

# GLOBAL INNOVATION INDEX 2019

## HONG KONG (CHINA)

**13th**

Hong Kong (China) ranks 13th among the 129 economies featured in the GII 2019.

The Global Innovation Index (GII) is a ranking of world economies based on 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 the GII model influence year-on-year comparisons of the GII ranks. The confidence interval for Hong Kong (China)'s ranking in the GII 2019 is between 11 and 17.

### Rankings of Hong Kong (China), 2017 - 2019

	GII	Innovation Inputs	Innovation Outputs
<b>2019</b>	13	8	16
<b>2018</b>	14	8	21
<b>2017</b>	16	8	25

- Hong Kong (China) performs better in Innovation Inputs than Outputs.
- This year Hong Kong (China) ranks 8th in Innovation Inputs, same as last year and 2017.
- As for Innovation Outputs, Hong Kong (China) ranks 16th. This position is better than last year and compared to 2017.

**13th**

Hong Kong (China) ranks 13th among the 50 high-income economies.

**3rd**

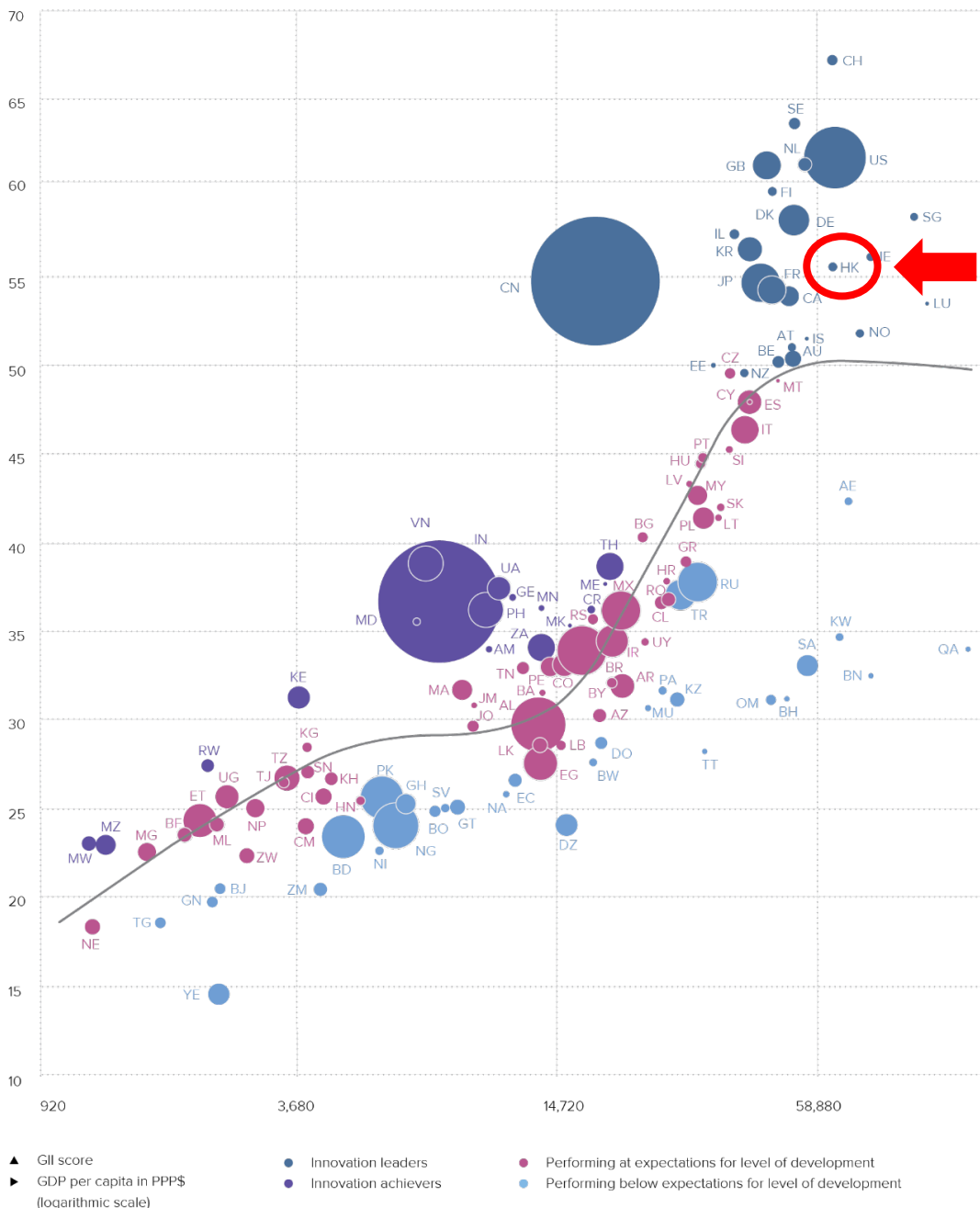
Hong Kong (China) ranks 3rd among the 15 economies in South East Asia, East Asia, and Oceania.

## 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 considered Innovation under-performers relative to GDP.

Relative to GDP, Hong Kong (China) performs above its expected level of development.

**GII scores and GDP per capita in PPP US\$ (bubbles sized by population)**

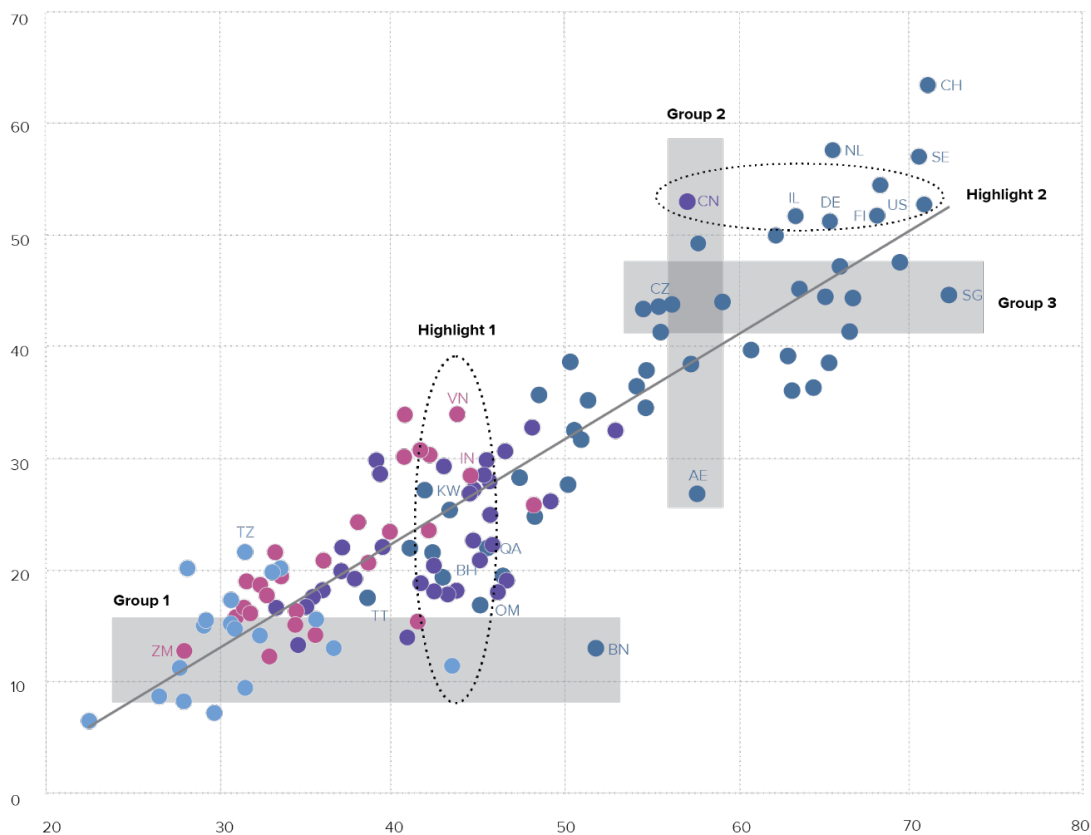


# EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs, indicating which economies best translate innovation inputs into innovation outputs. Economies appearing above the line are effectively translating their costly innovation investments into more and higher-quality outputs. In contrast, those below the line are not effectively translating innovation inputs into outputs.

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

## Innovation input/output performance by income group, 2019



▲ Output score  
▶ Input score

● High income  
● Upper-middle income

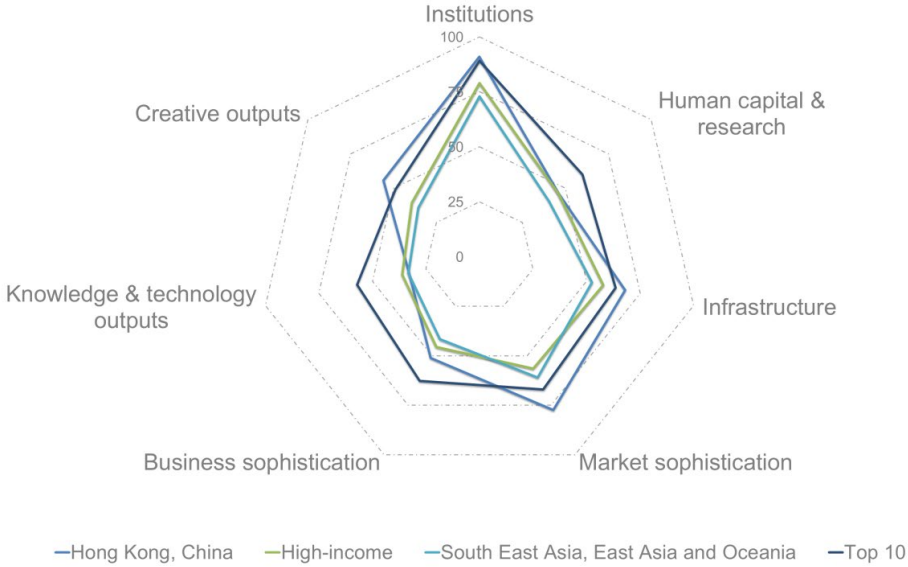
● Lower-middle income  
● Low income

— Fitted values

AE United Arab Emirates	CZ Czech Republic	NL Netherlands	TZ United Republic of Tanzania
BH Bahrain	DE Germany	OM Oman	US United States of America
BN Brunei Darussalam	FI Finland	QA Qatar	VN Viet Nam
CH Switzerland	IL Israel	SE Sweden	ZM Zambia
CN China	IN India	SG Singapore	
	KW Kuwait	TT Trinidad and Tobago	

# BENCHMARKING HONG KONG (CHINA) TO OTHER HIGH-INCOME ECONOMIES AND THE SOUTH EAST ASIA, EAST ASIA, AND OCEANIA REGION

Scores of Hong Kong (China) in the seven GII pillars



## High-income economies

Hong Kong (China) has high scores in all GII pillars but Knowledge & technology outputs, which is the only pillar below the average of the high-income group.

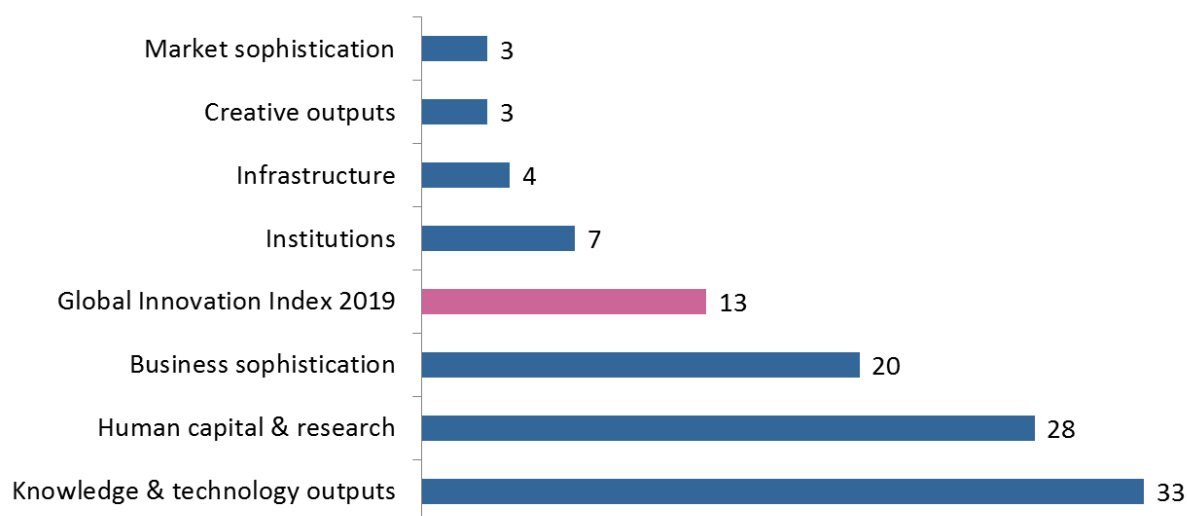
## South East Asia, East Asia, and Oceania Region

Compared to other economies in the South East Asia, East Asia, and Oceania region, Hong Kong (China) performs above average in all GII pillars but Knowledge & technology outputs.

Top ranks are found in areas such as Political environment, Regulatory environment, Ecological sustainability, Credit, Knowledge absorption, Creative goods & services, and Online creativity, where it ranks in the top 10 worldwide.

## OVERVIEW OF RANKINGS OF HONG KONG (CHINA) IN THE 7 GII AREAS

Hong Kong (China) performs the best in Market sophistication and Creative outputs while its weakest performance is in Knowledge & technology outputs.



\*The highest possible ranking in each pillar is 1.

## INNOVATION STRENGTHS AND WEAKNESSES FOR HONG KONG (CHINA)

The table below gives an overview of strengths and weaknesses for Hong Kong (China) in the GII 2019.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2	Regulatory environment	3	2.1.1	Expenditure on education, % GDP	96
1.2.1	Regulatory quality*	1	2.3.3	Global R&D companies, top 3, in mn US\$	43
1.2.3	Cost of redundancy dismissal, salary weeks	1	3.2.3	Gross capital formation, % GDP	74
2.1.4	PISA scales in reading, maths & science	2	5.2.3	GERD financed by abroad, %	65
3.3	Ecological sustainability	2	5.3.1	Intellectual property payments, % total trade	76
3.3.1	GDP/unit of energy use	1	5.3.3	ICT services imports, % total trade	112
4	Market sophistication	3	6.2.5	High- & medium-high-tech manufactures, %	82
4.1	Credit	2	6.3.2	High-tech net exports, % total trade	104
4.1.2	Domestic credit to private sector, % GDP	1	6.3.3	ICT services exports, % total trade	103
4.2.2	Market capitalization, % GDP	1	7.2.1	Cultural & creative services exports, % total trade	76
4.3.1	Applied tariff rate, weighted mean, %	1			
4.3.2	Intensity of local competition <sup>†</sup>	2			
5.3.2	High-tech imports, % total trade	1			
5.3.4	FDI net inflows, % GDP, 3-year average	1			
6.2.2	New businesses/th pop. 15–64	1			
6.3.4	FDI net outflows, % GDP, 3-year average	1			
7	Creative outputs	3			
7.2	Creative goods & services	1			
7.2.4	Printing & other media, % manufacturing	1			
7.2.5	Creative goods exports, % total trade	1			

## **STRENGTHS**

- GII strengths for Hong Kong (China) are found in all the seven GII pillars.
- Pillars Market sophistication (3) and Creative outputs (3) are notable GII strengths for this economy.
- In Market sophistication (3), several relative strengths for Hong Kong (China) are identified: sub-pillar Credit (2), as well as indicators Intensity of local competition (2), Domestic credit to private sector, Market capitalization, and Applied tariff rate. In the latter three, Hong Kong (China) is also world leader.
- In Creative outputs (3), relative strengths are sub-pillar Creative goods & services and two of its indicators - Printing & other media and Creative goods exports. In all these areas Hong Kong (China) positions 1st in the world.
- In Institutions (7), GII strengths are sub-pillar Regulatory environment (3) and two of its three indicators - Regulatory quality and Cost of redundancy dismissal, where the economy ranks first worldwide.
- In Human capital & research (28), Hong Kong (China) has GII strength in indicator PISA results (2).
- In Infrastructure (4), sub-pillar Ecological sustainability (2) and its indicator GDP per unit of energy use (1) are both relative strengths for the economy.
- In Business sophistication (20), Hong Kong (China)'s strengths are indicators High-tech imports and FDI inflows. In both indicators the economy takes the first spot.
- In Knowledge & technology outputs (33), Hong Kong (China) is world leader in indicators New businesses and FDI outflows, both strengths for this economy.

## **WEAKNESSES**

- Hong Kong (China)'s weaknesses in the GII are found in five of the seven GII pillars.
- In Human capital & research (28), weaknesses for Hong Kong (China) are indicators Expenditure on education (96) and Global R&D companies (43).
- In Business sophistication (20), relative weaknesses are indicators R&D financed by abroad (65), Intellectual property payments (76), and ICT services imports (112).
- In Knowledge & technology outputs (33), Hong Kong (China) has GII weaknesses in indicators High- & medium-high-tech manufactures (82), High-tech exports (104), and ICT services exports (103).
- Other two weaknesses in the innovation profile of Hong Kong (China) are found in indicators Gross capital formation (74) in Infrastructure (4) and Cultural & creative services exports (76) in Creative outputs (3).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2018 rank
16	8	High	SEAO	7.4	484.0	64,215.7	14
				Score/Value	Rank		
<b>INSTITUTIONS</b> .....				91.1	7		
1.1	<b>Political environment</b> .....		93.4	4			
1.1.1	Political and operational stability*.....		94.7	4			
1.1.2	Government effectiveness*.....		92.7	5			
1.2	<b>Regulatory environment</b> .....		98.0	3	●		
1.2.1	Regulatory quality*.....		100.0	1	●◆		
1.2.2	Rule of law*.....		91.8	12			
1.2.3	Cost of redundancy dismissal, salary weeks.....		8.0	1	●		
1.3	<b>Business environment</b> .....		81.9	28			
1.3.1	Ease of starting a business*.....		98.2	5	◆		
1.3.2	Ease of resolving insolvency*.....		65.7	41	◇		
<b>HUMAN CAPITAL &amp; RESEARCH</b> .....				46.1	28		◇
2.1	<b>Education</b> .....		53.6	48			
2.1.1	Expenditure on education, % GDP.....		3.3	96	○◇		
2.1.2	Government funding/pupil, secondary, % GDP/cap... ..		22.2	40			
2.1.3	School life expectancy, years.....		16.5	21			
2.1.4	PISA scales in reading, maths, & science.....		532.6	2	●◆		
2.1.5	Pupil-teacher ratio, secondary.....		11.5	43			
2.2	<b>Tertiary education</b> .....		50.0	15			
2.2.1	Tertiary enrolment, % gross.....		73.8	23			
2.2.2	Graduates in science & engineering, %.....		n/a	n/a			
2.2.3	Tertiary inbound mobility, %.....		11.4	16			
2.3	<b>Research &amp; development (R&amp;D)</b> .....		34.7	33	◇		
2.3.1	Researchers, FTE/mn pop.....		3,411.7	27	◇		
2.3.2	Gross expenditure on R&D, % GDP.....		0.8	43	◇		
2.3.3	Global R&D companies, avg. exp. top 3, mn US\$.....		0.0	43	○◇		
2.3.4	QS university ranking, average score top 3*.....		80.1	7			
<b>INFRASTRUCTURE</b> .....				67.9	4		◆
3.1	<b>Information &amp; communication technologies (ICTs)</b> .....		87.3	[18]			
3.1.1	ICT access*.....		91.4	4	◆		
3.1.2	ICT use*.....		83.2	8			
3.1.3	Government's online service*.....		n/a	n/a			
3.1.4	E-participation*.....		n/a	n/a			
3.2	<b>General infrastructure</b> .....		44.1	34			
3.2.1	Electricity output, kWh/mn pop.....		5,205.2	41			
3.2.2	Logistics performance*.....		86.8	12			
3.2.3	Gross capital formation, % GDP.....		22.2	74	○		
3.3	<b>Ecological sustainability</b> .....		72.2	2	●◆		
3.3.1	GDP/unit of energy use.....		27.0	1	●◆		
3.3.2	Environmental performance*.....		n/a	n/a			
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP..		2.2	44			
<b>MARKET SOPHISTICATION</b> .....				77.3	3		●◆
4.1	<b>Credit</b> .....		87.5	2	●◆		
4.1.1	Ease of getting credit*.....		75.0	29			
4.1.2	Domestic credit to private sector, % GDP...Ⓞ.....		203.8	1	●◆		
4.1.3	Microfinance gross loans, % GDP.....		n/a	n/a			
4.2	<b>Investment</b> .....		67.7	11	◆		
4.2.1	Ease of protecting minority investors*.....		78.3	10	◆		
4.2.2	Market capitalization, % GDP.....		1,099.6	1	●◆		
4.2.3	Venture capital deals/bn PPP\$ GDP.....		0.1	26			
4.3	<b>Trade, competition, &amp; market scale</b> .....		76.8	16			
4.3.1	Applied tariff rate, weighted avg., %.....		0.0	1	●◆		
4.3.2	Intensity of local competition*.....		85.6	2	●◆		
4.3.3	Domestic market scale, bn PPP\$.....		484.0	41			
<b>BUSINESS SOPHISTICATION</b> .....				51.1	20		
5.1	<b>Knowledge workers</b> .....		51.9	35	◇		
5.1.1	Knowledge-intensive employment, %...Ⓞ.....		39.0	29	◇		
5.1.2	Firms offering formal training, % firms.....		n/a	n/a			
5.1.3	GERD performed by business, % GDP.....		0.4	43	◇		
5.1.4	GERD financed by business, %.....		50.0	26			
5.1.5	Females employed w/advanced degrees, %...Ⓞ.....		15.9	41	◇		
5.2	<b>Innovation linkages</b> .....		44.7	21			
5.2.1	University/industry research collaboration*.....		66.4	15			
5.2.2	State of cluster development*.....		72.6	6	◆		
5.2.3	GERD financed by abroad, %.....		4.4	65	○		
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....		0.2	4	◆		
5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....		1.1	25	◇		
5.3	<b>Knowledge absorption</b> .....		56.6	8			
5.3.1	Intellectual property payments, % total trade.....		0.3	76	○◇		
5.3.2	High-tech imports, % total trade.....		49.8	1	●◆		
5.3.3	ICT services imports, % total trade.....		0.3	112	○◇		
5.3.4	FDI net inflows, % GDP.....		45.3	1	●◆		
5.3.5	Research talent, % in business enterprise.....		37.3	34	◇		
<b>KNOWLEDGE &amp; TECHNOLOGY OUTPUTS</b> .....				32.9	33		◇
6.1	<b>Knowledge creation</b> .....		21.5	[39]			
6.1.1	Patents by origin/bn PPP\$ GDP.....		0.7	70	◇		
6.1.2	PCT patents by origin/bn PPP\$ GDP.....		n/a	n/a			
6.1.3	Utility models by origin/bn PPP\$ GDP.....		1.1	22			
6.1.4	Scientific & technical articles/bn PPP\$ GDP.....		n/a	n/a			
6.1.5	Citable documents H-index.....		35.5	25			
6.2	<b>Knowledge impact</b> .....		50.1	14			
6.2.1	Growth rate of PPP\$ GDP/worker, %.....		2.1	41			
6.2.2	New businesses/th pop. 15-64.....		27.3	1	●◆		
6.2.3	Computer software spending, % GDP.....		0.4	27			
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....		5.7	55			
6.2.5	High- & medium-high-tech manufactures, %.....		0.1	82	○◇		
6.3	<b>Knowledge diffusion</b> .....		27.0	36			
6.3.1	Intellectual property receipts, % total trade.....		0.1	52	◇		
6.3.2	High-tech net exports, % total trade...Ⓞ.....		0.1	104	○◇		
6.3.3	ICT services exports, % total trade.....		0.4	103	○◇		
6.3.4	FDI net outflows, % GDP.....		26.2	1	●◆		
<b>CREATIVE OUTPUTS</b> .....				55.9	3		●◆
7.1	<b>Intangible assets</b> .....		50.2	35			
7.1.1	Trademarks by origin/bn PPP\$ GDP.....		64.8	31			
7.1.2	Industrial designs by origin/bn PPP\$ GDP.....		2.7	44			
7.1.3	ICTs & business model creation*.....		74.6	19			
7.1.4	ICTs & organizational model creation*.....		67.6	23	◇		
7.2	<b>Creative goods &amp; services</b> .....		70.5	1	●◆		
7.2.1	Cultural & creative services exports, % total trade.....		0.1	76	○◇		
7.2.2	National feature films/mn pop. 15-69...Ⓞ.....		10.4	17			
7.2.3	Entertainment & Media market/th pop. 15-69.....		50.9	16			
7.2.4	Printing & other media, % manufacturing.....		4.8	1	●◆		
7.2.5	Creative goods exports, % total trade.....		9.9	1	●◆		
7.3	<b>Online creativity</b> .....		52.8	10			
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....		71.9	8			
7.3.2	Country-code TLDs/th pop. 15-69.....		12.3	36	◇		
7.3.3	Wikipedia edits/mn pop. 15-69.....		84.1	11			
7.3.4	Mobile app creation/bn PPP\$ GDP.....		70.2	5	◆		

NOTES: ● indicates a strength; ○ a weakness; ◆ a strength relative to the other top 25-ranked GII economies; ◇ a weakness relative to the other top 25-ranked GII economies; \* an index; † a survey question. Ⓞ indicates that the economy's data are older than the base year; see Appendix II 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 missing or are outdated for Hong Kong (China).

### Missing data

Code	Indicator name	Country year	Model year	Source
2.2.2	Graduates in science & engineering, %	n/a	2016	UNESCO Institute for Statistics
3.1.3	Government's online service*	n/a	2018	United Nations Public Administration Network
3.1.4	E-participation*	n/a	2018	United Nations Public Administration Network
3.3.2	Environmental performance*	n/a	2018	Yale University and Columbia University
4.1.3	Microfinance gross loans, % GDP	n/a	2017	Microfinance Information Exchange
5.1.2	Firms offering formal training, % firms	n/a	2013	World Bank
6.1.2	PCT patents by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization
6.1.4	Scientific & technical articles/bn PPP\$ GDP	n/a	2018	Clarivate Analytics

### Outdated data

Code	Indicator name	Country year	Model year	Source
4.1.2	Domestic credit to private sector, % GDP	2016	2017	International Monetary Fund
5.1.1	Knowledge-intensive employment, %	2016	2017	Source: International Labour Organization
5.1.5	Females employed w/advanced degrees, %	2016	2017	International Labour Organization
6.3.2	High-tech net exports, % total trade	2016	2017	United Nations, COMTRADE
7.2.2	National feature films/mn pop. 15–69	2015	2017	UNESCO Institute for Statistics

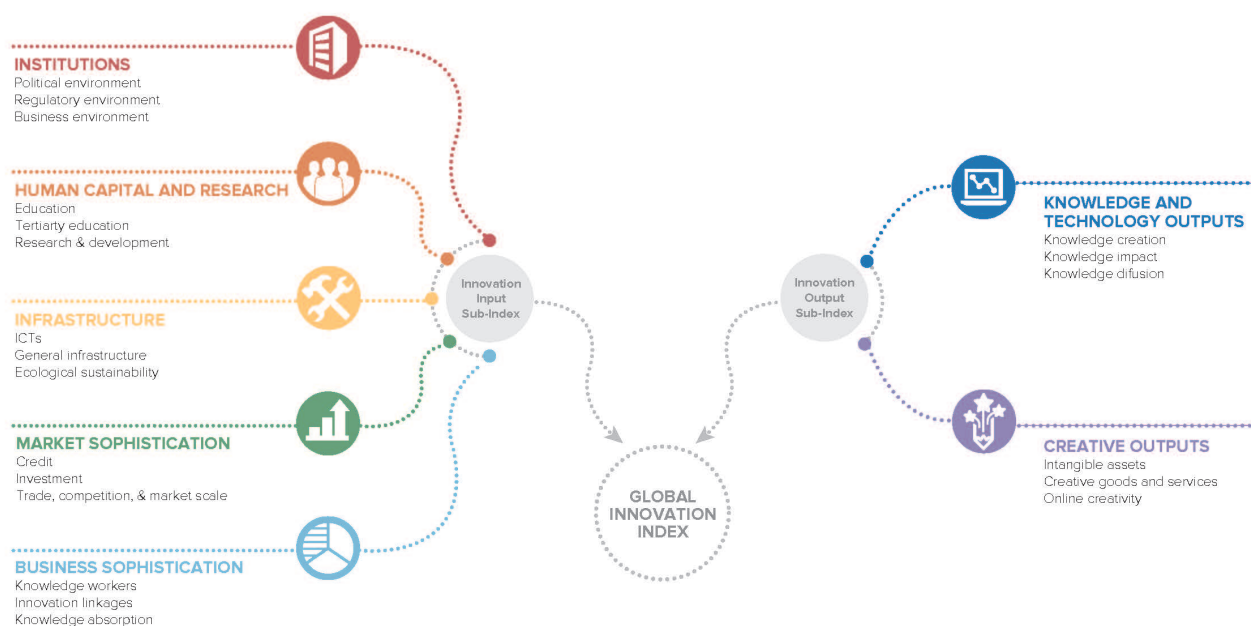


# ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2019, the GII presents its 12<sup>th</sup> edition devoted to the theme **Creating Healthy Lives—The Future of Medical Innovation**.

Recognizing that innovation is a key driver of economic development, the GII aims to provide a rich innovation ranking and 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 countries that incorporate the GII into their innovation agendas.

## Framework of the Global Innovation Index 2019



The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that includes 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 containing three sub-pillars.

