Global Innovation Index 2021

BELGIUM

22nd Belgium ranks 22nd among the 132 economies featured in the GII 2021.

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 2021 is between ranks 21 and 25.

Rankings for Belgium (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	22	21	26
2020	22	21	25
2019	23	21	24

- Belgium performs better in innovation inputs than innovation outputs in 2021.
- This year Belgium ranks 21st in innovation inputs, the same as both 2020 and 2019.
- As for innovation outputs, Belgium ranks 26th. This position is lower than both 2020 and 2019.

21st Belgium ranks 21st among the 51 high-income group economies.

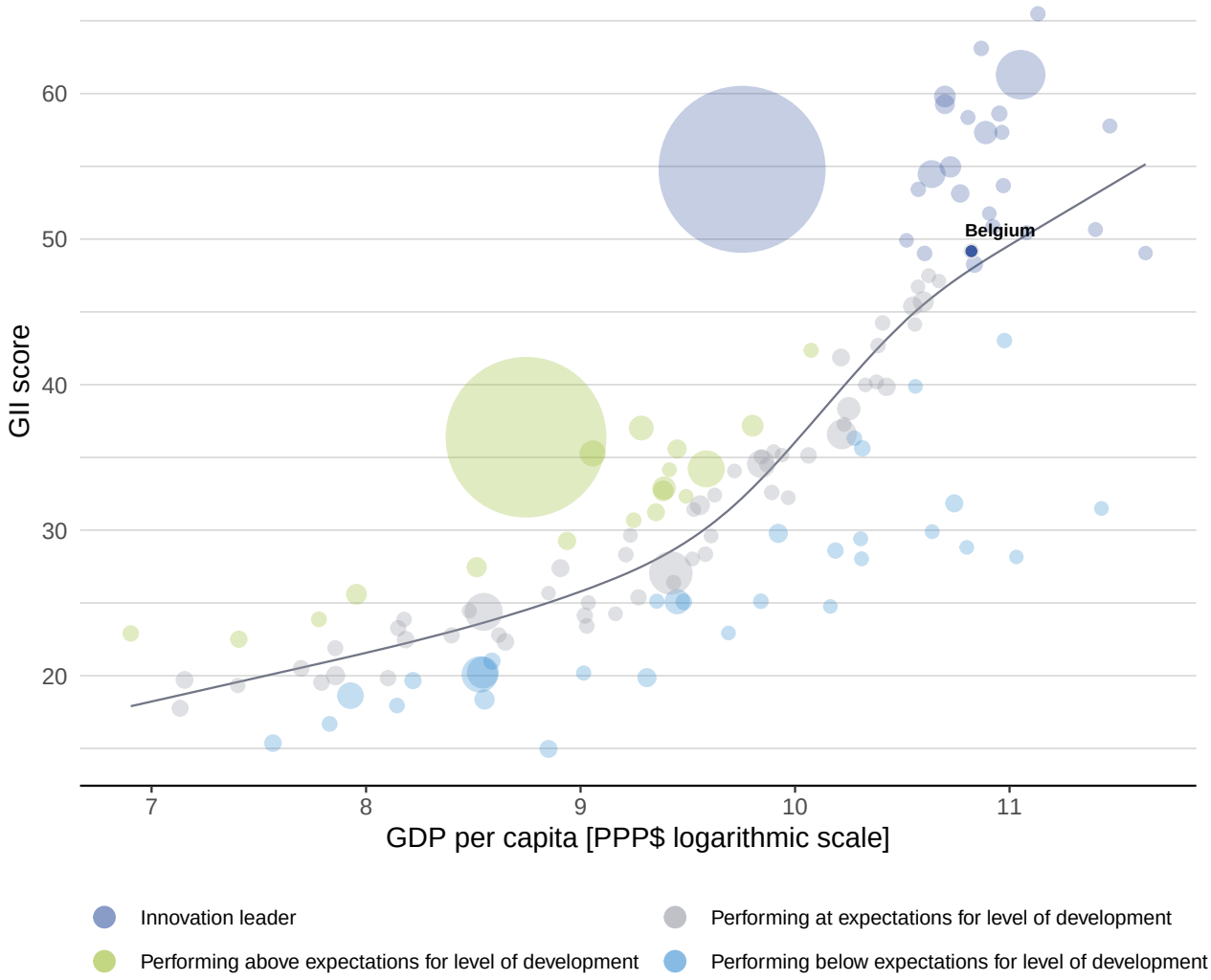
14th Belgium ranks 14th among the 39 economies in Europe.

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

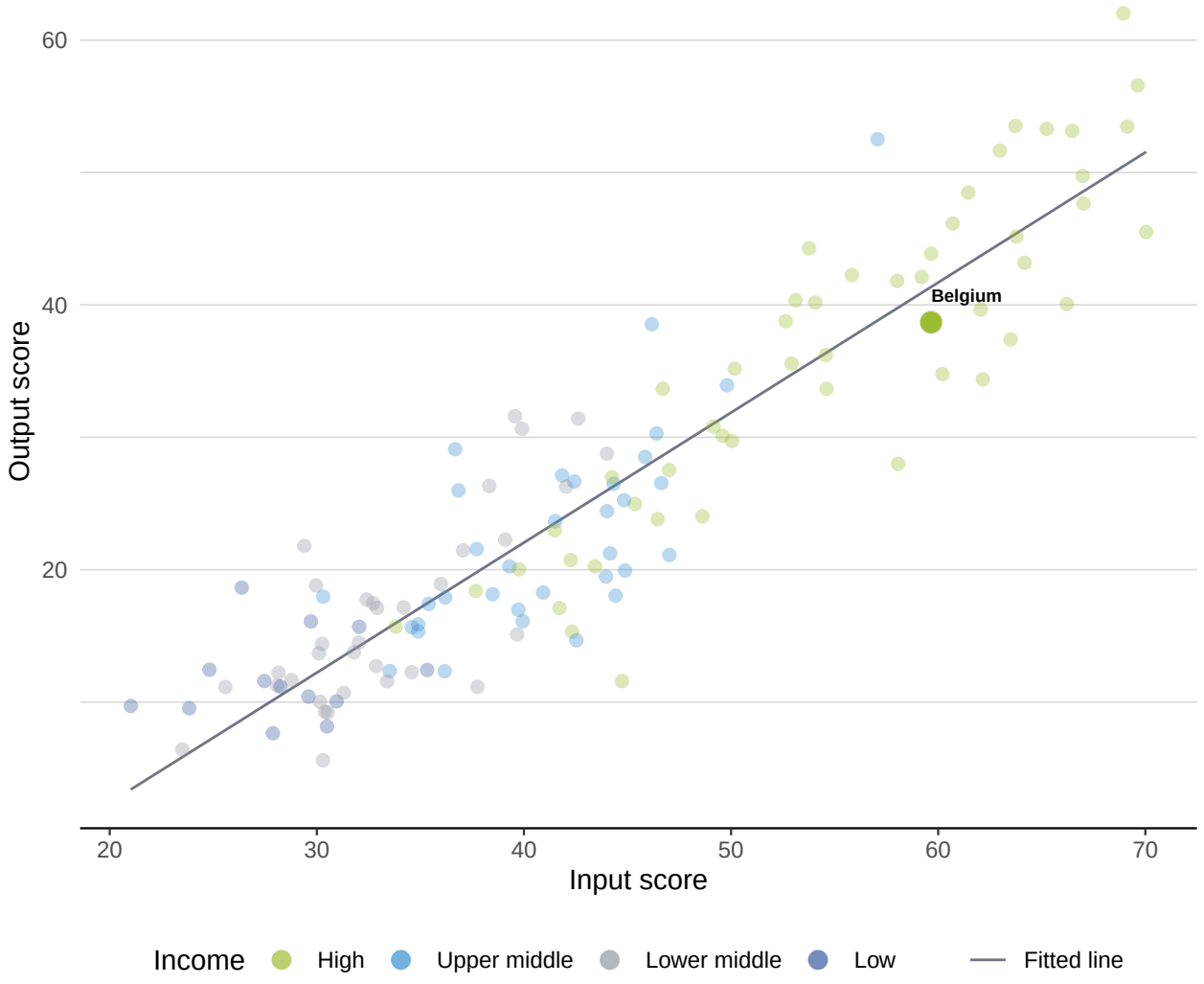


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

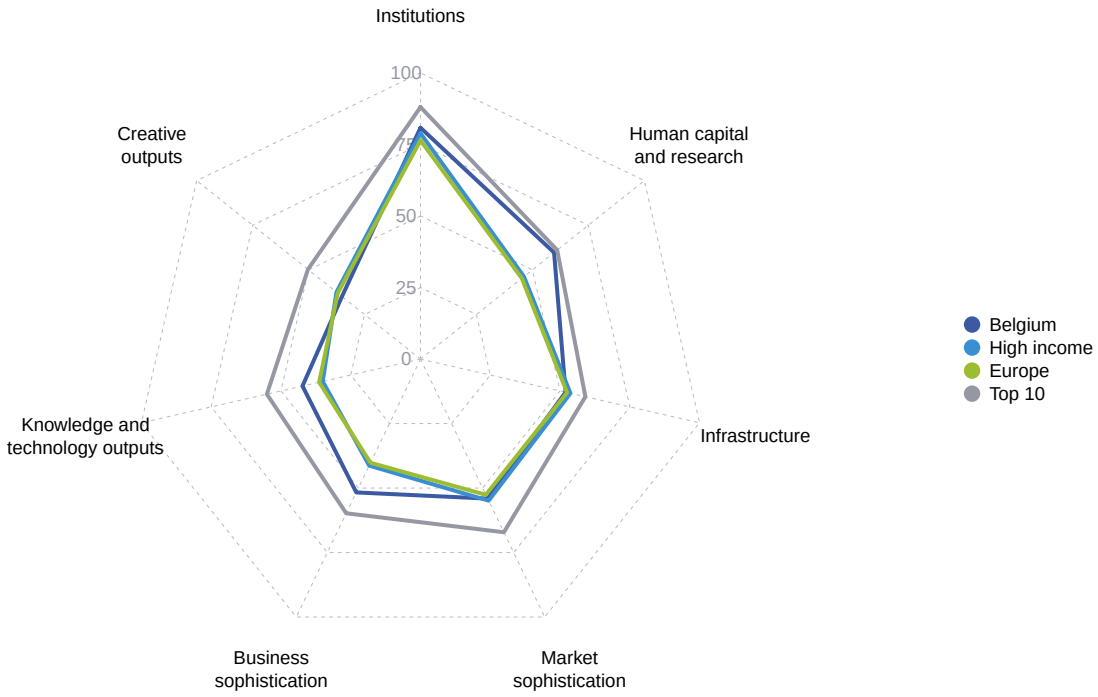
Belgium produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

The seven GII pillar scores for Belgium



High-income group economies

Belgium performs above the high-income group average in four pillars, namely: Institutions; Human capital and research; Business sophistication; and, Knowledge and technology outputs.

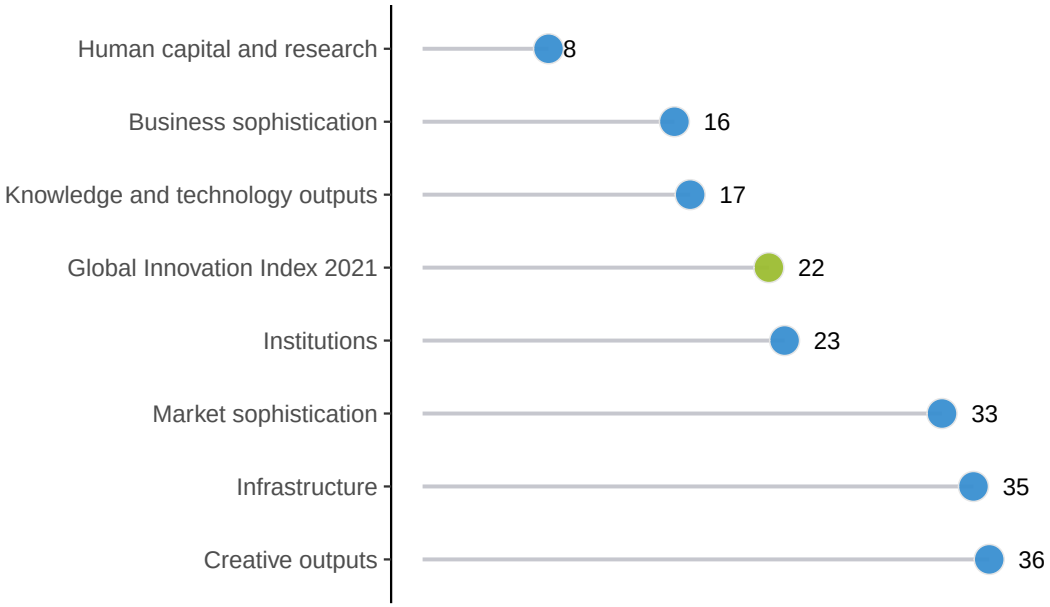
Europe

Belgium performs above the regional average in five pillars, namely: Institutions; Human capital and research; Market sophistication; Business sophistication; and, Knowledge and technology outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Belgium performs best in Human capital and research and its weakest performance is in Creative outputs.

The seven GII pillar ranks for Belgium



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

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Belgium in the GII 2021.

Strengths and weaknesses for Belgium

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.3	Business environment	8	1.2.3	Cost of redudancy dismissal	83
1.3.2	Ease of resolving insolvency	9	2.2.2	Graduates in science and engineering, %	90
2.1	Education	2	3.1.3	Government's online service	76
2.1.1	Expenditure on education, % GDP	9	3.1.4	E-participation	77
2.1.3	School life expectancy, years	4	4.1.1	Ease of getting credit	61
2.3.2	Gross expenditure on R&D, % GDP	10	5.3.4	FDI net inflows, % GDP	129
3.2.2	Logistics performance	3	6.2.1	Labor productivity growth, %	100
5.1	Knowledge workers	6	7.1.1	Trademarks by origin/bn PPP$ GDP	72
5.1.2	Firms offering formal training, %	9	7.2.4	Printing and other media, % manufacturing	59
5.1.4	GERD financed by business, %	9	7.3.4	Mobile app creation/bn PPP$ GDP	66
5.2.1	University-industry R&D collaboration	7			
5.2.3	GERD financed by abroad, % GDP	7			
6.2.3	Software spending, % GDP	6			

Belgium

GII 2021 rank **22**

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
26	21	High	EUR	11.6	575.8	50,114	22

		Score/ Value	Rank	
Institutions		**80.8**	**23**	
1.1	**Political environment**	**75.8**	**32**	◇
1.1.1	Political and operational stability*	80.4	29	
1.1.2	Government effectiveness*	73.6	31	◇
1.2	**Regulatory environment**	**78.4**	**32**	
1.2.1	Regulatory quality*	77.2	22	
1.2.2	Rule of law*	82.7	21	
1.2.3	Cost of redundancy dismissal	19.7	83	○
1.3	**Business environment**	**88.2**	**8**	●
1.3.1	Ease of starting a business*	92.3	44	
1.3.2	Ease of resolving insolvency*	84.1	9	●
Human capital and research		**59.7**	**8**	●
2.1	**Education**	**82.0**	**2**	● ◆
2.1.1	Expenditure on education, % GDP	6.4	9	●
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3	School life expectancy, years	19.6	4	● ◆
2.1.4	PISA scales in reading, maths and science	499.9	19	
2.1.5	Pupil-teacher ratio, secondary	8.9	20	◆
2.2	**Tertiary education**	**36.6**	**52**	
2.2.1	Tertiary enrolment, % gross	78.9	22	
2.2.2	Graduates in science and engineering, %	17.0	90	○ ◇
2.2.3	Tertiary inbound mobility, %	10.5	20	
2.3	**Research and development (R&D)**	**60.4**	**13**	
2.3.1	Researchers, FTE/mn pop.	5,425.4	12	
2.3.2	Gross expenditure on R&D, % GDP	2.9	10	●
2.3.3	Global corporate R&D investors, top 3, mn US$	65.6	17	
2.3.4	QS university ranking, top 3*	53.2	17	
Infrastructure		**52.0**	**35**	◇
3.1	**Information and communication technologies (ICTs)**	**74.0**	**51**	◇
3.1.1	ICT access*	83.3	25	
3.1.2	ICT use*	81.2	23	
3.1.3	Government's online service*	65.9	76	○ ◇
3.1.4	E-participation*	65.5	77	○ ◇
3.2	**General infrastructure**	**45.8**	**17**	
3.2.1	Electricity output, GWh/mn pop.	8,089.5	21	
3.2.2	Logistics performance*	92.5	3	●
3.2.3	Gross capital formation, % GDP	24.7	50	
3.3	**Ecological sustainability**	**36.2**	**44**	
3.3.1	GDP/unit of energy use	10.0	68	
3.3.2	Environmental performance*	73.3	15	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	1.6	53	
Market sophistication		**54.1**	**33**	
4.1	**Credit**	**46.5**	**45**	
4.1.1	Ease of getting credit*	65.0	61	○
4.1.2	Domestic credit to private sector, % GDP	70.1	47	◇
4.1.3	Microfinance gross loans, % GDP	n/a	n/a	
4.2	**Investment**	**35.4**	**48**	
4.2.1	Ease of protecting minority investors*	68.0	44	
4.2.2	Market capitalization, % GDP	75.2	22	
4.2.3	Venture capital investors, deals/bn PPP$ GDP	0.1	24	
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	0.1	26	
4.3	**Trade, diversification, and market scale**	**80.3**	**27**	
4.3.1	Applied tariff rate, weighted avg., %	1.8	25	
4.3.2	Domestic industry diversification	93.0	42	
4.3.3	Domestic market scale, bn PPP$	575.8	36	

		Score/ Value	Rank	
Business sophistication		**51.7**	**16**	
5.1	**Knowledge workers**	**69.3**	**6**	●
5.1.1	Knowledge-intensive employment, %	47.6	13	
5.1.2	Firms offering formal training, %	57.8	9	●
5.1.3	GERD performed by business, % GDP	2.0	9	
5.1.4	GERD financed by business, %	63.5	9	●
5.1.5	Females employed w/advanced degrees, %	25.4	14	
5.2	**Innovation linkages**	**47.1**	**16**	
5.2.1	University-industry R&D collaboration†	70.1	7	●
5.2.2	State of cluster development and depth†	64.3	16	
5.2.3	GERD financed by abroad, % GDP	0.3	7	●
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.1	27	
5.2.5	Patent families/bn PPP$ GDP	2.5	14	
5.3	**Knowledge absorption**	**38.7**	**31**	
5.3.1	Intellectual property payments, % total trade	0.8	51	
5.3.2	High-tech imports, % total trade	9.0	44	
5.3.3	ICT services imports, % total trade	2.4	24	
5.3.4	FDI net inflows, % GDP	–6.9	129	○ ◇
5.3.5	Research talent, % in businesses	56.7	17	
Knowledge and technology outputs		**42.3**	**17**	
6.1	**Knowledge creation**	**50.5**	**15**	
6.1.1	Patents by origin/bn PPP$ GDP	5.3	17	
6.1.2	PCT patents by origin/bn PPP$ GDP	2.3	17	
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	n/a	
6.1.4	Scientific and technical articles/bn PPP$ GDP	40.0	19	
6.1.5	Citable documents H-index	53.8	14	
6.2	**Knowledge impact**	**37.1**	**34**	
6.2.1	Labor productivity growth, %	–2.0	100	○
6.2.2	New businesses/th pop. 15–64	3.4	40	
6.2.3	Software spending, % GDP	0.5	6	●
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	4.9	56	
6.2.5	High-tech manufacturing, %	40.4	26	
6.3	**Knowledge diffusion**	**39.2**	**22**	
6.3.1	Intellectual property receipts, % total trade	1.0	20	
6.3.2	Production and export complexity	71.1	21	
6.3.3	High-tech exports, % total trade	9.5	16	
6.3.4	ICT services exports, % total trade	3.3	27	
Creative outputs		**35.1**	**36**	◇
7.1	**Intangible assets**	**34.5**	**52**	◇
7.1.1	Trademarks by origin/bn PPP$ GDP	32.3	72	○
7.1.2	Global brand value, top 5,000, % GDP	54.6	33	
7.1.3	Industrial designs by origin/bn PPP$ GDP	2.2	44	
7.1.4	ICTs and organizational model creation†	72.2	16	
7.2	**Creative goods and services**	**29.0**	**27**	
7.2.1	Cultural and creative services exports, % total trade	1.3	19	
7.2.2	National feature films/mn pop. 15–69	10.9	16	
7.2.3	Entertainment and media market/th pop. 15–69	51.7	15	
7.2.4	Printing and other media, % manufacturing	0.9	59	○
7.2.5	Creative goods exports, % total trade	1.5	36	
7.3	**Online creativity**	**42.2**	**27**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	21.1	27	
7.3.2	Country-code TLDs/th pop. 15–69	63.1	12	
7.3.3	Wikipedia edits/mn pop. 15–69	78.0	14	
7.3.4	Mobile app creation/bn PPP$ GDP	2.8	66	○ ◇

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 IV 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 for Belgium

Code	Indicator name	Economy year	Model year	Source
2.1.2	Government funding/pupil, secondary, % GDP/cap	n/a	2017	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
6.1.3	Utility models by origin/bn PPP$ GDP	n/a	2019	World Intellectual Property Organization

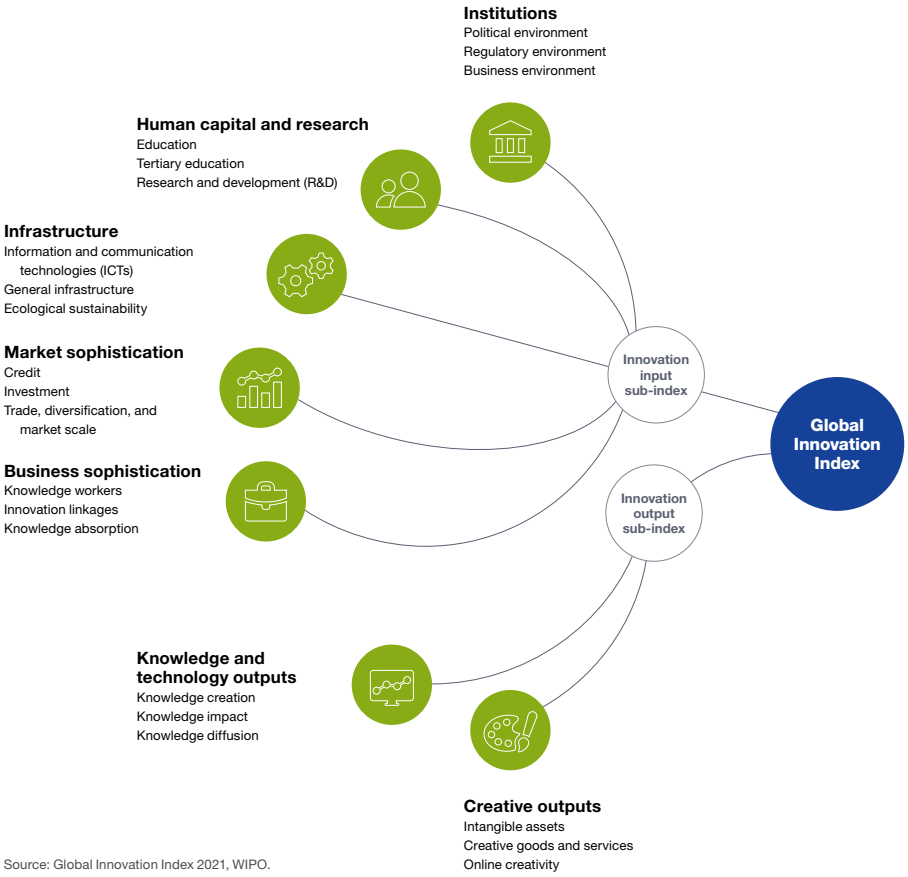
Outdated data for Belgium

Code	Indicator name	Economy year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2018	2019	UNESCO Institute for Statistics
4.2.2	Market capitalization, % GDP	2018	2019	World Federation of Exchanges
4.3.2	Domestic industry diversification	2017	2018	United Nations Industrial Development Organization
5.1.4	GERD financed by business, %	2017	2018	UNESCO Institute for Statistics; Eurostat; OECD - Main Science and Technology Indicators
5.2.3	GERD financed by abroad, % GDP	2017	2018	UNESCO Institute for Statistics

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 2021, WIPO.

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.