Global Innovation Index 2021

UNITED STATES OF AMERICA

3rd The United States of America ranks 3rd among the 132 economies featured in the GII 2021.

The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.

The following table shows the rankings of 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 2021 is between ranks 3 and 4.

Rankings for the United States of America (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	3	3	4
2020	3	4	5
2019	3	3	6

- The United States of America performs better in innovation inputs than innovation outputs in 2021.
- This year the United States of America ranks 3rd in innovation inputs, higher than last year but the same as 2019.
- As for innovation outputs, The United States of America ranks 4th. This position is higher than both 2020 and 2019.

3rd The United States of America ranks 3rd among the 51 high-income group economies.

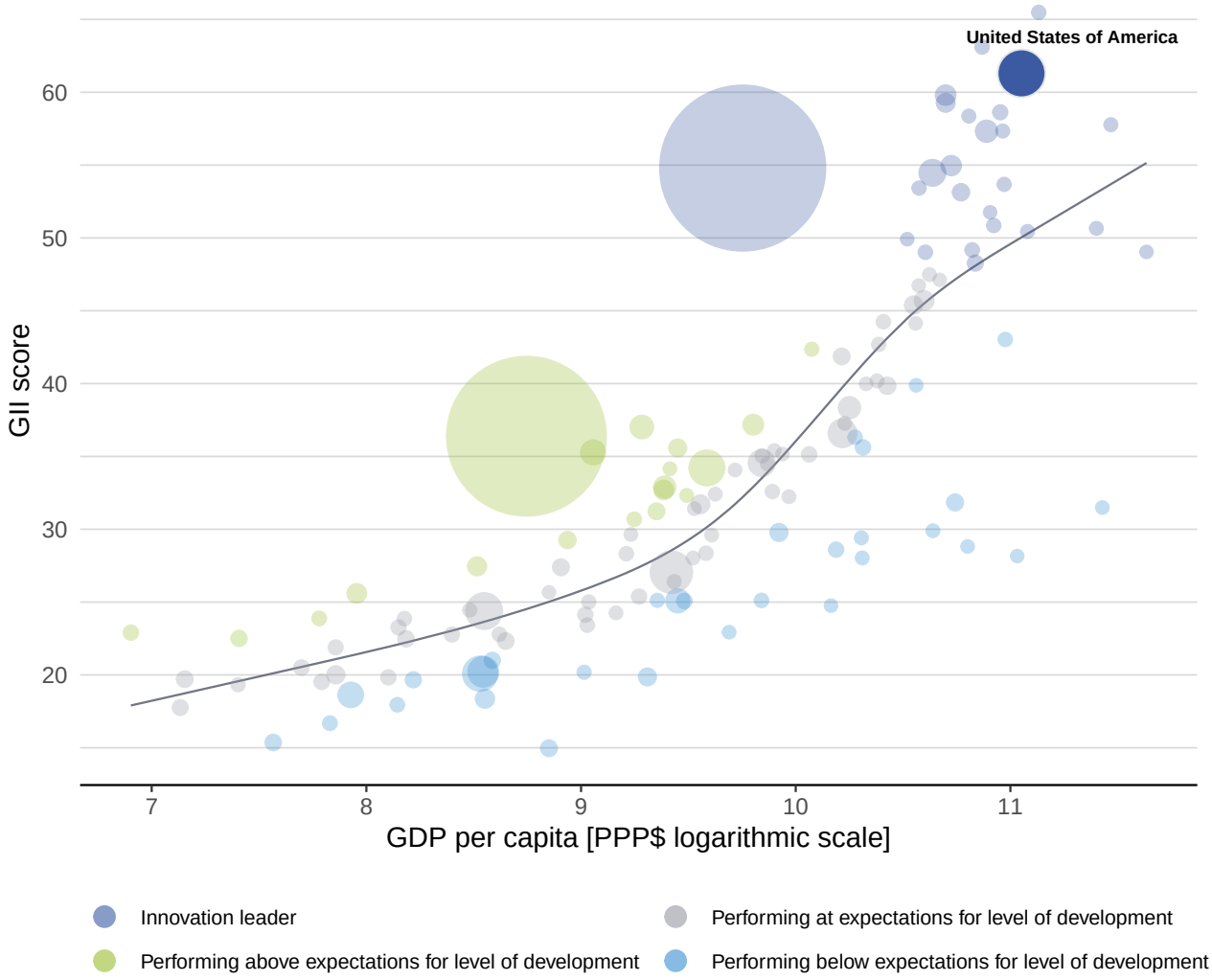
1st The United States of America ranks 1st among the 2 economies in Northern America.

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

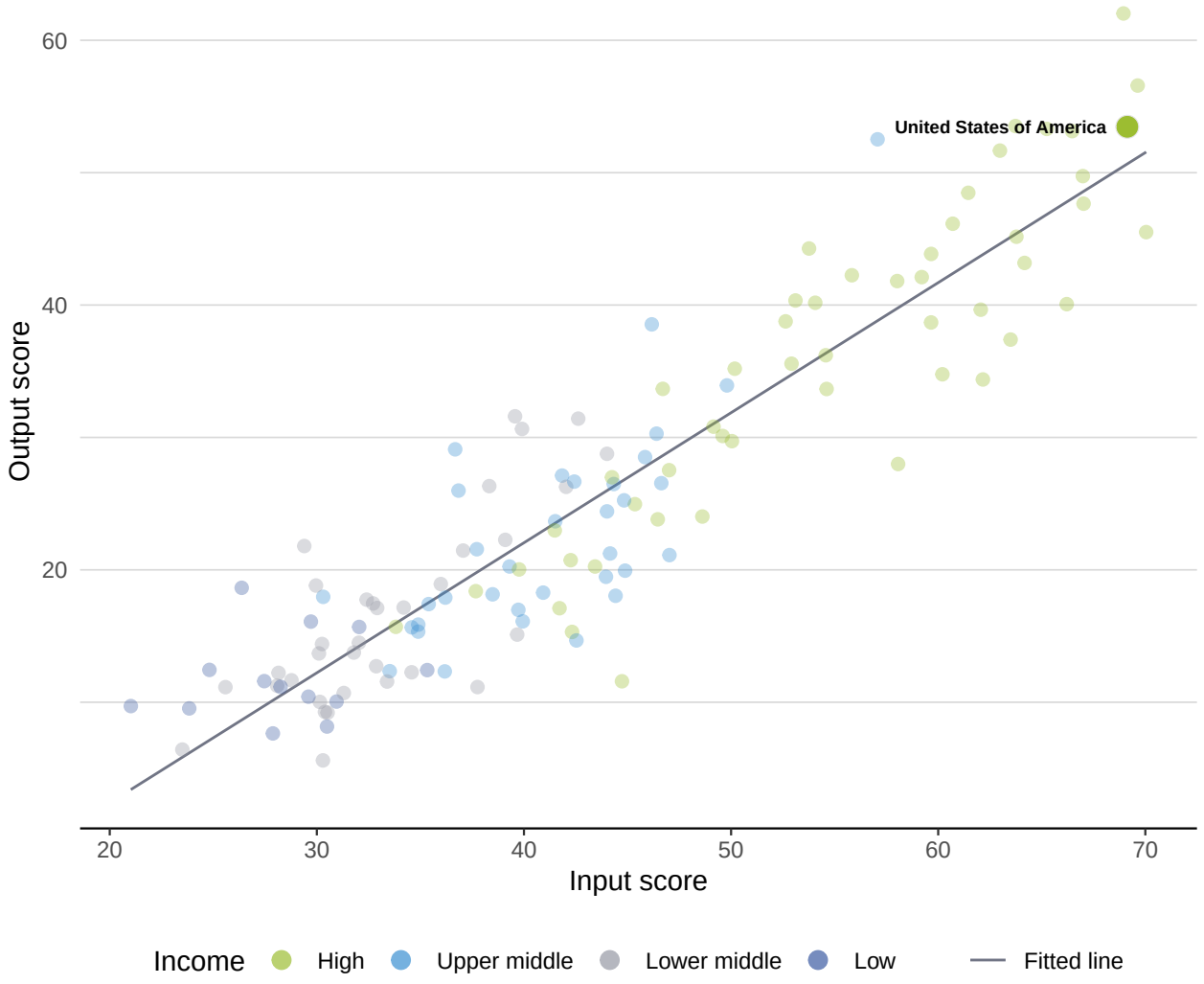


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

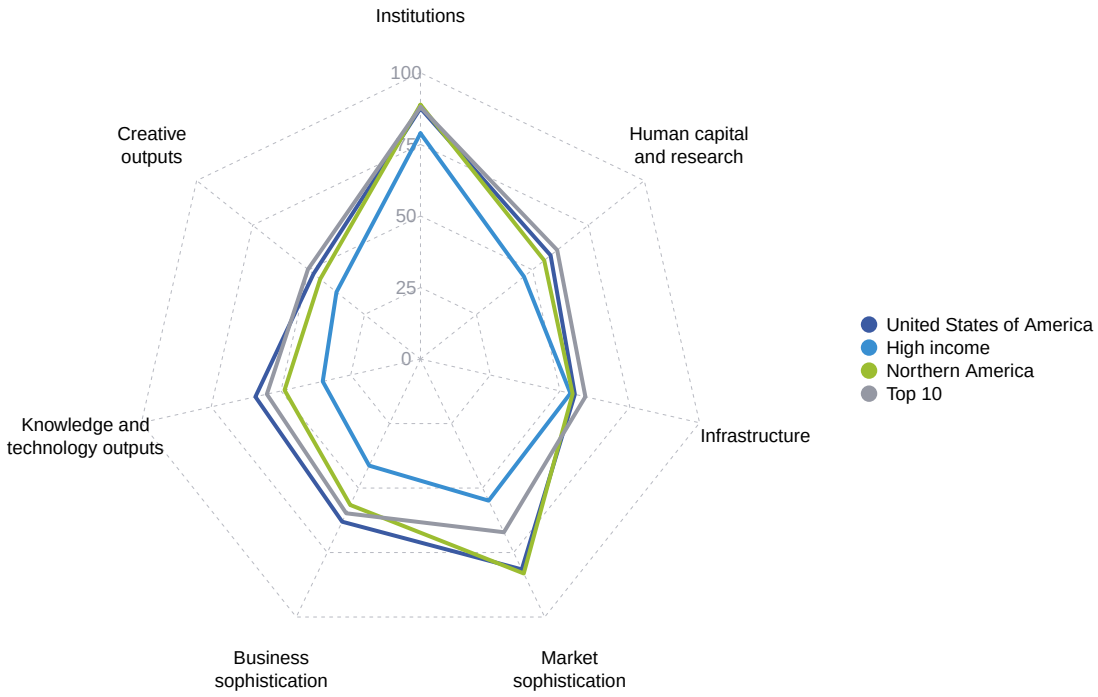
The United States of America produces more innovation outputs relative to its level of innovation investments.

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.

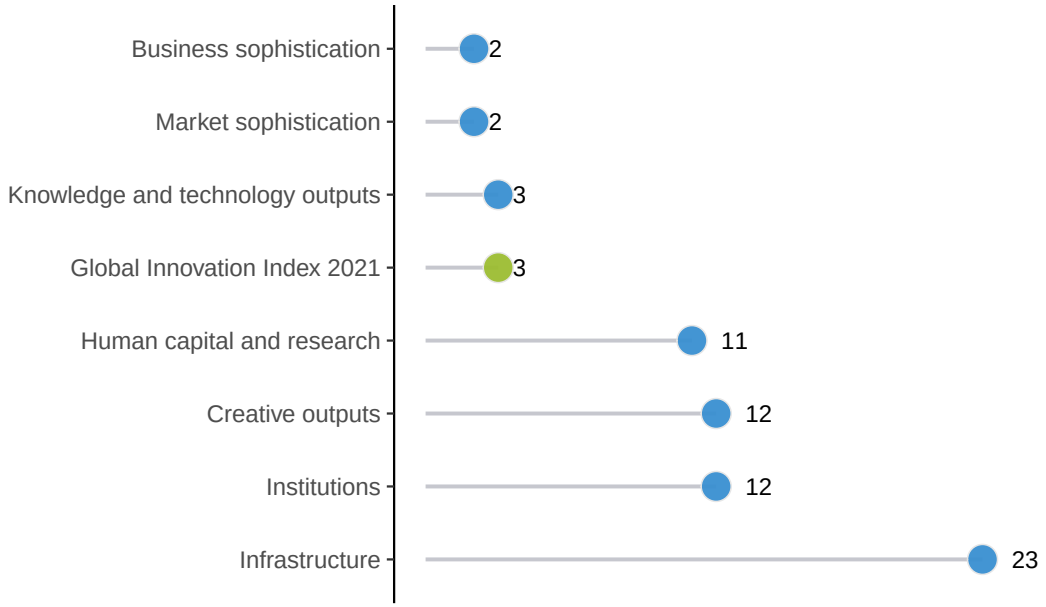
Northern America

The United States of America performs above the regional average in five pillars, namely: Human capital and research; Infrastructure; Business sophistication; Knowledge and technology outputs; and, Creative outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

The United States of America performs best in Market sophistication and Business 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 one.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of the United States of America in the GII 2021.

Strengths and weaknesses for the United States of America

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.2.3	Cost of redudancy dismissal	1	2.1.5	Pupil-teacher ratio, secondary	71
1.3	Business environment	2	2.2.2	Graduates in science and engineering, %	78
1.3.2	Ease of resolving insolvency	2	3.2.3	Gross capital formation, % GDP	86
2.3	Research and development (R&D)	2	3.3.1	GDP/unit of energy use	80
2.3.3	Global corporate R&D investors, top 3, mn US$	1	3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	117
2.3.4	QS university ranking, top 3	1	4.3.1	Applied tariff rate, weighted avg., %	128
3.1.4	E-participation	1	5.3.4	FDI net inflows, % GDP	89
4.1	Credit	1	6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	110
4.1.2	Domestic credit to private sector, % GDP	2	7.1.1	Trademarks by origin/bn PPP$ GDP	91
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	1	7.2.2	National feature films/mn pop. 15–69	60
4.3.3	Domestic market scale, bn PPP$	2			
5.2.1	University-industry R&D collaboration	3			
5.2.2	State of cluster development and depth	1			
6.1	Knowledge creation	3			
6.1.1	Patents by origin/bn PPP$ GDP	1			
6.1.5	Citable documents H-index	1			
6.2	Knowledge impact	1			
6.2.3	Software spending, % GDP	1			
6.3.1	Intellectual property receipts, % total trade	1			

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
7.1.4	ICTs and organizational model creation	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			

United States of America

GII 2021 rank **3**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
4	3	High	NAC	331.0	20,807.3	63,051	3

		Score/ Value	Rank
Institutions		**87.6**	**12**
1.1	**Political environment**	**80.8**	**19**
1.1.1	Political and operational stability*	75.0	40 ◇
1.1.2	Government effectiveness*	83.7	17
1.2	**Regulatory environment**	**91.0**	**12**
1.2.1	Regulatory quality*	78.7	20
1.2.2	Rule of law*	85.2	18
1.2.3	Cost of redundancy dismissal	8.0	1 ● ◆
1.3	**Business environment**	**91.0**	**2 ● ◆**
1.3.1	Ease of starting a business*	91.6	48
1.3.2	Ease of resolving insolvency*	90.5	2 ● ◆
Human capital and research		**58.1**	**11**
2.1	**Education**	**57.6**	**41**
2.1.1	Expenditure on education, % GDP	5.0	42
2.1.2	Government funding/pupil, secondary, % GDP/cap	22.7	31
2.1.3	School life expectancy, years	16.3	29
2.1.4	PISA scales in reading, maths and science	495.3	24
2.1.5	Pupil-teacher ratio, secondary	14.6	71 ○ ◇
2.2	**Tertiary education**	**38.6**	**45**
2.2.1	Tertiary enrolment, % gross	88.3	11
2.2.2	Graduates in science and engineering, %	19.0	78 ○
2.2.3	Tertiary inbound mobility, %	5.2	47
2.3	**Research and development (R&D)**	**78.3**	**2 ● ◆**
2.3.1	Researchers, FTE/mn pop.	4,408.2	22
2.3.2	Gross expenditure on R&D, % GDP	3.1	8
2.3.3	Global corporate R&D investors, top 3, mn US$	100.0	1 ● ◆
2.3.4	QS university ranking, top 3*	98.8	1 ● ◆
Infrastructure		**55.3**	**23**
3.1	**Information and communication technologies (ICTs)**	**90.1**	**9**
3.1.1	ICT access*	83.5	22
3.1.2	ICT use*	82.1	18
3.1.3	Government's online service*	94.7	7
3.1.4	E-participation*	100.0	1 ●
3.2	**General infrastructure**	**45.1**	**18**
3.2.1	Electricity output, GWh/mn pop.	13,284.9	9
3.2.2	Logistics performance*	85.3	14
3.2.3	Gross capital formation, % GDP	20.3	86 ○
3.3	**Ecological sustainability**	**30.8**	**55 ◇**
3.3.1	GDP/unit of energy use	9.1	80 ○
3.3.2	Environmental performance*	69.3	24
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	0.2	117 ○ ◇
Market sophistication		**81.5**	**2 ● ◆**
4.1	**Credit**	**88.0**	**1 ● ◆**
4.1.1	Ease of getting credit*	95.0	4 ◆
4.1.2	Domestic credit to private sector, % GDP	191.8	2 ● ◆
4.1.3	Microfinance gross loans, % GDP	n/a	n/a
4.2	**Investment**	**73.2**	**9 ◆**
4.2.1	Ease of protecting minority investors*	71.6	35
4.2.2	Market capitalization, % GDP	152.9	5
4.2.3	Venture capital investors, deals/bn PPP$ GDP	0.3	10
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	0.3	1 ● ◆
4.3	**Trade, diversification, and market scale**	**83.4**	**18**
4.3.1	Applied tariff rate, weighted avg., %	13.8	128 ○ ◇
4.3.2	Domestic industry diversification	98.6	8
4.3.3	Domestic market scale, bn PPP$	20,807.3	2 ● ◆

		Score/ Value	Rank
Business sophistication		**63.0**	**2 ● ◆**
5.1	**Knowledge workers**	**73.5**	**4 ◆**
5.1.1	Knowledge-intensive employment, %	52.0	4
5.1.2	Firms offering formal training, %	n/a	n/a
5.1.3	GERD performed by business, % GDP	2.3	5
5.1.4	GERD financed by business, %	63.1	10
5.1.5	Females employed w/advanced degrees, %	28.0	5 ◆
5.2	**Innovation linkages**	**59.9**	**5**
5.2.1	University-industry R&D collaboration†	74.4	3 ● ◆
5.2.2	State of cluster development and depth†	73.7	1 ● ◆
5.2.3	GERD financed by abroad, % GDP	0.2	19
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.2	6 ◆
5.2.5	Patent families/bn PPP$ GDP	3.4	12
5.3	**Knowledge absorption**	**55.7**	**7**
5.3.1	Intellectual property payments, % total trade	1.6	22
5.3.2	High-tech imports, % total trade	16.9	10
5.3.3	ICT services imports, % total trade	1.6	47
5.3.4	FDI net inflows, % GDP	1.6	89 ○
5.3.5	Research talent, % in businesses	72.5	4 ◆
Knowledge and technology outputs		**59.2**	**3 ● ◆**
6.1	**Knowledge creation**	**72.9**	**3 ● ◆**
6.1.1	Patents by origin/bn PPP$ GDP	13.3	1 ● ◆
6.1.2	PCT patents by origin/bn PPP$ GDP	2.8	12
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a
6.1.4	Scientific and technical articles/bn PPP$ GDP	18.9	46 ◇
6.1.5	Citable documents H-index	100.0	1 ● ◆
6.2	**Knowledge impact**	**56.9**	**1 ● ◆**
6.2.1	Labor productivity growth, %	1.6	30 ◆
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	110 ○ ◇
6.2.5	High-tech manufacturing, %	44.9	19
6.3	**Knowledge diffusion**	**47.7**	**16**
6.3.1	Intellectual property receipts, % total trade	4.3	1 ● ◆
6.3.2	Production and export complexity	79.7	11
6.3.3	High-tech exports, % total trade	8.8	18
6.3.4	ICT services exports, % total trade	2.0	56
Creative outputs		**47.8**	**12**
7.1	**Intangible assets**	**48.8**	**21**
7.1.1	Trademarks by origin/bn PPP$ GDP	21.5	91 ○ ◇
7.1.2	Global brand value, top 5,000, % GDP	209.5	4 ◆
7.1.3	Industrial designs by origin/bn PPP$ GDP	1.1	66
7.1.4	ICTs and organizational model creation†	83.7	1 ● ◆
7.2	**Creative goods and services**	**43.0**	**7**
7.2.1	Cultural and creative services exports, % total trade	1.9	8
7.2.2	National feature films/mn pop. 15–69	2.9	60 ○
7.2.3	Entertainment and media market/th pop. 15–69	100.0	1 ● ◆
7.2.4	Printing and other media, % manufacturing	1.4	31
7.2.5	Creative goods exports, % total trade	3.0	21
7.3	**Online creativity**	**50.4**	**21**
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	70 ◇
7.3.3	Wikipedia edits/mn pop. 15–69	69.5	40 ◇
7.3.4	Mobile app creation/bn PPP$ GDP	27.4	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 Appendix IV for details, including the year of the data, at http://globalinnovationindex.org. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

DATA AVAILABILITY

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

Missing data for the United States of America

Code	Indicator name	Economy year	Model year	Source
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
5.1.2	Firms offering formal training, %	n/a	2019	World Bank
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2019	World Intellectual Property Organization
6.2.2	New businesses/th pop. 15–64	n/a	2018	World Bank

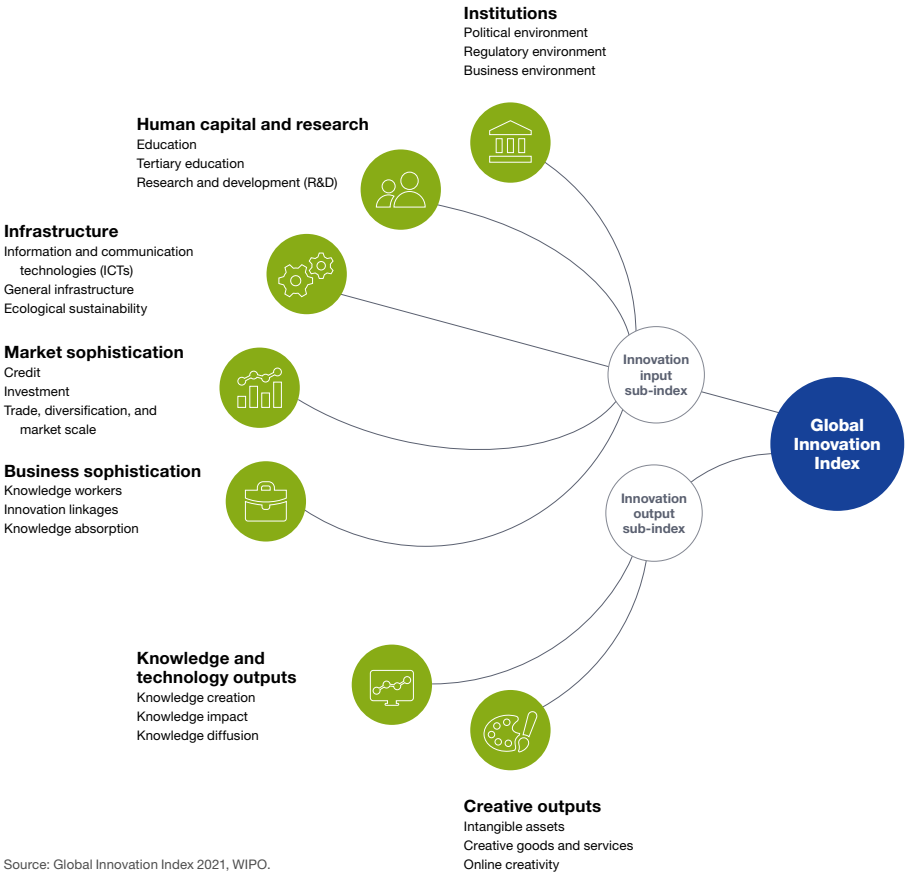
Outdated data for the United States of America

Code	Indicator name	Economy year	Model year	Source
2.1.1	Expenditure on education, % GDP	2014	2017	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2017	2019	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2017	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
4.2.2	Market capitalization, % GDP	2018	2019	World Federation of Exchanges
5.3.5	Research talent, % in businesses	2018	2019	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators

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 2021, WIPO.

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.