

POLAND

38th

Poland ranks 38th 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 Poland 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 Poland in the GII 2020 is between ranks 36 and 38.

Rankings of Poland (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	38	38	40
2019	39	37	41
2018	39	38	40

- Poland performs better in innovation inputs than innovation outputs in 2020.
- This year Poland ranks 38th in innovation inputs, lower than last year and the same compared to 2018.
- As for innovation outputs, Poland ranks 40th. This position is higher than last year and the same compared to 2018.

35th

Poland ranks 35th among the 49 high-income group economies.

25th

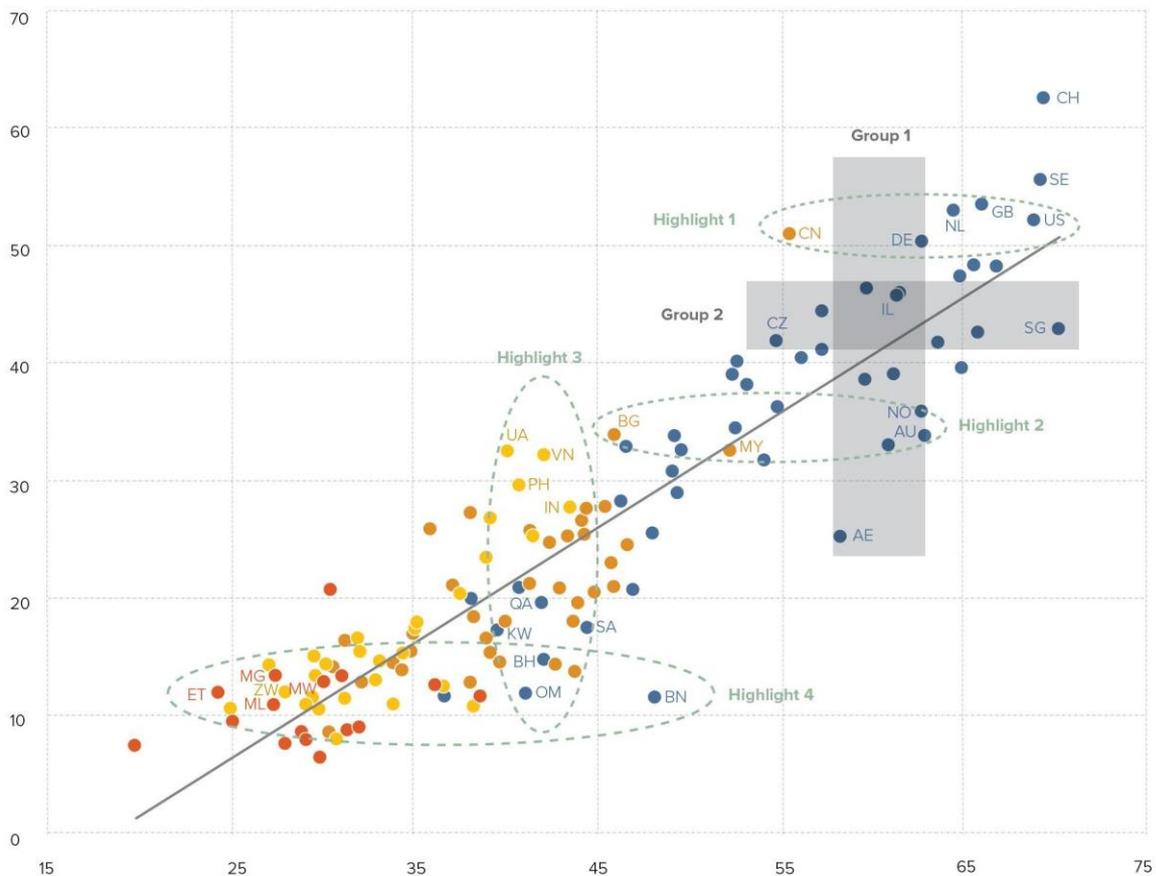
Poland ranks 25th among the 39 economies in Europe.

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.

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

Innovation input to output performance, 2020

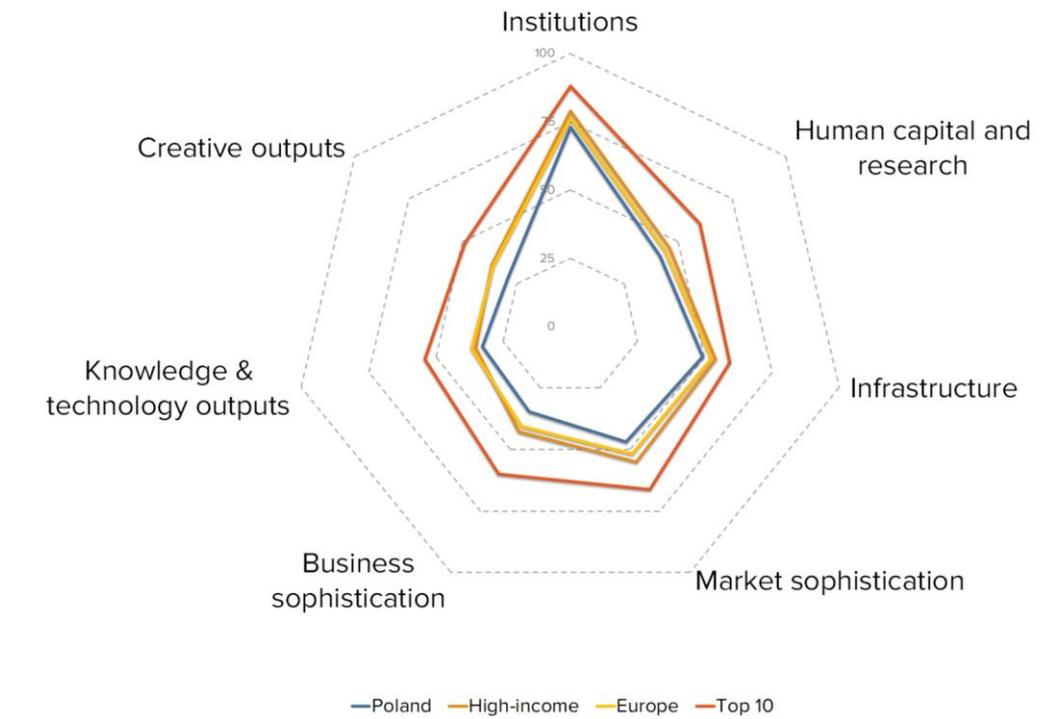


▲ Output score ● High income group ● Lower middle-income group — Fitted values
 ► Input score ● Upper middle-income group ● Low income group

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 POLAND AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

Poland's scores in the seven GII pillars



High-income group economies

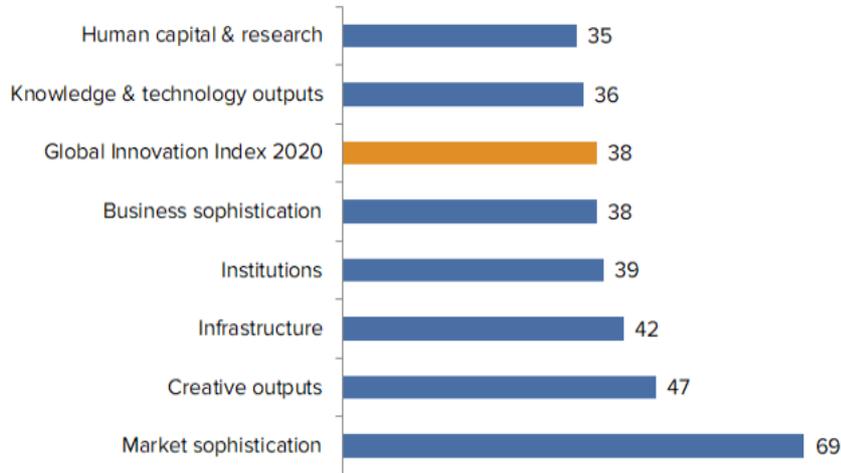
Poland scores below the income group average in all pillars.

Europe

Compared to other economies in Europe, Poland performs below average in all pillars.

OVERVIEW OF POLAND RANKINGS IN THE SEVEN GII AREAS

Poland performs best in Human capital & research and its weakest performance is in Market sophistication.



*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 Poland in the GII 2020.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.3.2	Ease of resolving insolvency*	23	1.2.3	Cost of redundancy dismissal, salary weeks	77
2.1.4	PISA scales in reading, maths, & science	9	1.3.1	Ease of starting a business*	99
2.1.5	Pupil-teacher ratio, secondary	22	3.2.3	Gross capital formation, % GDP	89
3.1.3	Government's online service*	17	4.1.3	Microfinance gross loans, % GDP	58
4.3	Trade, competition, and market scale	22	4.2	Investment	107
4.3.3	Domestic market scale, bn PPP\$	22	4.2.2	Market capitalization, % GDP	44
6.1.5	Citable documents H index	25	4.2.3	Venture capital deals/bn PPP\$ GDP	62
6.2.1	Growth rate of PPP\$ GDP/worker, %	18	5.1.2	Firms offering formal training, %	70
6.3.2	High-tech net exports, % total trade	24	5.2.1	University/industry research collaboration†	87
7.2	Creative goods and services	22	7.1.4	ICTs & organizational model creation†	74
7.2.5	Creative goods exports, % total trade	12	7.2.2	National feature films/mn pop. 15–69	72
7.3.2	Country-code TLDs/th pop. 15–69	25			

STRENGTHS

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

- Institutions (39): exhibits strengths in the indicator Ease of resolving insolvency (23).
- Human capital & research (35): shows strengths in the indicators PISA scales in reading, maths, & science (9) and Pupil-teacher ratio (22).
- Infrastructure (42): demonstrates strengths in the indicator Government's online service (17).
- Market sophistication (69): displays strengths in the sub-pillar Trade, competition, and market scale (22) and in the indicator Domestic market scale (22).
- Knowledge & technology outputs (36): reveals strengths in the indicators Citable documents H index (25), Growth rate of PPP\$ GDP/worker (18) and High-tech net exports (24).
- Creative outputs (47): shows strengths in the sub-pillar Creative goods and services (22), and in the indicators Creative goods exports (12) and Country-code TLDs (25).

WEAKNESSES

GII weaknesses for Poland are found in five of the seven GII pillars.

- Institutions (39): exhibits weaknesses in the indicators Cost of redundancy dismissal (77) and Ease of starting a business (99).
- Infrastructure (42): displays weaknesses in the indicator Gross capital formation (89).
- Market sophistication (69): shows weaknesses in the sub-pillar Investment (107) and in the indicators Microfinance gross loans (58), Market capitalization (44) and Venture capital deals (62).
- Business sophistication (38): demonstrates weaknesses in the indicators Firms offering formal training (70) and University/industry research collaboration (87).
- Creative outputs (47): reveals weaknesses in the indicators ICTs & organizational model creation (74) and National feature films (72).

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$	GDP per capita, PPP\$	GII 2019 rank
40	38	High	EUR	37.9	1,286.9	29,587.4	39
				Score/Value	Rank		
INSTITUTIONS				73.1	39	BUSINESS SOPHISTICATION	
1.1	Political environment	69.5	40	5.1	Knowledge workers	44.7	37
1.1.1	Political and operational stability*	78.6	38	5.1.1	Knowledge-intensive employment, %	39.5	28
1.1.2	Government effectiveness*	64.9	39	5.1.2	Firms offering formal training, %	21.7	70 ○
1.2	Regulatory environment	70.0	47	5.1.3	GERD performed by business, % GDP	0.8	28
1.2.1	Regulatory quality*	65.1	36	5.1.4	GERD financed by business, %	52.5	22
1.2.2	Rule of law*	57.8	46 ◇	5.1.5	Females employed w/advanced degrees, %	21.1	25
1.2.3	Cost of redundancy dismissal, salary weeks	18.8	77 ○	5.2	Innovation linkages	19.6	72 ◇
1.3	Business environment	79.7	35	5.2.1	University/industry research collaboration†	37.2	87 ○ ◇
1.3.1	Ease of starting a business*	82.9	99 ○ ◇	5.2.2	State of cluster development†	46.8	67
1.3.2	Ease of resolving insolvency*	76.5	23 ●	5.2.3	GERD financed by abroad, % GDP	0.1	47
				5.2.4	JV-strategic alliance deals/bn PPP\$ GDP	0.0	65
				5.2.5	Patent families 2+ offices/bn PPP\$ GDP	0.3	34
HUMAN CAPITAL & RESEARCH				41.6	35	KNOWLEDGE & TECHNOLOGY OUTPUTS	
2.1	Education	54.1	41	5.3	Knowledge absorption	39.4	33
2.1.1	Expenditure on education, % GDP	4.6	58	5.3.1	Intellectual property payments, % total trade	1.1	32
2.1.2	Government funding/pupil, secondary, % GDP/cap	22.4	33	5.3.2	High-tech imports, % total trade	9.7	36
2.1.3	School life expectancy, years	16.1	35	5.3.3	ICT services imports, % total trade	1.4	49
2.1.4	PISA scales in reading, maths, & science	512.8	9 ●	5.3.4	FDI net inflows, % GDP	3.0	55
2.1.5	Pupil-teacher ratio, secondary	9.1	22 ●	5.3.5	Research talent, % in business enterprise	48.2	28
2.2	Tertiary education	37.9	51	5.3.1	Knowledge creation	28.9	35
2.2.1	Tertiary enrolment, % gross	67.8	34	6.1	Patents by origin/bn PPP\$ GDP	3.9	27
2.2.2	Graduates in science & engineering, %	22.9	52	6.1.2	PCT patents by origin/bn PPP\$ GDP	0.3	44
2.2.3	Tertiary inbound mobility, %	4.1	57	6.1.3	Utility models by origin/bn PPP\$ GDP	0.8	27
2.3	Research & development (R&D)	32.8	36	6.1.4	Scientific & technical articles/bn PPP\$ GDP	17.5	32
2.3.1	Researchers, FTE/mn pop.	3,106.1	31	6.1.5	Citable documents H-index	36.6	25 ●
2.3.2	Gross expenditure on R&D, % GDP	1.2	33	6.2	Knowledge impact	33.8	31
2.3.3	Global R&D companies, avg. exp. top 3, mn \$US	41.3	37	6.2.1	Growth rate of PPP\$ GDP/worker, %	4.2	18 ● ◆
2.3.4	QS university ranking, average score top 3*	28.5	41	6.2.2	New businesses/th pop. 15-64	1.4	70
				6.2.3	Computer software spending, % GDP	0.0	43
				6.2.4	ISO 9001 quality certificates/bn PPP\$ GDP	9.3	30
				6.2.5	High- and medium-high-tech manufacturing, %	31.7	37
INFRASTRUCTURE				49.4	42	CREATIVE OUTPUTS	
3.1	Information & communication technologies (ICTs)	81.1	30	7.1	Intangible assets	26.7	69
3.1.1	ICT access*	73.8	46 ◇	7.1.1	Trademarks by origin/bn PPP\$ GDP	34.2	72
3.1.2	ICT use*	68.1	45	7.1.2	Global brand value, top 5,000, % GDP	38.4	39
3.1.3	Government's online service*	93.1	17 ●	7.1.3	Industrial designs by origin/bn PPP\$ GDP	n/a	n/a
3.1.4	E-participation*	89.3	31	7.1.4	ICTs & organizational model creation†	51.9	74 ○ ◇
3.2	General infrastructure	30.7	49	7.2	Creative goods and services	31.8	22 ●
3.2.1	Electricity output, kWh/mn pop.	4,411.2	49	7.2.1	Cultural & creative services exports, % total trade	1.1	23
3.2.2	Logistics performance*	68.9	27	7.2.2	National feature films/mn pop. 15-69	1.8	72 ○ ◇
3.2.3	Gross capital formation, % GDP	21.0	89 ○	7.2.3	Entertainment & Media market/th pop. 15-69	12.6	34 ◇
3.3	Ecological sustainability	36.4	45	7.2.4	Printing and other media, % manufacturing	1.1	48
3.3.1	GDP/unit of energy use	10.0	55	7.2.5	Creative goods exports, % total trade	4.8	12 ● ◆
3.3.2	Environmental performance*	60.9	37	7.3	Online creativity	30.5	35
3.3.3	ISO 14001 environmental certificates/bn PPP\$ GDP	2.4	34	7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	7.0	46
				7.3.2	Country-code TLDs/th pop. 15-69	26.8	25 ●
				7.3.3	Wikipedia edits/mn pop. 15-69	74.5	32
				7.3.4	Mobile app creation/bn PPP\$ GDP	15.1	32
MARKET SOPHISTICATION				46.8	69		
4.1	Credit	39.2	76				
4.1.1	Ease of getting credit*	75.0	34				
4.1.2	Domestic credit to private sector, % GDP	52.7	64				
4.1.3	Microfinance gross loans, % GDP	0.1	58 ○				
4.2	Investment	27.4	107 ○				
4.2.1	Ease of protecting minority investors*	66.0	50				
4.2.2	Market capitalization, % GDP	31.7	44 ○				
4.2.3	Venture capital deals/bn PPP\$ GDP	0.0	62 ○				
4.3	Trade, competition, and market scale	73.9	22 ●				
4.3.1	Applied tariff rate, weighted avg., %	1.7	22				
4.3.2	Intensity of local competition†	70.2	58				
4.3.3	Domestic market scale, bn PPP\$	1,286.9	22 ●				

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 Poland.

Missing data

Code	Indicator name	Country year	Model year	Source
7.1.3	Industrial designs by origin/bn PPP\$ GDP	n/a	2018	World Intellectual Property Organization

Outdated data

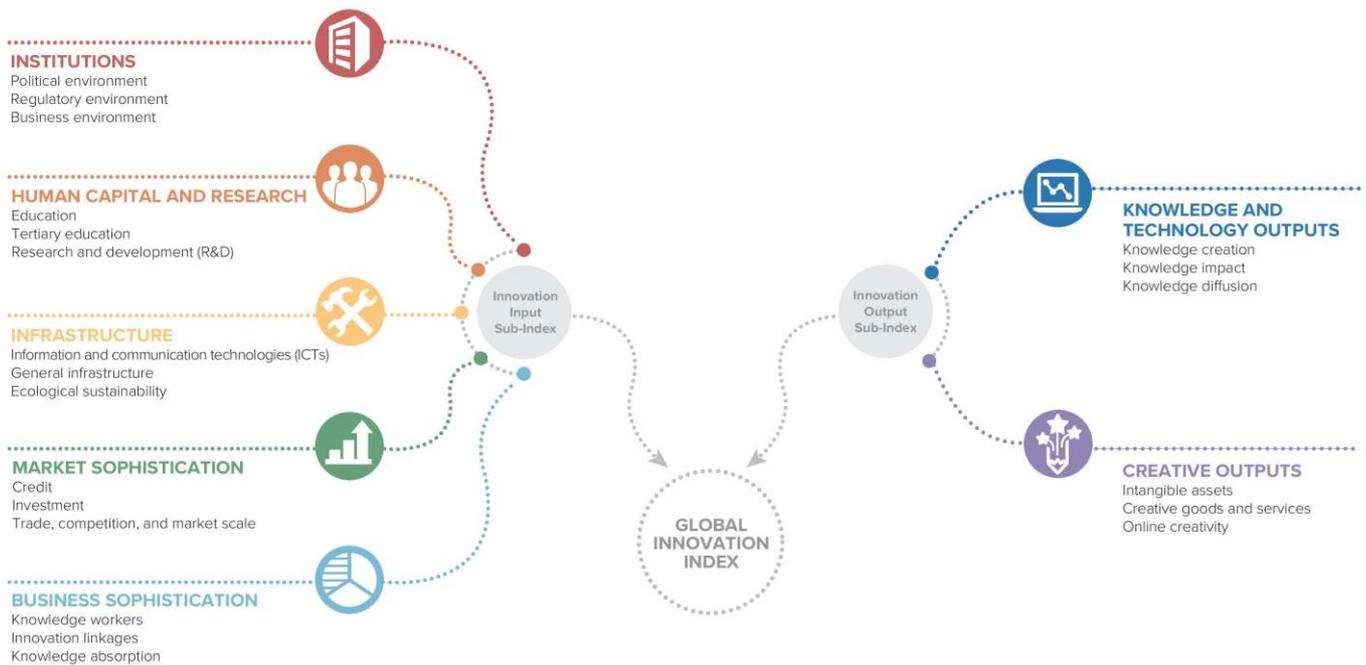
Code	Indicator name	Country year	Model year	Source
2.1.1	Expenditure on education, % GDP	2016	2018	UNESCO Institute for Statistics
2.1.5	Pupil-teacher ratio, secondary	2017	2018	UNESCO Institute for Statistics
4.1.3	Microfinance gross loans, % GDP	2015	2018	Microfinance Information Exchange

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.

