



RUSSIAN FEDERATION

47th Russia ranks 47th among the 132 economies featured in the GII 2022.

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 Russia 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 Russia in the GII 2022 is between ranks 43 and 50.

Rankings for Russia (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	47	42	58
2021	45	43	52
2022	47	46	50

- Russia performs better in innovation inputs than innovation outputs in 2022.
- This year Russia ranks 46th in innovation inputs, lower than both 2021 and 2020.
- As for innovation outputs, Russia ranks 50th. This position is higher than both 2021 and 2020.

7th Russia ranks 7th among the 36 upper-middle-income group economies.

30th Russia ranks 30th among the 39 economies in Europe.

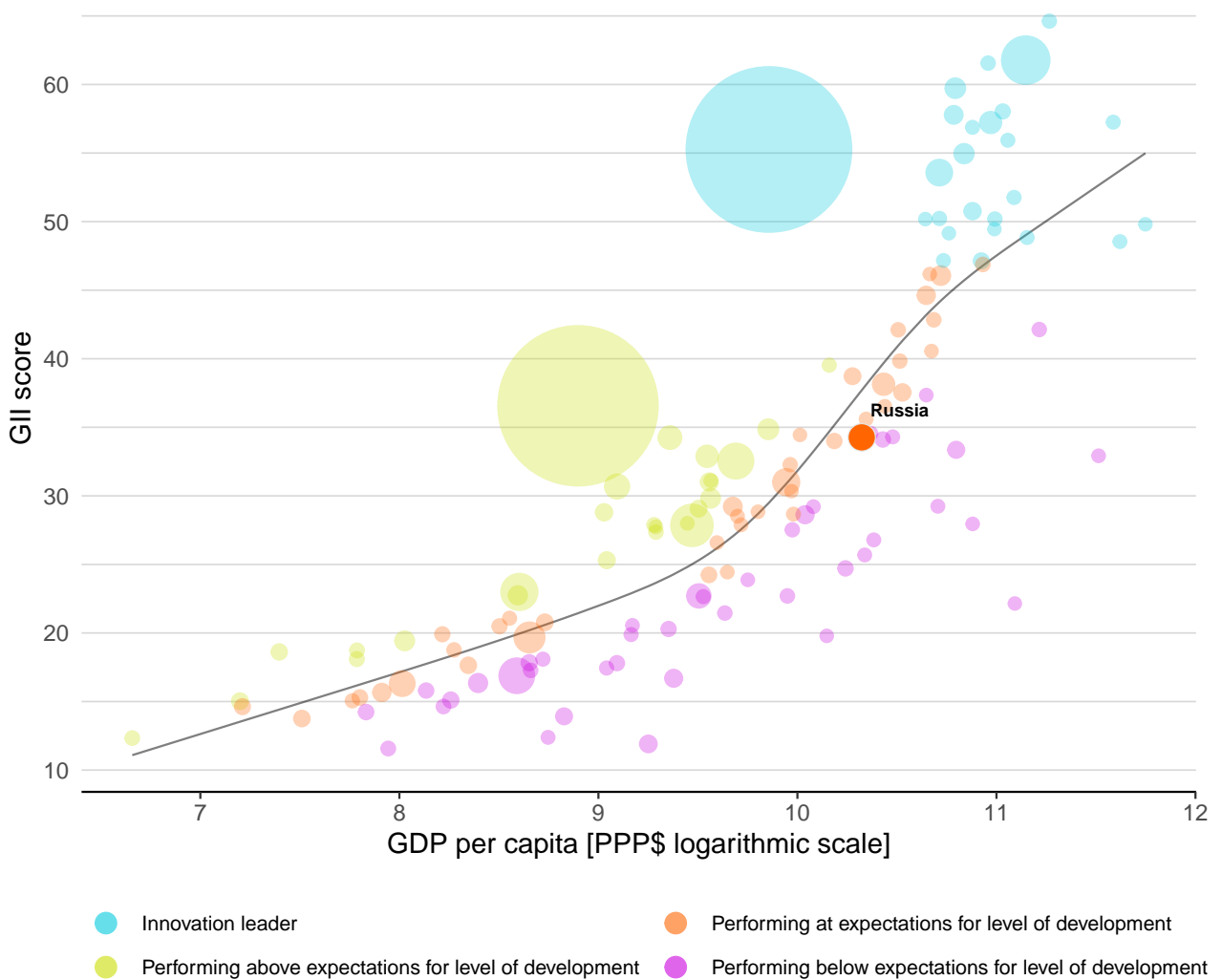


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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

The positive relationship between innovation and development



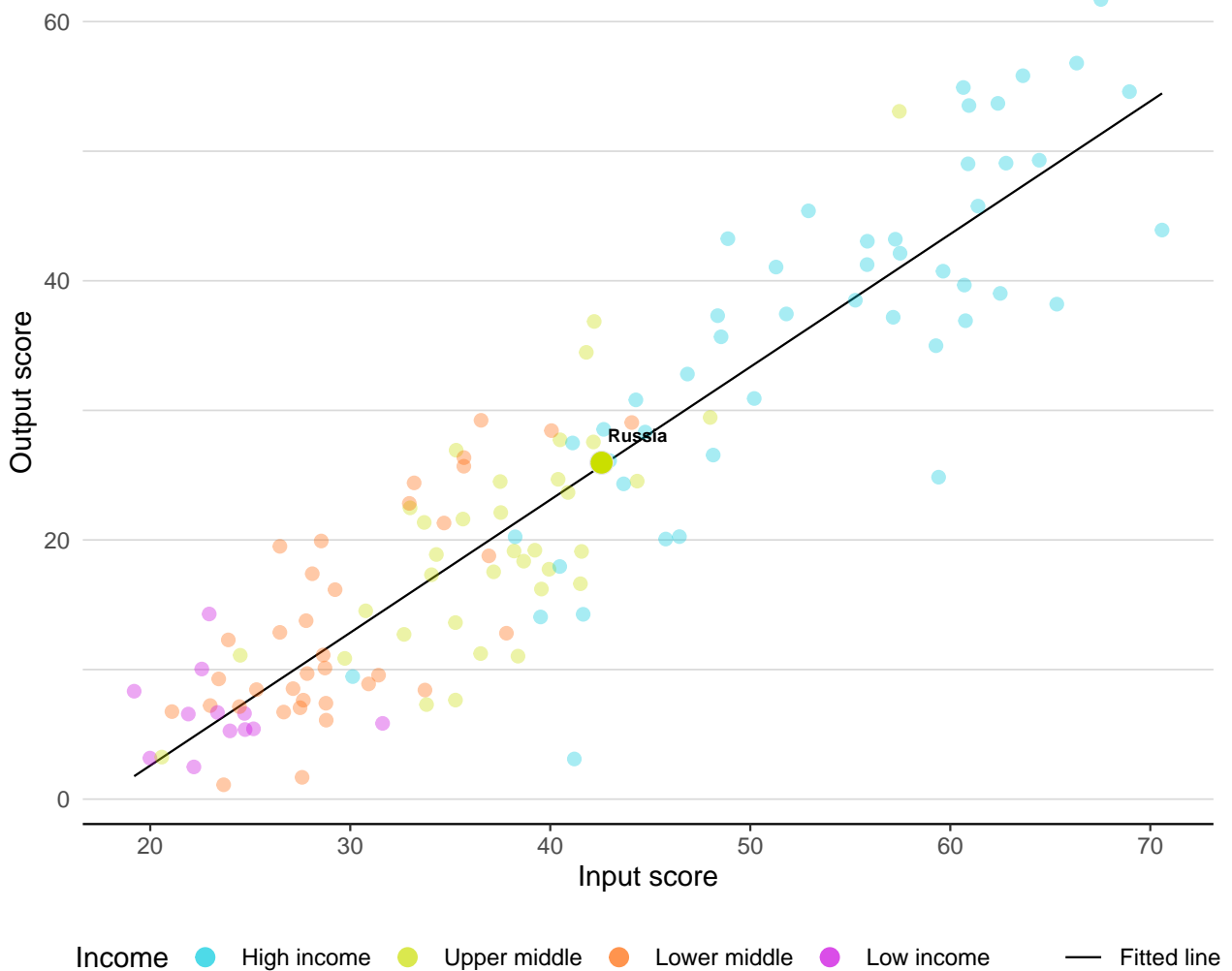


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

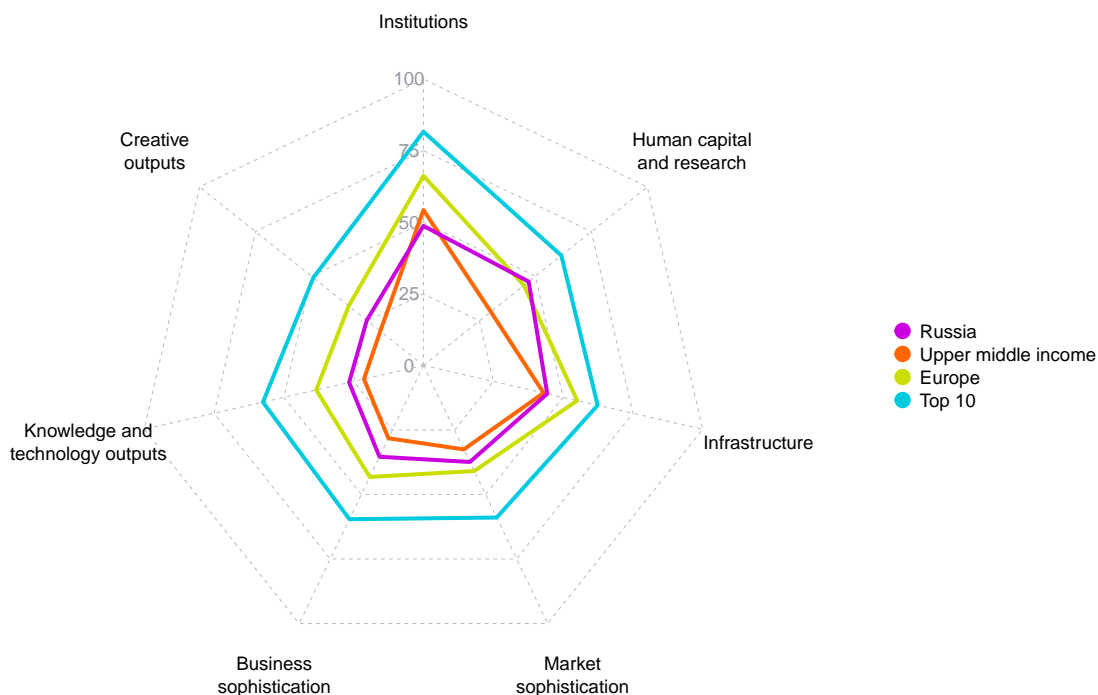
Innovation input to output performance





BENCHMARKING AGAINST OTHER UPPER MIDDLE-INCOME GROUP ECONOMIES AND EUROPE

The seven GII pillar scores for Russia



Upper-middle-income group economies

Russia performs above the upper-middle-income group average in six pillars, namely: Human capital and research; Infrastructure; Market sophistication; Business sophistication; Knowledge and technology outputs; and, Creative outputs.

Europe

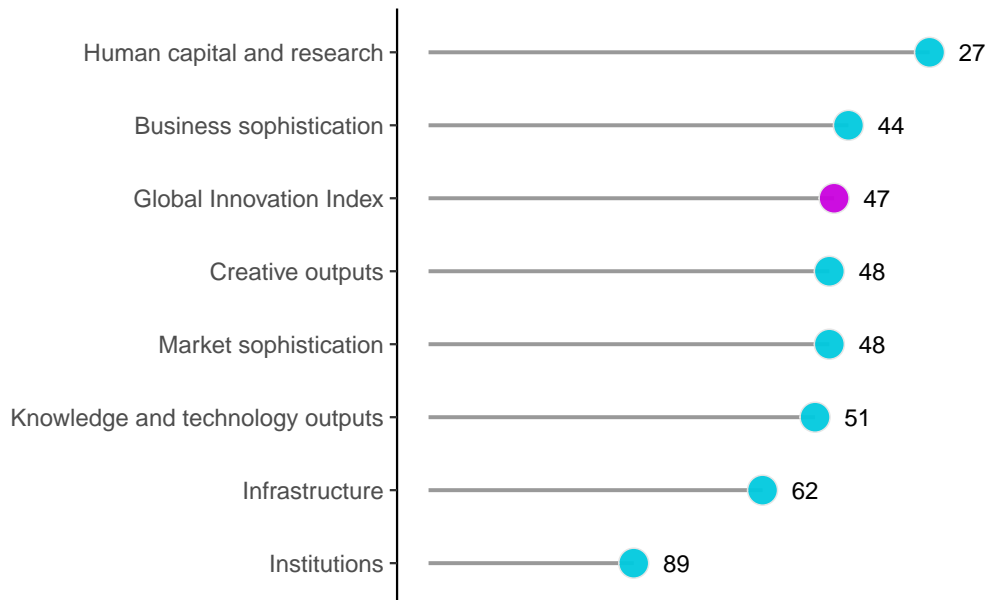
Russia performs above the regional average in Human capital and research.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Russia performs best in Human capital and research and its weakest performance is in Institutions.

The seven GII pillar ranks for Russia



Note: The highest possible ranking in each pillar is 1.

The full WIPO Intellectual Property Statistics profile for Russia can be found at:

https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=RU.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Russia in the GII 2022.

Strengths and weaknesses for Russia

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.2.1	Tertiary enrolment, % gross	16	1.2.2	Rule of law	108
2.2.2	Graduates in science and engineering, %	14	3.3.1	GDP/unit of energy use	122
2.3.4	QS university ranking, top 3	22	3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	103
4.3.3	Domestic market scale, bn PPP\$	1	4.1.1	Finance for startups and scaleups	61
5.1.1	Knowledge-intensive employment, %	20	4.1.3	Loans from microfinance institutions, % GDP	47
5.1.5	Females employed w/advanced degrees, %	13	4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	100
5.3.1	Intellectual property payments, % total trade	17	5.1.2	Firms offering formal training, %	95
6.1.1	Patents by origin/bn PPP\$ GDP	17	5.3.4	FDI net inflows, % GDP	101
6.1.3	Utility models by origin/bn PPP\$ GDP	9	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	105
7.1.2	Trademarks by origin/bn PPP\$ GDP	18	7.2.4	Printing and other media, % manufacturing	76

Russian Federation

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
50	46	Upper middle	EUR	145.9	4,447.5	30,431

Institutions		Score/Value	Rank
Institutions		48.7	89
1.1 Political environment		57.0	74
1.1.1 Political and operational stability*		63.6	81
1.1.2 Government effectiveness*		50.4	68
1.2 Regulatory environment		55.9	91
1.2.1 Regulatory quality*		34.0	98 ◊
1.2.2 Rule of law*		26.4	108 ◊
1.2.3 Cost of redundancy dismissal		17.3	73
1.3 Business environment		33.3	101 ◊
1.3.1 Policies for doing business†		42.1	88
1.3.2 Entrepreneurship policies and culture*		24.6	56

Human capital and research		Score/Value	Rank
Human capital and research		47.0	27 ◆
2.1 Education		54.8	[58]
2.1.1 Expenditure on education, % GDP	⊙	4.7	52
2.1.2 Government funding/pupil, secondary, % GDP/cap		n/a	n/a
2.1.3 School life expectancy, years		15.8	40
2.1.4 PISA scales in reading, maths and science		481.3	31 ◆
2.1.5 Pupil-teacher ratio, secondary		n/a	n/a
2.2 Tertiary education		48.1	16 ◆◆
2.2.1 Tertiary enrolment, % gross		86.4	16 ◆◆
2.2.2 Graduates in science and engineering, %	⊙	31.4	14 ◆◆
2.2.3 Tertiary inbound mobility, %		5.0	50
2.3 Research and development (R&D)		38.1	29 ◆
2.3.1 Researchers, FTE/mn pop.		2,721.7	32 ◆
2.3.2 Gross expenditure on R&D, % GDP		1.1	38 ◆
2.3.3 Global corporate R&D investors, top 3, mn USD		40.9	36 ◆
2.3.4 QS university ranking, top 3*		47.9	22 ◆◆

Infrastructure		Score/Value	Rank
Infrastructure		44.3	62
3.1 Information and communication technologies (ICTs)		83.1	34 ◆
3.1.1 ICT access*		86.6	65
3.1.2 ICT use*		76.9	31 ◆
3.1.3 Government's online service*		81.8	39
3.1.4 E-participation*		86.9	27
3.2 General infrastructure		33.9	51
3.2.1 Electricity output, GWh/mn pop.		7,519.9	25 ◆
3.2.2 Logistics performance*		33.0	74
3.2.3 Gross capital formation, % GDP		23.5	63
3.3 Ecological sustainability		16.1	122 ◊◊
3.3.1 GDP/unit of energy use		4.9	122 ◊◊
3.3.2 Environmental performance*		37.5	82
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP		0.2	103 ◊

Market sophistication		Score/Value	Rank
Market sophistication		37.4	48
4.1 Credit		18.6	90
4.1.1 Finance for startups and scaleups*		29.6	61 ◊
4.1.2 Domestic credit to private sector, % GDP		60.0	58
4.1.3 Loans from microfinance institutions, % GDP		0.3	47 ◊
4.2 Investment		5.0	77
4.2.1 Market capitalization, % GDP		42.8	40
4.2.2 Venture capital investors, deals/bn PPP\$ GDP		0.0	72
4.2.3 Venture capital recipients, deals/bn PPP\$ GDP		0.0	100 ◊
4.2.4 Venture capital received, value, % GDP		0.0	75
4.3 Trade, diversification, and market scale		88.6	5 ◆◆
4.3.1 Applied tariff rate, weighted avg., %		4.1	85
4.3.2 Domestic industry diversification		92.1	42
4.3.3 Domestic market scale, bn PPP\$		4,447.5	1 ◆◆

Business sophistication		Score/Value	Rank
Business sophistication		35.4	44
5.1 Knowledge workers		43.1	43
5.1.1 Knowledge-intensive employment, %	⊙	45.9	20 ◆◆
5.1.2 Firms offering formal training, %		11.8	95 ◊◊
5.1.3 GERD performed by business, % GDP		0.6	35
5.1.4 GERD financed by business, %		29.2	61
5.1.5 Females employed w/advanced degrees, %	⊙	26.5	13 ◆◆
5.2 Innovation linkages		22.1	70
5.2.1 University-industry R&D collaboration†		46.5	56
5.2.2 State of cluster development and depth†		49.1	54
5.2.3 GERD financed by abroad, % GDP		0.0	64
5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP		0.0	73
5.2.5 Patent families/bn PPP\$ GDP		0.2	45
5.3 Knowledge absorption		40.9	32 ◆
5.3.1 Intellectual property payments, % total trade		1.7	17 ◆◆
5.3.2 High-tech imports, % total trade		9.8	44
5.3.3 ICT services imports, % total trade		1.7	49
5.3.4 FDI net inflows, % GDP		1.0	101 ◊
5.3.5 Research talent, % in businesses		46.5	30 ◆

Knowledge and technology outputs		Score/Value	Rank
Knowledge and technology outputs		26.6	51
6.1 Knowledge creation		30.2	30 ◆
6.1.1 Patents by origin/bn PPP\$ GDP		5.9	17 ◆◆
6.1.2 PCT patents by origin/bn PPP\$ GDP		0.2	46
6.1.3 Utility models by origin/bn PPP\$ GDP		2.2	9 ◆
6.1.4 Scientific and technical articles/bn PPP\$ GDP		10.3	85
6.1.5 Citable documents H-index		37.7	25 ◆
6.2 Knowledge impact		26.1	70
6.2.1 Labor productivity growth, %		2.0	35
6.2.2 New businesses/th pop. 15-64		2.3	55
6.2.3 Software spending, % GDP		0.3	39
6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP		1.0	105 ◊
6.2.5 High-tech manufacturing, %		22.8	56
6.3 Knowledge diffusion		23.6	65
6.3.1 Intellectual property receipts, % total trade		0.3	37 ◆
6.3.2 Production and export complexity		44.5	52
6.3.3 High-tech exports, % total trade		1.9	60
6.3.4 ICT services exports, % total trade		1.7	70

Creative outputs		Score/Value	Rank
Creative outputs		25.3	48
7.1 Intangible assets		40.0	35
7.1.1 Intangible asset intensity, top 15, %		56.7	45
7.1.2 Trademarks by origin/bn PPP\$ GDP		83.3	18 ◆
7.1.3 Global brand value, top 5,000, % GDP		47.0	35
7.1.4 Industrial designs by origin/bn PPP\$ GDP		1.2	63
7.2 Creative goods and services		10.8	80
7.2.1 Cultural and creative services exports, % total trade		1.1	27
7.2.2 National feature films/mn pop. 15-69		1.2	55
7.2.3 Entertainment and media market/th pop. 15-69		6.5	42
7.2.4 Printing and other media, % manufacturing		0.6	76 ◊
7.2.5 Creative goods exports, % total trade		0.4	67
7.3 Online creativity		10.4	43
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69		3.4	60
7.3.2 Country-code TLDs/th pop. 15-69		13.8	35
7.3.3 GitHub commit pushes received/mn pop. 15-69		10.9	42 ◆
7.3.4 Mobile app creation/bn PPP\$ GDP		13.5	26

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 appendices for details, including the year of the data, at https://www.wipo.int/global_innovation_index/en/2022. 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 indicators that are either missing or outdated for Russia.

Missing data for Russia

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	n/a	2019	UNESCO Institute for Statistics

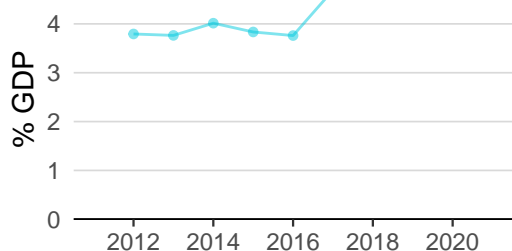
Outdated data for Russia

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2018	2020	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2019	2020	UNESCO Institute for Statistics
5.1.1	Knowledge-intensive employment, %	2020	2021	International Labour Organization
5.1.5	Females employed w/advanced degrees, %	2020	2021	International Labour Organization

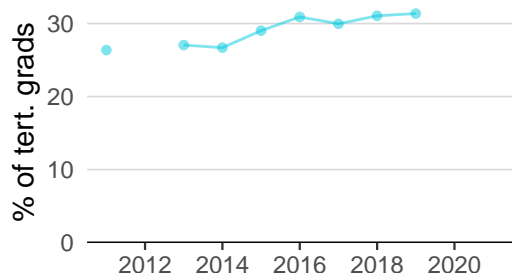
RUSSIA'S INNOVATION SYSTEM

As far as practicable, the plots below present unscaled indicator data.

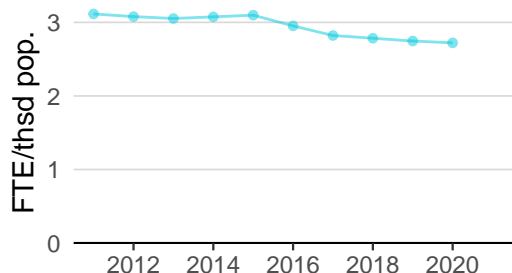
Innovation inputs



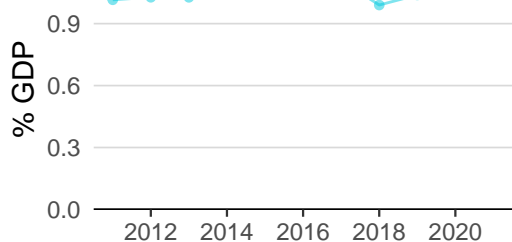
2.1.1 Expenditure on education was equal to 4.7% GDP in 2018—effectively unchanged from the year prior—and equivalent to an indicator rank of 52.



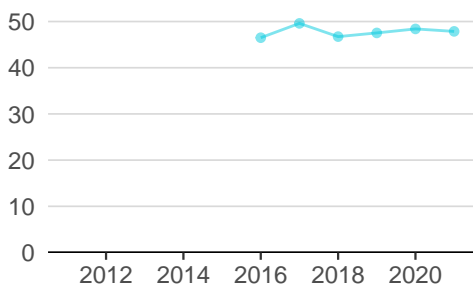
2.2.2 Graduates in science and engineering was equal to 31.4% of tert. grads in 2019—up by 1 percentage point from the year prior—and equivalent to an indicator rank of 14.



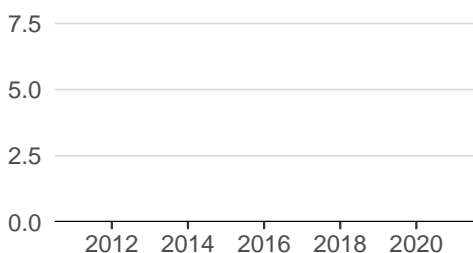
2.3.1 Researchers was equal to 2.7 FTE/thsd pop. in 2020—down by 1 percentage point from the year prior—and equivalent to an indicator rank of 32.



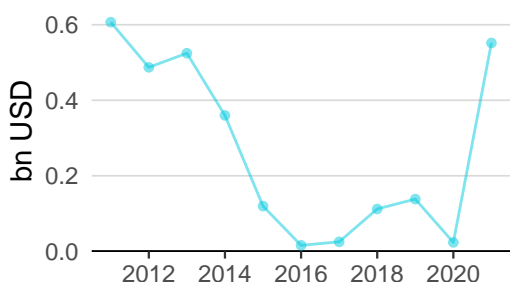
2.3.2 Gross expenditure on R&D was equal to 1.1% GDP in 2020—up by 6 percentage points from the year prior—and equivalent to an indicator rank of 38.



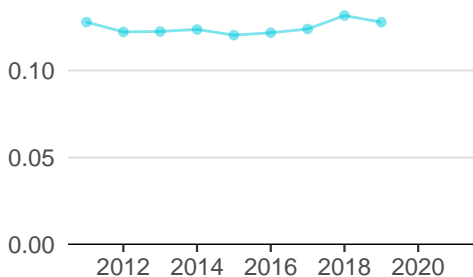
2.3.4 QS university ranking was equal to 47.9 in 2021—down by 1 percentage point from the year prior—and equivalent to an indicator rank of 22.



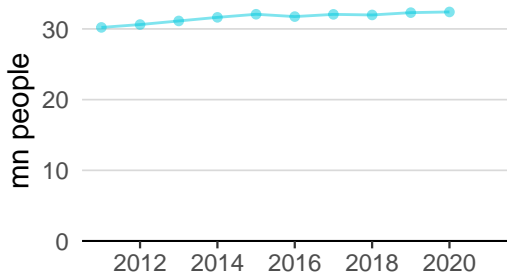
3.1.1 ICT access was equal to 8.7 in 2020 and equivalent to an indicator rank of 65.



4.2.4 Venture capital received was equal to 0.6 bn USD in 2021—up by 2251 percentage points from the year prior—and equivalent to an indicator rank of 75.

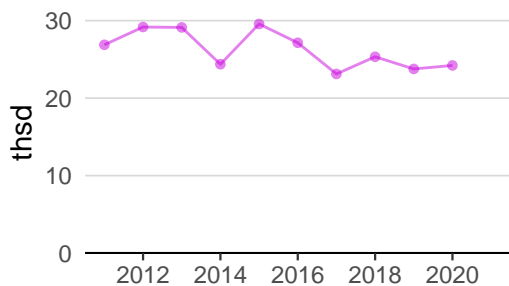


4.3.2 Domestic industry diversification was equal to 0.1 in 2019—down by 3 percentage points from the year prior—and equivalent to an indicator rank of 42.

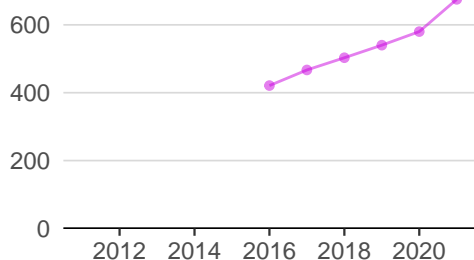


5.1.1 Knowledge-intensive employment was equal to 32.4 mn people in 2020—effectively unchanged from the year prior—and equivalent to an indicator rank of 20.

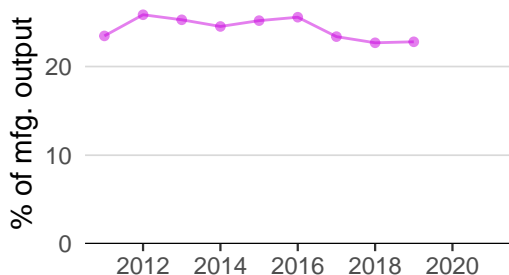
Innovation outputs



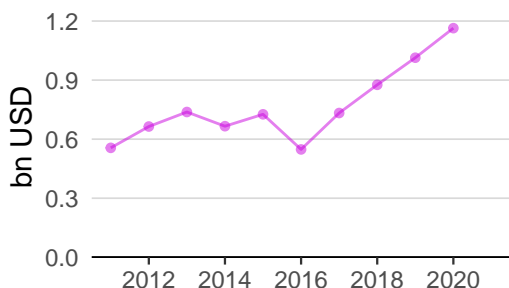
6.1.1 Patents by origin was equal to 24.2 thsd in 2020—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 17.



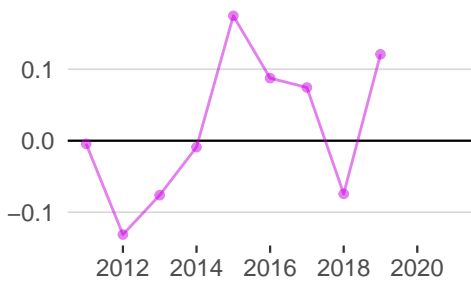
6.1.5 Citable documents H-index was equal to 675.0 in 2021—up by 16 percentage points from the year prior—and equivalent to an indicator rank of 25.



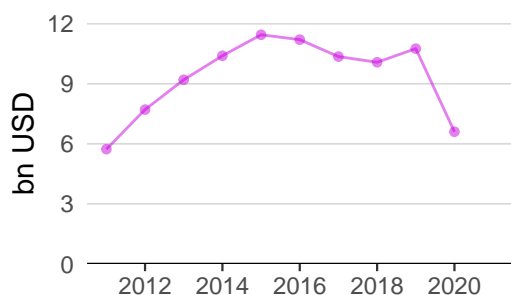
6.2.5 High-tech manufacturing was equal to 22.8% of mfg. output in 2019—effectively unchanged from the year prior—and equivalent to an indicator rank of 56.



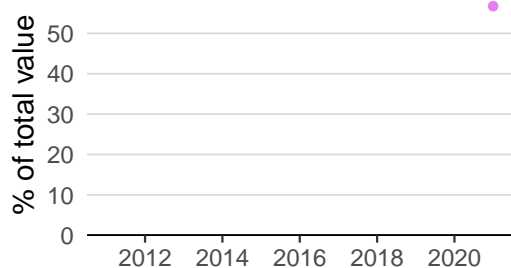
6.3.1 Intellectual property receipts was equal to 1.2 bn USD in 2020—up by 15 percentage points from the year prior—and equivalent to an indicator rank of 37.



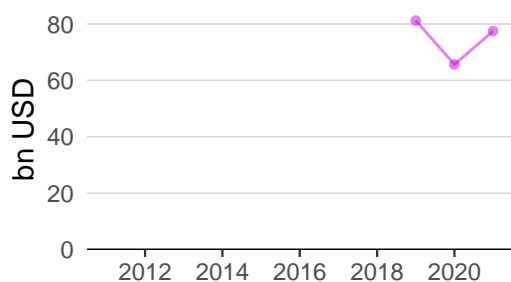
6.3.2 Production and export complexity was equal to 0.1 in 2019—up by 263 percentage points from the year prior—and equivalent to an indicator rank of 52.



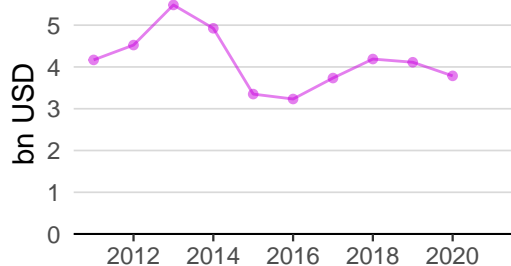
6.3.3 High-tech exports was equal to 6.6 bn USD in 2020—down by 39 percentage points from the year prior—and equivalent to an indicator rank of 60.



7.1.1 Intangible asset intensity was equal to 56.7% of total value in 2021 and equivalent to an indicator rank of 45.



7.1.3 Global brand value was equal to 77.5 bn USD in 2021—up by 18 percentage points from the year prior—and equivalent to an indicator rank of 35.



7.2.1 Cultural and creative services exports was equal to 3.8 bn USD in 2020—down by 8 percentage points from the year prior—and equivalent to an indicator rank of 27.

RUSSIA'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank
		[mn EUR]	[%]	[%]	
KAMAZ	Automobiles & Parts	41	28.9	2.0	2,299

Source: European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2021-eu-industrial-rd-investment-scoreboard>).
Note: European Commission's Joint Research Centre ranks the top 2,500 firms by R&D investment annually.

2.3.4 QS university ranking

University	Score	Rank
SAINT-PETERSBURG STATE UNIVERSITY	39.2	242=
NOVOSIBIRSK STATE UNIVERSITY	38.8	246=
LOMONOSOV MOSCOW STATE UNIVERSITY	65.6	78

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2022>).
Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100]. Ranks can represent a single value "x", a tie "x=" or a range "x-y".

7.1.1 Intangible asset intensity, top 15

Firm	Rank
MMC NORILSK NICKEL	1
NOVATEK	2
POLYUS	3

Source: Brand Finance (<https://brandirectory.com/reports/gift-2021>).
Note: Brand Finance only provides within economy ranks.

7.1.3 Global brand value, top 5,000

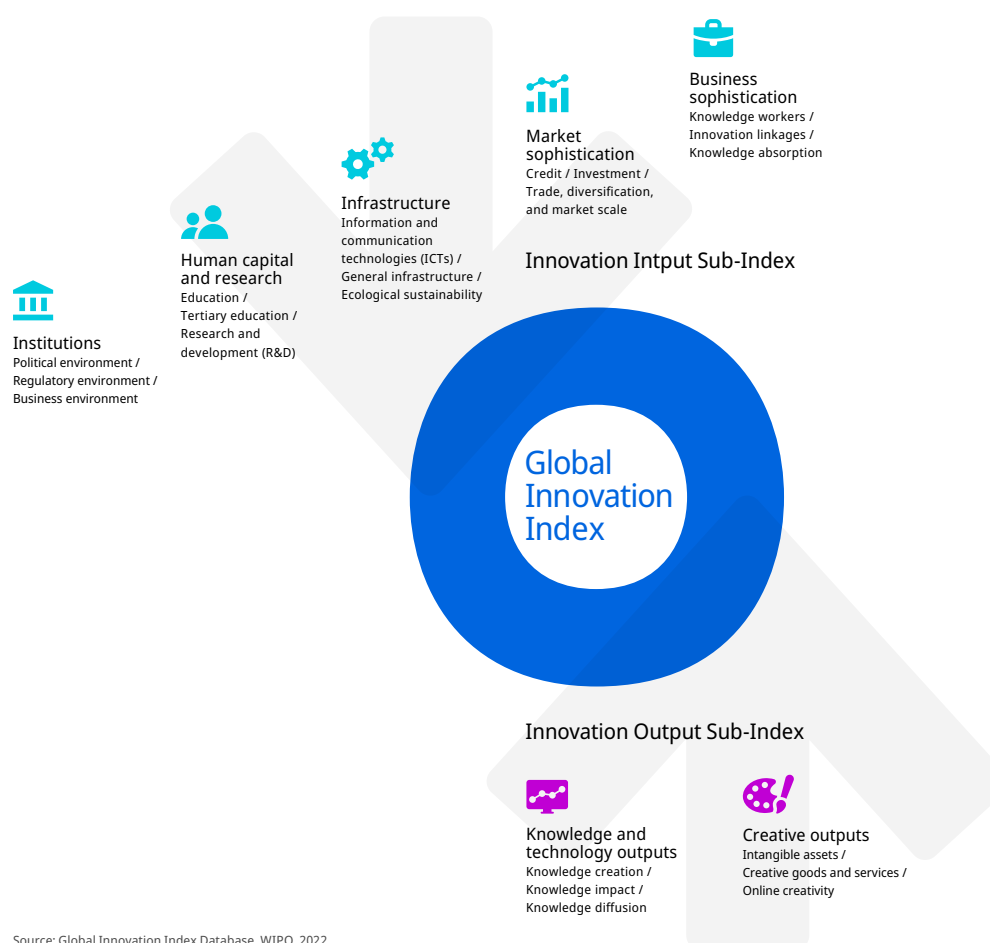
Brand	Industry	Rank
SBER	Banking	1
GAZPROM	Oil & Gas	2
LUKOIL	Oil & Gas	3

Source: Brand Finance (<https://brandirectory.com>).
Note: Rank corresponds to within economy ranks.

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.