

BELGIUM

22nd Belgium ranks 22nd 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 Belgium 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 Belgium in the GII 2020 is between ranks 20 and 26.

Rankings of Belgium (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	22	21	25
2019	23	21	24
2018	25	21	23

- Belgium performs better in innovation inputs than innovation outputs in 2020.
- This year Belgium ranks 21st in innovation inputs, the same as last year and the same compared to 2018.
- As for innovation outputs, Belgium ranks 25th. This position is lower than last year and lower compared to 2018.

21st Belgium ranks 21st among the 49 high-income group economies.

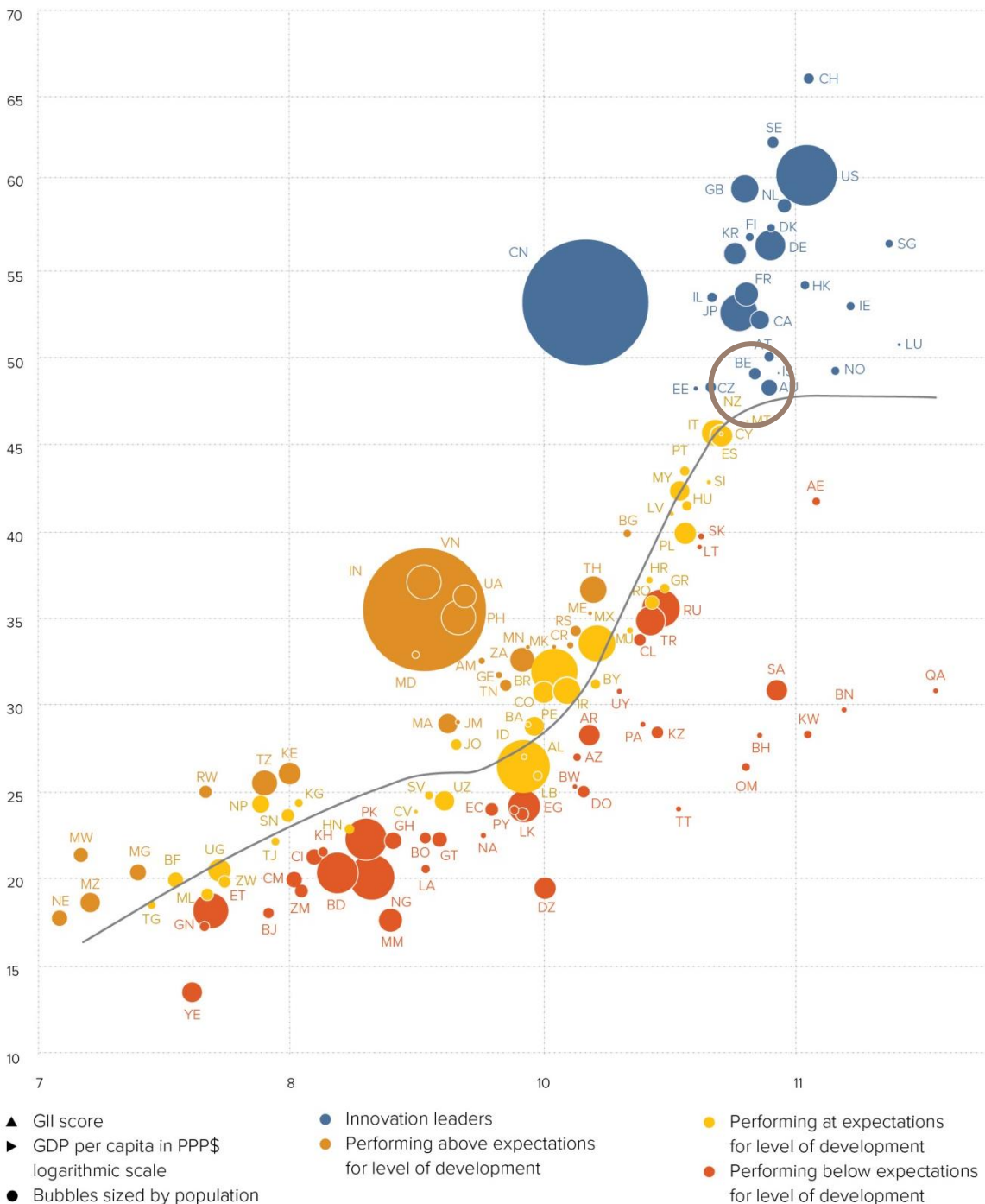
14th Belgium ranks 14th among the 39 economies in Europe.

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, Belgium's performance is above expectations for its level of development.

The positive relationship between innovation and development

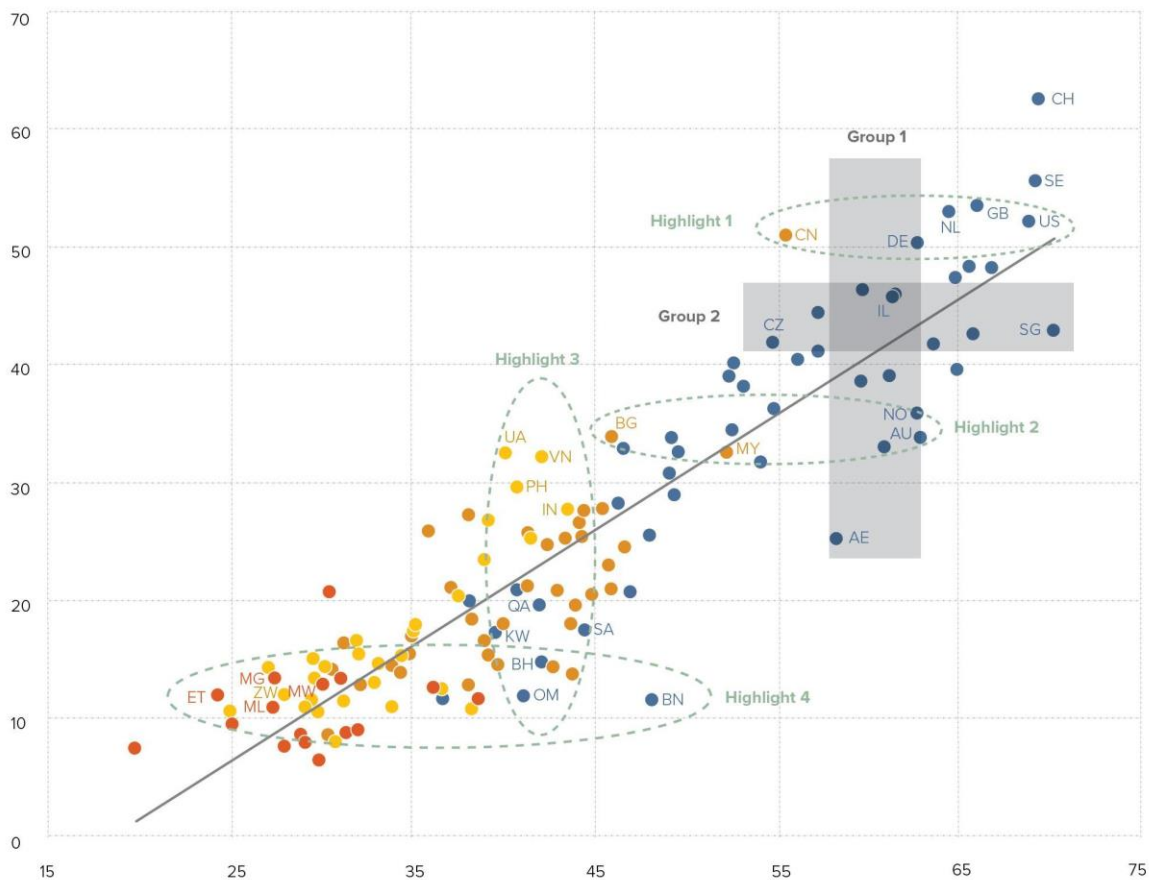


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

Belgium produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance, 2020

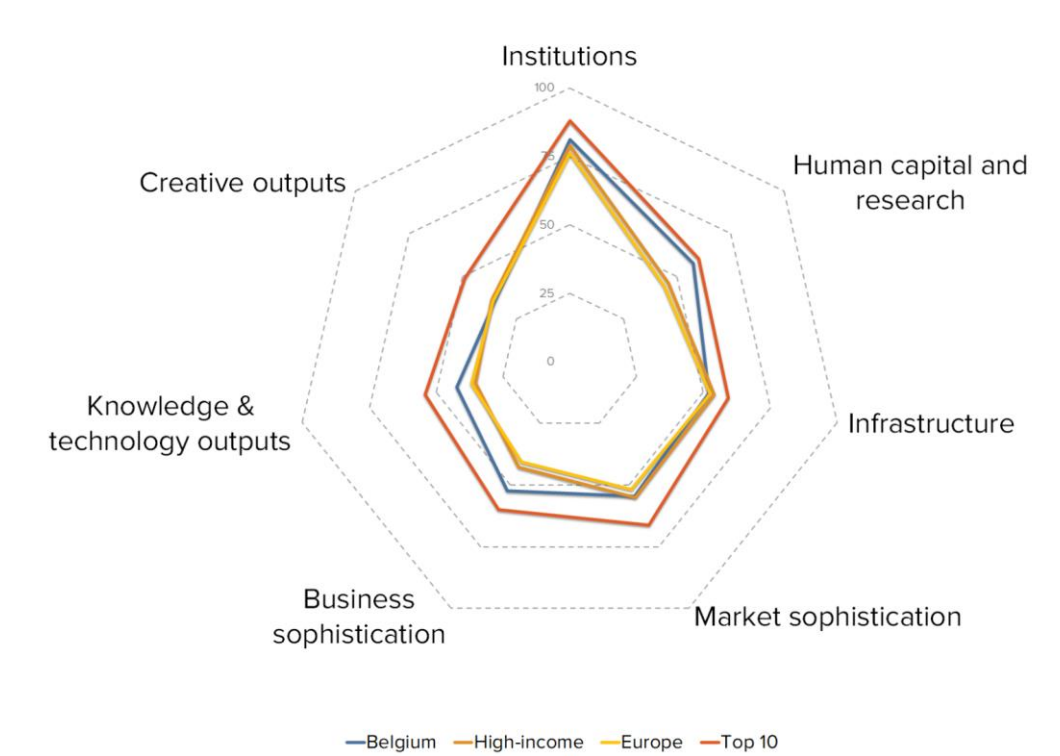


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

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 BELGIUM AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

Belgium's scores in the seven GII pillars



High-income group economies

Belgium has high scores in four out of the seven GII pillars: Institutions, Human capital & research, Business sophistication and Knowledge & technology outputs, which are above average for the high-income group.

Conversely, Belgium scores below average for its income group in three pillars: Infrastructure, Market sophistication and Creative outputs.

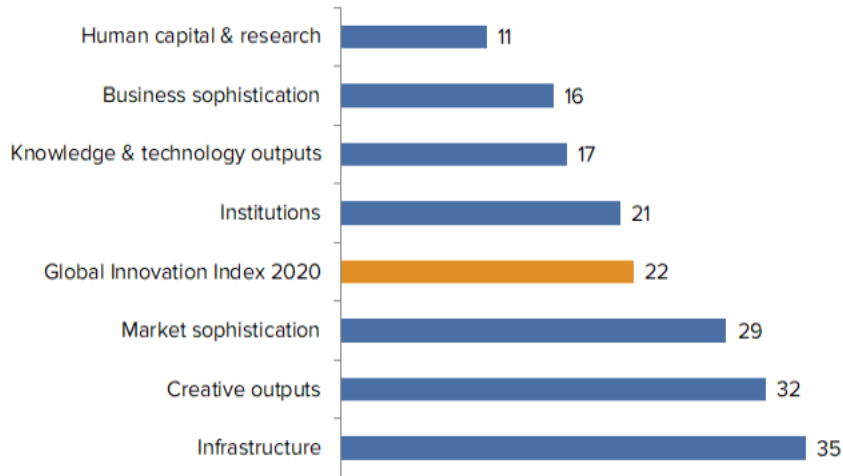
Europe

Compared to other economies in Europe, Belgium performs:

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

OVERVIEW OF BELGIUM RANKINGS IN THE SEVEN GII AREAS

Belgium performs best in Human capital & research 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 Belgium in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.3	Business environment	8	1.2.3	Cost of redundancy dismissal, salary weeks	82
1.3.2	Ease of resolving insolvency*	9	2.2.2	Graduates in science & engineering, %	83
2	Human capital & research	11	3.3.1	GDP/unit of energy use	66
2.1	Education	2	4.1.1	Ease of getting credit*	61
2.1.1	Expenditure on education, % GDP	9	5.3.2	High-tech imports, % total trade	66
2.1.3	School life expectancy, years	2	5.3.4	FDI net inflows, % GDP	128
2.3.2	Gross expenditure on R&D, % GDP	10	6.2.1	Growth rate of PPP\$ GDP/worker, %	87
3.2.2	Logistics performance*	3	6.3.4	FDI net outflows, % GDP	128
5.1	Knowledge workers	6	7.1.1	Trademarks by origin/bn PPP\$ GDP	61
5.1.3	GERD performed by business, % GDP	9	7.3.4	Mobile app creation/bn PPP\$ GDP	59
5.1.4	GERD financed by business, %	9			
5.2.3	GERD financed by abroad, % GDP	6			
6.2.3	Computer software spending, % GDP	7			
7.3.2	Country-code TLDs/th pop. 15–69	12			

STRENGTHS

GII strengths for Belgium are found in six of the seven GII pillars.

- Institutions (21): exhibits strengths in the sub-pillar Business environment (8) and in the indicator Ease of resolving insolvency (9).
- Human capital & research (11): shows strengths in the sub-pillar Education (2) and in the indicators Expenditure on education (9), School life expectancy (2) and Gross expenditure on R&D (10).
- Infrastructure (35): the indicator Logistics performance (3) is a strength.
- Business sophistication (16): displays strengths in the sub-pillar Knowledge workers (6) and in the indicators GERD performed by business (9), GERD financed by business (9) and GERD financed by abroad (6).
- Knowledge & technology outputs (17): the indicator Computer software spending (7) is a strength.
- Creative outputs (32): the indicator Country-code TLDs (12) is a strength.

WEAKNESSES

GII weaknesses for Belgium are found in seven of the seven GII pillars.

- Institutions (21): the indicator Cost of redundancy dismissal (82) is a weakness.
- Human capital & research (11): the indicator Graduates in science & engineering (83) is a weakness.
- Infrastructure (35): the indicator GDP per unit of energy use (66) is a weakness.
- Market sophistication (29): the indicator Ease of getting credit (61) is a weakness.
- Business sophistication (16): demonstrates weaknesses in the indicators High-tech imports (66) and FDI net inflows (128).
- Knowledge & technology outputs (17): displays weaknesses in the indicators Growth rate of GDP per worker (87) and FDI net outflows (128).
- Creative outputs (32): has weaknesses in the indicators Trademarks by origin (61) and Mobile app creation (59).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
25	21	High	EUR	11.5	567.5	43,240.2	23
				Score/Value	Rank		
INSTITUTIONS.....				81.2	21	BUSINESS SOPHISTICATION.....	
1.1	Political environment.....			77.7	26	5.1	Knowledge workers.....
1.1.1	Political and operational stability*.....			80.4	33	5.1.1	Knowledge-intensive employment, %.....
1.1.2	Government effectiveness*.....			76.3	27	5.1.2	Firms offering formal training, %.....
1.2	Regulatory environment.....			77.6	32	5.1.3	GERD performed by business, % GDP.....
1.2.1	Regulatory quality*.....			74.3	25	5.1.4	GERD financed by business, %.....
1.2.2	Rule of law*.....			82.3	21	5.1.5	Females employed w/advanced degrees, %.....
1.2.3	Cost of redundancy dismissal, salary weeks.....			19.7	82	5.2	Innovation linkages.....
1.3	Business environment.....			88.2	8	5.2.1	University/industry research collaboration†.....
1.3.1	Ease of starting a business*.....			92.3	44	5.2.2	State of cluster development†.....
1.3.2	Ease of resolving insolvency*.....			84.1	9	5.2.3	GERD financed by abroad, % GDP.....
						5.2.4	JV-strategic alliance deals/bn PPP\$ GDP.....
						5.2.5	Patent families 2+ offices/bn PPP\$ GDP.....
HUMAN CAPITAL & RESEARCH.....				57.8	11	KNOWLEDGE & TECHNOLOGY OUTPUTS....	
2.1	Education.....			75.4	2	6.1	Knowledge creation.....
2.1.1	Expenditure on education, % GDP.....			6.5	9	6.1.1	Patents by origin/bn PPP\$ GDP.....
2.1.2	Government funding/pupil, secondary, % GDP/cap.....			n/a	n/a	6.1.2	PCT patents by origin/bn PPP\$ GDP.....
2.1.3	School life expectancy, years.....			19.8	2	6.1.3	Utility models by origin/bn PPP\$ GDP.....
2.1.4	PISA scales in reading, maths, & science.....			499.9	19	6.1.4	Scientific & technical articles/bn PPP\$ GDP.....
2.1.5	Pupil-teacher ratio, secondary.....			9.0	21	6.1.5	Citable documents H-index.....
2.2	Tertiary education.....			38.4	49	6.2	Knowledge impact.....
2.2.1	Tertiary enrolment, % gross.....			79.7	19	6.2.1	Growth rate of PPP\$ GDP/worker, %.....
2.2.2	Graduates in science & engineering, %.....			16.7	83	6.2.2	New businesses/th pop. 15-64.....
2.2.3	Tertiary inbound mobility, %.....			8.5	24	6.2.3	Computer software spending, % GDP.....
2.3	Research & development (R&D).....			59.6	14	6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP.....
2.3.1	Researchers, FTE/mn pop.....			5,023.3	16	6.2.5	High- and medium-high-tech manufacturing, %.....
2.3.2	Gross expenditure on R&D, % GDP.....			2.8	10	6.3	Knowledge diffusion.....
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US.....			66.3	20	6.3.1	Intellectual property receipts, % total trade.....
2.3.4	QS university ranking, average score top 3*.....			54.9	16	6.3.2	High-tech net exports, % total trade.....
INFRASTRUCTURE.....				52.2	35	CREATIVE OUTPUTS.....	
3.1	Information & communication technologies (ICTs)....			77.1	40	7.1	Intangible assets.....
3.1.1	ICT access*.....			80.2	27	7.1.1	Trademarks by origin/bn PPP\$ GDP.....
3.1.2	ICT use*.....			76.6	27	7.1.2	Global brand value, top 5,000, % GDP.....
3.1.3	Government's online service*.....			75.7	56	7.1.3	Industrial designs by origin/bn PPP\$ GDP.....
3.1.4	E-participation*.....			75.8	59	7.1.4	ICTs & organizational model creation†.....
3.2	General infrastructure.....			41.4	20	7.2	Creative goods and services.....
3.2.1	Electricity output, kWh/mn pop.....			6,486.6	31	7.2.1	Cultural & creative services exports, % total trade.....
3.2.2	Logistics performance*.....			92.4	3	7.2.2	National feature films/mn pop. 15-69.....
3.2.3	Gross capital formation, % GDP.....			25.1	51	7.2.3	Entertainment & Media market/th pop. 15-69.....
3.3	Ecological sustainability.....			38.0	41	7.2.4	Printing and other media, % manufacturing.....
3.3.1	GDP/unit of energy use.....			9.2	66	7.2.5	Creative goods exports, % total trade.....
3.3.2	Environmental performance*.....			73.3	15	7.3	Online creativity.....
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP.....			1.8	49	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69.....
MARKET SOPHISTICATION.....				54.5	29	7.3.2	Country-code TLDs/th pop. 15-69.....
4.1	Credit.....			47.5	46	7.3.3	Wikipedia edits/mn pop. 15-69.....
4.1.1	Ease of getting credit*.....			65.0	61	7.3.4	Mobile app creation/bn PPP\$ GDP.....
4.1.2	Domestic credit to private sector, % GDP.....			69.5	45		
4.1.3	Microfinance gross loans, % GDP.....			n/a	n/a		
4.2	Investment.....			42.0	46		
4.2.1	Ease of protecting minority investors*.....			68.0	44		
4.2.2	Market capitalization, % GDP.....			75.2	20		
4.2.3	Venture capital deals/bn PPP\$ GDP.....			0.1	21		
4.3	Trade, competition, and market scale.....			74.0	21		
4.3.1	Applied tariff rate, weighted avg., %.....			1.7	22		
4.3.2	Intensity of local competition†.....			78.6	14		
4.3.3	Domestic market scale, bn PPP\$.....			567.5	36		

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 either missing or outdated for Belgium.

Missing data

Code	Indicator name	Country year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2016	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
5.1.2	Firms offering formal training, %	n/a	2018	World Bank
6.1.3	Utility models by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization

Outdated data

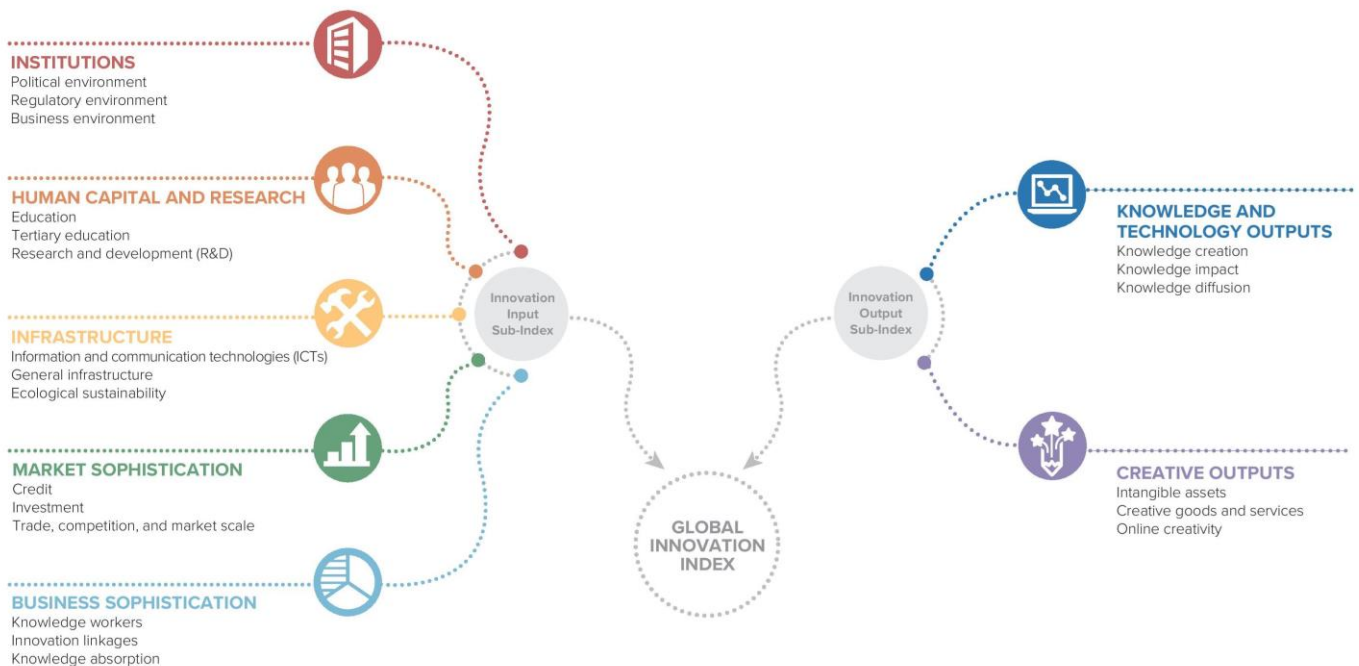
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2017	2018	UNESCO Institute for Statistics
5.2.1	University/industry research collaboration [†]	2018	2019	World Economic Forum
5.2.2	State of cluster development [†]	2018	2019	World Economic Forum

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 13th 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.

