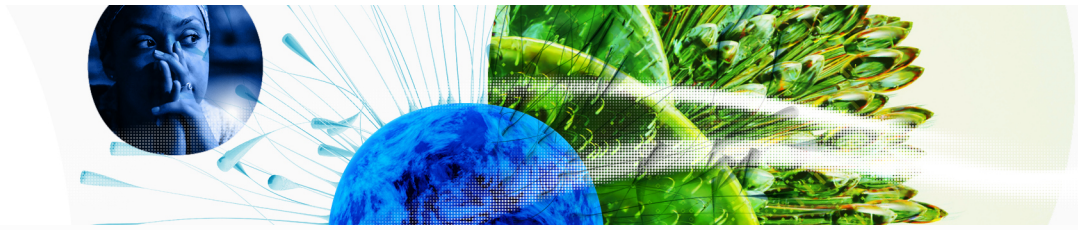
Global Innovation Index 2023



The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

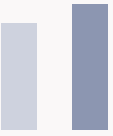
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation**.

United States of America ranking in the Global Innovation Index 2023

> United States of America ranks 3rd among the 132 economies featured in the GII 2023.

> United States of America ranks 3rd among the 50 high-income group economies.

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



> United States of America GII Ranking (2020-2023)

The table shows the rankings of United States of America over the past four years. 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 United States of America in the GII 2023 is between ranks 2 and 4.

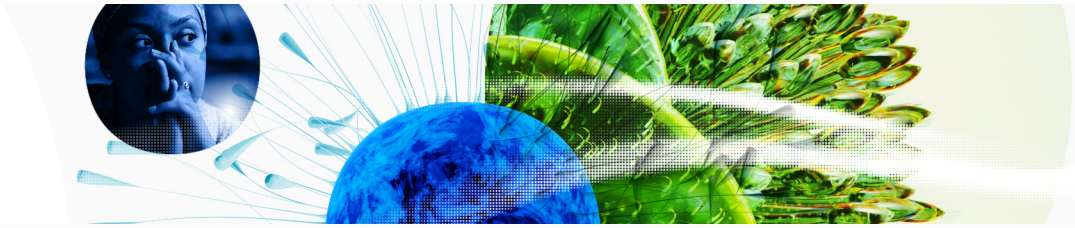
	GII Position	Innovation Inputs	Innovation Outputs
2020	3rd	4th	5th
2021	3rd	3rd	4th
2022	2nd	2nd	5th
2023	3rd	2nd	4th

United States of America performs worse in innovation outputs than innovation inputs in 2023.

This year United States of America ranks 2nd in innovation inputs. This position is the same as last year.

United States of America ranks 4th in innovation outputs. This position is higher than last year.

Global Innovation Index 2023

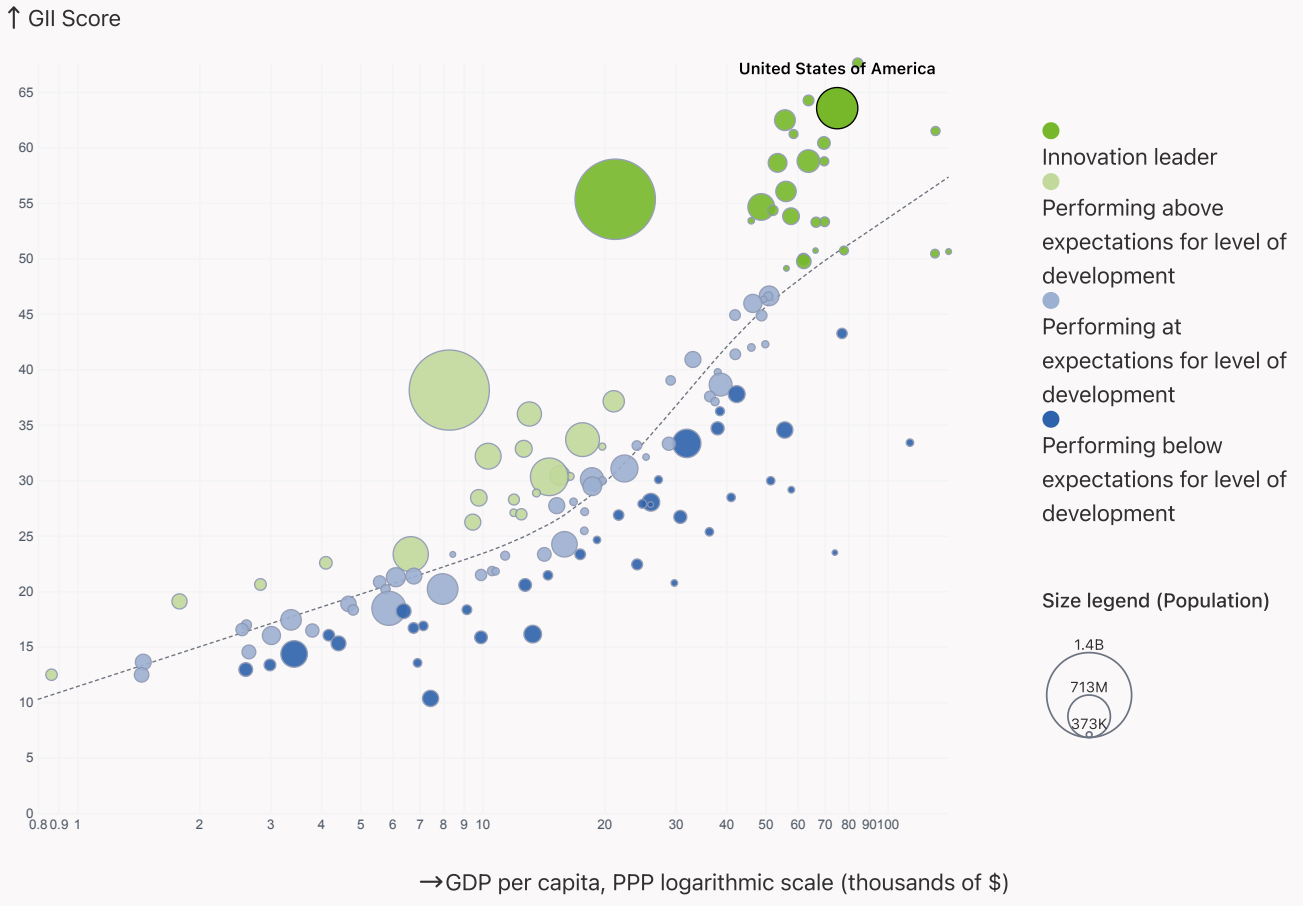


→ Expected vs. observed innovation performance

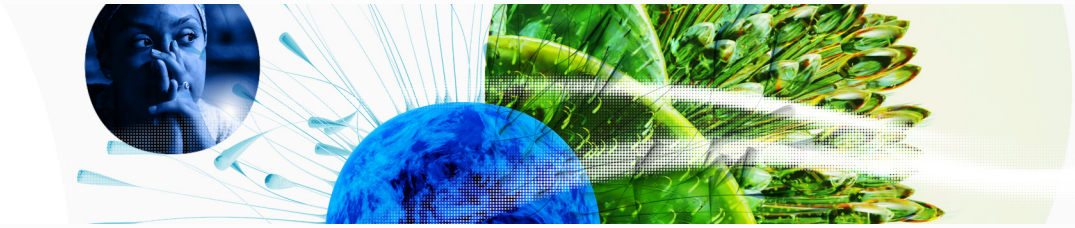
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.

> United States of America is an innovation leader, ranking in the top 25 of the GII.

> Innovation overperformers relative to their economic development



Global Innovation Index 2023

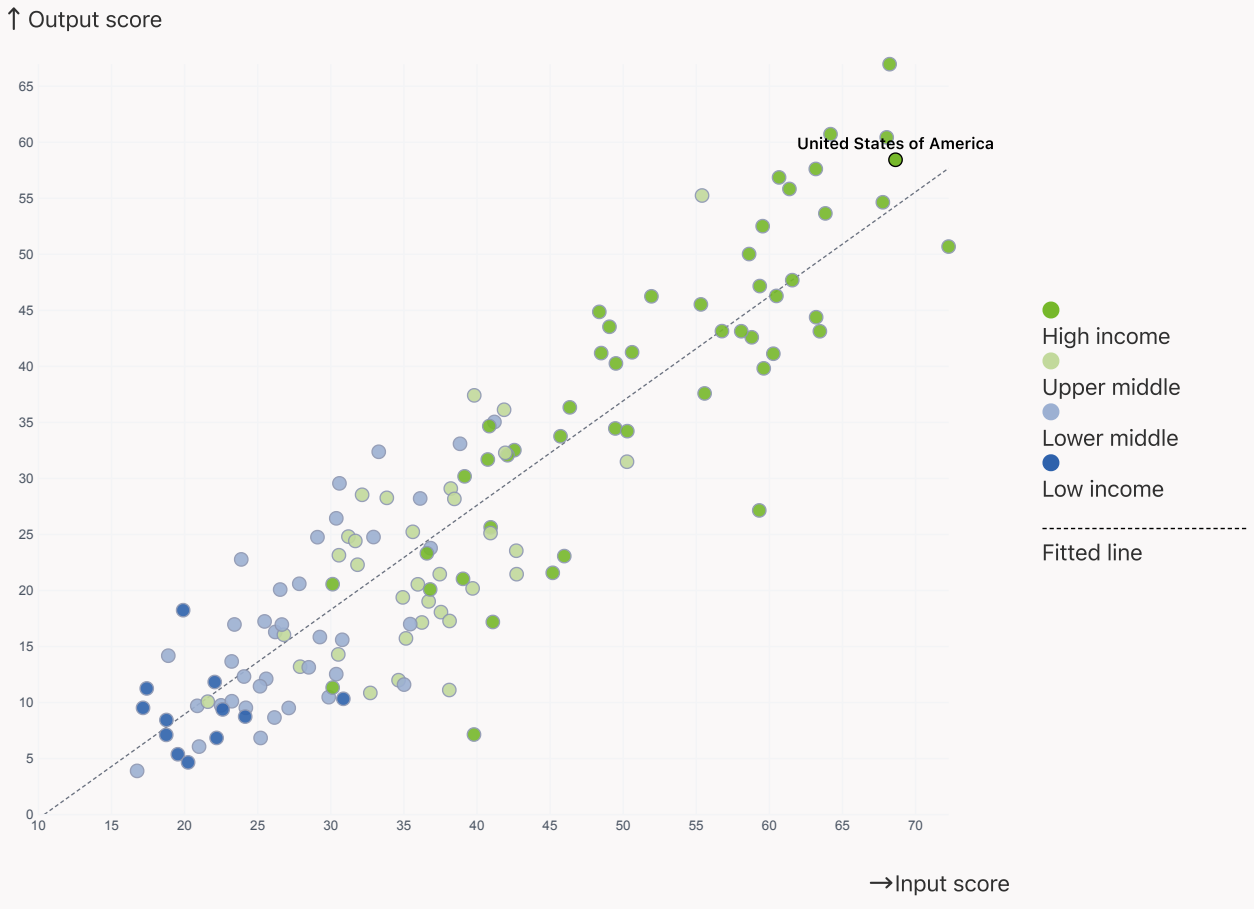


→ Effectively translating innovation investments into innovation outputs

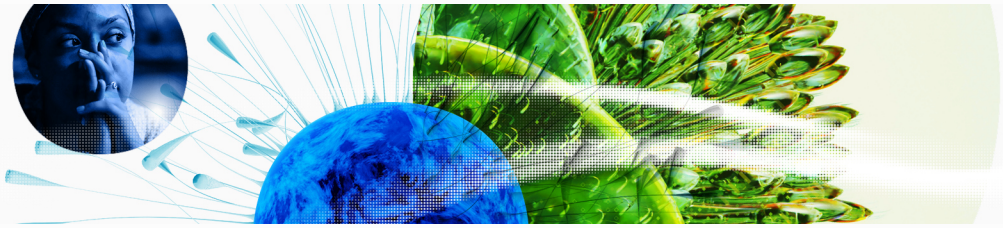
The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

> United States of America produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

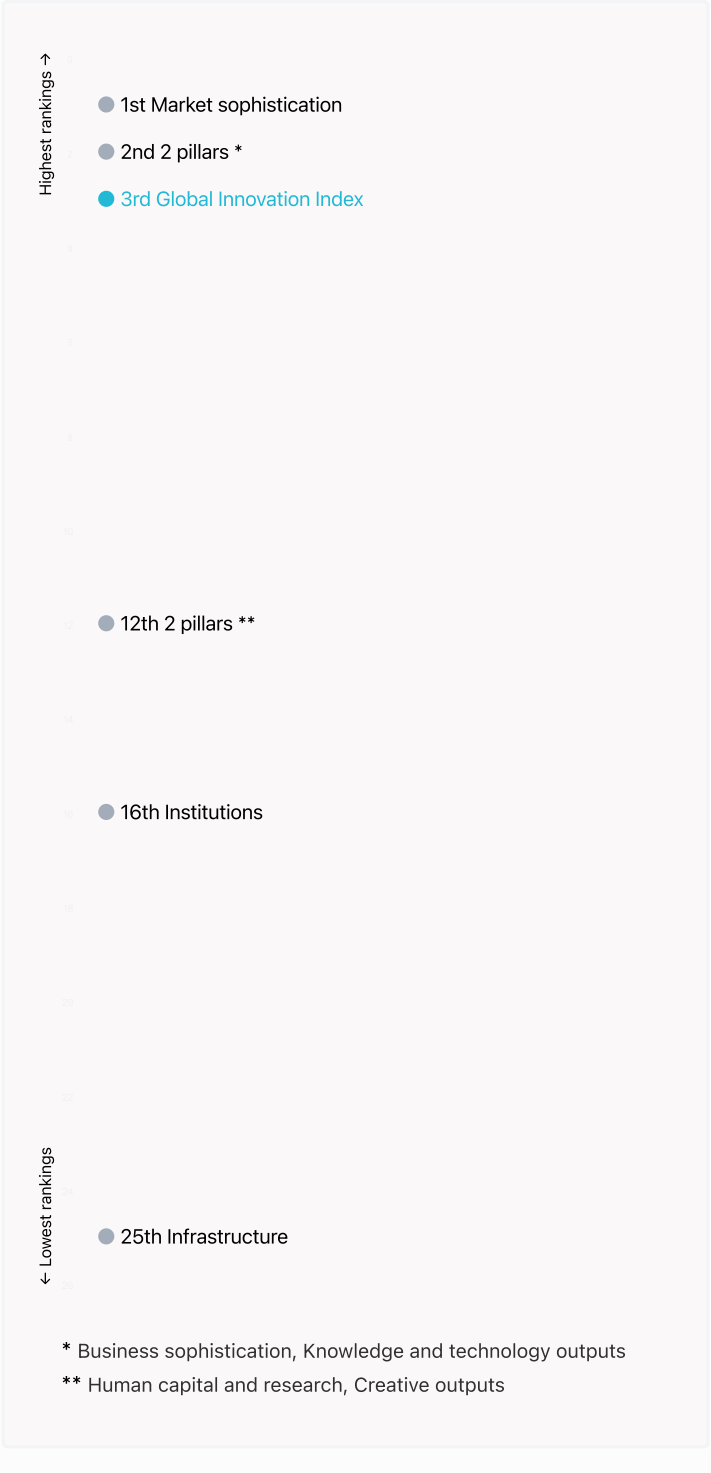


Global Innovation Index 2023



→ Overview of United States of America's rankings in the seven areas of the GII in 2023

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for United States of America are those that rank above the GII (shown in blue) and the weakest are those that rank below.



* Business sophistication, Knowledge and technology outputs

** Human capital and research, Creative outputs

> Highest rankings

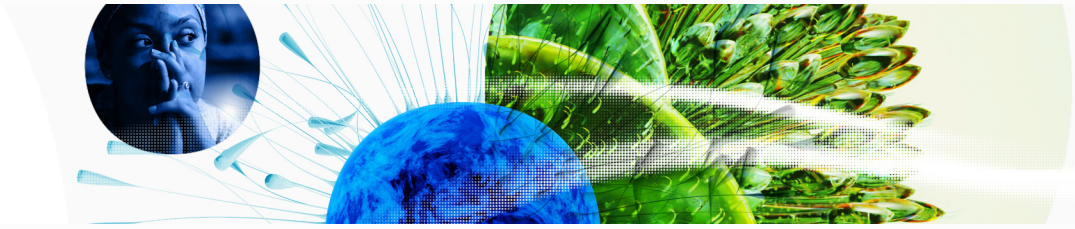
United States of America ranks highest in Market sophistication (1st) and Business sophistication, Knowledge and technology outputs (2nd).

> Lowest rankings

United States of America ranks lowest in Infrastructure (25th), Institutions (16th) and Human capital and research, Creative outputs (12th).

The full WIPO Intellectual Property Statistics profile for United States of America can be found on this link.

Global Innovation Index 2023



→ Benchmark of United States of America against other country groupings for each of the seven areas of the GII Index

The charts shows the relative position of United States of America (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

> High-Income economies

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

> Northern America

United States of America performs above the regional average in Knowledge and technology outputs, Creative outputs, Business sophistication, Market sophistication, Infrastructure.

Knowledge and technology outputs

- United States of America | Score: 63.73
- Top 10 | Score: 58.96
- Northern America | Score: 53.82
- High income | Score: 38.62

Creative outputs

- Top 10 | 56.09
- United States of America | 53.03
- Northern America | 48.88
- High income | 40.27

Business sophistication

- United States of America | 69.91
- Top 10 | 64.39
- Northern America | 62.97
- High income | 46.38

Market sophistication

- United States of America | 82.86
- Northern America | 75.48
- Top 10 | 61.93
- High income | 46.42

Human capital and research

- Top 10 | 60.28
- Northern America | 57.30
- United States of America | 56.54
- High income | 46.30

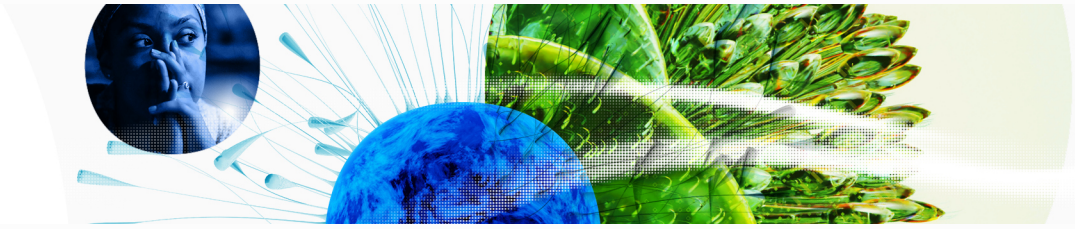
Infrastructure

- Top 10 | 62.83
- United States of America | 56.70
- Northern America | 56.37
- High income | 55.85

Institutions

- Top 10 | 79.85
- Northern America | 77.69
- United States of America | 77.36
- High income | 68.16

Global Innovation Index 2023



→ Innovation strengths and weaknesses in United States of America

The table below gives an overview of the indicator strengths and weaknesses of United States of America in the GII 2023.

> United States of America's main innovation strengths are **Citable documents H-index** (rank 1), **Software spending, % GDP** (rank 1) and **Intangible asset intensity, top 15, %** (rank 1).

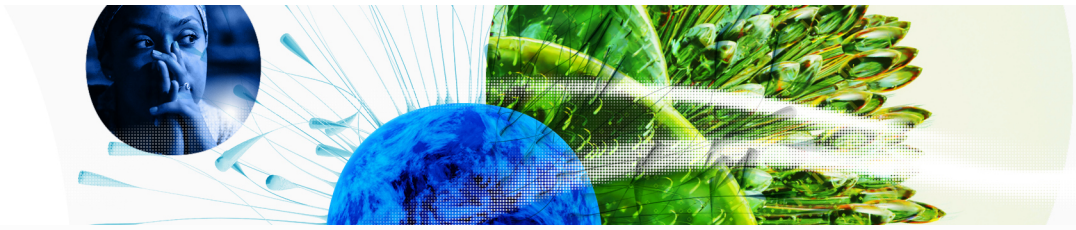
Strengths

Rank	Code	Indicator name
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	1.2.3	Cost of redundancy dismissal
1	4.3.3	Domestic market scale, bn PPP$
1	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	6.3.1	Intellectual property receipts, % total trade
1	2.3.4	QS university ranking, top 3
1	2.3.3	Global corporate R&D investors, top 3, mn US$
1	5.2.2	State of cluster development
1	6.2.2	Unicorn valuation, % GDP
1	4.2.4	VC received, value, % GDP
2	4.1.2	Domestic credit to private sector, % GDP
2	5.3.5	Research talent, % in businesses
2	5.2.1	University-industry R&D collaboration
3	7.1.3	Global brand value, top 5,000
3	5.1.3	GERD performed by business, % GDP
3	2.3.2	Gross expenditure on R&D, % GDP

Weaknesses

Rank	Code	Indicator name
116	3.3.3	ISO 14001 environment/bn PPP$ GDP
104	6.3.5	ISO 9001 quality/bn PPP$ GDP
91	5.3.4	FDI net inflows, % GDP
86	7.1.2	Trademarks by origin/bn PPP$ GDP
81	3.2.3	Gross capital formation, % GDP
73	3.3.1	GDP/unit of energy use
73	2.1.5	Pupil-teacher ratio, secondary
70	2.2.2	Graduates in science and engineering, %
69	7.1.4	Industrial designs by origin/bn PPP$ GDP
68	7.3.2	Country-code TLDs/th pop. 15-69

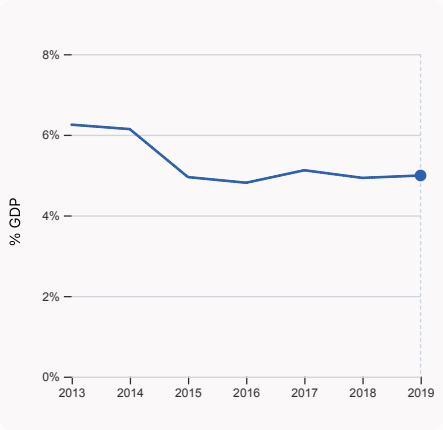
Global Innovation Index 2023



→ United States of America's innovation system

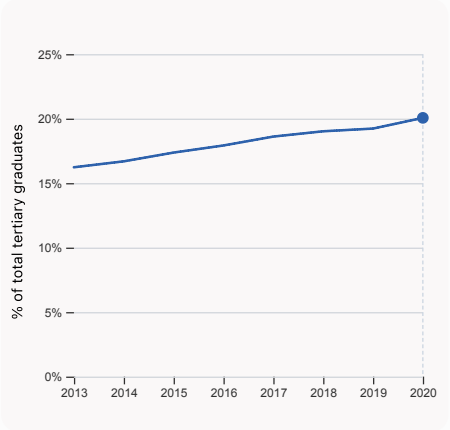
As far as practicable, the plots below present unscaled indicator data.

> Innovation inputs in United States of America



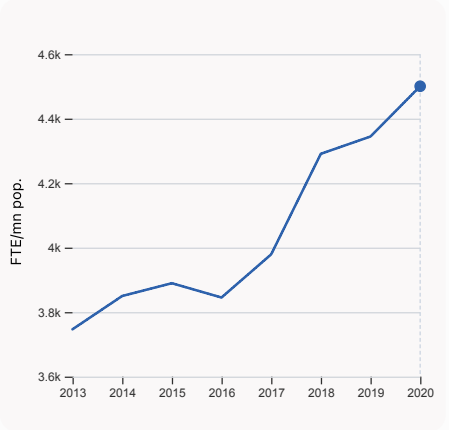
2.1.1 Expenditure on education, % GDP

was equal to 4.99% GDP in 2019, up by 0.06 percentage points from the year prior – and equivalent to an indicator rank of 41.



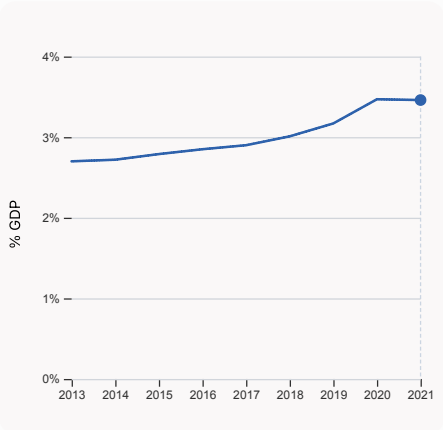
2.2.2 Graduates in science and engineering, %

was equal to 20.06% of total tertiary graduates in 2020, up by 0.83 percentage points from the year prior – and equivalent to an indicator rank of 70.



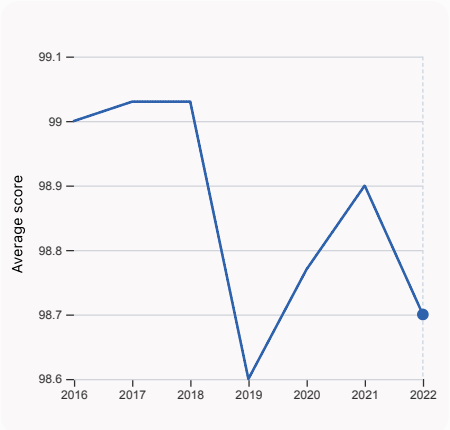
2.3.1 Researchers, FTE/mn pop.

was equal to 4,500.45 FTE/mn pop. in 2020, up by 3.59% from the year prior – and equivalent to an indicator rank of 24.



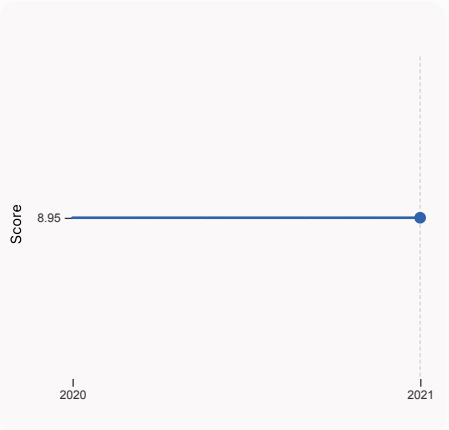
2.3.2 Gross expenditure on R&D, % GDP

was equal to 3.46% GDP in 2021, down by 0.01 percentage points from the year prior – and equivalent to an indicator rank of 3.



2.3.4 QS university ranking, top 3

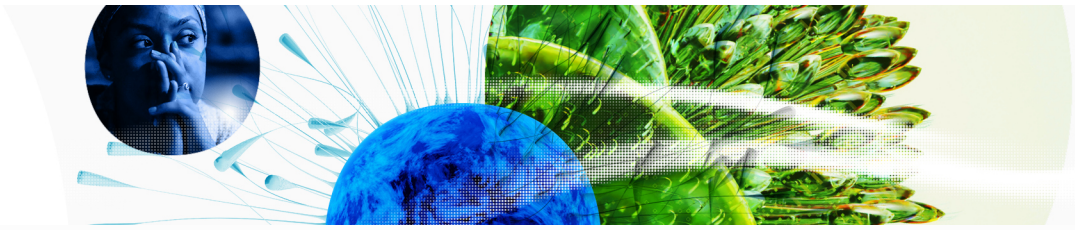
was equal to an average score of 98.7 for the top 3 universities in 2022, down by 0.2% from the year prior – and equivalent to an indicator rank of 1.

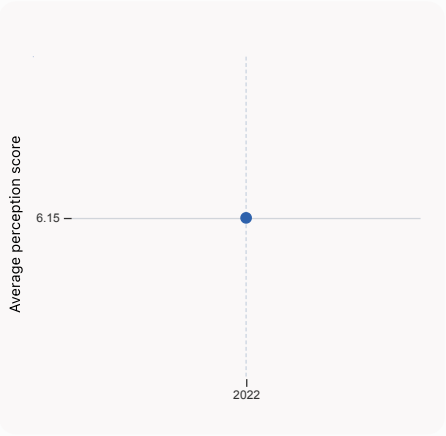


3.1.1 ICT access

was equal to a score of 8.95 in 2021, with no change from the year prior – and equivalent to an indicator rank of 56.

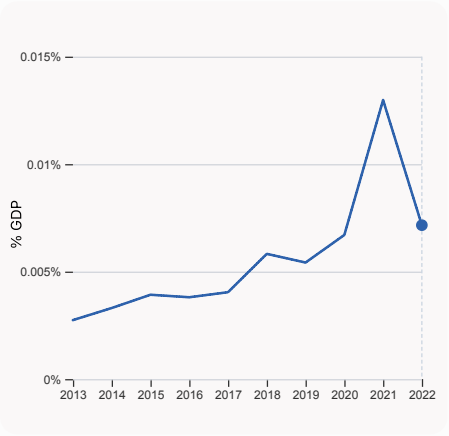
Global Innovation Index 2023





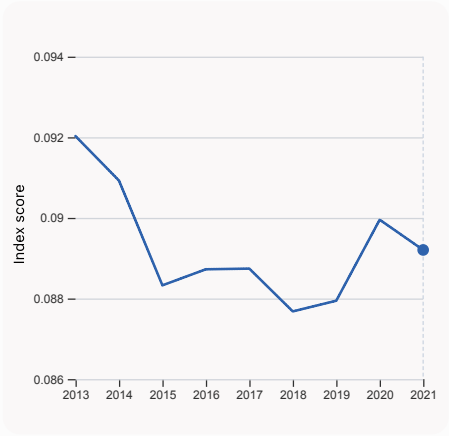
4.1.1 Finance for startups and scaleups

was equal to an average perception score of 6.15 in 2022, equivalent to an indicator rank of 6.



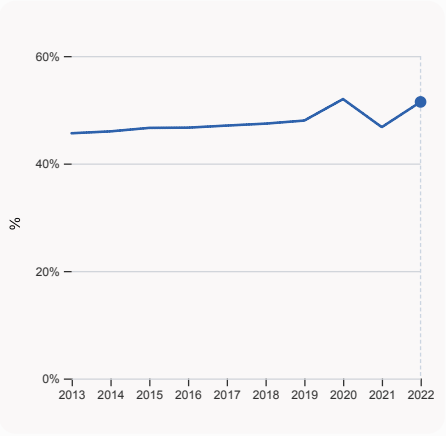
4.2.4 VC received, value, % GDP

was equal to 0.00716% GDP in 2022, down by 0.0058 percentage points from the year prior – and equivalent to an indicator rank of 1.



4.3.2 Domestic industry diversification

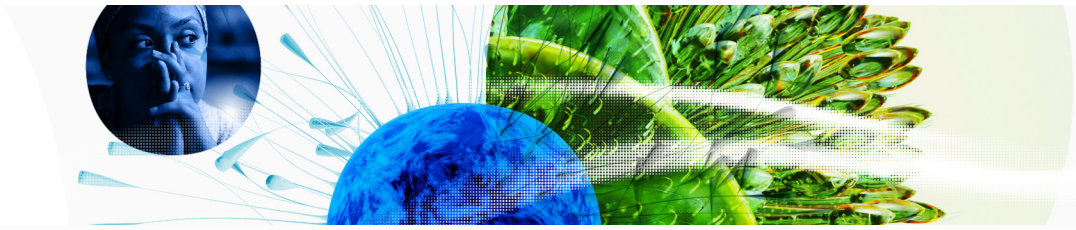
was equal to an index score of 0.089 in 2021, down by 0.83% from the year prior – and equivalent to an indicator rank of 6.



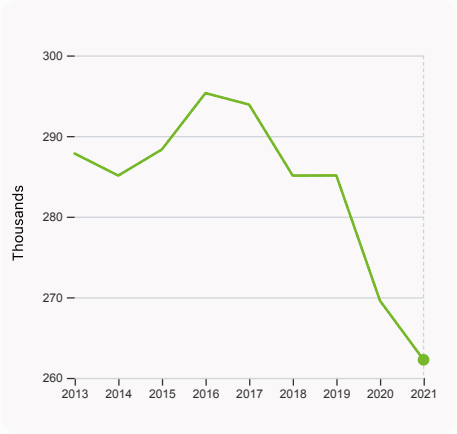
5.1.1 Knowledge-intensive employment, %

was equal to 51.46% in 2022, up by 4.69 percentage points from the year prior – and equivalent to an indicator rank of 9.

Global Innovation Index 2023

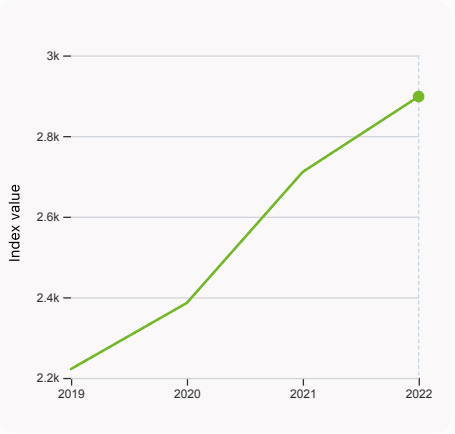


> Innovation outputs in United States of America



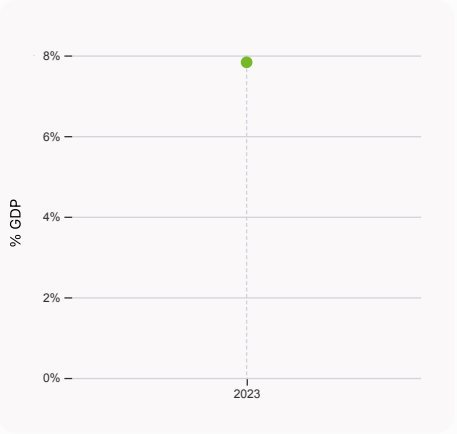
6.1.1 Patents by origin

was equal to 262.24 Thousands in 2021, down by 2.72% from the year prior – and equivalent to an indicator rank of 7.



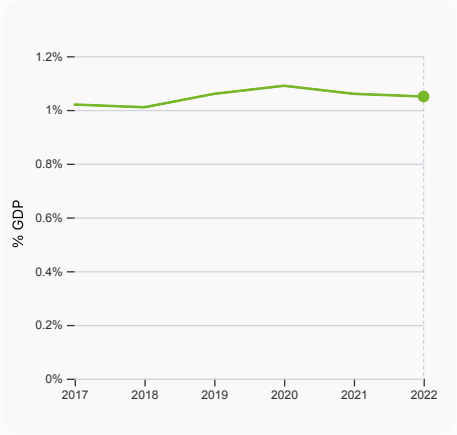
6.1.5 Citable documents H-index

was equal to an index value of 2,898 in 2022, up by 6.9% from the year prior – and equivalent to an indicator rank of 1.



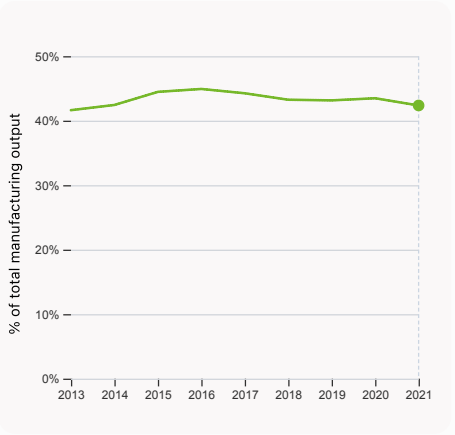
6.2.2 Unicorn valuation, % GDP

was equal to 7.83 % GDP in 2023 – and equivalent to an indicator rank of 1.



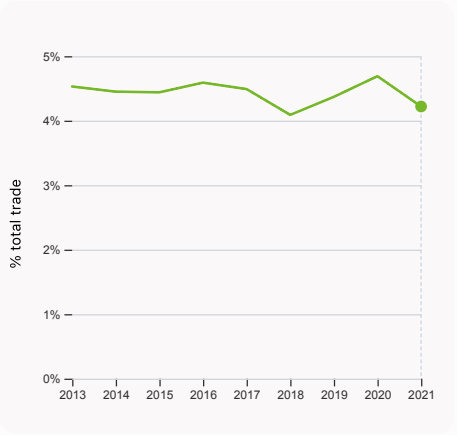
6.2.3 Software spending, % GDP

was equal to 1.05% GDP in 2022, down by 0.01 percentage points from the year prior – and equivalent to an indicator rank of 1.



6.2.4 High-tech manufacturing, %

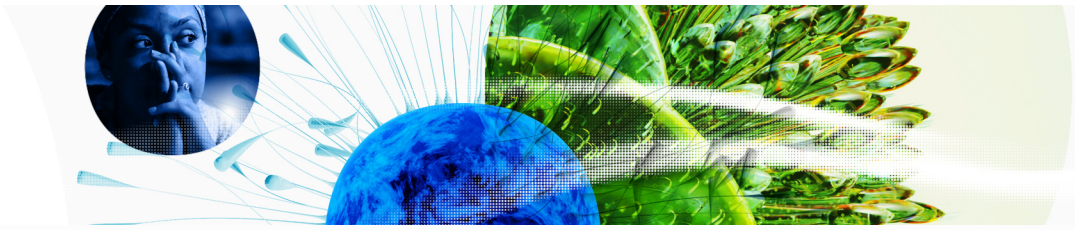
was equal to 42.36% of total manufacturing output in 2021, down by 1.12 percentage points from the year prior – and equivalent to an indicator rank of 24.



6.3.1 Intellectual property receipts, % total trade

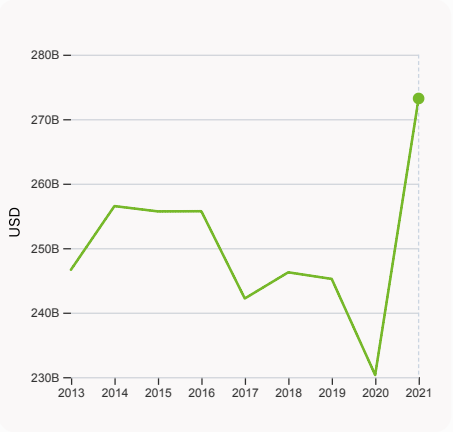
was equal to 4.22% total trade in 2021, down by 0.47 percentage points from the year prior – and equivalent to an indicator rank of 1.

Global Innovation Index 2023



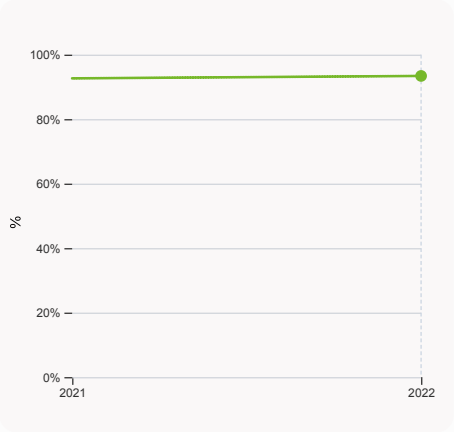
6.3.2 Production and export complexity

was equal to a score of 1.47 in 2020, down by 6.96% from the year prior – and equivalent to an indicator rank of 12.



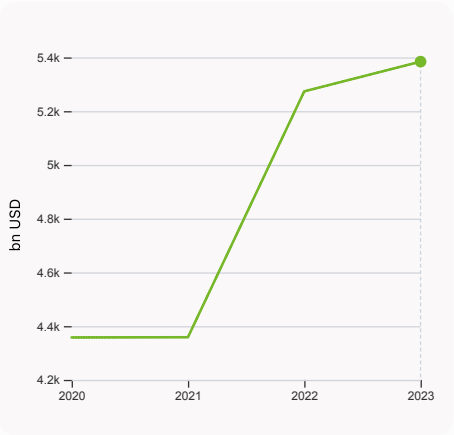
6.3.3 High-tech exports

was equal to 273,205,845,580 USD in 2021, up by 18.61% from the year prior – and equivalent to an indicator rank of 20.



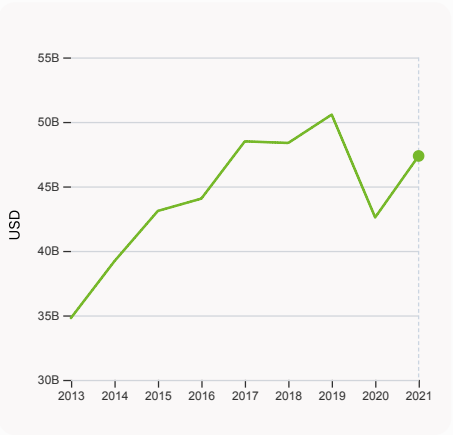
7.1.1 Intangible asset intensity, top 15, %

was equal to 93.4% in 2022, up by 0.75 percentage points from the year prior – and equivalent to an indicator rank of 1.



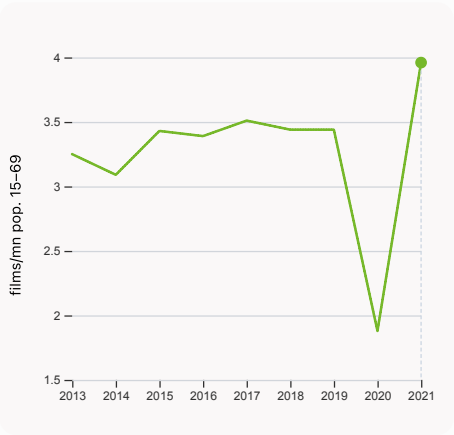
7.1.3 Global brand value, top 5,000

was equal to 5,384.335 bn USD in 2023, up by 2.096% from the year prior – and equivalent to an indicator rank of 3.



7.2.1 Cultural and creative services exports

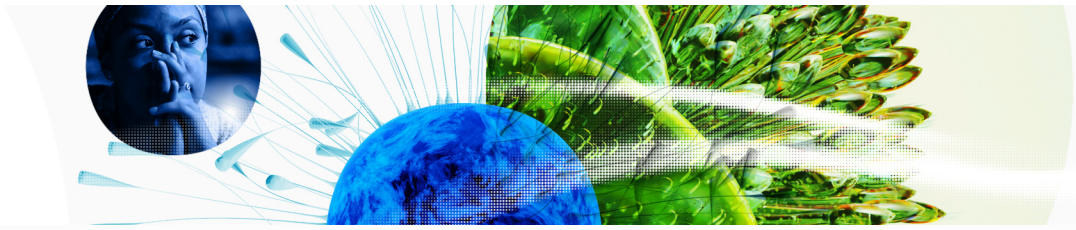
was equal to 47,361,054,000 USD in 2021, up by 11.18% from the year prior – and equivalent to an indicator rank of 19.

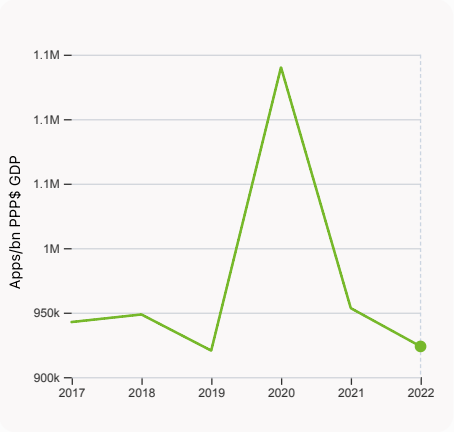


7.2.2 National feature films/mn pop. 15-69

was equal to 3.96 films/mn pop. 15–69 in 2021, up by 110.64% from the year prior – and equivalent to an indicator rank of 34.

Global Innovation Index 2023

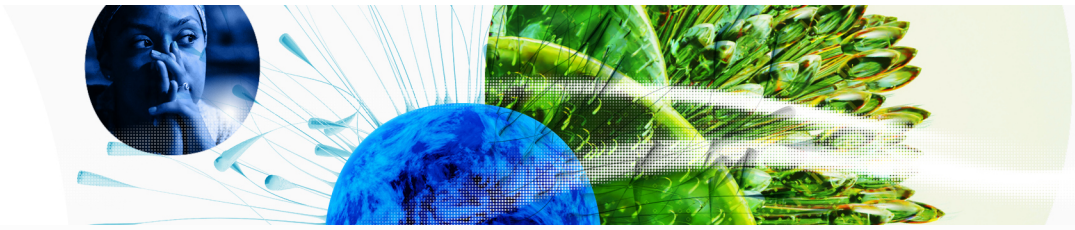




7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 923,796.83 Apps/bn PPP$ GDP in 2022, down by 3.11% from the year prior – and equivalent to an indicator rank of 21.

Global Innovation Index 2023



→ United States of America's innovation top performers

> 2.3.3 Global corporate R&D investors from United States of America

Rank	Firm	Industry	R&D	R&D Growth	R&D Intensity
			[mn EUR]	[%]	[%]
1	ALPHABET	Software & Computer Services	27,867	14	12
2	META	Software & Computer Services	21,768	34	21
3	MICROSOFT	Software & Computer Services	21,642	18	12
5	APPLE	Technology Hardware & Equipment	19,348	17	6

Source: European Commission's Joint Research Centre (https://iri.jrc.ec.europa.eu/scoreboard/2022-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 of United States of America's top universities

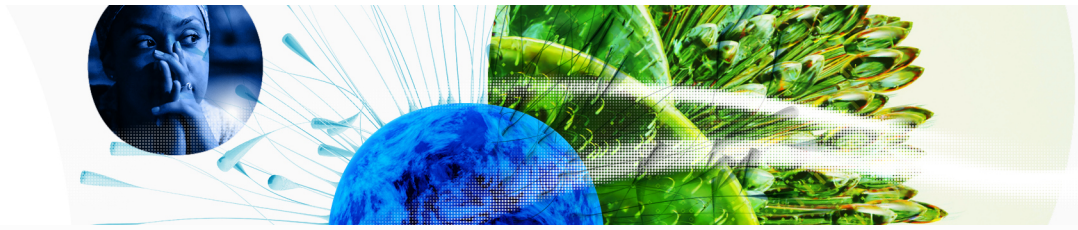
Rank	University	Score
1	MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)	100.00
3	STANFORD UNIVERSITY	98.50
5	HARVARD UNIVERSITY	97.60

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2023).
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".

> 6.2.2 Top Unicorn Companies in United States of America

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	SPACEX	Other	Hawthorne	137
2	STRIPE	Fintech	San Francisco	50
3	EPIC GAMES	Other	Cary	32

Source: CBInsights, Tracker – The Complete List of Unicorn Companies: https://www.cbinsights.com/research-unicorn-companies



> 7.1.1 Top 15 intangible-asset intensive companies in United States of America

Rank	Firm	Intensity, %
1	APPLE INC	95.84
2	MICROSOFT CORP	93.26
3	AMAZON.COM INC	81.02

Source: Brand Finance (https://brandirectory.com/reports/gift-2022).
Note: Brand Finance only provides within economy ranks.

> 7.1.3 Top 5,000 companies in United States of America with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	AMAZON	Retail	299,280.0
2	APPLE	Electronics	297,511.8
3	GOOGLE	Media	281,382.0

Source: Brand Finance (https://brandirectory.com).
Note: Rank corresponds to within economy ranks.

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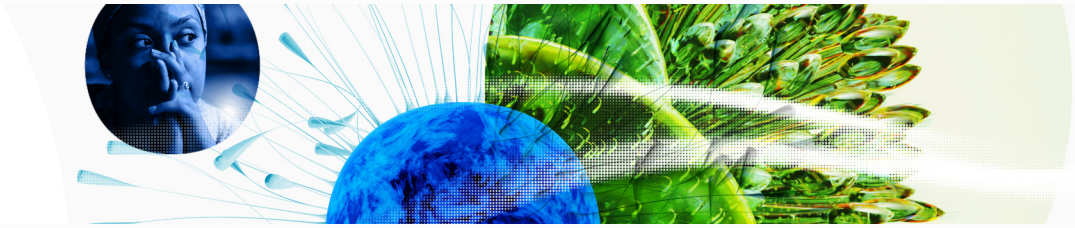

GII 2023 rank

3

United States of America

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
4	2	High	NAC	338.3	25,035.2	75,179.6

	Score / Value	Rank
Institutions	**77.4**	**16**
1.1 Institutional environment	**69.1**	**27**
1.1.1 Operational stability for businesses*	64.6	37
1.1.2 Government effectiveness*	73.6	21
1.2 Regulatory environment	**90.2**	**11**
1.2.1 Regulatory quality*	79.8	18
1.2.2 Rule of law*	81.2	20
1.2.3 Cost of redundancy dismissal	8.0	1 ●
1.3 Business environment	**72.7**	**21**
1.3.1 Policies for doing business†	81.4	7
1.3.2 Entrepreneurship policies and culture†	64.0	18
Human capital and research	**56.5**	**12**
2.1 Education	**58.3**	**45**
2.1.1 Expenditure on education, % GDP	5.0	41
2.1.2 Government funding/pupil, secondary, % GDP/cap	22.6	36
2.1.3 School life expectancy, years	16.3	31
2.1.4 PISA scales in reading, maths and science	495.3	24
2.1.5 Pupil-teacher ratio, secondary	14.5	73 ○ ◇
2.2 Tertiary education	**34.1**	**53**
2.2.1 Tertiary enrolment, % gross	87.6	14
2.2.2 Graduates in science and engineering, %	20.1	70 ○
2.2.3 Tertiary inbound mobility, %	5.1	47
2.3 Research and development (R&D)	**77.2**	**2**
2.3.1 Researchers, FTE/mn pop.	4,500.5	24
2.3.2 Gross expenditure on R&D, % GDP	3.5	3 ●
2.3.3 Global corporate R&D investors, top 3, mn US$	100.0	1 ●
2.3.4 QS university ranking, top 3*	100.0	1 ●
Infrastructure	**56.7**	**25**
3.1 Information and communication technologies (ICTs)	**90.6**	**11**
3.1.1 ICT access*	84.4	56
3.1.2 ICT use*	95.0	11
3.1.3 Government's online service*	92.3	9
3.1.4 E-participation*	90.7	10
3.2 General infrastructure	**53.7**	**12**
3.2.1 Electricity output, GWh/mn pop.	13,154.8	9
3.2.2 Logistics performance*	77.3	16
3.2.3 Gross capital formation, % GDP	22.0	81 ○
3.3 Ecological sustainability	**25.8**	**62 ◇**
3.3.1 GDP/unit of energy use	9.7	73 ○
3.3.2 Environmental performance*	54.6	36
3.3.3 ISO 14001 environment/bn PPP$ GDP	0.2	116 ○ ◇
Market sophistication	**82.9**	**1**
4.1 Credit	**83.5**	**2**
4.1.1 Finance for startups and scaleups†	83.9	6
4.1.2 Domestic credit to private sector, % GDP	216.2	2 ●
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a
4.2 Investment	**68.8**	**4**
4.2.1 Market capitalization, % GDP	166.7	7
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	0.4	13
4.2.3 VC recipients, deals/bn PPP$ GDP	0.3	6
4.2.4 VC received, value, % GDP	0.0	1 ●
4.3 Trade, diversification, and market scale	**96.3**	**1**
4.3.1 Applied tariff rate, weighted avg., %	1.5	49
4.3.2 Domestic industry diversification	98.7	6
4.3.3 Domestic market scale, bn PPP$	25,035.2	1 ●

	Score / Value	Rank
Business sophistication	**69.9**	**2**
5.1 Knowledge workers	**76.8**	**2**
5.1.1 Knowledge-intensive employment, %	51.5	9
5.1.2 Firms offering formal training, %	n/a	n/a
5.1.3 GERD performed by business, % GDP	2.7	3 ●
5.1.4 GERD financed by business, %	67.9	6
5.1.5 Females employed w/advanced degrees, %	27.9	9
5.2 Innovation linkages	**75.8**	**4**
5.2.1 University-industry R&D collaboration†	99.9	2 ●
5.2.2 State of cluster development†	100.0	1 ●
5.2.3 GERD financed by abroad, % GDP	0.2	15
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	**57.2**	**5**
5.3.1 Intellectual property payments, % total trade	1.6	20
5.3.2 High-tech imports, % total trade	18.5	9
5.3.3 ICT services imports, % total trade	1.5	60
5.3.4 FDI net inflows, % GDP	1.4	91 ○
5.3.5 Research talent, % in businesses	80.4	2 ●
Knowledge and technology outputs	**63.7**	**2**
6.1 Knowledge creation	**61.2**	**8**
6.1.1 Patents by origin/bn PPP$ GDP	11.4	7
6.1.2 PCT patents by origin/bn PPP$ GDP	2.4	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	n/a	n/a
6.1.5 Citable documents H-index	100.0	1 ●
6.2 Knowledge impact	**77.6**	**1**
6.2.1 Labor productivity growth, %	1.4	50
6.2.2 Unicorn valuation, % GDP	7.8	1 ●
6.2.3 Software spending, % GDP	1.0	1 ●
6.2.4 High-tech manufacturing, %	42.4	24
6.3 Knowledge diffusion	**52.5**	**14**
6.3.1 Intellectual property receipts, % total trade	4.4	1 ●
6.3.2 Production and export complexity	83.4	12
6.3.3 High-tech exports, % total trade	9.2	20
6.3.4 ICT services exports, % total trade	2.0	57
6.3.5 ISO 9001 quality/bn PPP$ GDP	1.1	104 ○ ◇
Creative outputs	**53.0**	**12**
7.1 Intangible assets	**52.2**	**21**
7.1.1 Intangible asset intensity, top 15, %	93.4	1 ●
7.1.2 Trademarks by origin/bn PPP$ GDP	24.0	86 ○ ◇
7.1.3 Global brand value, top 5,000	20.6	3 ●
7.1.4 Industrial designs by origin/bn PPP$ GDP	1.0	69 ○ ◇
7.2 Creative goods and services	**47.3**	**5**
7.2.1 Cultural and creative services exports, % total trade	1.6	19
7.2.2 National feature films/mn pop. 15-69	4.0	34
7.2.3 Entertainment and media market/th pop. 15-69	100.0	1 ●
7.2.4 Creative goods exports, % total trade	2.7	20
7.3 Online creativity	**60.4**	**13**
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	2.3	68 ○ ◇
7.3.3 GitHub commits/mn pop. 15-69	63.7	11
7.3.4 Mobile app creation/bn PPP$ GDP	75.7	21

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/gii-ranking. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

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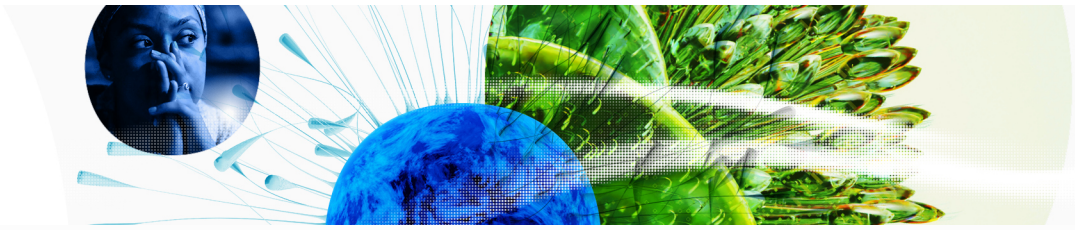

→ Data availability

The following tables list indicators that are either missing or outdated for United States of America.

> United States of America has missing data for three indicators and outdated data for three indicators.

> Missing data for United States of America

Code	Indicator name	Economy Year	Model Year	Source
4.1.3	Loans from microfinance institutions, % GDP	n/a	2021	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	2021	World Intellectual Property Organization; International Monetary Fund

> Outdated data for United States of America

Code	Indicator name	Economy Year	Model Year	Source
2.1.1	Expenditure on education, % GDP	2019	2021	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2020	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	2020	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

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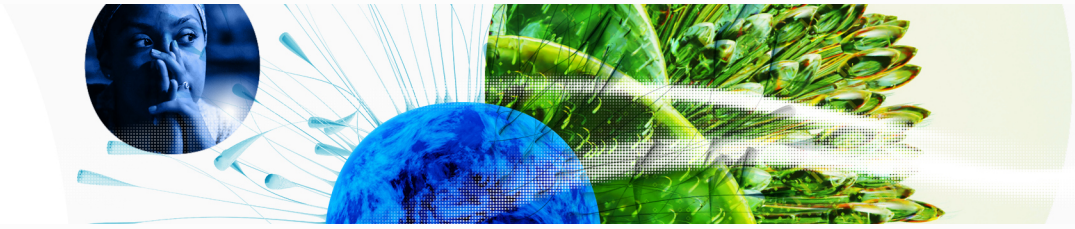

About the Global Innovation Index

- 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.

Source: Global Innovation Index Database, WIPO, 2023.

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.