Sweden ranks 2nd 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 Sweden 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.

<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>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>2019</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2018</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

- Sweden performs better in innovation outputs than innovation inputs in 2020.
- This year Sweden ranks 3rd in innovation inputs, higher than last year and the same as 2018.
- As for innovation outputs, Sweden ranks 2nd. This position is higher than last year and higher compared to 2018.

Sweden ranks 2nd among the 49 high-income group economies.

Sweden ranks 2nd 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, Sweden 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.

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

Innovation input to output performance, 2020
BENCHMARKING SWEDEN AGAINST OTHER HIGH-INCOME ECONOMIES AND EUROPE

Sweden’s scores in the seven GII pillars

High-income group economies

Sweden has high scores in all seven GII pillars, which are above average for the high-income group.

Europe

Compared to other economies in Europe, Sweden performs above average in all seven GII pillars.
OVERVIEW OF SWEDEN RANKINGS IN THE SEVEN GII AREAS

Sweden performs best in Business sophistication and its weakest performance is in Market sophistication.

*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 Sweden in the GII 2020.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
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<td>3.3.1</td>
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<td>4.1.1</td>
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<td>5.3.1</td>
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<td>5.3.2</td>
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<td>7.1.1</td>
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<tr>
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<td>7.2.4</td>
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<td>7.1.4</td>
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<tr>
<td>7.1.4</td>
<td>7.3.3</td>
</tr>
</tbody>
</table>
STRENGTHS

GII strengths for Sweden are found in six of the seven GII pillars.

- **Institutions (11)**: the indicator *Rule of law (4)* demonstrates a strength.
- **Human capital & research (3)**: shows strengths in the indicators *Expenditure on education (3), School life expectancy (3)* and *Gross expenditure on R&D (3)*.
- **Infrastructure (2)**: exhibits strengths in the sub-pillar *General infrastructure (4)* and in the indicator *Logistics performance (2)*.
- **Business sophistication (1)**: displays strengths in the sub-pillars *Knowledge workers (3)* and *Innovation linkages (2)* and in the indicators *Firms offering formal training (3), JV–strategic alliance deals (3)* and *Patent families (1)*.
- **Knowledge & technology outputs (2)**: the sub-pillars *Knowledge creation (2)* and *Knowledge diffusion (4)* reveal strengths.
- **Creative outputs (7)**: shows strengths in the indicators *Global brand value (3), ICTs & organizational model creation (2)* and *Wikipedia edits (4)*.

WEAKNESSES

GII weaknesses for Sweden are found in all seven of the GII pillars.

- **Institutions (11)**: the indicator *Cost of redundancy dismissal (55)* is a weakness.
- **Human capital & research (3)**: demonstrates weakness in the indicator *Pupil–teacher ratio (61)*.
- **Infrastructure (2)**: displays weakness in the indicator *GDP/unit of energy use (61)*.
- **Market sophistication (12)**: exhibits weaknesses in the indicators *Ease of getting credit (74)* and *Applied tariff rate (22)*.
- **Business sophistication (1)**: demonstrates weaknesses in the indicators *High-tech imports (51)* and *FDI net inflows (59)*.
- **Knowledge & technology outputs (2)**: displays weakness in the indicator *Growth rate of PPP (80)*.
- **Creative outputs (7)**: reveals weaknesses in the indicators *Trademarks by origin (56)* and *Printing & other media (54)*.
### SWEDEN

#### Output rank | Input rank | Income | Region | Population (mn) | GDP, PPP$ | GDP per capita, PPP$ | GII 2019 rank
---|---|---|---|---|---|---|---
2 | 3 | High | 10.0 | 563.9 | 47,691.9 | 2

#### INSTITUTIONS
- **Score/Value Rank**
  - Political environment: 89.9/11
  - Political and operational stability: 87.5/11
  - Government effectiveness: 91.8/8
  - Regulatory environment: 90.0/13
    - Regulatory quality: 85.8/6
      - Rule of law: 96.1/4
      - Cost of redundancy dismissal, salary weeks: 14.4/5
  - Business environment: 86.3/16
    - Ease of starting a business: 93.1/7
    - Ease of resolving insolvency: 79.5/15

#### HUMAN CAPITAL & RESEARCH
- **Score/Value Rank**
  - Education: 68.2/6
    - Expenditure on education, % GDP: 7.3
    - Government funding/pupil, secondary, % GDP: 23.8
    - School life expectancy, years: 19.3
    - PISA scales in reading, maths, & science: 502.5
    - Parcel teacher ratio, secondary: 13.1/61
  - Tertiary education: 44.9/28
    - Tertiary enrolment, % gross: 67.0
    - Graduates in science & engineering, % total: 27.5
    - Tertiary inboured mobility, %: 6.7
  - Research & development (R&D): 74.0/6
    - Researchers, FTE/million pop.: 7,525.6
    - Gross expenditure on R&D, % GDP: 3.3
    - Global R&D companies, avg. exp. top 5, mn $US: 79.0
    - QS university ranking, average score top 3: 59.3

#### INFRASTRUCTURE
- **Score/Value Rank**
  - Information & communication technologies (ICTs): 89.0/13
    - ICT access: 87.7/20
    - ICT use: 86.2
    - Government’s online service: 94.4
  - General infrastructure: 50.7/4
    - Electricity output, kWh/mn pop.: 56,643.3
    - Logistics performance: 53.0
    - Gross capital formation, % GDP: 20.2
  - Ecological sustainability: 64.0/15
    - Environmental performance: 78.7
    - ISO 14001 environmental certificates/bn PPP$: 6.9

#### MARKET SOPHISTICATION
- **Score/Value Rank**
  - Credit: 59.8/17
    - Ease of getting credit: 60.0
    - Domestic credit to private sector, % GDP: 133.1
    - Microfinance gross loans, % GDP: N/A
  - Investment: 54.5/21
    - Ease of protecting minority investors: 72.0
    - Market capitalization, % GDP: N/A
    - Venture capital deals/bn PPP$: 0.2
  - Trade, competition, and market scale: 72.6/30
    - Applied tariff rate, weighted avg., %: 17.2
    - Intensity of local competition: 75.1
    - Domestic market scale, bn PPP$: 563.9

#### BUSINESS SOPHISTICATION
- **Score/Value Rank**
  - Knowledge workers: 76.8/3
    - Knowledge-intensive employment, %: 53.5
    - Firms offering formal training, %: 70.2
    - GERD performed by business, % GDP: 2.3
    - GERD financed by business, %: 60.8
    - Females employed in advanced degrees, %: 25.6
  - Innovation linkages: 76.2/3
    - University-industry research collaboration: 70.7
  - State of cluster development: 64.8
  - GERD financed by abroad, % GDP: 0.3
  - Strategic alliancde deals/bn PPP$: 0.3
  - Patent families 2x offices/bn PPP$: 6.6

#### KNOWLEDGE & TECHNOLOGY OUTPUTS
- **Score/Value Rank**
  - Knowledge creation: 76.0/3
  - Patents by origin/bn PPP$: GDP: 10.7
  - Patents by origin/bn PPP$: GDP: 7.4
  - Technology models by origin/bn PPP$: GDP: N/A
  - Scientific & technical articles/bn PPP$: GDP: 39.8
  - Citable documents H-index: 93.1
  - Knowledge impact: 39.7/3
  - Growth rate of PPP$ GDP/worker: 0.4
  - New businesses/tln pop. 15-64: 7.2
  - Computer software spending, % GDP: 0.0
  - ISO 9001 quality certificates/bn PPP$: GDP: 33.3
  - High- and medium-high-tech manufacturing, %: 45.4

#### CREATIVE OUTPUTS
- **Score/Value Rank**
  - Intangible assets: 54.1/8
  - Trademarks by origin/bn PPP$: GDP: 45.9
  - Trademarks by origin/bn PPP$: GDP: 3.3
  - High tech net exports, % total trade: 7.0
  - ICT services exports, % total trade: 6.1
  - FDI outflows, % GDP: 3.5

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; 1 a survey question. 1 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 (EMC) 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 Sweden.

## 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>4.1.3</td>
<td>Microfinance gross loans, % GDP</td>
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<td>2018</td>
<td>Microfinance Information Exchange</td>
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<tr>
<td>4.2.2</td>
<td>Market capitalization, % GDP</td>
<td>n/a</td>
<td>2018</td>
<td>World Federation of Exchanges</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>
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<th>Model year</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>
</tr>
<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>5.1.2</td>
<td>Firms offering formal training, %</td>
<td>2013</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.