



Global Innovation Index 2021



LEBANON

92nd Lebanon ranks 92nd 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 Lebanon 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 Lebanon in the GII 2021 is between ranks 88 and 95.

Rankings for Lebanon (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	92	94	97
2020	87	93	80
2019	88	92	82

- Lebanon performs better in innovation inputs than innovation outputs in 2021.
- This year Lebanon ranks 94th in innovation inputs, lower than both 2020 and 2019.
- As for innovation outputs, Lebanon ranks 97th. This position is lower than both 2020 and 2019.

30th Lebanon ranks 30th among the 34 upper middle-income group economies.

16th Lebanon ranks 16th among the 19 economies in Northern Africa and Western Asia.

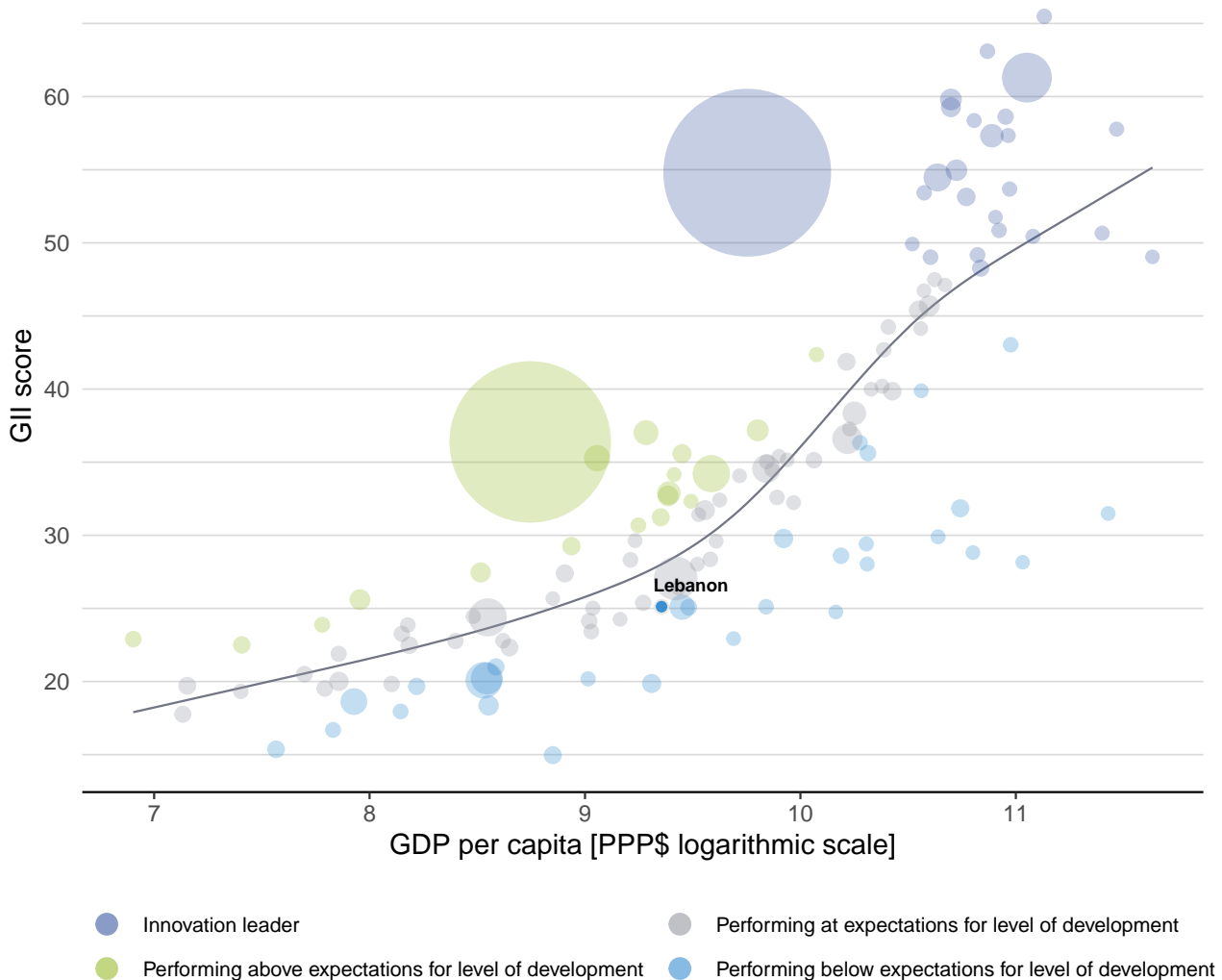


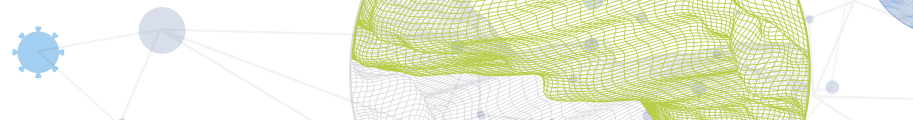
EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, Lebanon's performance is below expectations for its level of development.

The positive relationship between innovation and development



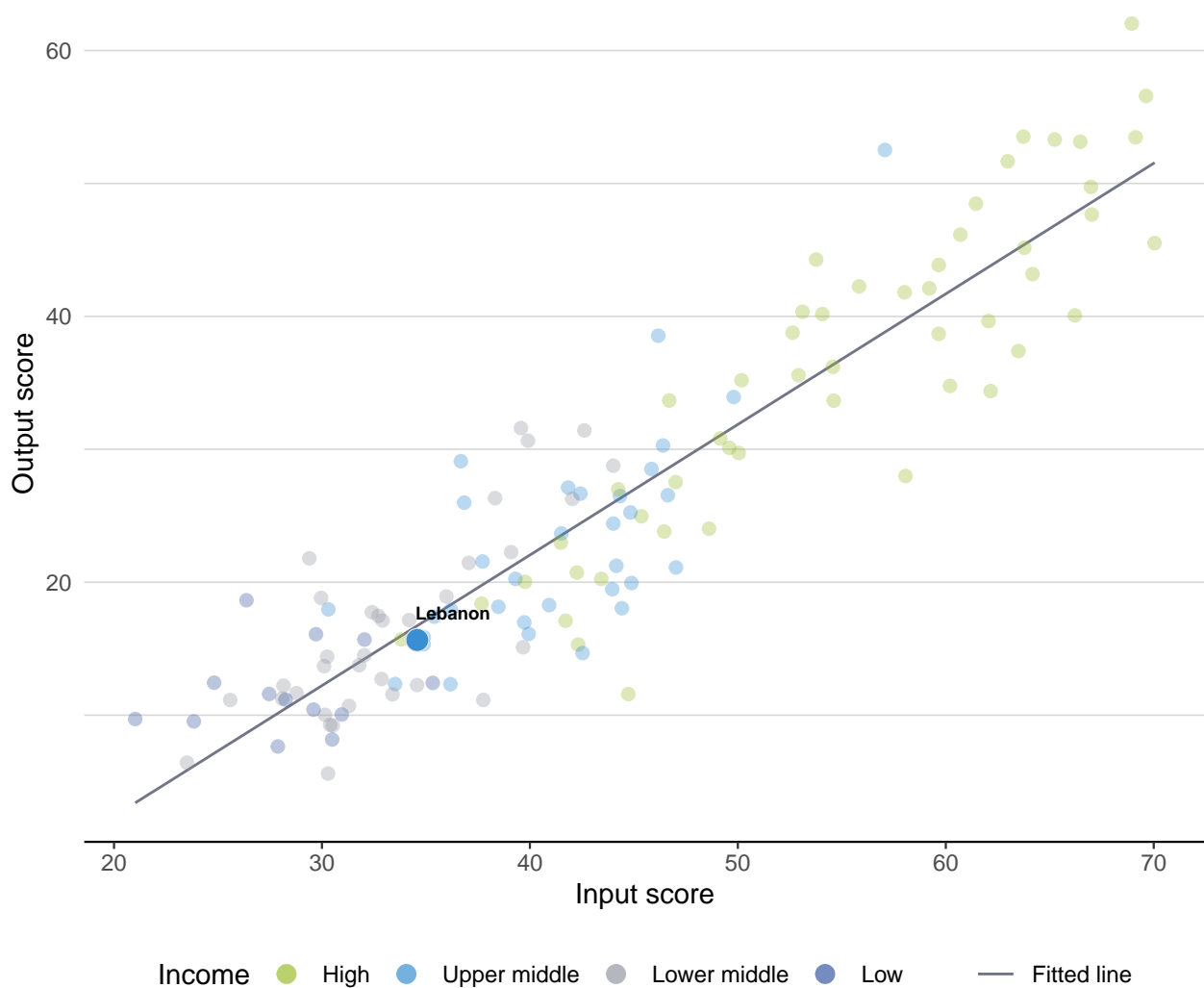


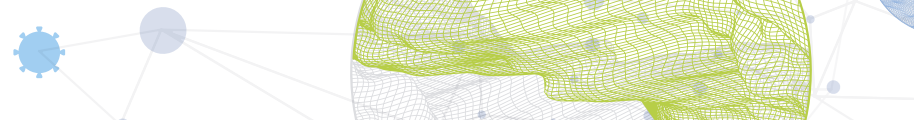
EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

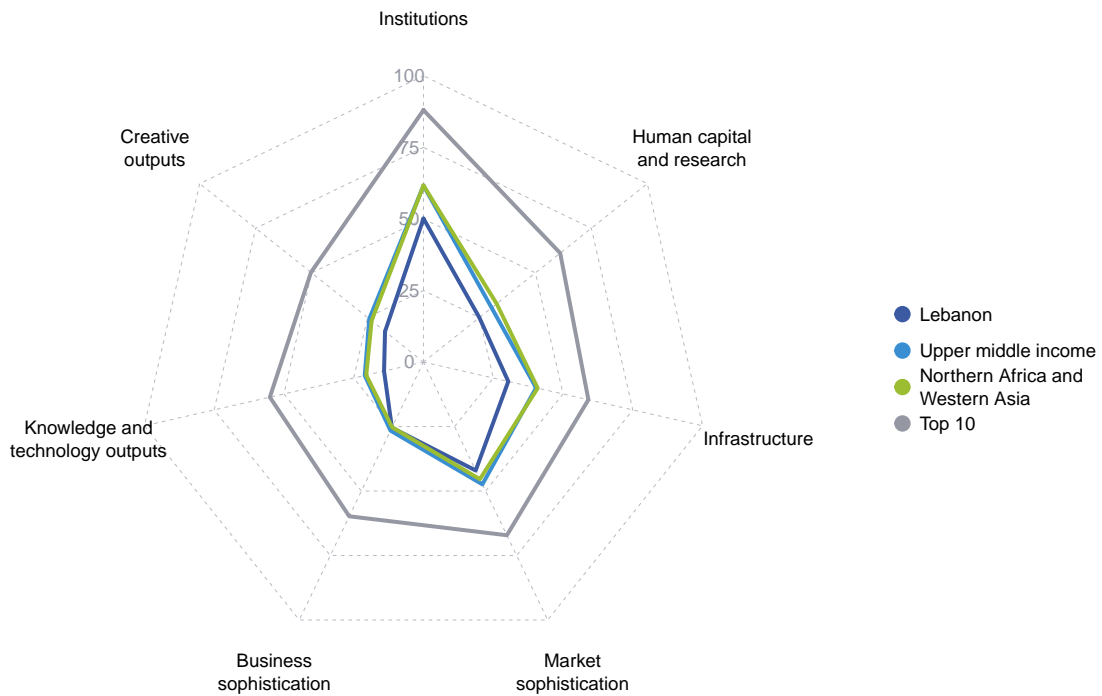
Innovation input to output performance





BENCHMARKING AGAINST OTHER UPPER MIDDLE-INCOME GROUP ECONOMIES AND NORTHERN AFRICA AND WESTERN ASIA

The seven GII pillar scores for Lebanon



Upper middle-income group economies

Lebanon performs below the upper middle-income group average in all GII pillars.

Northern Africa and Western Asia

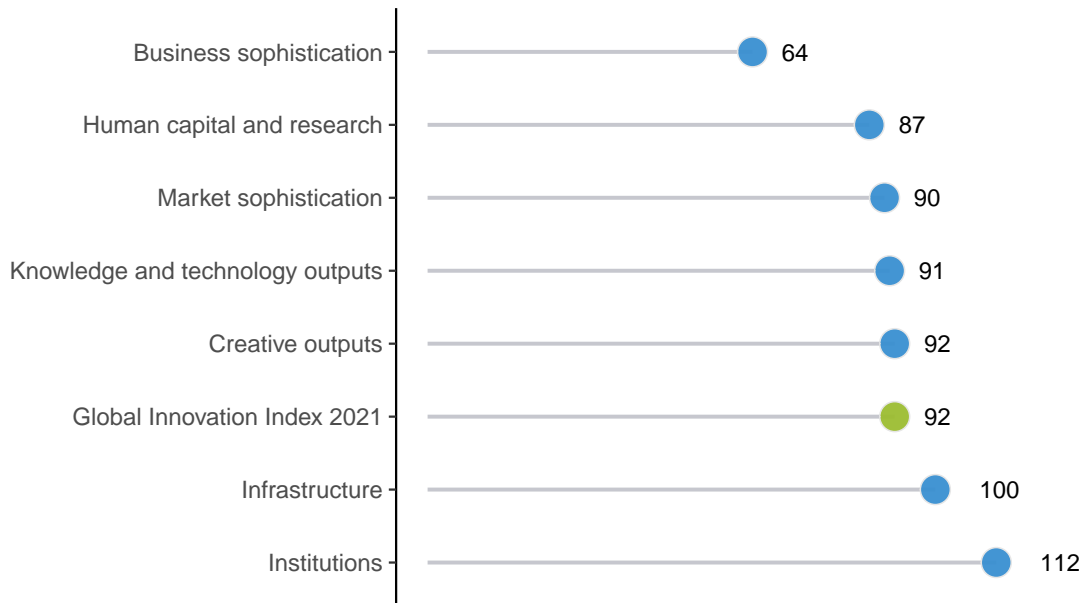
Lebanon performs above the regional average in Business sophistication.



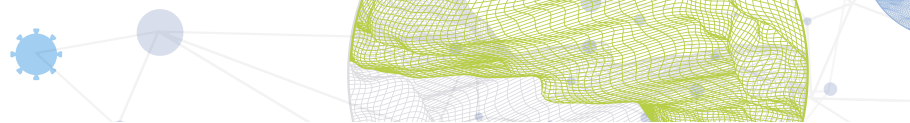
OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Lebanon performs best in Business sophistication and its weakest performance is in Institutions.

The seven GII pillar ranks for Lebanon



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 Lebanon in the GII 2021.

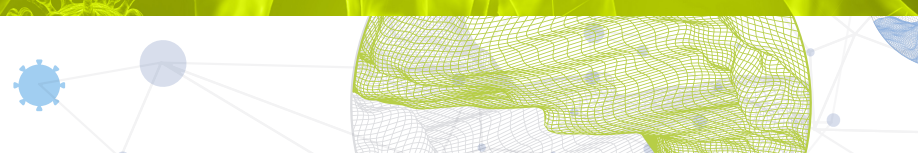
Strengths and weaknesses for Lebanon

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	18	1.1	Political environment	129
2.1.5	Pupil-teacher ratio, secondary	5	1.1.1	Political and operational stability	131
2.2.3	Tertiary inbound mobility, %	25	1.1.2	Government effectiveness	121
4.1.2	Domestic credit to private sector, % GDP	23	1.3	Business environment	121
4.2.3	Venture capital investors, deals/bn PPP\$ GDP	22	1.3.2	Ease of resolving insolvency	121
5.3.3	ICT services imports, % total trade	17	2.1	Education	123
5.3.4	FDI net inflows, % GDP	23	2.1.1	Expenditure on education, % GDP	107
6.1.4	Scientific and technical articles/bn PPP\$ GDP	31	2.1.2	Government funding/pupil, secondary, % GDP/cap	101
7.2.1	Cultural and creative services exports, % total trade	17	2.1.4	PISA scales in reading, maths and science	73
7.3.4	Mobile app creation/bn PPP\$ GDP	27	2.3.3	Global corporate R&D investors, top 3, mn US\$	41
			3.1.4	E-participation	120
			6.2.1	Labor productivity growth, %	120
			7.2.3	Entertainment and media market/th pop. 15–69	60

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$	GII 2020 rank
97	94	Upper middle	NAWA	6.8	78.9	11,562	87

	Score/ Value	Rank		Score/ Value	Rank
 Institutions	50.1	112	 Business sophistication	25.4	64
1.1 Political environment	33.3	129	5.1 Knowledge workers	34.0	[58]
1.1.1 Political and operational stability*	35.7	131	5.1.1 Knowledge-intensive employment, %	27.6	54
1.1.2 Government effectiveness*	32.1	121	5.1.2 Firms offering formal training, %	20.8	74
1.2 Regulatory environment	63.5	72	5.1.3 GERD performed by business, % GDP	n/a	n/a
1.2.1 Regulatory quality*	32.4	99	5.1.4 GERD financed by business, %	n/a	n/a
1.2.2 Rule of law*	24.1	115	5.1.5 Females employed w/advanced degrees, %	14.6	51
1.2.3 Cost of redundancy dismissal	8.7	18	5.2 Innovation linkages	21.3	63
1.3 Business environment	53.6	121	5.2.1 University-industry R&D collaboration†	42.6	66
1.3.1 Ease of starting a business*	78.2	113	5.2.2 State of cluster development and depth†	47.5	59
1.3.2 Ease of resolving insolvency*	29.1	121	5.2.3 GERD financed by abroad, % GDP	n/a	n/a
			5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.0	79
			5.2.5 Patent families/bn PPP\$ GDP	0.0	68
 Human capital and research	24.9	87	5.3 Knowledge absorption	21.0	87
2.1 Education	24.8	123	5.3.1 Intellectual property payments, % total trade	0.1	108
2.1.1 Expenditure on education, % GDP	2.4	107	5.3.2 High-tech imports, % total trade	4.0	117
2.1.2 Government funding/pupil, secondary, % GDP/cap	6.4	101	5.3.3 ICT services imports, % total trade	2.5	17
2.1.3 School life expectancy, years	n/a	n/a	5.3.4 FDI net inflows, % GDP	4.6	23
2.1.4 PISA scales in reading, maths and science	376.8	73	5.3.5 Research talent, % in businesses	n/a	n/a
2.1.5 Pupil-teacher ratio, secondary	7.7	5	 Knowledge and technology outputs	14.1	[91]
2.2 Tertiary education	35.7	56	6.1 Knowledge creation	21.5	[49]
2.2.1 Tertiary enrolment, % gross	n/a	n/a	6.1.1 Patents by origin/bn PPP\$ GDP	1.1	62
2.2.2 Graduates in science and engineering, %	23.4	50	6.1.2 PCT patents by origin/bn PPP\$ GDP	n/a	n/a
2.2.3 Tertiary inbound mobility, %	9.6	25	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
2.3 Research and development (R&D)	14.3	[49]	6.1.4 Scientific and technical articles/bn PPP\$ GDP	28.4	31
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	6.1.5 Citable documents H-index	12.8	60
2.3.2 Gross expenditure on R&D, % GDP	n/a	n/a	6.2 Knowledge impact	5.7	[125]
2.3.3 Global corporate R&D investors, top 3, mn US\$	0.0	41	6.2.1 Labor productivity growth, %	-10.0	120
2.3.4 QS university ranking, top 3*	28.6	42	6.2.2 New businesses/th pop. 15-64	n/a	n/a
			6.2.3 Software spending, % GDP	0.0	108
 Infrastructure	30.4	100	6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	5.7	47
3.1 Information and communication technologies (ICTs)	45.4	99	6.2.5 High-tech manufacturing, %	n/a	n/a
3.1.1 ICT access*	62.8	72	6.3 Knowledge diffusion	15.2	70
3.1.2 ICT use*	43.7	94	6.3.1 Intellectual property receipts, % total trade	0.1	66
3.1.3 Government's online service*	41.8	116	6.3.2 Production and export complexity	52.1	45
3.1.4 E-participation*	33.3	120	6.3.3 High-tech exports, % total trade	0.2	112
3.2 General infrastructure	21.2	103	6.3.4 ICT services exports, % total trade	2.1	52
3.2.1 Electricity output, GWh/mn pop.	3,100.6	64	 Creative outputs	17.2	92
3.2.2 Logistics performance*	31.1	78	7.1 Intangible assets	18.7	108
3.2.3 Gross capital formation, % GDP	n/a	n/a	7.1.1 Trademarks by origin/bn PPP\$ GDP	12.7	105
3.3 Ecological sustainability	24.6	82	7.1.2 Global brand value, top 5,000, % GDP	14.6	55
3.3.1 GDP/unit of energy use	9.9	69	7.1.3 Industrial designs by origin/bn PPP\$ GDP	n/a	n/a
3.3.2 Environmental performance*	45.4	70	7.1.4 ICTs and organizational model creation†	42.4	106
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	0.6	80	7.2 Creative goods and services	13.7	69
			7.2.1 Cultural and creative services exports, % total trade	1.6	17
 Market sophistication	42.0	90	7.2.2 National feature films/mn pop. 15-69	3.3	55
4.1 Credit	34.1	91	7.2.3 Entertainment and media market/th pop. 15-69	0.9	60
4.1.1 Ease of getting credit*	40.0	113	7.2.4 Printing and other media, % manufacturing	n/a	n/a
4.1.2 Domestic credit to private sector, % GDP	106.3	23	7.2.5 Creative goods exports, % total trade	0.6	60
4.1.3 Microfinance gross loans, % GDP	0.2	54	7.3 Online creativity	17.6	65
4.2 Investment	26.2	77	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	5.9	51
4.2.1 Ease of protecting minority investors*	44.0	98	7.3.2 Country-code TLDs/th pop. 15-69	0.3	107
4.2.2 Market capitalization, % GDP	18.0	61	7.3.3 Wikipedia edits/mn pop. 15-69	44.4	78
4.2.3 Venture capital investors, deals/bn PPP\$ GDP	0.1	22	7.3.4 Mobile app creation/bn PPP\$ GDP	20.5	27
4.2.4 Venture capital recipients, deals/bn PPP\$ GDP	0.1	25			
4.3 Trade, diversification, and market scale	65.7	74			
4.3.1 Applied tariff rate, weighted avg., %	3.3	64			
4.3.2 Domestic industry diversification	80.7	75			
4.3.3 Domestic market scale, bn PPP\$	78.9	89			

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.

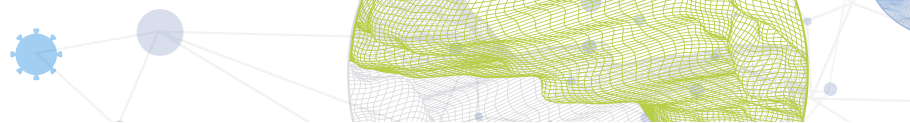


DATA AVAILABILITY

The following tables list data that are either missing or outdated for Lebanon.

Missing data for Lebanon

Code	Indicator name	Economy year	Model year	Source
2.1.3	School life expectancy, years	n/a	2018	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	n/a	2018	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
2.3.2	Gross expenditure on R&D, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
3.2.3	Gross capital formation, % GDP	n/a	2020	International Monetary Fund
5.1.3	GERD performed by business, % GDP	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2018	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
6.2.2	New businesses/th pop. 15–64	n/a	2018	World Bank
6.2.5	High-tech manufacturing, %	n/a	2018	United Nations Industrial Development Organization
7.1.3	Industrial designs by origin/bn PPP\$ GDP	n/a	2019	World Intellectual Property Organization
7.2.4	Printing and other media, % manufacturing	n/a	2018	United Nations Industrial Development Organization



Outdated data for Lebanon

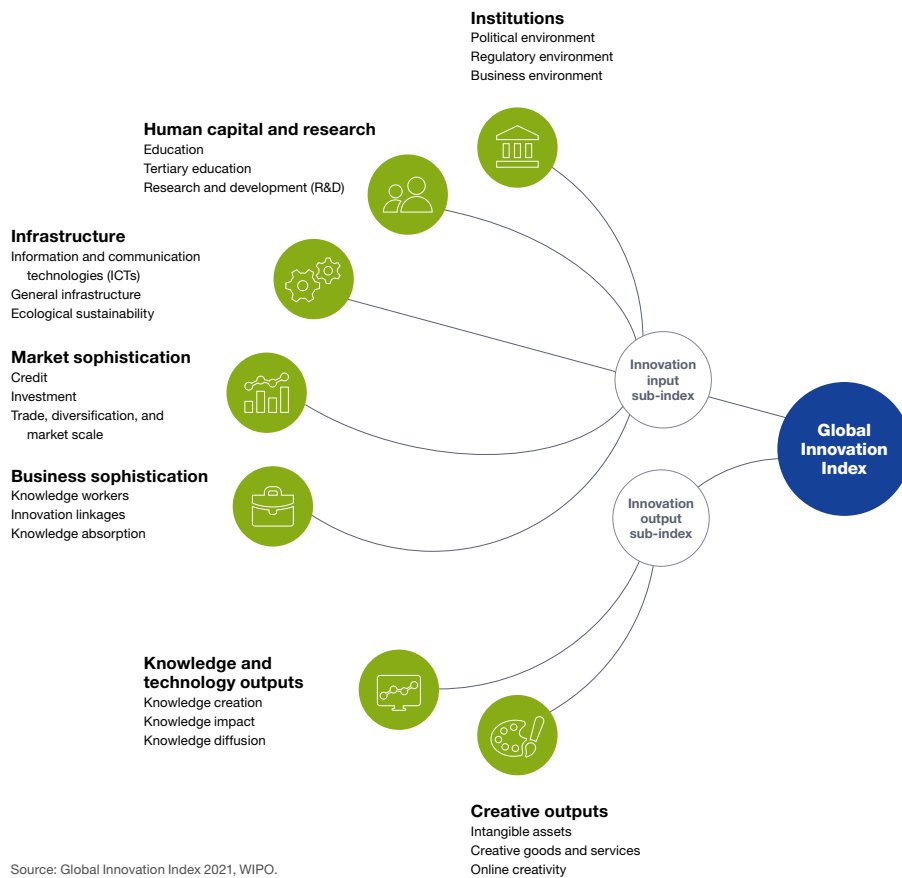
Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2013	2017	UNESCO Institute for Statistics
2.1.2	Government funding/pupil, secondary, % GDP/cap	2013	2017	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2016	2019	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2011	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.1.2	Domestic credit to private sector, % GDP	2017	2019	International Monetary Fund
4.3.2	Domestic industry diversification	2014	2018	United Nations Industrial Development Organization
5.3.2	High-tech imports, % total trade	2018	2019	United Nations, COMTRADE
6.1.1	Patents by origin/bn PPP\$ GDP	2015	2019	World Intellectual Property Organization
6.3.3	High-tech exports, % total trade	2018	2019	United Nations, COMTRADE
7.1.1	Trademarks by origin/bn PPP\$ GDP	2015	2019	World Intellectual Property Organization
7.2.2	National feature films/mn pop. 15–69	2015	2017	UNESCO Institute for Statistics
7.2.5	Creative goods exports, % total trade	2018	2019	United Nations, COMTRADE



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.