

BOSNIA AND HERZEGOVINA

75th Bosnia and Herzegovina ranks 75th among the 132 economies featured in the GII 2021.

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 Bosnia and Herzegovina 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 Bosnia and Herzegovina in the GII 2021 is between ranks 73 and 82.

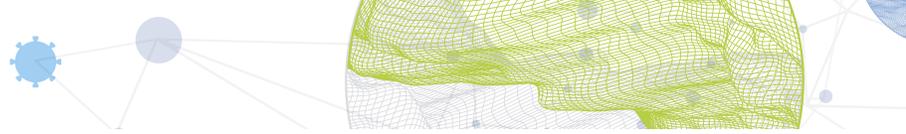
Rankings for Bosnia and Herzegovina (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	75	70	80
2020	74	72	75
2019	76	71	79

- Bosnia and Herzegovina performs better in innovation inputs than innovation outputs in 2021.
- This year Bosnia and Herzegovina ranks 70th in innovation inputs, higher than both 2020 and 2019.
- As for innovation outputs, Bosnia and Herzegovina ranks 80th. This position is lower than both 2020 and 2019.

22nd Bosnia and Herzegovina ranks 22nd among the 34 upper middle-income group economies.

38th Bosnia and Herzegovina ranks 38th among the 39 economies in Europe.

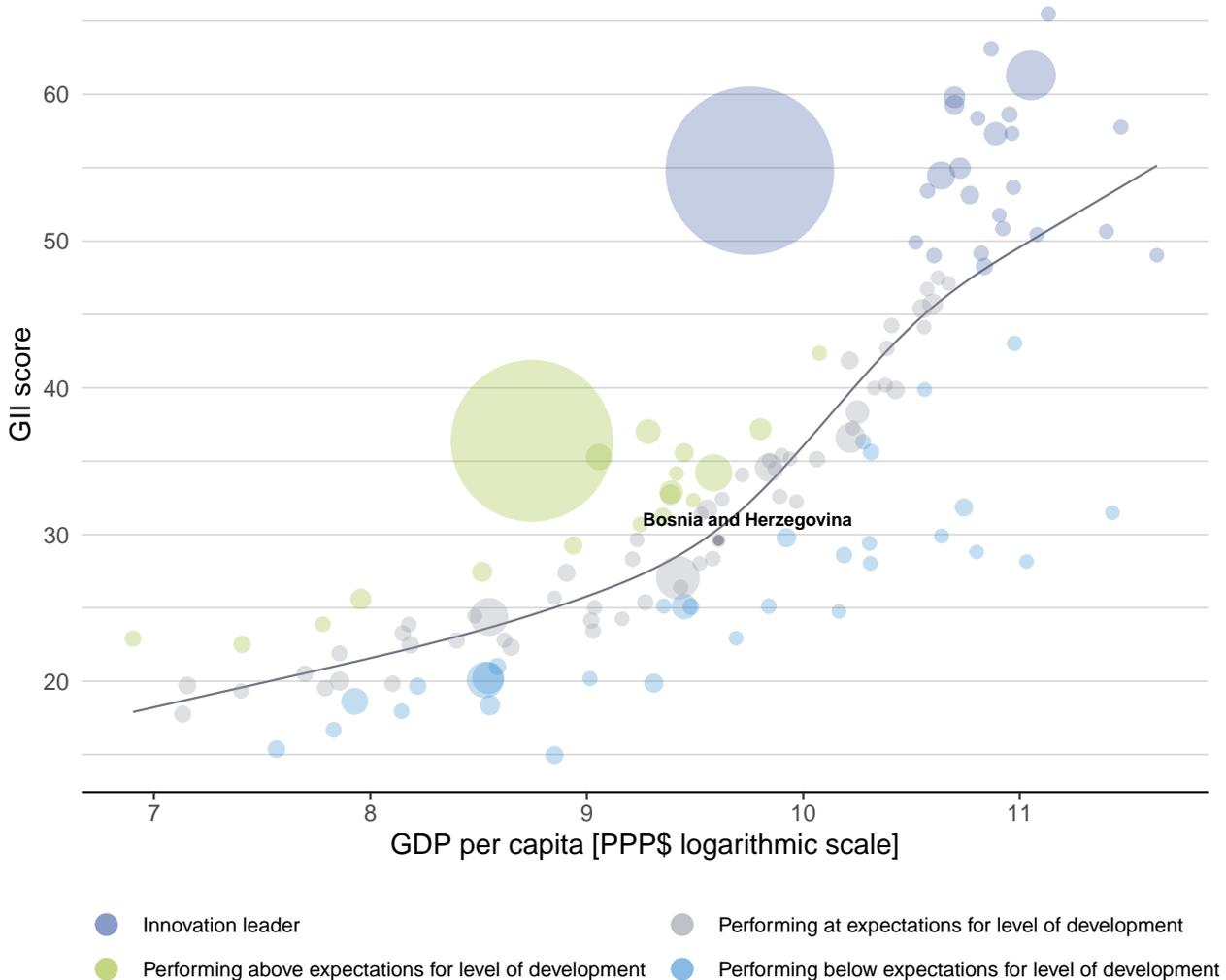


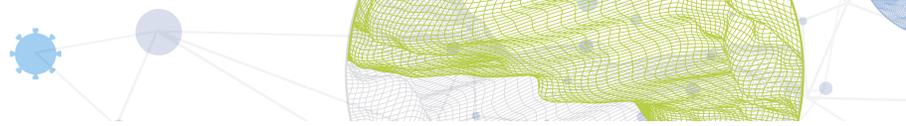
EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, Bosnia and Herzegovina's performance is at expectations for its level of development.

The positive relationship between innovation and development



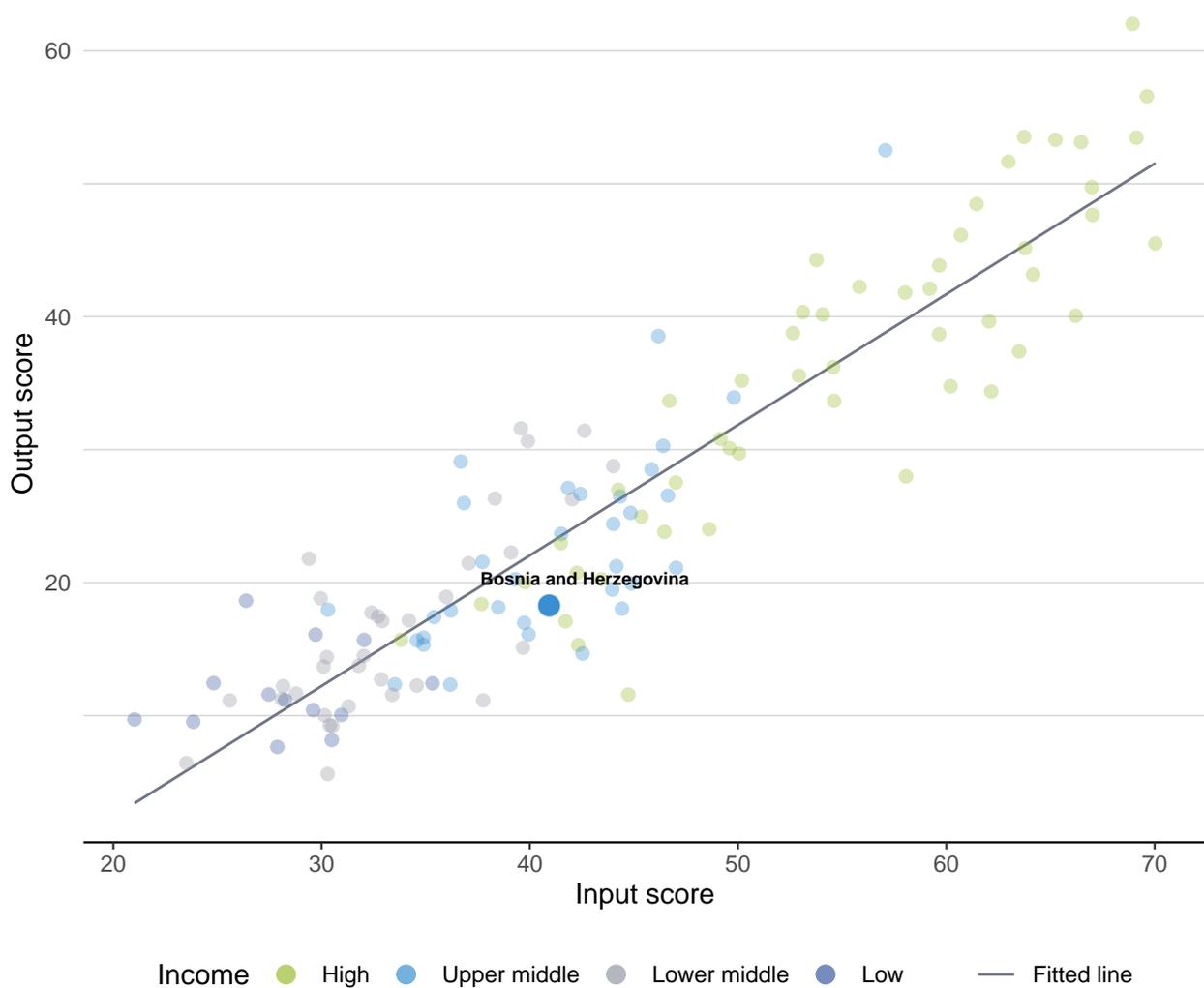


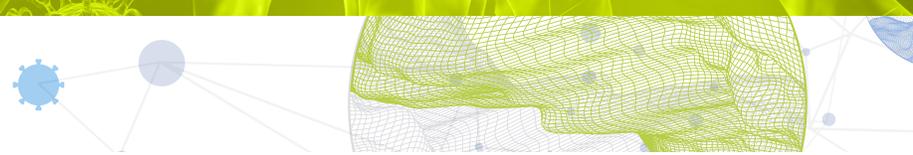
EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Bosnia and Herzegovina produces less innovation outputs relative to its level of innovation investments.

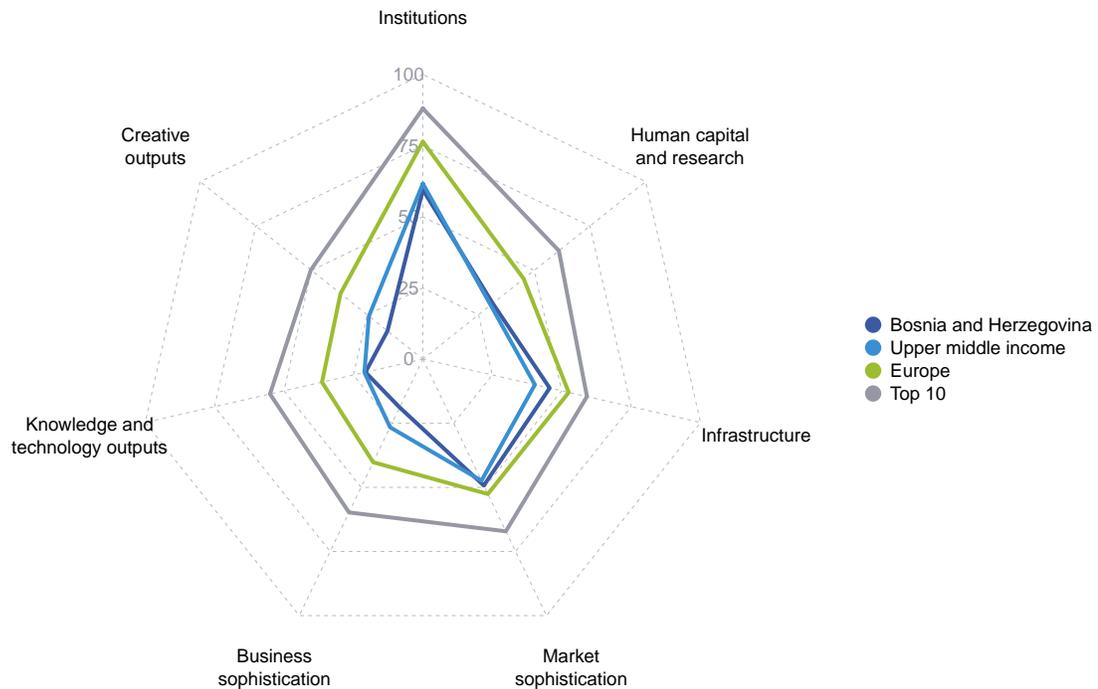
Innovation input to output performance





BENCHMARKING AGAINST OTHER UPPER MIDDLE-INCOME GROUP ECONOMIES AND EUROPE

The seven GII pillar scores for Bosnia and Herzegovina

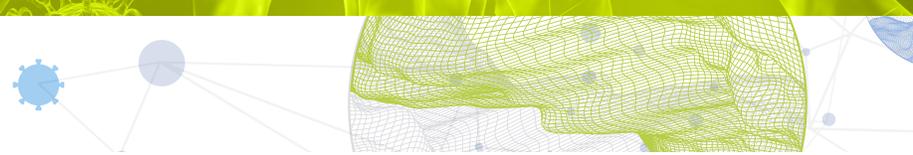


Upper middle-income group economies

Bosnia and Herzegovina performs above the upper middle-income group average in three pillars, namely: Human capital and research; Infrastructure; and, Market sophistication.

Europe

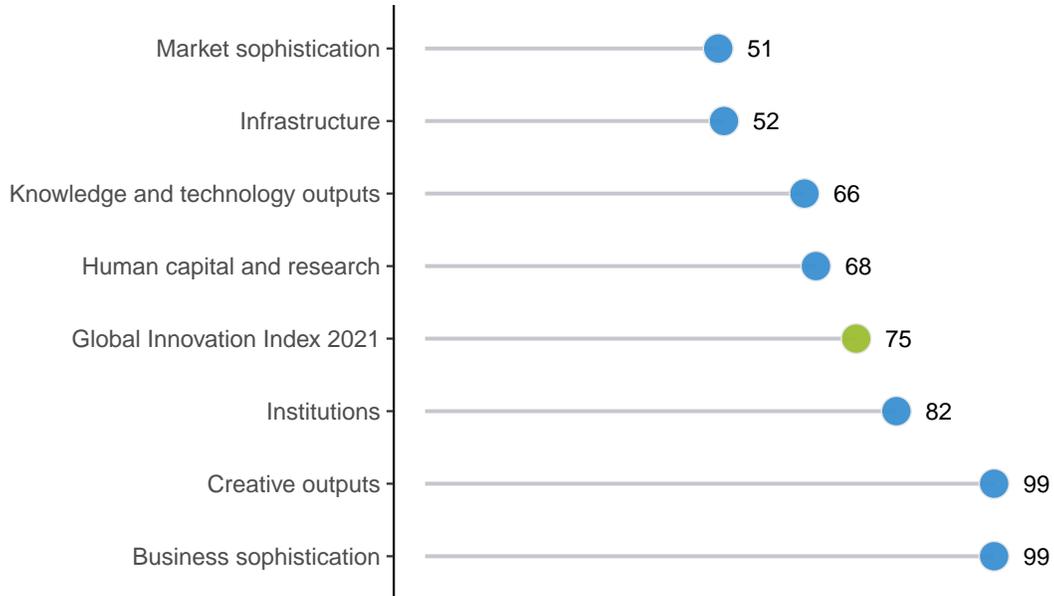
Bosnia and Herzegovina performs below the regional average in all GII pillars.



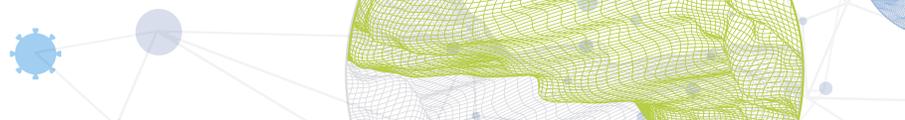
OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

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

The seven GII pillar ranks for Bosnia and Herzegovina



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



INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Bosnia and Herzegovina in the GII 2021.

Strengths and weaknesses for Bosnia and Herzegovina

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	24	1.3.1	Ease of starting a business	131
1.3.2	Ease of resolving insolvency	34	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
2.1.5	Pupil-teacher ratio, secondary	18	2.3.4	QS university ranking, top 3	74
2.2.3	Tertiary inbound mobility, %	36	3.3.1	GDP/unit of energy use	106
3.2.1	Electricity output, GWh/mn pop.	38	4.3.1	Applied tariff rate, weighted avg., %	132
3.3	Ecological sustainability	5	5.2	Innovation linkages	122
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	1	5.2.1	University-industry R&D collaboration	119
4.3.2	Domestic industry diversification	13	5.2.2	State of cluster development and depth	114
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	5	5.3	Knowledge absorption	118
6.3.2	Production and export complexity	37	7.1	Intangible assets	115
7.2.2	National feature films/mn pop. 15–69	24	7.1.2	Global brand value, top 5,000, % GDP	80
			7.1.4	ICTs and organizational model creation	116
			7.3.4	Mobile app creation/bn PPP\$ GDP	88

Bosnia and Herzegovina

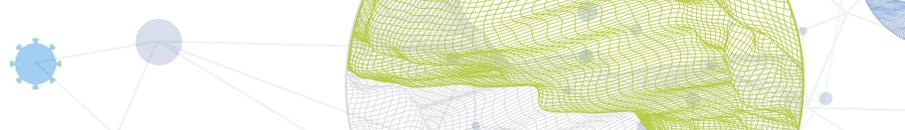
GII 2021 rank

75

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
80	70	Upper middle	EUR	3.3	48.8	14,895	74

	Score/ Value	Rank		Score/ Value	Rank
Institutions	59.5	82	Business sophistication	18.8	99
1.1 Political environment	45.8	102	5.1 Knowledge workers	29.2	74
1.1.1 Political and operational stability*	64.3	80	5.1.1 Knowledge-intensive employment, %	21.8	73
1.1.2 Government effectiveness*	36.6	106	5.1.2 Firms offering formal training, %	37.9	34
1.2 Regulatory environment	68.5	54	5.1.3 GERD performed by business, % GDP	0.1	65
1.2.1 Regulatory quality*	38.4	84	5.1.4 GERD financed by business, %	36.1	53
1.2.2 Rule of law*	40.6	74	5.1.5 Females employed w/advanced degrees, %	6.2	89
1.2.3 Cost of redundancy dismissal	9.2	24	5.2 Innovation linkages	12.4	122
1.3 Business environment	64.1	88	5.2.1 University-industry R&D collaboration†	26.8	119
1.3.1 Ease of starting a business*	60.0	131	5.2.2 State of cluster development and depth†	35.4	114
1.3.2 Ease of resolving insolvency*	68.2	34	5.2.3 GERD financed by abroad, % GDP	0.0	72
Human capital and research	31.4	68	5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	83
2.1 Education	60.7	[25]	5.2.5 Patent families/bn PPP\$ GDP	0.0	82
2.1.1 Expenditure on education, % GDP	n/a	n/a	5.3 Knowledge absorption	14.9	118
2.1.2 Government funding/pupil, secondary, % GDP/cap	n/a	n/a	5.3.1 Intellectual property payments, % total trade	0.1	104
2.1.3 School life expectancy, years	n/a	n/a	5.3.2 High-tech imports, % total trade	5.6	104
2.1.4 PISA scales in reading, maths and science	402.6	63	5.3.3 ICT services imports, % total trade	0.5	108
2.1.5 Pupil-teacher ratio, secondary	8.8	18	5.3.4 FDI net inflows, % GDP	2.6	68
2.2 Tertiary education	31.2	71	5.3.5 Research talent, % in businesses	12.0	61
2.2.1 Tertiary enrolment, % gross	40.2	74	Knowledge and technology outputs	20.7	66
2.2.2 Graduates in science and engineering, %	23.5	49	6.1 Knowledge creation	9.3	83
2.2.3 Tertiary inbound mobility, %	7.1	36	6.1.1 Patents by origin/bn PPP\$ GDP	0.9	68
2.3 Research and development (R&D)	2.2	91	6.1.2 PCT patents by origin/bn PPP\$ GDP	0.1	58
2.3.1 Researchers, FTE/mn pop.	460.2	71	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
2.3.2 Gross expenditure on R&D, % GDP	0.2	91	6.1.4 Scientific and technical articles/bn PPP\$ GDP	13.1	67
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0	41	6.1.5 Citable documents H-index	5.0	105
2.3.4 QS university ranking, top 3*	0.0	74	6.2 Knowledge impact	33.4	50
Infrastructure	45.7	52	6.2.1 Labor productivity growth, %	-0.8	78
3.1 Information and communication technologies (ICTs)	59.3	84	6.2.2 New businesses/th pop. 15-64	1.1	83
3.1.1 ICT access*	71.3	58	6.2.3 Software spending, % GDP	0.1	92
3.1.2 ICT use*	51.6	79	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	27.0	5
3.1.3 Government's online service*	53.5	97	6.2.5 High-tech manufacturing, %	14.2	77
3.1.4 E-participation*	60.7	85	6.3 Knowledge diffusion	19.3	56
3.2 General infrastructure	25.3	78	6.3.1 Intellectual property receipts, % total trade	0.2	39
3.2.1 Electricity output, GWh/mn pop.	5,733.8	38	6.3.2 Production and export complexity	59.4	37
3.2.2 Logistics performance*	35.4	71	6.3.3 High-tech exports, % total trade	2.6	51
3.2.3 Gross capital formation, % GDP	19.8	88	6.3.4 ICT services exports, % total trade	1.7	65
3.3 Ecological sustainability	52.4	5	Creative outputs	15.9	99
3.3.1 GDP/unit of energy use	6.0	106	7.1 Intangible assets	16.4	115
3.3.2 Environmental performance*	45.4	70	7.1.1 Trademarks by origin/bn PPP\$ GDP	19.1	93
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	16.2	1	7.1.2 Global brand value, top 5,000, % GDP	0.0	80
Market sophistication	49.3	51	7.1.3 Industrial designs by origin/bn PPP\$ GDP	1.6	53
4.1 Credit	37.6	79	7.1.4 ICTs and organizational model creation†	39.0	116
4.1.1 Ease of getting credit*	65.0	61	7.2 Creative goods and services	12.2	73
4.1.2 Domestic credit to private sector, % GDP	58.1	59	7.2.1 Cultural and creative services exports, % total trade	0.1	75
4.1.3 Microfinance gross loans, % GDP	0.7	29	7.2.2 National feature films/mn pop. 15-69	8.4	24
4.2 Investment	56.0	[15]	7.2.3 Entertainment and media market/th pop. 15-69	n/a	n/a
4.2.1 Ease of protecting minority investors*	56.0	82	7.2.4 Printing and other media, % manufacturing	1.1	44
4.2.2 Market capitalization, % GDP	n/a	n/a	7.2.5 Creative goods exports, % total trade	0.4	66
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	n/a	n/a	7.3 Online creativity	18.6	61
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	n/a	n/a	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	2.8	68
4.3 Trade, diversification, and market scale	54.3	110	7.3.2 Country-code TLDs/th pop. 15-69	2.9	62
4.3.1 Applied tariff rate, weighted avg., %	17.9	132	7.3.3 Wikipedia edits/mn pop. 15-69	66.5	43
4.3.2 Domestic industry diversification	97.7	13	7.3.4 Mobile app creation/bn PPP\$ GDP	0.1	88
4.3.3 Domestic market scale, bn PPP\$	48.8	103			

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 IV 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

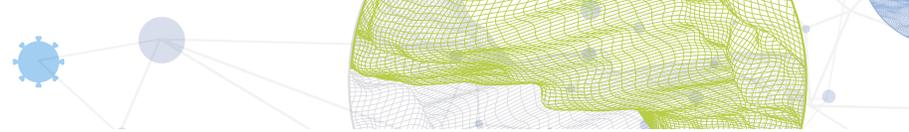
The following tables list data that are either missing or outdated for Bosnia and Herzegovina.

Missing data for Bosnia and Herzegovina

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	n/a	2017	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2017	UNESCO Institute for Statistics
2.1.3	School life expectancy, years	n/a	2018	UNESCO Institute for Statistics
4.2.2	Market capitalization, % GDP	n/a	2019	World Federation of Exchanges
4.2.3	Venture capital investors, deals/bn PPP\$ GDP	n/a	2020	Refinitiv Eikon
4.2.4	Venture capital recipients, deals/bn PPP\$ GDP	n/a	2020	Refinitiv Eikon
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
7.2.3	Entertainment and media market/th pop. 15–69	n/a	2020	PwC

Outdated data for Bosnia and Herzegovina

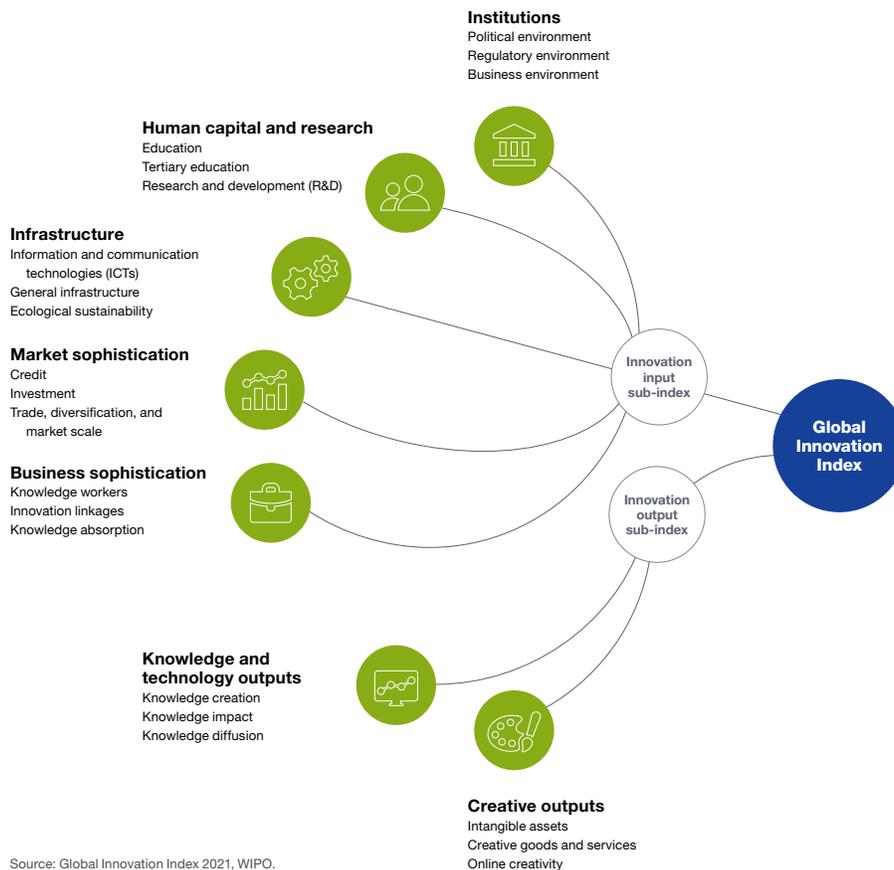
Code	Indicator name	Economy year	Model year	Source
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ABOUT THE GLOBAL INNOVATION INDEX

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.