GLOBAL INNOVATION INDEX 2019

AUSTRIA

21st Austria ranks 21st among the 129 economies featured in the GII 2019.

The Global Innovation Index (GII) is a ranking of world economies based on 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 Austria over the past three years, noting that data availability and the GII model influence year-on-year comparisons of the GII ranks. The confidence interval for Austria's ranking in the GII 2019 is between 20 and 21.

Austria's Rankings, 2017 - 2019

	GII	Innovation Inputs	Innovation Outputs
2019	21	19	25
2018	21	20	28
2017	20	18	21

- Austria performs better in Innovation Inputs than Outputs.
- This year Austria ranks 19th in Innovation Inputs, better than last year but worse compared to 2017.
- As for Innovation Outputs, Austria ranks 25th. This position is better than last year but worse compared to 2017.

20th Austria ranks 20th among the 50 high-income economies.

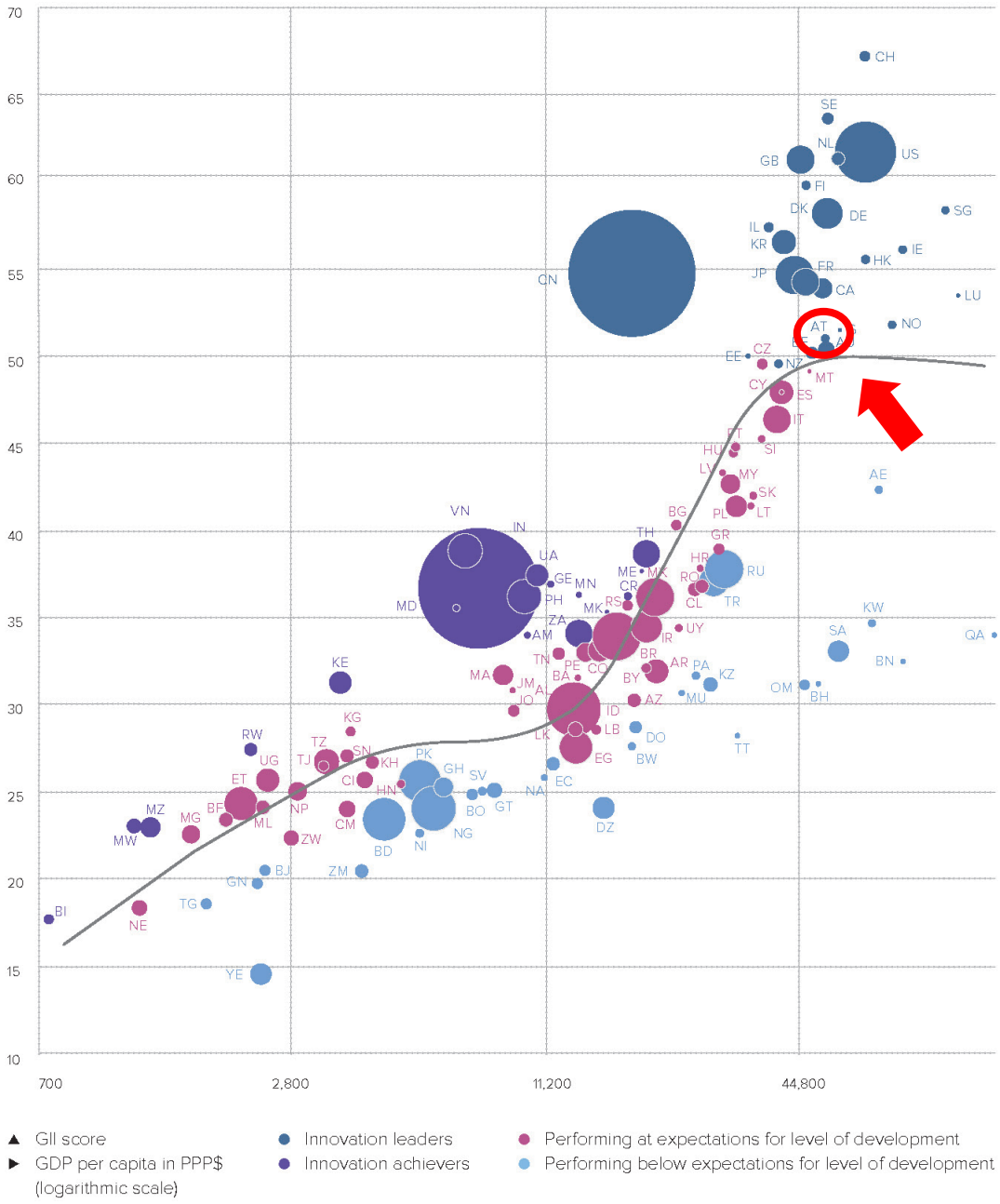
13th Austria ranks 13th among the 39 economies in Europe.

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 considered Innovation under-performers relative to GDP.

Relative to GDP, Austria performs above its expected level of development.

GII scores and GDP per capita in PPP US$
(bubbles sized by population)

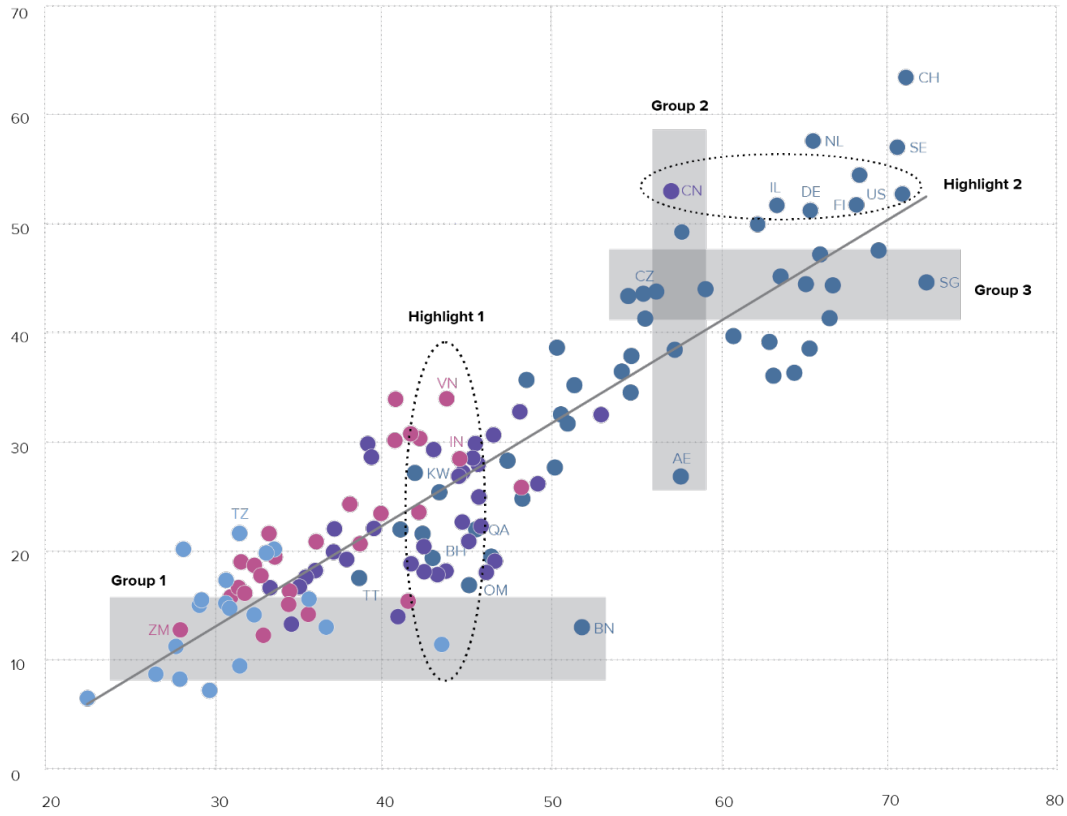


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs, indicating which economies best translate innovation inputs into innovation outputs. Economies appearing above the line are effectively translating their costly innovation investments into more and higher-quality outputs. In contrast, those below the line are not effectively translating innovation inputs into outputs.

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

Innovation input/output performance by income group, 2019



▲ Output score
▶ Input score

● High income
● Upper-middle income

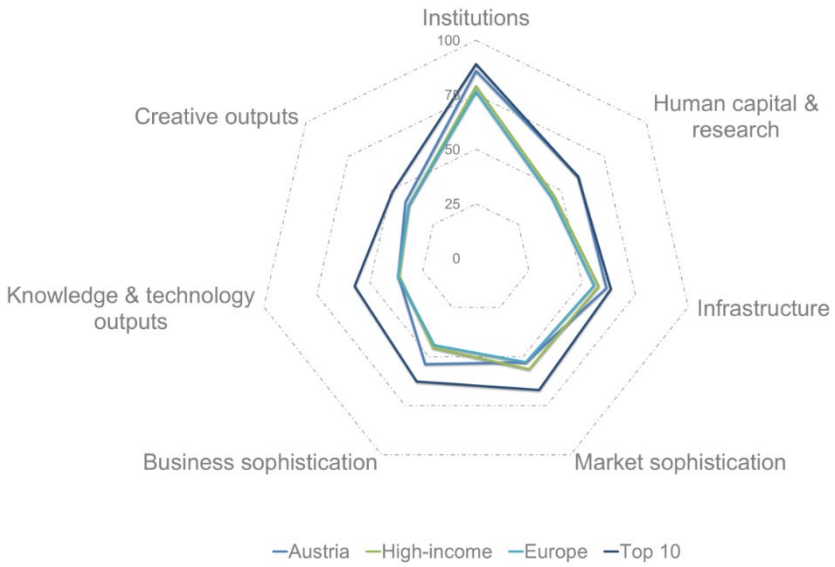
● Lower-middle income
● Low income

— Fitted values

AE	United Arab Emirates	CZ	Czech Republic	NL	Netherlands	TZ	United Republic of Tanzania
BH	Bahrain	DE	Germany	OM	Oman	US	United States of America
BN	Brunei Darussalam	FI	Finland	QA	Qatar	VN	Viet Nam
CH	Switzerland	IL	Israel	SE	Sweden	ZM	Zambia
CN	China	IN	India	SG	Singapore		
		KW	Kuwait	TT	Trinidad and Tobago		

BENCHMARKING AUSTRIA TO OTHER HIGH-INCOME ECONOMIES AND THE EUROPE REGION

Austria's scores in the seven GII pillars



High-income economies

Austria has high scores in 6 out of the 7 GII pillars: Institutions, Human capital & research, Infrastructure, Business sophistication, Knowledge & technology outputs, and Creative outputs, which are above the average of the high-income group.

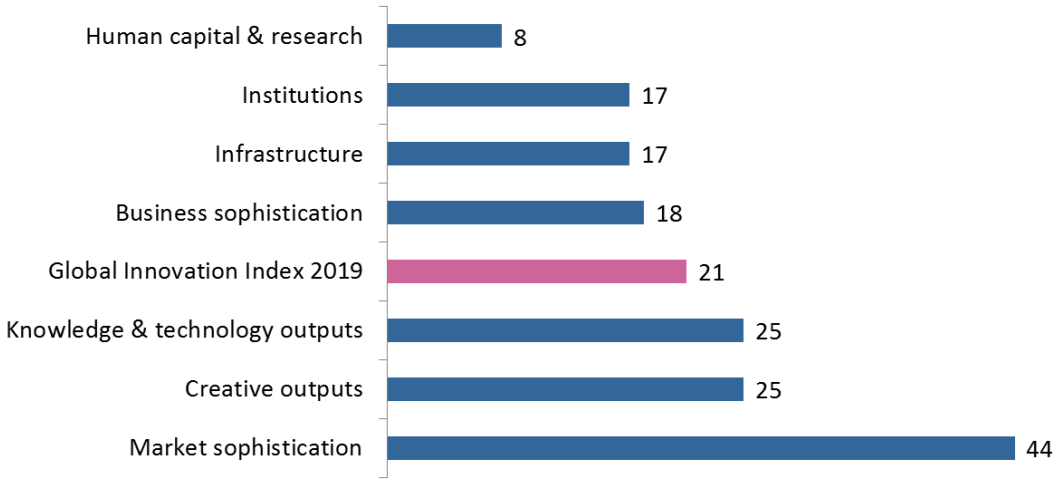
Europe Region

Compared to other economies in Europe, Austria performs above average in 6 out of the 7 GII pillars: Institutions, Human capital & research, Infrastructure, Market sophistication, Business sophistication, and Creative outputs.

Top ranks are found in areas such as Regulatory environment, Tertiary education, General infrastructure, and Innovation linkages where the country ranks in the top 15 worldwide.

OVERVIEW OF AUSTRIA'S RANKINGS IN THE 7 GII AREAS

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



*The highest possible ranking in each pillar is 1.

AUSTRIA'S INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of Austria's strengths and weaknesses in the GII 2019.

Strengths

Code	Indicator name	Rank
1.2	Regulatory environment	10
1.2.2	Rule of law*	9
1.2.3	Cost of redundancy dismissal, salary weeks	1
2	Human capital & research	8
2.2	Tertiary education	3
2.2.1	Tertiary enrolment, % gross	12
2.2.3	Tertiary inbound mobility, %	10
2.3.1	Researchers, FTE/mn pop.	9
2.3.2	Gross expenditure on R&D, % GDP	6
3.2.2	Logistics performance*	4
3.3.2	Environmental performance*	8
5.1.3	GERD performed by business, % GDP	6
5.2	Innovation linkages	11
5.2.5	Patent families 2+ offices/bn PPP$ GDP	12
7.3.2	Country-code TLDs/th pop. 15–69	11

Weaknesses

Code	Indicator name	Rank
1.3.1	Ease of starting a business*	91
4.1.1	Ease of getting credit*	77
4.2	Investment	81
4.2.2	Market capitalization, % GDP	48
4.2.3	Venture capital deals/bn PPP$ GDP	38
5.3.2	High-tech imports, % total trade	54
5.3.4	FDI net inflows, % GDP, 3-year average	127
6.2.1	Growth rate of PPP$ GDP/worker, %, 3-year average	65
6.2.2	New businesses/th pop. 15–64	80
6.3.4	FDI net outflows, % GDP, 3-year average	124
7.2.4	Printing & other media, % manufacturing	42

STRENGTHS

- GII strengths for Austria are found in five of the seven GII pillars, and mostly on the innovation input side of the GII.
- Pillar Human capital & research (8) is one of Austria's relative strengths. Several other GII strengths for this country are in this area.
- In Human capital & research (8), strengths are sub-pillar Tertiary education (3) and indicators Tertiary enrolment (12), Tertiary inbound mobility (10), Researchers (9), and Gross expenditure on R&D (6).
- In Institutions (17), GII strengths for Austria are sub-pillar Regulatory environment (10) and indicators Rule of law (9) and Cost of redundancy dismissal, in which it positions 1st worldwide.
- In Infrastructure (17), two indicators – Logistics performance (4) and Environmental performance (8) – are relative strengths for Austria.
- In Business sophistication (18), Austria's strengths are sub-pillar Innovation linkages (11) and indicators R&D performed by business (6) and Patent families in two or more offices (12).
- In Creative outputs (25), indicator Country-code TLDs (11) is the only GII strength for Austria.

WEAKNESSES

- Austria's weaknesses in the GII are found in five of the seven GII pillars.
- Several of these weaknesses are in Market sophistication (44). These are sub-pillar Investment (81) and indicators Ease of getting credit (77), Market capitalization (48), and Venture capital deals (38).
- In Institutions (17), Austria's weakness is indicator Ease of starting a business (91).
- In Business sophistication (18), relative weaknesses for Austria are indicators High-tech imports (54) and FDI inflow (127).
- In Knowledge & technology outputs (25), GII weaknesses for this country are indicators Labor productivity growth (65), New businesses, and FDI outflows (124).
- In Creative outputs (25), Austria's only relative weakness is indicator Printing & other media (42).

AUSTRIA

GII 2019 rank

21

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2018 rank
25	**19**	**High**	**EUR**	**8.8**	**464.0**	**52,137.4**	**21**

		Score/Value	Rank	
	INSTITUTIONS	**86.0**	**17**	
1.1	**Political environment**	**83.9**	**17**	
1.1.1	Political and operational stability*	87.7	18	
1.1.2	Government effectiveness*	82.0	16	
1.2	**Regulatory environment**	**93.7**	**10**	●
1.2.1	Regulatory quality*	80.5	18	
1.2.2	Rule of law*	94.3	9	●
1.2.3	Cost of redundancy dismissal, salary weeks	8.0	1	●
1.3	**Business environment**	**80.3**	**32**	
1.3.1	Ease of starting a business*	83.2	91	○ ◇
1.3.2	Ease of resolving insolvency*	77.5	20	
	HUMAN CAPITAL & RESEARCH	**60.2**	**8**	●
2.1	**Education**	**60.7**	**22**	
2.1.1	Expenditure on education, % GDP	5.5	28	
2.1.2	Government funding/pupil, secondary, % GDP/cap	27.3	17	◆
2.1.3	School life expectancy, years	16.3	28	
2.1.4	PISA scales in reading, maths, & science	492.2	25	
2.1.5	Pupil-teacher ratio, secondary	9.3	20	◆
2.2	**Tertiary education**	**61.7**	**3**	● ◆
2.2.1	Tertiary enrolment, % gross	86.3	12	●
2.2.2	Graduates in science & engineering, %	30.3	12	◆
2.2.3	Tertiary inbound mobility, %	16.3	10	●
2.3	**Research & development (R&D)**	**58.1**	**18**	
2.3.1	Researchers, FTE/mn pop	5,439.8	9	●
2.3.2	Gross expenditure on R&D, % GDP	3.2	6	●
2.3.3	Global R&D companies, avg. exp. top 3, mn US$	55.4	25	
2.3.4	QS university ranking, average score top 3*	42.0	28	
	INFRASTRUCTURE	**61.4**	**17**	
3.1	**Information & communication technologies(ICTs)**	**82.3**	**26**	
3.1.1	ICT access*	85.2	13	
3.1.2	ICT use*	74.7	29	◇
3.1.3	Government's online service*	86.8	32	
3.1.4	E-participation*	82.6	45	◇
3.2	**General infrastructure**	**51.3**	**14**	
3.2.1	Electricity output, kWh/mn pop	7,666.0	27	
3.2.2	Logistics performance*	91.8	4	●
3.2.3	Gross capital formation, % GDP	25.6	41	
3.3	**Ecological sustainability**	**50.5**	**28**	
3.3.1	GDP/unit of energy use	11.5	37	
3.3.2	Environmental performance*	79.0	8	●
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	2.6	37	
	MARKET SOPHISTICATION	**52.8**	**44**	◇
4.1	**Credit**	**47.3**	**39**	
4.1.1	Ease of getting credit*	55.0	77	○
4.1.2	Domestic credit to private sector, % GDP	84.1	34	
4.1.3	Microfinance gross loans, % GDP	n/a	n/a	
4.2	**Investment**	**38.8**	**81**	○ ◇
4.2.1	Ease of protecting minority investors*	68.3	30	
4.2.2	Market capitalization, % GDP	30.8	48	○ ◇
4.2.3	Venture capital deals/bn PPP$ GDP	0.0	38	○ ◇
4.3	**Trade, competition, & market scale**	**72.4**	**28**	
4.3.1	Applied tariff rate, weighted avg., %	1.8	23	
4.3.2	Intensity of local competition†	78.8	13	
4.3.3	Domestic market scale, bn PPP$	464.0	43	

		Score/Value	Rank	
	BUSINESS SOPHISTICATION	**53.8**	**18**	
5.1	**Knowledge workers**	**65.0**	**17**	
5.1.1	Knowledge-intensive employment, %	41.6	25	
5.1.2	Firms offering formal training, % firms	n/a	n/a	
5.1.3	GERD performed by business, % GDP	2.2	6	●
5.1.4	GERD financed by business, %	54.0	21	
5.1.5	Females employed w/advanced degrees, %	17.2	35	◇
5.2	**Innovation linkages**	**50.8**	**11**	●
5.2.1	University/industry research collaboration†	65.2	16	
5.2.2	State of cluster development†	66.7	14	
5.2.3	GERD financed by abroad, %	16.0	24	
5.2.4	JV-strategic alliance deals/bn PPP$ GDP	0.0	31	◇
5.2.5	Patent families 2+ offices/bn PPP$ GDP	4.5	12	●
5.3	**Knowledge absorption**	**45.6**	**26**	
5.3.1	Intellectual property payments, % total trade	0.8	49	
5.3.2	High-tech imports, % total trade	8.2	54	○
5.3.3	ICT services imports, % total trade	2.3	18	
5.3.4	FDI net inflows, % GDP	-1.9	127	○
5.3.5	Research talent, % in business enterprise	62.2	9	
	KNOWLEDGE & TECHNOLOGY OUTPUTS	**36.7**	**25**	◇
6.1	**Knowledge creation**	**41.3**	**18**	
6.1.1	Patents by origin/bn PPP$ GDP	9.7	13	
6.1.2	PCT patents by origin/bn PPP$ GDP	3.2	11	
6.1.3	Utility models by origin/bn PPP$ GDP	1.0	23	
6.1.4	Scientific & technical articles/bn PPP$ GDP	22.0	20	
6.1.5	Citable documents H-index	43.4	17	
6.2	**Knowledge impact**	**43.6**	**33**	
6.2.1	Growth rate of PPP$ GDP/worker, %	0.9	65	○
6.2.2	New businesses/th pop. 15-64	0.6	80	○ ◇
6.2.3	Computer software spending, % GDP	0.6	15	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	8.4	36	
6.2.5	High- & medium-high-tech manufactures, %	0.4	15	
6.3	**Knowledge diffusion**	**25.1**	**40**	◇
6.3.1	Intellectual property receipts, % total trade	0.6	24	
6.3.2	High-tech net exports, % total trade	7.5	21	
6.3.3	ICT services exports, % total trade	3.0	33	
6.3.4	FDI net outflows, % GDP	-1.2	124	○ ◇
	CREATIVE OUTPUTS	**41.4**	**25**	
7.1	**Intangible assets**	**51.2**	**30**	
7.1.1	Trademarks by origin/bn PPP$ GDP	53.3	45	
7.1.2	Industrial designs by origin/bn PPP$ GDP 🕘	7.3	17	
7.1.3	ICTs & business model creation†	72.6	27	
7.1.4	ICTs & organizational model creation†	64.9	29	◇
7.2	**Creative goods & services**	**27.1**	**38**	
7.2.1	Cultural & creative services exports, % total trade	1.2	23	
7.2.2	National feature films/mn pop. 15-69	7.1	28	
7.2.3	Entertainment & Media market/th pop. 15-69	65.3	8	
7.2.4	Printing & other media, % manufacturing	1.3	42	○
7.2.5	Creative goods exports, % total trade	0.9	45	
7.3	**Online creativity**	**36.2**	**22**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	36.0	19	
7.3.2	Country-code TLDs/th pop. 15-69	57.9	11	●
7.3.3	Wikipedia edits/mn pop. 15-69	54.2	20	
7.3.4	Mobile app creation/bn PPP$ GDP	14.4	33	

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 missing or are outdated for Austria.

Missing data

Code	Indicator name	Country year	Model year	Source
4.1.3	Microfinance gross loans, % GDP	n/a	2017	Microfinance Information Exchange
5.1.2	Firms offering formal training, % firms	n/a	2013	World Bank

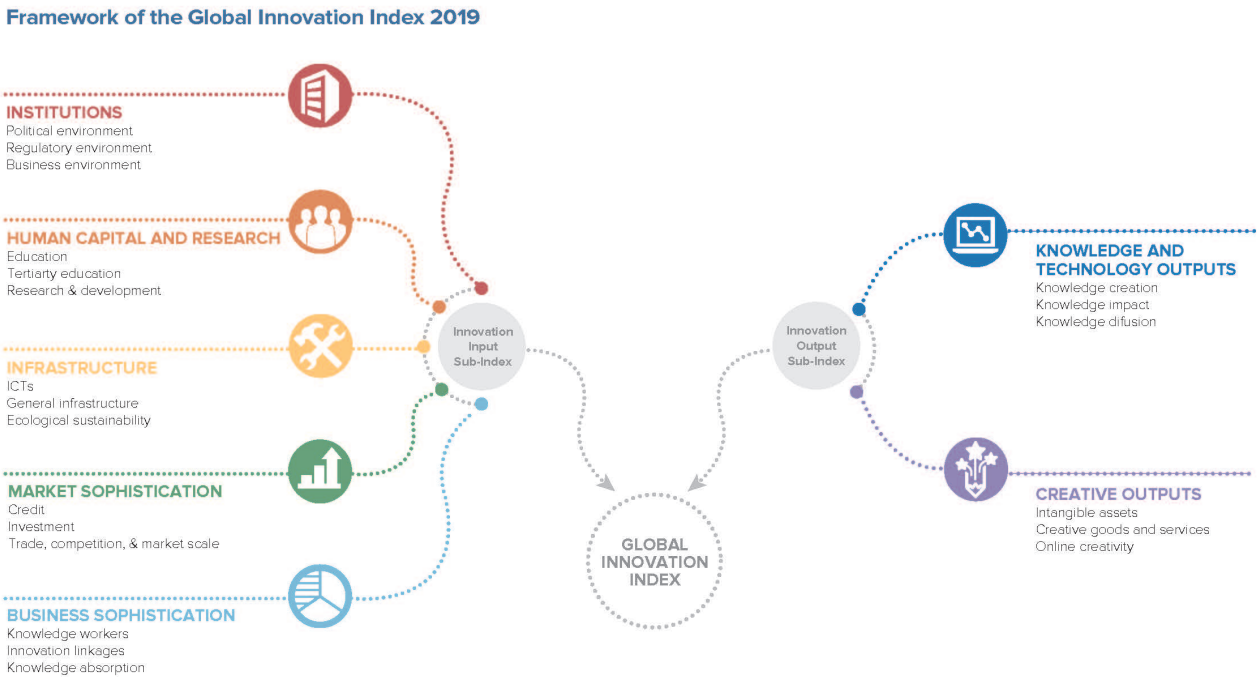
Outdated data

Code	Indicator name	Country year	Model year	Source
7.1.2	Industrial designs by origin/bn PPP$ GDP	2016	2017	World Intellectual Property Organization

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 2019, the GII presents its 12th edition devoted to the theme **Creating Healthy Lives—The Future of Medical Innovation**.

Recognizing that innovation is a key driver of economic development, the GII aims to provide a rich innovation ranking and 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 countries that incorporate the GII into their innovation agendas.



The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that includes 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 containing three sub-pillars.