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.

<table>
<thead>
<tr>
<th>Year</th>
<th>GII Position</th>
<th>Innovation Inputs</th>
<th>Innovation Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>23rd</td>
<td>13th</td>
<td>31st</td>
</tr>
<tr>
<td>2021</td>
<td>25th</td>
<td>15th</td>
<td>33rd</td>
</tr>
<tr>
<td>2022</td>
<td>25th</td>
<td>19th</td>
<td>32nd</td>
</tr>
<tr>
<td>2023</td>
<td>24th</td>
<td>16th</td>
<td>30th</td>
</tr>
</tbody>
</table>

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.
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)

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

* Institutions, Market sophistication
** Business sophistication, Creative outputs

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

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School life expectancy, years</strong> (rank 1)</td>
<td><strong>Production and export complexity</strong> (rank 90)</td>
</tr>
<tr>
<td><strong>E-participation</strong> (rank 2)</td>
<td><strong>ICT services imports, % total trade</strong> (rank 82)</td>
</tr>
<tr>
<td><strong>Tertiary enrolment, % gross</strong> (rank 3)</td>
<td><strong>Labor productivity growth, %</strong> (rank 81)</td>
</tr>
<tr>
<td><strong>Regulatory quality</strong> (rank 4)</td>
<td><strong>FDI net inflows, % GDP</strong> (rank 79)</td>
</tr>
<tr>
<td><strong>Tertiary inbound mobility, %</strong> (rank 5)</td>
<td><strong>ICT services exports, % total trade</strong> (rank 76)</td>
</tr>
<tr>
<td><strong>Females employed w/advanced degrees, %</strong> (rank 6)</td>
<td><strong>GDP/unit of energy use</strong> (rank 74)</td>
</tr>
<tr>
<td><strong>QS university ranking, top 3</strong> (rank 6)</td>
<td><strong>Graduates in science and engineering, %</strong> (rank 68)</td>
</tr>
<tr>
<td><strong>Applied tariff rate, weighted avg., %</strong> (rank 7)</td>
<td><strong>Government funding, pupil, secondary, % GDP/cap</strong> (rank 67)</td>
</tr>
<tr>
<td><strong>Citable documents H-index</strong> (rank 7)</td>
<td><strong>Cultural and creative services exports, % total trade</strong> (rank 65)</td>
</tr>
<tr>
<td><strong>Government’s online service</strong> (rank 7)</td>
<td><strong>National feature films/mn pop. 15–69</strong> (rank 58)</td>
</tr>
</tbody>
</table>
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.
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.
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.
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.
### 2.3.3 Global corporate R&D investors from Australia

<table>
<thead>
<tr>
<th>Rank</th>
<th>Firm</th>
<th>Industry</th>
<th>R&amp;D</th>
<th>R&amp;D Growth</th>
<th>R&amp;D Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>194</td>
<td>CSL</td>
<td>Pharmaceuticals &amp; Biotechnology</td>
<td>1,021</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>322</td>
<td>TELSTRA</td>
<td>Technology Hardware &amp; Equipment</td>
<td>571</td>
<td>-4</td>
<td>4</td>
</tr>
<tr>
<td>375</td>
<td>COMMONWEALTH BANK OF AUSTRALIA</td>
<td>Banks</td>
<td>476</td>
<td>34</td>
<td>3</td>
</tr>
<tr>
<td>515</td>
<td>ARISTOCRAT LEISURE</td>
<td>Travel &amp; Leisure</td>
<td>348</td>
<td>5</td>
<td>11</td>
</tr>
</tbody>
</table>


### 2.3.4 QS university ranking of Australia’s top universities

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>THE AUSTRALIAN NATIONAL UNIVERSITY</td>
<td>82.10</td>
</tr>
<tr>
<td>33</td>
<td>THE UNIVERSITY OF MELBOURNE</td>
<td>81.60</td>
</tr>
<tr>
<td>41</td>
<td>THE UNIVERSITY OF SYDNEY</td>
<td>79.60</td>
</tr>
</tbody>
</table>

Source: QS Quacquarelli Symonds Ltd [https://www.topuniversities.com/university-rankings/world-university-rankings/2023](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=x” or a range “x-y”.

### 6.2.2 Top Unicorn Companies in Australia

<table>
<thead>
<tr>
<th>Rank</th>
<th>Unicorn Company</th>
<th>Industry</th>
<th>City</th>
<th>Valuation, bn USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CANVA</td>
<td>Internet software &amp; services</td>
<td>Surry Hills</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>AIRWALLEX</td>
<td>Fintech</td>
<td>Melbourne</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>IMMUTABLE</td>
<td>Fintech</td>
<td>Sydney</td>
<td>3</td>
</tr>
</tbody>
</table>

### 7.1.1 Top 15 intangible-asset intensive companies in Australia

<table>
<thead>
<tr>
<th>Rank</th>
<th>Firm</th>
<th>Intensity, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CSL LTD</td>
<td>92.23</td>
</tr>
<tr>
<td>2</td>
<td>BHP GROUP LTD</td>
<td>58.95</td>
</tr>
<tr>
<td>3</td>
<td>COMMONWEALTH BANK OF AUSTRALIA</td>
<td>43.86</td>
</tr>
</tbody>
</table>

Note: Brand Finance only provides within-economy ranks.

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

<table>
<thead>
<tr>
<th>Rank</th>
<th>Brand</th>
<th>Industry</th>
<th>Brand Value, mn USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WOOLWORTHS</td>
<td>Retail</td>
<td>10,886.9</td>
</tr>
<tr>
<td>2</td>
<td>TELSTRA</td>
<td>Telecoms</td>
<td>8,890.6</td>
</tr>
<tr>
<td>3</td>
<td>COMMONWEALTH BANK</td>
<td>Banking</td>
<td>7,672.8</td>
</tr>
</tbody>
</table>

Note: Rank corresponds to within-economy ranks.
Global Innovation Index 2023

Australia

Output rank 30  
Input rank 16  
Income High  
Region SEAO

Population (mn) 26.2  
GDP, PPP$ (bn) 1,615.3  
GDP per capita, PPP$ 62,191.6

Business sophistication 50.7  
Score / Value Rank 24

5.1 Knowledge workers 63.6  
5.1.1 Knowledge-intensive employment, % 51.5  
5.1.2 Firms offering formal training, % 5.1.3 GERD performed by business, % GDP 0.9  
5.1.4 GERD financed by business, % 5.1.5 Females employed with advanced degrees, % 28.7  
5.2 Innovation linkages 52.3  
5.2.1 University-industry R&D collaboration* 70.2  
5.2.2 State of cluster development* 64.6  
5.2.3 GERD financed by abroad, % GDP 5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP 0.2  
5.2.5 Patent families/bn PPP$ GDP 1.0  
5.3 Knowledge absorption 36.2  
5.3.1 Intellectual property payments, % total trade 1.2  
5.3.2 High-tech imports, % total trade 11.0  
5.3.3 ICT services imports, % total trade 1.1  
5.3.4 FD inflows, % GDP 1.8  
5.3.5 Research talent, % in businesses 79.0

Knowledge and technology outputs 34.9  
Score / Value Rank 30

6.1 Knowledge creation 45.8  
6.1.1 Patents by origin/bn PPP$ GDP 2.0  
6.1.2 ICT patent applications/bn PPP$ GDP 6.1.3 Utility models by origin/bn PPP$ GDP 1.2  
6.1.4 Scientific and technical articles/bn PPP$ GDP 6.1.5 Citable documents H-index 69.6  
6.2 Knowledge impact 38.4  
6.2.1 Labor productivity growth, % 0.5  
6.2.2 Uncorn val, GDP 3.1  
6.2.3 Software spending, % GDP 0.2  
6.2.4 High-tech manufacturing, % 25.1  
6.3 Knowledge diffusion 20.5  
6.3.1 Intellectual property receipts, % total trade 0.3  
6.3.2 Production and export complexity 41.5  
6.3.3 High-tech exports, % total trade 1.8  
6.3.4 ICT services exports, % total trade 1.3  
6.3.5 ISO 9001 quality/bn PPP$ GDP 5.8

Creative outputs 44.6  
Score / Value Rank 24

7.1 Intangible assets 46.8  
7.1.1 Intangible asset intensity, top 15%, % 66.9  
7.1.2 Trademarks by origin/bn PPP$ GDP 66.9  
7.1.3 Global brand value, top 500 7.1.4 Industrial designs by origin/bn PPP$ GDP 7.6  
7.2 Creative goods and services 20.9  
7.2.1 Cultural and creative services exports, % total trade 0.3  
7.2.2 National feature films/mn pop. 15-69 1.2  
7.2.3 Entertainment and media market/sq km pop. 15-69 62.7  
7.2.4 Creative goods exports, % total trade 0.6  
7.3 Online creativity 64.0  
7.3.1 Generic top-level domains (TLDs)/sq km pop. 15-69 67.7  
7.3.2 Country-code TLD/sq km pop. 15-69 67.2  
7.3.3 GitHub commits/sq km pop. 15-69 47.5  
7.3.4 Mobile app creation/bn PPP$ GDP 73.5

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

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

Outdated data for Australia

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