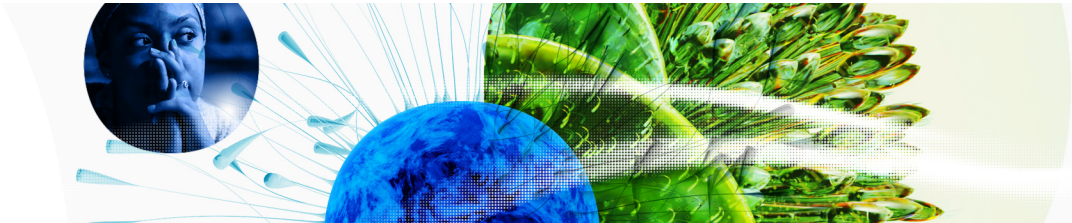# Global Innovation Index 2023

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**.

Hong Kong, China ranking in the Global Innovation Index 2023
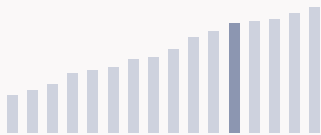
> Hong Kong, China ranks **17th** among the 132 economies featured in the GII 2023.
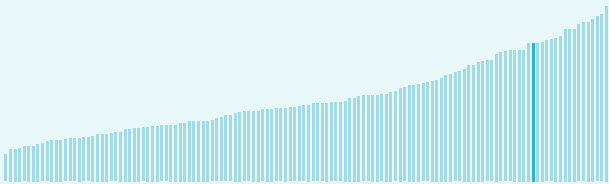
> Hong Kong, China ranks **16th** among the 50 high-income group economies.
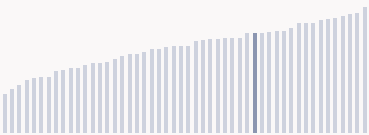
> Hong Kong, China ranks **5th** among the 16 economies in South East Asia, East Asia, and Oceania.

> **Hong Kong, China GII Ranking (2020-2023)**

The table shows the rankings of Hong Kong, China 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 Hong Kong, China in the GII 2023 is between ranks 11 and 22.

	GII Position	Innovation Inputs	Innovation Outputs
2020	11th	7th	16th
2021	14th	10th	17th
2022	14th	5th	25th
2023	17th	8th	24th

Hong Kong, China performs worse in innovation outputs than innovation inputs in 2023.

This year **Hong Kong, China ranks 8th in innovation inputs.** This position is lower than last year.

Hong Kong, China ranks 24th 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.

> Hong Kong, China is an innovation leader, ranking in the top 25 of the GII.

> Innovation overperformers relative to their economic development

↑ GII Score
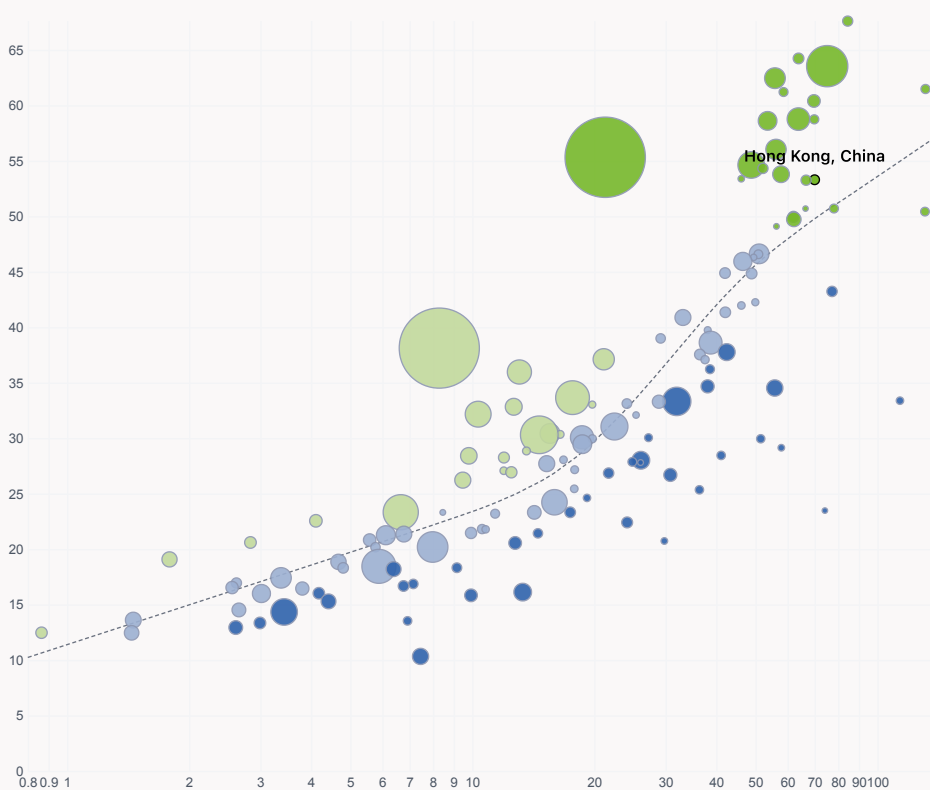
- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Hong Kong, China

Size legend (Population)
1.4B
713M
373K

→GDP per capita, PPP logarithmic scale (thousands of $)
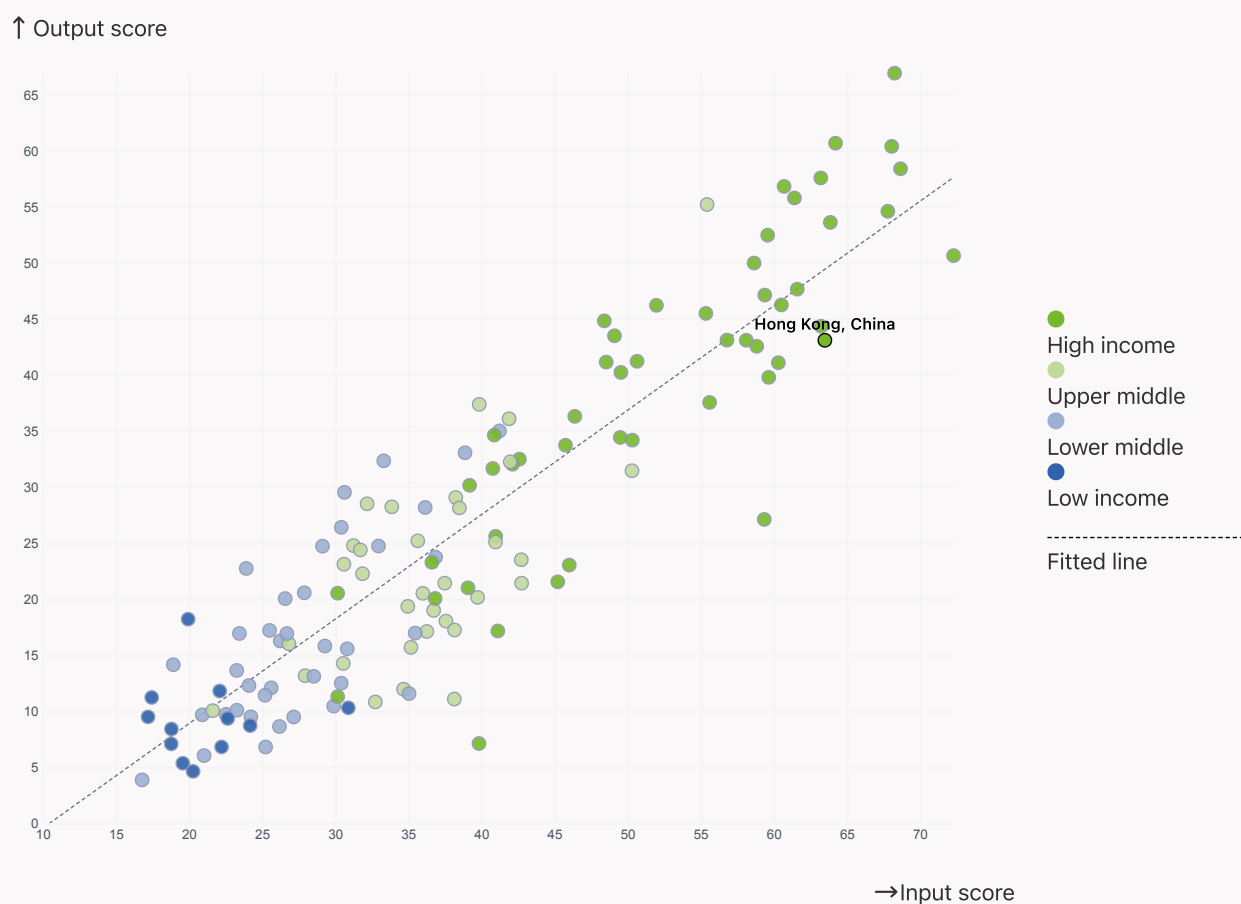
Global Innovation Index 2023

→ 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.

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

> Relationship between innovation inputs and outputs

↑ Output score

Hong Kong, China

High income

Upper middle

Lower middle

Low income

Fitted line

→Input score

Global Innovation Index 2023

→ **Overview of Hong Kong, China'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 Hong Kong, China are those that rank above the GII (shown in blue) and the weakest are those that rank below.

Highest rankings →

- 2nd Market sophistication
- 3rd Creative outputs

- 8th Institutions
- 9th Infrastructure

- 15th Human capital and research

- 17th Global Innovation Index

- 28th Business sophistication

← Lowest rankings

- 51st Knowledge and technology outputs

> **Highest rankings**

Hong Kong, China ranks highest in Market sophistication (2nd), Creative outputs (3rd), Institutions (8th), Infrastructure (9th) and Human capital and research (15th).

> **Lowest rankings**

Hong Kong, China ranks lowest in Knowledge and technology outputs (51st), Business sophistication (28th) and Human capital and research (15th).

The full WIPO Intellectual Property Statistics profile for Hong Kong, China can be found on this link.

Global Innovation Index 2023

→ **Benchmark of Hong Kong, China against other country groupings for each of the seven areas of the GII Index**

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

> **High-Income economies**

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

> **South East Asia, East Asia, And Oceania**

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

Knowledge and technology outputs

Top 10 | Score: 58.96

High income | Score: 38.62

SEAO | Score: 32.16

Hong Kong, China | Score: 26.94

* South East Asia, East Asia, and Oceania

Creative outputs

Hong Kong, China | 59.21

Top 10 | 56.09

High income | 40.27

SEAO | 34.40

Business sophistication

Top 10 | 64.39

Hong Kong, China | 47.03

High income | 46.38

SEAO | 40.54

Market sophistication

Hong Kong, China | 71.77

Top 10 | 61.93

SEAO | 47.18

High income | 46.42

Human capital and research

Top 10 | 60.28

Hong Kong, China | 54.37

High income | 46.30

SEAO | 40.81

Infrastructure

Hong Kong, China | 62.94

Top 10 | 62.83

High income | 55.85

SEAO | 47.13

Institutions

Hong Kong, China | 81.38

Top 10 | 79.85

High income | 68.16

SEAO | 62.54

Global Innovation Index 2023

→ Innovation strengths and weaknesses in Hong Kong, China

The table below gives an overview of the indicator strengths and weaknesses of Hong Kong, China in the GII 2023.

> Hong Kong, China's main innovation strengths are **Applied tariff rate, weighted avg., %** (rank 1), **Global brand value, top 5,000** (rank 1) and **Cost of redundancy dismissal** (rank 1).

| Strengths				Weaknesses		
Rank	Code	Indicator name		Rank	Code	Indicator name
1	4.3.1	Applied tariff rate, weighted avg., %		121	6.3.3	High-tech exports, % total trade
1	7.1.3	Global brand value, top 5,000		119	5.3.3	ICT services imports, % total trade
1	1.2.3	Cost of redundancy dismissal		110	3.2.3	Gross capital formation, % GDP
1	7.2.4	Creative goods exports, % total trade		101	6.3.4	ICT services exports, % total trade
1	4.1.2	Domestic credit to private sector, % GDP		100	4.3.2	Domestic industry diversification
1	7.3.3	GitHub commits/mn pop. 15-69		86	7.2.1	Cultural and creative services exports, % total trade
1	5.3.2	High-tech imports, % total trade		84	5.3.1	Intellectual property payments, % total trade
1	4.2.1	Market capitalization, % GDP		78	6.2.1	Labor productivity growth, %
2	3.3.1	GDP/unit of energy use		71	2.1.1	Expenditure on education, % GDP
3	5.3.4	FDI net inflows, % GDP		63	6.2.4	High-tech manufacturing, %
3	2.1.4	PISA scales in reading, maths and science				
4	2.3.4	QS university ranking, top 3				

→ Hong Kong, China's innovation system

As far as practicable, the plots below present unscaled indicator data.
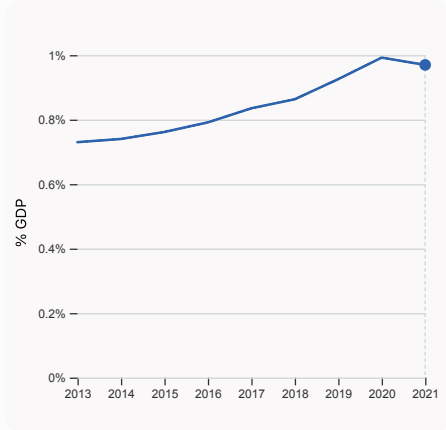
> Innovation inputs in Hong Kong, China
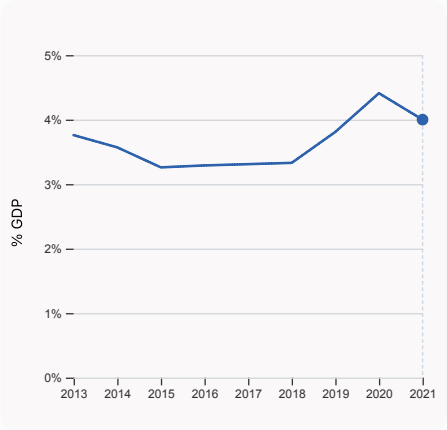
2.1.1 Expenditure on education, % GDP

was equal to 4% GDP in 2021, down by 0.41 percentage points from the year prior – and equivalent to an indicator rank of 71.
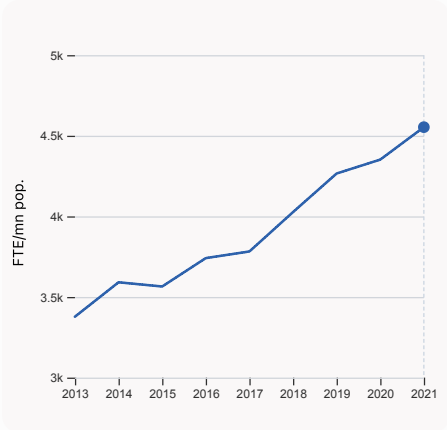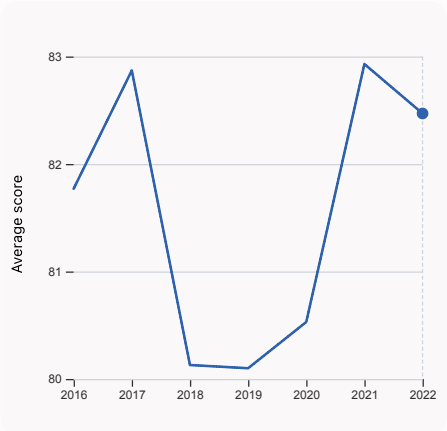

2.3.1 Researchers, FTE/mn pop.

was equal to 4,553.4 FTE/mn pop. in 2021, up by 4.62% from the year prior – and equivalent to an indicator rank of 23.

2.3.2 Gross expenditure on R&D, % GDP

was equal to 0.97% GDP in 2021, down by 0.023 percentage points from the year prior – and equivalent to an indicator rank of 41.

2.3.4 QS university ranking, top 3

was equal to an average score of 82.47 for the top 3 universities in 2022, down by 0.55% from the year prior – and equivalent to an indicator rank of 4.
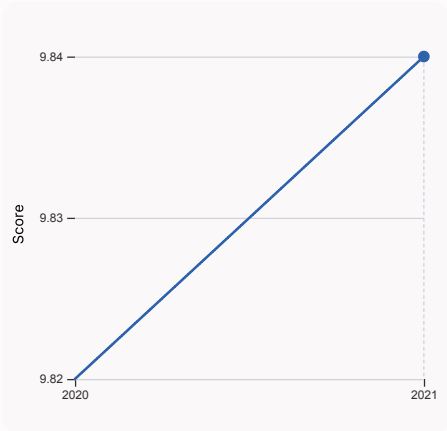
3.1.1 ICT access

was equal to a score of 9.84 in 2021, up by 0.2% from the year prior – and equivalent to an indicator rank of 5.
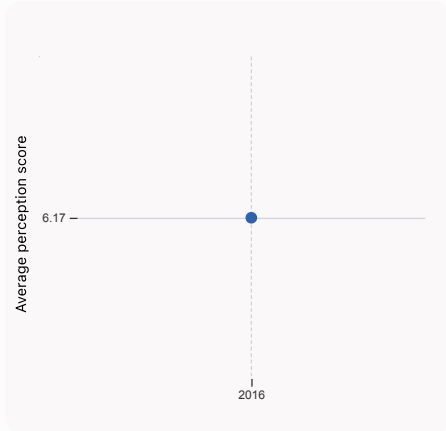
4.1.1 Finance for startups and scaleups

was equal to an average perception score of 6.17 in 2016, equivalent to an indicator rank of 5.

Global Innovation Index 2023
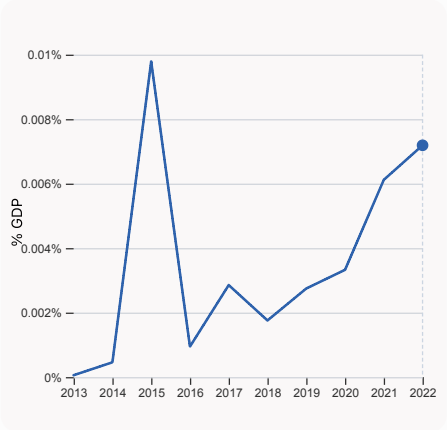
4.2.4 VC received, value, % GDP

was equal to 0.00719% GDP in 2022, up by 0.0011 percentage points from the year prior – and equivalent to an indicator rank of 9.
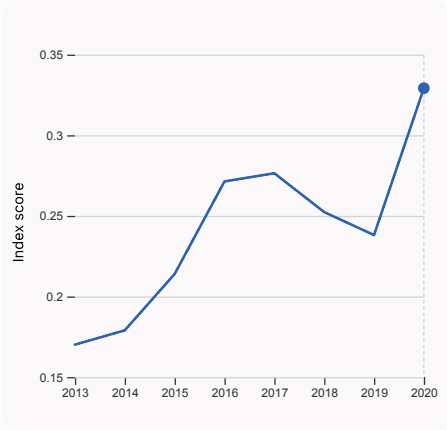
4.3.2 Domestic industry diversification

was equal to an index score of 0.329 in 2020, up by 38.25% from the year prior – and equivalent to an indicator rank of 100.

5.1.1 Knowledge-intensive employment, %

was equal to 40.7% in 2021, down by 0.88 percentage points from the year prior – and equivalent to an indicator rank of 29.

> ## Innovation outputs in Hong Kong, China

6.1.1 Patents by origin

was equal to 0.4 Thousands in 2021, down by 5.2% from the year prior – and equivalent to an indicator rank of 65.
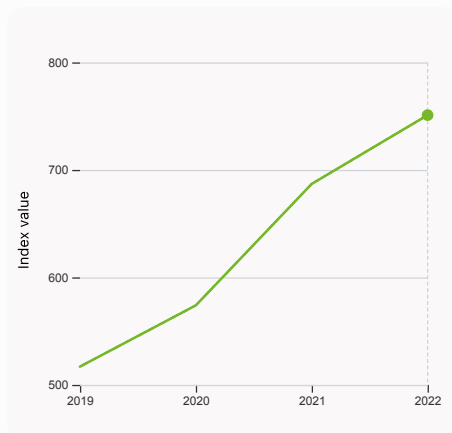
6.1.5 Citable documents H-index

was equal to an index value of 751 in 2022, up by 9.32% from the year prior – and equivalent to an indicator rank of 23.
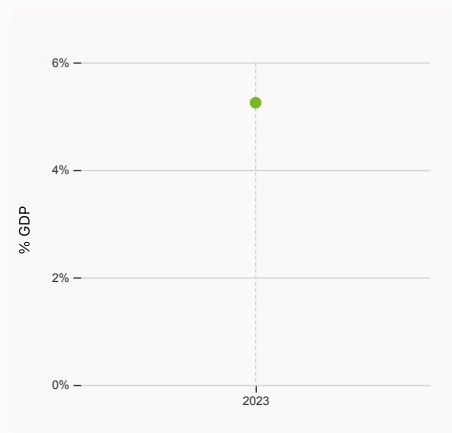
6.2.2 Unicorn valuation, % GDP

was equal to 5.25 % GDP in 2023 – and equivalent to an indicator rank of 6.
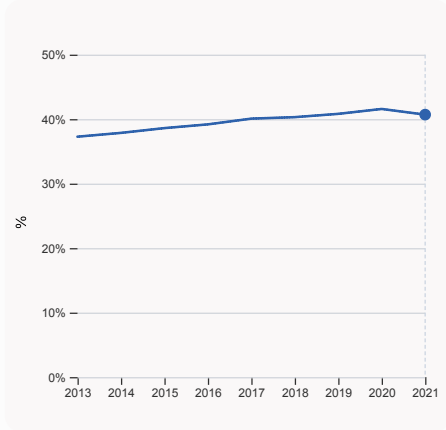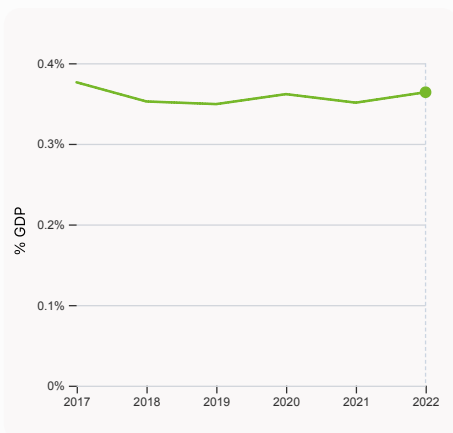

6.2.3 Software spending, % GDP

was equal to 0.364% GDP in 2022, up by 0.013 percentage points from the year prior – and equivalent to an indicator rank of 26.
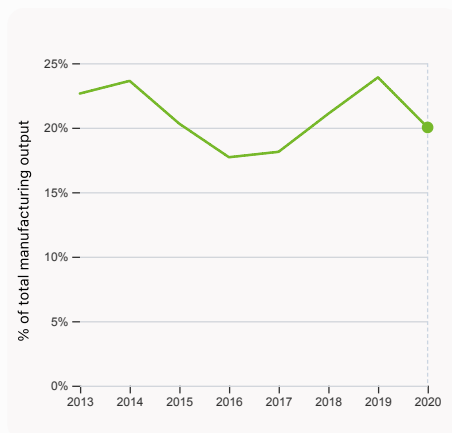
6.2.4 High-tech manufacturing, %

was equal to 20.02% of total manufacturing output in 2020, down by 3.88 percentage points from the year prior – and equivalent to an indicator rank of 63.
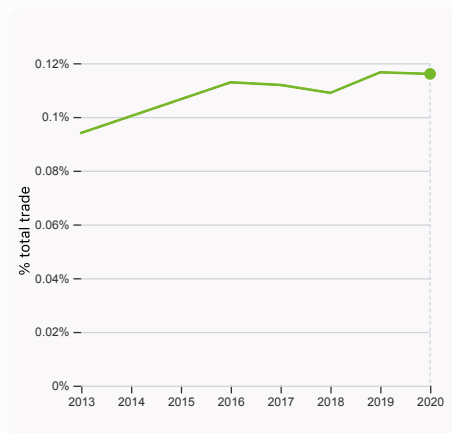
6.3.1 Intellectual property receipts, % total trade

was equal to 0.116% total trade in 2020, down by 0.0006 percentage points from the year prior – and equivalent to an indicator rank of 53.

Global Innovation Index 2023
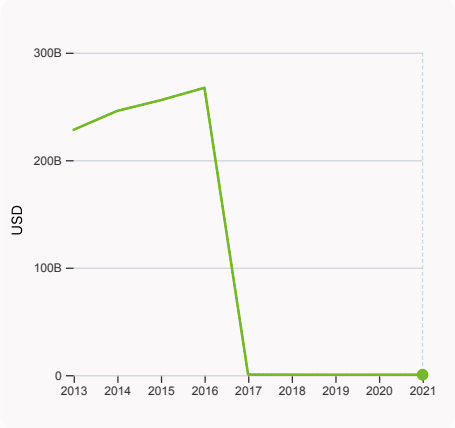
6.3.3 High-tech exports

was equal to 388,465,892.1 USD in 2021, up by 3.83% from the year prior – and equivalent to an indicator rank of 121.
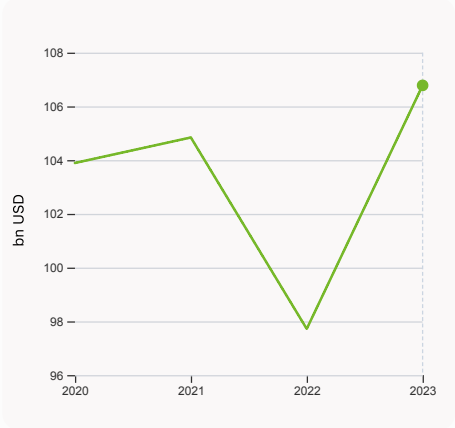
7.1.3 Global brand value, top 5,000

was equal to 106.782 bn USD in 2023, up by 9.27% from the year prior – and equivalent to an indicator rank of 1.
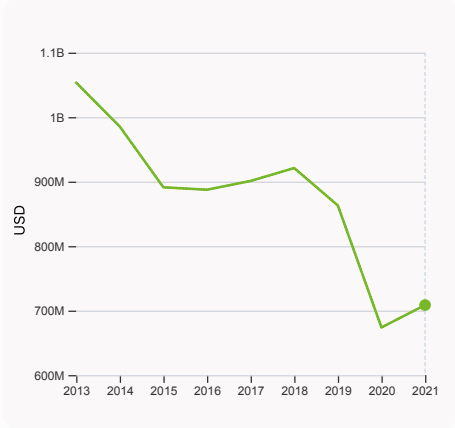
7.2.1 Cultural and creative services exports

was equal to 708,611,000 USD in 2021, up by 5.15% from the year prior – and equivalent to an indicator rank of 86.
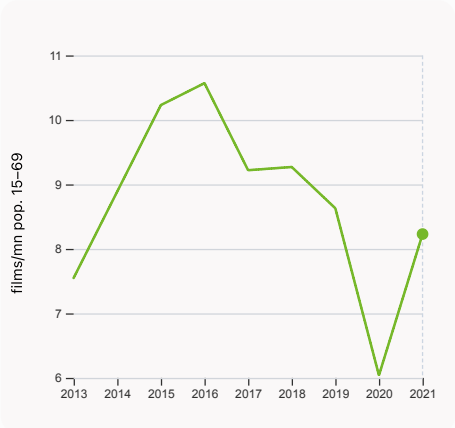
7.2.2 National feature films/mn pop. 15-69

was equal to 8.23 films/mn pop. 15–69 in 2021, up by 36.26% from the year prior – and equivalent to an indicator rank of 7.
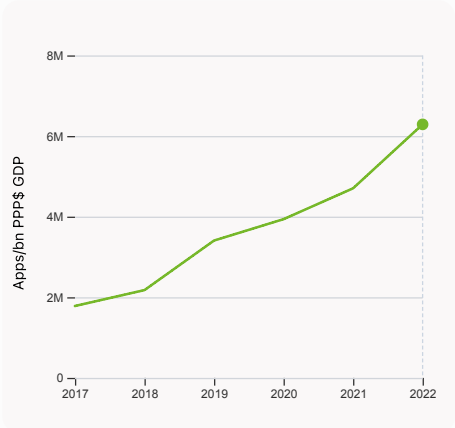
7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 6,289,377.89 Apps/bn PPP$ GDP in 2022, up by 33.72% from the year prior – and equivalent to an indicator rank of 5.

→ Hong Kong, China's innovation top performers

> 2.3.4 QS university ranking of Hong Kong, China's top universities

Rank	University	Score
21	UNIVERSITY OF HONG KONG (HKU)	87.00
38	THE CHINESE UNIVERSITY OF HONG KONG (CUHK)	80.60
40	THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (HKUST)	79.80

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 Hong Kong, China

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	LALAMOVE	Supply chain, logistics, & delivery	Cheung Sha Wan	10
2	AMBER GROUP	Fintech		3
3	BABEL FINANCE	Fintech	Hong Kong	2

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

> 7.1.3 Top 5,000 companies in Hong Kong, China with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	AIA	Insurance	15,046.3
2	PRUDENTIAL PLC	Insurance	9,518.7
3	CHINA RESOURCES LAND	Real Estate	7,930.3

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

Global Innovation Index 2023

Hong Kong, China

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
24	8	High	SEAO	7.5	518.7	69,987.0

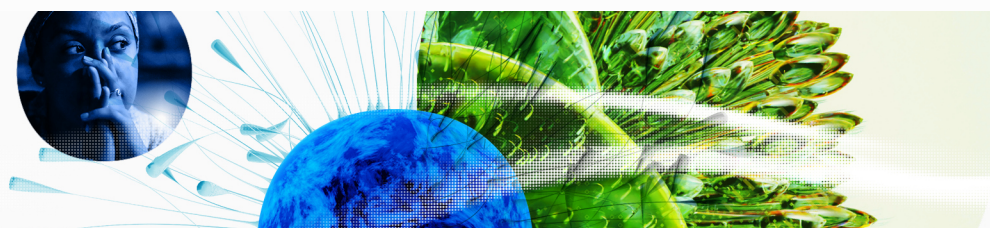|	Score / Value	Rank	
🏛 **Institutions**	**81.4**	**8**	
1.1 Institutional environment	**74.2**	**18**	
1.1.1 Operational stability for businesses*	69.4	29	
1.1.2 Government effectiveness*	78.9	12	
1.2 Regulatory environment	**91.3**	**7**	
1.2.1 Regulatory quality*	83.2	13	
1.2.2 Rule of law*	82.1	17	
1.2.3 Cost of redundancy dismissal	8.0	1	●
1.3 Business environment	**78.7**	**9**	
1.3.1 Policies for doing business†	74.5	20	
1.3.2 Entrepreneurship policies and culture†	🕐 82.9	6	
👥 **Human capital and research**	**54.4**	**15**	
2.1 Education	**63.2**	**18**	
2.1.1 Expenditure on education, % GDP	4.0	71	○
2.1.2 Government funding/pupil, secondary, % GDP/cap	26.0	16	
2.1.3 School life expectancy, years	17.1	18	
2.1.4 PISA scales in reading, maths and science	530.7	3	●
2.1.5 Pupil-teacher ratio, secondary	10.8	39	
2.2 Tertiary education	**50.6**	**9**	
2.2.1 Tertiary enrolment, % gross	88.4	13	
2.2.2 Graduates in science and engineering, %	n/a	n/a	
2.2.3 Tertiary inbound mobility, %	16.5	12	
2.3 Research and development (R&D)	**49.3**	**20**	
2.3.1 Researchers, FTE/mn pop.	4,553.4	23	
2.3.2 Gross expenditure on R&D, % GDP	1.0	41	◇
2.3.3 Global corporate R&D investors, top 3, mn US$	n/a	n/a	
2.3.4 QS university ranking, top 3*	83.6	4	●
⚙ **Infrastructure**	**62.9**	**9**	
3.1 Information and communication technologies (ICTs)	**95.1**	**3**	
3.1.1 ICT access*	97.8	5	
3.1.2 ICT use*	92.5	16	
3.1.3 Government's online service*	n/a	n/a	
3.1.4 E-participation*	n/a	n/a	
3.2 General infrastructure	**40.1**	**32**	
3.2.1 Electricity output, GWh/mn pop.	🕐 4,707.9	48	
3.2.2 Logistics performance*	86.4	7	
3.2.3 Gross capital formation, % GDP	18.0	110	○◇
3.3 Ecological sustainability	**53.6**	**13**	
3.3.1 GDP/unit of energy use	32.7	2	●
3.3.2 Environmental performance*	n/a	n/a	
3.3.3 ISO 14001 environment/bn PPP$ GDP	2.3	38	
📊 **Market sophistication**	**71.8**	**2**	
4.1 Credit	**92.2**	**1**	
4.1.1 Finance for startups and scaleups†	🕐 84.3	5	
4.1.2 Domestic credit to private sector, % GDP	258.9	1	●
4.1.3 Loans from microfinance institutions, % GDP	n/a	n/a	
4.2 Investment	**64.3**	**7**	
4.2.1 Market capitalization, % GDP	1,394.2	1	●
4.2.2 Venture capital (VC) investors, deals/bn PPP$ GDP	1.3	6	
4.2.3 VC recipients, deals/bn PPP$ GDP	0.1	25	
4.2.4 VC received, value, % GDP	0.0	9	
4.3 Trade, diversification, and market scale	**58.8**	**64**	
4.3.1 Applied tariff rate, weighted avg., %	0.0	1	●
4.3.2 Domestic industry diversification	65.3	100	○◇
4.3.3 Domestic market scale, bn PPP$	518.7	46	

	Score / Value	Rank	
💼 **Business sophistication**	**47.0**	**28**	◇
5.1 Knowledge workers	**45.4**	**40**	◇
5.1.1 Knowledge-intensive employment, %	🕐 40.7	29	
5.1.2 Firms offering formal training, %	n/a	n/a	
5.1.3 GERD performed by business, % GDP	🕐 0.4	46	◇
5.1.4 GERD financed by business, %	🕐 49.2	32	
5.1.5 Females employed w/advanced degrees, %	🕐 15.8	47	◇
5.2 Innovation linkages	**46.9**	**24**	◇
5.2.1 University-industry R&D collaboration†	74.9	18	
5.2.2 State of cluster development†	75.6	18	
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	0.7	29	◇
5.3 Knowledge absorption	**48.8**	**23**	
5.3.1 Intellectual property payments, % total trade	🕐 0.3	84	○◇
5.3.2 High-tech imports, % total trade	59.1	1	●
5.3.3 ICT services imports, % total trade	🕐 0.4	119	○◇
5.3.4 FDI net inflows, % GDP	29.1	3	●
5.3.5 Research talent, % in businesses	🕐 35.6	37	◇
🚀 **Knowledge and technology outputs**	**26.9**	**51**	◇
6.1 Knowledge creation	**24.5**	**40**	
6.1.1 Patents by origin/bn PPP$ GDP	0.8	65	◇
6.1.2 PCT patents by origin/bn PPP$ GDP	n/a	n/a	
6.1.3 Utility models by origin/bn PPP$ GDP	0.8	25	
6.1.4 Scientific and technical articles/bn PPP$ GDP	n/a	n/a	
6.1.5 Citable documents H-index	39.4	23	
6.2 Knowledge impact	**49.9**	**16**	
6.2.1 Labor productivity growth, %	0.5	78	○
6.2.2 Unicorn valuation, % GDP	5.3	6	
6.2.3 Software spending, % GDP	0.4	26	
6.2.4 High-tech manufacturing, %	20.0	63	○◇
6.3 Knowledge diffusion	**6.4**	**122**	◇
6.3.1 Intellectual property receipts, % total trade	🕐 0.1	53	◇
6.3.2 Production and export complexity	n/a	n/a	
6.3.3 High-tech exports, % total trade	0.1	121	○◇
6.3.4 ICT services exports, % total trade	🕐 0.5	101	○
6.3.5 ISO 9001 quality/bn PPP$ GDP	6.2	45	
🎨 **Creative outputs**	**59.2**	**3**	
7.1 Intangible assets	**57.5**	**11**	
7.1.1 Intangible asset intensity, top 15, %	n/a	n/a	
7.1.2 Trademarks by origin/bn PPP$ GDP	63.8	34	
7.1.3 Global brand value, top 5,000	27.6	1	●
7.1.4 Industrial designs by origin/bn PPP$ GDP	1.9	42	
7.2 Creative goods and services	**50.9**	**3**	
7.2.1 Cultural and creative services exports, % total trade	0.1	86	○◇
7.2.2 National feature films/mn pop. 15-69	8.2	7	
7.2.3 Entertainment and media market/th pop. 15-69	48.8	19	
7.2.4 Creative goods exports, % total trade	12.7	1	●
7.3 Online creativity	**70.9**	**6**	
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69	86.4	7	
7.3.2 Country-code TLDs/th pop. 15-69	11.8	40	◇
7.3.3 GitHub commits/mn pop. 15-69	100.0	1	●
7.3.4 Mobile app creation/bn PPP$ GDP	85.5	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/gii-ranking. 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.

> Hong Kong, China has missing data for eleven indicators and outdated data for thirteen indicators.

> ## Missing data for Hong Kong, China

Code	Indicator name	Economy Year	Model Year	Source
2.2.2	Graduates in science and engineering, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD
2.3.3	Global corporate R&D investors, top 3, mn US$	n/a	2022	European Commission\'s Joint Research Centre
3.1.3	Government's online service	n/a	2022	Division for Public Institutions and Digital Government (DPIDG) of the United Nations Department of Economic and Social Affairs (UNDESA).
3.1.4	E-participation	n/a	2022	Division for Public Institutions and Digital Government (DPIDG) of the United Nations Department of Economic and Social Affairs (UNDESA).
3.3.2	Environmental performance	n/a	2022	Yale Center for Environmental Law & Policy
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
6.1.2	PCT patents by origin/bn PPP$ GDP	n/a	2022	World Intellectual Property Organization; International Monetary Fund
6.1.4	Scientific and technical articles/bn PPP$ GDP	n/a	2022	Clarivate; International Monetary Fund
6.3.2	Production and export complexity	n/a	2020	Harvard University, Growth Lab
7.1.1	Intangible asset intensity, top 15, %	n/a	2022	Brand Finance

> ## Outdated data for Hong Kong, China

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	2016	2022	Global Entrepreneurship Monitor
3.2.1	Electricity output, GWh/mn pop.	2020	2021	International Energy Agency

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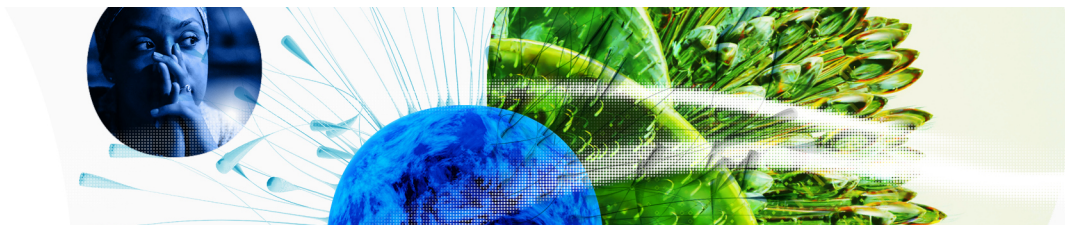
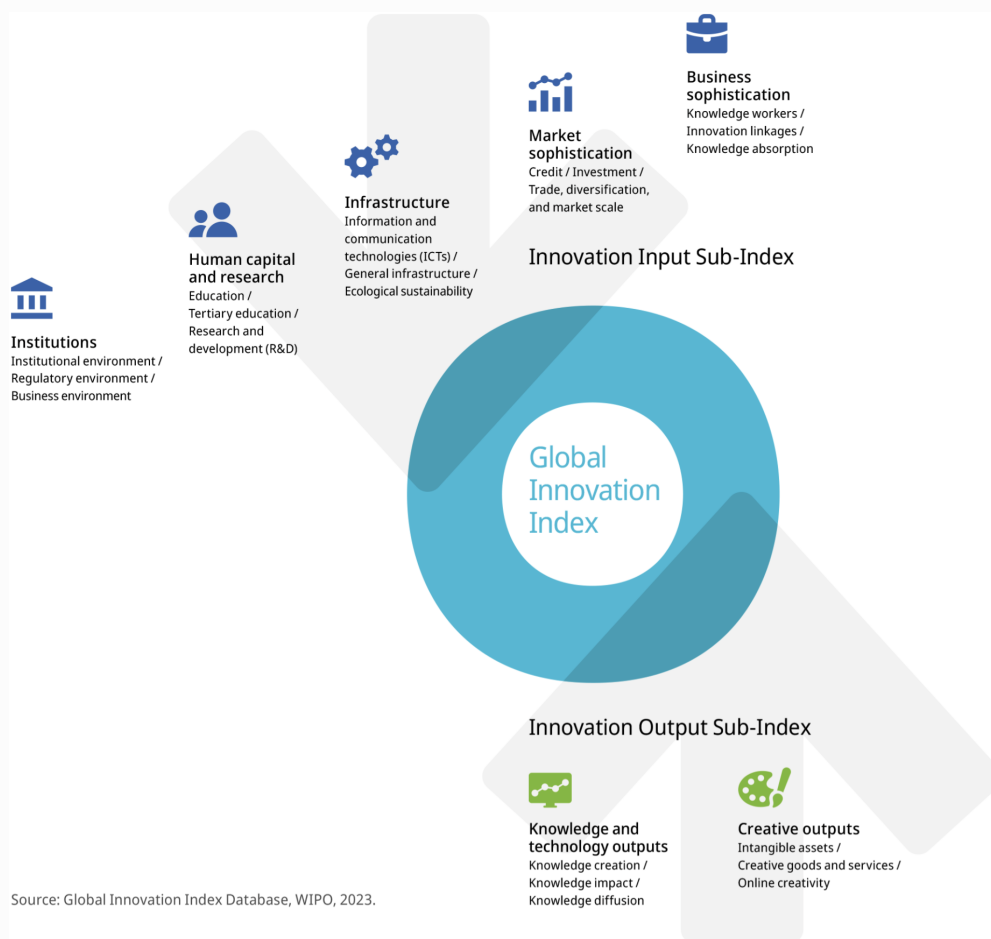| Code	Indicator name	Economy Year	Model Year	Source
4.1.1	Finance for startups and scaleups	2016	2022	Global Entrepreneurship Monitor
5.1.1	Knowledge-intensive employment, %	2021	2022	International Labour Organization
5.1.3	GERD performed by business, % GDP	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.4	GERD financed by business, %	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2021	2022	International Labour Organization
5.2.3	GERD financed by abroad, % GDP	2018	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.1	Intellectual property payments, % total trade	2020	2021	World Trade Organization and United Nations Conference on Trade and Development
5.3.3	ICT services imports, % total trade	2020	2021	World Trade Organization and United Nations Conference on Trade and Development
5.3.5	Research talent, % in businesses	2018	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
6.3.1	Intellectual property receipts, % total trade	2020	2021	World Trade Organization and United Nations Conference on Trade and Development
6.3.4	ICT services exports, % total trade	2020	2021	World Trade Organization and United Nations Conference on Trade and Development

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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.

Institutions
Institutional environment /
Regulatory environment /
Business environment

Human capital and research
Education /
Tertiary education /
Research and development (R&D)

Infrastructure
Information and communication technologies (ICTs) /
General infrastructure /
Ecological sustainability

Market sophistication
Credit / Investment /
Trade, diversification, and market scale

Business sophistication
Knowledge workers /
Innovation linkages /
Knowledge absorption

Innovation Input Sub-Index

Global Innovation Index

Innovation Output Sub-Index

Knowledge and technology outputs
Knowledge creation /
Knowledge impact /
Knowledge diffusion

Creative outputs
Intangible assets /
Creative goods and services /
Online creativity

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.