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.

Poland ranking in the Global Innovation Index 2023

> Poland ranks 41st among the 132 economies featured in the GII 2023.

> Poland ranks 36th among the 50 high-income group economies.

> Poland ranks 26th among the 39 economies in Europe.

> Poland GII Ranking (2020-2023)

The table shows the rankings of Poland 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 Poland in the GII 2023 is between ranks 39 and 42.

<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>38th</td>
<td>38th</td>
<td>40th</td>
</tr>
<tr>
<td>2021</td>
<td>40th</td>
<td>37th</td>
<td>42nd</td>
</tr>
<tr>
<td>2022</td>
<td>38th</td>
<td>41st</td>
<td>36th</td>
</tr>
<tr>
<td>2023</td>
<td>41st</td>
<td>50th</td>
<td>36th</td>
</tr>
</tbody>
</table>

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

This year Poland ranks 50th in innovation inputs. This position is lower than last year.

Poland ranks 36th in innovation outputs. This position is the same as 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, Poland’s performance is below 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.

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

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

- **Highest rankings**
  - Poland ranks highest in Creative outputs (35th), Human capital and research, Knowledge and technology outputs (40th) and Business sophistication (41st).

- **Lowest rankings**
  - Poland ranks lowest in Institutions (76th), Market sophistication (67th) and Infrastructure (47th).

* Human capital and research, Knowledge and technology outputs
** Business sophistication

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

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

### Creative outputs
- Top 10 | 56.09
- High Income | 40.27
- Europe | 39.87
- Poland | 37.62

### Business sophistication
- Top 10 | 64.39
- High Income | 46.38
- Europe | 44.61
- Poland | 36.69

### Market sophistication
- Top 10 | 61.93
- High Income | 46.42
- Europe | 43.65
- Poland | 34.49

### Human capital and research
- Top 10 | 60.28
- High Income | 46.30
- Europe | 44.05
- Poland | 37.66

### Infrastructure
- Top 10 | 62.83
- High Income | 55.85
- Europe | 54.69
- Poland | 48.45

### Institutions
- Top 10 | 79.85
- High Income | 68.16
- Europe | 61.69
- Poland | 47.13

Knowledge and technology outputs
- Top 10 | Score: 58.96
- Europe | Score: 38.80
- High Income | Score: 38.62
- Poland | Score: 31.60
## Innovation strengths and weaknesses in Poland

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

> Poland's main innovation strengths are **PISA scales in reading, maths and science** (rank 9), **Labor productivity growth, %** (rank 11) and **Creative goods exports, % total trade** (rank 13).

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weakenesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td><strong>Weakenesses</strong></td>
</tr>
<tr>
<td>Rank</td>
<td>Code</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>9</td>
<td>2.1.4</td>
</tr>
<tr>
<td>11</td>
<td>6.2.1</td>
</tr>
<tr>
<td>13</td>
<td>7.2.4</td>
</tr>
<tr>
<td>16</td>
<td>7.1.1</td>
</tr>
<tr>
<td>19</td>
<td>7.1.4</td>
</tr>
<tr>
<td>21</td>
<td>4.3.3</td>
</tr>
<tr>
<td>22</td>
<td>4.3.2</td>
</tr>
<tr>
<td>26</td>
<td>6.1.5</td>
</tr>
<tr>
<td>28</td>
<td>5.1.5</td>
</tr>
<tr>
<td>28</td>
<td>6.1.1</td>
</tr>
<tr>
<td>27</td>
<td>7.3.2</td>
</tr>
</tbody>
</table>
→ Poland’s innovation system

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

> Innovation inputs in Poland

2.1.1 Expenditure on education, % GDP was equal to 4.68% GDP in 2019, up by 0.07 percentage points from the year prior – and equivalent to an indicator rank of 47.

2.2.2 Graduates in science and engineering, % was equal to 19.45% of total tertiary graduates in 2020, down by 1.36 percentage points from the year prior – and equivalent to an indicator rank of 78.

2.3.1 Researchers, FTE/mn pop. was equal to 3,584.83 FTE/mn pop. in 2021, up by 9.21% from the year prior – and equivalent to an indicator rank of 29.

2.3.2 Gross expenditure on R&D, % GDP was equal to 1.44% GDP in 2021, up by 0.05 percentage points from the year prior – and equivalent to an indicator rank of 29.

2.3.4 QS university ranking, top 3 was equal to an average score of 31.73 for the top 3 universities in 2022, up by 4.033% from the year prior – and equivalent to an indicator rank of 40.

3.1.1 ICT access was equal to a score of 9.06 in 2021, up by 0.33% from the year prior – and equivalent to an indicator rank of 47.
4.1.1 Finance for startups and scaleups was equal to an average perception score of 4.77 in 2022, equivalent to an indicator rank of 40.

4.2.4 VC received, value, % GDP was equal to 0.00028% GDP in 2022, up by 0.000088 percentage points from the year prior – and equivalent to an indicator rank of 74.

4.3.2 Domestic industry diversification was equal to an index score of 0.104 in 2020, down by 0.94% from the year prior – and equivalent to an indicator rank of 22.

5.1.1 Knowledge-intensive employment, % was equal to 41.52% in 2022, up by 0.15 percentage points from the year prior – and equivalent to an indicator rank of 28.
6.1.1 Patents by origin
was equal to 3.91 Thousands in 2021, down by 12.87% from the year prior – and equivalent to an indicator rank of 26.

6.1.5 Citable documents H-index
was equal to an index value of 707 in 2022, up by 7.12% from the year prior – and equivalent to an indicator rank of 26.

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 0.315% GDP in 2022, up by 0.085 percentage points from the year prior – and equivalent to an indicator rank of 40.

6.2.4 High-tech manufacturing, %
was equal to 27.53% of total manufacturing output in 2020, up by 0.1 percentage points from the year prior – and equivalent to an indicator rank of 46.

6.3.1 Intellectual property receipts, % total trade
was equal to 0.373% total trade in 2021, up by 0.026 percentage points from the year prior – and equivalent to an indicator rank of 35.
6.3.2 Production and export complexity
was equal to a score of 1.02 in 2020, down by 5.56% from the year prior – and equivalent to an indicator rank of 26.

6.3.3 High-tech exports
was equal to 23,834,306,175 USD in 2021, up by 19.37% from the year prior – and equivalent to an indicator rank of 32.

7.1.1 Intangible asset intensity, top 15, %
was equal to 72.12% in 2022, up by 2.16 percentage points from the year prior – and equivalent to an indicator rank of 16.

7.1.3 Global brand value, top 5,000
was equal to 33.1 bn USD in 2023, up by 18.61% from the year prior – and equivalent to an indicator rank of 36.

7.2.1 Cultural and creative services exports
was equal to 3,951,205,000 USD in 2021, up by 20.3% from the year prior – and equivalent to an indicator rank of 29.

7.2.2 National feature films/mn pop. 15-69
was equal to 1.91 films/mn pop. 15–69 in 2021, up by 52.8% from the year prior – and equivalent to an indicator rank of 48.
Global Innovation Index 2023

7.3.4 Mobile app creation/bn PPP$ GDP

was equal to 598,426.75 Apps/bn PPP$ GDP in 2022, up by 0.21% from the year prior – and equivalent to an indicator rank of 38.
Poland's innovation top performers

2.3.4 QS university ranking of Poland's top universities

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>284</td>
<td>UNIVERSITY OF WARSAW</td>
<td>36.10</td>
</tr>
<tr>
<td>293</td>
<td>JAGIELLONIAN UNIVERSITY</td>
<td>35.60</td>
</tr>
<tr>
<td>521-530</td>
<td>WARSAW UNIVERSITY OF TECHNOLOGY</td>
<td>23.50</td>
</tr>
</tbody>
</table>

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".

7.1.1 Top 15 intangible-asset intensive companies in Poland

<table>
<thead>
<tr>
<th>Rank</th>
<th>Firm</th>
<th>Intensity, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DINO POLSKA SA</td>
<td>84.66</td>
</tr>
<tr>
<td>2</td>
<td>CYFROWY POLSAT SA</td>
<td>60.87</td>
</tr>
<tr>
<td>3</td>
<td>LPP SA</td>
<td>66.72</td>
</tr>
</tbody>
</table>

Note: Brand Finance only provides within economy ranks.

7.1.3 Top 5,000 companies in Poland 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>PKN Orlen</td>
<td>Oil &amp; Gas</td>
<td>3,897.2</td>
</tr>
<tr>
<td>2</td>
<td>BIEDRONKA</td>
<td>Retail</td>
<td>3,566.5</td>
</tr>
<tr>
<td>3</td>
<td>PKO BANK POLSKI</td>
<td>Banking</td>
<td>2,333.9</td>
</tr>
</tbody>
</table>

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

Poland

**Output rank**
- **36**

**Input rank**
- **50**

**Income**
- **High**

**Region**
- **EUR**

**Population (mn)**
- **39.9**

**GDP, PPP$ (bn)**
- **1,599.0**

**GDP per capita, PPP$**
- **42,465.9**

### Institutions

<table>
<thead>
<tr>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>47.1</td>
<td>76</td>
</tr>
</tbody>
</table>

1. **Institutional environment**
   - 1.1 Operational stability for businesses*
   - 1.2 Government effectiveness*
   - 1.3 Regulatory quality*
   - 1.2 Rule of law* 52.7 45
   - 1.3 Cost of redundancy dismissal 18.8 80

2. **Business sophistication**
   - 2.1 Knowledge workers 47.6 36
   - 2.2 Innovation linkages 18.8 84

### Human capital and research

<table>
<thead>
<tr>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.7</td>
<td>40</td>
</tr>
</tbody>
</table>

2.1 **Education**
   - 2.1.1 Expenditure on education, % GDP 60.2 36
   - 2.1.2 Government funding/pupil, % GDP/cap 21.2 46
   - 2.1.3 School life expectancy, years 16.1 36
   - 2.1.4 PISA scales in reading, maths and science 912.8 9

3.1 **Information and communication technologies (ICTs)**
   - 3.1.1 Internet access* 76.9 45

4.1 **Credit**
   - 4.1.1 Credit for startups and scaleups* 24.7 79

### Infrastructure

<table>
<thead>
<tr>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.5</td>
<td>47</td>
</tr>
</tbody>
</table>

3.1 **Government’s online services**
   - 3.1.1 Government’s online services* 77.1 43

### Market sophistication

<table>
<thead>
<tr>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.5</td>
<td>67</td>
</tr>
</tbody>
</table>

4.1.2 **Credit for startups and scaleups**
   - 4.1.2 Domestic credit to private sector, % GDP 49.8 74

### Business sophistication

<table>
<thead>
<tr>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>36.7</td>
<td>41</td>
</tr>
</tbody>
</table>

5.1 **Knowledge workers**
   - 5.1.1 Knowledge-intensive employment, % 41.5 28

5.3 **Knowledge absorption**
   - 5.3.1 Intellectual property payments, % total trade 11.2 32

6.1 **Knowledge creation**
   - 6.1.1 Patents by origin/bn PPP$ GDP 25.9 39

6.2 **Knowledge impact**
   - 6.2.1 Labor productivity growth, % 3.3 31

6.3 **Knowledge diffusion**
   - 6.3.1 Knowledge diffusion 35.0 40

7.1 **Intangible assets**
   - 7.1.1 Intangible asset intensity, top 15%, % 2.7 26

7.2 **Creative outputs**
   - 7.2.1 Cultural and creative services exports, % total trade 1.0 29

### Creative outputs

<table>
<thead>
<tr>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.6</td>
<td>35</td>
</tr>
</tbody>
</table>

7.1.1 **Intangible asset intensity, top 15%, %**
   - 7.1.1 Intangible asset intensity, top 15%, % 2.7 26

7.2.1 **Cultural and creative services exports, % total trade**
   - 7.2.1 Cultural and creative services exports, % total trade 1.0 29
Data availability

The following tables list indicators that are either missing or outdated for Poland.

Poland has missing data for zero indicators and outdated data for one indicator.

Outdated data for Poland

<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>2.1.1</td>
<td>Expenditure on education, % GDP</td>
<td>2019</td>
<td>2021</td>
<td>UNESCO Institute for Statistics</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.