GLOBAL INNOVATION INDEX 2020

AUSTRIA

19th Austria ranks 19th 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 Austria 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 Austria in the GII 2020 is between ranks 18 and 19.

Rankings of Austria (2018–2020)

	GII	Innovation inputs	Innovation outputs
2020	19	18	23
2019	21	19	25
2018	21	20	28

- Austria performs better in innovation inputs than innovation outputs in 2020.
- This year Austria ranks 18th in innovation inputs, higher than last year and higher compared to 2018.
- As for innovation outputs, Austria ranks 23rd. This position is higher than last year and higher compared to 2018.

18th Austria ranks 18th among the 49 high-income group economies.

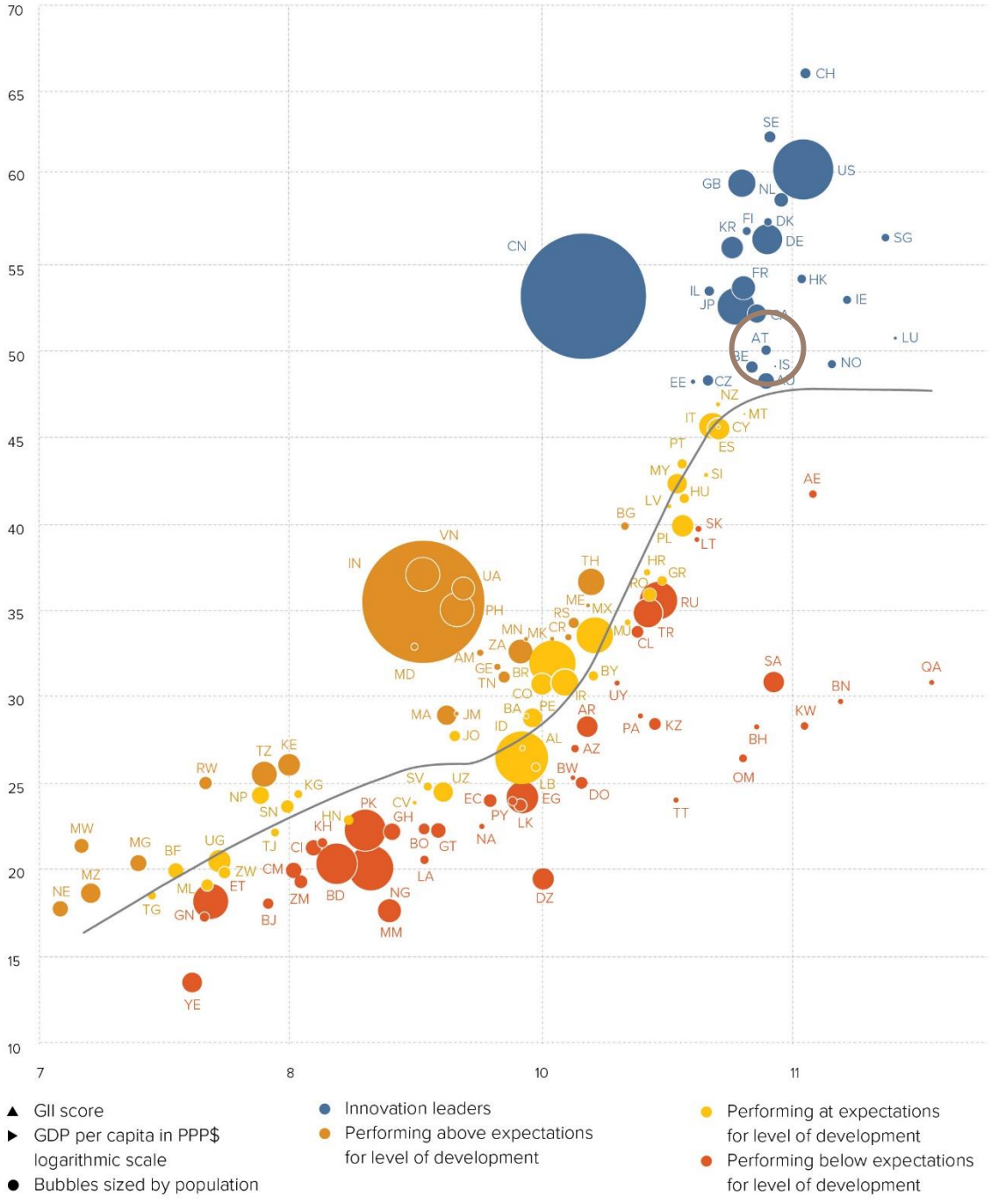
11th Austria ranks 11th among the 39 economies in Europe.

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

The positive relationship between innovation and development

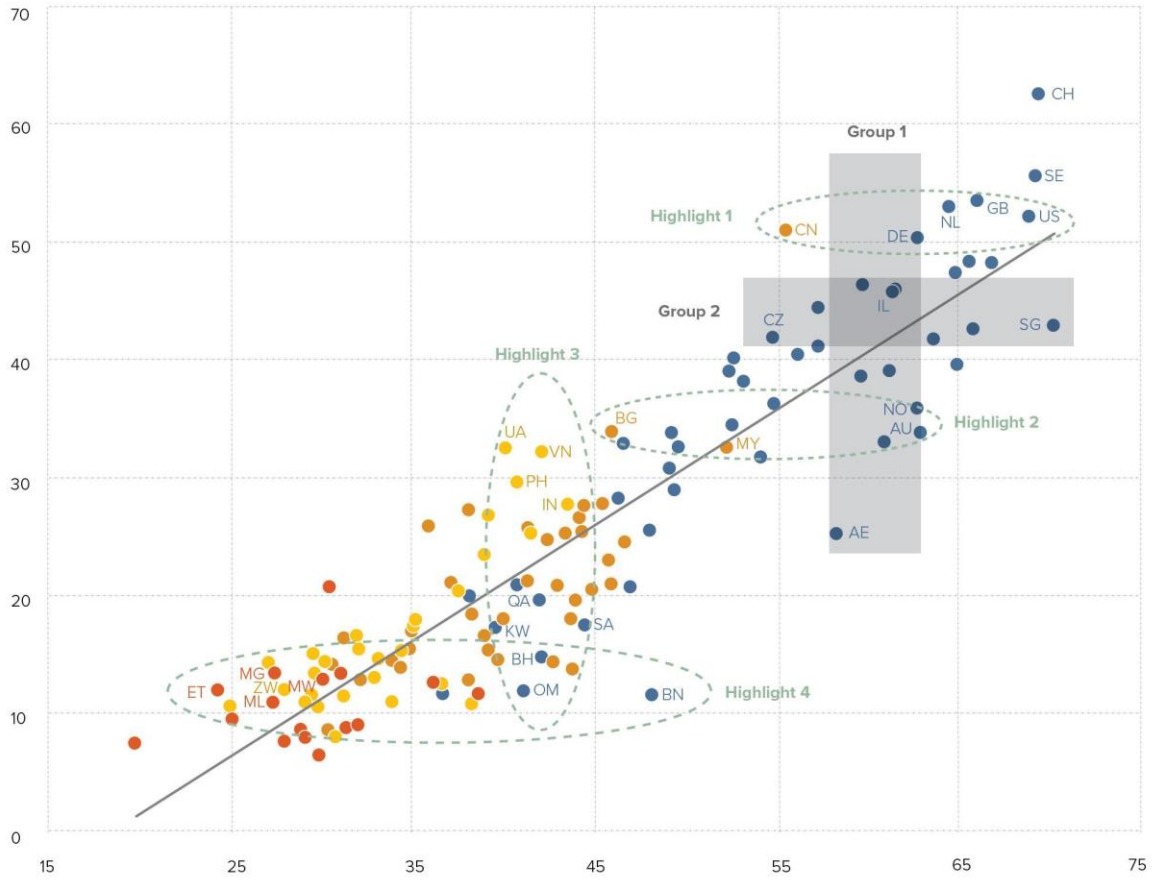


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

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.

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

Innovation input to output performance, 2020



▲ Output score
► Input score

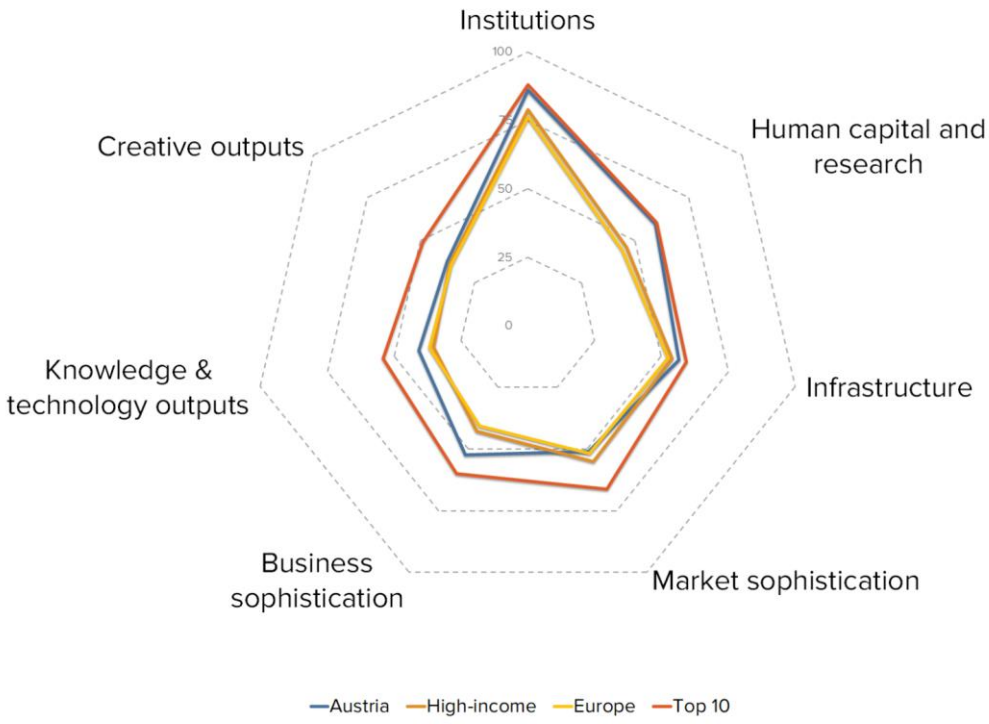
● High income group
● Upper middle-income group
● Lower middle-income group
● Low income group

— Fitted values

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 AUSTRIA AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

Austria's scores in the seven GII pillars



High-income group economies

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

Conversely, Austria scores below average for its income group in the pillar Market sophistication.

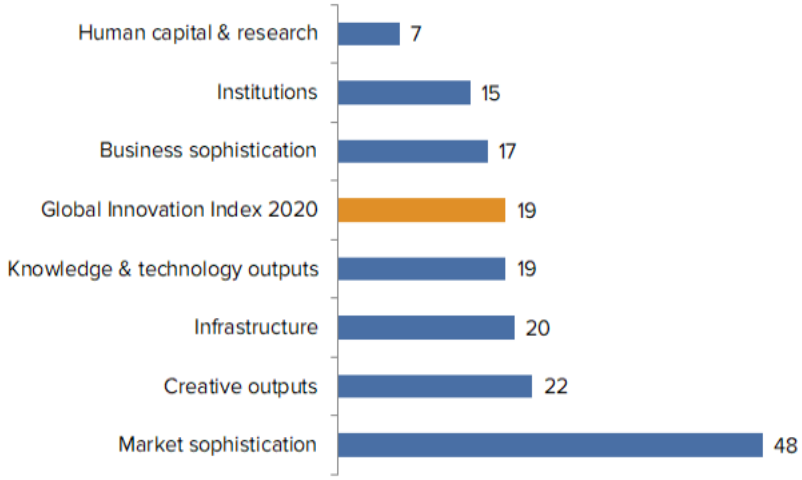
Europe

Compared to other economies in Europe, Austria performs:

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

OVERVIEW OF AUSTRIA RANKINGS IN THE SEVEN GII AREAS

Austria 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 Austria in the GII 2020.

Strengths

Code	Indicator name	Rank
1.2	Regulatory environment	6
1.2.2	Rule of law*	6
1.2.3	Cost of redundancy dismissal, salary weeks	1
2	Human capital & research	7
2.2	Tertiary education	4
2.2.1	Tertiary enrolment, % gross	11
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*	6
5.1.3	GERD performed by business, % GDP	6
5.2.3	GERD financed by abroad, % GDP	3
7.3.2	Country-code TLDs/th pop. 15–69	11

Weaknesses

Code	Indicator name	Rank
1.3.1	Ease of starting a business*	98
4.1.1	Ease of getting credit*	88
4.2	Investment	80
4.2.2	Market capitalization, % GDP	46
5.2.4	JV–strategic alliance deals/bn PPP$ GDP	56
5.3.2	High-tech imports, % total trade	69
5.3.4	FDI net inflows, % GDP	125
6.2.1	Growth rate of PPP$ GDP/worker, %	72
6.2.2	New businesses/th pop. 15–64	91
6.3.4	FDI net outflows, % GDP	127
7.2.4	Printing & other media, % manufacturing	45

STRENGTHS

GII strengths for Austria are found in five of the seven GII pillars.

- Institutions (15): exhibits strengths in the sub-pillar Regulatory environment (6) and in the indicators Rule of law (6) and Cost of redundancy dismissal (1).
- Human capital & research (7): shows strengths in the sub-pillar Tertiary education (4) and in the indicators Tertiary enrolment (11), Tertiary inbound mobility (10), Researchers (9) and Gross expenditure on R&D (6).
- Infrastructure (20): demonstrates strengths in the indicators Logistics performance (4) and Environmental performance (6).
- Business sophistication (17): displays strengths in the indicators GERD performed by business (6) and GERD financed by abroad (3).
- Creative outputs (22): the indicator Country-code TLDs (11) is a strength.

WEAKNESSES

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

- Institutions (15): the indicator Ease of starting a business (98) is a weakness.
- Market sophistication (48): shows weaknesses in the sub-pillar Investment (80) and in the indicators Ease of getting credit (88) and Market capitalization (46).
- Business sophistication (17): demonstrates weaknesses in the indicators JV–strategic alliance deals (56), High-tech imports (69) and FDI net inflows (125).
- Knowledge & technology outputs (19): displays weaknesses in the indicators Growth rate of GDP per worker (72), New businesses (91) and FDI net outflows (127).
- Creative outputs (22): the indicator Printing and other media (45) is a weakness.

AUSTRIA

GII 2020 rank

19

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2019 rank
23	18	High	EUR	9.0	479.4	46,758.1	21

		Score/Value	Rank	
INSTITUTIONS		**86.2**	**15**	
1.1	**Political environment**	**83.6**	**17**	
1.1.1	Political and operational stability*	85.7	17	
1.1.2	Government effectiveness*	82.6	18	
1.2	**Regulatory environment**	**94.5**	**6**	●
1.2.1	Regulatory quality*	82.6	18	
1.2.2	Rule of law*	95.6	6	●
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	98	○ ◇
1.3.2	Ease of resolving insolvency*	77.4	21	
HUMAN CAPITAL & RESEARCH		**59.7**	**7**	●
2.1	**Education**	**58.5**	**18**	
2.1.1	Expenditure on education, % GDP ⊙	5.5	21	
2.1.2	Government funding/pupil, secondary, % GDP/cap	27.7	16	◆
2.1.3	School life expectancy, years	16.1	33	
2.1.4	PISA scales in reading, maths, & science	491.0	27	
2.1.5	Pupil-teacher ratio, secondary ⊙	9.3	25	◆
2.2	**Tertiary education**	**62.4**	**4**	● ◆
2.2.1	Tertiary enrolment, % gross	85.1	11	●
2.2.2	Graduates in science & engineering, % ⊙	30.3	13	◆
2.2.3	Tertiary inbound mobility, %	17.2	10	● ◆
2.3	**Research & development (R&D)**	**58.2**	**17**	
2.3.1	Researchers, FTE/mn pop	5,733.1	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 $US	55.6	26	
2.3.4	QS university ranking, average score top 3*	43.4	26	
INFRASTRUCTURE		**56.5**	**20**	
3.1	**Information & communication technologies (ICTs)**	**82.1**	**27**	◇
3.1.1	ICT access*	84.8	15	
3.1.2	ICT use*	74.2	31	◇
3.1.3	Government's online service*	86.8	32	
3.1.4	E-participation*	82.6	45	◇
3.2	**General infrastructure**	**42.5**	**17**	
3.2.1	Electricity output, kWh/mn pop	7,354.0	29	
3.2.2	Logistics performance*	91.8	4	●
3.2.3	Gross capital formation, % GDP	25.7	46	
3.3	**Ecological sustainability**	**45.0**	**30**	
3.3.1	GDP/unit of energy use	12.0	33	
3.3.2	Environmental performance*	79.6	6	●
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	2.3	35	
MARKET SOPHISTICATION		**51.1**	**48**	◇
4.1	**Credit**	**45.9**	**48**	
4.1.1	Ease of getting credit*	55.0	88	○
4.1.2	Domestic credit to private sector, % GDP	84.2	34	
4.1.3	Microfinance gross loans, % GDP	n/a	n/a	
4.2	**Investment**	**33.9**	**80**	○ ◇
4.2.1	Ease of protecting minority investors*	70.0	36	
4.2.2	Market capitalization, % GDP	30.8	46	○ ◇
4.2.3	Venture capital deals/bn PPP$ GDP	0.1	27	
4.3	**Trade, competition, and market scale**	**73.4**	**24**	
4.3.1	Applied tariff rate, weighted avg., %	1.7	22	
4.3.2	Intensity of local competition+	78.8	13	
4.3.3	Domestic market scale, bn PPP$	479.4	43	

		Score/Value	Rank	
BUSINESS SOPHISTICATION		**52.3**	**17**	
5.1	**Knowledge workers**	**60.9**	**13**	
5.1.1	Knowledge-intensive employment, %	41.9	24	
5.1.2	Firms offering formal training, %	n/a	n/a	
5.1.3	GERD performed by business, % GDP	2.2	6	●
5.1.4	GERD financed by business, %	54.4	18	
5.1.5	Females employed w/advanced degrees, %	17.0	38	◇
5.2	**Innovation linkages**	**55.1**	**12**	
5.2.1	University/industry research collaboration+	64.1	19	
5.2.2	State of cluster development+	65.7	15	
5.2.3	GERD financed by abroad, % GDP	0.5	3	● ◆
5.2.4	JV-strategic alliance deals/bn PPP$ GDP	0.0	56	○ ◇
5.2.5	Patent families 2+ offices/bn PPP$ GDP	3.9	13	
5.3	**Knowledge absorption**	**40.9**	**29**	
5.3.1	Intellectual property payments, % total trade	0.8	51	
5.3.2	High-tech imports, % total trade	7.5	69	○
5.3.3	ICT services imports, % total trade	2.5	17	
5.3.4	FDI net inflows, % GDP	-1.1	125	○
5.3.5	Research talent, % in business enterprise	63.0	9	
KNOWLEDGE & TECHNOLOGY OUTPUTS		**40.7**	**19**	
6.1	**Knowledge creation**	**48.5**	**15**	
6.1.1	Patents by origin/bn PPP$ GDP	9.3	12	
6.1.2	PCT patents by origin/bn PPP$ GDP	3.0	11	
6.1.3	Utility models by origin/bn PPP$ GDP	0.8	26	
6.1.4	Scientific & technical articles/bn PPP$ GDP	23.6	20	
6.1.5	Citable documents H-index	44.1	18	
6.2	**Knowledge impact**	**35.9**	**23**	
6.2.1	Growth rate of PPP$ GDP/worker, %	0.6	72	○
6.2.2	New businesses/th pop. 15-64	0.6	91	○ ◇
6.2.3	Computer software spending, % GDP	0.0	15	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	7.1	38	
6.2.5	High- and medium-high-tech manufacturing, %	43.2	16	
6.3	**Knowledge diffusion**	**37.6**	**28**	
6.3.1	Intellectual property receipts, % total trade	0.6	24	◇
6.3.2	High-tech net exports, % total trade	6.8	25	
6.3.3	ICT services exports, % total trade	3.0	31	
6.3.4	FDI net outflows, % GDP	-0.9	127	○
CREATIVE OUTPUTS		**37.5**	**22**	◇
7.1	**Intangible assets**	**36.7**	**36**	◇
7.1.1	Trademarks by origin/bn PPP$ GDP	55.4	42	
7.1.2	Global brand value, top 5,000, % GDP	51.1	34	◇
7.1.3	Industrial designs by origin/bn PPP$ GDP ⊙	8.1	16	
7.1.4	ICTs & organizational model creation+	64.9	29	◇
7.2	**Creative goods and services**	**26.7**	**36**	
7.2.1	Cultural & creative services exports, % total trade	1.1	22	
7.2.2	National feature films/mn pop. 15-69	7.0	30	
7.2.3	Entertainment & Media market/th pop. 15-69	63.2	9	
7.2.4	Printing and other media, % manufacturing	1.1	45	○
7.2.5	Creative goods exports, % total trade	0.9	48	
7.3	**Online creativity**	**50.1**	**19**	
7.3.1	Generic top-level domains (TLDs)/th pop. 15-69	35.4	19	
7.3.2	Country-code TLDs/th pop. 15-69	62.8	11	●
7.3.3	Wikipedia edits/mn pop. 15-69	85.8	14	
7.3.4	Mobile app creation/bn PPP$ GDP	17.2	28	

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 Austria.

Missing data

Code	Indicator name	Country year	Model year	Source
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

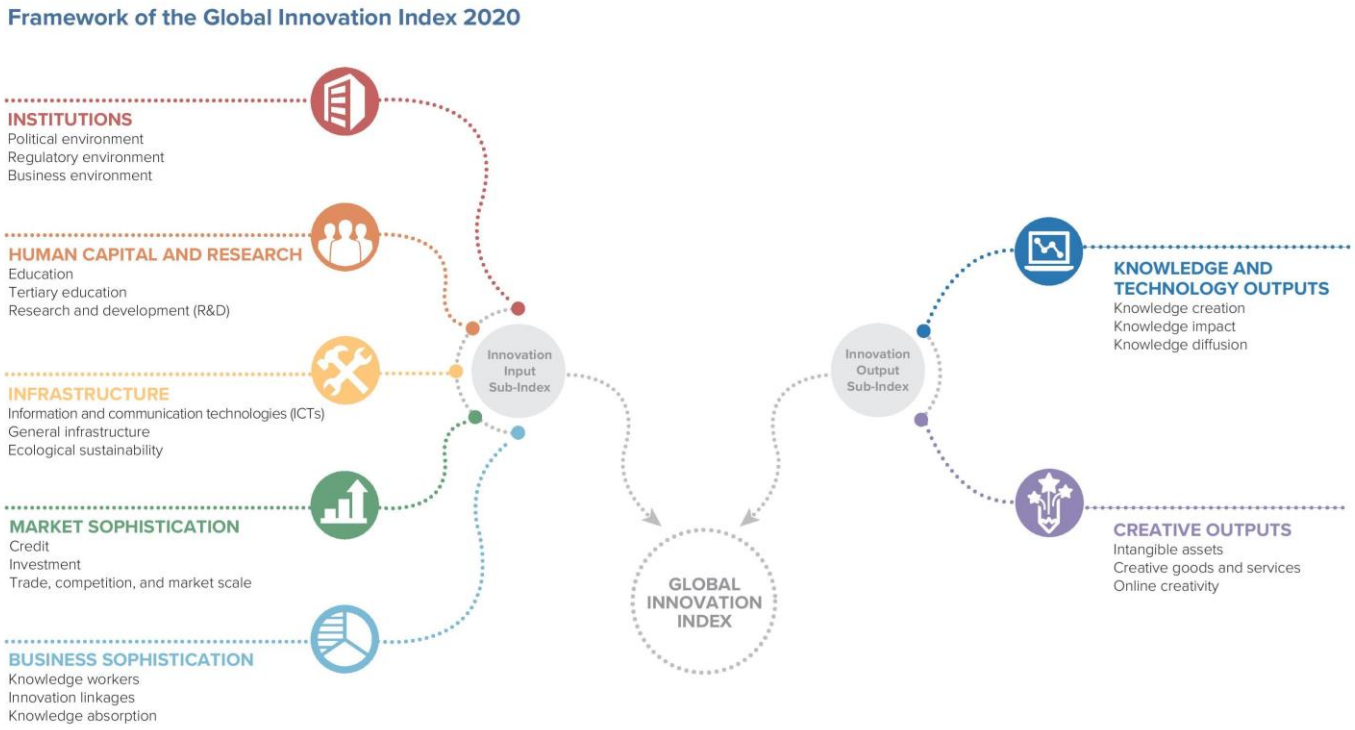
Outdated data

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
2.2.2	Graduates in science & engineering, %	2016	2017	UNESCO Institute for Statistics
7.1.3	Industrial designs by origin/bn PPP$ GDP	2016	2018	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 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.



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.