NORWAY

20th Norway ranks 20th among the 131 economies featured in the GII 2020.

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 Norway 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 Norway in the GII 2020 is between ranks 20 and 25.

<table>
<thead>
<tr>
<th></th>
<th>GII</th>
<th>Innovation inputs</th>
<th>Innovation outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>20</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>2019</td>
<td>19</td>
<td>13</td>
<td>27</td>
</tr>
<tr>
<td>2018</td>
<td>19</td>
<td>13</td>
<td>24</td>
</tr>
</tbody>
</table>

- Norway performs better in innovation inputs than innovation outputs in 2020.
- This year Norway ranks 15th in innovation inputs, lower than last year and lower compared to 2018.
- As for innovation outputs, Norway ranks 28th. This position is lower than last year and lower compared to 2018.

19th Norway ranks 19th among the 49 high-income group economies.

12th Norway ranks 12th 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, Norway’s performance is 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.

Norway produces less innovation outputs relative to its level of innovation investments.
BENCHMARKING NORWAY AGAINST OTHER HIGH-INCOME GROUP ECONOMIES AND EUROPE

Norway’s scores in the seven GII pillars

High-income group economies

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

Conversely, Norway scores below average for its income group in one GII pillar: Knowledge & technology outputs.

Europe

Compared to other economies in Europe, Norway performs:

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

Norway performs best in Infrastructure and its weakest performance is in Knowledge & technology outputs.

*The highest possible ranking in each pillar is 1.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the strengths and weaknesses of Norway 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</td>
<td>1</td>
<td>Institutions</td>
<td>3</td>
</tr>
<tr>
<td>1.1</td>
<td>1.1</td>
<td>Political environment</td>
<td>4</td>
</tr>
<tr>
<td>1.1.2</td>
<td>1.1.2</td>
<td>Government effectiveness*</td>
<td>5</td>
</tr>
<tr>
<td>1.2</td>
<td>1.2</td>
<td>Regulatory environment</td>
<td>4</td>
</tr>
<tr>
<td>1.2.2</td>
<td>1.2.2</td>
<td>Rule of law*</td>
<td>2</td>
</tr>
<tr>
<td>1.3</td>
<td>1.3</td>
<td>Business environment</td>
<td>3</td>
</tr>
<tr>
<td>1.3.2</td>
<td>1.3.2</td>
<td>Ease of resolving insolvency*</td>
<td>5</td>
</tr>
<tr>
<td>2.1</td>
<td>2.1</td>
<td>Education</td>
<td>5</td>
</tr>
<tr>
<td>2.1.1</td>
<td>2.1.1</td>
<td>Expenditure on education, % GDP</td>
<td>2</td>
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<tr>
<td>2.3.1</td>
<td>2.3.1</td>
<td>Researchers, FTE/mn pop.</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Infrastructure</td>
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</tr>
<tr>
<td>3.1.2</td>
<td>3.1.2</td>
<td>ICT use*</td>
<td>5</td>
</tr>
<tr>
<td>3.2</td>
<td>3.2</td>
<td>General infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>3.2.1</td>
<td>3.2.1</td>
<td>Electricity output, GWh/mn pop</td>
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</tr>
<tr>
<td>5.1.1</td>
<td>5.1.1</td>
<td>Knowledge-intensive employment, %</td>
<td>5</td>
</tr>
<tr>
<td>7.2.3</td>
<td>7.2.3</td>
<td>Entertainment &amp; Media market/th pop. 15–69</td>
<td>3</td>
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<tr>
<td>7.3.3</td>
<td>7.3.3</td>
<td>Wikipedia edits/mn pop. 15–69</td>
<td>1</td>
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</table>

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
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</thead>
<tbody>
<tr>
<td>2.2.2</td>
<td>2.2.2</td>
<td>Graduates in science &amp; engineering, %</td>
<td>56</td>
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<tr>
<td>2.2.3</td>
<td>2.2.3</td>
<td>Tertiary inbound mobility, %</td>
<td>64</td>
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<td>4.1.1</td>
<td>4.1.1</td>
<td>Ease of getting credit*</td>
<td>88</td>
</tr>
<tr>
<td>4.3.2</td>
<td>4.3.2</td>
<td>Intensity of local competition†</td>
<td>65</td>
</tr>
<tr>
<td>5.3.1</td>
<td>5.3.1</td>
<td>Intellectual property payments, % total trade</td>
<td>69</td>
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<tr>
<td>5.3.2</td>
<td>5.3.2</td>
<td>High-tech imports, % total trade</td>
<td>79</td>
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<tr>
<td>5.3.4</td>
<td>5.3.4</td>
<td>FDI net inflows, % GDP</td>
<td>129</td>
</tr>
<tr>
<td>6.2.1</td>
<td>6.2.1</td>
<td>Growth rate of PPP$ GDP/worker, %</td>
<td>86</td>
</tr>
<tr>
<td>6.2.5</td>
<td>6.2.5</td>
<td>High- and medium-high-tech manufacturing, %</td>
<td>57</td>
</tr>
<tr>
<td>7.1.1</td>
<td>7.1.1</td>
<td>Trademarks by origin/bn PPP$ GDP</td>
<td>68</td>
</tr>
</tbody>
</table>
STRENGTHS

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

- Institutions (3): exhibits strengths in the sub-pillars Political environment (4), Regulatory environment (4) and Business environment (3) and in the indicators Government effectiveness (5), Rule of law (2) and Ease of resolving insolvency (5).
- Human capital & research (16): shows strengths in the sub-pillar Education (5) and in the indicators Expenditure on education (2) and Researchers (7).
- Infrastructure (1): demonstrates strengths in the sub-pillar General infrastructure (3) and in the indicators ICT use (5) and Electricity output (1).
- Business sophistication (25): displays strengths in the indicator Knowledge-intensive employment (5).
- Creative outputs (19): reveals strengths in the indicators Entertainment & Media market (3) and Wikipedia edits (1).

WEAKNESSES

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

- Human capital & research (16): exhibits weaknesses in the indicators Graduates in science & engineering (56) and Tertiary inbound mobility (64).
- Market sophistication (25): shows weaknesses in the indicators Ease of getting credit (88) and Intensity of local competition (65).
- Business sophistication (25): demonstrates weaknesses in the indicators Intellectual property payments (69), High-tech imports (79) and FDI net inflows (129).
- Knowledge & technology outputs (33): displays weaknesses in the indicators Growth rate of PPP$ GDP/worker (86) and High- and medium-high-tech manufacturing (57).
- Creative outputs (19): reveals weaknesses in the indicator Trademarks by origin (68).
NORWAY

GII 2020 rank 20

Output rank: 28
Input rank: 15
Income: High
Region: EUR
Population (mn): 5.4
GDP, PPP$: 410.7
GDP per capita, PPP$: 66,947.8

Institutions

2.1 Education
2.1.1 Expenditure on education, % GDP
2.1.2 Government funding/pupil, % GDP/Pcap
2.1.3 School life expectancy, years
2.1.4 IIE scale scores in math, arts, science
2.1.5 Pupil-teacher ratio, secondary

2.2 Tertiary education
2.2.1 Tertiary enrolment, % gross
2.2.2 Graduates in science & engineering, %
2.2.3 Tertiary inbound mobility

2.3 Research & Development (R&D)
2.3.1 Researchers, FTE/million pop
2.3.2 Gross expenditure on R&D, % GDP
2.3.3 Global R&D companies, avg. exp. top 5, % US
2.3.4 QS university ranking, average score top 5

Infratucture

3.1 Information & communication technologies (ICTs)
3.1.1 ICT users
3.1.2 Telephone subscribers, fixed
3.1.3 Government's online service
3.1.4 E-participation

3.2 General infrastructure
3.2.1 Electricity output, kWh/million
3.2.2 Logistics performance
3.2.3 Gross capital formation, % GDP

3.3 Ecological sustainability
3.3.1 Energy use, % renewable energy
3.3.2 Environmental performance
3.3.3 ISO 14001 environmental certificates

Market Sophistication

4.1 Credit
4.1.1 Ease of getting credit
4.1.2 Domestic credit to private sector, % GDP
4.1.3 Microfinance gross loans, % GDP

4.2 Investment
4.2.1 Ease of protecting minority investors
4.2.2 Market capitalization, % GDP
4.2.3 Venture capital deals/billion PPP$ GDP

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$

Business Sophistication

5.1 Knowledge workers
5.1.1 Knowledge-intensive employment, % GDP
5.1.2 Firms offering formal training, % GDP
5.1.3 Gender of employment, % GDP
5.1.4 GDP of professional, % GDP
5.1.5 Firms offering formal training, % GDP
5.2 Innovation linkages
5.2.1 University/industry research collaboration
5.2.2 State of cluster development
5.2.3 GERD financed by abroad, % GDP
5.2.4 GERD contributed by joint venture
5.2.5 Education of business

Knowledge & Technology Outputs

6.1 Knowledge creation
6.1.1 Patents by origin, billion PPP$ GDP
6.1.2 ICT patents
6.1.3 Scientific & technical articles
6.1.4 FDI inflows, % GDP

Creative Outputs

7.1 Intangible assets
7.1.1 Trademarks by origin, billion PPP$ GDP
7.1.2 Brand value, billion PPP$ GDP
7.1.3 Industrial designs by origin, billion PPP$ GDP
7.1.4 ICTs & organizational model

NOTES: Indicates a strength; Indicates a weakness; Indicates a strength relative to the other top 25-ranked GII economies; Indicates a weakness relative to the other top 25-ranked GII economies; an index is a survey question; indicates that the economy's data are older than the base year; see Appendix F for details, including the year of the data, at http://globalinnovationindex.org. Square brackets indicate that the data minimum coverage (EMG) requirements were not met at the sub-pixel or pixel level.
DATA AVAILABILITY

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

Missing data

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Country</th>
<th>Model</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1.3</td>
<td>Microfinance gross loans, % GDP</td>
<td>n/a</td>
<td>2018</td>
<td>Microfinance Information Exchange</td>
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<tr>
<td>5.1.2</td>
<td>Firms offering formal training, %</td>
<td>n/a</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>n/a</td>
<td>2018</td>
<td>World Intellectual Property Organization</td>
</tr>
</tbody>
</table>

Outdated data

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Country</th>
<th>Model</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1</td>
<td>Expenditure on education, % GDP</td>
<td>2016</td>
<td>2018</td>
<td>UNESCO Institute for Statistics</td>
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<tr>
<td>2.1.5</td>
<td>Pupil-teacher ratio, secondary</td>
<td>2017</td>
<td>2018</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>5.2.1</td>
<td>University/industry research collaboration†</td>
<td>2018</td>
<td>2019</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td>5.2.2</td>
<td>State of cluster development†</td>
<td>2018</td>
<td>2019</td>
<td>World Economic Forum</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.