HONG KONG, CHINA

14th Hong Kong, China ranks 14th 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 Hong Kong, China 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 Hong Kong, China in the GII 2022 is between ranks 14 and 22.

Rankings for Hong Kong, China (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	11	7	16
2021	14	10	17
2022	14	5	25

- Hong Kong, China performs better in innovation inputs than innovation outputs in 2022.
- This year Hong Kong, China ranks 5th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Hong Kong, China ranks 25th. This position is lower than both 2021 and 2020.

13th Hong Kong, China ranks 13th among the 48 high-income group economies.

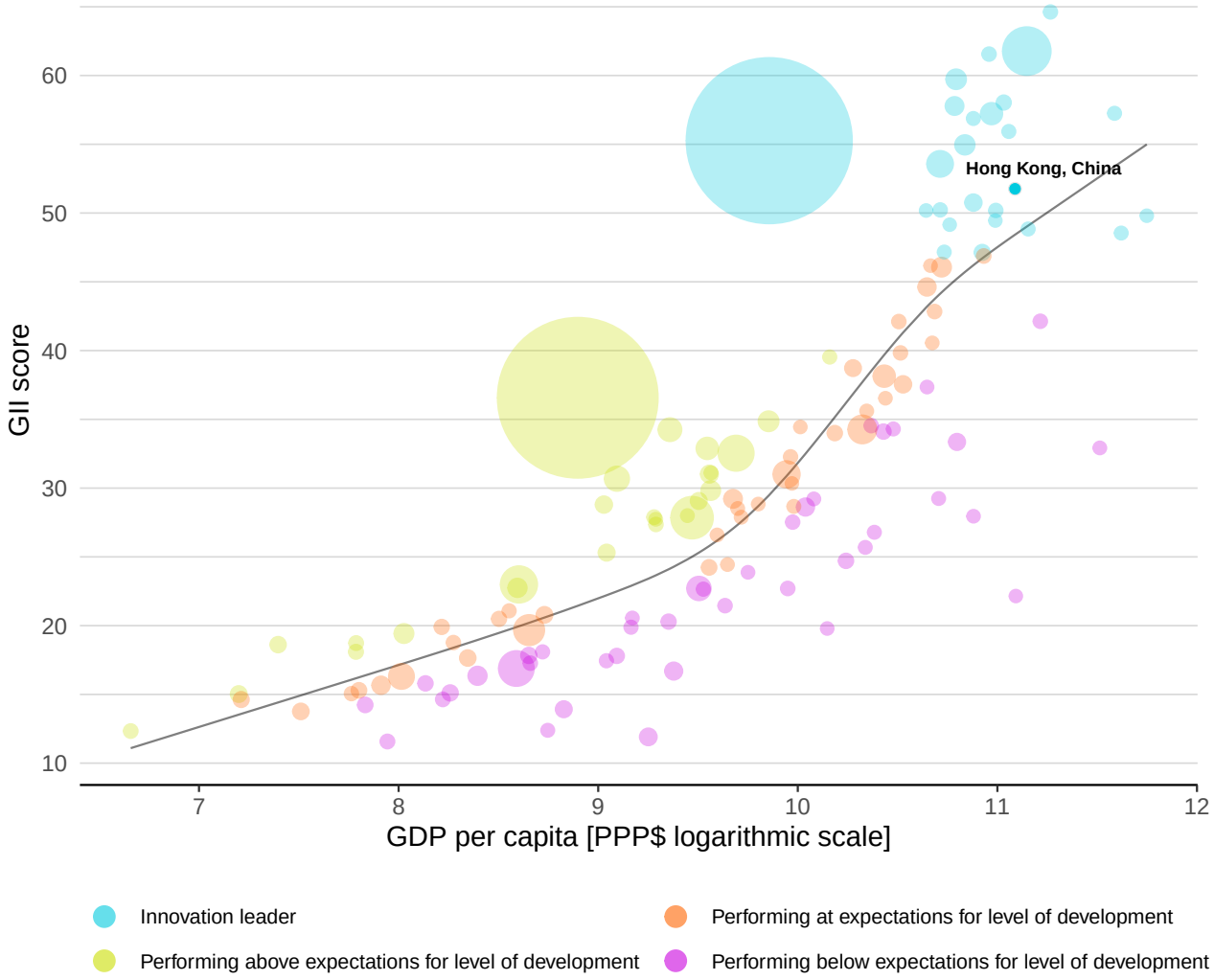
5th Hong Kong, China ranks 5th among the 17 economies in South East Asia, East Asia, and Oceania.

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, Hong Kong, China's performance is above expectations for its level of development.

The positive relationship between innovation and development

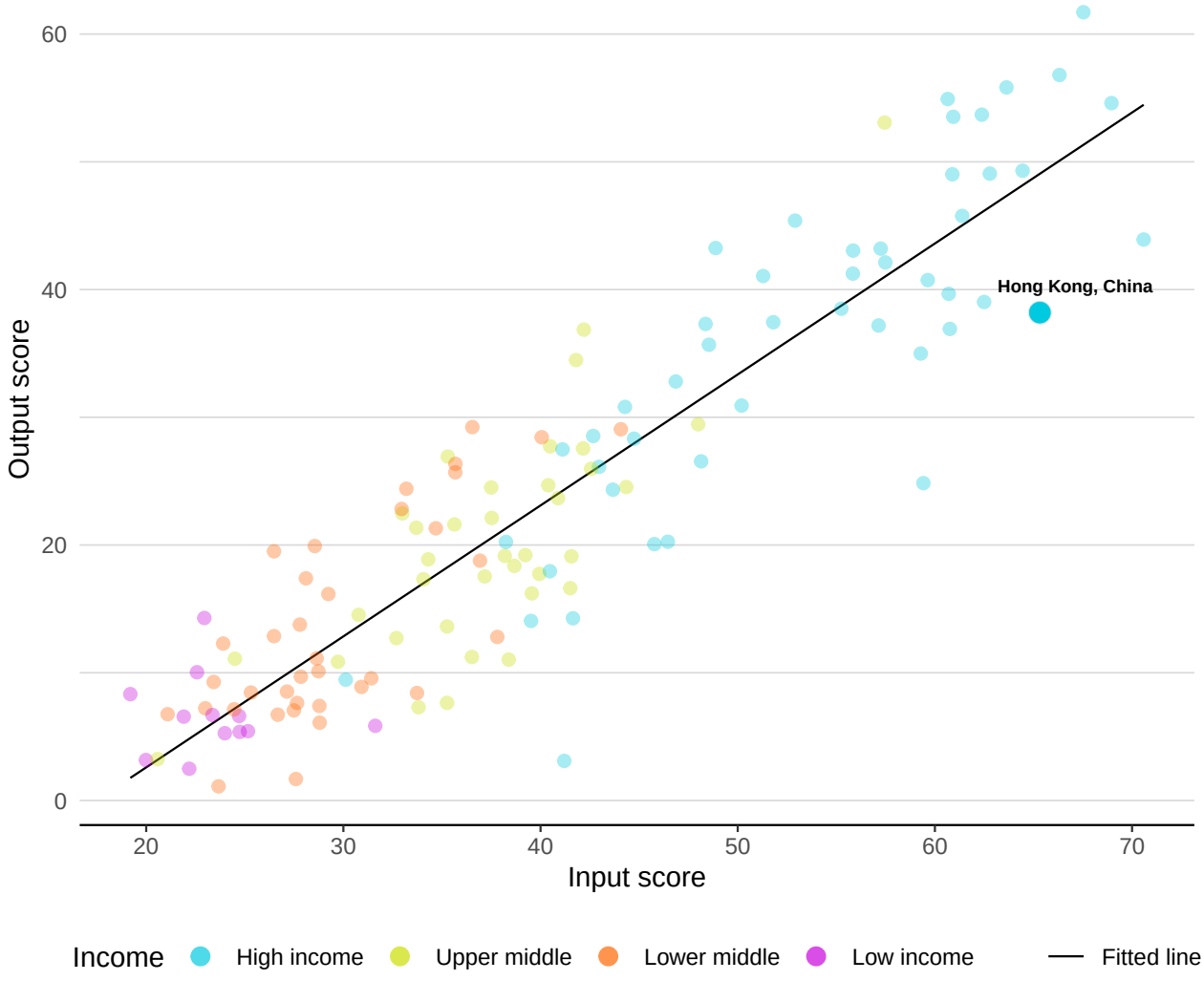


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

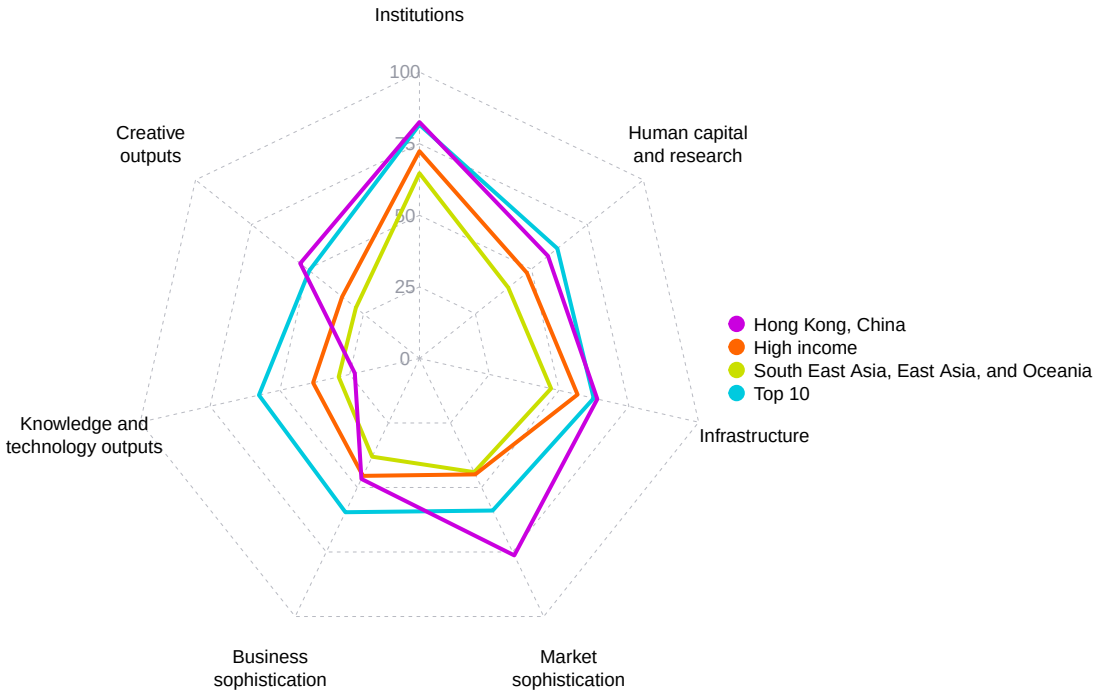
Hong Kong, China produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND SOUTH EAST ASIA, EAST ASIA, AND OCEANIA

The seven GII pillar scores for Hong Kong, China



High-income group economies

Hong Kong, China performs above the high-income group average in six pillars, namely: Institutions; Human capital and research; Infrastructure; Market sophistication; Business sophistication; and, Creative outputs.

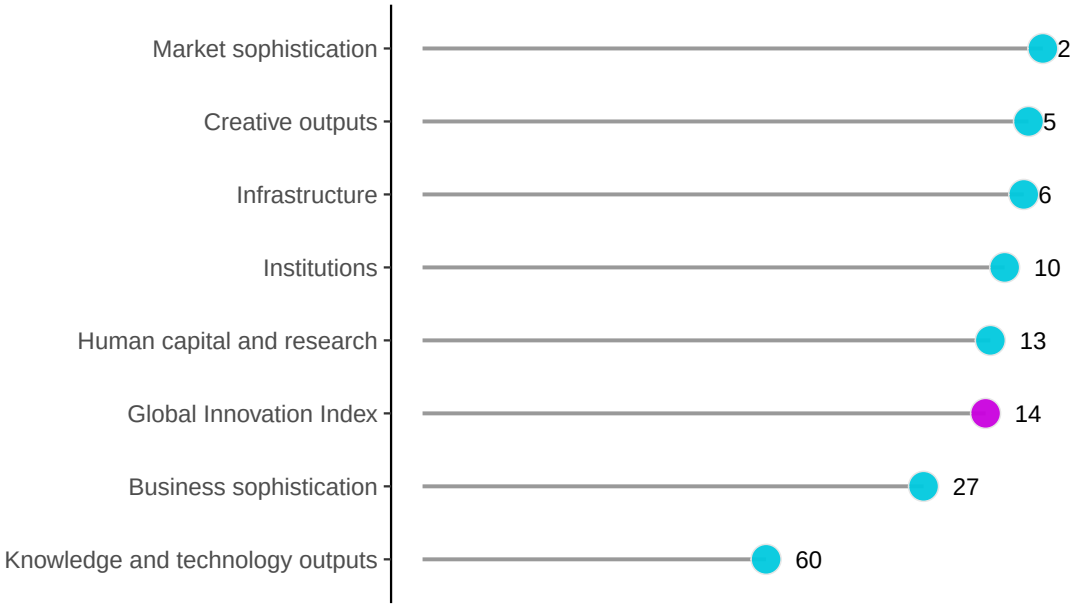
South East Asia, East Asia, and Oceania

Hong Kong, China performs above the regional average in six pillars, namely: Institutions; Human capital and research; Infrastructure; Market sophistication; Business sophistication; and, Creative outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Hong Kong, China performs best in Market sophistication and its weakest performance is in Knowledge and technology outputs.

The seven GII pillar ranks for Hong Kong, China



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

The full WIPO Intellectual Property Statistics profile for Hong Kong, China can be found at:

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

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Hong Kong, China in the GII 2022.

Strengths and weaknesses for Hong Kong, China

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.2.3	Cost of redundancy dismissal	1	2.1.1	Expenditure on education, % GDP	63
2.1.4	PISA scales in reading, maths and science	3	3.2.3	Gross capital formation, % GDP	102
3.1.1	ICT access	2	4.3.2	Domestic industry diversification	81
3.3.1	GDP/unit of energy use	2	5.2.3	GERD financed by abroad, % GDP	54
4.1.2	Domestic credit to private sector, % GDP	1	5.3.1	Intellectual property payments, % total trade	79
4.2.1	Market capitalization, % GDP	1	5.3.3	ICT services imports, % total trade	123
4.2.2	Venture capital investors, deals/bn PPP$ GDP	1	6.1.1	Patents by origin/bn PPP$ GDP	67
4.3.1	Applied tariff rate, weighted avg., %	1	6.3.3	High-tech exports, % total trade	117
5.3.2	High-tech imports, % total trade	1	6.3.4	ICT services exports, % total trade	100
6.2.2	New businesses/th pop. 15–64	2	7.2.1	Cultural and creative services exports, % total trade	82
7.1.3	Global brand value, top 5,000, % GDP	1			
7.2.5	Creative goods exports, % total trade	1			
7.3.3	GitHub commit pushes received/mn pop. 15–69	1			

GII 2022 rank

Hong Kong, China

14

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
25	5	High	SEAO	7.6	488.7	65,403

		Score/ Value	Rank	
Institutions		**82.5**	**10**	
1.1	**Political environment**	83.7	16	
1.1.1	Political and operational stability*	81.8	24	
1.1.2	Government effectiveness*	85.5	9	
1.2	**Regulatory environment**	94.2	5	
1.2.1	Regulatory quality*	89.6	7	
1.2.2	Rule of law*	87.3	14	
1.2.3	Cost of redundancy dismissal	8.0	1 ●	
1.3	**Business environment**	69.7	[18]	
1.3.1	Policies for doing business†	69.7	20	
1.3.2	Entrepreneurship policies and culture*	n/a	n/a	
Human capital and research		**57.4**	**13**	
2.1	**Education**	64.3	15	
2.1.1	Expenditure on education, % GDP	4.4	63 ○	
2.1.2	Government funding/pupil, secondary, % GDP/cap	24.1	25	
2.1.3	School life expectancy, years	17.3	17	
2.1.4	PISA scales in reading, maths and science	530.7	3 ● ◆	
2.1.5	Pupil-teacher ratio, secondary	10.9	38	
2.2	**Tertiary education**	49.4	12	
2.2.1	Tertiary enrolment, % gross	84.4	17	
2.2.2	Graduates in science and engineering, %	n/a	n/a	
2.2.3	Tertiary inbound mobility, %	16.2	12	
2.3	**Research and development (R&D)**	58.4	18	
2.3.1	Researchers, FTE/mn pop.	4,352.2	24	
2.3.2	Gross expenditure on R&D, % GDP	1.0	41	◇
2.3.3	Global corporate R&D investors, top 3, mn USD	n/a	n/a	
2.3.4	QS university ranking, top 3*	82.9	5	
Infrastructure		**63.7**	**6**	
3.1	**Information and communication technologies (ICTs)**	90.6	[10]	
3.1.1	ICT access*	98.2	2 ● ◆	
3.1.2	ICT use*	83.0	12	
3.1.3	Government's online service*	n/a	n/a	
3.1.4	E-participation*	n/a	n/a	
3.2	**General infrastructure**	44.2	30	
3.2.1	Electricity output, GWh/mn pop.	4,707.2	45	
3.2.2	Logistics performance*	87.0	12	
3.2.3	Gross capital formation, % GDP	18.6	102 ○ ◇	
3.3	**Ecological sustainability**	56.3	3 ● ◆	
3.3.1	GDP/unit of energy use	32.8	2 ● ◆	
3.3.2	Environmental performance*	n/a	n/a	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	2.1	46	
Market sophistication		**76.3**	**2 ● ◆**	
4.1	**Credit**	100.0	[1]	
4.1.1	Finance for startups and scaleups*	n/a	n/a	
4.1.2	Domestic credit to private sector, % GDP	258.4	1 ● ◆	
4.1.3	Loans from microfinance institutions, % GDP	n/a	n/a	
4.2	**Investment**	67.5	7	
4.2.1	Market capitalization, % GDP	1,391.4	1 ● ◆	
4.2.2	Venture capital investors, deals/bn PPP$ GDP	0.9	1 ● ◆	
4.2.3	Venture capital recipients, deals/bn PPP$ GDP	0.1	29	
4.2.4	Venture capital received, value, % GDP	0.0	17	
4.3	**Trade, diversification, and market scale**	61.5	49	
4.3.1	Applied tariff rate, weighted avg., %	0.0	1 ● ◆	
4.3.2	Domestic industry diversification	73.6	81 ○ ◇	
4.3.3	Domestic market scale, bn PPP$	488.7	45	

		Score/ Value	Rank	
Business sophistication		**46.7**	**27**	◇
5.1	**Knowledge workers**	46.1	37	◇
5.1.1	Knowledge-intensive employment, %	41.4	28	
5.1.2	Firms offering formal training, %	n/a	n/a	
5.1.3	GERD performed by business, % GDP	0.4	44	◇
5.1.4	GERD financed by business, %	49.2	31	
5.1.5	Females employed w/advanced degrees, %	15.8	47	◇
5.2	**Innovation linkages**	44.1	24	
5.2.1	University-industry R&D collaboration†	62.9	18	
5.2.2	State of cluster development and depth†	66.1	12	
5.2.3	GERD financed by abroad, % GDP	0.0	54 ○	◇
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.2	7	
5.2.5	Patent families/bn PPP$ GDP	0.8	28	◇
5.3	**Knowledge absorption**	49.8	15	
5.3.1	Intellectual property payments, % total trade	0.3	79 ○	◇
5.3.2	High-tech imports, % total trade	61.9	1 ●	◆
5.3.3	ICT services imports, % total trade	0.3	123 ○	◇
5.3.4	FDI net inflows, % GDP	25.6	6	◆
5.3.5	Research talent, % in businesses	35.6	39	◇
Knowledge and technology outputs		**23.2**	**60**	◇
6.1	**Knowledge creation**	22.9	[41]	
6.1.1	Patents by origin/bn PPP$ GDP	1.0	67 ○	◇
6.1.2	PCT patents by origin/bn PPP$ GDP	n/a	n/a	
6.1.3	Utility models by origin/bn PPP$ GDP	1.0	21	
6.1.4	Scientific and technical articles/bn PPP$ GDP	n/a	n/a	
6.1.5	Citable documents H-index	38.4	24	
6.2	**Knowledge impact**	43.1	15	
6.2.1	Labor productivity growth, %	1.7	42	
6.2.2	New businesses/th pop. 15–64	19.2	2 ●	◆
6.2.3	Software spending, % GDP	0.3	28	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	5.2	55	
6.2.5	High-tech manufacturing, %	23.9	53	◇
6.3	**Knowledge diffusion**	3.5	124 ○	◇
6.3.1	Intellectual property receipts, % total trade	0.1	52	◇
6.3.2	Production and export complexity	n/a	n/a	
6.3.3	High-tech exports, % total trade	0.1	117 ○	◇
6.3.4	ICT services exports, % total trade	0.5	100 ○	
Creative outputs		**53.2**	**5**	◆
7.1	**Intangible assets**	54.7	14	
7.1.1	Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2	Trademarks by origin/bn PPP$ GDP	66.9	32	
7.1.3	Global brand value, top 5,000, % GDP	264.3	1 ●	◆
7.1.4	Industrial designs by origin/bn PPP$ GDP	2.5	41	
7.2	**Creative goods and services**	47.4	2 ●	◆
7.2.1	Cultural and creative services exports, % total trade	0.1	82 ○	◇
7.2.2	National feature films/mn pop. 15–69	8.1	9	
7.2.3	Entertainment and media market/th pop. 15–69	48.3	18	
7.2.4	Printing and other media, % manufacturing	n/a	n/a	
7.2.5	Creative goods exports, % total trade	12.7	1 ●	◆
7.3	**Online creativity**	56.3	5	◆
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	75.5	7	
7.3.2	Country-code TLDs/th pop. 15–69	11.7	39	◇
7.3.3	GitHub commit pushes received/mn pop. 15–69	100.0	1 ●	◆
7.3.4	Mobile app creation/bn PPP$ GDP	37.9	5	◆

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 Hong Kong, China.

Missing data for Hong Kong, China

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	n/a	2021	Global Entrepreneurship Monitor
2.2.2	Graduates in science and engineering, %	n/a	2020	UNESCO Institute for Statistics
2.3.3	Global corporate R&D investors, top 3, mn USD	n/a	2021	European Commission's Joint Research Centre
3.1.3	Government's online service	n/a	2020	Division for Public Administration and Development Management (DPADM), United Nations Department of Economic and Social Affairs (DESA).
3.1.4	E-participation	n/a	2020	Division for Public Administration and Development Management (DPADM), United Nations Department of Economic and Social Affairs (DESA).
3.3.2	Environmental performance	n/a	2022	Yale University
4.1.1	Finance for startups and scaleups	n/a	2021	Global Entrepreneurship Monitor
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
6.1.2	PCT patents by origin/bn PPP$ GDP	n/a	2021	World Intellectual Property Organization
6.1.4	Scientific and technical articles/bn PPP$ GDP	n/a	2021	Clarivate
6.3.2	Production and export complexity	n/a	2019	Harvard University, Growth Lab
7.1.1	Intangible asset intensity, top 15, %	n/a	2021	Brand Finance
7.2.4	Printing and other media, % manufacturing	n/a	2019	United Nations Industrial Development Organization

Outdated data for Hong Kong, China

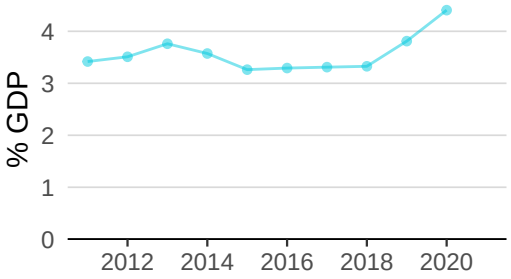
Code	Indicator name	Economy year	Model year	Source
5.1.1	Knowledge-intensive employment, %	2020	2021	International Labour Organization
5.1.3	GERD performed by business, % GDP	2018	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	2018	2019	UNESCO Institute for Statistics
5.1.5	Females employed w/advanced degrees, %	2020	2021	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2018	2019	UNESCO Institute for Statistics

Code	Indicator name	Economy year	Model year	Source
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
5.3.5	Research talent, % in businesses	2018	2020	UNESCO Institute for Statistics
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

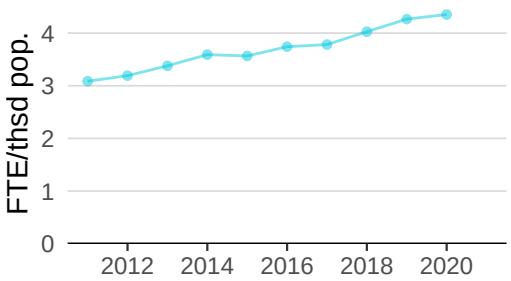
HONG KONG, CHINA'S INNOVATION SYSTEM

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

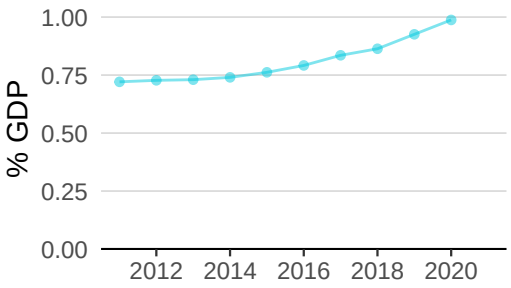
Innovation inputs



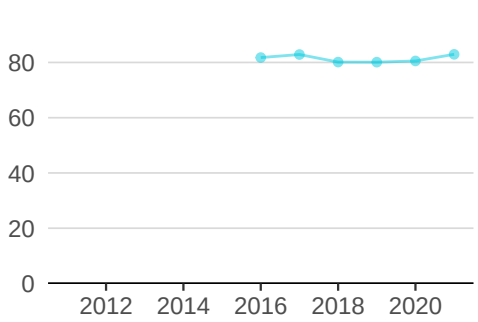
2.1.1 Expenditure on education was equal to 4.4% GDP in 2020–up by 16 percentage points from the year prior–and equivalent to an indicator rank of 63.



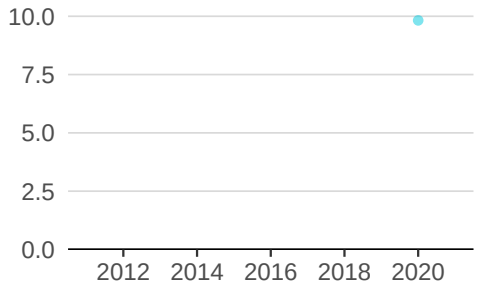
2.3.1 Researchers was equal to 4.4 FTE/thsd pop. in 2020–up by 2 percentage points from the year prior–and equivalent to an indicator rank of 24.



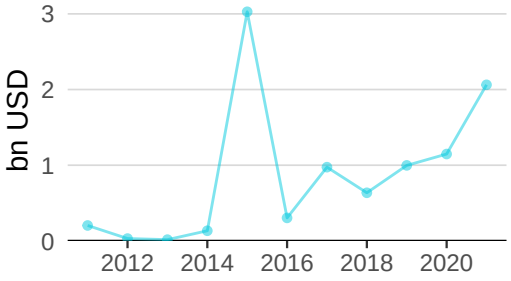
2.3.2 Gross expenditure on R&D was equal to 1.0% GDP in 2020–up by 7 percentage points from the year prior–and equivalent to an indicator rank of 41.



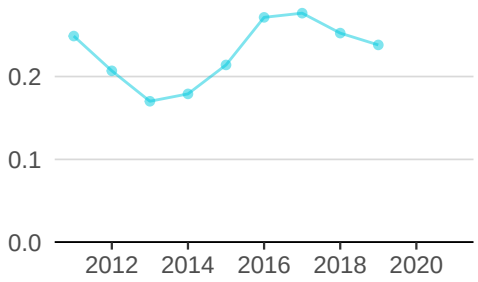
2.3.4 QS university ranking was equal to 82.9 in 2021–up by 3 percentage points from the year prior–and equivalent to an indicator rank of 5.



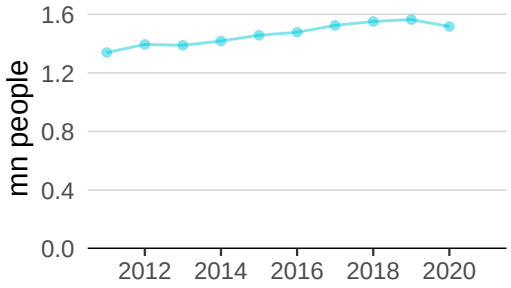
3.1.1 ICT access was equal to 9.8 in 2020 and equivalent to an indicator rank of 2.



4.2.4 Venture capital received was equal to 2.1 bn USD in 2021–up by 80 percentage points from the year prior–and equivalent to an indicator rank of 17.

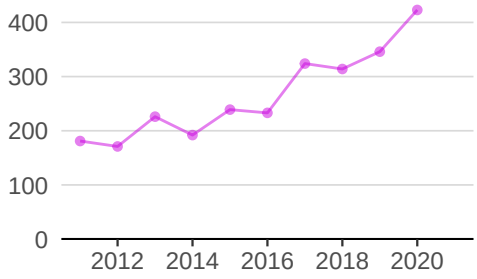


4.3.2 Domestic industry diversification was equal to 0.2 in 2019–down by 6 percentage points from the year prior–and equivalent to an indicator rank of 81.

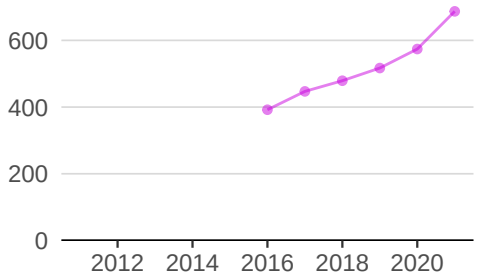


5.1.1 Knowledge-intensive employment was equal to 1.5 mn people in 2020–down by 3 percentage points from the year prior–and equivalent to an indicator rank of 28.

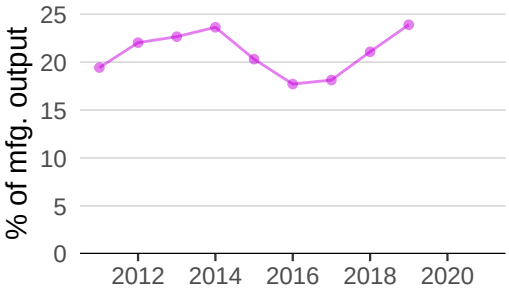
Innovation outputs



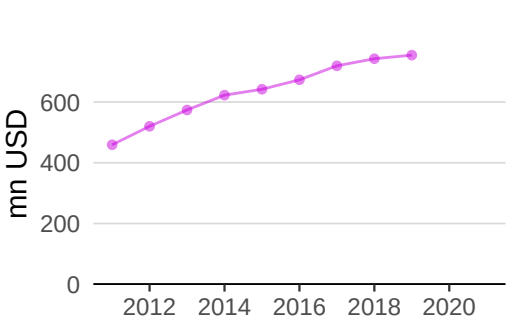
6.1.1 Patents by origin was equal to 423.0 in 2020–up by 22 percentage points from the year prior–and equivalent to an indicator rank of 67.



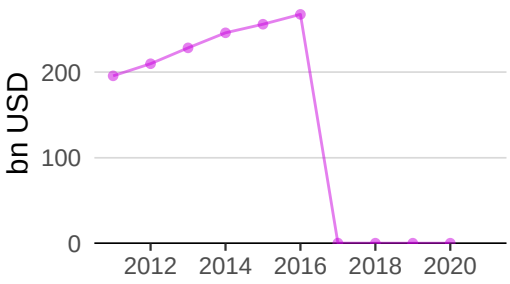
6.1.5 Citable documents H-index was equal to 687.0 in 2021–up by 20 percentage points from the year prior–and equivalent to an indicator rank of 24.



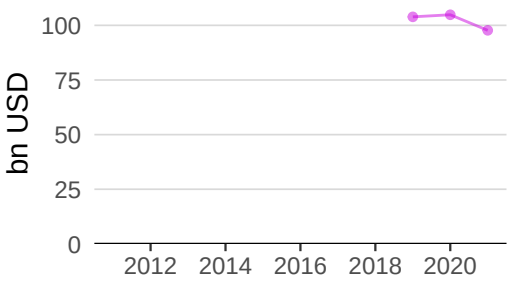
6.2.5 High-tech manufacturing was equal to 23.9% of mfg. output in 2019–up by 13 percentage points from the year prior–and equivalent to an indicator rank of 53.



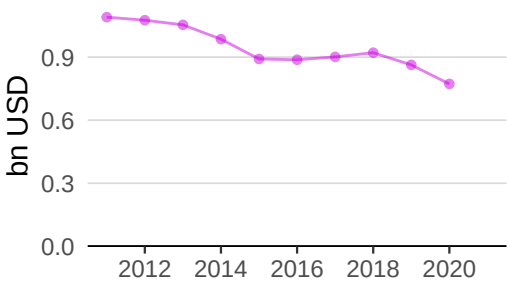
6.3.1 Intellectual property receipts was equal to 754.3 mn USD in 2019–up by 2 percentage points from the year prior–and equivalent to an indicator rank of 52.



6.3.3 High-tech exports was equal to 0.4 bn USD in 2020–up by 2 percentage points from the year prior–and equivalent to an indicator rank of 117.



7.1.3 Global brand value was equal to 97.7 bn USD in 2021–down by 7 percentage points from the year prior–and equivalent to an indicator rank of 1.



7.2.1 Cultural and creative services exports was equal to 0.8 bn USD in 2020–down by 10 percentage points from the year prior–and equivalent to an indicator rank of 82.

HONG KONG, CHINA'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank

No observations

Source: European Commission's Joint Research Centre (https://iri.jrc.ec.europa.eu/scoreboard/2021-eu-industrial-rd-investment-scoreboard).

2.3.4 QS university ranking

University	Score	Rank
UNIVERSITY OF HONG KONG	86.3	22
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY	82.2	34
THE CHINESE UNIVERSITY OF HONG KONG	80.3	39

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

No observations

Source: Brand Finance (https://brandirectory.com/reports/gift-2021).

7.1.3 Global brand value, top 5,000

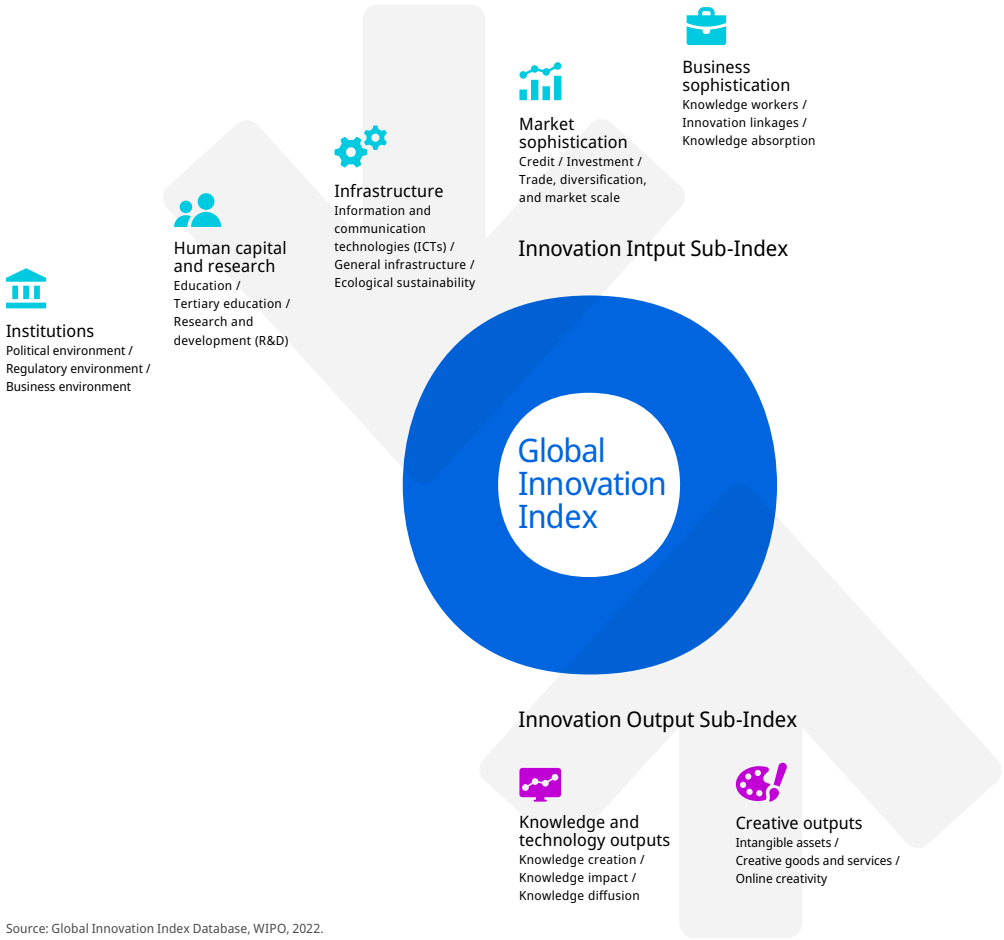
Brand	Industry	Rank
AIA	Insurance	1
CHINA OVERSEAS LAND & INVEST	Real Estate	2
CHINA RESOURCES LAND	Real Estate	3

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.



Source: Global Innovation Index Database, WIPO, 2022.

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.