Global Innovation Index 2021

DENMARK

9th Denmark ranks 9th 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 Denmark 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 Denmark in the GII 2021 is between ranks 9 and 10.

Rankings for Denmark (2019–2021)

	GII	Innovation inputs	Innovation outputs
2021	9	5	11
2020	6	5	9
2019	7	5	12

- Denmark performs better in innovation inputs than innovation outputs in 2021.
- This year Denmark ranks 5th in innovation inputs, the same as both 2020 and 2019.
- As for innovation outputs, Denmark ranks 11th. This position is lower than last year but higher than 2019.

9th Denmark ranks 9th among the 51 high-income group economies.

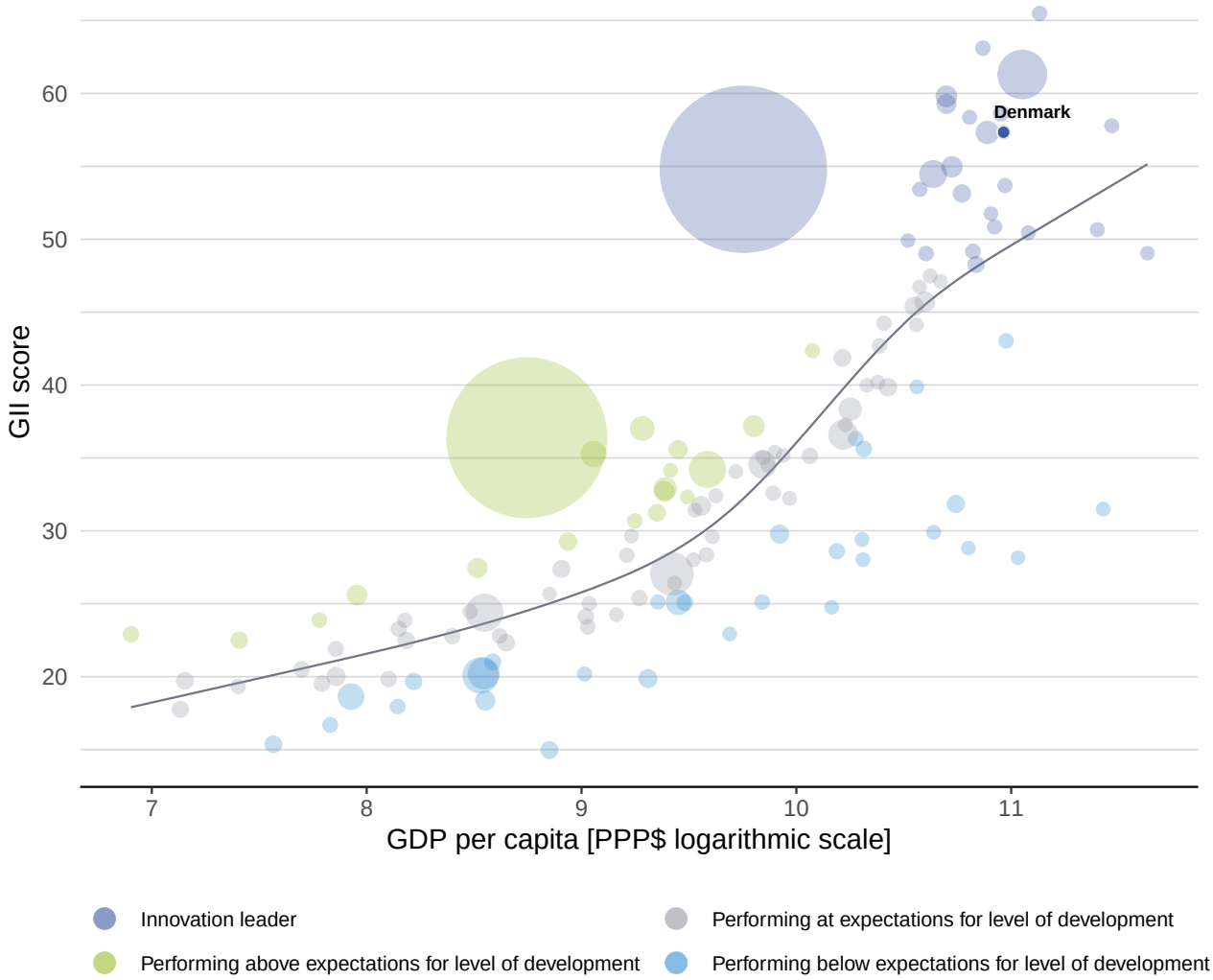
6th Denmark ranks 6th among the 39 economies in Europe.

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

The positive relationship between innovation and development

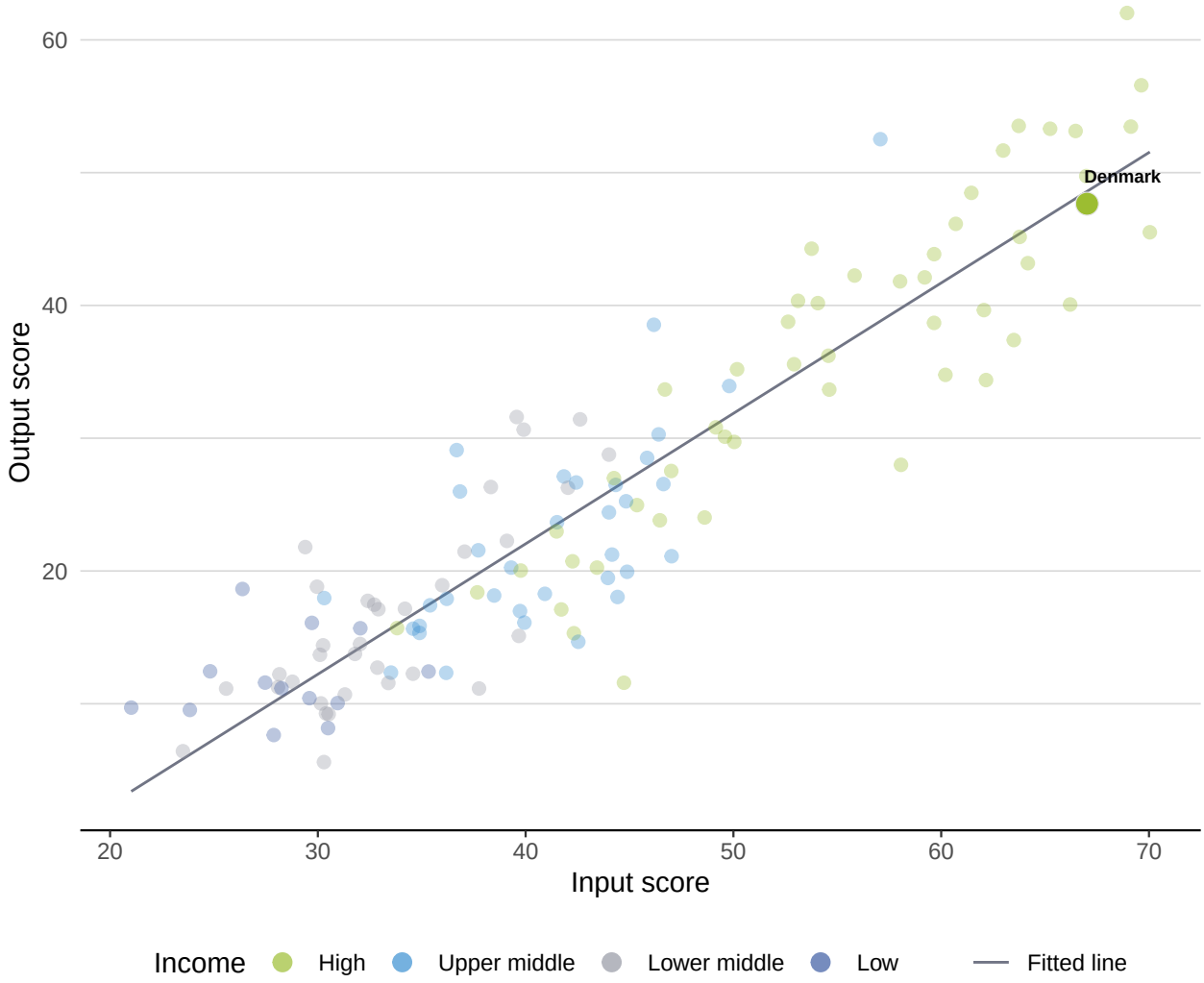


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

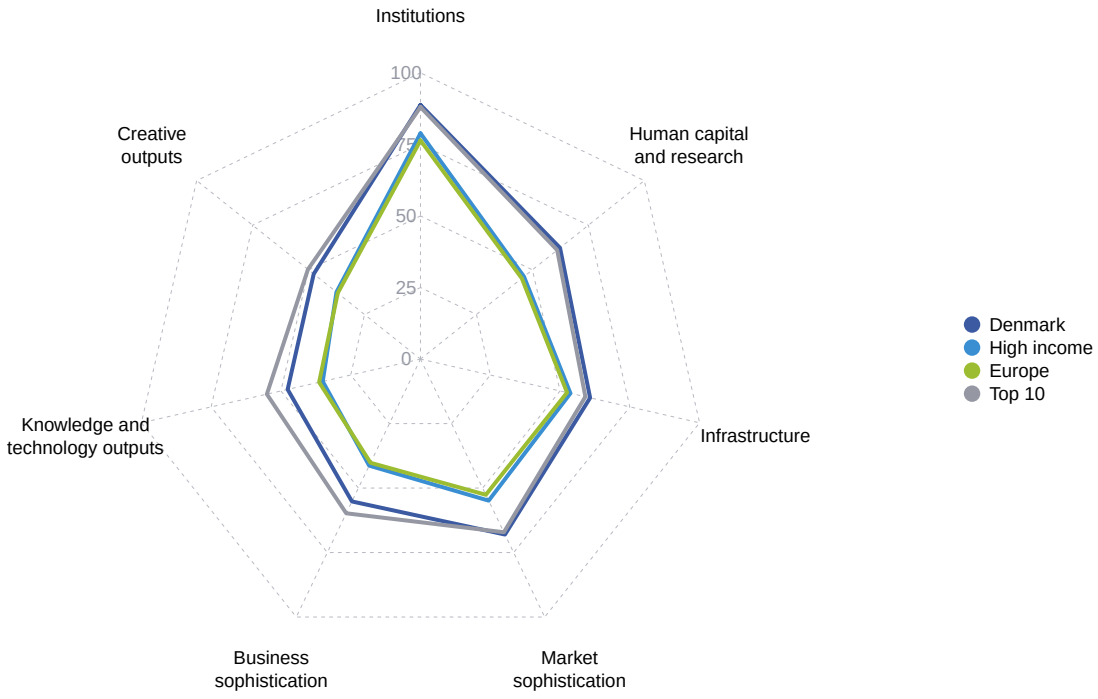
Denmark produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

The seven GII pillar scores for Denmark



High-income group economies

Denmark performs above the high-income group average in all GII pillars.

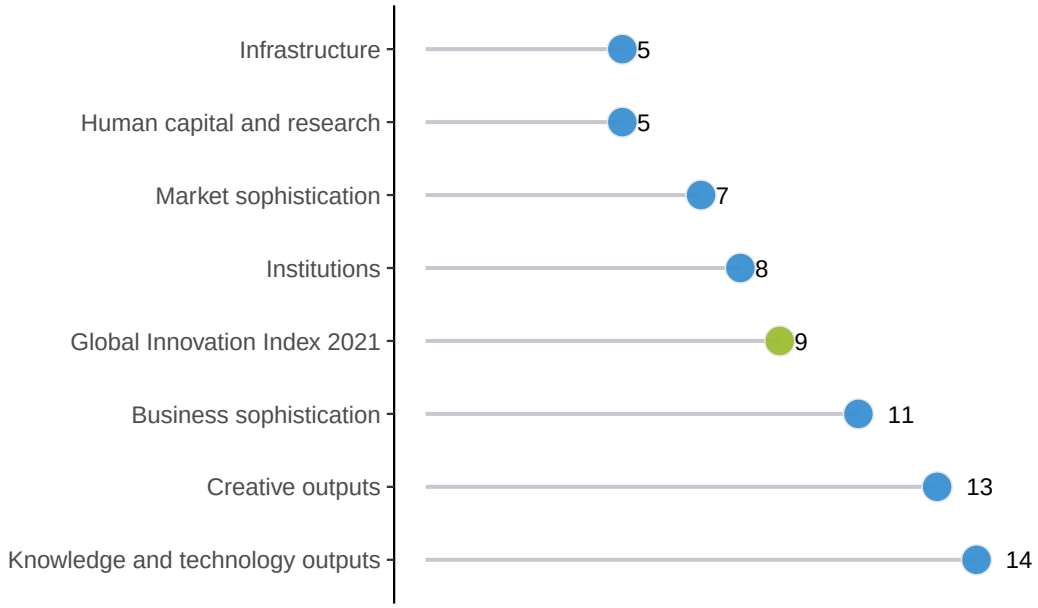
Europe

Denmark performs above the regional average in all GII pillars.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2021 AREAS

Denmark performs best in Human capital and research and Infrastructure and its weakest performance is in Knowledge and technology outputs.

The seven GII pillar ranks for Denmark



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 Denmark in the GII 2021.

Strengths and weaknesses for Denmark

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.1	Political environment	2	1.2.3	Cost of redudancy dismissal	78
1.1.1	Political and operational stability	5	2.2.2	Graduates in science and engineering, %	58
1.1.2	Government effectiveness	3	3.2.3	Gross capital formation, % GDP	77
1.2.2	Rule of law	5	4.1.1	Ease of getting credit	44
2.1	Education	5	5.3.2	High-tech imports, % total trade	100
2.1.1	Expenditure on education, % GDP	3	5.3.4	FDI net inflows, % GDP	120
2.3.1	Researchers, FTE/mn pop.	2	6.1.3	Utility models by origin/bn PPP$ GDP	46
3.1	Information and communication technologies (ICTs)	3	6.2.1	Labor productivity growth, %	69
3.1.2	ICT use	2	7.1.1	Trademarks by origin/bn PPP$ GDP	67
3.1.3	Government's online service	3	7.2.4	Printing and other media, % manufacturing	60
3.3.2	Environmental performance	1			
6.1.4	Scientific and technical articles/bn PPP$ GDP	2			
7.3.2	Country-code TLDs/th pop. 15–69	1			

Denmark

GII 2021 rank

9

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$	GII 2020 rank
11	**5**	**High**	**EUR**	**5.8**	**335.8**	**57,781**	**6**

		Score/ Value	Rank
Institutions		**88.8**	**8**
1.1	**Political environment**	**92.8**	**2 ● ◆**
1.1.1	Political and operational stability*	91.1	5 ● ◆
1.1.2	Government effectiveness*	93.7	3 ● ◆
1.2	**Regulatory environment**	**84.6**	**20**
1.2.1	Regulatory quality*	84.4	16
1.2.2	Rule of law*	96.7	5 ●
1.2.3	Cost of redundancy dismissal	18.8	78 ○
1.3	**Business environment**	**88.9**	**6**
1.3.1	Ease of starting a business*	92.7	42
1.3.2	Ease of resolving insolvency*	85.1	6
Human capital and research		**62.3**	**5 ● ◆**
2.1	**Education**	**74.2**	**5 ● ◆**
2.1.1	Expenditure on education, % GDP	7.8	3 ● ◆
2.1.2	Government funding/pupil, secondary, % GDP/cap	22.9	27
2.1.3	School life expectancy, years	18.8	9
2.1.4	PISA scales in reading, maths and science	501.1	17
2.1.5	Pupil-teacher ratio, secondary ◴	9.9	26
2.2	**Tertiary education**	**43.3**	**30**
2.2.1	Tertiary enrolment, % gross	81.2	20
2.2.2	Graduates in science and engineering, %	22.2	58 ○
2.2.3	Tertiary inbound mobility, %	10.7	19
2.3	**Research and development (R&D)**	**69.5**	**7**
2.3.1	Researchers, FTE/mn pop.	7,739.4	2 ● ◆
2.3.2	Gross expenditure on R&D, % GDP	2.9	9
2.3.3	Global corporate R&D investors, top 3, mn US$	69.1	16
2.3.4	QS university ranking, top 3*	58.1	15
Infrastructure		**60.8**	**5 ●**
3.1	**Information and communication technologies (ICTs)**	**91.0**	**3 ●**
3.1.1	ICT access*	80.2	32
3.1.2	ICT use*	90.4	2 ● ◆
3.1.3	Government's online service*	97.1	3 ● ◆
3.1.4	E-participation*	96.4	9
3.2	**General infrastructure**	**39.6**	**31**
3.2.1	Electricity output, GWh/mn pop.	5,073.2	42
3.2.2	Logistics performance*	90.3	8
3.2.3	Gross capital formation, % GDP	21.2	77 ○
3.3	**Ecological sustainability**	**51.7**	**11**
3.3.1	GDP/unit of energy use	18.6	10
3.3.2	Environmental performance*	82.5	1 ●
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	3.0	28
Market sophistication		**68.0**	**7**
4.1	**Credit**	**68.5**	**8**
4.1.1	Ease of getting credit*	70.0	44 ○
4.1.2	Domestic credit to private sector, % GDP	159.7	7
4.1.3	Microfinance gross loans, % GDP	n/a	n/a
4.2	**Investment**	**58.6**	**13**
4.2.1	Ease of protecting minority investors*	72.0	27
4.2.2	Market capitalization, % GDP	n/a	n/a
4.2.3	Venture capital investors, deals/bn PPP$ GDP	0.3	11
4.2.4	Venture capital recipients, deals/bn PPP$ GDP	0.1	11
4.3	**Trade, diversification, and market scale**	**76.9**	**37**
4.3.1	Applied tariff rate, weighted avg., %	1.8	25
4.3.2	Domestic industry diversification	90.0	50
4.3.3	Domestic market scale, bn PPP$	335.8	51

		Score/ Value	Rank
Business sophistication		**55.2**	**11**
5.1	**Knowledge workers**	**65.8**	**8**
5.1.1	Knowledge-intensive employment, %	48.8	11
5.1.2	Firms offering formal training, %	n/a	n/a
5.1.3	GERD performed by business, % GDP	1.8	11
5.1.4	GERD financed by business, % ◴	60.4	13
5.1.5	Females employed w/advanced degrees, %	22.9	21
5.2	**Innovation linkages**	**58.6**	**7**
5.2.1	University-industry R&D collaboration†	66.3	12
5.2.2	State of cluster development and depth†	63.1	20
5.2.3	GERD financed by abroad, % GDP ◴	0.3	9
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	0.2	16
5.2.5	Patent families/bn PPP$ GDP	4.8	9
5.3	**Knowledge absorption**	**41.1**	**26**
5.3.1	Intellectual property payments, % total trade	0.9	43
5.3.2	High-tech imports, % total trade	5.8	100 ○
5.3.3	ICT services imports, % total trade	3.4	6
5.3.4	FDI net inflows, % GDP	0.4	120 ○
5.3.5	Research talent, % in businesses	58.5	13
Knowledge and technology outputs		**47.6**	**14**
6.1	**Knowledge creation**	**61.5**	**10**
6.1.1	Patents by origin/bn PPP$ GDP	10.8	9
6.1.2	PCT patents by origin/bn PPP$ GDP	4.6	7
6.1.3	Utility models by origin/bn PPP$ GDP	0.2	46 ○
6.1.4	Scientific and technical articles/bn PPP$ GDP	62.2	2 ● ◆
6.1.5	Citable documents H-index	51.0	15
6.2	**Knowledge impact**	**45.1**	**13**
6.2.1	Labor productivity growth, %	–0.1	69 ○
6.2.2	New businesses/th pop. 15–64	10.0	16
6.2.3	Software spending, % GDP	0.5	13
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	7.2	38
6.2.5	High-tech manufacturing, %	48.8	13
6.3	**Knowledge diffusion**	**36.2**	**24**
6.3.1	Intellectual property receipts, % total trade	1.9	13
6.3.2	Production and export complexity	69.2	24
6.3.3	High-tech exports, % total trade	5.2	34
6.3.4	ICT services exports, % total trade	2.8	39
Creative outputs		**47.7**	**13**
7.1	**Intangible assets**	**47.2**	**23**
7.1.1	Trademarks by origin/bn PPP$ GDP	34.0	67 ○
7.1.2	Global brand value, top 5,000, % GDP	131.7	15
7.1.3	Industrial designs by origin/bn PPP$ GDP	6.8	20
7.1.4	ICTs and organizational model creation†	78.9	7
7.2	**Creative goods and services**	**32.1**	**21**
7.2.1	Cultural and creative services exports, % total trade	0.8	36
7.2.2	National feature films/mn pop. 15–69	13.4	10
7.2.3	Entertainment and media market/th pop. 15–69	76.5	4
7.2.4	Printing and other media, % manufacturing	0.9	60 ○
7.2.5	Creative goods exports, % total trade	1.5	35
7.3	**Online creativity**	**64.3**	**6**
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	49.9	16
7.3.2	Country-code TLDs/th pop. 15–69	100.0	1 ● ◆
7.3.3	Wikipedia edits/mn pop. 15–69	72.0	32
7.3.4	Mobile app creation/bn PPP$ GDP	32.1	16

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 Denmark.

Missing data for Denmark

Code	Indicator name	Economy year	Model year	Source
4.1.3	Microfinance gross loans, % GDP	n/a	2018	Microfinance Information Exchange
4.2.2	Market capitalization, % GDP	n/a	2019	World Federation of Exchanges
5.1.2	Firms offering formal training, %	n/a	2019	World Bank

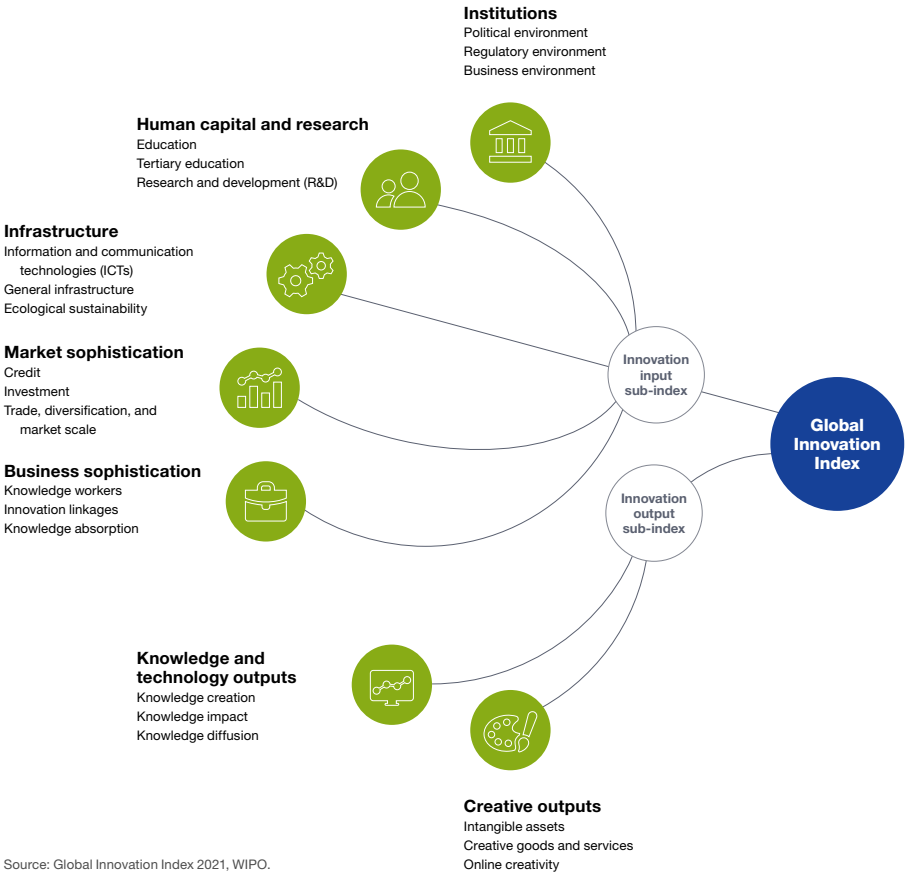
Outdated data for Denmark

Code	Indicator name	Economy year	Model year	Source
2.1.5	Pupil-teacher ratio, secondary	2018	2019	UNESCO Institute for Statistics
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.