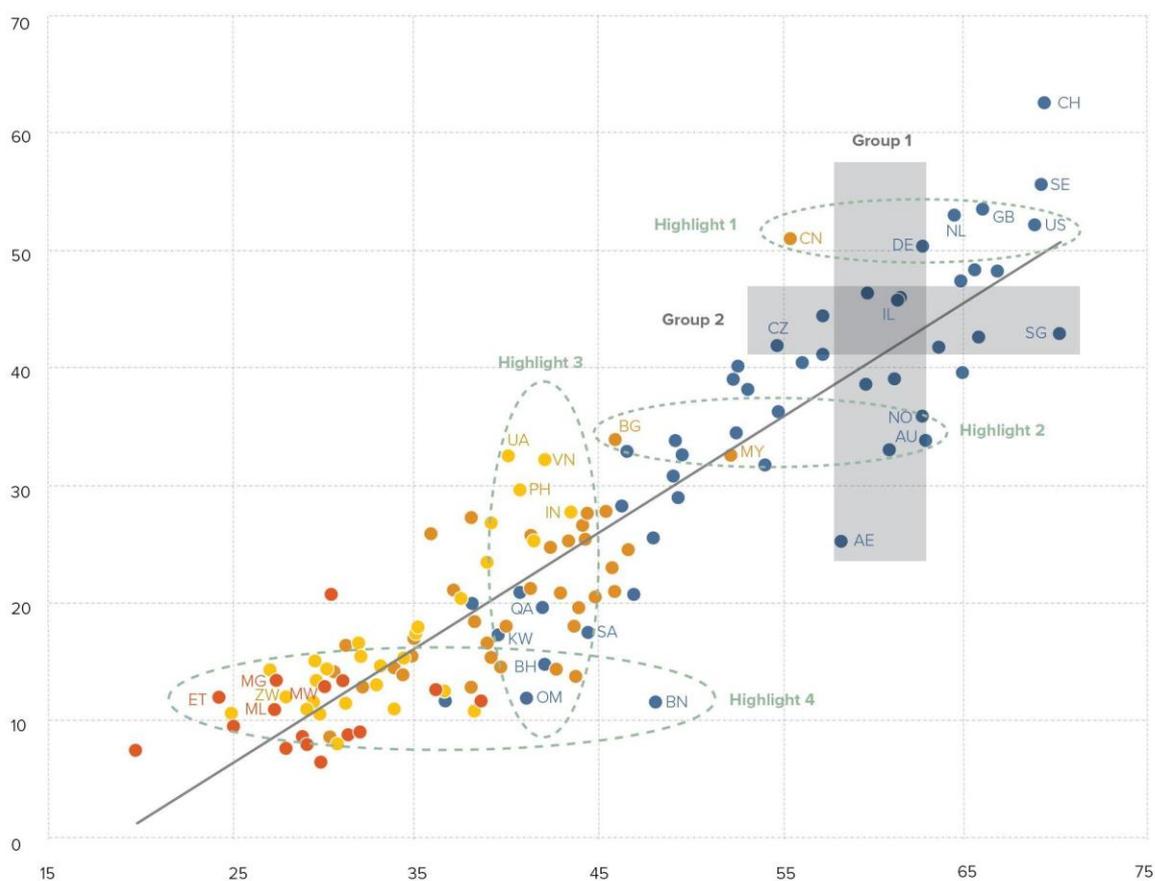


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

The Russian Federation produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance, 2020

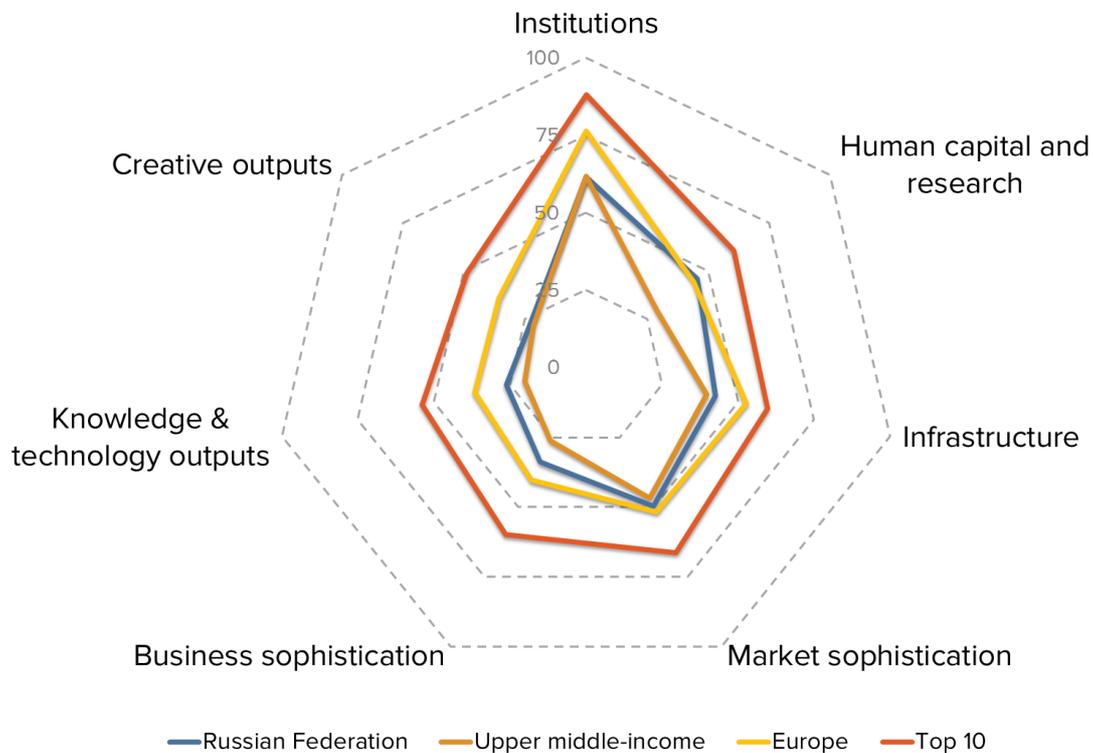


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

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 RUSSIAN FEDERATION AGAINST OTHER UPPER MIDDLE-INCOME GROUP ECONOMIES AND EUROPE

Russian Federation's scores in the seven GII pillars



Upper middle-income group economies

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

Conversely, the Russian Federation scores below average for its income group in one pillar: Institutions.

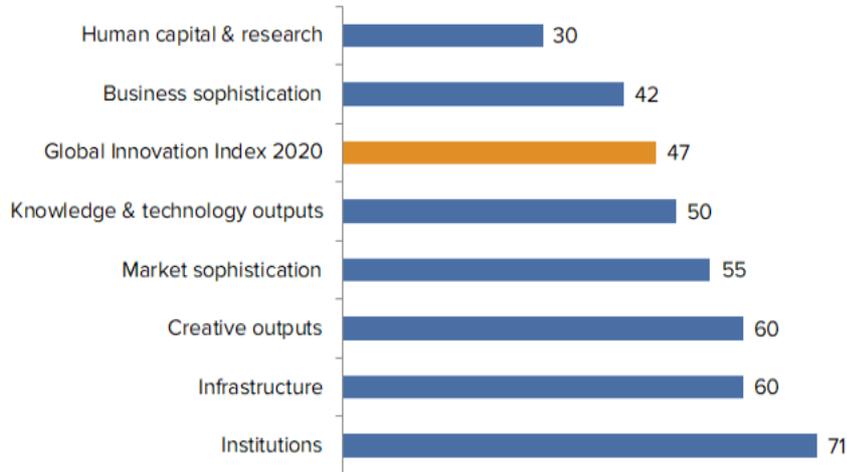
Europe

Compared to other economies in Europe, the Russian Federation performs:

- above average in one out 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 RUSSIAN FEDERATION RANKINGS IN THE SEVEN GII AREAS

The Russian Federation performs best in Human capital & research and its weakest performance is in Institutions.



*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 the Russian Federation in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.1.5	Pupil-teacher ratio, secondary	19	1.2.1	Regulatory quality*	105
2.2	Tertiary education	17	1.2.2	Rule of law*	114
2.2.1	Tertiary enrolment, % gross	17	3.3	Ecological sustainability	100
2.2.2	Graduates in science & engineering, %	15	3.3.1	GDP/unit of energy use	115
2.3.4	QS university ranking, average score top 3*	21	3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	106
4.3	Trade, competition, and market scale	18	4.1.3	Microfinance gross loans, % GDP	77
4.3.3	Domestic market scale, bn PPP\$	6	4.2	Investment	106
5.1.1	Knowledge-intensive employment, %	18	5.1.2	Firms offering formal training, %	91
5.1.5	Females employed w/advanced degrees, %	10	5.2.2	State of cluster development*	95
5.3.1	Intellectual property payments, % total trade	17	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	105
6.1.1	Patents by origin/bn PPP\$ GDP	17	7.2.2	National feature films/mn pop. 15–69	81
6.1.3	Utility models by origin/bn PPP\$ GDP	9	7.2.4	Printing and other media, % manufacturing	76

STRENGTHS

GII strengths for the Russian Federation are found in four of the seven GII pillars.

- Human capital & research (30): shows strengths in the sub-pillar Tertiary education (17) and in the indicators Pupil-teacher ratio (19), Tertiary enrolment (17), Graduates in science & engineering (15) and QS university ranking (21).
- Market sophistication (55): exhibits strengths in the sub-pillar Trade, competition, and market scale (18) and in the indicator Domestic market scale (6).
- Business sophistication (42): displays strengths in the indicators Knowledge-intensive employment (18), Females employed w/advanced degrees (10) and Intellectual property payments (17).
- Knowledge & technology outputs (50): reveals strengths in the indicators Patents by origin (17) and Utility models by origin (9).

WEAKNESSES

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

- Institutions (71): exhibits weaknesses in the indicators Regulatory quality (105) and Rule of law (114).
- Infrastructure (60): displays weaknesses in the sub-pillar Ecological sustainability (100) and in the indicators GDP/unit of energy use (115) and ISO 14001 environmental certificates (106).
- Market sophistication (55): shows weaknesses in the sub-pillar Investment (106) and in the indicator Microfinance gross loans (77).
- Business sophistication (42): demonstrates weaknesses in the indicators Firms offering formal training (91) and State of cluster development (95).
- Knowledge & technology outputs (50): reveals weaknesses in the indicator ISO 9001 quality certificates (105).
- Creative outputs (60): shows weaknesses in the indicators National feature films (81) and Printing and other media (76).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
58	42	Upper middle	EUR	145.9	4,349.4	25,878.7	46
				Score/Value	Rank		
INSTITUTIONS				61.5	71		
1.1	Political environment	54.5	75				
1.1.1	Political and operational stability*	66.1	76				
1.1.2	Government effectiveness*	48.8	75				
1.2	Regulatory environment	54.0	95				
1.2.1	Regulatory quality*	27.5	105 ○ ◇				
1.2.2	Rule of law*	25.4	114 ○ ◇				
1.2.3	Cost of redundancy dismissal, salary weeks	17.3	69				
1.3	Business environment	76.1	45				
1.3.1	Ease of starting a business*	93.1	38				
1.3.2	Ease of resolving insolvency*	59.1	52				
HUMAN CAPITAL & RESEARCH				45.6	30		
2.1	Education	51.9	46				
2.1.1	Expenditure on education, % GDP	3.7	82				
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a				
2.1.3	School life expectancy, years	15.0	51				
2.1.4	PISA scales in reading, maths, & science	481.3	31				
2.1.5	Pupil-teacher ratio, secondary	8.8	19				
2.2	Tertiary education	49.9	17				
2.2.1	Tertiary enrolment, % gross	81.9	17				
2.2.2	Graduates in science & engineering, %	30.0	15				
2.2.3	Tertiary inbound mobility, %	4.3	56				
2.3	Research & development (R&D)	34.9	33				
2.3.1	Researchers, FTE/mn pop	2,784.3	34				
2.3.2	Gross expenditure on R&D, % GDP	1.0	37				
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US	39.1	39				
2.3.4	QS university ranking, average score top 3*	47.5	21				
INFRASTRUCTURE				42.4	60		
3.1	Information & communication technologies (ICTs)	81.2	29				
3.1.1	ICT access*	72.8	51				
3.1.2	ICT use*	68.3	44				
3.1.3	Government's online service*	91.7	25				
3.1.4	E-participation*	92.1	23				
3.2	General infrastructure	25.9	72				
3.2.1	Electricity output, kWh/mn pop	7,558.3	28				
3.2.2	Logistics performance*	32.2	74				
3.2.3	Gross capital formation, % GDP	23.1	69				
3.3	Ecological sustainability	20.0	100 ○ ◇				
3.3.1	GDP/unit of energy use	4.4	115 ○ ◇				
3.3.2	Environmental performance*	50.5	56				
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.2	106 ○				
MARKET SOPHISTICATION				49.7	55		
4.1	Credit	45.2	50				
4.1.1	Ease of getting credit*	80.0	23				
4.1.2	Domestic credit to private sector, % GDP	76.0	42				
4.1.3	Microfinance gross loans, % GDP	0.0	77 ○				
4.2	Investment	27.4	106 ○				
4.2.1	Ease of protecting minority investors*	60.0	71				
4.2.2	Market capitalization, % GDP	40.9	37				
4.2.3	Venture capital deals/bn PPP\$ GDP	0.0	52				
4.3	Trade, competition, and market scale	76.5	18				
4.3.1	Applied tariff rate, weighted avg., %	3.5	71				
4.3.2	Intensity of local competition†	70.9	51				
4.3.3	Domestic market scale, bn PPP\$	4,349.4	6				
BUSINESS SOPHISTICATION				34.0	42		
5.1	Knowledge workers	44.8	36				
5.1.1	Knowledge-intensive employment, %	44.1	18				
5.1.2	Firms offering formal training, %	11.8	91 ○ ◇				
5.1.3	GERD performed by business, % GDP	n/a	n/a				
5.1.4	GERD financed by business, %	29.5	61				
5.1.5	Females employed w/advanced degrees, %	26.2	10				
5.2	Innovation linkages	17.6	90				
5.2.1	University/industry research collaboration†	46.8	49				
5.2.2	State of cluster development†	40.3	95 ○				
5.2.3	GERD financed by abroad, % GDP	0.0	62				
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.0	60				
5.2.5	Patent families 2+ offices/bn PPP\$ GDP	0.1	51				
5.3	Knowledge absorption	39.7	32				
5.3.1	Intellectual property payments, % total trade	1.6	17				
5.3.2	High-tech imports, % total trade	9.1	44				
5.3.3	ICT services imports, % total trade	1.3	54				
5.3.4	FDI net inflows, % GDP	1.6	95				
5.3.5	Research talent, % in business enterprise	44.2	29				
KNOWLEDGE & TECHNOLOGY OUTPUTS				26.4	50		
6.1	Knowledge creation	32.7	30				
6.1.1	Patents by origin/bn PPP\$ GDP	6.0	17				
6.1.2	PCT patents by origin/bn PPP\$ GDP	0.3	45				
6.1.3	Utility models by origin/bn PPP\$ GDP	2.2	9				
6.1.4	Scientific & technical articles/bn PPP\$ GDP	7.3	66				
6.1.5	Citable documents H-index	38.2	22				
6.2	Knowledge impact	23.0	68				
6.2.1	Growth rate of PPP\$ GDP/worker, %	1.9	48				
6.2.2	New businesses/th pop. 15-64	3.3	43				
6.2.3	Computer software spending, % GDP	0.0	63				
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	1.1	105 ○				
6.2.5	High- and medium-high-tech manufacturing, %	25.6	44				
6.3	Knowledge diffusion	23.6	66				
6.3.1	Intellectual property receipts, % total trade	0.2	39				
6.3.2	High-tech net exports, % total trade	2.4	51				
6.3.3	ICT services exports, % total trade	1.2	74				
6.3.4	FDI net outflows, % GDP	2.0	36				
CREATIVE OUTPUTS				22.8	60		
7.1	Intangible assets	28.4	61				
7.1.1	Trademarks by origin/bn PPP\$ GDP	48.2	52				
7.1.2	Global brand value, top 5,000, % GDP	49.6	35				
7.1.3	Industrial designs by origin/bn PPP\$ GDP	0.9	72				
7.1.4	ICTs & organizational model creation†	58.4	49				
7.2	Creative goods and services	9.1	81				
7.2.1	Cultural & creative services exports, % total trade	0.9	28				
7.2.2	National feature films/mn pop. 15-69	1.2	81 ○				
7.2.3	Entertainment & Media market/th pop. 15-69	6.3	45				
7.2.4	Printing and other media, % manufacturing	0.8	76 ○				
7.2.5	Creative goods exports, % total trade	0.3	69				
7.3	Online creativity	25.3	44				
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	3.5	61				
7.3.2	Country-code TLDs/th pop. 15-69	14.2	33				
7.3.3	Wikipedia edits/mn pop. 15-69	65.9	47				
7.3.4	Mobile app creation/bn PPP\$ GDP	19.4	25				

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 the Russian Federation.

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
5.1.3	GERD performed by business, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators

Outdated data

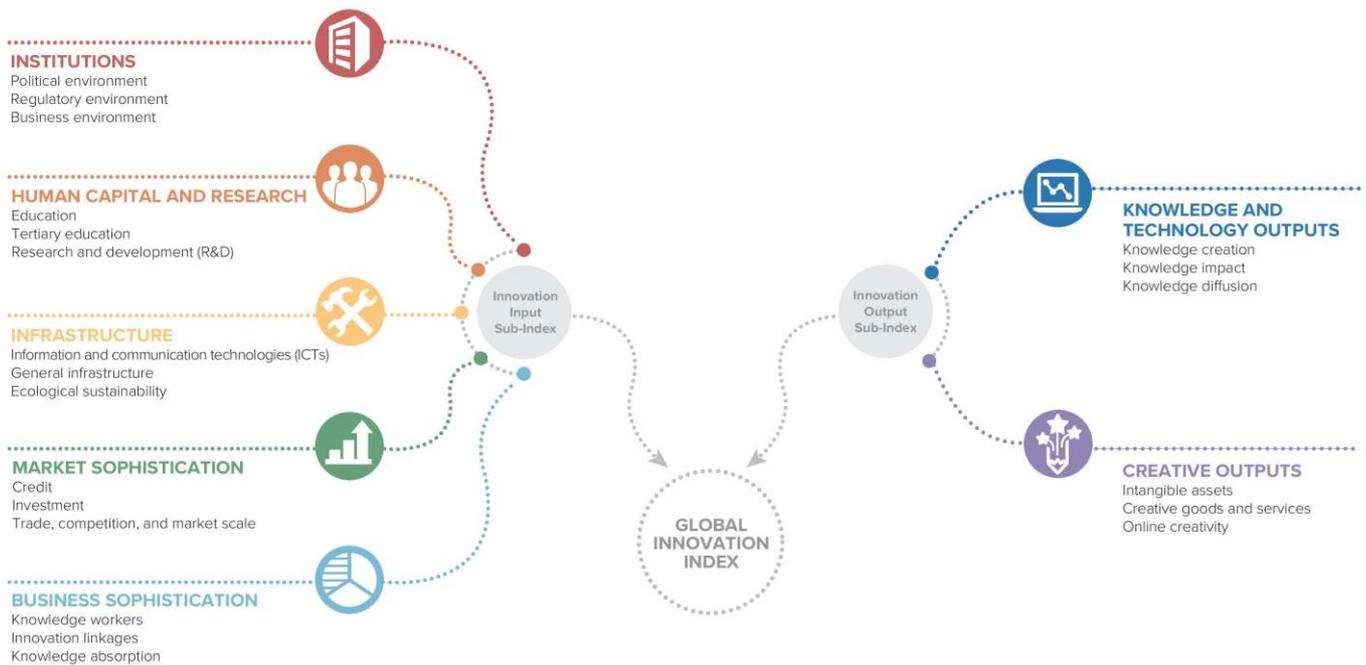
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2012	2018	UNESCO Institute for Statistics
6.2.5	High- & medium-high-tech manufacturing, %	2016	2017	United Nations Industrial Development Organization
7.2.4	Printing and other media, % manufacturing	2016	2017	United Nations Industrial Development Organization

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.

