



Global Innovation Index 2021

Tracking Innovation through the COVID-19 Crisis

Russia GII 2021 Results

Global Innovation Conclave & India Launch of Global Innovation Index (GII)

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Confederation of Indian Industry



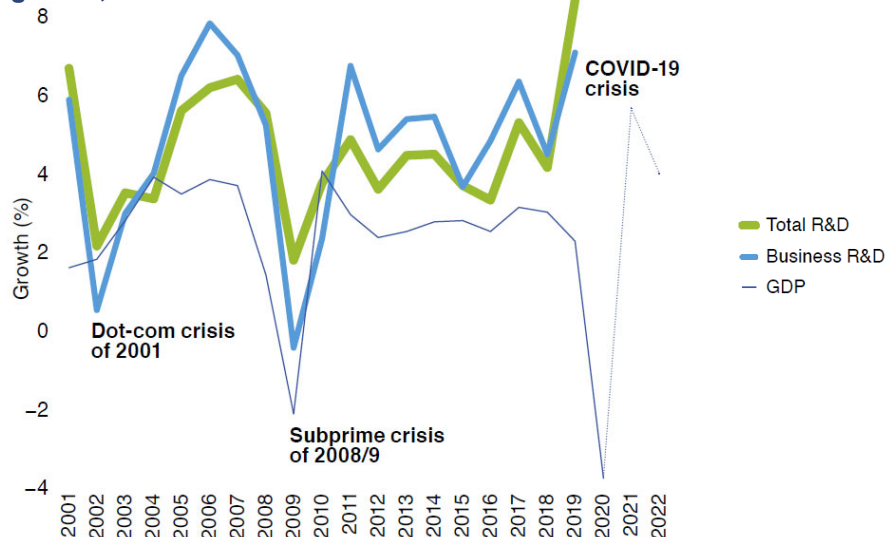
Global Innovation Tracker

What is the global state of innovation?
Has the pandemic slowed or accelerated investments in innovation?

| Science and Innovation Investments | | | | | |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--|
| Short term 2019 - 2020 (annual growth) | R&D expenditure | | Innovation index | | Sectoral index 2019 - 2020 (annual growth) |
| | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | |
| 7.6% | 8.5% | 7.2% | 3.5% | 5.8% | |
| 5.4% | 4.9% | 5.2% | 5.3% | 3.6% | |
| Technological progress | | | | | |
| Short term 2019 - 2020 (annual growth) | Digital innovation | | Innovation index | | Sectoral index 2019 - 2020 (annual growth) |
| | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | |
| 90.5% | -13.1% | -9.2% | 10.4% | | |
| 32.3% | -6.9% | -3.7% | 9.7% | | |
| Socioeconomic impact | | | | | |
| Short term 2019 - 2020 (annual growth) | Labor productivity | | Life expectancy | | GDP per capita 2019 - 2020 (annual growth) |
| | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | 2019 - 2020 (annual growth) | |
| 4.0% | 0.2% | 0.06% | | | |
| 2.2% | 0.3% | 1.48% | | | |

1. Investment in innovation has shown great resilience during the COVID-19 pandemic

R&D and GDP growth, 2001-2022



Sources: Authors' estimates based on the UNESCO Institute for Statistics database, OECD Main Science and Technology Indicators, Eurostat, and the IMF World Economic Outlook.

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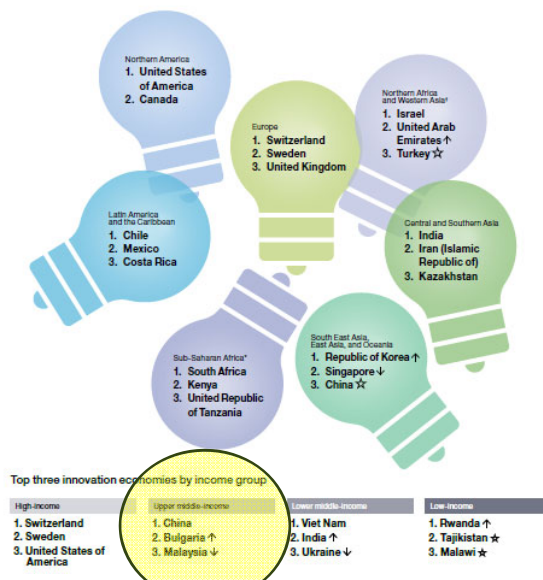
GII 2021 results

The GII helps create an environment that evaluates innovation factors continuously.

In 2021, it provides innovation metrics for **132 economies**.

Global Innovation Index 2021

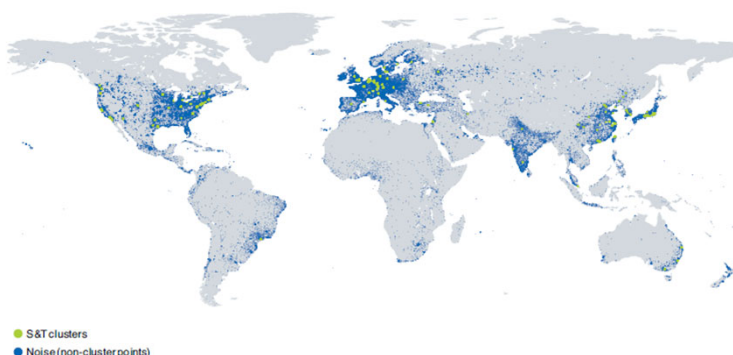
2. The geography of innovation is changing unevenly



Source: Global Innovation Index Database, WIPO, 2021.

3. New Science and Technology (S&T) clusters are emerging, but only in a handful of economies

Top 100 clusters worldwide



Source: WIPO Statistics Database, April 2021.

Top S&T cluster of each economy or cross-border region, 2021

| Rank | Cluster name | Economy | Rank change |
|------|------------------------------|---------|-------------|
| 1 | Tokyo-Yokohama | JP | 0 |
| 2 | Shenzhen-Hong Kong-Guangzhou | CN/HK | 0 |
| 3 | Beijing | CN | 1 |
| 4 | Seoul | KR | -1 |
| 5 | San Jose-San Francisco, CA | US | 0 |
| 10 | Paris | FR | 0 |
| 15 | London | GB | 0 |
| 19 | Amsterdam-Rotterdam | NL | -1 |
| 20 | Cologne | DE | -1 |
| 27 | Tel Aviv-Jerusalem | IL | -3 |
| 28 | Taipei-Hsinchu | TW | -1 |
| 29 | Singapore | SG | -1 |
| 31 | Melbourne | AU | 4 |
| 32 | Moscow | RU | 0 |
| 35 | Stockholm | SE | -2 |
| 36 | Eindhoven | BE/NL | -2 |
| 40 | Toronto, ON | CA | -1 |
| 41 | Tehran | IR | 2 |
| 43 | Brussels | BE | -2 |
| 46 | Madrid | ES | -1 |
| 48 | Milan | IT | 0 |
| 49 | Istanbul | TR | 2 |
| 50 | Zürich | CH/DE | -1 |
| 58 | Copenhagen | DK | -2 |
| 62 | Bengaluru | IN | -2 |
| 66 | São Paulo | BR | -5 |
| 71 | Vienna | AT | -1 |
| 74 | Helsinki | FI | -6 |
| 92 | Lausanne | CH/FR | -3 |
| 100 | Warsaw | PL | -1 |

Russia in GII 2021

What is Russia's performance in innovation?

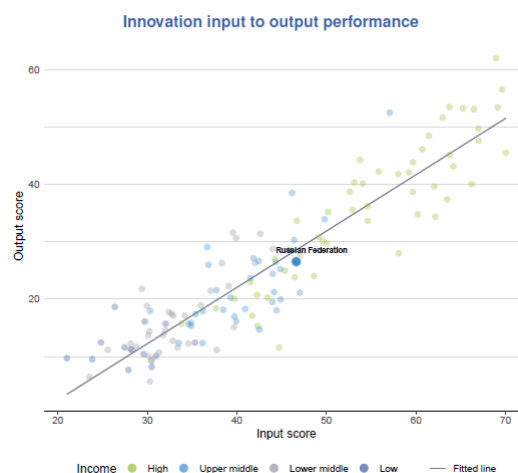
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1. Russia has maintained around rank 45 with progress in 2021

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

Rankings for Russia (2019–2021)

| | GII | Innovation inputs | Innovation outputs |
|------|-----|-------------------|--------------------|
| 2021 | 45 | 43 | 52 |
| 2020 | 47 | 42 | 58 |
| 2019 | 46 | 41 | 59 |



Source: WIPO Statistics Database, April 2021.

<https://twitter.com/PiyushGoyal/status/1439988312312205315/photo/1>

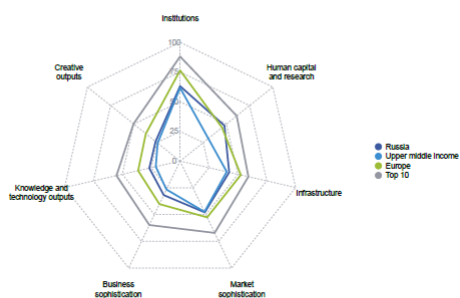
2. Selected middle-income economies are changing the innovation landscape



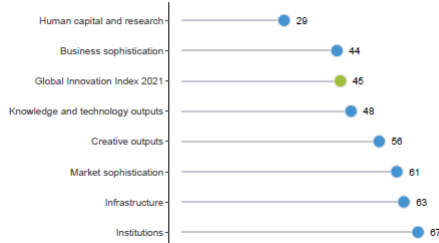
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4. Russia compared to other upper-middle-income and Central and Southern Asia economies

The seven GII pillar scores for Russia



The seven GII pillar ranks for Russia



Upper middle-income group economies

Russia performs above the upper middle-income group average in all GII pillars.

Europe

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

110

Russian Federation

GI 2021 rank

45

| Output rank | Input rank | Income | Region | Population (mn) | GDP, PPP\$ (bn) | GDP per capita, PPP\$ | GI 2020 rank |
|-------------|------------|--------------|--------|-----------------|-----------------|-----------------------|--------------|
| 52 | 43 | Upper middle | EUR | 145.9 | 4,021.7 | 27,394 | 47 |

| | Score | Value | Rank | | Score | Value | Rank |
|---|-------------|-----------|------|--|-------------|-----------|------|
| 1. Institutions | 63.1 | 67 | | 2. Business sophistication | 31.8 | 44 | |
| 1.1 Political environment | 57.4 | 67 | | 2.1 Knowledge workers | 30.2 | 46 | |
| 1.1.1 Political and operational stability ¹ | 64.5 | 60 | | 2.1.1 Knowledge-intensive employment, % | 44.6 | 10 ●● | |
| 1.1.2 Government effectiveness ² | 54.0 | 62 | | 2.1.2 Firms offering formal training, % | 11.8 | 184 ○●● | |
| 1.2 Regulatory environment | 55.7 | 62 | | 2.1.3 GERD performed by business, % GDP | 0.6 | 24 | |
| 1.2.1 Regulatory quality ³ | 52.2 | 63 | | 2.1.4 GERD financed by business, % | 30.2 | 60 | |
| 1.2.2 Rule of law ⁴ | 57.7 | 61 | | 2.1.5 Foreign employed without visas, % | 26.2 | 10 ●● | |
| 1.2.3 Cost of secondary dismissal | 10.3 | 100 ○ | | 2.2 Innovation linkages | 17 | 68 | |
| 1.3 Business environment | 76.1 | 45 | | 2.2.1 University industry R&D collaboration ⁵ | 44.0 | 58 | |
| 1.3.1 Ease of starting a business ⁶ | 80.1 | 38 | | 2.2.2 State of cluster development and depth ⁶ | 40.3 | 60 | |
| 1.3.2 Ease of resolving insolvency ⁷ | 58.1 | 62 | | 2.2.3 GERD financed by abroad, % GDP | 0.0 | 63 | |
| | | | | 2.2.4 Joint venture/strategic alliance/branch/PPP/GDP | 1.4 | 97 ○ | |
| | | | | 2.2.5 Patent families/PPP/GDP | 0.2 | 50 | |
| 3. Human capital and research | 47.8 | 29 | | 3.3 Knowledge absorption | 29.5 | 21 | |
| 3.1 Education | 57.6 | 46 | | 3.3.1 Intellectual property payments, % total trade | 1.6 | 23 ● | |
| 3.1.1 Expenditure on education, % GDP | 4.7 | 42 | | 3.3.2 High-tech exports, % total trade | 9.1 | 81 | |
| 3.1.2 Government (incl. social), secondary, % GDP/age | 106 | 36 | | 3.3.3 ICT services imports, % total trade | 1.3 | 60 | |
| 3.1.3 School life expectancy, years | 16.7 | 41 | | 3.3.4 ICT total inflows, % GDP | 4.6 | 28 ● | |
| 3.1.4 PISA scales in reading, maths and science | 481.3 | 29 | | | | | |
| 3.1.5 PISA teacher ratio, secondary | 96 | 36 | | | | | |
| 3.2 Tertiary education | 50.8 | 34 ● | | 4. Knowledge and technology outputs | 26.7 | 48 | |
| 3.2.1 Tertiary enrolment, % gross | 64.6 | 19 ●● | | 4.1 Knowledge creation | 35.6 | 26 ● | |
| 3.2.2 Graduates in science and engineering, % | 29.1 | 54 | | 4.1.1 Patents by origin/PPP/GDP | 5.7 | 10 ●● | |
| 3.2.3 Tertiary labour mobility, % | 4.5 | 51 | | 4.1.2 PCT patents by origin/PPP/GDP | 0.3 | 63 | |
| 3.3 Research and development (R&D) | 26.2 | 32 | | 4.1.3 Utility models by origin/PPP/GDP | 2.3 | 10 ●● | |
| 3.3.1 Researchers, FTE per pop. | 2,740.7 | 33 | | 4.1.4 Scientific and technical articles/PPP/GDP | 10.6 | 80 | |
| 3.3.2 Gross expenditure on R&D, % GDP | 1.0 | 38 | | 4.1.5 Creative documents/10 index | 37.7 | 29 ●● | |
| 3.3.3 Global corporate R&D investment, top 10, as % US | 39.0 | 40 | | | | | |
| 3.3.4 QI university rankings, top 1 ⁸ | 45.4 | 27 ●● | | 4.2 Knowledge impact | 20.6 | 61 | |
| | | | | 4.2.1 Labor productivity growth, % | 1.4 | 44 | |
| | | | | 4.2.2 New business setup, top 10 | 3.3 | 32 | |
| | | | | 4.2.3 Software spending, % GDP ⁹ | 0.3 | 43 | |
| 4. Infrastructure | 42.5 | 63 | | 4.2.4 ISO 9001 quality certification/PPP/GDP | 1.1 | 100 ○ | |
| 4.1 Information and communications technology (ICT) | 78.5 | 36 | | 4.2.5 High-tech manufacturing, % | 25.7 | 48 | |
| 4.1.1 ICT access ¹⁰ | 71.9 | 54 | | | | | |
| 4.1.2 ICT use ¹¹ | 72.5 | 39 | | 4.3 Knowledge diffusion | 15.6 | 68 | |
| 4.1.3 Government's online services ¹² | 61.9 | 39 | | 4.3.1 Intellectual property receipts, % total trade | 3.2 | 62 | |
| 4.1.4 E-participation ¹³ | 86.9 | 27 | | 4.3.2 Production and export complexity | 43.0 | 64 | |
| 4.2 General infrastructure | 29.0 | 64 | | 4.3.3 High-tech exports, % total trade | 2.6 | 52 | |
| 4.2.1 Electricity output, kWh/pop. | 770.0 | 29 | | 4.3.4 ICT service exports, % total trade | 1.3 | 71 | |
| 4.2.2 Logistic performance ¹⁴ | 33.0 | 74 | | | | | |
| 4.2.3 Gross capital formation, % GDP | 22.9 | 69 | | 5. Creative outputs | 26.4 | 56 | |
| 4.3 Ecological sustainability | 18.9 | 101 ○ | | 5.1 Intangible assets | 35.6 | 50 | |
| 4.3.1 GHG of energy use | 4.8 | 117 ○ | | 5.1.1 Payments by origin/PPP/GDP | 59.7 | 20 | |
| 4.3.2 Environmental performance ¹⁵ | 50.5 | 56 | | 5.1.2 Global brand value, top 10/PPP, % GDP | 44.8 | 39 | |
| 4.3.3 SDG 10/10 environmental certification/PPP/GDP | 6.2 | 107 ○ | | 5.1.3 Industrial design by origin/PPP/GDP | 1.1 | 67 | |
| | | | | 5.1.4 ICTs and organizational model creation ¹⁶ | 56.4 | 56 | |
| 5. Market sophistication | 48.0 | 81 | | 5.2 Creative goods and services | 97 | 84 | |
| 5.1 Credit | 40.1 | 70 | | 5.2.1 Culture and creative services exports, % total trade | 1.0 | 121 | |
| 5.1.1 Ease of getting credit ¹⁷ | 40.0 | 70 | | 5.2.2 National culture filmshare pop. 15-69 | 1.2 | 79 | |
| 5.1.2 Domestic credit to private sector, % GDP | 53.4 | 63 | | 5.2.3 Entertainment and media marketshare pop. 15-69 | 0.6 | 100 | |
| 5.1.3 Microfinance gross loans, % GDP | 0.0 | 181 | | 5.2.4 Printing and other media, % manufacturing | 0.6 | 100 | |
| 5.2 Investment | 18.8 | 116 ○ | | 5.2.5 Creative goods exports, % total trade | 0.4 | 69 | |
| 5.2.1 Ease of providing minority investment ¹⁸ | 60.0 | 71 | | | | | |
| 5.2.2 Market capitalization, % GDP | 40.9 | 38 | | 5.3 Online creativity | 24.0 | 47 | |
| 5.2.3 Venture capital investments, double PPP/GDP | 1.0 | 55 | | 5.3.1 Creative top-level domain (TLD) pop. 15-69 | 3.4 | 61 | |
| 5.2.4 Venture capital receipts, double PPP/GDP | 0.0 | 182 | | 5.3.2 Country code TLD pop. 15-69 | 14.1 | 39 | |
| 5.3 Trade, diversification, and market scale | 83.9 | 17 ● | | 5.3.3 Wikipedia editions pop. 15-69 | 28.0 | 54 | |
| 5.3.1 Applied trade ratio, weighted avg., % | 1.3 | 4 | | 5.3.4 Mobile app downloads/PPP/GDP | 2.6 | 26 | |
| 5.3.2 Domestic industry diversification | 80.5 | 44 | | | | | |
| 5.3.3 Domestic market scale, top PPP | 4,001.7 | 1 ●● | | | | | |

NOTES: A dash indicates a strength, a weakness, an income group, strength, an income group, weakness, an index, a survey question, or indicates that the survey's questions are older than the base year; see Appendix V for details, including the year of the data, at <http://datahub.wri.org>. Scores 1-100 (1 is best) for the 2020 data are shown in parentheses.

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