

## MALAWI

**111th**

Malawi ranks 111th among the 131 economies featured in the GII 2020.

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 Malawi 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 Malawi in the GII 2020 is between ranks 110 and 127.

**Rankings of Malawi (2018–2020)**

	<b>GII</b>	<b>Innovation inputs</b>	<b>Innovation outputs</b>
<b>2020</b>	111	114	103
<b>2019</b>	118	119	112
<b>2018</b>	114	111	108

- Malawi performs better in innovation outputs than innovation inputs in 2020.
- This year Malawi ranks 114th in innovation inputs, higher than last year and lower compared to 2018.
- As for innovation outputs, Malawi ranks 103rd. This position is higher than last year and higher compared to 2018.

**5th**

Malawi ranks 5th among the 16 low-income group economies.

**11th**

Malawi ranks 11th among the 26 economies in Sub-Saharan Africa.

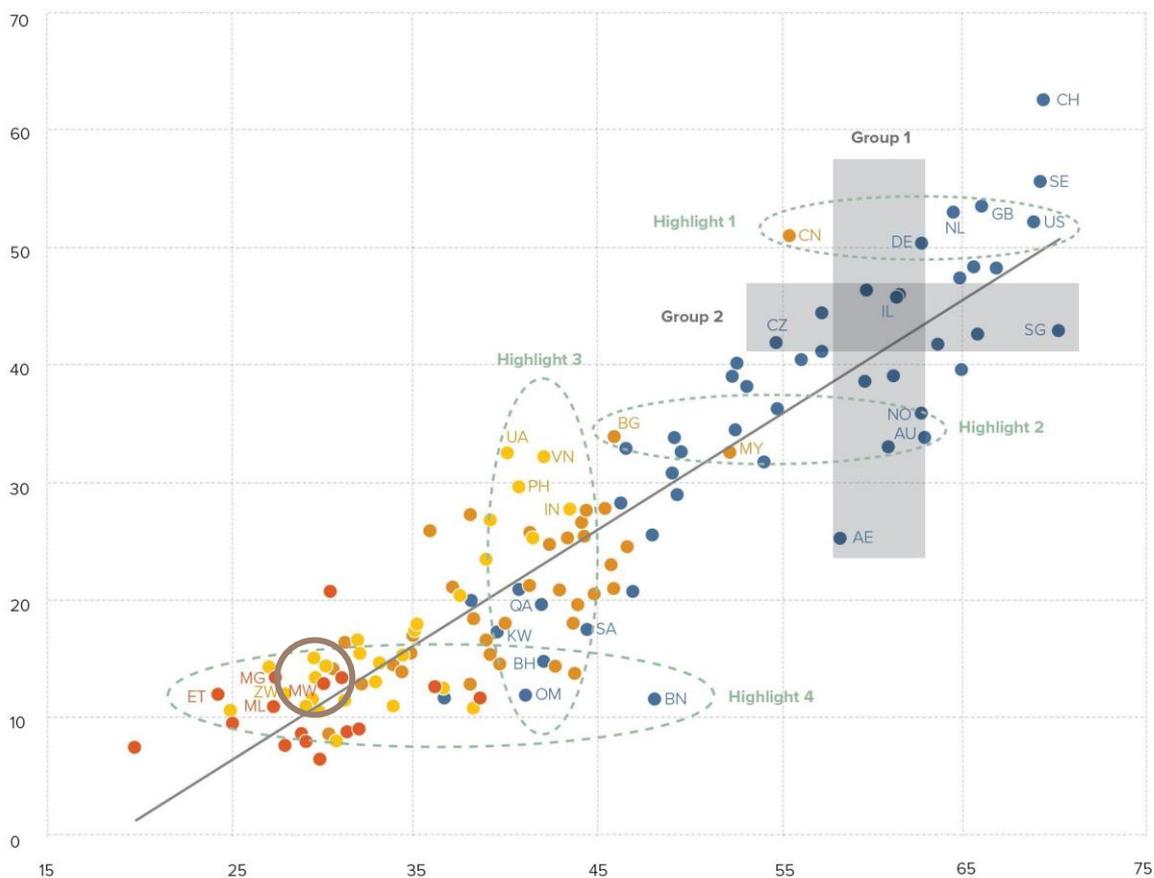


## EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Malawi produces more innovation outputs relative to its level of innovation investments.

**Innovation input to output performance, 2020**

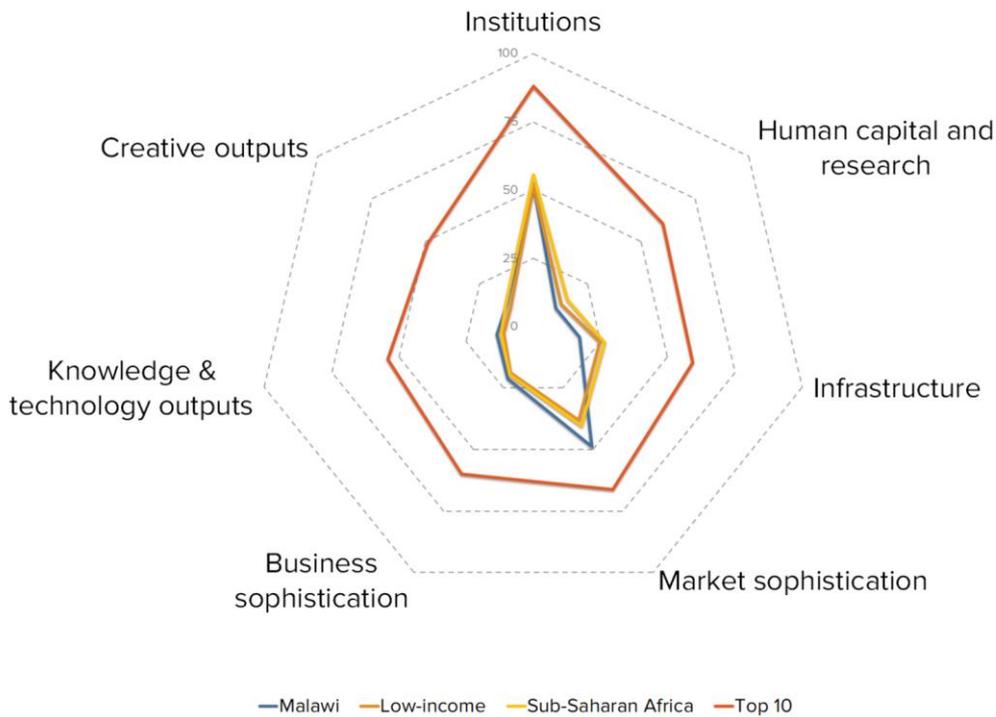


▲ Output score      ● High income group      ● Lower middle-income group      — Fitted values  
 ► Input score      ● Upper middle-income group      ● Low income group

AU Australia	IN India	NL Netherlands	CH Switzerland
BH Bahrain	IL Israel	NO Norway	UA Ukraine
BN Brunei Darussalam	KW Kuwait	OM Oman	AE United Arab Emirates
BG Bulgaria	MG Madagascar	PH Philippines	GB United Kingdom
CN China	MW Malawi	QA Qatar	US United States of America
CZ Czech Republic	ML Mali	SA Saudi Arabia	VN Viet Nam
ET Ethiopia	MY Malaysia	SG Singapore	ZW Zimbabwe
DE Germany		SE Sweden	

# BENCHMARKING MALAWI AGAINST OTHER LOW-INCOME GROUP ECONOMIES AND SUB-SAHARAN AFRICA

## Malawi's scores in the seven GII pillars



### Low-income group economies

Malawi has high scores in five out of the seven GII pillars: Institutions, Market sophistication, Business sophistication, Knowledge & technology outputs and Creative outputs, which are above average for the low-income group.

Conversely, Malawi scores below average for its income group in two GII pillars: Human capital & research and Infrastructure.

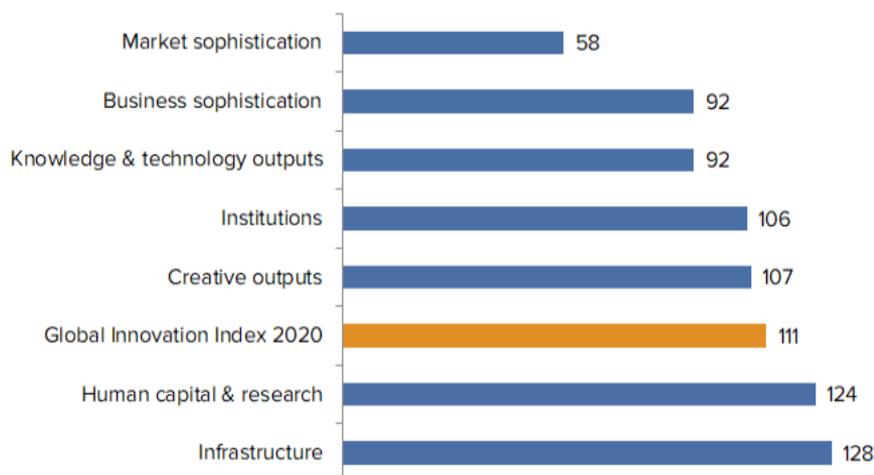
### Sub-Saharan Africa

Compared to other economies in Sub-Saharan Africa, Malawi performs:

- above average in three out of the seven GII pillars: Market sophistication, Business sophistication and Knowledge & technology outputs; and
- below average in four out of the seven GII pillars: Institutions, Human capital & research, Infrastructure and Creative outputs.

## OVERVIEW OF MALAWI RANKINGS IN THE SEVEN GII AREAS

Malawi performs best in Market sophistication and its weakest performance is in Infrastructure.



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

## INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Malawi in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
2.1.1	Expenditure on education, % GDP	54	2.1.5	Pupil-teacher ratio, secondary	124
2.1.2	Government funding/pupil, secondary, % GDP/cap	23	2.2	Tertiary education	129
4	Market sophistication	58	2.2.1	Tertiary enrolment, % gross	124
4.1.1	Ease of getting credit*	10	2.3.3	Global R&D companies, top 3, mn US\$	42
4.1.3	Microfinance gross loans, % GDP	36	2.3.4	QS university ranking, average score top 3*	77
5.1.2	Firms offering formal training, %	43	3.1	Information & communication technologies (ICTs)	129
5.3.2	High-tech imports, % total trade	23	3.1.1	ICT access*	131
5.3.3	ICT services imports, % total trade	45	3.2.3	Gross capital formation, % GDP	123
6.1.4	Scientific & technical articles/bn PPP\$ GDP	56	4.1.2	Domestic credit to private sector, % GDP	126
6.3.3	ICT services exports, % total trade	53	5.1	Knowledge-intensive employment, %	118
7.2.4	Printing and other media, % manufacturing	35	6.1.2	PCT patents by origin/bn PPP\$ GDP	100
			6.2.2	New businesses/th pop. 15–64	119
			7.1.4	ICTs & organizational model creation†	124

## **STRENGTHS**

GII strengths for Malawi are found in five of the seven GII pillars.

- Human capital & research (124): shows strengths in the indicators Expenditure on education (54) and Government funding (23).
- Market sophistication (58): demonstrates strengths in the indicators Ease of getting credit (10) and Microfinance gross loans (36).
- Business sophistication (92): displays strengths in the indicators Firms offering formal training (43), High-tech imports (23) and ICT services imports (45).
- Knowledge & technology outputs (92): reveals strengths in the indicators Scientific & technical articles (56) and ICT services exports (53).
- Creative outputs (107): exhibits strengths in the indicator Printing and other media (35).

## **WEAKNESSES**

GII weaknesses for Malawi are found in six of the seven GII pillars.

- Human capital & research (124): reveals weaknesses in the sub-pillar Tertiary education (129) and in the indicators Pupil-teacher ratio (124), Tertiary enrolment (124), Global R&D companies (42) and QS university ranking (77).
- Infrastructure (128): displays weaknesses in the sub-pillar Information & communication technologies (129) and in the indicators ICT access (131) and Gross capital formation (123).
- Market sophistication (58): shows weaknesses in the indicator Domestic credit to private sector (126).
- Business sophistication (92): demonstrates weaknesses in the indicator Knowledge-intensive employment (118).
- Knowledge & technology outputs (92): reveals weaknesses in the indicators PCT patents by origin (100) and New businesses (119).
- Creative outputs (107): exhibits weaknesses in the indicator ICTs & organizational model creation (124).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
103	114	Low	SSF	18.6	25.2	1,082.9	118
			Score/Value Rank				Score/Value Rank
<b>INSTITUTIONS</b> .....				52.2	106		
<b>1.1</b>	<b>Political environment</b> .....	43.4	111				
1.1.1	Political and operational stability*.....	62.5	92				
1.1.2	Government effectiveness*.....	33.9	116				
<b>1.2</b>	<b>Regulatory environment</b> .....	56.6	89				
1.2.1	Regulatory quality*.....	24.1	112				
1.2.2	Rule of law*.....	36.8	84				
1.2.3	Cost of redundancy dismissal, salary weeks.....	16.7	65				
<b>1.3</b>	<b>Business environment</b> .....	56.4	115				
1.3.1	Ease of starting a business*.....	77.9	114				
1.3.2	Ease of resolving insolvency*.....	34.9	112				
<b>HUMAN CAPITAL &amp; RESEARCH</b> .....				10.5	124		
<b>2.1</b>	<b>Education</b> .....	29.9	105				
2.1.1	Expenditure on education, % GDP.....	4.7	54	●			
2.1.2	Government funding/pupil, secondary, % GDP/cap.....	24.0	23	●			
2.1.3	School life expectancy, years.....	10.9	101				
2.1.4	PISA scales in reading, maths, & science.....	n/a	n/a				
2.1.5	Pupil-teacher ratio, secondary.....	72.3	124	○ ◇			
<b>2.2</b>	<b>Tertiary education</b> .....	1.6	129	○ ◇			
2.2.1	Tertiary enrolment, % gross.....	0.8	124	○ ◇			
2.2.2	Graduates in science & engineering, %.....	n/a	n/a				
2.2.3	Tertiary inbound mobility, %.....	1.1	86				
<b>2.3</b>	<b>Research &amp; development (R&amp;D)</b> .....	0.2	117				
2.3.1	Researchers, FTE/mn pop.....	50.4	92				
2.3.2	Gross expenditure on R&D, % GDP.....	n/a	n/a				
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US.....	0.0	42	○ ◇			
2.3.4	QS university ranking, average score top 3*.....	0.0	77	○ ◇			
<b>INFRASTRUCTURE</b> .....				17.4	128	◇	
<b>3.1</b>	<b>Information &amp; communication technologies (ICTs)</b> .....	20.3	129	○ ◇			
3.1.1	ICT access*.....	21.4	131	○ ◇			
3.1.2	ICT use*.....	13.7	123				
3.1.3	Government's online service*.....	25.7	122				
3.1.4	E-participation*.....	20.2	123	◇			
<b>3.2</b>	<b>General infrastructure</b> .....	12.3	124				
3.2.1	Electricity output, kWh/mn pop.....	n/a	n/a				
3.2.2	Logistics performance*.....	24.2	93				
3.2.3	Gross capital formation, % GDP.....	12.3	123	○ ◇			
<b>3.3</b>	<b>Ecological sustainability</b> .....	19.5	104				
3.3.1	GDP/unit of energy use.....	n/a	n/a				
3.3.2	Environmental performance*.....	38.3	93	◆			
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....	0.1	123				
<b>MARKET SOPHISTICATION</b> .....				48.9	58	◆	
<b>4.1</b>	<b>Credit</b> .....	38.4	79				
4.1.1	Ease of getting credit*.....	90.0	10	◆			
4.1.2	Domestic credit to private sector, % GDP.....	10.5	126	○			
4.1.3	Microfinance gross loans, % GDP.....	0.5	36	●			
<b>4.2</b>	<b>Investment</b> .....	58.0	[17]				
4.2.1	Ease of protecting minority investors*.....	58.0	77	◆			
4.2.2	Market capitalization, % GDP.....	n/a	n/a				
4.2.3	Venture capital deals/bn PPP\$ GDP.....	n/a	n/a				
<b>4.3</b>	<b>Trade, competition, and market scale</b> .....	50.3	114				
4.3.1	Applied tariff rate, weighted avg., %.....	4.8	86	◆			
4.3.2	Intensity of local competition*.....	61.1	106				
4.3.3	Domestic market scale, bn PPP\$.....	25.2	126				
<b>BUSINESS SOPHISTICATION</b> .....				21.2	[92]		
<b>5.1</b>	<b>Knowledge workers</b> .....	15.3	[107]				
5.1.1	Knowledge-intensive employment, %.....	3.7	118	○			
5.1.2	Firms offering formal training, %.....	32.9	43	● ◆			
5.1.3	GERD performed by business, % GDP.....	n/a	n/a				
5.1.4	GERD financed by business, %.....	n/a	n/a				
5.1.5	Females employed w/advanced degrees, %.....	0.6	115				
<b>5.2</b>	<b>Innovation linkages</b> .....	20.9	[66]				
5.2.1	University/industry research collaboration*.....	31.0	105				
5.2.2	State of cluster development*.....	35.9	110				
5.2.3	GERD financed by abroad, % GDP.....	n/a	n/a				
5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....	n/a	n/a				
5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....	0.0	71	◆			
<b>5.3</b>	<b>Knowledge absorption</b> .....	27.4	71				
5.3.1	Intellectual property payments, % total trade.....	0.2	88				
5.3.2	High-tech imports, % total trade.....	10.7	23	●			
5.3.3	ICT services imports, % total trade.....	1.5	45	●			
5.3.4	FDI net inflows, % GDP.....	1.7	91				
5.3.5	Research talent, % in business enterprise.....	n/a	n/a				
<b>KNOWLEDGE &amp; TECHNOLOGY OUTPUTS</b> .....				13.4	92		
<b>6.1</b>	<b>Knowledge creation</b> .....	9.3	79				
6.1.1	Patents by origin/bn PPP\$ GDP.....	0.1	109				
6.1.2	PCT patents by origin/bn PPP\$ GDP.....	0.0	100	○ ◇			
6.1.3	Utility models by origin/bn PPP\$ GDP.....	n/a	n/a				
6.1.4	Scientific & technical articles/bn PPP\$ GDP.....	9.3	56	◆			
6.1.5	Citable documents H-index.....	8.1	85				
<b>6.2</b>	<b>Knowledge impact</b> .....	10.7	115				
6.2.1	Growth rate of PPP\$ GDP/worker, %.....	0.5	75				
6.2.2	New businesses/th pop. 15-64.....	0.1	119	○			
6.2.3	Computer software spending, % GDP.....	0.0	110				
6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....	0.8	112				
6.2.5	High- and medium-high-tech manufacturing, %.....	8.6	86				
<b>6.3</b>	<b>Knowledge diffusion</b> .....	20.3	75				
6.3.1	Intellectual property receipts, % total trade.....	n/a	n/a				
6.3.2	High-tech net exports, % total trade.....	0.5	81				
6.3.3	ICT services exports, % total trade.....	2.1	53	●			
6.3.4	FDI net outflows, % GDP.....	-0.1	120				
<b>CREATIVE OUTPUTS</b> .....				12.3	[107]		
<b>7.1</b>	<b>Intangible assets</b> .....	19.2	[96]				
7.1.1	Trademarks by origin/bn PPP\$ GDP.....	23.6	87				
7.1.2	Global brand value, top 5,000, % GDP.....	n/a	n/a				
7.1.3	Industrial designs by origin/bn PPP\$ GDP.....	n/a	n/a				
7.1.4	ICTs & organizational model creation*.....	28.7	124	○ ◇			
<b>7.2</b>	<b>Creative goods and services</b> .....	6.6	[97]				
7.2.1	Cultural & creative services exports, % total trade.....	0.1	84				
7.2.2	National feature films/mn pop. 15-69.....	n/a	n/a				
7.2.3	Entertainment & Media market/th pop. 15-69.....	n/a	n/a				
7.2.4	Printing and other media, % manufacturing.....	1.2	35	●			
7.2.5	Creative goods exports, % total trade.....	0.1	103				
<b>7.3</b>	<b>Online creativity</b> .....	4.2	112				
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....	0.2	117				
7.3.2	Country-code TLDs/th pop. 15-69.....	0.0	124				
7.3.3	Wikipedia edits/mn pop. 15-69.....	17.0	113				
7.3.4	Mobile app creation/bn PPP\$ GDP.....	n/a	n/a				

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 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 either missing or outdated for Malawi.

### Missing data

Code	Indicator name	Country year	Model year	Source
2.1.4	PISA scales in reading, maths, & science	n/a	2018	OECD Programme for International Student Assessment (PISA)
2.2.2	Graduates in science & engineering, %	n/a	2017	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
3.2.1	Electricity output, GWh/mn pop	n/a	2017	International Energy Agency
3.3.1	GDP/unit of energy use	n/a	2017	International Energy Agency
4.2.2	Market capitalization, % GDP	n/a	2018	World Federation of Exchanges
4.2.3	Venture capital deals/bn PPP\$ GDP	n/a	2019	Thomson Reuters
5.1.3	GERD performed by business, % GDP	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.1.4	GERD financed by business, %	n/a	2017	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	n/a	2017	UNESCO Institute for Statistics
5.2.4	JV–strategic alliance deals/bn PPP\$ GDP	n/a	2019	Thomson Reuters
5.3.5	Research talent, % in business enterprise	n/a	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization
6.3.1	Intellectual property receipts, % total trade	n/a	2018	World Trade Organization
7.1.2	Global brand value, top 5000, % GDP	n/a	2019	Brand Finance
7.1.3	Industrial designs by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization
7.2.2	National feature films/mn pop. 15–69	n/a	2017	UNESCO Institute for Statistics
7.2.3	Entertainment & Media market/th pop. 15–69	n/a	2018	PwC
7.3.4	Mobile app creation/bn PPP\$ GDP	n/a	2019	App Annie

### Outdated data

Code	Indicator name	Country year	Model year	Source
2.1.3	School life expectancy, years	2011	2017	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2011	2017	UNESCO Institute for Statistics
2.2.3	Tertiary inbound mobility, %	2010	2017	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	2010	2018	UNESCO Institute for Statistics; Eurostat; OECD – Main Science and Technology Indicators
4.1.2	Domestic credit to private sector, % GDP	2016	2018	International Monetary Fund
4.3.1	Applied tariff rate, weighted avg., %	2016	2018	World Bank
5.1.1	Knowledge-intensive employment, %	2013	2018	International Labour Organization
5.1.2	Firms offering formal training, %	2013	2018	World Bank
5.1.5	Females employed w/advanced degrees, %	2017	2018	International Labour Organization
5.3.1	Intellectual property payments, % total trade	2017	2018	World Trade Organization
5.3.2	High-tech imports, % total trade	2017	2018	United Nations, COMTRADE
5.3.3	ICT services imports, % total trade	2017	2018	World Trade Organization
6.1.1	Patents by origin/bn PPP\$ GDP	2016	2018	World Intellectual Property Organization
6.2.2	New businesses/th pop. 15–64	2009	2018	World Bank
6.2.5	High- and medium-high-tech manufacturing, %	2010	2017	United Nations Industrial Development Organization

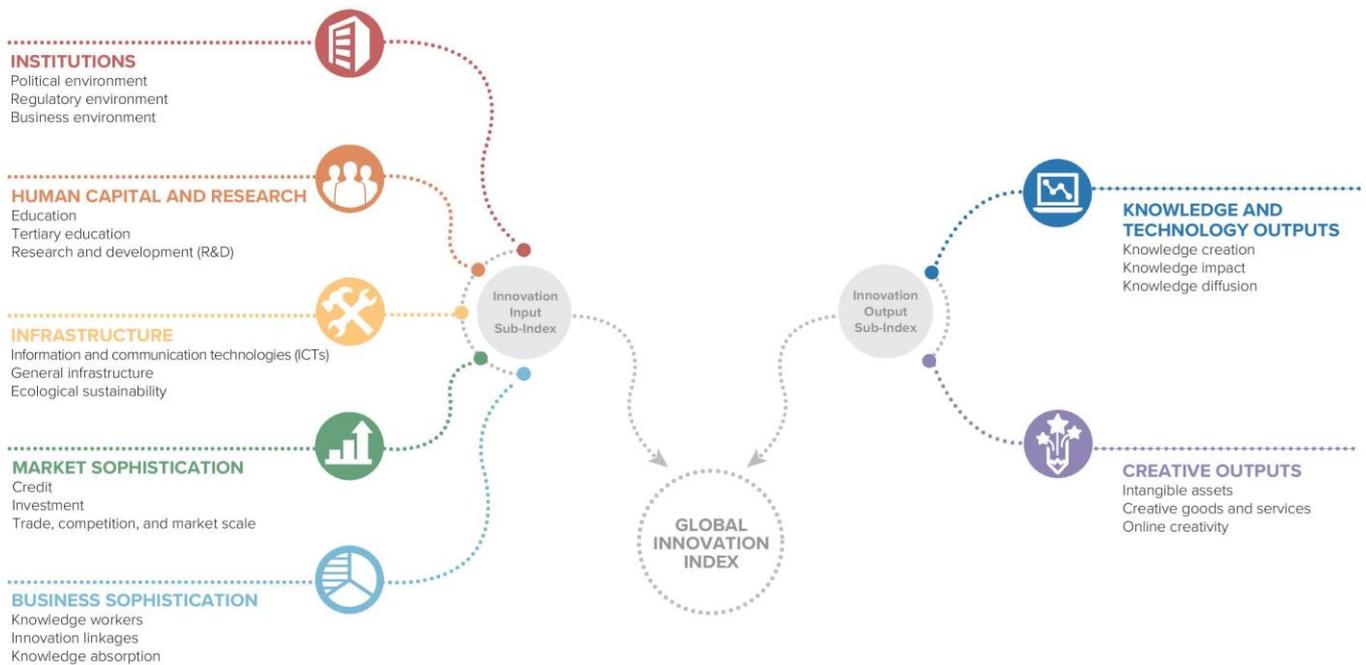
6.3.2	High-tech net exports, % total trade	2017	2018	United Nations, COMTRADE
6.3.3	ICT services exports, % total trade	2017	2018	World Trade Organization
7.1.1	Trademarks by origin/bn PPP\$ GDP	2016	2018	World Intellectual Property Organization
7.2.1	Cultural & creative services exports, % total trade	2012	2018	World Trade Organization
7.2.4	Printing & other media, % manufacturing	2010	2017	United Nations Industrial Development Organization
7.2.5	Creative goods exports, % total trade	2017	2018	United Nations, COMTRADE

## 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 2020, the GII presents its 13<sup>th</sup> edition devoted to the theme *Who Will Finance Innovation?*

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.

### Framework of the Global Innovation Index 2020



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.

