



ISRAEL

16th Israel ranks 16th 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 Israel 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 Israel in the GII 2022 is between ranks 14 and 21.

Rankings for Israel (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	13	17	13
2021	15	18	12
2022	16	22	16

- Israel performs better in innovation outputs than innovation inputs in 2022.
- This year Israel ranks 22nd in innovation inputs, lower than both 2021 and 2020.
- As for innovation outputs, Israel ranks 16th. This position is lower than both 2021 and 2020.

15th Israel ranks 15th among the 48 high-income group economies.

1st Israel ranks 1st among the 19 economies in Northern Africa and Western Asia.

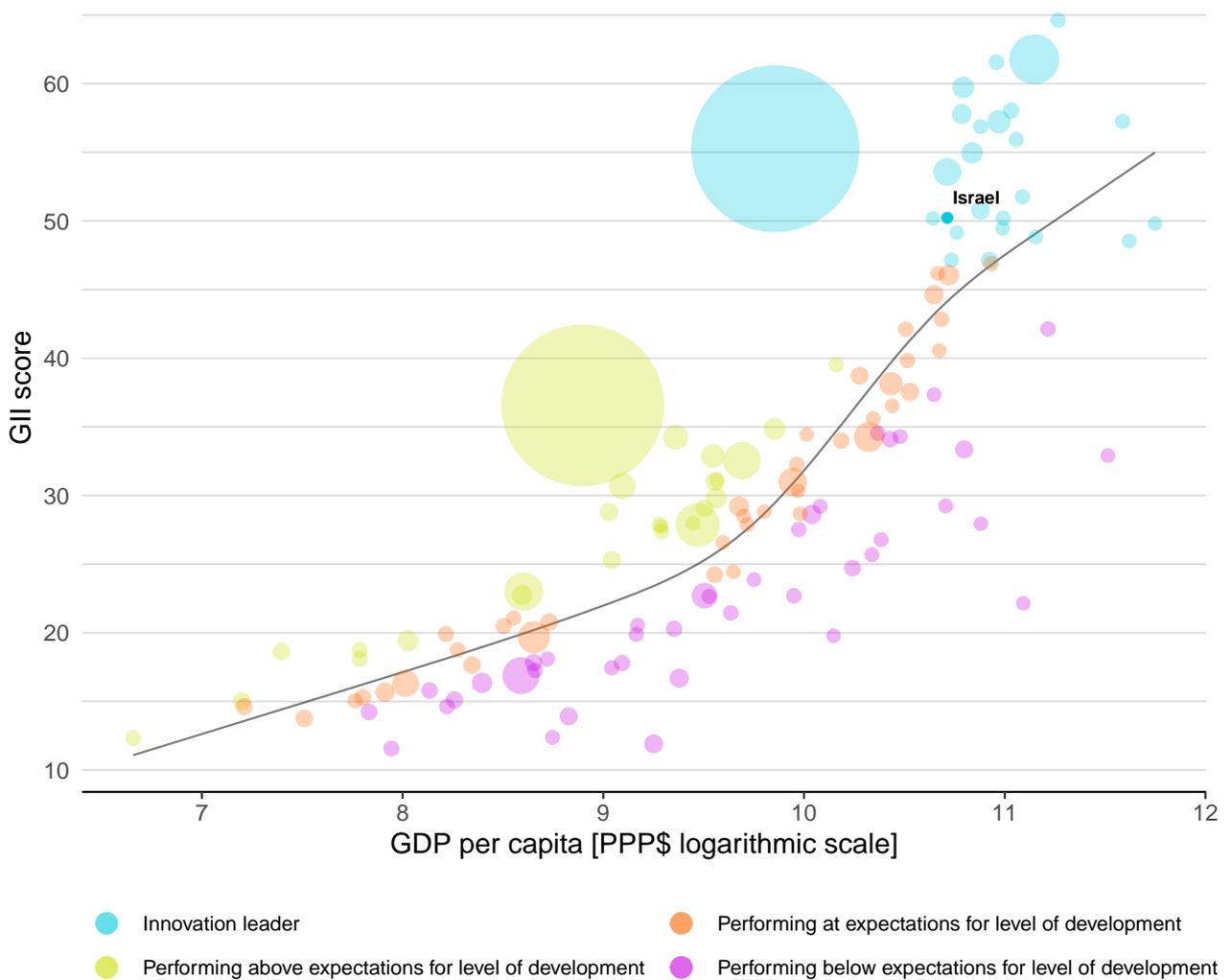


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, Israel's performance is above expectations for its level of development.

The positive relationship between innovation and development



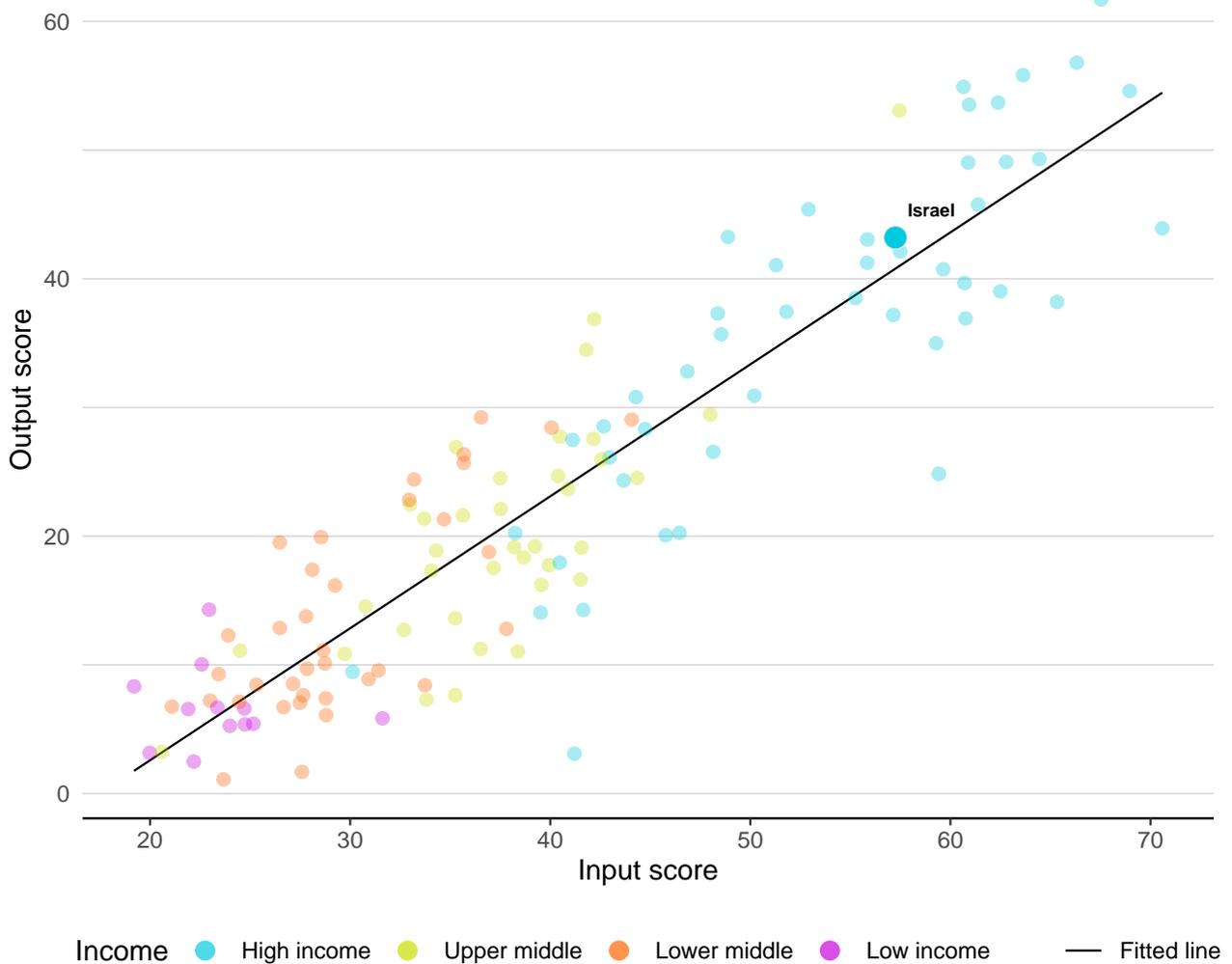


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

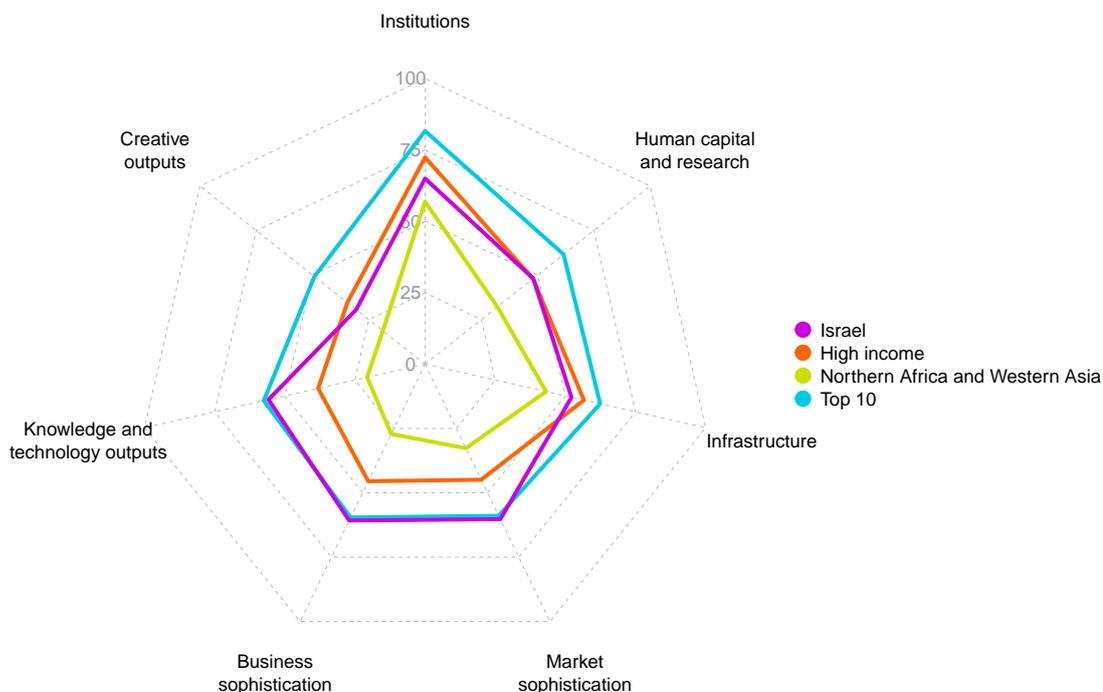
Innovation input to output performance





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

The seven GII pillar scores for Israel



High-income group economies

Israel performs above the high-income group average in four pillars, namely: Human capital and research; Market sophistication; Business sophistication; and, Knowledge and technology outputs.

Northern Africa and Western Asia

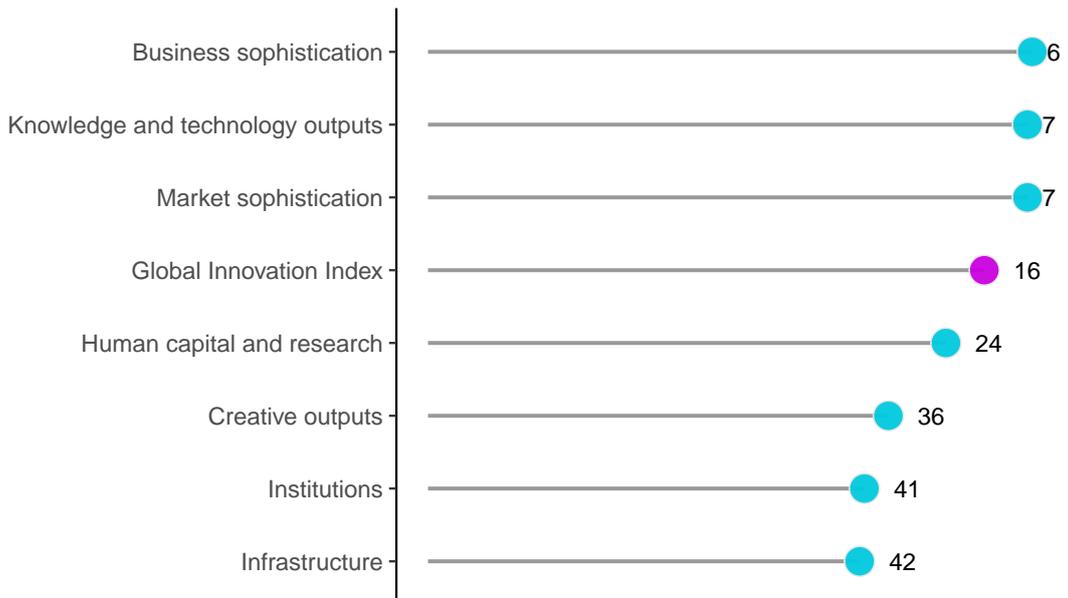
Israel performs above the regional average in all GII pillars.



OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Israel performs best in Business sophistication and its weakest performance is in Infrastructure.

The seven GII pillar ranks for Israel



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

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

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for Israel

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.3.2	Gross expenditure on R&D, % GDP	1	1.2.3	Cost of redundancy dismissal	115
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	1	2.1.2	Government funding/pupil, secondary, % GDP/cap	57
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	1	2.1.4	PISA scales in reading, maths and science	39
4.2.4	Venture capital received, value, % GDP	1	2.1.5	Pupil-teacher ratio, secondary	65
5.1.3	GERD performed by business, % GDP	1	2.2.2	Graduates in science and engineering, %	78
5.1.5	Females employed w/advanced degrees, %	1	2.2.3	Tertiary inbound mobility, %	72
5.2.1	University-industry R&D collaboration	2	3.1.4	E-participation	66
5.2.3	GERD financed by abroad, % GDP	1	3.2.3	Gross capital formation, % GDP	79
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	3	5.1.2	Firms offering formal training, %	82
6.1.2	PCT patents by origin/bn PPP\$ GDP	1	7.1.2	Trademarks by origin/bn PPP\$ GDP	104
6.3.4	ICT services exports, % total trade	1			
7.2.1	Cultural and creative services exports, % total trade	5			
7.3.4	Mobile app creation/bn PPP\$ GDP	3			

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
16	22	High	NAWA	8.8	421.8	44,966

	Score/Value	Rank		Score/Value	Rank
 Institutions	65.0	41	 Business sophistication	60.8	6
1.1 Political environment	72.1	38	5.1 Knowledge workers	67.9	9
1.1.1 Political and operational stability*	70.9	53	5.1.1 Knowledge-intensive employment, %	48.4	11
1.1.2 Government effectiveness*	73.3	27	5.1.2 Firms offering formal training, %	18.6	82
1.2 Regulatory environment	67.7	58	5.1.3 GERD performed by business, % GDP	4.9	1
1.2.1 Regulatory quality*	75.9	22	5.1.4 GERD financed by business, %	38.1	46
1.2.2 Rule of law*	71.9	29	5.1.5 Females employed w/advanced degrees, %	30.3	1
1.2.3 Cost of redundancy dismissal	27.4	115	5.2 Innovation linkages	78.4	1
1.3 Business environment	55.1	47	5.2.1 University-industry R&D collaboration [†]	77.6	2
1.3.1 Policies for doing business [†]	58.4	43	5.2.2 State of cluster development and depth [†]	56.1	34
1.3.2 Entrepreneurship policies and culture*	51.8	32	5.2.3 GERD financed by abroad, % GDP	2.6	1
			5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP	0.3	3
			5.2.5 Patent families/bn PPP\$ GDP	5.2	7
 Human capital and research	48.1	24	5.3 Knowledge absorption	36.0	47
2.1 Education	57.8	47	5.3.1 Intellectual property payments, % total trade	0.8	53
2.1.1 Expenditure on education, % GDP	6.1	18	5.3.2 High-tech imports, % total trade	10.7	30
2.1.2 Government funding/pupil, secondary, % GDP/cap	19.9	57	5.3.3 ICT services imports, % total trade	2.1	35
2.1.3 School life expectancy, years	16.1	35	5.3.4 FDI net inflows, % GDP	5.4	18
2.1.4 PISA scales in reading, maths and science	465.2	39	5.3.5 Research talent, % in businesses	n/a	n/a
2.1.5 Pupil-teacher ratio, secondary	14.2	65	 Knowledge and technology outputs	55.8	7
2.2 Tertiary education	26.0	78	6.1 Knowledge creation	59.9	12
2.2.1 Tertiary enrolment, % gross	60.3	50	6.1.1 Patents by origin/bn PPP\$ GDP	4.3	20
2.2.2 Graduates in science and engineering, %	18.8	78	6.1.2 PCT patents by origin/bn PPP\$ GDP	5.0	1
2.2.3 Tertiary inbound mobility, %	2.8	72	6.1.3 Utility models by origin/bn PPP\$ GDP	n/a	n/a
2.3 Research and development (R&D)	60.5	16	6.1.4 Scientific and technical articles/bn PPP\$ GDP	42.1	20
2.3.1 Researchers, FTE/mn pop.	n/a	n/a	6.1.5 Citable documents H-index	46.5	16
2.3.2 Gross expenditure on R&D, % GDP	5.4	1	6.2 Knowledge impact	40.2	23
2.3.3 Global corporate R&D investors, top 3, mn USD	62.9	21	6.2.1 Labor productivity growth, %	2.4	26
2.3.4 QS university ranking, top 3*	38.3	32	6.2.2 New businesses/th pop. 15-64	3.1	44
			6.2.3 Software spending, % GDP	0.2	60
			6.2.4 ISO 9001 quality certificates/bn PPP\$ GDP	21.7	12
			6.2.5 High-tech manufacturing, %	34.3	38
 Infrastructure	52.2	42	6.3 Knowledge diffusion	67.3	3
3.1 Information and communication technologies (ICTs)	78.9	49	6.3.1 Intellectual property receipts, % total trade	1.0	22
3.1.1 ICT access*	89.4	51	6.3.2 Production and export complexity	71.2	20
3.1.2 ICT use*	80.1	21	6.3.3 High-tech exports, % total trade	12.5	13
3.1.3 Government's online service*	74.7	55	6.3.4 ICT services exports, % total trade	16.5	1
3.1.4 E-participation*	71.4	66	 Creative outputs	30.6	36
3.2 General infrastructure	42.1	33	7.1 Intangible assets	27.3	64
3.2.1 Electricity output, GWh/mn pop.	7,900.2	20	7.1.1 Intangible asset intensity, top 15, %	69.5	24
3.2.2 Logistics performance*	58.6	34	7.1.2 Trademarks by origin/bn PPP\$ GDP	12.3	104
3.2.3 Gross capital formation, % GDP	22.0	79	7.1.3 Global brand value, top 5,000, % GDP	18.8	46
3.3 Ecological sustainability	35.6	40	7.1.4 Industrial designs by origin/bn PPP\$ GDP	2.0	48
3.3.1 GDP/unit of energy use	16.0	18	7.2 Creative goods and services	34.7	18
3.3.2 Environmental performance*	48.2	46	7.2.1 Cultural and creative services exports, % total trade	3.1	5
3.3.3 ISO 14001 environmental certificates/bn PPP\$ GDP	2.1	44	7.2.2 National feature films/mn pop. 15-69	5.1	23
			7.2.3 Entertainment and media market/th pop. 15-69	36.0	21
			7.2.4 Printing and other media, % manufacturing	1.1	42
			7.2.5 Creative goods exports, % total trade	1.7	32
 Market sophistication	60.2	7	7.3 Online creativity	33.2	22
4.1 Credit	38.1	34	7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	21.8	26
4.1.1 Finance for startups and scaleups*	51.2	11	7.3.2 Country-code TLDs/th pop. 15-69	14.2	34
4.1.2 Domestic credit to private sector, % GDP	68.6	50	7.3.3 GitHub commit pushes received/mn pop. 15-69	48.9	10
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	7.3.4 Mobile app creation/bn PPP\$ GDP	47.8	3
4.2 Investment	80.4	4			
4.2.1 Market capitalization, % GDP	58.1	33			
4.2.2 Venture capital investors, deals/bn PPP\$ GDP	0.8	1			
4.2.3 Venture capital recipients, deals/bn PPP\$ GDP	0.6	1			
4.2.4 Venture capital received, value, % GDP	0.0	1			
4.3 Trade, diversification, and market scale	62.2	44			
4.3.1 Applied tariff rate, weighted avg., %	1.8	59			
4.3.2 Domestic industry diversification	89.4	46			
4.3.3 Domestic market scale, bn PPP\$	421.8	49			

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 Israel.

Missing data for Israel

Code	Indicator name	Economy year	Model year	Source
2.3.1	Researchers, FTE/mn pop.	n/a	2020	UNESCO Institute for Statistics
4.1.3	Loans from microfinance institutions, % GDP	n/a	2020	International Monetary Fund, Financial Access Survey (FAS)
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization

Outdated data for Israel

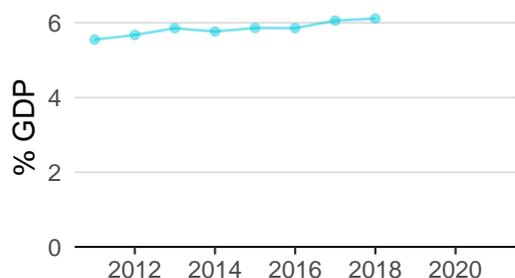
Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2018	2020	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2019	2020	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2014	2019	UNESCO Institute for Statistics
4.3.1	Applied tariff rate, weighted avg., %	2017	2020	World Bank
4.3.2	Domestic industry diversification	2018	2019	United Nations Industrial Development Organization
5.1.1	Knowledge-intensive employment, %	2017	2021	International Labour Organization
5.1.2	Firms offering formal training, %	2013	2019	World Bank Enterprise Surveys
5.1.5	Females employed w/advanced degrees, %	2020	2021	International Labour Organization
5.3.1	Intellectual property payments, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
5.3.3	ICT services imports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
6.2.5	High-tech manufacturing, %	2018	2019	United Nations Industrial Development Organization
6.3.1	Intellectual property receipts, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
6.3.4	ICT services exports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
7.2.4	Printing and other media, % manufacturing	2018	2019	United Nations Industrial Development Organization



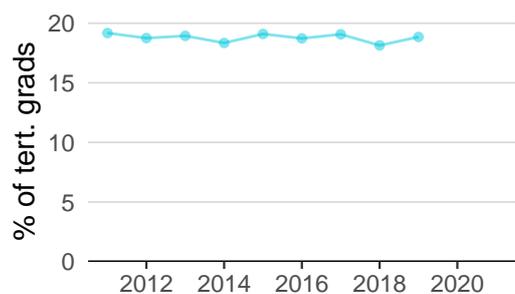
ISRAEL'S INNOVATION SYSTEM

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

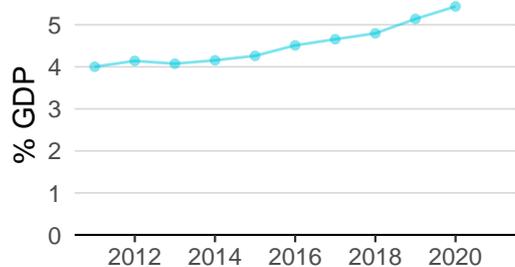
Innovation inputs



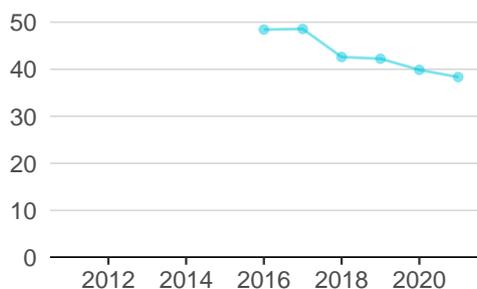
2.1.1 Expenditure on education was equal to 6.1% GDP in 2018—up by 1 percentage point from the year prior—and equivalent to an indicator rank of 18.



2.2.2 Graduates in science and engineering was equal to 18.8% of tert. grads in 2019—up by 4 percentage points from the year prior—and equivalent to an indicator rank of 78.



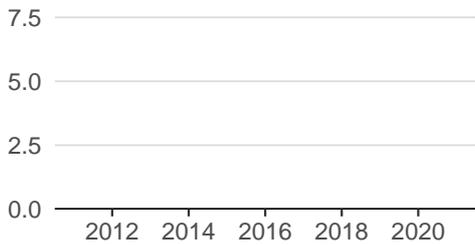
2.3.2 Gross expenditure on R&D was equal to 5.4% GDP in 2020—up by 6 percentage points from the year prior—and equivalent to an indicator rank of 1.



2.3.4 QS university ranking was equal to 38.3 in 2021—down by 4 percentage points from the year prior—and equivalent to an indicator rank of 32.



3.1.1 ICT access was equal to 8.9 in 2020 and equivalent to an indicator rank of 51.



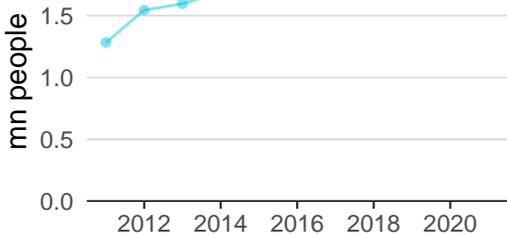
4.2.4 Venture capital received was equal to 10.2 bn USD in 2021—up by 154 percentage points from the year prior—and equivalent to an indicator rank of 1.



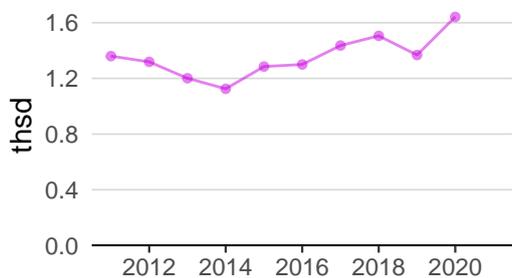
4.3.2 Domestic industry diversification was equal to 0.1 in 2018—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 46.



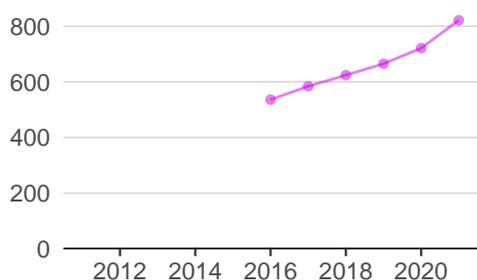
5.1.1 Knowledge-intensive employment was equal to 1.8 mn people in 2017—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 11.



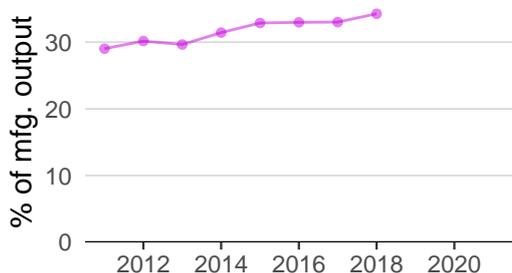
Innovation outputs



6.1.1 Patents by origin was equal to 1.6 thsd in 2020—up by 20 percentage points from the year prior—and equivalent to an indicator rank of 20.



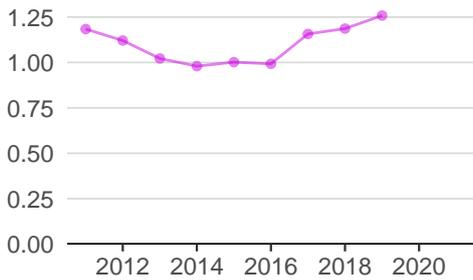
6.1.5 Citable documents H-index was equal to 821.0 in 2021—up by 14 percentage points from the year prior—and equivalent to an indicator rank of 16.



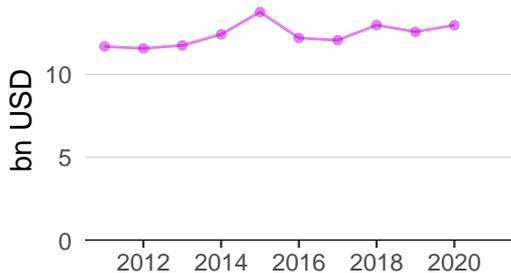
6.2.5 High-tech manufacturing was equal to 34.3% of mfg. output in 2018—up by 4 percentage points from the year prior—and equivalent to an indicator rank of 38.



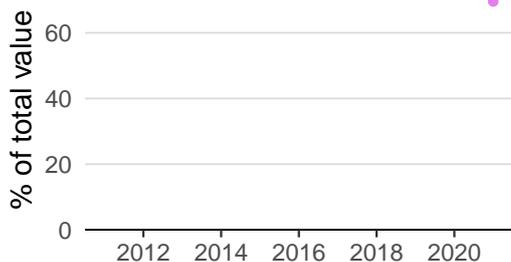
6.3.1 Intellectual property receipts was equal to 1.2 bn USD in 2019—up by 12 percentage points from the year prior—and equivalent to an indicator rank of 22.



6.3.2 Production and export complexity was equal to 1.3 in 2019—up by 6 percentage points from the year prior—and equivalent to an indicator rank of 20.



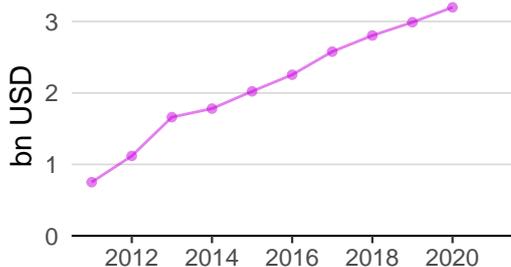
6.3.3 High-tech exports was equal to 13.0 bn USD in 2020—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 13.



7.1.1 Intangible asset intensity was equal to 69.5% of total value in 2021 and equivalent to an indicator rank of 24.



7.1.3 Global brand value was equal to 8.8 bn USD in 2021—up by 15 percentage points from the year prior—and equivalent to an indicator rank of 46.



7.2.1 Cultural and creative services exports was equal to 3.2 bn USD in 2020—up by 7 percentage points from the year prior—and equivalent to an indicator rank of 5.

ISRAEL'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]	[%]	[%]	
TEVA PHARMACEUTICAL INDUSTRIES	Pharmaceuticals & Biotechnology	812	-1.3	6.0	201
ELBIT SYSTEMS	Aerospace & Defence	293	8.4	7.7	475
WIX.COM	Software & Computer Services	261	27.5	32.5	529

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
HEBREW UNIVERSITY OF JERUSALEM	44.5	198
TEL AVIV UNIVERSITY	38.1	255=
TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	32.4	330=

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
TEVA PHARMACEUTICAL IND	1
WIX	2
NICE	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

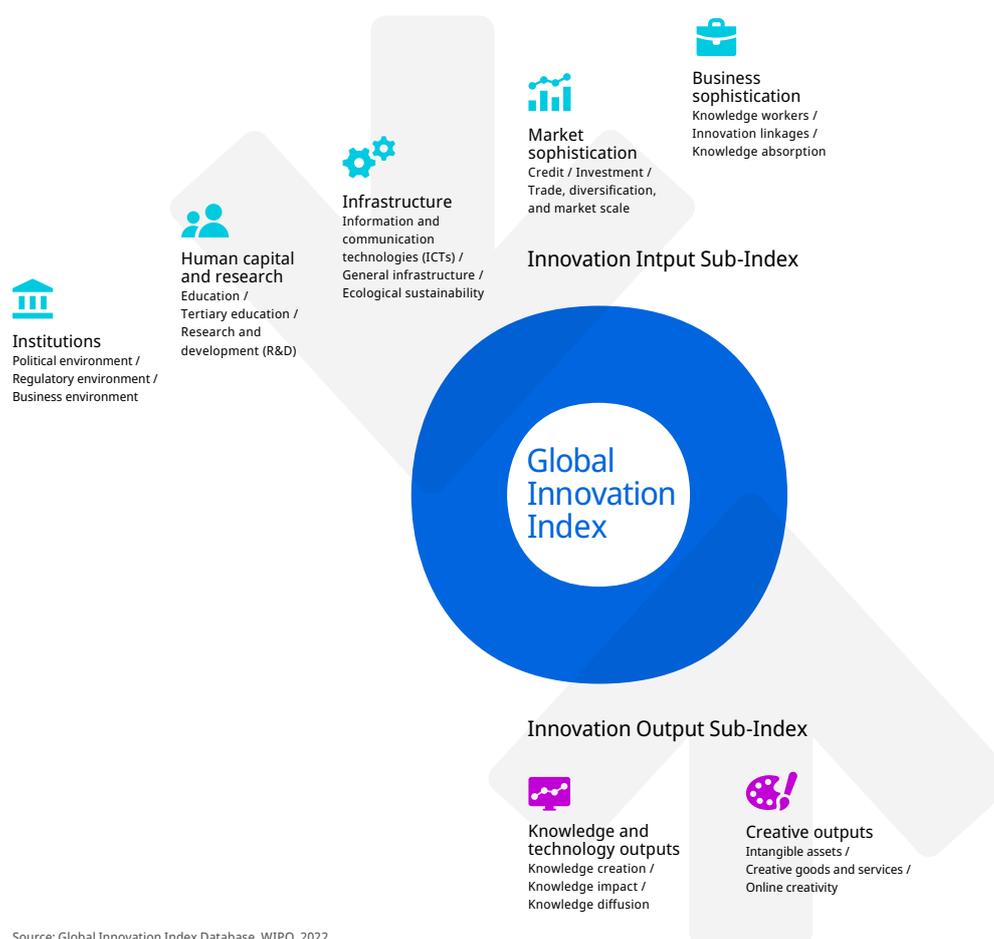
Brand	Industry	Rank
BANK LEUMI	Banking	1
BANK HAPOALIM	Banking	2
TEVA	Pharma	3

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.