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.

The following table shows the rankings of Ukraine over the past three years, noting that 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 Ukraine in the GII 2020 is between ranks 37 and 46.

<table>
<thead>
<tr>
<th></th>
<th>GII</th>
<th>Innovation inputs</th>
<th>Innovation outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>45</td>
<td>71</td>
<td>37</td>
</tr>
<tr>
<td>2019</td>
<td>47</td>
<td>82</td>
<td>36</td>
</tr>
<tr>
<td>2018</td>
<td>43</td>
<td>75</td>
<td>35</td>
</tr>
</tbody>
</table>

- Ukraine performs better in innovation outputs than innovation inputs in 2020.
- This year Ukraine ranks 71st in innovation inputs, higher than last year and higher compared to 2018.
- As for innovation outputs, Ukraine ranks 37th. This position is lower than last year and lower compared to 2018.

Ukraine ranks 2nd among the 29 lower middle-income group economies.

Ukraine ranks 30th among the 39 economies in Europe.
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, Ukraine is performing above expectations for its level of development.
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.

Ukraine produces more innovation outputs relative to its level of innovation investments.
BENCHMARKING UKRAINE AGAINST OTHER LOWER MIDDLE-INCOME GROUP ECONOMIES AND EUROPE

Ukraine’s scores in the seven GII pillars

Lower middle-income group economies

Ukraine has high scores in six out of the seven GII pillars: Institutions, Human capital & research, Infrastructure, Business sophistication, Knowledge & technology outputs and Creative outputs, which are above average for the lower middle-income group.

Conversely, Ukraine scores below average for its income group in one pillar: Market sophistication.

Europe

Compared to other economies in Europe, Ukraine performs below average in all seven of the GII pillars.
OVERVIEW OF UKRAINE RANKINGS IN THE SEVEN GII AREAS

Ukraine performs best in Knowledge & technology outputs and its weakest performance is in Market sophistication.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Ukraine in the GII 2020.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.2</td>
<td>2.1.2</td>
<td>Government funding/pupil, secondary, % GDP/cap</td>
<td>12</td>
</tr>
<tr>
<td>2.1.5</td>
<td>2.1.5</td>
<td>Pupil-teacher ratio, secondary</td>
<td>3</td>
</tr>
<tr>
<td>2.2.1</td>
<td>2.2.1</td>
<td>Tertiary enrolment, % gross</td>
<td>14</td>
</tr>
<tr>
<td>4.3.1</td>
<td>4.3.1</td>
<td>Applied tariff rate, weighted avg., %</td>
<td>18</td>
</tr>
<tr>
<td>5.1.5</td>
<td>5.1.5</td>
<td>Females employed w/advanced degrees, %</td>
<td>3</td>
</tr>
<tr>
<td>6.1.3</td>
<td>6.1.3</td>
<td>Utility models by origin/bn PPP$ GDP</td>
<td>1</td>
</tr>
<tr>
<td>6.3.3</td>
<td>6.3.3</td>
<td>ICT services exports, % total trade</td>
<td>9</td>
</tr>
<tr>
<td>7.1.1</td>
<td>7.1.1</td>
<td>Trademarks by origin/bn PPP$ GDP</td>
<td>5</td>
</tr>
<tr>
<td>7.1.3</td>
<td>7.1.3</td>
<td>Industrial designs by origin/bn PPP$ GDP</td>
<td>8</td>
</tr>
<tr>
<td>7.3.4</td>
<td>7.3.4</td>
<td>Mobile app creation/bn PPP$ GDP</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>1.1</td>
<td>Political environment</td>
<td>105</td>
</tr>
<tr>
<td>1.1.1</td>
<td>1.1.1</td>
<td>Political &amp; operational stability*</td>
<td>123</td>
</tr>
<tr>
<td>1.2.2</td>
<td>1.2.2</td>
<td>Rule of law*</td>
<td>109</td>
</tr>
<tr>
<td>1.3</td>
<td>1.3</td>
<td>Business environment</td>
<td>104</td>
</tr>
<tr>
<td>1.3.2</td>
<td>1.3.2</td>
<td>Ease of resolving insolvency*</td>
<td>117</td>
</tr>
<tr>
<td>3.2.3</td>
<td>3.2.3</td>
<td>Gross capital formation, % GDP</td>
<td>102</td>
</tr>
<tr>
<td>3.3.1</td>
<td>3.3.1</td>
<td>GDP/unit of energy use</td>
<td>117</td>
</tr>
<tr>
<td>4.1.3</td>
<td>4.1.3</td>
<td>Microfinance gross loans, % GDP</td>
<td>78</td>
</tr>
<tr>
<td>4.2</td>
<td>4.2</td>
<td>Investment</td>
<td>121</td>
</tr>
<tr>
<td>4.2.2</td>
<td>4.2.2</td>
<td>Market capitalization, % GDP</td>
<td>71</td>
</tr>
<tr>
<td>4.2.3</td>
<td>4.2.3</td>
<td>Venture capital deals/bn PPP$ GDP</td>
<td>64</td>
</tr>
<tr>
<td>5.2.4</td>
<td>5.2.4</td>
<td>JV–strategic alliance deals/bn PPP$ GDP</td>
<td>113</td>
</tr>
<tr>
<td>7.2.2</td>
<td>7.2.2</td>
<td>National feature films/mn pop. 15–69</td>
<td>99</td>
</tr>
</tbody>
</table>

*The highest possible ranking in each pillar is 1.
STRENGTHS

GII strengths for Ukraine are found in five of the seven GII pillars.

- Human capital & research (39): shows strengths in the indicators Government funding/pupil (12), Pupil–teacher ratio (3) and Tertiary enrolment (14).
- Market sophistication (99): the indicator Applied tariff rate (18) reveals a strength.
- Business sophistication (54): displays strength in the indicator Females employed w/advanced degrees (3).
- Knowledge & technology outputs (25): reveals strengths in the indicators Utility models by origin (1) and ICT services exports (9).
- Creative outputs (44): exhibits strengths in the indicators Trademarks by origin (5), Industrial designs by origin (8) and Mobile app creation (15).

WEAKNESSES

GII weaknesses for Ukraine are found in five of the seven GII pillars.

- Institutions (93): exhibits weaknesses in the sub-pillars Political environment (105) and Business environment (104) and in the indicators Political & operational stability (123), Rule of law (109) and Ease of resolving insolvency (117).
- Infrastructure (94): displays weaknesses in the indicators Gross capital formation (102) and GDP/unit of energy use (117).
- Market sophistication (99): shows weaknesses in the sub-pillar Investment (121) and in the indicators Microfinance gross loans (78), Market capitalization (71) and Venture capital deals (64).
- Business sophistication (54): the indicator JV–strategic alliance deals (113) demonstrates a weakness.
- Creative outputs (44): the indicator National feature films (99) reveals a weakness.
## UKRAINE

### GII 2020 rank

<table>
<thead>
<tr>
<th>Output rank</th>
<th>Input rank</th>
<th>Income Region</th>
<th>Population (mn)</th>
<th>GDP, PPP$</th>
<th>GDP per capita, PPP$</th>
<th>GII 2019 rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>71</td>
<td>Lower middle</td>
<td>44.0</td>
<td>409.3</td>
<td>8,533.5</td>
<td>47</td>
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</tbody>
</table>

### INSTITUTIONS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>55.6</td>
<td>93</td>
</tr>
</tbody>
</table>

1.1 Political environment
1.1.1 Political and operational stability
1.1.2 Government effectiveness
1.2 Regulatory environment
1.2.1 Regulatory quality
1.2.2 Rule of law
1.2.3 Cost of redundancy dismissal, salary weeks
1.3 Business environment
1.3.1 Ease of starting a business
1.3.2 Ease of resolving insolvency

### HUMAN CAPITAL & RESEARCH

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>40.5</td>
<td>39</td>
</tr>
</tbody>
</table>

2.1 Education
2.1.1 Expenditure on education, % GDP\(^\text{a}\)
2.1.2 Government funding/ pupil, secondary, % GDP\text{pcap}\(^\text{b}\)
2.1.3 School life expectancy, years\(^\text{c}\)
2.1.4 PISA scales in reading, maths, & science
2.1.5 Pupil-teacher ratio, secondary

2.2 Tertiary education
2.2.1 Tertiary enrolment, % gross\(^\text{d}\)
2.2.2 Graduates in science & engineering, %
2.2.3 Tertiary inbound mobility, %

2.3 Research & development (R&D)
2.3.1 Researchers, FTE/1000 pop\(^\text{e}\)
2.3.2 Gross expenditure on R&D, % GDP\(^\text{f}\)
2.3.3 Global R&D companies, avg. exp. top 5, mn $US\(^\text{g}\)
2.3.4 Q5 university ranking, average score top 5\(^\text{h}\)

### INFRASTRUCTURE

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.1</td>
<td>94</td>
</tr>
</tbody>
</table>

3.1 Information & communication technologies (ICTs)
3.1.1 ICT access\(^\text{i}\)
3.1.2 ICT use\(^\text{j}\)
3.1.3 Government’s online service\(^\text{k}\)
3.1.4 E-participation\(^\text{l}\)

3.2 General infrastructure
3.2.1 Electricity output, kWh/mn pop\(^\text{m}\)
3.2.2 Logistics performance\(^\text{n}\)
3.2.3 Gross capital formation, % GDP\(^\text{o}\)

3.3 Ecological sustainability
3.3.1 GDP/unit of energy use
3.3.2 Environmental performance\(^\text{p}\)
3.3.3 ISO 14001 environmental certificates/bn PPP$s GDP\(^\text{q}\)

### MARKET SOPHISTICATION

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.1</td>
<td>99</td>
</tr>
</tbody>
</table>

4.1 Credit
4.1.1 Ease of getting credit\(^\text{r}\)
4.1.2 Domestic credit to private sector, % GDP\(^\text{s}\)
4.1.3 Microfinance gross loans, % GDP\(^\text{t}\)

4.2 Investment
4.2.1 Ease of protecting minority investors\(^\text{u}\)
4.2.2 Market capitalization, % GDP\(^\text{v}\)
4.2.3 Venture capital deals/bn PPP$s GDP\(^\text{w}\)

4.3 Trade, competition, and market scale
4.3.1 Applied tariff rate, weighted avg., %
4.3.2 Intensity of local competition
4.3.3 Domestic market scale, bn PPP$s

### BUSINESS SOPHISTICATION

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.5</td>
<td>54</td>
</tr>
</tbody>
</table>

5.1 Knowledge workers
5.1.1 Knowledge-intensive employment, %
5.1.2 Firms offering formal training, %
5.1.3 GERD performed by business, % GDP\(^\text{x}\)
5.1.4 GERD financed by business, %
5.1.5 Females employed in advanced degrees, %

5.2 Innovation linkages
5.2.1 University-industry research collaboration\(^\text{y}\)
5.2.2 State of cluster development
5.2.3 GERD financed by abroad, % GDP\(^\text{z}\)
5.2.4 JV-strategic alliance deals/bn PPP$s GDP\(^\text{aa}\)
5.2.5 Patent families 2x offices bn PPP$s GDP\(^\text{ab}\)

5.3 Knowledge absorption
5.3.1 Intellectual property payments, % total trade\(^\text{ac}\)
5.3.2 High-tech imports, % total trade\(^\text{ad}\)
5.3.3 ICT services imports, % total trade\(^\text{ae}\)
5.3.4 FDI net inflows, % GDP\(^\text{af}\)
5.3.5 Research talent, % in business enterprise\(^\text{ag}\)

### KNOWLEDGE & TECHNOLOGY OUTPUTS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.1</td>
<td>25</td>
</tr>
</tbody>
</table>

6.1 Knowledge creation
6.1.1 Patents by origin/bn PPP$s GDP\(^\text{ah}\)
6.1.2 PCT patents by origin/bn PPP$s GDP\(^\text{ai}\)
6.1.3 Utility models by origin/bn PPP$s GDP\(^\text{aj}\)
6.1.4 Scientific & technical articles/bn PPP$s GDP\(^\text{ak}\)
6.1.5 Citable documents H-index\(^\text{al}\)

6.2 Knowledge impact
6.2.1 Growth rate of PPP$s GDP/worker, %
6.2.2 New businesses/1000 pop. 15-64\(^\text{am}\)
6.2.3 Computer software spending, % GDP\(^\text{an}\)
6.2.4 ISO 9001 quality certificates/bn PPP$s GDP\(^\text{ao}\)
6.2.5 High and medium high-tech manufacturing, % GDP\(^\text{ap}\)

6.3 Knowledge diffusion
6.3.1 Intellectual property receipts, % total trade\(^\text{aq}\)
6.3.2 High tech net exports, % total trade\(^\text{ar}\)
6.3.3 ICT services exports, % total trade\(^\text{as}\)
6.3.4 FDI net outflows, % GDP\(^\text{at}\)

### CREATIVE OUTPUTS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.9</td>
<td>44</td>
</tr>
</tbody>
</table>

7.1 Intangible assets
7.1.1 Trademarks by origin/bn PPP$s GDP\(^\text{au}\)
7.1.2 Goodwill brand value, top 5000, % GDP\(^\text{av}\)
7.1.3 Industrial designs by origin/bn PPP$s GDP\(^\text{aw}\)
7.1.4 ICTs & organizational model creation\(^\text{ax}\)

7.2 Creative goods and services
7.2.1 Cultural & creative services exports, % total trade\(^\text{ay}\)
7.2.2 National feature films/mn pop. 15-64\(^\text{az}\)
7.2.3 Entertainment & media market/bn pop. 15-64\(^\text{ba}\)
7.2.4 Printing and other media, % manufacturing\(^\text{bb}\)
7.2.5 Creative goods exports, % total trade\(^\text{bc}\)

7.3 Online creativity
7.3.1 Generic top-level domains (TLDs)/bn pop. 15-64\(^\text{bd}\)
7.3.2 Country-code TLDs/bn pop. 15-64\(^\text{be}\)
7.3.3 Wikipedia edits/mn pop. 15-64\(^\text{bf}\)
7.3.4 Mobile app creation/bn PPP$s GDP\(^\text{bg}\)

### NOTES
- * indicates a strength; ◊ indicates a weakness; + an income group strength; ◊ an income group weakness; ‡ an indicator; □ a survey question; ❄ indicates that the economy’s data are older than the base year; see Appendix I 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.
DATA AVAILABILITY

The following tables list data that are either missing or outdated for Ukraine.

### Missing data

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Country year</th>
<th>Model year</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.2.3</td>
<td>Entertainment &amp; Media market/th pop. 15–69</td>
<td>n/a</td>
<td>2018</td>
<td>PwC</td>
</tr>
</tbody>
</table>

### Outdated data

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Country 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>2017</td>
<td>2018</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>2.1.3</td>
<td>School life expectancy, years</td>
<td>2014</td>
<td>2017</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>2.2.1</td>
<td>Tertiary enrolment, % gross</td>
<td>2014</td>
<td>2017</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>4.1.3</td>
<td>Microfinance gross loans, % GDP</td>
<td>2015</td>
<td>2018</td>
<td>Microfinance Information Exchange</td>
</tr>
<tr>
<td>6.2.2</td>
<td>New businesses/th pop. 15–64</td>
<td>2017</td>
<td>2018</td>
<td>World Bank</td>
</tr>
</tbody>
</table>
ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2020, the GII presents its 13th edition devoted to the theme *Who Will Finance Innovation?*

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.