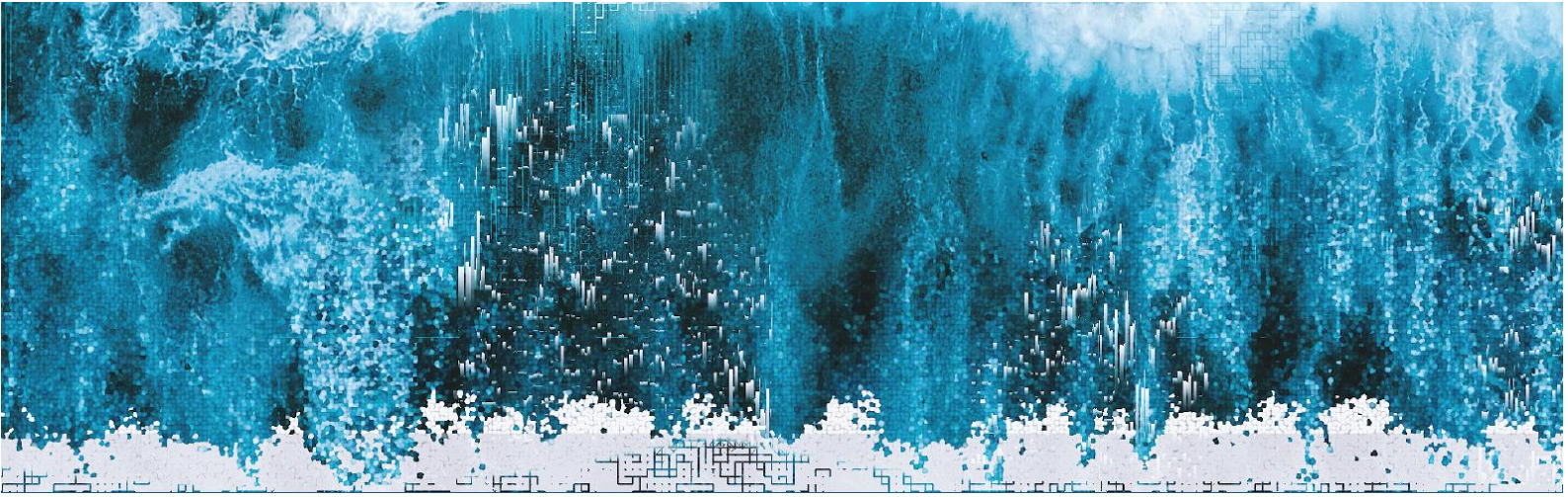


GLOBAL INNOVATION INDEX 2018

Chile

47th Chile is ranked 47th in the GII 2018, moving down 1 position from the previous year.

Chile ranks 47th in the GII this year, at the top spot in the region but down one position since last year. It holds a place in the top 50 economies across three areas: institutions, sophistication of the business sector, and knowledge- and technology-related innovation outputs. This year it also improves in important indicators, such as productivity growth and high- and medium-high-tech manufactures.

Its areas of strength are mostly found among indicators that capture the input side of the innovation process. These include the regulatory quality, enrolment in tertiary education, access to credit, firms offering formal training, and FDI inflows (for a complete list of Chile's strengths, see page 3 of this brief). Among innovation output indicators, the only strengths found this year are new businesses and FDI outflows.

The GII indicators are grouped into innovation inputs and outputs. Innovation inputs capture the efforts made by the country to boost innovation. Innovation outputs measure the results of these efforts in terms of scientific publications, patents, trademarks, production, exports and other outputs. The table below presents Chile's ranking over time in the overall GII, the Innovation Input and Output Sub-Indices – which summarize Chile's performance in innovation input and output indicators–, and in the Efficiency Ratio – which captures how well the economy translates innovation inputs into more outputs.[1]

Chile's ranking over time

	GII	Input	Output	Efficiency
2018	47	45	53	68
2017	46	42	53	77
2016	44	40	53	91

[1] Note that year-on-year comparisons of the GII ranks are imperfect and influenced by changes in the GII model and data availability.

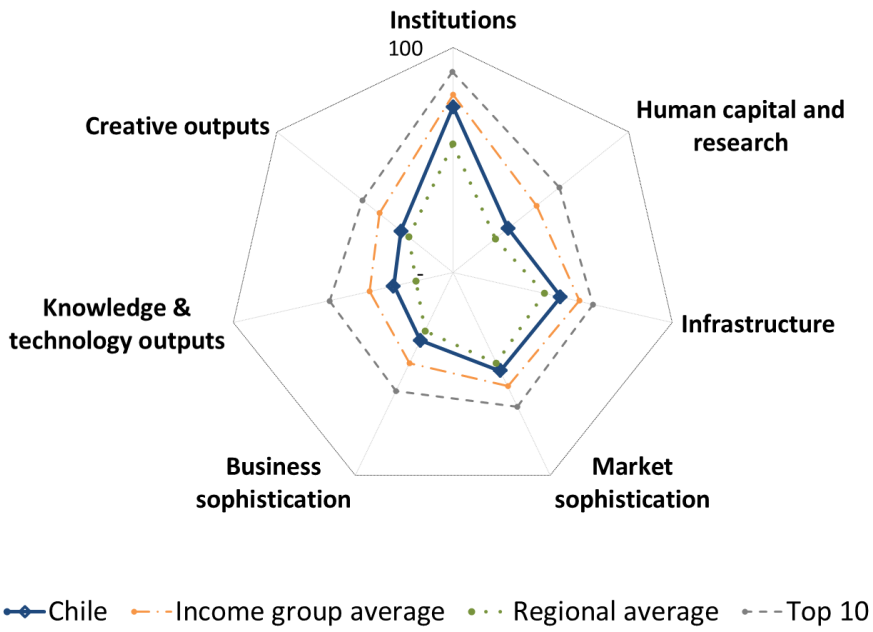
- Chile performs better in innovation inputs than innovation outputs. Over the last three years, it demonstrates stability in innovation outputs, ranking 53rd.
- Chile shows a slightly downward trend in innovation inputs, ranking 45th this year, dropping from the 42nd position in 2017 and the 40th in 2016.
- Chile's Innovation Efficiency Ratio improved over the last years, moving up 23 positions from 2016. However, its efficiency in translating innovation inputs into outputs is still rather low compared to other countries at similar stages of development. This is influenced by a lower ranking in innovation outputs (53rd) compared to inputs (45th).

39th Chile is ranked 39th among the 47 high-income countries in the GII 2018.

1st Chile is the most innovative country in Latin America and the Caribbean in the GII 2018.

Benchmarking Chile to other high-income countries and the Latin America and the Caribbean region

Chile's scores by area



High-income countries

Chile scores below the average of the high-income group in all 7 GII areas.

Latin America and the Caribbean region

Compared to other countries in the Latin America and the Caribbean region, Chile performs above-average in all 7 GII areas.

Chile's innovation profile

Strengths

- Most comparative strengths for Chile are on the innovation input side of the GII.
- In **Institutions** (37th), Chile exhibits strengths in indicators *Regulatory quality* (20th) and *Rule of law* (25th).
- In **Human Capital & Research** (61st), Chile performs strongly in indicator *Tertiary enrolment* – taking up the high 6th global position.
- In **Market Sophistication** (54th), Chile's strengths lie in indicators *Domestic credit to private sector* (20th) and *Market capitalization* (16th).
- Chile is showing particularly strong performance in **Business Sophistication** (48th), where it has strengths in three indicators: *Firms offering formal training* (10th), *Intellectual property payments* (11th), and *FDI inflows* (19th).
- On the **innovation output** side, only two strengths are found. In **Knowledge & Technology Outputs** (48th), Chile shows strong performance in indicators *New businesses* (15th) and *FDI outflows* (12th).

Weaknesses

- Relative GII weaknesses on the **innovation input** side are mainly accumulated in **Human Capital & Research** (61st), where Chile exhibits relative weaknesses in indicators *Government funding per pupil* (67th), *Pupil-teacher ratio* (82nd), *Tertiary inbound mobility* (96th), and *Global R&D companies expenditures* (40th).

- In **Institutions** (37th), Chile performs relatively weakly in indicator *Cost of redundancy dismissal* (103rd).

- In **Business Sophistication** (48th), relative weaknesses are exhibited in the *area Innovation linkages* (108th) as well as indicators *State of cluster development* (87th) and *R&D financed by abroad* (76th).

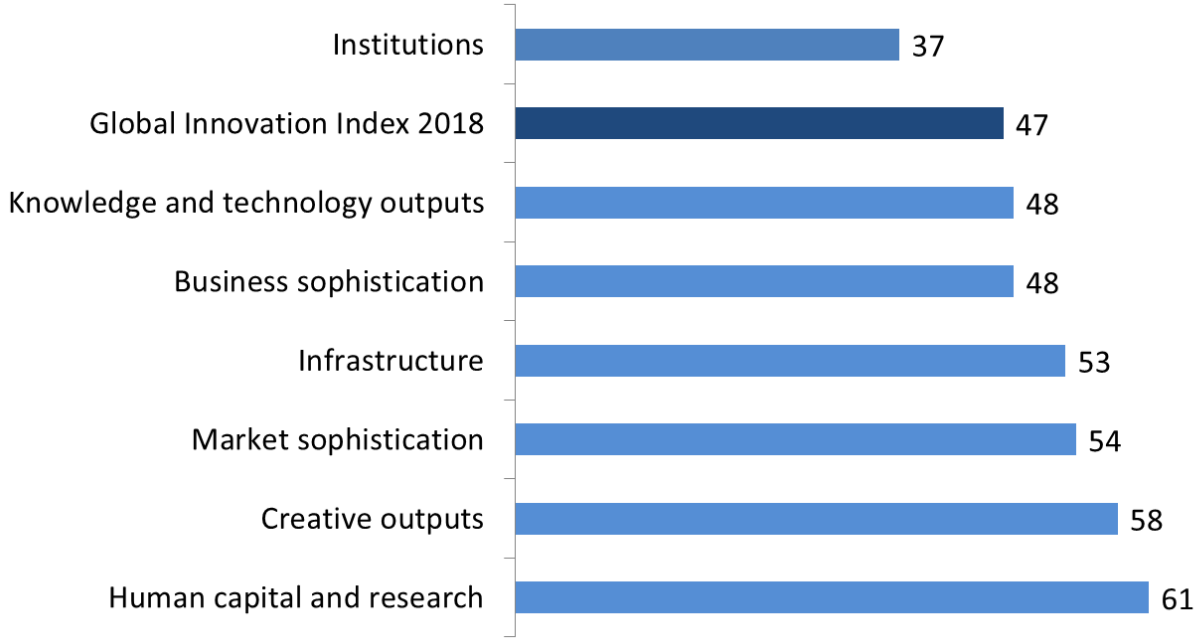
- On the **innovation output** side, the only weak rank is in **Knowledge & Technology Outputs** (48th) in *ICT services exports* (91st). Two other relative weaknesses are found in **Creative Outputs** (58th) in indicators *Industrial designs by origin* (105th) and *Mobile app creation* (72nd).

The following figure presents a summary of Chile's ranks in the 7 GII areas, as well as the overall rank in the GII 2018.

Chile's rank in the GII 2018 and the 7 GII areas

Rank 1 is the highest possible in each pillar

Total number of countries: 126



Expected vs. Observed Innovation Performance

The GII bubble chart shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The depicted trendline gives an indication of the expected innovation performance at different levels of income. Countries located above the trendline are performing better that what would be expected based on their income level. Countries below the line are Innovation Under-performers relative to GDP.

Relative to GDP, Chile performs at its expected level of development.

Missing and Outdated Data

More and better data improves the ability of a country to understand its strengths and weaknesses and give policymakers greater capacity to plan and adapt public policies accordingly. The GII 2018 covers 126 countries that complied with the minimum indicator coverage of 35 indicators in the Innovation Input Sub-Index (66%) and 18 indicators in the Innovation Output Sub-Index (66%).

The following tables show data for Chile that is not available or that is outdated.

Missing Data

Code	Indicator	Country Year	Model Year	Source
7.2.1	Cultural & creative services exports, % total trade	n/a	2016	WTO, Trade in Commercial Services

Outdated Data

Code	Indicator	Country Year	Model Year	Source
2.1.5	Pupil-teacher ratio, secondary	2015	2016	UNESCO Institute for Statistics
2.2.2	Graduates in science & engineering, %	2015	2016	UNESCO Institute for Statistics
5.1.2	Firms offering formal training, % firms	2010	2013	World Bank, Enterprise Surveys
6.2.5	High- & medium-high-tech manufactures, %	2014	2015	UNIDO, Industrial Statistics
7.2.4	Printing & other media, % manufacturing	2014	2015	UNIDO, Industrial Statistics

CHILE

GII 2018 rank **47**

Output rank	Input rank	Income	Region	Efficiency ratio	Population (mn)	GDP, PPP$	GDP per capita, PPP$	GII 2017 rank
53	45	High	LCN	68	18.1	452.1	24,537.1	46

		Score/Value	Rank	
	Institutions	**73.6**	**37**	
1.1	Political environment	72.5	32	
1.1.1	Political stability & safety*	76.5	37	
1.1.2	Government effectiveness*	70.4	32	
1.2	Regulatory environment	73.7	40	
1.2.1	Regulatory quality*	79.3	20	●
1.2.2	Rule of law*	74.8	25	●
1.2.3	Cost of redundancy dismissal, salary weeks	27.4	103	○ ◇
1.3	Business environment	74.5	47	
1.3.1	Ease of starting a business*	89.6	55	
1.3.2	Ease of resolving insolvency*	59.5	48	
	Human capital & research	**31.2**	**61**	◇
2.1	Education	45.6	72	◇
2.1.1	Expenditure on education, % GDP	4.9	58	
2.1.2	Government funding/pupil, secondary, % GDP/cap	16.5	67	○ ◇
2.1.3	School life expectancy, years	16.4	24	
2.1.4	PISA scales in reading, maths & science	442.7	44	◇
2.1.5	Pupil-teacher ratio, secondary[d]	19.4	82	○ ◇
2.2	Tertiary education	33.7	58	
2.2.1	Tertiary enrolment, % gross	90.3	6	● ◆
2.2.2	Graduates in science & engineering, %[d]	20.1	59	
2.2.3	Tertiary inbound mobility, %	0.4	96	○ ◇
2.3	Research & development (R&D)	14.5	48	◇
2.3.1	Researchers, FTE/mn pop.	502.1	66	◇
2.3.2	Gross expenditure on R&D, % GDP	0.4	70	◇
2.3.3	Global R&D companies, top 3, mn US$	0.0	40	○ ◇
2.3.4	QS university ranking, average score top 3*	43.7	31	
	Infrastructure	**48.9**	**53**	◇
3.1	Information & communication technologies (ICTs)	68.5	40	
3.1.1	ICT access*	67.9	60	◇
3.1.2	ICT use*	53.9	59	◇
3.1.3	Government's online service*	77.5	28	
3.1.4	E-participation*	74.6	32	
3.2	General infrastructure	38.6	59	
3.2.1	Electricity output, kWh/cap	4,302.9	49	
3.2.2	Logistics performance*	54.8	45	
3.2.3	Gross capital formation, % GDP	21.6	73	
3.3	Ecological sustainability	39.7	55	
3.3.1	GDP/unit of energy use	10.2	48	
3.3.2	Environmental performance*	57.5	73	◇
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	2.8	38	
	Market sophistication	**48.5**	**54**	
4.1	Credit	37.3	62	
4.1.1	Ease of getting credit*	50.0	79	
4.1.2	Domestic credit to private sector, % GDP	112.1	20	●
4.1.3	Microfinance gross loans, % GDP	0.9	29	◆
4.2	Investment	40.4	66	
4.2.1	Ease of protecting minority investors*	60.0	56	
4.2.2	Market capitalization, % GDP	84.6	16	●
4.2.3	Venture capital deals/bn PPP$ GDP	0.0	50	
4.3	Trade, competition, & market scale	67.6	41	
4.3.1	Applied tariff rate, weighted mean, %	3.2	66	
4.3.2	Intensity of local competition†	70.4	58	
4.3.3	Domestic market scale, bn PPP$	452.1	42	

		Score/Value	Rank	
	Business sophistication	**33.6**	**48**	
5.1	Knowledge workers	42.9	49	
5.1.1	Knowledge-intensive employment, %	25.8	54	◇
5.1.2	Firms offering formal training, % firms[d]	57.5	10	● ◆
5.1.3	GERD performed by business, % GDP	0.1	56	◇
5.1.4	GERD financed by business, %	35.8	48	
5.1.5	Females employed w/advanced degrees, %	8.1	72	◇
5.2	Innovation linkages	19.8	108	○ ◇
5.2.1	University/industry research collaboration†	42.1	55	
5.2.2	State of cluster development†	40.4	87	○ ◇
5.2.3	GERD financed by abroad, %	1.9	76	○
5.2.4	JV–strategic alliance deals/bn PPP$ GDP	0.0	80	
5.2.5	Patent families 2+ offices/bn PPP$ GDP	0.2	46	
5.3	Knowledge absorption	38.2	33	
5.3.1	Intellectual property payments, % total trade	2.3	11	●
5.3.2	High-tech net imports, % total trade	10.7	33	
5.3.3	ICT services imports, % total trade	1.0	73	
5.3.4	FDI net inflows, % GDP	7.5	19	●
5.3.5	Research talent, % in business enterprise	29.5	41	
	Knowledge & technology outputs	**27.2**	**48**	
6.1	Knowledge creation	12.2	60	◇
6.1.1	Patents by origin/bn PPP$ GDP	0.9	68	
6.1.2	PCT patents by origin/bn PPP$ GDP	0.4	39	
6.1.3	Utility models by origin/bn PPP$ GDP	0.2	44	
6.1.4	Scientific & technical articles/bn PPP$ GDP	13.4	39	
6.1.5	Citable documents H index	21.8	37	
6.2	Knowledge impact	40.4	46	
6.2.1	Growth rate of PPP$ GDP/worker, %	0.5	66	
6.2.2	New businesses/th pop. 15–64	8.9	15	●
6.2.3	Computer software spending, % GDP	0.3	32	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	11.4	28	
6.2.5	High- & medium-high-tech manufactures, %[d]	0.2	57	
6.3	Knowledge diffusion	28.9	35	
6.3.1	Intellectual property receipts, % total trade	0.1	49	
6.3.2	High-tech net exports, % total trade	1.0	68	
6.3.3	ICT services exports, % total trade	0.7	91	○
6.3.4	FDI net outflows, % GDP	4.9	12	●
	Creative outputs	**29.7**	**58**	◇
7.1	Intangible assets	46.6	47	
7.1.1	Trademarks by origin/bn PPP$ GDP	72.6	26	
7.1.2	Industrial designs by origin/bn PPP$ GDP	0.2	105	○ ◇
7.1.3	ICTs & business model creation†	71.5	29	
7.1.4	ICTs & organizational model creation†	56.8	52	
7.2	Creative goods & services	18.6	72	◇
7.2.1	Cultural & creative services exports, % total trade	n/a	n/a	
7.2.2	National feature films/mn pop. 15–69	2.9	56	
7.2.3	Entertainment & Media market/th pop. 15–69	11.9	31	◇
7.2.4	Printing & other media, % manufacturing[d]	1.6	24	
7.2.5	Creative goods exports, % total trade	0.2	83	◇
7.3	Online creativity	6.9	62	◇
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	2.1	75	◇
7.3.2	Country-code TLDs/th pop. 15–69	11.8	36	
7.3.3	Wikipedia edits/mn pop. 15–69	16.2	56	◇
7.3.4	Mobile app creation/bn PPP$ GDP	2.6	72	○ ◇

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question.
[d] indicates that the country'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; see page 75 of this appendix for details.