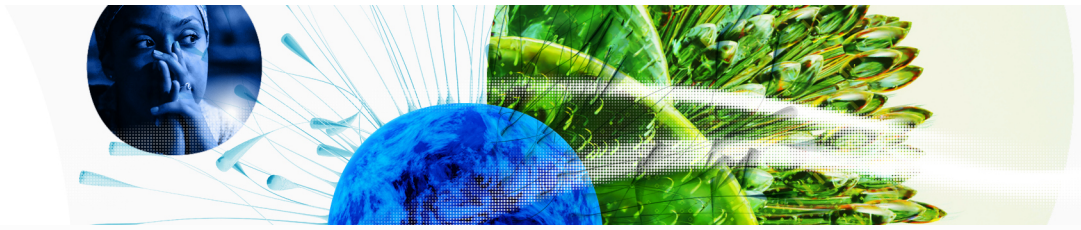


Global Innovation Index 2023

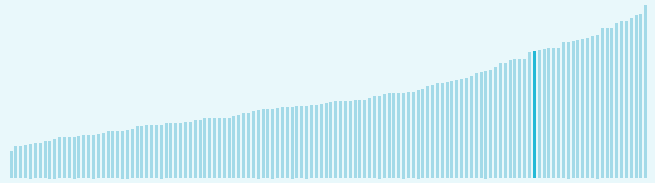


The Global Innovation Index (GII) **ranks world economies according to their innovation capabilities.**

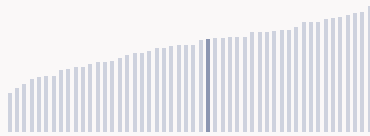
Consisting of **roughly 80 indicators**, grouped into innovation inputs and outputs, the GII **aims to capture the multi-dimensional facets of innovation.**

Australia ranking in the Global Innovation Index 2023

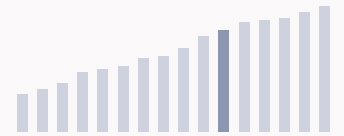
> Australia ranks **24th** among the 132 economies featured in the GII 2023.



> Australia ranks **23rd** among the 50 high-income group economies.



> Australia ranks **6th** among the 16 economies in South East Asia, East Asia, and Oceania.



> Australia GII Ranking (2020-2023)

The table shows the rankings of Australia over the past four years. 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 Australia in the GII 2023 is between ranks 22 and 25.

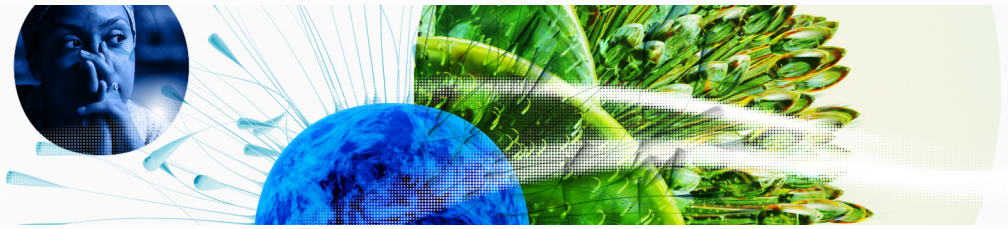
	GII Position	Innovation Inputs	Innovation Outputs
2020	23rd	13th	31st
2021	25th	15th	33rd
2022	25th	19th	32nd
2023	24th	16th	30th

Australia performs worse in innovation outputs than innovation inputs in 2023.

This year Australia ranks 16th in innovation inputs. This position is higher than last year.

Australia ranks 30th in innovation outputs. This position is higher than last year.

Global Innovation Index 2023



→ Expected vs. observed innovation performance

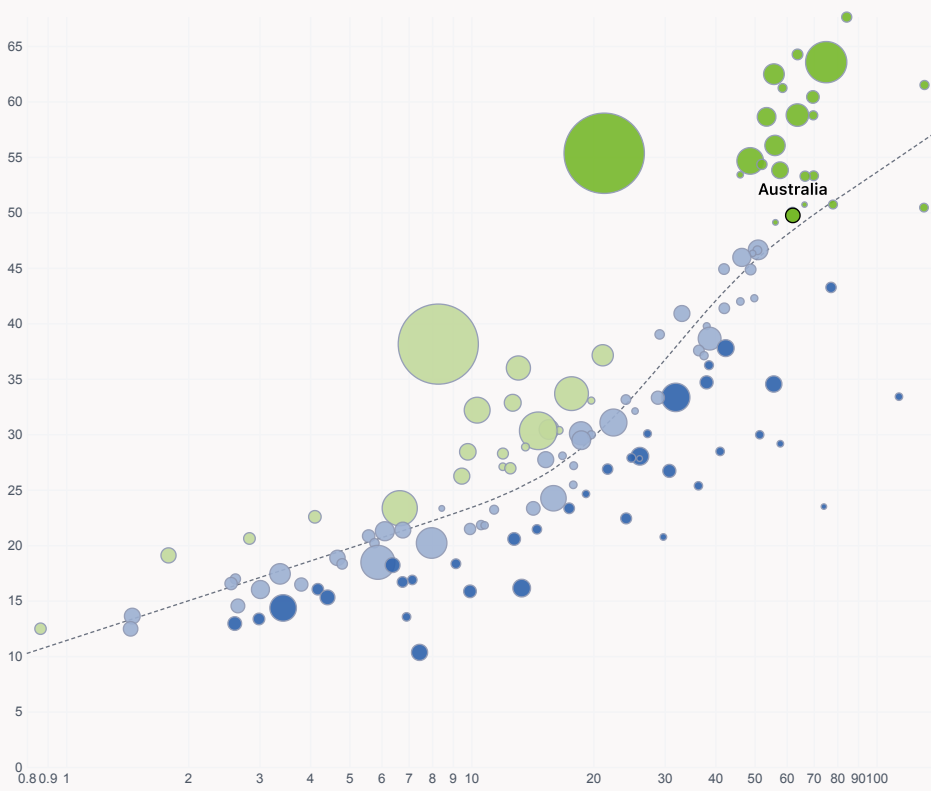
The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.



> Australia is an innovation leader, ranking in the top 25 of the GII.

> Innovation overperformers relative to their economic development

↑ GII Score



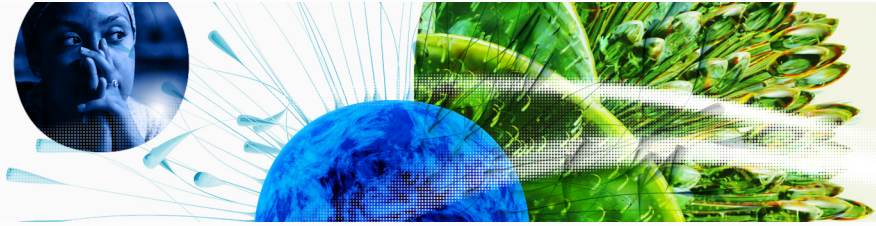
- Innovation leader
- Performing above expectations for level of development
- Performing at expectations for level of development
- Performing below expectations for level of development

Size legend (Population)



→ GDP per capita, PPP logarithmic scale (thousands of \$)

Global Innovation Index 2023



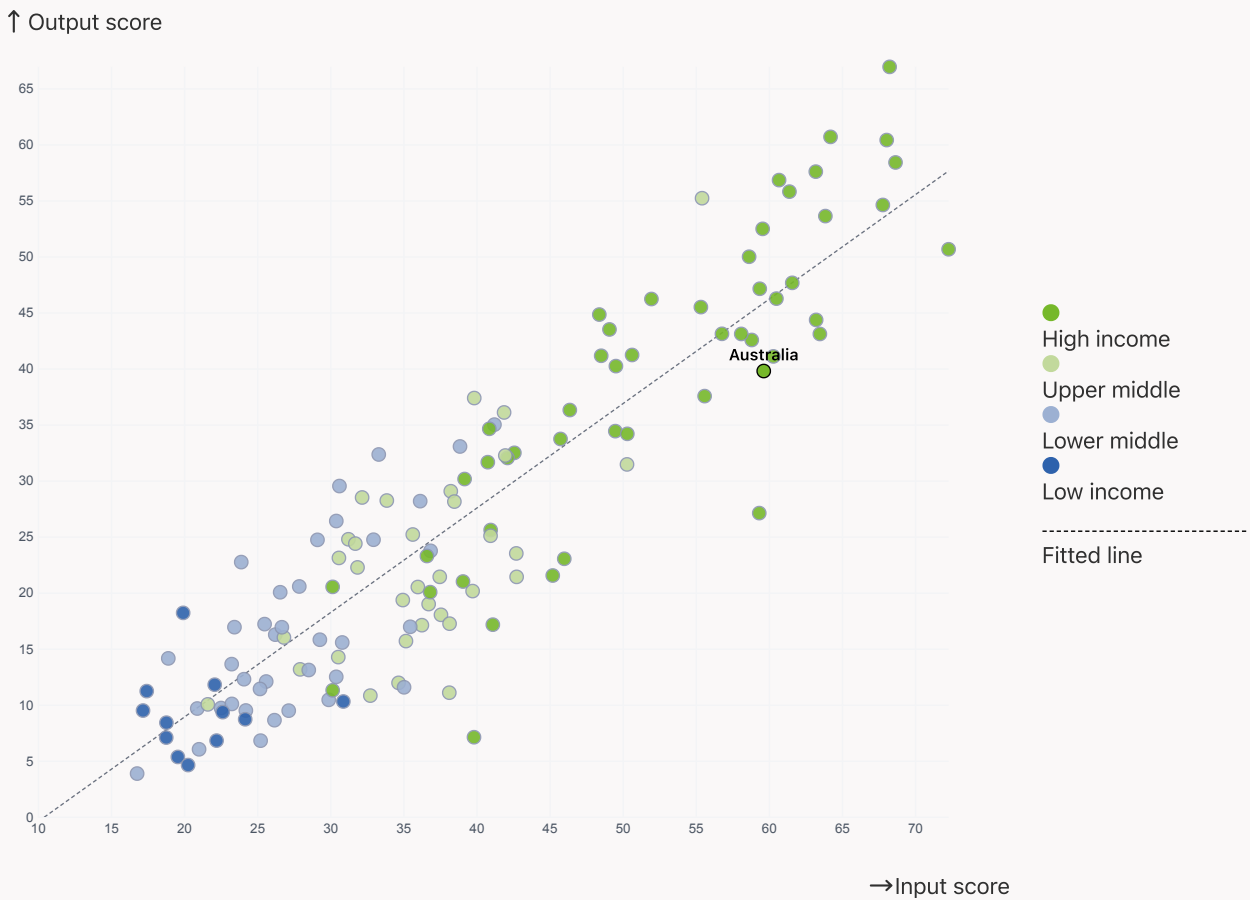
→ Effectively translating innovation investments into innovation outputs

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.

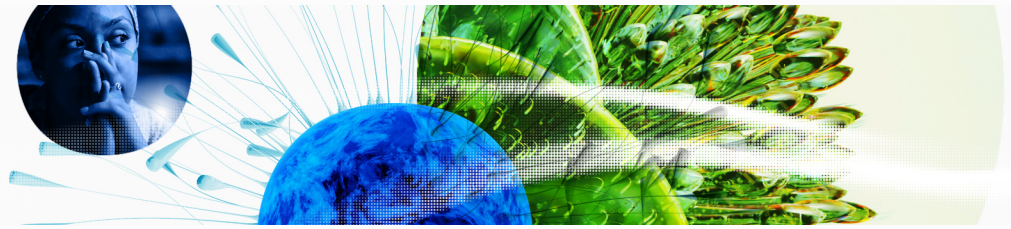


> Australia produces less innovation outputs relative to its level of innovation investments.

> Relationship between innovation inputs and outputs

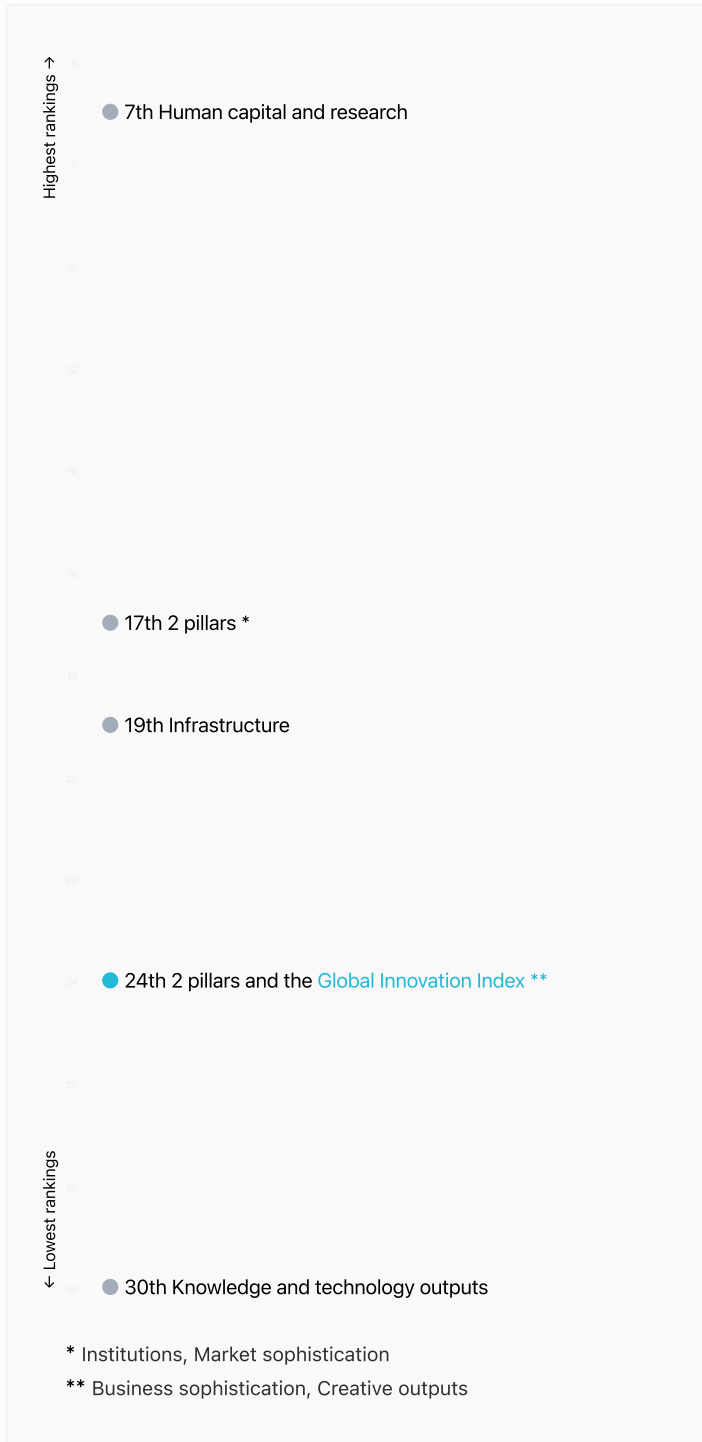


Global Innovation Index 2023



→ Overview of Australia's rankings in the seven areas of the GII in 2023

The chart shows the ranking for each of the seven areas that the GII comprises. The strongest areas for Australia are those that rank above the GII (shown in blue) and the weakest are those that rank below.



> Highest rankings



Australia ranks highest in Human capital and research (7th), Institutions, Market sophistication (17th), Infrastructure (19th) and Business sophistication, Creative outputs (24th).

> Lowest rankings

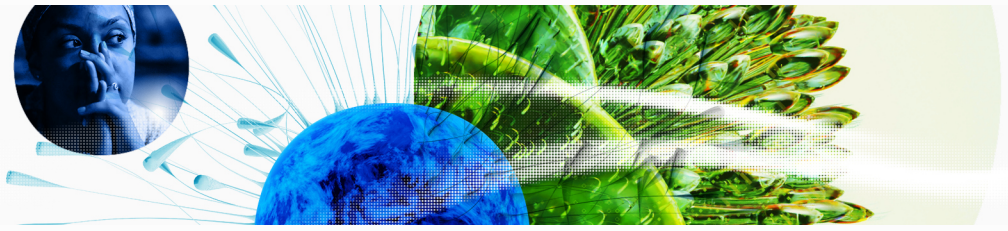


Australia ranks lowest in Knowledge and technology outputs (30th), Business sophistication, Creative outputs, GII Index (24th) and Infrastructure (19th).



The full WIPO Intellectual Property Statistics profile for Australia can be found on [this link](#).

Global Innovation Index 2023



→ Benchmark of Australia against other country groupings for each of the seven areas of the GII Index

The charts show the relative position of Australia (blue bar) against other country groupings (grey bars), for each of the seven areas of the GII Index.

> High-Income economies

Australia performs above the high-income group average in Creative outputs, Business sophistication, Market sophistication, Human capital and research, Infrastructure, Institutions.



> South East Asia, East Asia, And Oceania

Australia performs above the regional average in all the pillars.



Knowledge and technology outputs

Top 10 | Score: 58.96

High income | Score: 38.62

Australia | Score: 34.89

SEAO | Score: 32.16

* South East Asia, East Asia, and Oceania

Creative outputs

Top 10 | 56.09

Australia | 44.64

High income | 40.27

SEAO | 34.40

Business sophistication

Top 10 | 64.39

Australia | 50.71

High income | 46.38

SEAO | 40.54

Market sophistication

Top 10 | 61.93

Australia | 53.71

SEAO | 47.18

High income | 46.42

Human capital and research

Top 10 | 60.28

Australia | 59.46

High income | 46.30

SEAO | 40.81

Infrastructure

Top 10 | 62.83

Australia | 58.78

High income | 55.85

SEAO | 47.13

Institutions

Top 10 | 79.85

Australia | 75.64

High income | 68.16

SEAO | 62.54



→ Innovation strengths and weaknesses in Australia

The table below gives an overview of the indicator strengths and weaknesses of Australia in the GII 2023.



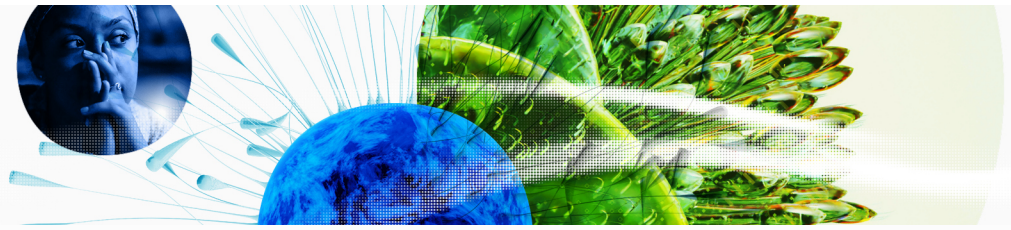
> Australia's main innovation strengths are **School life expectancy, years (rank 1)**, **E-participation (rank 2)** and **Tertiary enrolment, % gross (rank 3)**.

Strengths

Weaknesses

Rank	Code	Indicator name	Rank	Code	Indicator name
1	2.1.3	School life expectancy, years	90	6.3.2	Production and export complexity
2	3.1.4	E-participation	82	5.3.3	ICT services imports, % total trade
3	2.2.1	Tertiary enrolment, % gross	81	6.2.1	Labor productivity growth, %
4	1.2.1	Regulatory quality	79	5.3.4	FDI net inflows, % GDP
5	2.2.3	Tertiary inbound mobility, %	76	6.3.4	ICT services exports, % total trade
6	5.1.5	Females employed w/advanced degrees, %	74	3.3.1	GDP/unit of energy use
6	2.3.4	QS university ranking, top 3	68	2.2.2	Graduates in science and engineering, %
7	4.3.1	Applied tariff rate, weighted avg., %	67	2.1.2	Government funding/pupil, secondary, % GDP/cap
7	6.1.5	Citable documents H-index	65	7.2.1	Cultural and creative services exports, % total trade
7	3.1.3	Government's online service	58	7.2.2	National feature films/mn pop. 15-69

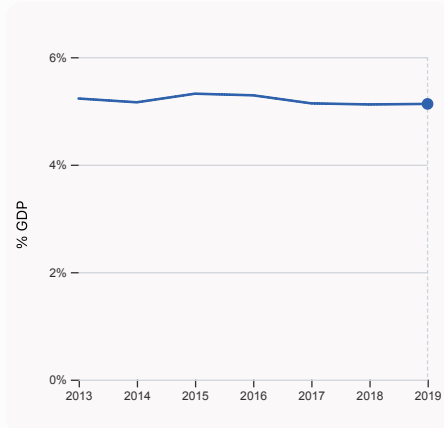
Global Innovation Index 2023



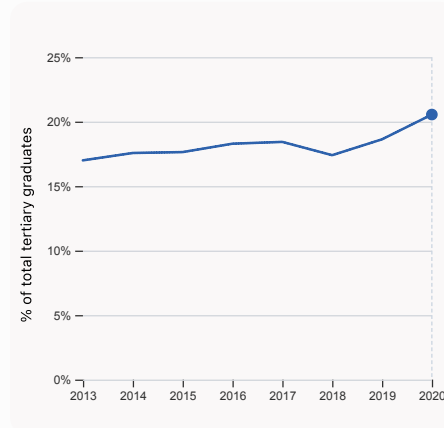
→ Australia's innovation system

As far as practicable, the plots below present unscaled indicator data.

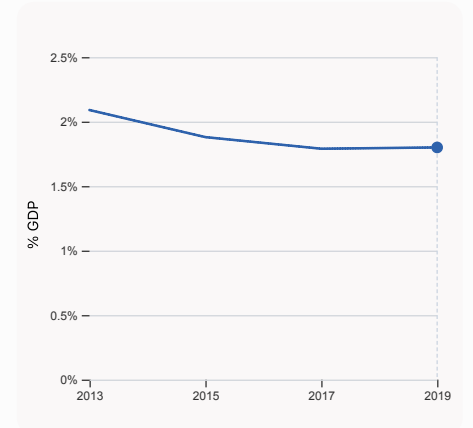
> Innovation inputs in Australia



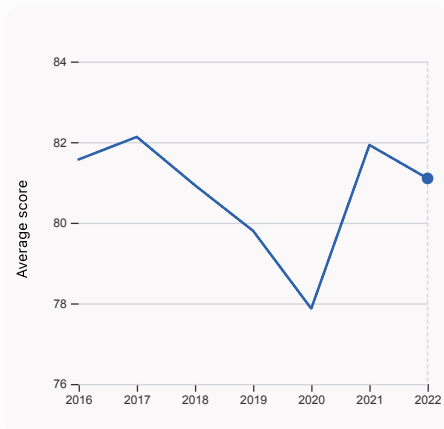
2.1.1 Expenditure on education, % GDP was equal to 5.13% GDP in 2019, up by 0.01 percentage points from the year prior – and equivalent to an indicator rank of 35.



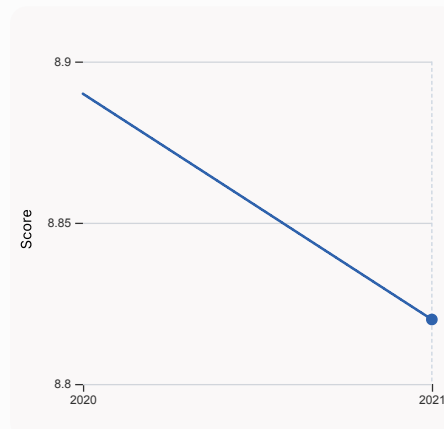
2.2.2 Graduates in science and engineering, % was equal to 20.55% of total tertiary graduates in 2020, up by 1.92 percentage points from the year prior – and equivalent to an indicator rank of 68.



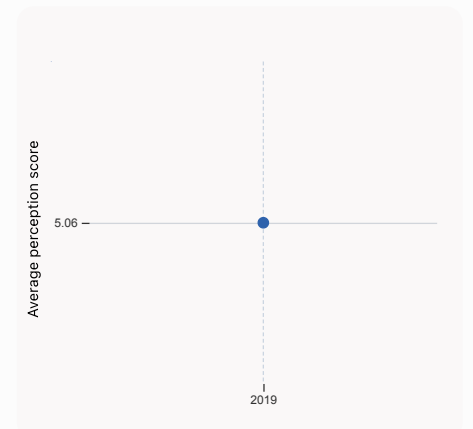
2.3.2 Gross expenditure on R&D, % GDP was equal to 1.8% GDP in 2019, up by 0.01 percentage points from the year prior – and equivalent to an indicator rank of 21.



2.3.4 QS university ranking, top 3 was equal to an average score of 81.1 for the top 3 universities in 2022, down by 1.013% from the year prior – and equivalent to an indicator rank of 6.

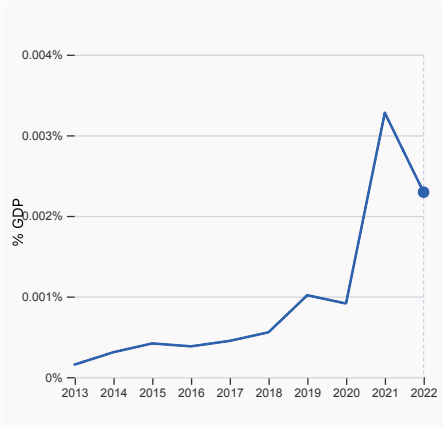
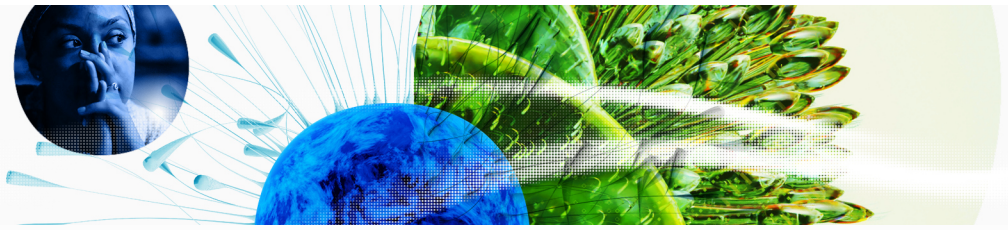


3.1.1 ICT access was equal to a score of 8.82 in 2021, down by 0.79% from the year prior – and equivalent to an indicator rank of 66.



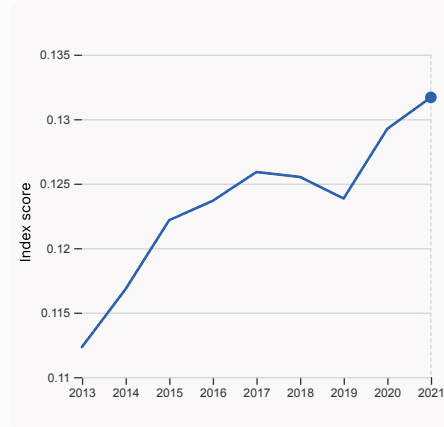
4.1.1 Finance for startups and scaleups was equal to an average perception score of 5.06 in 2019, equivalent to an indicator rank of 32.

Global Innovation Index 2023



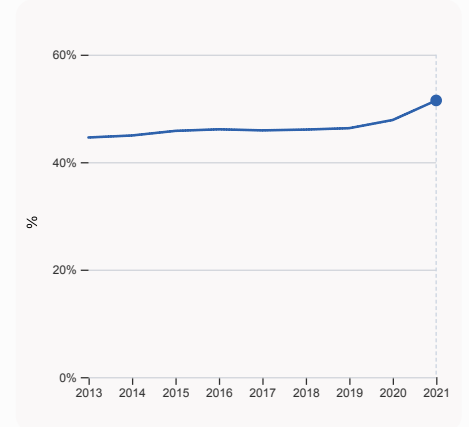
4.2.4 VC received, value, % GDP

was equal to 0.00229% GDP in 2022, down by 0.00098 percentage points from the year prior – and equivalent to an indicator rank of 32.



4.3.2 Domestic industry diversification

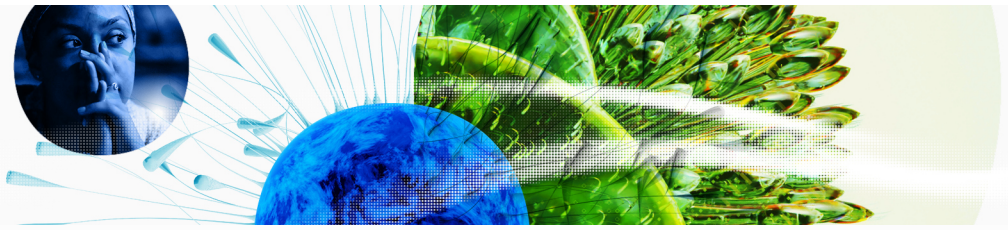
was equal to an index score of 0.132 in 2021, up by 1.89% from the year prior – and equivalent to an indicator rank of 41.



5.1.1 Knowledge-intensive employment, %

was equal to 51.48% in 2021, up by 3.64 percentage points from the year prior – and equivalent to an indicator rank of 8.

Global Innovation Index 2023

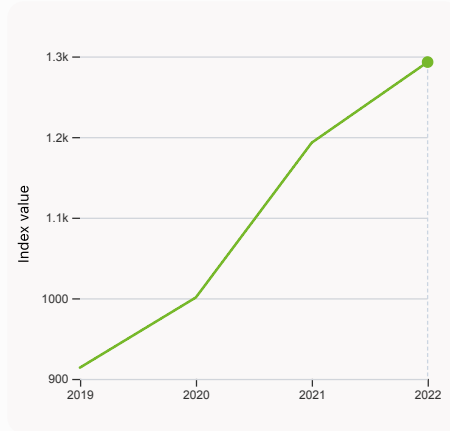


> Innovation outputs in Australia



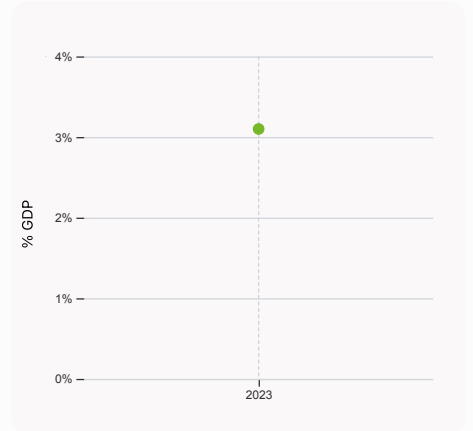
6.1.1 Patents by origin

was equal to 2.97 Thousands in 2021, up by 25.25% from the year prior – and equivalent to an indicator rank of 35.



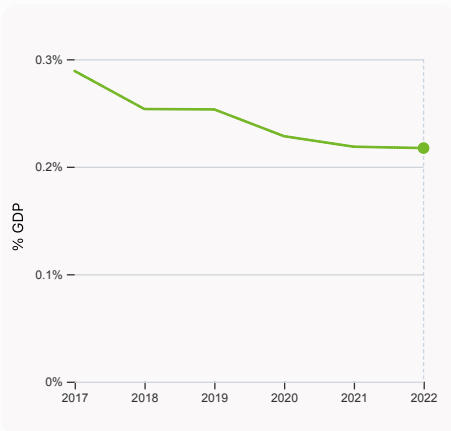
6.1.5 Citable documents H-index

was equal to an index value of 1,293 in 2022, up by 8.38% from the year prior – and equivalent to an indicator rank of 7.



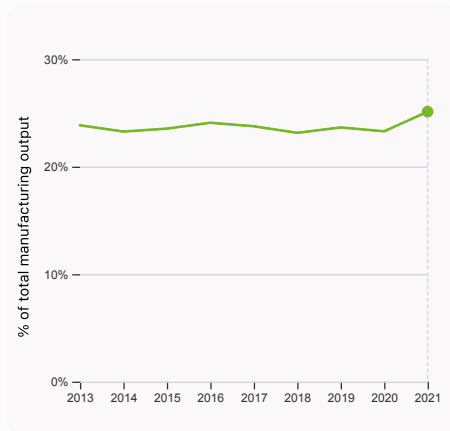
6.2.2 Unicorn valuation, % GDP

was equal to 3.1 % GDP in 2023 – and equivalent to an indicator rank of 14.



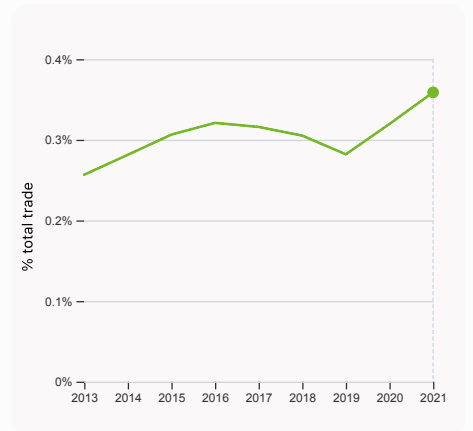
6.2.3 Software spending, % GDP

was equal to 0.217% GDP in 2022, down by 0.0013 percentage points from the year prior – and equivalent to an indicator rank of 67.



6.2.4 High-tech manufacturing, %

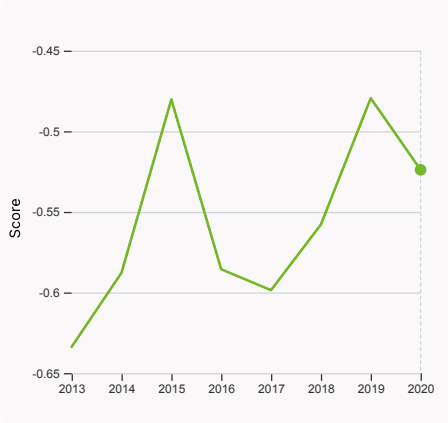
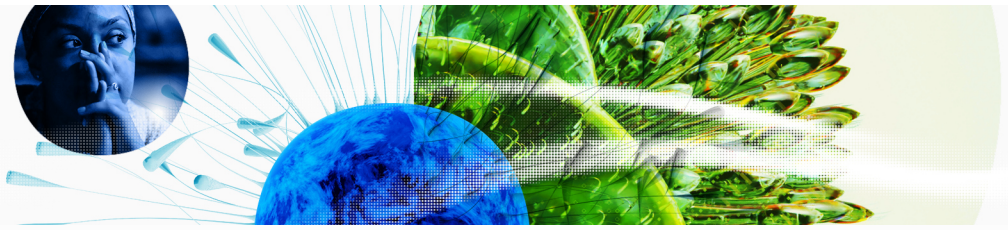
was equal to 25.12% of total manufacturing output in 2021, up by 1.83 percentage points from the year prior – and equivalent to an indicator rank of 50.



6.3.1 Intellectual property receipts, % total trade

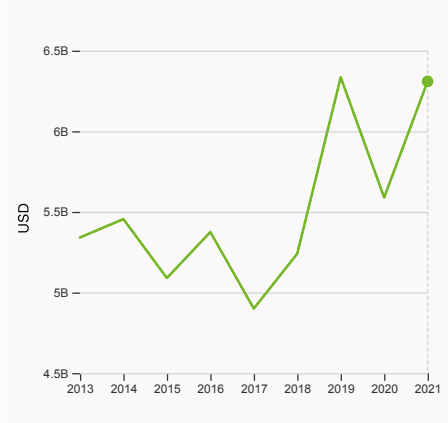
was equal to 0.359% total trade in 2021, up by 0.039 percentage points from the year prior – and equivalent to an indicator rank of 32.

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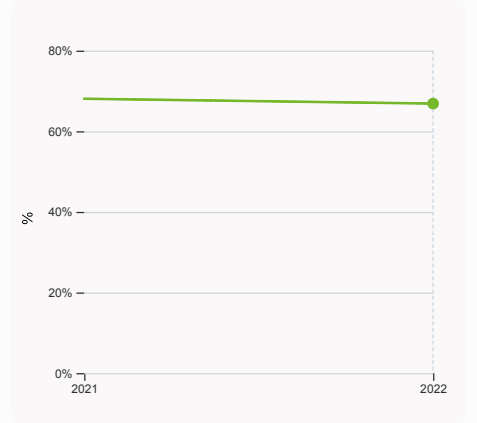
6.3.2 Production and export complexity

was equal to a score of -0.524 in 2020, down by 9.26% from the year prior – and equivalent to an indicator rank of 90.



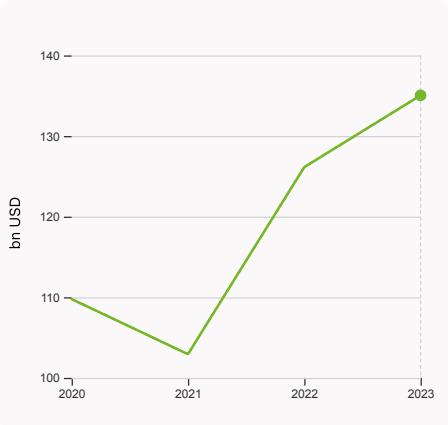
6.3.3 High-tech exports

was equal to 6,309,320,484 USD in 2021, up by 12.88% from the year prior – and equivalent to an indicator rank of 62.



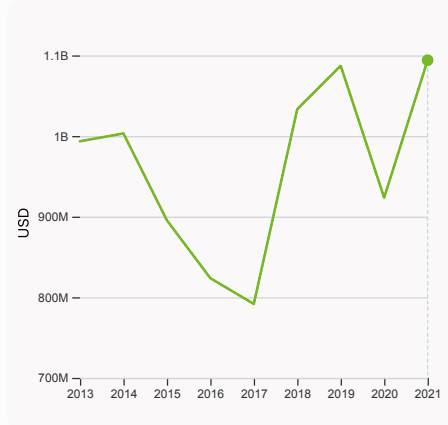
7.1.1 Intangible asset intensity, top 15, %

was equal to 66.87% in 2022, down by 1.2 percentage points from the year prior – and equivalent to an indicator rank of 24.



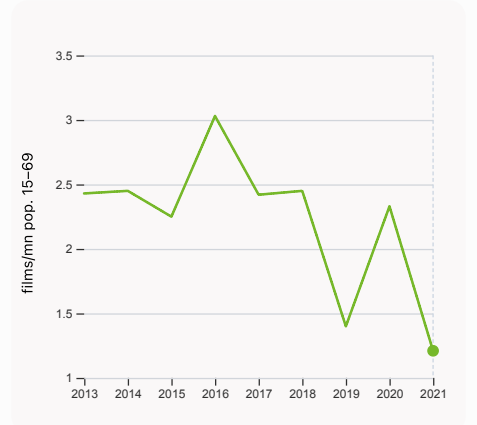
7.1.3 Global brand value, top 5,000

was equal to 135.045 bn USD in 2023, up by 7.059% from the year prior – and equivalent to an indicator rank of 27.



7.2.1 Cultural and creative services exports

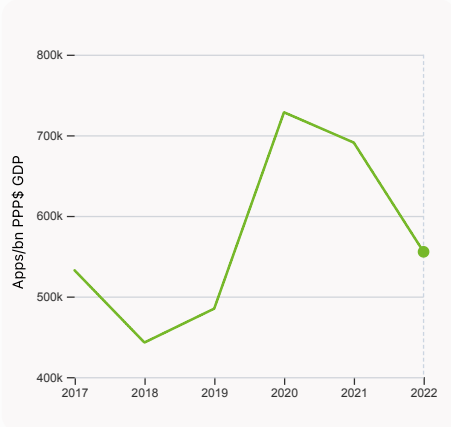
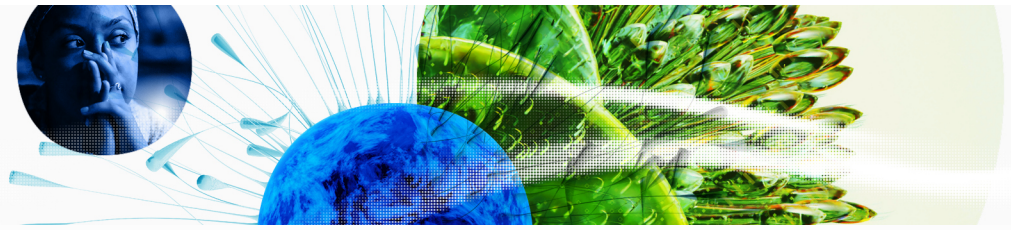
was equal to 1,094,053,000 USD in 2021, up by 18.46% from the year prior – and equivalent to an indicator rank of 65.



7.2.2 National feature films/mn pop. 15-69

was equal to 1.21 films/mn pop. 15-69 in 2021, down by 48.069% from the year prior – and equivalent to an indicator rank of 58.

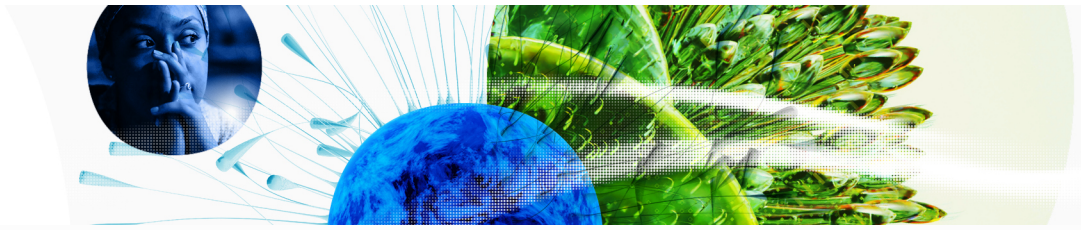
Global Innovation Index 2023



7.3.4 Mobile app creation/bn PPP\$ GDP

was equal to 555,428.67 Apps/bn PPP\$ GDP in 2022, down by 19.61% from the year prior – and equivalent to an indicator rank of 37.

Global Innovation Index 2023



→ Australia's innovation top performers

> 2.3.3 Global corporate R&D investors from Australia

Rank	Firm	Industry	R&D	R&D Growth	R&D Intensity
			[mn EUR]	[%]	[%]
194	CSL	Pharmaceuticals & Biotechnology	1,021	15	11
322	TELSTRA	Technology Hardware & Equipment	571	-4	4
375	COMMONWEALTH BANK OF AUSTRALIA	Banks	476	34	3
515	ARISTOCRAT LEISURE	Travel & Leisure	348	5	11

Source: European Commission's Joint Research Centre (<https://iri.jrc.ec.europa.eu/scoreboard/2022-eu-industrial-rd-investment-scoreboard>).

Note: European Commission's Joint Research Centre ranks the top 2,500 firms by R&D investment annually.

> 2.3.4 QS university ranking of Australia's top universities

Rank	University	Score
30	THE AUSTRALIAN NATIONAL UNIVERSITY	82.10
33	THE UNIVERSITY OF MELBOURNE	81.60
41	THE UNIVERSITY OF SYDNEY	79.60

Source: QS Quacquarelli Symonds Ltd (<https://www.topuniversities.com/university-rankings/world-university-rankings/2023>).

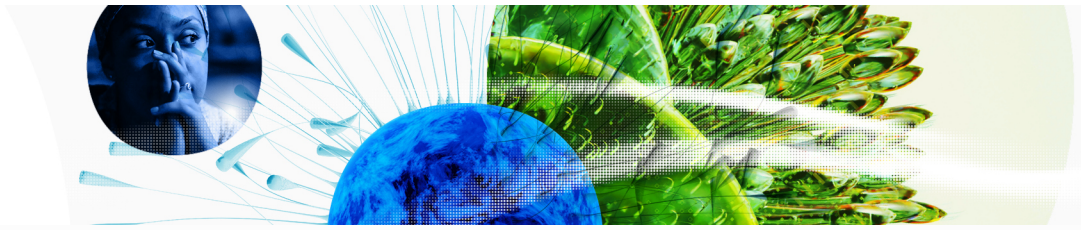
Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100]. Ranks can represent a single value "x", a tie "x=" or a range "x-y".

> 6.2.2 Top Unicorn Companies in Australia

Rank	Unicorn Company	Industry	City	Valuation, bn USD
1	CANVA	Internet software & services	Surry Hills	40
2	AIRWALLEX	Fintech	Melbourne	6
3	IMMUTABLE	Fintech	Sydney	3

Source: CBInsights, Tracker – The Complete List of Unicorn Companies: <https://www.cbinsights.com/research-unicorn-companies>

Global Innovation Index 2023



> 7.1.1 Top 15 intangible-asset intensive companies in Australia

Rank	Firm	Intensity, %
1	CSL LTD	92.23
2	BHP GROUP LTD	58.95
3	COMMONWEALTH BANK OF AUSTRALIA	43.86

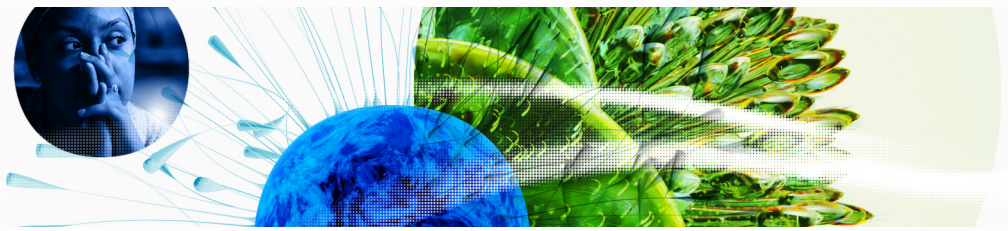
Source: Brand Finance (<https://brandirectory.com/reports/gift-2022>).
Note: Brand Finance only provides within economy ranks.

> 7.1.3 Top 5,000 companies in Australia with highest global brand value

Rank	Brand	Industry	Brand Value, mn USD
1	WOOLWORTHS	Retail	10,886.9
2	TELSTRA	Telecoms	8,890.6
3	COMMONWEALTH BANK	Banking	7,672.8

Source: Brand Finance (<https://brandirectory.com>).
Note: Rank corresponds to within economy ranks.

Global Innovation Index 2023



GII 2023 rank

24

Australia

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP\$ (bn)	GDP per capita, PPP\$
30	16	High	SEAO	26.2	1,615.3	62,191.6
Score / Value Rank				Score / Value Rank		
Institutions				75.6	17	
1.1 Institutional environment				77.8	14	
1.1.1 Operational stability for businesses*				77.1	14	
1.1.2 Government effectiveness*				78.5	13	
1.2 Regulatory environment				90.7	10	
1.2.1 Regulatory quality*				89.8	4 ●	
1.2.2 Rule of law*				88.8	12	
1.2.3 Cost of redundancy dismissal				12.0	39	
1.3 Business environment				58.4	37	
1.3.1 Policies for doing business*				69.3	27	
1.3.2 Entrepreneurship policies and culture*				● 47.6	37	
Human capital and research				59.5	7	
2.1 Education				59.2	40	
2.1.1 Expenditure on education, % GDP				● 5.1	35	
2.1.2 Government funding/pupil, secondary, % GDP/cap				17.0	67 ○ ◇	
2.1.3 School life expectancy, years				21.1	1 ●	
2.1.4 PISA scales in reading, maths and science				499.0	20	
2.1.5 Pupil-teacher ratio, secondary				n/a	n/a	
2.2 Tertiary education				59.2	4	
2.2.1 Tertiary enrolment, % gross				114.2	3 ●	
2.2.2 Graduates in science and engineering, %				20.6	68 ○	
2.2.3 Tertiary inbound mobility, %				26.0	5 ●	
2.3 Research and development (R&D)				60.0	16	
2.3.1 Researchers, FTE/mn pop.				n/a	n/a	
2.3.2 Gross expenditure on R&D, % GDP				● 1.8	21	
2.3.3 Global corporate R&D investors, top 3, mn US\$				65.5	18	
2.3.4 QS university ranking, top 3*				82.2	6 ●	
Infrastructure				58.8	19	
3.1 Information and communication technologies (ICTs)				91.8	9	
3.1.1 ICT access*				82.3	66 ○ ◇	
3.1.2 ICT use*				92.7	14	
3.1.3 Government's online service*				93.1	7 ●	
3.1.4 E-participation*				98.8	2 ●	
3.2 General infrastructure				47.9	23	
3.2.1 Electricity output, GWh/mn pop.				10,300.7	14	
3.2.2 Logistics performance*				72.7	18	
3.2.3 Gross capital formation, % GDP				23.2	72	
3.3 Ecological sustainability				36.7	38	
3.3.1 GDP/unit of energy use				9.7	74 ○	
3.3.2 Environmental performance*				69.8	17	
3.3.3 ISO 14001 environment/bn PPP\$ GDP				2.4	37	
Market sophistication				53.7	17	
4.1 Credit				57.3	21	
4.1.1 Finance for startups and scaleups*				● 60.6	32	
4.1.2 Domestic credit to private sector, % GDP				142.4	12	
4.1.3 Loans from microfinance institutions, % GDP				n/a	n/a	
4.2 Investment				29.5	24	
4.2.1 Market capitalization, % GDP				108.3	13	
4.2.2 Venture capital (VC) investors, deals/bn PPP\$ GDP				0.3	21	
4.2.3 VC recipients, deals/bn PPP\$ GDP				0.1	18	
4.2.4 VC received, value, % GDP				0.0	32	
4.3 Trade, diversification, and market scale				74.3	15	
4.3.1 Applied tariff rate, weighted avg., %				0.7	7 ●	
4.3.2 Domestic industry diversification				92.8	41	
4.3.3 Domestic market scale, bn PPP\$				1,615.3	19	
Business sophistication				50.7	24 ○ ◇	
5.1 Knowledge workers				63.6	15	
5.1.1 Knowledge-intensive employment, %				● 51.5	8	
5.1.2 Firms offering formal training, %				n/a	n/a	
5.1.3 GERD performed by business, % GDP				● 0.9	24	
5.1.4 GERD financed by business, %				n/a	n/a	
5.1.5 Females employed w/advanced degrees, %				● 28.7	6 ●	
5.2 Innovation linkages				52.3	18	
5.2.1 University-industry R&D collaboration*				70.2	24	
5.2.2 State of cluster development*				64.6	30	
5.2.3 GERD financed by abroad, % GDP				n/a	n/a	
5.2.4 Joint venture/strategic alliance deals/bn PPP\$ GDP				0.2	11	
5.2.5 Patent families/bn PPP\$ GDP				1.0	27 ○ ◇	
5.3 Knowledge absorption				36.2	54 ○ ◇	
5.3.1 Intellectual property payments, % total trade				1.2	30	
5.3.2 High-tech imports, % total trade				11.0	25	
5.3.3 ICT services imports, % total trade				1.1	82 ○ ◇	
5.3.4 FDI net inflows, % GDP				1.8	79 ○	
5.3.5 Research talent, % in businesses				n/a	n/a	
Knowledge and technology outputs				34.9	30 ○ ◇	
6.1 Knowledge creation				45.8	17	
6.1.1 Patents by origin/bn PPP\$ GDP				2.0	35 ○ ◇	
6.1.2 PCT patents by origin/bn PPP\$ GDP				1.1	27 ○ ◇	
6.1.3 Utility models by origin/bn PPP\$ GDP				1.2	21	
6.1.4 Scientific and technical articles/bn PPP\$ GDP				n/a	n/a	
6.1.5 Citable documents H-index				69.6	7 ●	
6.2 Knowledge impact				38.4	34	
6.2.1 Labor productivity growth, %				0.5	81 ○	
6.2.2 Unicorn valuation, % GDP				3.1	14	
6.2.3 Software spending, % GDP				0.2	67 ○ ◇	
6.2.4 High-tech manufacturing, %				25.1	50 ○ ◇	
6.3 Knowledge diffusion				20.5	72 ○ ◇	
6.3.1 Intellectual property receipts, % total trade				0.3	32 ○ ◇	
6.3.2 Production and export complexity				41.5	90 ○ ◇	
6.3.3 High-tech exports, % total trade				1.8	62 ○ ◇	
6.3.4 ICT services exports, % total trade				1.3	76 ○	
6.3.5 ISO 9001 quality/bn PPP\$ GDP				5.8	49	
Creative outputs				44.6	24	
7.1 Intangible assets				46.8	33	
7.1.1 Intangible asset intensity, top 15, %				66.9	24	
7.1.2 Trademarks by origin/bn PPP\$ GDP				66.9	29	
7.1.3 Global brand value, top 5,000				7.6	27	
7.1.4 Industrial designs by origin/bn PPP\$ GDP				1.8	46	
7.2 Creative goods and services				20.9	47 ○ ◇	
7.2.1 Cultural and creative services exports, % total trade				0.3	65 ○	
7.2.2 National feature films/mn pop. 15-69				1.2	58 ○ ◇	
7.2.3 Entertainment and media market/th pop. 15-69				62.7	8	
7.2.4 Creative goods exports, % total trade				0.6	58	
7.3 Online creativity				64.0	12	
7.3.1 Generic top-level domains (TLDs)/th pop. 15-69				67.7	11	
7.3.2 Country-code TLDs/th pop. 15-69				67.2	10	
7.3.3 GitHub commits/mn pop. 15-69				47.5	22	
7.3.4 Mobile app creation/bn PPP\$ GDP				73.5	37	

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 appendices for details, including the year of the data, at <https://www.wipo.int/gii-ranking>. 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 indicators that are either missing or outdated for Australia.



> Australia has missing data for seven indicators and outdated data for seven indicators.

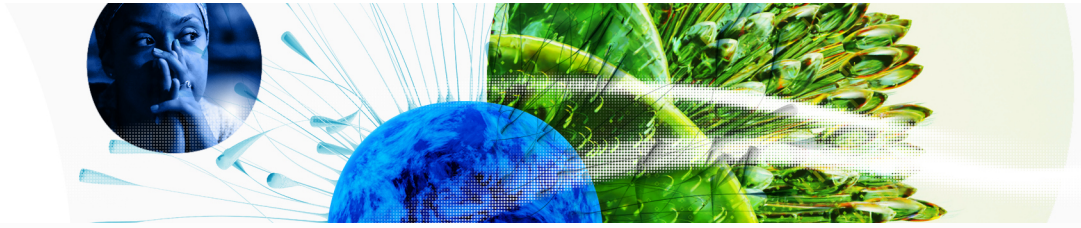
> Missing data for Australia

Code	Indicator name	Economy Year	Model Year	Source
2.1.5	Pupil-teacher ratio, secondary	n/a	2020	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
4.1.3	Loans from microfinance institutions, % GDP	n/a	2021	International Monetary Fund, Financial Access Survey (FAS)
5.1.2	Firms offering formal training, %	n/a	2019	World Bank Enterprise Surveys
5.1.4	GERD financed by business, %	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.2.3	GERD financed by abroad, % GDP	n/a	2020	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.3.5	Research talent, % in businesses	n/a	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT

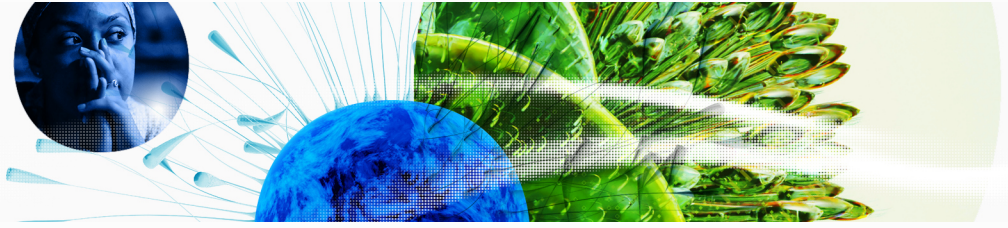
> Outdated data for Australia

Code	Indicator name	Economy Year	Model Year	Source
1.3.2	Entrepreneurship policies and culture	2019	2022	Global Entrepreneurship Monitor
2.1.1	Expenditure on education, % GDP	2019	2021	UNESCO Institute for Statistics
2.3.2	Gross expenditure on R&D, % GDP	2019	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
4.1.1	Finance for startups and scaleups	2019	2022	Global Entrepreneurship Monitor
5.1.1	Knowledge-intensive employment, %	2021	2022	International Labour Organization
5.1.3	GERD performed by business, % GDP	2019	2021	UNESCO Institute for Statistics; Eurostat; OECD; RICYT
5.1.5	Females employed w/advanced degrees, %	2021	2022	International Labour Organization

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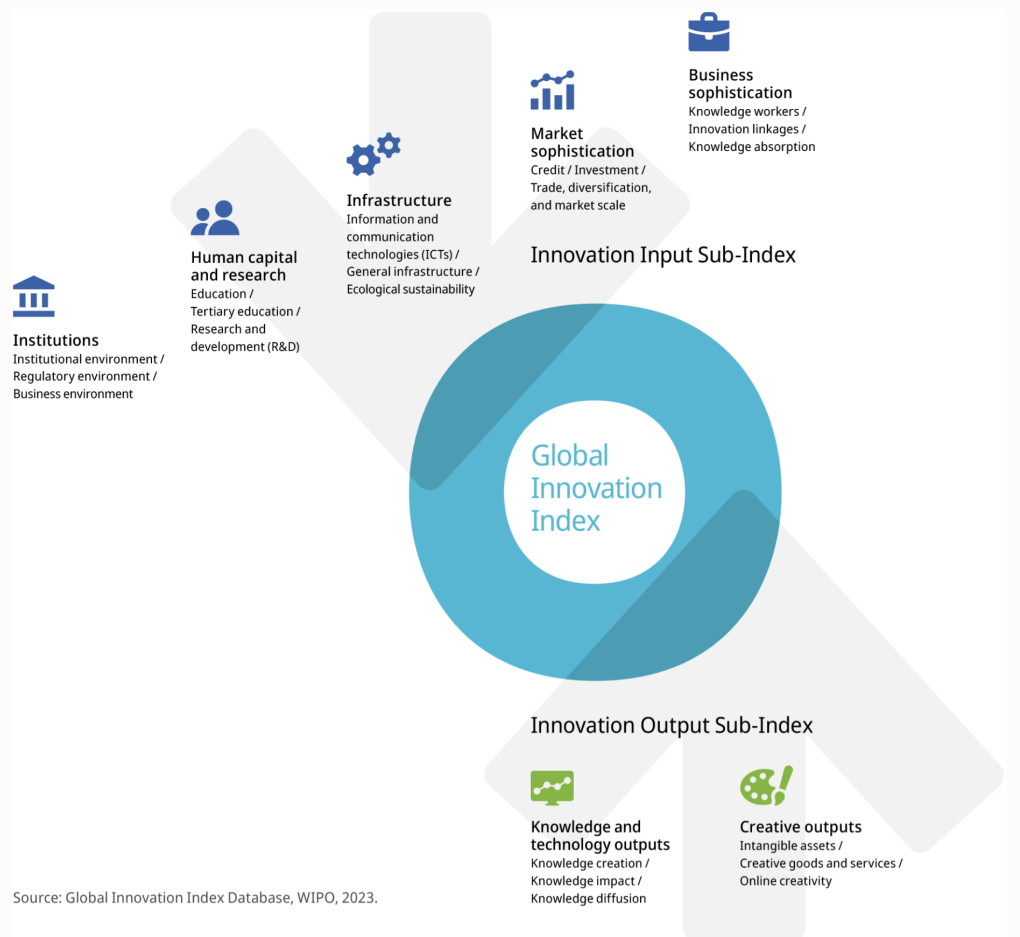


Global Innovation Index 2023



→ 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.



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.