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.

Portugal ranking in the Global Innovation Index 2023

> Portugal ranks 30th among the 132 economies featured in the GII 2023.

> Portugal ranks 29th among the 50 high-income group economies.

> Portugal ranks 19th among the 39 economies in Europe.

> Portugal GII Ranking (2020-2023)

The table shows the rankings of Portugal 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 Portugal in the GII 2023 is between ranks 30 and 31.

<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>31st</td>
<td>32nd</td>
<td>29th</td>
</tr>
<tr>
<td>2021</td>
<td>31st</td>
<td>32nd</td>
<td>30th</td>
</tr>
<tr>
<td>2022</td>
<td>32nd</td>
<td>32nd</td>
<td>31st</td>
</tr>
<tr>
<td>2023</td>
<td>30th</td>
<td>31st</td>
<td>29th</td>
</tr>
</tbody>
</table>

Portugal performs better in innovation outputs than innovation inputs in 2023.

This year Portugal ranks 31st in innovation inputs. This position is higher than last year.

Portugal ranks 29th 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.

Relative to GDP, Portugal's performance is at expectations for its level of development.

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 $)
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.

Portugal produces more innovation outputs relative to its level of innovation investments.

Relationship between innovation inputs and outputs
Overview of Portugal’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 Portugal are those that rank above the GII (shown in blue) and the weakest are those that rank below.

- **Highest rankings**
  - 19th Creative outputs
  - 23rd Human capital and research

- **Lowest rankings**
  - 30th Global Innovation Index
  - 32nd Knowledge and technology outputs
  - 34th Business sophistication
  - 35th Institutions
  - 42nd Market sophistication
  - 45th Infrastructure

Portugal ranks highest in Creative outputs (19th) and Human capital and research (23rd).

Portugal ranks lowest in Infrastructure (45th), Market sophistication (42nd) and Institutions (35th).

The full WIPO Intellectual Property Statistics profile for Portugal can be found on this link.
→ Benchmark of Portugal against other country groupings for each of the seven areas of the GII Index

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

> High-Income economies
Portugal performs below the high-income group average in Knowledge and technology outputs, Business sophistication, Market sophistication, Infrastructure, Institutions.

> Europe
Portugal performs above the regional average in Creative outputs, Human capital and research, Institutions.

Knowledge and technology outputs
- Top 10 | Score: 58.96
- Europe | Score: 38.80
- High income | Score: 38.62
- Portugal | Score: 34.42

Creative outputs
- Top 10 | 56.09
- Portugal | 45.98
- High income | 40.27
- Europe | 39.87

Business sophistication
- Top 10 | 64.39
- High income | 46.38
- Europe | 44.61
- Portugal | 39.76

Market sophistication
- Top 10 | 61.93
- High income | 46.42
- Europe | 43.65
- Portugal | 43.38

Human capital and research
- Top 10 | 60.28
- Portugal | 49.55
- High income | 46.30
- Europe | 44.05

Infrastructure
- Top 10 | 62.83
- High income | 55.85
- Europe | 54.69
- Portugal | 50.79

Institutions
- Top 10 | 79.85
- High income | 68.16
- Portugal | 64.26
- Europe | 61.69
**Innovation strengths and weaknesses in Portugal**

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

> Portugal’s main innovation strengths are Domestic industry diversification (rank 1), Software spending, % GDP (rank 6) and Scientific and technical articles/bn PPP$ GDP (rank 8).

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Code</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>1</td>
<td>4.3.2</td>
</tr>
<tr>
<td>6</td>
<td>6.2.3</td>
</tr>
<tr>
<td>8</td>
<td>6.1.4</td>
</tr>
<tr>
<td>11</td>
<td>7.3.2</td>
</tr>
<tr>
<td>11</td>
<td>2.1.2</td>
</tr>
<tr>
<td>14</td>
<td>7.1.2</td>
</tr>
<tr>
<td>15</td>
<td>2.3.1</td>
</tr>
<tr>
<td>17</td>
<td>1.1.1</td>
</tr>
<tr>
<td>18</td>
<td>3.3.1</td>
</tr>
<tr>
<td>18</td>
<td>2.1.5</td>
</tr>
</tbody>
</table>
Portugal’s innovation system

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

> Innovation inputs in Portugal

2.1.1 Expenditure on education, % GDP was equal to 4.63% GDP in 2019, down by 0.05 percentage points from the year prior – and equivalent to an indicator rank of 50.

2.2.2 Graduates in science and engineering, % was equal to 27.82% of total tertiary graduates in 2020, down by 0.17 percentage points from the year prior – and equivalent to an indicator rank of 30.

2.3.1 Researchers, FTE/mn pop. was equal to 5,473.26 FTE/mn pop. in 2021, up by 5.98% from the year prior – and equivalent to an indicator rank of 15.

2.3.2 Gross expenditure on R&D, % GDP was equal to 1.68% GDP in 2021, up by 0.07 percentage points from the year prior – and equivalent to an indicator rank of 23.

2.3.4 QS university ranking, top 3 was equal to an average score of 32.97 for the top 3 universities in 2022, up by 6.7% from the year prior – and equivalent to an indicator rank of 38.

3.1.1 ICT access was equal to a score of 9.23 in 2021, up by 1.76% from the year prior – and equivalent to an indicator rank of 30.
4.1.1 Finance for startups and scaleups
was equal to an average perception score of
5.38 in 2019, equivalent to an indicator rank
of 20.

4.2.4 VC received, value, % GDP
was equal to 0.00162% GDP in 2022, up by
0.0011 percentage points from the year prior
– and equivalent to an indicator rank of 53.

4.3.2 Domestic industry diversification
was equal to an index score of 0.08 in 2020,
down by 0.17% from the year prior – and
equivalent to an indicator rank of 1.

5.1.1 Knowledge-intensive employment, %
was equal to 41.92% in 2022, down by 0.79
percentage points from the year prior – and
equivalent to an indicator rank of 26.
> Innovation outputs in Portugal

6.1.1 Patents by origin
was equal to 1.001 Thousands in 2021, up by 5.81% from the year prior – and equivalent to an indicator rank of 27.

6.1.5 Citable documents H-index
was equal to an index value of 653 in 2022, up by 9.015% from the year prior – and equivalent to an indicator rank of 30.

6.2.2 Unicorn valuation, % GDP
was equal to 0 % GDP in 2023 – and equivalent to an indicator rank of 48.

6.2.3 Software spending, % GDP
was equal to 0.672% GDP in 2022, up by 0.15 percentage points from the year prior – and equivalent to an indicator rank of 6.

6.2.4 High-tech manufacturing, %
was equal to 29.41% of total manufacturing output in 2020, down by 0.05 percentage points from the year prior – and equivalent to an indicator rank of 41.

6.3.1 Intellectual property receipts, % total trade
was equal to 0.148% total trade in 2021, down by 0.013 percentage points from the year prior – and equivalent to an indicator rank of 47.
6.3.2 Production and export complexity
was equal to a score of 0.758 in 2020, up by 20.072% from the year prior – and equivalent to an indicator rank of 34.

6.3.3 High-tech exports
was equal to 3,561,355,804 USD in 2021, up by 5.65% from the year prior – and equivalent to an indicator rank of 44.

7.1.1 Intangible asset intensity, top 15%,
was equal to 67.9% in 2022, up by 12.69 percentage points from the year prior – and equivalent to an indicator rank of 22.

7.1.3 Global brand value, top 5,000
was equal to 12.85 bn USD in 2023, up by 14.09% from the year prior – and equivalent to an indicator rank of 33.

7.2.1 Cultural and creative services exports
was equal to 6,948,816,000 USD in 2021, up by 30.26% from the year prior – and equivalent to an indicator rank of 46.

7.2.2 National feature films/mn pop. 15–69
was equal to 4.43 films/mn pop. 15–69 in 2021, up by 33.43% from the year prior – and equivalent to an indicator rank of 26.
7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 394,691.27 Apps/bn PPP$ GDP in 2022, down by 13.18% from the year prior – and equivalent to an indicator rank of 45.
Portugal's innovation top performers

2.3.3 Global corporate R&D investors from Portugal

<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>1399</td>
<td>ENERGIAS DE PORTUGAL</td>
<td>Electricity</td>
<td>103</td>
<td>-7</td>
<td>1</td>
</tr>
<tr>
<td>174</td>
<td>BIAL</td>
<td>Pharmaceuticals &amp; Biotechnology</td>
<td>78</td>
<td>67</td>
<td>25</td>
</tr>
</tbody>
</table>


2.3.4 QS university ranking of Portugal's top universities

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>274</td>
<td>UNIVERSITY OF PORTO</td>
<td>37.10</td>
</tr>
<tr>
<td>335</td>
<td>UNIVERSITY OF LISBON</td>
<td>31.90</td>
</tr>
<tr>
<td>369</td>
<td>UNIVERSIDADE NOVA DE LISboa</td>
<td>29.90</td>
</tr>
</tbody>
</table>

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=x" or a range "x-y".

7.1.1 Top 15 intangible-asset intensive companies in Portugal

<table>
<thead>
<tr>
<th>Rank</th>
<th>Firm</th>
<th>Intensity, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EDP - ENERGIAS DE PORTUGAL SA</td>
<td>37.00</td>
</tr>
<tr>
<td>2</td>
<td>JERONIMO MARTINS SGPS SA</td>
<td>76.03</td>
</tr>
<tr>
<td>3</td>
<td>GALP ENERGIA SGPS SA</td>
<td>50.24</td>
</tr>
</tbody>
</table>


7.1.3 Top 5,000 companies in Portugal 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>EDP</td>
<td>Utilities</td>
<td>2,508.7</td>
</tr>
<tr>
<td>2</td>
<td>GALP ENERGIA</td>
<td>Oil &amp; Gas</td>
<td>2,043.1</td>
</tr>
<tr>
<td>3</td>
<td>PINGO DOCE</td>
<td>Retail</td>
<td>1,224.8</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Output rank</th>
<th>Input rank</th>
<th>Income rank</th>
<th>Region</th>
<th>Population (mn)</th>
<th>GDP, PPP$ (bn)</th>
<th>GDP per capita, PPP$</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>31</td>
<td>High</td>
<td>EUR</td>
<td>10.3</td>
<td>432.1</td>
<td>42,086.5</td>
</tr>
</tbody>
</table>

### Business sophistication

| 5.1 Knowledge workers | 5.1 Knowledge-intensive employment, % | 5.1.2 Firms offering formal training, % | 5.1.3 GERD performed by business, % GDP | 5.1.4 GERD financed by business, % | 5.1.5 Females employed w/advanced degrees, % | 5.2 Innovation linkages | 5.2.1 University-industry R&D collaboration | 5.2.2 State of cluster development | 5.2.3 GERD financed by abroad, % GDP | 5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP | 5.2.5 Patent families/bn PPP$ GDP | 5.3 Knowledge absorption | 5.3.1 Intellectual property payments, % total trade | 5.3.2 High-tech imports, % total trade | 5.3.3 ICT services imports, % total trade | 5.3.4 FD & net inflows, % GDP | 5.3.5 Research talent, % in businesses |
|----------------------|-------------------------------------|----------------------------------------|----------------------------------------|------------------------------------|---------------------------------------------|-------------------------|------------------------------------------|---------------------------------|---------------------------------|-------------------------------------|---------------------------------|-------------------------------|---------------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 49.8                 | 41.9                                 | 29.0                                    | 1.0                                    | 52.2                              | 21.2                                      | 49.7                    | 61.0                                     | 46.7                            | 0.1                             | 0.0                                | 0.6                             | 3.9                            | 0.9                            | 9.1                             | 3.0                             | 44.0                            |

### Creative outputs

| 7.1 Intangible assets | 7.1.1 Intangible asset intensity, top 15, % | 7.1.2 Trademarks by origin/bn PPP$ GDP | 7.1.3 Global brand value, top 5,000 | 7.1.4 Industrial designs by origin/bn PPP$ GDP | 7.2 Creative goods and services | 7.2.1 Cultural and creative services exports, % total trade | 7.2.2 National feature films/mn pop. 15–69 | 7.2.3 Entertainment and media market/s/mn pop. 15–69 | 7.2.4 Creative goods exports, % total trade | 7.2.5 Online creativity | 7.3 Generic top-level domains (TLDs)/s/mn pop. 15–69 | 7.3.2 Country-code TLDs/s/mn pop. 15–69 | 7.3.3 GitHub commits/mn pop. 15–69 | 7.3.4 Mobile app creation/bn PPP$ GDP |
|-----------------------|---------------------------------------------|----------------------------------------|----------------------------------------|-------------------------------------|-----------------------------------------|-------------------------|-------------------------------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|-------------------------------|---------------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 55.2                  | 67.9                                        | 9.8                                    | 4.9                                   | 9.9                                | 23.1                                    | 0.6                     | 4.4                                       | 3.3                             | 1.5                             | 0.5                             | 4.6                            | 22.5                           | 66.9                           | 41.0                           | 7.4                             | 41.5                            |

### Key takeaway

- Portugal is ranked 30th globally in the Global Innovation Index 2023.
- Portugal scores highest in the Business sophistication category, particularly in knowledge workers and innovation linkages.
- Portugal's GDP per capita is 42,086.5 PPP$.

**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 Portugal.

> Portugal has missing data for one indicator and outdated data for four indicators.

### Missing data for Portugal

<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>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>
</tbody>
</table>

### Outdated data for Portugal

<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>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>4.2.1</td>
<td>Market capitalization, % GDP</td>
<td>2018</td>
<td>2020</td>
<td>World Federation of Exchanges; World Bank</td>
</tr>
</tbody>
</table>
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.