



## 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**

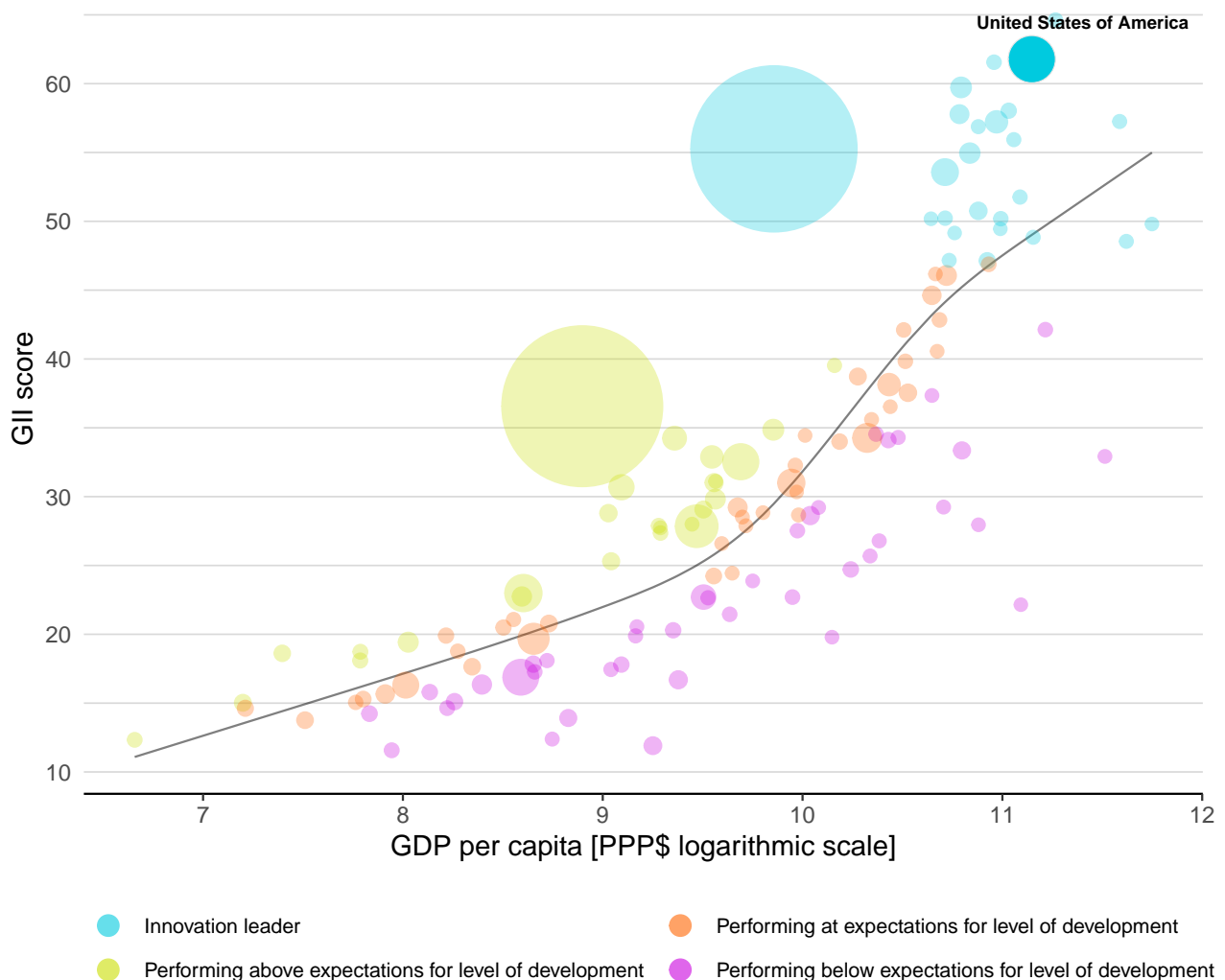
The United States of America ranks 1st among the 2 economies in Northern America.

## 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

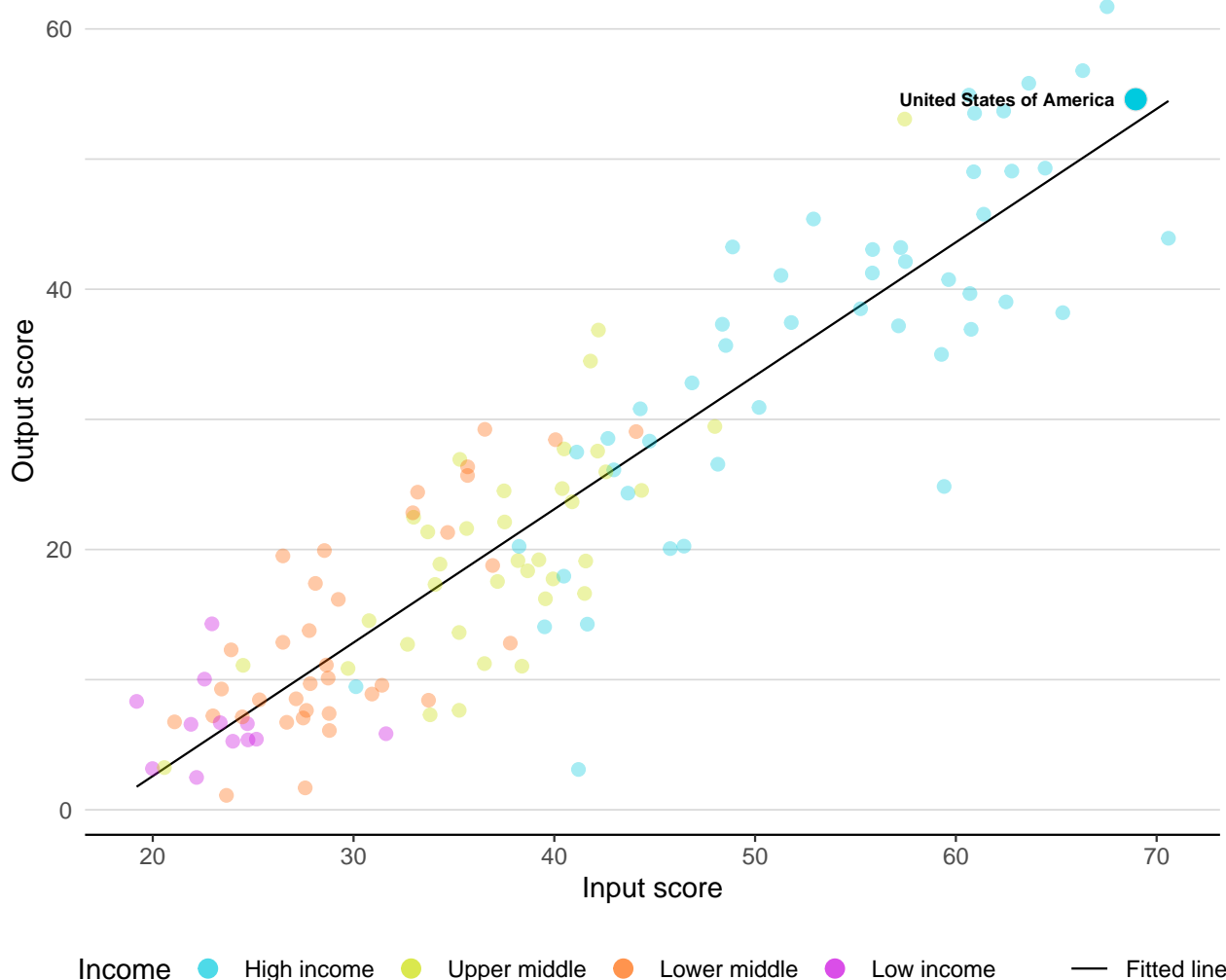


## EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

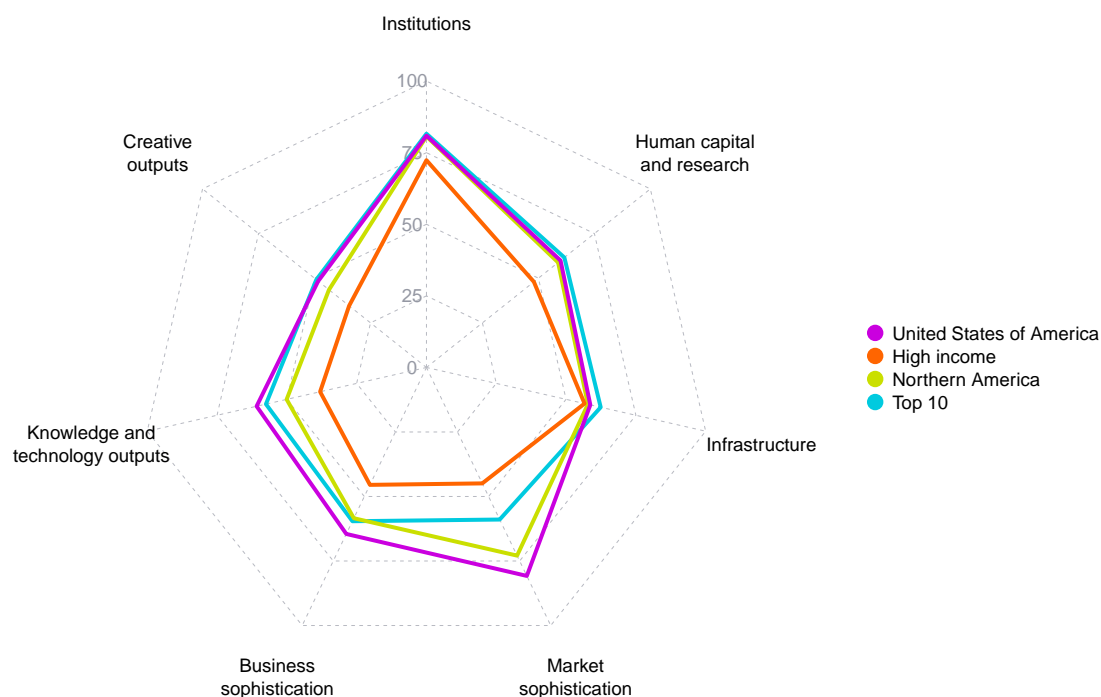
The United States of America produces more innovation outputs relative to its level of innovation investments.

### 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.

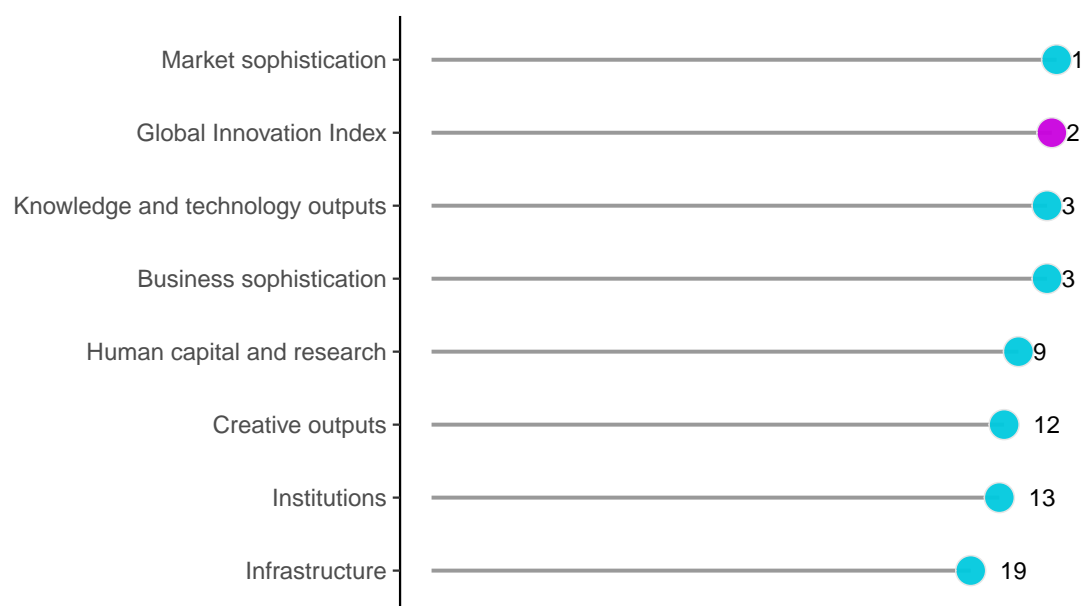
#### Northern America

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](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			
 <b>Institutions</b>		80.9	13	 <b>Business sophistication</b>		64.5 3 ● ◆
1.1	<b>Political environment</b>	78.1	23	5.1	<b>Knowledge workers</b>	75.0 4 ◆
1.1.1	Political and operational stability*	78.2	35	5.1.1	Knowledge-intensive employment, %	46.8 18
1.1.2	Government effectiveness*	78.1	23	5.1.2	Firms offering formal training, %	n/a n/a
1.2	<b>Regulatory environment</b>	89.4	12	5.1.3	GERD performed by business, % GDP	2.6 3 ●
1.2.1	Regulatory quality*	76.0	21	5.1.4	GERD financed by business, %	66.3 6
1.2.2	Rule of law*	81.6	21	5.1.5	Females employed w/advanced degrees, %	28.0 8
1.2.3	Cost of redundancy dismissal	8.0	1 ●	5.2	<b>Innovation linkages</b>	66.1 4 ◆
1.3	<b>Business environment</b>	75.3	11	5.2.1	University-industry R&D collaboration†	79.6 1 ● ◆
1.3.1	Policies for doing business†	78.6	7	5.2.2	State of cluster development and depth†	78.5 1 ● ◆
1.3.2	Entrepreneurship policies and culture*	72.0	13	5.2.3	GERD financed by abroad, % GDP	0.2 12
 <b>Human capital and research</b>		59.9	9	5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	0.2 5
2.1	<b>Education</b>	58.6	44	5.2.5	Patent families/bn PPP\$ GDP	3.3 12
2.1.1	Expenditure on education, % GDP	4.9	46	5.3	<b>Knowledge absorption</b>	52.5 10
2.1.2	Government funding/pupil, secondary, % GDP/cap	22.6	36	5.3.1	Intellectual property payments, % total trade	1.6 21
2.1.3	School life expectancy, years	16.3	30	5.3.2	High-tech imports, % total trade	19.2 11 ◆
2.1.4	PISA scales in reading, maths and science	495.3	24	5.3.3	ICT services imports, % total trade	1.6 57
2.1.5	Pupil-teacher ratio, secondary	14.7	72 ○ ◇	5.3.4	FDI net inflows, % GDP	1.2 96 ○
2.2	<b>Tertiary education</b>	34.9	48	5.3.5	Research talent, % in businesses	72.3 4 ◆
2.2.1	Tertiary enrolment, % gross	87.9	12	 <b>Knowledge and technology outputs</b>		60.8 3 ● ◆
2.2.2	Graduates in science and engineering, %	19.2	76 ○	6.1	<b>Knowledge creation</b>	69.6 3 ●
2.2.3	Tertiary inbound mobility, %	5.2	48	6.1.1	Patents by origin/bn PPP\$ GDP	12.9 1 ● ◆
2.3	<b>Research and development (R&amp;D)</b>	86.1	2 ● ◆	6.1.2	PCT patents by origin/bn PPP\$ GDP	2.6 13
2.3.1	Researchers, FTE/mn pop.	4,829.1	19	6.1.3	Utility models by origin/bn PPP\$ GDP	n/a n/a
2.3.2	Gross expenditure on R&D, % GDP	3.5	5	6.1.4	Scientific and technical articles/bn PPP\$ GDP	19.3 50 ◇
2.3.3	Global corporate R&D investors, top 3, mn USD	100.0	1 ● ◆	6.1.5	Citable documents H-index	100.0 1 ● ◆
2.3.4	QS university ranking, top 3*	98.9	1 ● ◆	6.2	<b>Knowledge impact</b>	55.0 2 ● ◆
 <b>Infrastructure</b>		58.7	19	6.2.1	Labor productivity growth, %	1.5 46
3.1	<b>Information and communication technologies (ICTs)</b>	92.1	7	6.2.2	New businesses/th pop. 15–64	n/a n/a
3.1.1	ICT access*	89.5	50	6.2.3	Software spending, % GDP	1.1 1 ● ◆
3.1.2	ICT use*	84.0	11	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	1.0 106 ○ ◇
3.1.3	Government's online service*	94.7	7	6.2.5	High-tech manufacturing, %	44.3 20
3.1.4	E-participation*	100.0	1 ●	6.3	<b>Knowledge diffusion</b>	57.9 9
3.2	<b>General infrastructure</b>	58.6	10	6.3.1	Intellectual property receipts, % total trade	4.3 4 ◆
3.2.1	Electricity output, GWh/mn pop.	12,816.4	9	6.3.2	Production and export complexity	78.4 11
3.2.2	Logistics performance*	85.6	14	6.3.3	High-tech exports, % total trade	9.4 18
3.2.3	Gross capital formation, % GDP	21.1	84 ○	6.3.4	ICT services exports, % total trade	2.3 56
3.3	<b>Ecological sustainability</b>	25.4	67 ◇	 <b>Creative outputs</b>		48.4 12
3.3.1	GDP/unit of energy use	9.5	75 ○	7.1	<b>Intangible assets</b>	52.8 16
3.3.2	Environmental performance*	51.1	36	7.1.1	Intangible asset intensity, top 15, %	92.7 1 ● ◆
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	0.2	113 ○ ◇	7.1.2	Trademarks by origin/bn PPP\$ GDP	26.3 81 ○ ◇
 <b>Market sophistication</b>		80.8	1 ● ◆	7.1.3	Global brand value, top 5,000, % GDP	229.9 2 ● ◆
4.1	<b>Credit</b>	69.8	3 ● ◆	7.1.4	Industrial designs by origin/bn PPP\$ GDP	1.0 65 ○
4.1.1	Finance for startups and scaleups*	56.3	5 ◆	7.2	<b>Creative goods and services</b>	44.8 4 ◆
4.1.2	Domestic credit to private sector, % GDP	215.9	2 ● ◆	7.2.1	Cultural and creative services exports, % total trade	1.8 14
4.1.3	Loans from microfinance institutions, % GDP	n/a	n/a	7.2.2	National feature films/mn pop. 15–69	3.5 34
4.2	<b>Investment</b>	76.3	5 ◆	7.2.3	Entertainment and media market/th pop. 15–69	100.0 1 ● ◆
4.2.1	Market capitalization, % GDP	166.7	7	7.2.4	Printing and other media, % manufacturing	1.4 26
4.2.2	Venture capital investors, deals/bn PPP\$ GDP	0.4	12	7.2.5	Creative goods exports, % total trade	2.8 18
4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	0.3	1 ● ◆	7.3	<b>Online creativity</b>	43.0 14
4.2.4	Venture capital received, value, % GDP	0.0	1 ● ◆	7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	100.0 1 ● ◆
4.3	<b>Trade, diversification, and market scale</b>	96.2	1 ● ◆	7.3.2	Country-code TLDs/th pop. 15–69	2.1 68 ○ ◇
4.3.1	Applied tariff rate, weighted avg., %	1.5	49	7.3.3	GitHub commit pushes received/mn pop. 15–69	53.8 7
4.3.2	Domestic industry diversification	98.5	11	7.3.4	Mobile app creation/bn PPP\$ GDP	16.2 20
4.3.3	Domestic market scale, bn PPP\$	22,939.6	1 ● ◆			

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](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

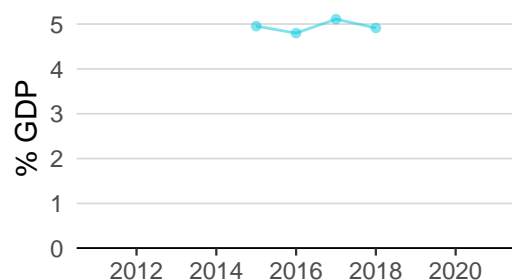
### Outdated data for the United States of America

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

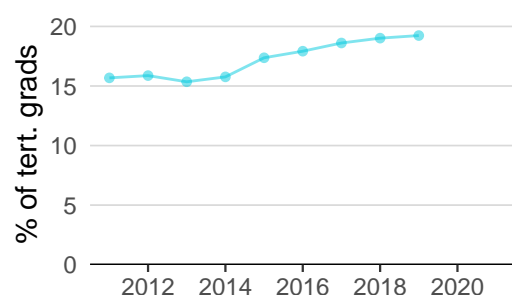
## INNOVATION SYSTEM FOR THE UNITED STATES OF AMERICA

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

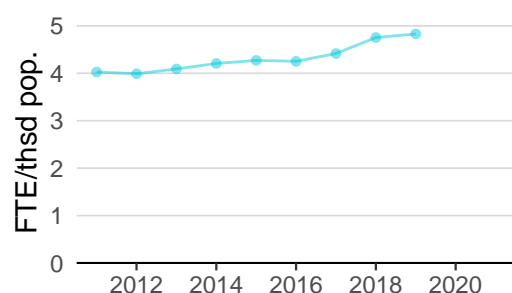
### Innovation inputs



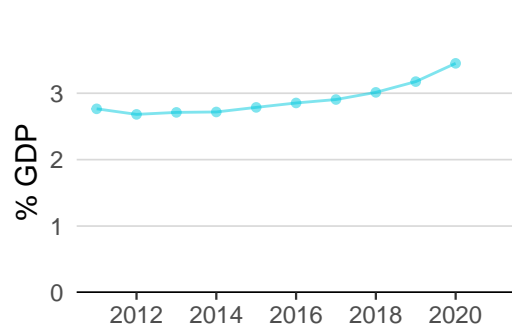
**2.1.1 Expenditure on education** was equal to 4.9% GDP in 2018—down by 4 percentage points from the year prior—and equivalent to an indicator rank of 46.



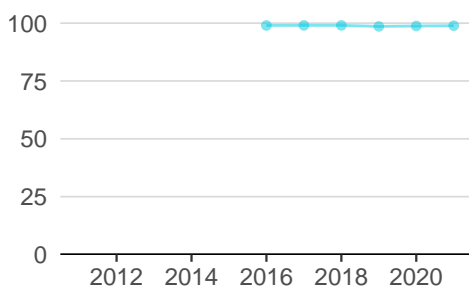
**2.2.2 Graduates in science and engineering** was equal to 19.2% of tert. grads in 2019—up by 1 percentage point from the year prior—and equivalent to an indicator rank of 76.



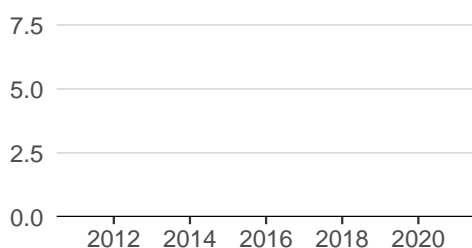
**2.3.1 Researchers** was equal to 4.8 FTE/thsd pop. in 2019—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 19.



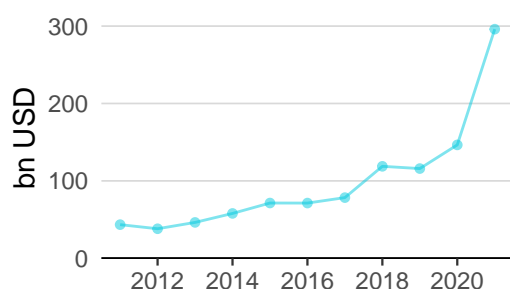
**2.3.2 Gross expenditure on R&D** was equal to 3.5% GDP in 2020—up by 9 percentage points from the year prior—and equivalent to an indicator rank of 5.



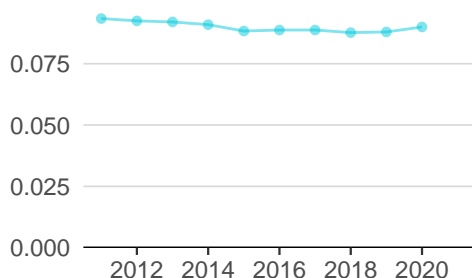
**2.3.4 QS university ranking** was equal to 98.9 in 2021—effectively unchanged from the year prior—and equivalent to an indicator rank of 1.



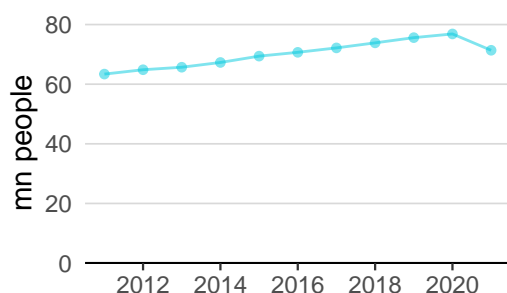
**3.1.1 ICT access** was equal to 9.0 in 2020 and equivalent to an indicator rank of 50.



**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.

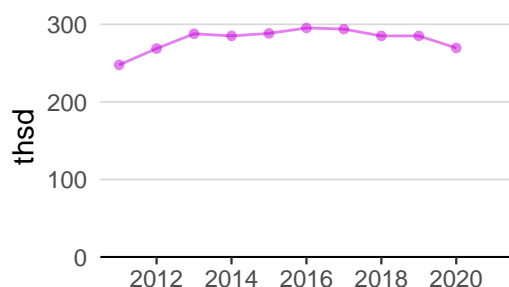


**4.3.2 Domestic industry diversification** was equal to 0.1 in 2020—up by 2 percentage points from the year prior—and equivalent to an indicator rank of 11.

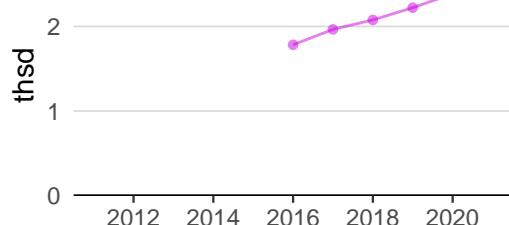


**5.1.1 Knowledge-intensive employment** was equal to 71.4 mn people in 2021—down by 7 percentage points from the year prior—and equivalent to an indicator rank of 18.

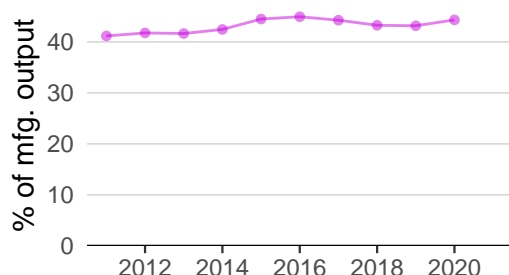
## Innovation outputs



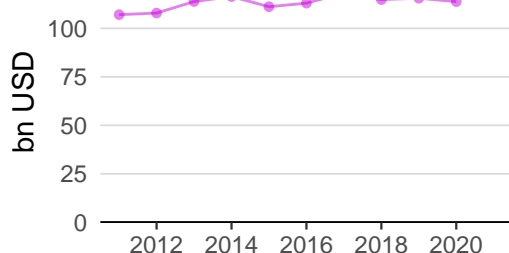
**6.1.1 Patents by origin** was equal to 269.6 thsd in 2020—down by 5 percentage points from the year prior—and equivalent to an indicator rank of 1.



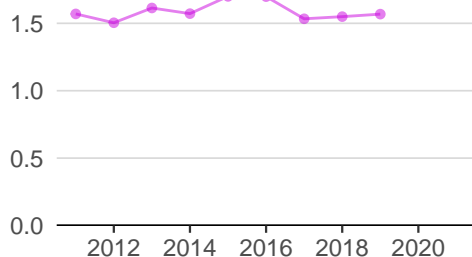
**6.1.5 Citable documents H-index** was equal to 2.7 thsd in 2021—up by 14 percentage points from the year prior—and equivalent to an indicator rank of 1.



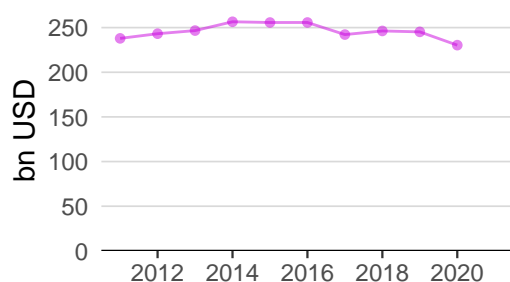
**6.2.5 High-tech manufacturing** was equal to 44.3% of mfg. output in 2020—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 20.



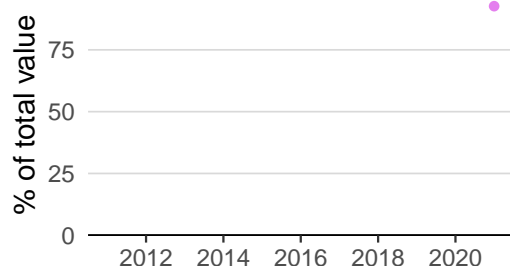
**6.3.1 Intellectual property receipts** was equal to 113.8 bn USD in 2020—down by 2 percentage points from the year prior—and equivalent to an indicator rank of 4.



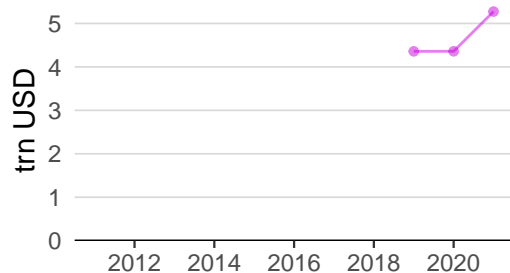
**6.3.2 Production and export complexity** was equal to 1.6 in 2019—up by 1 percentage point from the year prior—and equivalent to an indicator rank of 11.



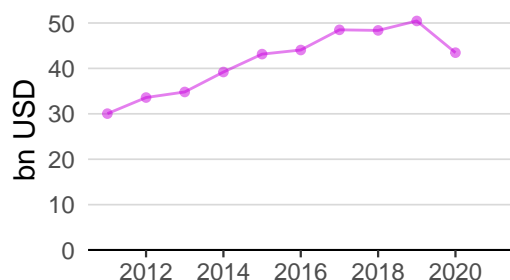
**6.3.3 High-tech exports** was equal to 230.3 bn USD in 2020—down by 6 percentage points from the year prior—and equivalent to an indicator rank of 18.



**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

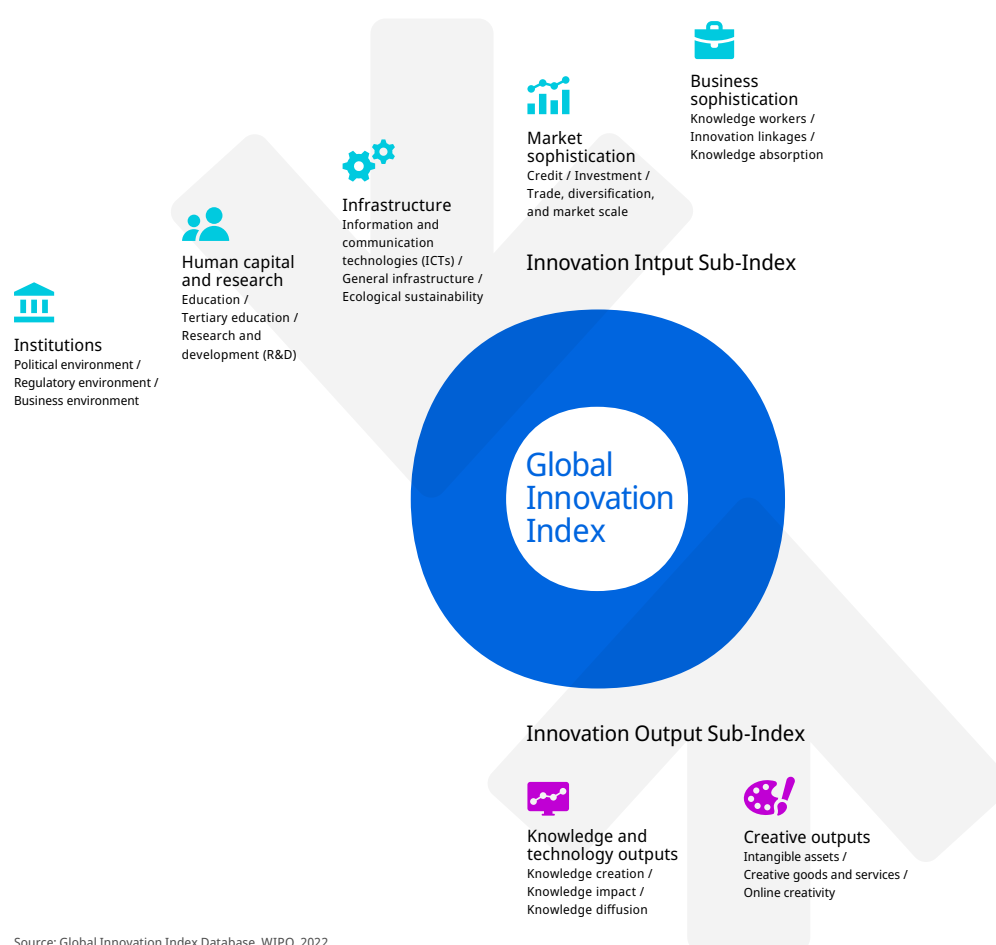
Source: Brand Finance (<https://brandirectory.com>).

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.