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 Bulgaria 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 Bulgaria in the GII 2020 is between ranks 36 and 39.

<table>
<thead>
<tr>
<th>Year</th>
<th>GII</th>
<th>Innovation inputs</th>
<th>Innovation outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>37</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>2019</td>
<td>40</td>
<td>45</td>
<td>38</td>
</tr>
<tr>
<td>2018</td>
<td>37</td>
<td>44</td>
<td>34</td>
</tr>
</tbody>
</table>

- Bulgaria performs better in innovation outputs than innovation inputs in 2020.
- This year Bulgaria ranks 45th in innovation inputs, the same as last year and lower compared to 2018.
- As for innovation outputs, Bulgaria ranks 30th. This position is higher than last year and higher compared to 2018.

Bulgaria ranks 3rd among the 37 upper middle-income group economies.

Bulgaria ranks 24th 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, Bulgaria 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.

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

Innovation input to output performance, 2020
BENCHMARKING BULGARIA AGAINST OTHER UPPER MIDDLE-INCOME GROUP ECONOMIES AND EUROPE

Bulgaria’s scores in the seven GII pillars

Upper middle-income group economies

Bulgaria 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 upper middle income group.

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

Europe

Compared to other economies in Europe, Bulgaria performs:

- above average in one of the seven GII pillars: Infrastructure; and
- below average in six out of the seven GII pillars: Institutions, Human capital & research, Market sophistication, Business sophistication, Knowledge & technology outputs and Creative outputs.
OVERVIEW OF BULGARIA RANKINGS IN THE SEVEN GII AREAS

Bulgaria 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 Bulgaria 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>1.2.3 Cost of redundancy dismissal, salary weeks</td>
<td>1.2.3</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>3.3 Ecological sustainability</td>
<td>3.3</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>3.3.3 ISO 14001 environmental certificates/bn PPP$ GDP</td>
<td>3.3.3</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>5.2.3 GERD financed by abroad, % GDP</td>
<td>5.2.3</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>6.1.3 Utility models by origin/bn PPP$ GDP</td>
<td>6.1.3</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>6.2 Knowledge impact</td>
<td>6.2</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>6.2.2 New businesses/th pop. 15–64</td>
<td>6.2.2</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>6.2.4 ISO 9001 quality certificates/bn PPP$ GDP</td>
<td>6.2.4</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>7.1 Intangible assets</td>
<td>7.1</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>7.1.1 Trademarks by origin/bn PPP$ GDP</td>
<td>7.1.1</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>7.1.3 Industrial designs by origin/bn PPP$ GDP</td>
<td>7.1.3</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>7.2.1 Cultural &amp; creative services exports, % total trade</td>
<td>7.2.1</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>7.3.1 Generic top-level domains (TLDs)/th pop. 15–69</td>
<td>7.3.1</td>
<td></td>
<td>24</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>1.3.1 Ease of starting a business*</td>
<td>1.3.1</td>
<td></td>
<td>86</td>
</tr>
<tr>
<td>2.1.4 PISA scales in reading, maths &amp; science</td>
<td>2.1.4</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>2.2.2 Graduates in science &amp; engineering, %</td>
<td>2.2.2</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>2.3.3 Global R&amp;D companies, top 3, mn US$</td>
<td>2.3.3</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>3.2.3 Gross capital formation, % GDP</td>
<td>3.2.3</td>
<td></td>
<td>86</td>
</tr>
<tr>
<td>3.3.1 GDP/unit of energy use</td>
<td>3.3.1</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td>4 Market sophistication</td>
<td>4</td>
<td></td>
<td>97</td>
</tr>
<tr>
<td>4.1 Credit</td>
<td>4.1</td>
<td></td>
<td>91</td>
</tr>
<tr>
<td>4.1.3 Microfinance gross loans, % GDP</td>
<td>4.1.3</td>
<td></td>
<td>81</td>
</tr>
<tr>
<td>4.2 Investment</td>
<td>4.2</td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>4.2.2 Market capitalization, % GDP</td>
<td>4.2.2</td>
<td></td>
<td>62</td>
</tr>
<tr>
<td>4.3.2 Intensity of local competition†</td>
<td>4.3.2</td>
<td></td>
<td>81</td>
</tr>
<tr>
<td>5.2.4 JV–strategic alliance deals/bn PPP$ GDP</td>
<td>5.2.4</td>
<td></td>
<td>80</td>
</tr>
</tbody>
</table>

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

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

- **Institutions (48)**: the indicator Cost of redundancy dismissal (16) is a strength.
- **Infrastructure (30)**: demonstrates strengths in the sub-pillar Ecological sustainability (6) and in the indicator ISO 14001 environmental certificates (2).
- **Business sophistication (40)**: the indicator GERD financed by abroad (14) demonstrates a strength.
- **Knowledge & technology outputs (29)**: exhibits strengths in the sub-pillar Knowledge impact (7) and in the indicators Utility models by origin (13), New businesses (14) and ISO 9001 quality certificates (1).
- **Creative outputs (37)**: shows strengths in the sub-pillar Intangible assets (21) and in the indicators Trademarks by origin (16), Industrial designs by origin (23), Cultural & creative services exports (14) and Generic top-level domains (24).

WEAKNESSES

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

- **Institutions (48)**: the indicator Ease of starting a business (86) is a weakness.
- **Human capital & research (64)**: shows weaknesses in the indicators PISA scales in reading, maths & science (50), Graduates in science & engineering (70) and Global R&D companies (42).
- **Infrastructure (30)**: displays weaknesses in the indicators Gross capital formation (86) and GDP/unit of energy use (92).
- **Market sophistication (97)**: shows weaknesses in the sub-pillars Credit (91) and Investment (102) and in the indicators Microfinance gross loans (81), Market capitalization (62) and Intensity of local competition (81).
- **Business sophistication (40)**: the indicator JV–strategic alliance deals (80) is a weakness.
## BULGARIA

<table>
<thead>
<tr>
<th>Output rank</th>
<th>Input rank</th>
<th>Income region</th>
<th>Population (m)</th>
<th>GDP, PPP$</th>
<th>GDP per capita, PPP$</th>
<th>GII 2019 rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>45</td>
<td>Upper middle</td>
<td>7.0</td>
<td>171.2</td>
<td>21,472.2</td>
<td>40</td>
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</table>

### INSTITUTIONS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>69.1</td>
<td>48</td>
</tr>
</tbody>
</table>

| 1.1 Political environment | 60.7 | 56 |
| 1.1.1 Political and operational stability | 60.0 | 70 |
| 1.1.2 Government effectiveness | 60.2 | 56 |

| 1.2 Regulatory environment | 75.1 | 37 |
| 1.2.1 Regulatory quality | 57.0 | 43 |
| 1.2.2 Rule of law | 45.9 | 65 |
| 1.2.3 Cost of redundancy dismissal, salary weeks | 8.6 | 15 |

| 1.3 Business environment | 71.6 | 64 |
| 1.3.1 Ease of starting a business | 85.4 | 86 |
| 1.3.2 Ease of resolving insolvency | 57.8 | 56 |

### HUMAN CAPITAL & RESEARCH

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.0</td>
<td>64</td>
</tr>
</tbody>
</table>

| 2.1 Education | 43.5 | 73 |
| 2.1.1 Expenditure on education, % GDP | 4.1 | 70 |
| 2.1.2 Government funding/pupil, secondary, % GDP | 21.8 | 38 |
| 2.1.3 School life expectancy, years | 14.4 | 62 |

### BUSINESS SOPHISTICATION

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.3</td>
<td>40</td>
</tr>
</tbody>
</table>

| 5.1 Knowledge workers | 43.4 | 39 |

### KNOWLEDGE & TECHNOLOGY OUTPUTS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.5</td>
<td>29</td>
</tr>
</tbody>
</table>

| 6.1 Knowledge creation | 19.9 | 50 |
| 6.1.1 Patents by origin/bn PPP$ GDP | 1.3 | 57 |
| 6.1.2 PCT patents by origin/bn PPP$ GDP | 0.3 | 43 |

### BUSINESS OUTPUTS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.5</td>
<td>37</td>
</tr>
</tbody>
</table>

| 7.1 Intangible assets | 43.8 | 21 |

### MARKET SOPHISTICATION

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.2</td>
<td>97</td>
</tr>
</tbody>
</table>

| 4.1 Credit | 34.6 | 91 |
| 4.1.1 Ease of getting credit | 65.0 | 61 |
| 4.1.2 Domestic credit to private sector, % GDP | 61.6 | 67 |

### CREATIVITY OUTPUTS

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.5</td>
<td>41</td>
</tr>
</tbody>
</table>

| 7.3 Online creativity | 26.5 | 41 |

### NOTES

- "*" indicates a strength; "○" 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 (GMC) 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 Bulgaria.

### 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>7.1.2</td>
<td>Global brand value, top 5,000, % GDP</td>
<td>n/a</td>
<td>2019</td>
<td>Brand Finance</td>
</tr>
<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>2013</td>
<td>2018</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>2.1.2</td>
<td>Government funding/pupil, secondary, % GDP/cap</td>
<td>2013</td>
<td>2016</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>2.1.5</td>
<td>Pupil-teacher ratio, secondary</td>
<td>2016</td>
<td>2018</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>4.2.2</td>
<td>Market capitalization, % GDP</td>
<td>2011</td>
<td>2018</td>
<td>World Federation of Exchanges</td>
</tr>
<tr>
<td>5.1.2</td>
<td>Firms offering formal training, %</td>
<td>2012</td>
<td>2018</td>
<td>World Bank</td>
</tr>
<tr>
<td>6.1.3</td>
<td>Utility models by origin/bn PPP$ GDP</td>
<td>2017</td>
<td>2018</td>
<td>World Intellectual Property Organization</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.

![Framework of the Global Innovation Index 2020](image)

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.