



UNITED STATES OF AMERICA

2nd

The United States of America ranks 2nd 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 the United States of America 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 the United States of America in the GII 2022 is between ranks 2 and 3.

Rankings for the United States of America (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	3	4	5
2021	3	3	4
2022	2	2	5

- The United States of America performs better in innovation inputs than innovation outputs in 2022.
- This year the United States of America ranks 2nd in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, the United States of America ranks 5th. This position is lower than last year but the same as 2020.

2nd

The United States of America ranks 2nd among the 48 high-income group economies.

1st

The United States of America ranks 1st among the 2 economies in Northern America.

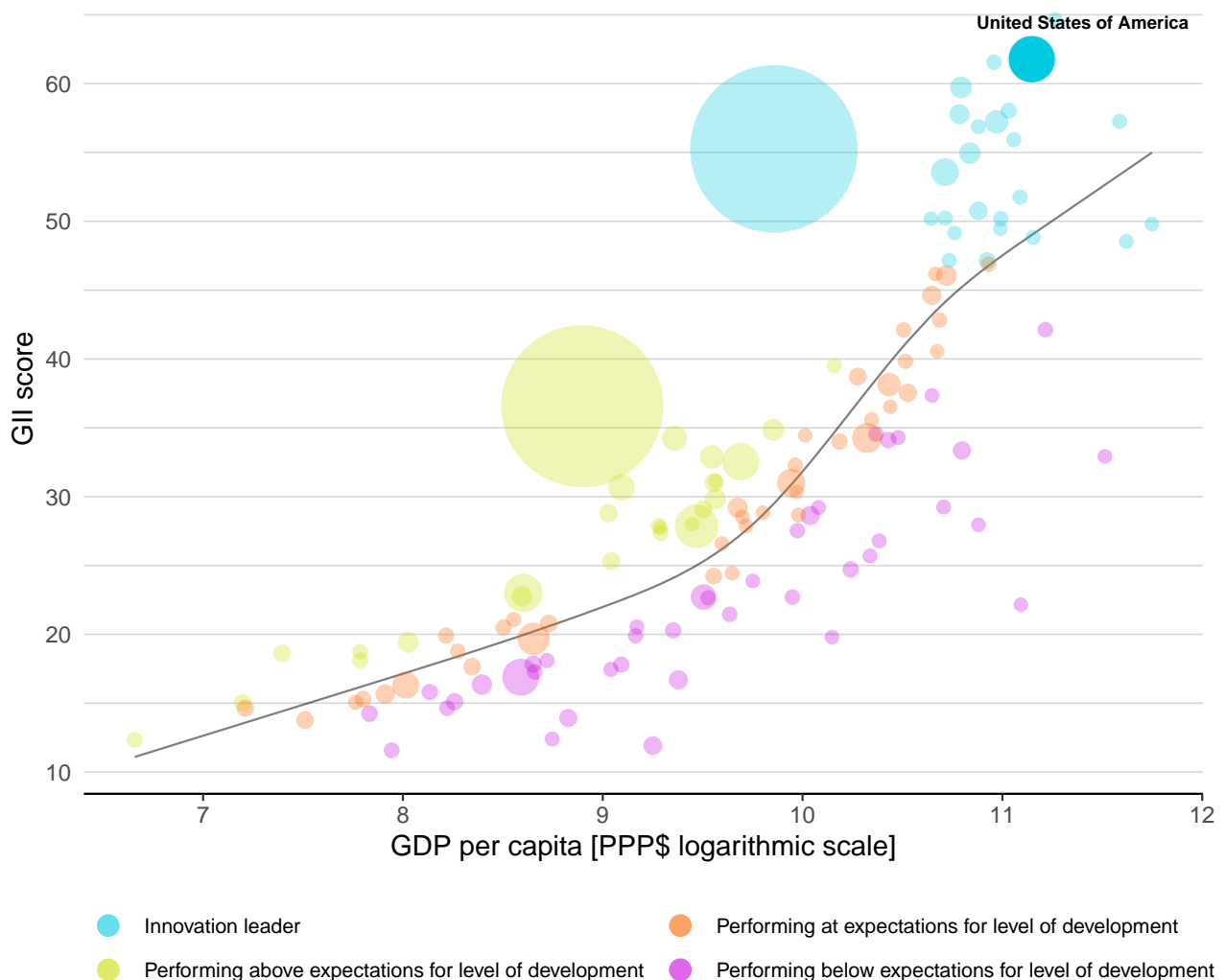


EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

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, the United States of America's performance is above expectations for its level of development.

The positive relationship between innovation and development

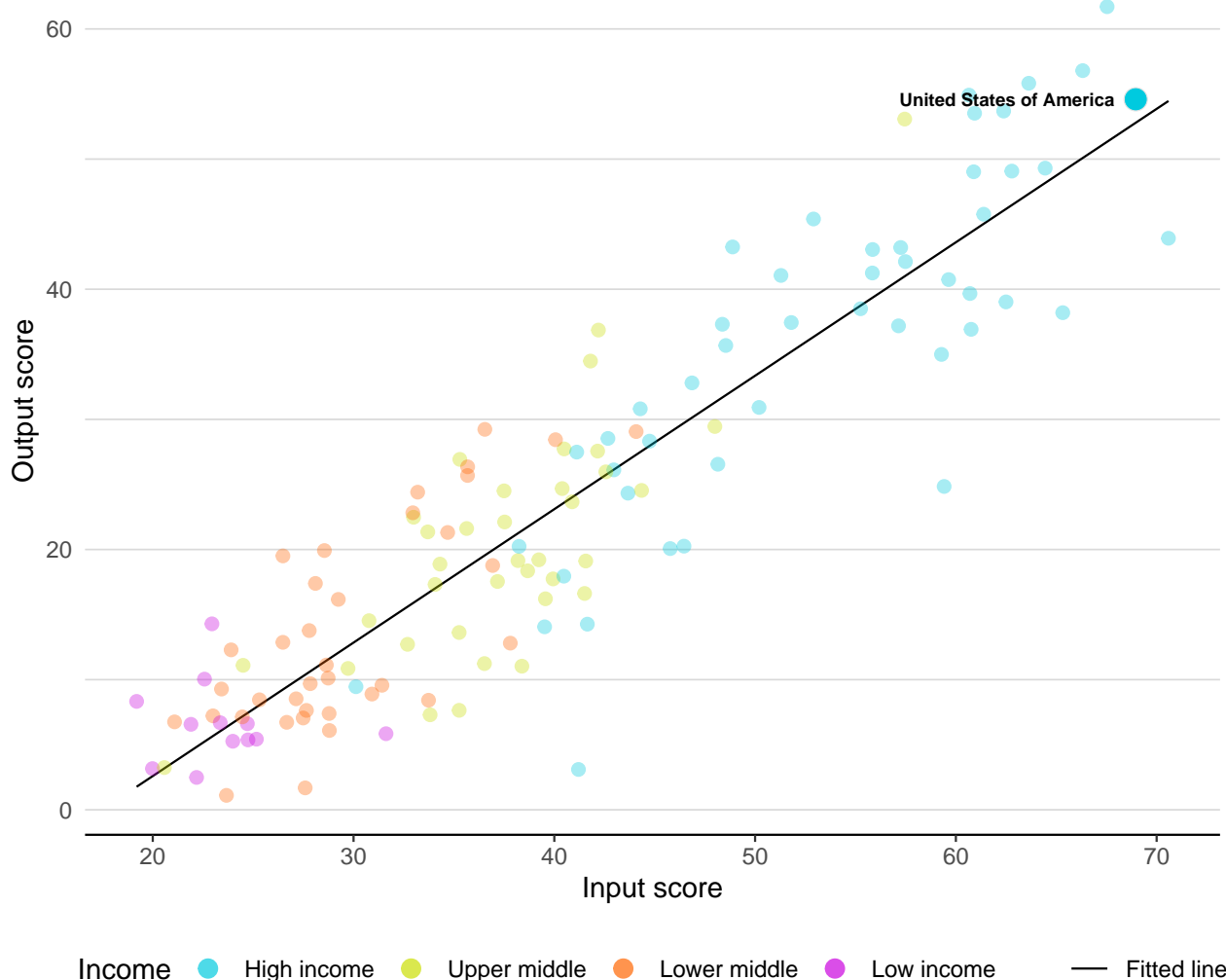


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

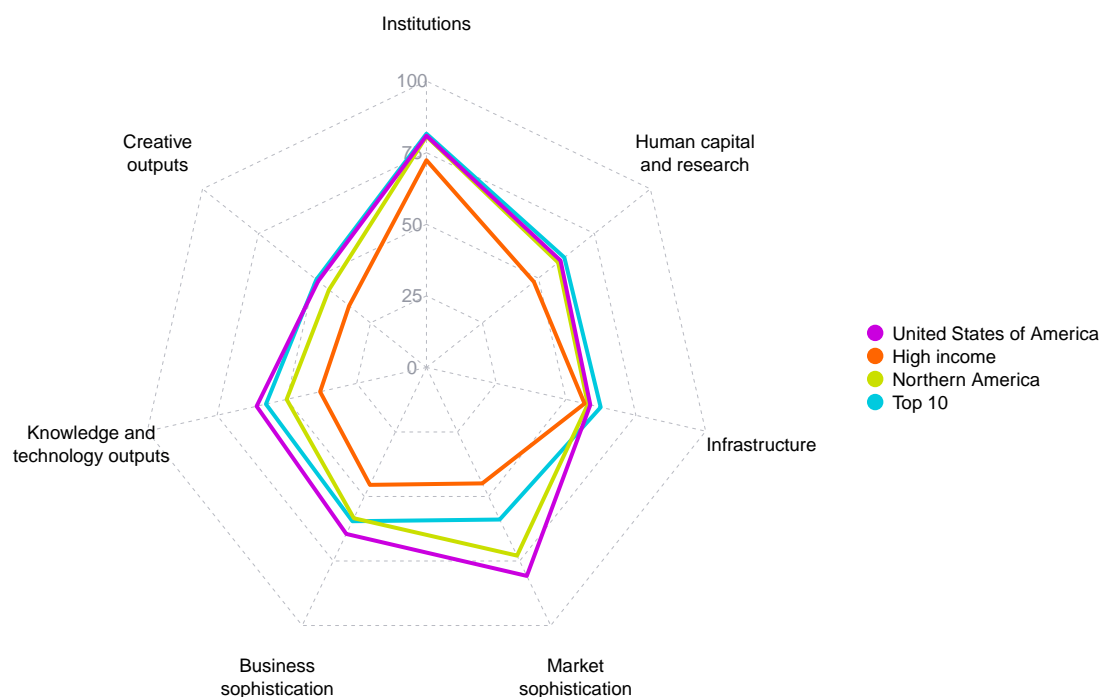
The United States of America produces more innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND NORTHERN AMERICA

The seven GII pillar scores for the United States of America



High-income group economies

The United States of America performs above the high-income group average in all GII pillars.

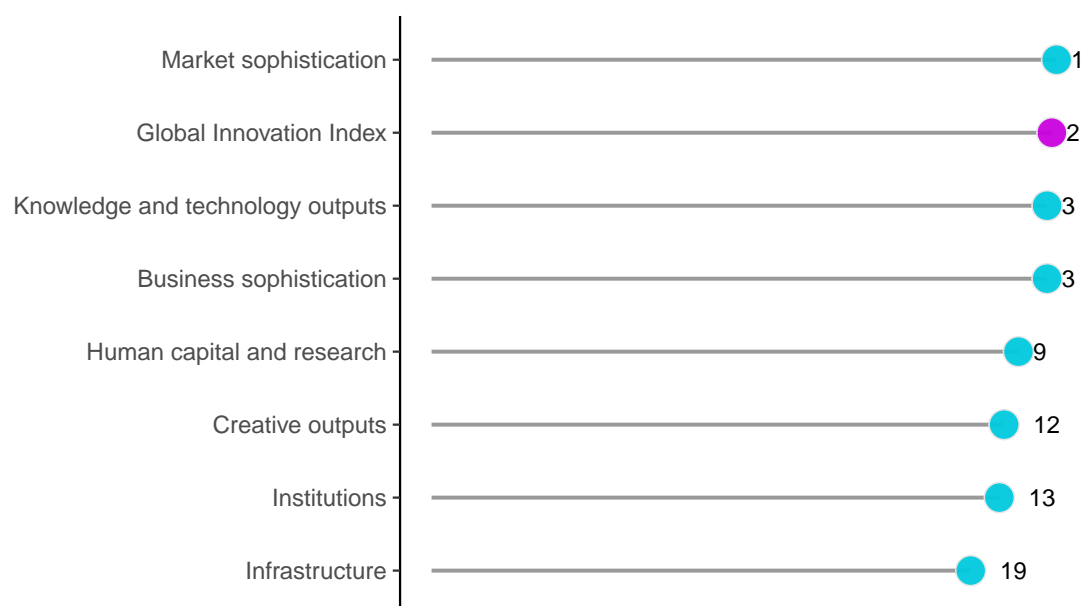
Northern America

The United States of America performs above the regional average in all GII pillars.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

The United States of America performs best in Market sophistication and its weakest performance is in Infrastructure.

The seven GII pillar ranks for the United States of America



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

The full WIPO Intellectual Property Statistics profile for the United States of America can be found at:

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

INNOVATION STRENGTHS AND WEAKNESSES

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

Strengths and weaknesses for the United States of America


Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	1	2.1.5	Pupil-teacher ratio, secondary	72
2.3.3	Global corporate R&D investors, top 3, mn USD	1	2.2.2	Graduates in science and engineering, %	76
2.3.4	QS university ranking, top 3	1	3.2.3	Gross capital formation, % GDP	84
3.1.4	E-participation	1	3.3.1	GDP/unit of energy use	75
4.1.2	Domestic credit to private sector, % GDP	2	3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	113
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	1	5.3.4	FDI net inflows, % GDP	96
4.2.4	Venture capital received, value, % GDP	1	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	106
4.3.3	Domestic market scale, bn PPP\$	1	7.1.2	Trademarks by origin/bn PPP\$ GDP	81
5.1.3	GERD performed by business, % GDP	3	7.1.4	Industrial designs by origin/bn PPP\$ GDP	65
5.2.1	University-industry R&D collaboration	1	7.3.2	Country-code TLDs/th pop. 15–69	68
5.2.2	State of cluster development and depth	1			
6.1.1	Patents by origin/bn PPP\$ GDP	1			
6.1.5	Citable documents H-index	1			
6.2.3	Software spending, % GDP	1			
7.1.1	Intangible asset intensity, top 15, %	1			
7.1.3	Global brand value, top 5,000, % GDP	2			
7.2.3	Entertainment and media market/th pop. 15–69	1			
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	1			


United States of America


2


Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
5	2	High	NAC	332.9	22,939.6	69,375


		Score/ Value	Rank
	Institutions	80.9	13
1.1	Political environment	78.1	23
1.1.1	Political and operational stability*	78.2	35
1.1.2	Government effectiveness*	78.1	23
1.2	Regulatory environment	89.4	12
1.2.1	Regulatory quality*	76.0	21
1.2.2	Rule of law*	81.6	21
1.2.3	Cost of redundancy dismissal	8.0	1 ●
1.3	Business environment	75.3	11
1.3.1	Policies for doing business†	78.6	7
1.3.2	Entrepreneurship policies and culture*	72.0	13


	Human capital and research	59.9	9
2.1	Education	58.6	44
2.1.1	Expenditure on education, % GDP	4.9	46
2.1.2	Government funding/pupil, secondary, % GDP/cap	22.6	36
2.1.3	School life expectancy, years	16.3	30
2.1.4	PISA scales in reading, maths and science	495.3	24
2.1.5	Pupil-teacher ratio, secondary	14.7	72 ○ ◇
2.2	Tertiary education	34.9	48
2.2.1	Tertiary enrolment, % gross	87.9	12
2.2.2	Graduates in science and engineering, %	19.2	76 ○
2.2.3	Tertiary inbound mobility, %	5.2	48
2.3	Research and development (R&D)	86.1	2 ● ◆
2.3.1	Researchers, FTE/mn pop.	4,829.1	19
2.3.2	Gross expenditure on R&D, % GDP	3.5	5
2.3.3	Global corporate R&D investors, top 3, mn USD	100.0	1 ● ◆
2.3.4	QS university ranking, top 3*	98.9	1 ● ◆

	Infrastructure	58.7	19
3.1	Information and communication technologies (ICTs)	92.1	7
3.1.1	ICT access*	89.5	50
3.1.2	ICT use*	84.0	11
3.1.3	Government's online service*	94.7	7
3.1.4	E-participation*	100.0	1 ●
3.2	General infrastructure	58.6	10
3.2.1	Electricity output, GWh/mn pop.	12,816.4	9
3.2.2	Logistics performance*	85.6	14
3.2.3	Gross capital formation, % GDP	21.1	84 ○
3.3	Ecological sustainability	25.4	67 ◇
3.3.1	GDP/unit of energy use	9.5	75 ○
3.3.2	Environmental performance*	51.1	36
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.2	113 ○ ◇

	Market sophistication	80.8	1 ● ◆
4.1	Credit	69.8	3 ● ◆
4.1.1	Finance for startups and scaleups*	56.3	5 ◆
4.1.2	Domestic credit to private sector, % GDP	215.9	2 ● ◆
4.1.3	Loans from microfinance institutions, % GDP	n/a	n/a
4.2	Investment	76.3	5 ◆
4.2.1	Market capitalization, % GDP	166.7	7
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	0.4	12
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	0.3	1 ● ◆
4.2.4	Venture capital received, value, % GDP	0.0	1 ● ◆
4.3	Trade, diversification, and market scale	96.2	1 ● ◆
4.3.1	Applied tariff rate, weighted avg., %	1.5	49
4.3.2	Domestic industry diversification	98.5	11
4.3.3	Domestic market scale, bn PPP\$	22,939.6	1 ● ◆

	Business sophistication	64.5	3 ● ◆
5.1	Knowledge workers	75.0	4 ◆
5.1.1	Knowledge-intensive employment, %	46.8	18
5.1.2	Firms offering formal training, %	n/a	n/a
5.1.3	GERD performed by business, % GDP	2.6	3 ●
5.1.4	GERD financed by business, %	66.3	6
5.1.5	Females employed w/advanced degrees, %	28.0	8
5.2	Innovation linkages	66.1	4 ◆
5.2.1	University-industry R&D collaboration†	79.6	1 ● ◆
5.2.2	State of cluster development and depth†	78.5	1 ● ◆
5.2.3	GERD financed by abroad, % GDP	0.2	12
5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	0.2	5
5.2.5	Patent families/bn PPP\$ GDP	3.3	12
5.3	Knowledge absorption	52.5	10
5.3.1	Intellectual property payments, % total trade	1.6	21
5.3.2	High-tech imports, % total trade	19.2	11 ◆
5.3.3	ICT services imports, % total trade	1.6	57
5.3.4	FDI net inflows, % GDP	1.2	96 ○
5.3.5	Research talent, % in businesses	72.3	4 ◆

	Knowledge and technology outputs	60.8	3 ● ◆
6.1	Knowledge creation	69.6	3 ●
6.1.1	Patents by origin/bn PPP\$ GDP	12.9	1 ● ◆
6.1.2	PCT patents by origin/bn PPP\$ GDP	2.6	13
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	n/a
6.1.4	Scientific and technical articles/bn PPP\$ GDP	19.3	50 ◇
6.1.5	Citable documents H-index	100.0	1 ● ◆
6.2	Knowledge impact	55.0	2 ● ◆
6.2.1	Labor productivity growth, %	1.5	46
6.2.2	New businesses/th pop. 15–64	n/a	n/a
6.2.3	Software spending, % GDP	1.1	1 ● ◆
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	1.0	106 ○ ◇
6.2.5	High-tech manufacturing, %	44.3	20
6.3	Knowledge diffusion	57.9	9
6.3.1	Intellectual property receipts, % total trade	4.3	4 ◆
6.3.2	Production and export complexity	78.4	11
6.3.3	High-tech exports, % total trade	9.4	18
6.3.4	ICT services exports, % total trade	2.3	56

	Creative outputs	48.4	12
7.1	Intangible assets	52.8	16
7.1.1	Intangible asset intensity, top 15, %	92.7	1 ● ◆
7.1.2	Trademarks by origin/bn PPP\$ GDP	26.3	81 ○ ◇
7.1.3	Global brand value, top 5,000, % GDP	229.9	2 ● ◆
7.1.4	Industrial designs by origin/bn PPP\$ GDP	1.0	65 ○
7.2	Creative goods and services	44.8	4 ◆
7.2.1	Cultural and creative services exports, % total trade	1.8	14
7.2.2	National feature films/mn pop. 15–69	3.5	34
7.2.3	Entertainment and media market/th pop. 15–69	100.0	1 ● ◆
7.2.4	Printing and other media, % manufacturing	1.4	26
7.2.5	Creative goods exports, % total trade	2.8	18
7.3	Online creativity	43.0	14
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	100.0	1 ● ◆
7.3.2	Country-code TLDs/th pop. 15–69	2.1	68 ○ ◇
7.3.3	GitHub commit pushes received/mn pop. 15–69	53.8	7
7.3.4	Mobile app creation/bn PPP\$ GDP	16.2	20

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 the United States of America.

Missing data for the United States of America

Code	Indicator name	Economy year	Model year	Source
4.1.3	Loans from microfinance institutions, % GDP	n/a	2020	International Monetary Fund, Financial Access Survey (FAS)
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2020	World Intellectual Property Organization
6.2.2	New businesses/th pop. 15–64	n/a	2020	World Bank, Entrepreneurship Database

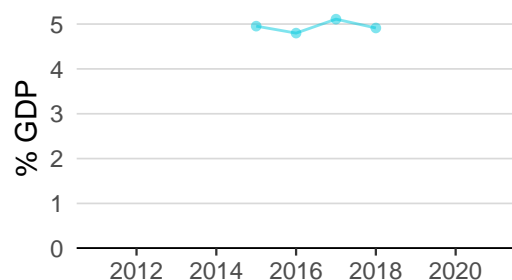
Outdated data for the United States of America

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
2.3.1	Researchers, FTE/mn pop.	2019	2020	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	2019	2020	UNESCO Institute for Statistics

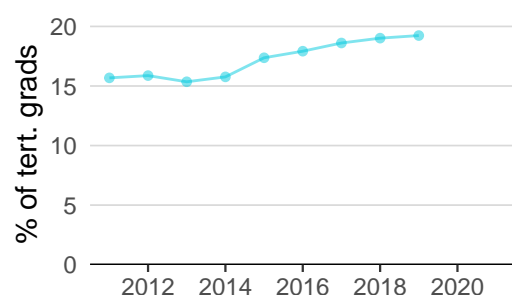
INNOVATION SYSTEM FOR THE UNITED STATES OF AMERICA

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

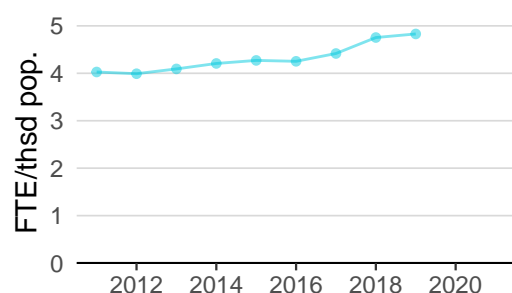
Innovation inputs



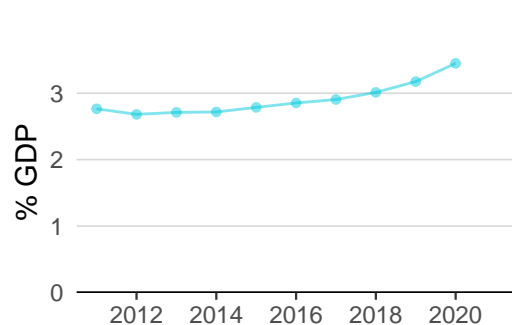
2.1.1 Expenditure on education was equal to 4.9% GDP in 2018—down by 4 percentage points from the year prior—and equivalent to an indicator rank of 46.



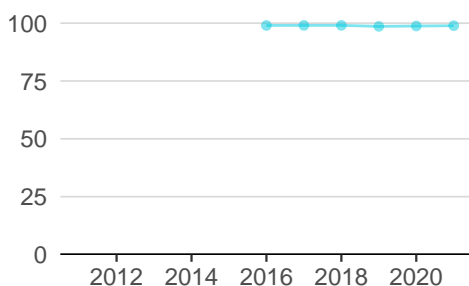
2.2.2 Graduates in science and engineering was equal to 19.2% of tert. grads in 2019—up by 1 percentage point from the year prior—and equivalent to an indicator rank of 76.



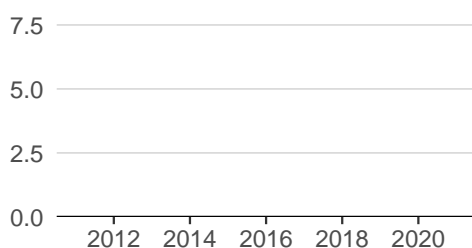
2.3.1 Researchers was equal to 4.8 FTE/thsd pop. in 2019—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 19.



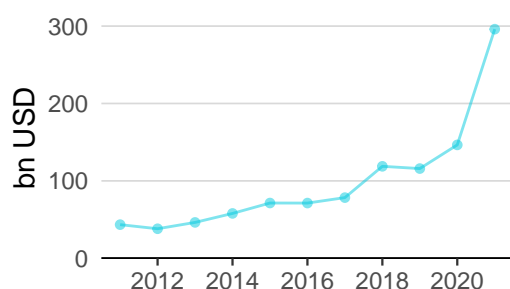
2.3.2 Gross expenditure on R&D was equal to 3.5% GDP in 2020—up by 9 percentage points from the year prior—and equivalent to an indicator rank of 5.



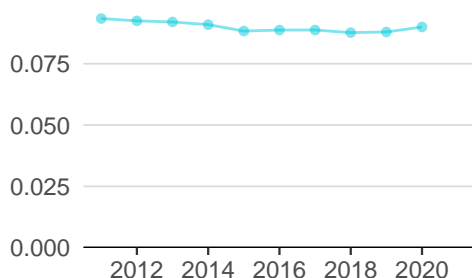
2.3.4 QS university ranking was equal to 98.9 in 2021—effectively unchanged from the year prior—and equivalent to an indicator rank of 1.



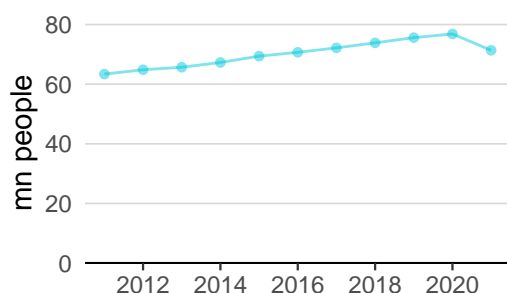
3.1.1 ICT access was equal to 9.0 in 2020 and equivalent to an indicator rank of 50.



4.2.4 Venture capital received was equal to 296.0 bn USD in 2021—up by 102 percentage points from the year prior—and equivalent to an indicator rank of 1.

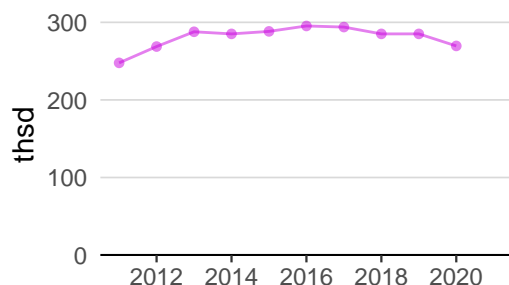


4.3.2 Domestic industry diversification was equal to 0.1 in 2020—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 11.

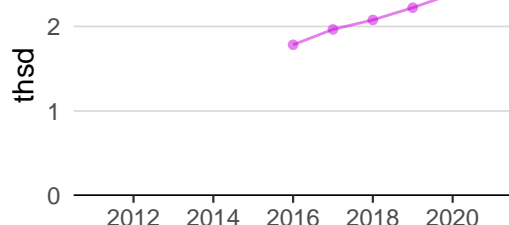


5.1.1 Knowledge-intensive employment was equal to 71.4 mn people in 2021—down by 7 percentage points from the year prior—and equivalent to an indicator rank of 18.

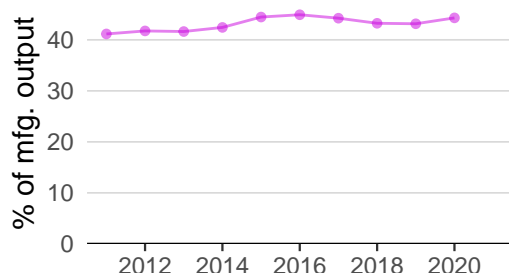
Innovation outputs



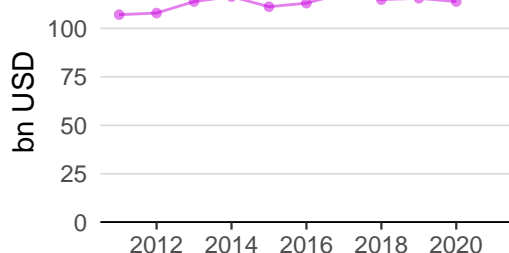
6.1.1 Patents by origin was equal to 269.6 thsd in 2020—down by 5 percentage points from the year prior—and equivalent to an indicator rank of 1.



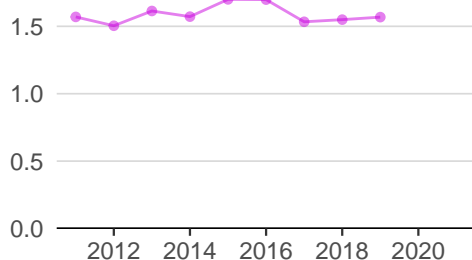
6.1.5 Citable documents H-index was equal to 2.7 thsd in 2021—up by 14 percentage points from the year prior—and equivalent to an indicator rank of 1.



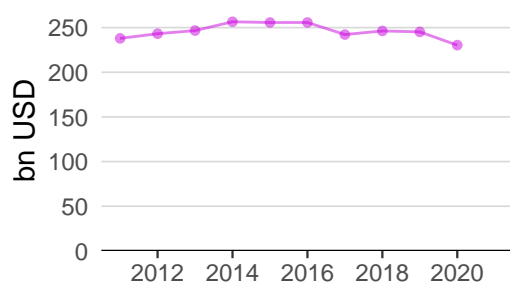
6.2.5 High-tech manufacturing was equal to 44.3% of mfg. output in 2020—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 20.



6.3.1 Intellectual property receipts was equal to 113.8 bn USD in 2020—down by 2 percentage points from the year prior—and equivalent to an indicator rank of 4.



6.3.2 Production and export complexity was equal to 1.6 in 2019—up by 1 percentage point from the year prior—and equivalent to an indicator rank of 11.



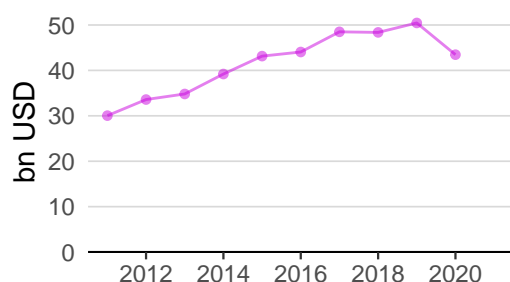
6.3.3 High-tech exports was equal to 230.3 bn USD in 2020—down by 6 percentage points from the year prior—and equivalent to an indicator rank of 18.



7.1.1 Intangible asset intensity was equal to 92.7% of total value in 2021 and equivalent to an indicator rank of 1.



7.1.3 Global brand value was equal to 5.3 trn USD in 2021—up by 21 percentage points from the year prior—and equivalent to an indicator rank of 2.



7.2.1 Cultural and creative services exports was equal to 43.5 bn USD in 2020—down by 14 percentage points from the year prior—and equivalent to an indicator rank of 14.

INNOVATION TOP PERFORMERS FOR THE UNITED STATES OF AMERICA

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank
		[mn EUR]	[%]	[%]	
ALPHABET	Software & Computer Services	22,470	6.0	15.1	1
MICROSOFT	Software & Computer Services	16,882	7.5	12.3	3
APPLE	Technology Hardware & Equipment	15,282	15.6	6.8	5

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
MASSACHUSETTS INSTITUTE OF TECHNOLOGY	100.0	1
STANFORD UNIVERSITY	98.7	3=
HARVARD UNIVERSITY	98.0	5

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
MICROSOFT	1
APPLE	2
AMAZON	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
APPLE	Tech	1
AMAZON	Retail	2
GOOGLE	Media	3

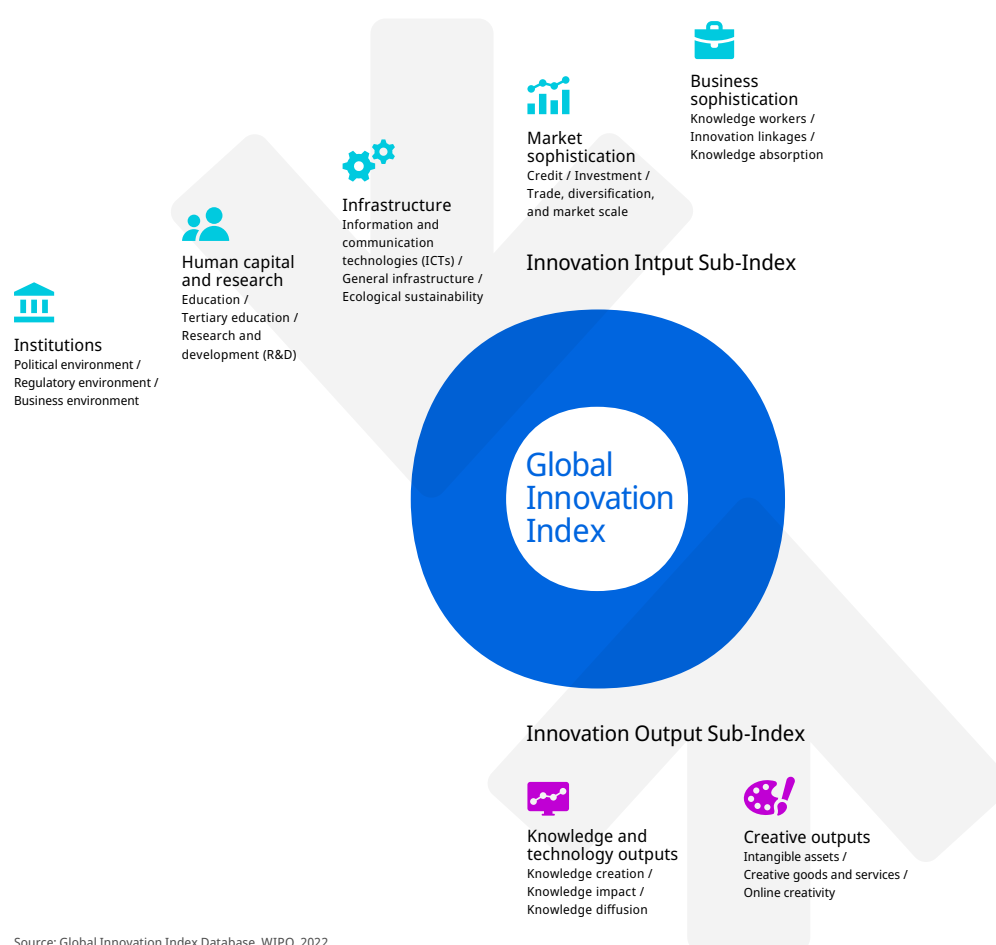
Source: Brand Finance (<https://brandirectory.com>).

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.