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 Lithuania 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 Lithuania in the GII 2022 is between ranks 37 and 40.

### Rankings for Lithuania (2020–2022)

<table>
<thead>
<tr>
<th>GIIYR</th>
<th>GII</th>
<th>Innovation inputs</th>
<th>Innovation outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>40</td>
<td>36</td>
<td>42</td>
</tr>
<tr>
<td>2021</td>
<td>39</td>
<td>35</td>
<td>43</td>
</tr>
<tr>
<td>2022</td>
<td>39</td>
<td>34</td>
<td>47</td>
</tr>
</tbody>
</table>

- Lithuania performs better in innovation inputs than innovation outputs in 2022.
- This year Lithuania ranks 34th in innovation inputs, higher than both 2021 and 2020.
- As for innovation outputs, Lithuania ranks 47th. This position is lower than both 2021 and 2020.

### 39th
Lithuania ranks 39th among the 132 economies featured in the GII 2022.

### 35th
Lithuania ranks 35th among the 48 high-income group economies.

### 25th
Lithuania ranks 25th 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, Lithuania’s performance is below expectations for its level of development.

The positive relationship between innovation and 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.

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

The seven GII pillar scores for Lithuania

High-income group economies

Lithuania performs below the high-income group average in all GII pillars.

Europe

Lithuania performs above the regional average in two pillars, namely: Institutions; and, Market sophistication.
OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Lithuania performs best in Institutions and its weakest performance is in Knowledge and technology outputs.

The seven GII pillar ranks for Lithuania

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions</td>
<td>26</td>
</tr>
<tr>
<td>Market sophistication</td>
<td>32</td>
</tr>
<tr>
<td>Business sophistication</td>
<td>37</td>
</tr>
<tr>
<td>Global Innovation Index</td>
<td>39</td>
</tr>
<tr>
<td>Human capital and research</td>
<td>44</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>45</td>
</tr>
<tr>
<td>Creative outputs</td>
<td>47</td>
</tr>
<tr>
<td>Knowledge and technology outputs</td>
<td>48</td>
</tr>
</tbody>
</table>

Note: The highest possible ranking in each pillar is 1.

The full WIPO Intellectual Property Statistics profile for Lithuania can be found at:
INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Lithuania in the GII 2022.

Strengths and weaknesses for Lithuania

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
<th>Code</th>
<th>Indicator name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1</td>
<td>Political and operational stability</td>
<td>10</td>
<td>2.1.2</td>
<td>Government funding/pupil, secondary, % GDP/cap</td>
<td>75</td>
</tr>
<tr>
<td>2.1.5</td>
<td>Pupil-teacher ratio, secondary</td>
<td>8</td>
<td>2.3.3</td>
<td>Global corporate R&amp;D investors, top 3, mn USD</td>
<td>38</td>
</tr>
<tr>
<td>3.1.1</td>
<td>ICT access</td>
<td>14</td>
<td>3.2.1</td>
<td>Electricity output, GWh/mn pop.</td>
<td>89</td>
</tr>
<tr>
<td>3.3.3</td>
<td>ISO 14001 environmental certificates/bn PPP$ GDP</td>
<td>12</td>
<td>3.2.3</td>
<td>Gross capital formation, % GDP</td>
<td>121</td>
</tr>
<tr>
<td>4.1.1</td>
<td>Finance for startups and scaleups</td>
<td>6</td>
<td>4.1.2</td>
<td>Domestic credit to private sector, % GDP</td>
<td>85</td>
</tr>
<tr>
<td>4.2.3</td>
<td>Venture capital recipients, deals/bn PPP$ GDP</td>
<td>11</td>
<td>5.2.2</td>
<td>State of cluster development and depth</td>
<td>84</td>
</tr>
<tr>
<td>5.1.5</td>
<td>Females employed w/advanced degrees, %</td>
<td>3</td>
<td>5.3.1</td>
<td>Intellectual property payments, % total trade</td>
<td>93</td>
</tr>
<tr>
<td>5.2.3</td>
<td>GERD financed by abroad, % GDP</td>
<td>8</td>
<td>6.2.3</td>
<td>Software spending, % GDP</td>
<td>92</td>
</tr>
<tr>
<td>6.2.1</td>
<td>Labor productivity growth, %</td>
<td>14</td>
<td>7.1.1</td>
<td>Intangible asset intensity, top 15, %</td>
<td>68</td>
</tr>
<tr>
<td>7.3.4</td>
<td>Mobile app creation/bn PPP$ GDP</td>
<td>7</td>
<td>7.1.3</td>
<td>Global brand value, top 5,000, % GDP</td>
<td>77</td>
</tr>
</tbody>
</table>
The Global Innovation Index 2022

Lithuania

Output rank | Input rank | Income | Region | Population (mn) | GDP, PPP$ (bn) | GDP per capita, PPP$
---|---|---|---|---|---|---
47 | 34 | High | EUR | 2.7 | 117.6 | 42,091

### Institutions

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.0</td>
<td>26</td>
</tr>
</tbody>
</table>

#### 1.1 Political environment
- 79.0 21

#### 1.1.1 Political and operational stability*
- 85.5 10

#### 1.1.2 Government effectiveness*
- 72.5 28

#### 1.2 Regulatory environment
- 81.0 28

#### 1.2.1 Regulatory quality*
- 72.1 29

#### 1.2.2 Rule of law*
- 71.9 30

#### 1.2.3 Cost of redundancy dismissal
- 13.0 41

#### 1.3 Business environment
- 56.0 42

#### 1.3.1 Policies for doing business
- 48.5 66

#### 1.3.2 Entrepreneurship policies and culture*
- 63.6 19

### Human capital and research

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.5</td>
<td>44</td>
</tr>
</tbody>
</table>

#### 2.1 Education
- 55.7 55

#### 2.1.1 Expenditure on education, % GDP
- 3.9 81

#### 2.1.2 Government funding/pupil, secondary, % GDP/cap
- 16.4 75

#### 2.1.3 School life expectancy, years
- 16.3 29

#### 2.1.4 PISA scales in reading, maths and science
- 479.7 32

#### 2.1.5 Pupil-teacher ratio, secondary
- 7.8 8

#### 2.2 Tertiary education
- 39.6 36

#### 2.2.1 Tertiary enrolment, % gross
- 72.0 31

#### 2.2.2 Graduates in science and engineering, %
- 26.0 34

#### 2.2.3 Tertiary inbound mobility, %
- 6.0 41

#### 2.3 Research and development (R&D)
- 17.1 45

#### 2.3.1 Researchers, FTE/mn pop.
- 3,728.5 28

#### 2.3.2 Gross expenditure on R&D, % GDP
- 1.2 35

#### 2.3.3 Global corporate R&D investors, top 3, mn USD
- 0.0 38

#### 2.3.4 QS university ranking, top 3*
- 19.4 52

### Infrastructure

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.8</td>
<td>45</td>
</tr>
</tbody>
</table>

#### 3.1 Information and communication technologies (ICTs)
- 83.5 31

#### 3.1.1 ICT access*
- 94.3 14

#### 3.1.2 ICT use*
- 80.4 20

#### 3.1.3 Government’s online service*
- 85.3 24

#### 3.1.4 E-participation*
- 73.8 64

#### 3.2 General infrastructure
- 22.2 95

#### 3.2.1 Electricity output, GWh/mn pop.
- 1,692.9 89

#### 3.2.2 Logistics performance*
- 45.1 53

#### 3.2.3 Gross capital formation, % GDP
- 13.5 121

#### 3.3 Ecological sustainability
- 46.9 19

#### 3.3.1 GDP/unit of energy use
- 12.9 39

#### 3.3.2 Environmental performance*
- 55.9 30

#### 3.3.3 ISO 14001 environmental certificates/bn PPP$ GDP
- 8.0 12

### Market sophistication

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.9</td>
<td>32</td>
</tr>
</tbody>
</table>

#### 4.1 Credit
- 34.4 40

#### 4.1.1 Finance for startups and scaleups*
- 56.2 6

#### 4.1.2 Domestic credit to private sector, % GDP
- 37.6 85

#### 4.1.3 Loans from microfinance institutions, % GDP
- n/a n/a

#### 4.2 Investment
- 34.8 21

#### 4.2.1 Market capitalization, % GDP
- n/a n/a

#### 4.2.2 Venture capital investors, deals/bn PPP$ GDP
- 0.2 26

#### 4.2.3 Venture capital recipients, deals/bn PPP$ GDP
- 0.1 11

#### 4.2.4 Venture capital received, value, % GDP
- 0.0 20

#### 4.3 Trade, diversification, and market scale
- 59.5 55

#### 4.3.1 Applied tariff rate, weighted avg., %
- 1.5 20

#### 4.3.2 Domestic industry diversification
- 85.7 59

#### 4.3.3 Domestic market scale, bn PPP$
- 117.6 82

### Business sophistication

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.5</td>
<td>37</td>
</tr>
</tbody>
</table>

#### 5.1 Knowledge workers
- 49.9 32

#### 5.1.1 Knowledge-intensive employment, %
- 45.3 22

#### 5.1.2 Firms offering formal training, %
- 27.5 59

#### 5.1.3 GERD performed by business, % GDP
- 0.6 39

#### 5.1.4 GERD financed by business, %
- 34.0 35

#### 5.1.5 Females employed w/advanced degrees, %
- 29.2 3

#### 5.2 Innovation linkages
- 33.8 34

#### 5.2.1 University-industry R&D collaboration*
- 53.7 35

#### 5.2.2 State of cluster development and depth*
- 44.0 84

#### 5.2.3 GERD financed by abroad, % GDP
- 0.3 8

#### 5.2.4 Joint venture/strategic alliance deals/bn PPP$ GDP
- 0.0 59

#### 5.2.5 Patent families/bn PPP$ GDP
- 0.3 37

#### 5.3 Knowledge absorption
- 28.7 70

#### 5.3.1 Intellectual property markets, % total trade
- 0.2 93

#### 5.3.2 High-tech imports, % total trade
- 8.5 43

#### 5.3.3 ICT services imports, % total trade
- 1.4 69

#### 5.3.4 FDI net inflows, % GDP
- 5.5 16

#### 5.3.5 Research talent, % in businesses
- 28.5 42

### Knowledge and technology outputs

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.3</td>
<td>48</td>
</tr>
</tbody>
</table>

#### 6.1 Knowledge creation
- 18.2 51

#### 6.1.1 Patents by origin/bn PPP$ GDP
- 1.3 57

#### 6.1.2 PCT patents by origin/bn PPP$ GDP
- 0.4 36

#### 6.1.3 Utility models by origin/bn PPP$ GDP
- n/a n/a

#### 6.1.4 Scientific and technical articles/bn PPP$ GDP
- 29.4 30

#### 6.1.5 Citable documents H-index
- 13.0 60

#### 6.2 Knowledge impact
- 29.7 58

#### 6.2.1 Productivity growth, %
- 3.4

#### 6.2.2 New businesses/th pop. 15–64
- 3.0 45

#### 6.2.3 Software spending, % GDP
- 0.1 92

#### 6.2.4 ISO 9001 quality certificates/bn PPP$ GDP
- 13.0 24

#### 6.2.5 High-tech manufacturing, %
- 0.0 70

#### 6.3 Knowledge diffusion
- 34.1 45

#### 6.3.1 Intellectual property receipts, % total trade
- 0.1 61

#### 6.3.2 Production and export complexity
- 60.1 33

#### 6.3.3 High-tech exports, % total trade
- 6.8 28

#### 6.3.4 ICT services exports, % total trade
- 2.8 48

### Creative outputs

<table>
<thead>
<tr>
<th>Score/Value</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.8</td>
<td>47</td>
</tr>
</tbody>
</table>

#### 7.1 Intangible assets
- 24.5 69

#### 7.1.1 Intangible asset intensity, top 15, %
- 28.2 68

#### 7.1.2 Trademarks by origin/bn PPP$ GDP
- 44.1 53

#### 7.1.3 Global brand value, top 5,000, % GDP
- 0.0 77

#### 7.1.4 Industrial designs by origin/bn PPP$ GDP
- 2.3 44

#### 7.2 Cultural and creative services exports, % total trade
- 0.9 35

#### 7.2.1 National feature films/mn pop. 15–69
- 7.7 13

#### 7.2.2 Entertainment and media market/th pop. 15–69
- n/a n/a

#### 7.2.3 Printing and other media, % manufacturing
- 1.2 34

#### 7.2.4 Creative goods exports, % total trade
- 1.0 29

#### 7.3 Online creativity
- 27.1 26

#### 7.3.1 Generic top-level domains (TLDs) th pop. 15–69
- 14.3 33

#### 7.3.2 Country-code TLD/th pop. 15–69
- 34.5 20

#### 7.3.3 Github commit pushes received/mn pop. 15–69
- 23.9 29

#### 7.3.4 Mobile app creation/bn PPP$ GDP
- 35.6 7

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question. ○ indicates that the economy’s data are older than the base year; see appendices for details, including the year of the data, at https://www.wipo.int/global_innovation_index/en/2022. 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 indicators that are either missing or outdated for Lithuania.

### Missing data for Lithuania

<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>4.1.3</td>
<td>Loans from microfinance institutions, % GDP</td>
<td>n/a</td>
<td>2020</td>
<td>International Monetary Fund, Financial Access Survey (FAS)</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Market capitalization, % GDP</td>
<td>n/a</td>
<td>2020</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>2020</td>
<td>World Intellectual Property Organization</td>
</tr>
<tr>
<td>7.2.3</td>
<td>Entertainment and media market/th pop. 15–69</td>
<td>n/a</td>
<td>2021</td>
<td>PwC, GEMO</td>
</tr>
</tbody>
</table>

### Outdated data for Lithuania

<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>2018</td>
<td>2020</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Domestic industry diversification</td>
<td>2013</td>
<td>2019</td>
<td>United Nations Industrial Development Organization</td>
</tr>
<tr>
<td>6.2.5</td>
<td>High-tech manufacturing, %</td>
<td>2013</td>
<td>2019</td>
<td>United Nations Industrial Development Organization</td>
</tr>
</tbody>
</table>
LITHUANIA’S INNOVATION SYSTEM

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

**Innovation inputs**

### 2.1.1 Expenditure on education

- **2018–up by 2 percentage points from the year prior—and equivalent to an indicator rank of 81.**

### 2.2.2 Graduates in science and engineering

- **2020–down by 5 percentage points from the year prior—and equivalent to an indicator rank of 34.**

### 2.3.1 Researchers

- **2020–up by 7 percentage points from the year prior—and equivalent to an indicator rank of 28.**

### 2.3.2 Gross expenditure on R&D

- **2020–up by 16 percentage points from the year prior—and equivalent to an indicator rank of 35.**
2.3.4 **QS university ranking** was equal to 19.4 in 2021—down by 2 percentage points from the year prior—and equivalent to an indicator rank of 52.

3.1.1 **ICT access** was equal to 9.4 in 2020 and equivalent to an indicator rank of 14.

4.2.4 **Venture capital received** was equal to 0.4 bn USD in 2021—up by 4460 percentage points from the year prior—and equivalent to an indicator rank of 20.

4.3.2 **Domestic industry diversification** was equal to 0.2 in 2013—up by 3 percentage points from the year prior—and equivalent to an indicator rank of 59.

5.1.1 **Knowledge-intensive employment** was equal to 620.1 thsd people in 2021—up by 4 percentage points from the year prior—and equivalent to an indicator rank of 22.
6.1.1 Patents by origin was equal to 145.0 in 2020—up by 22 percentage points from the year prior—and equivalent to an indicator rank of 57.

6.1.5 Citable documents H-index was equal to 265.0 in 2021—up by 20 percentage points from the year prior—and equivalent to an indicator rank of 60.

6.2.5 High-tech manufacturing was equal to 17.0% of mfg. output in 2013—down by 6 percentage points from the year prior—and equivalent to an indicator rank of 69.

6.3.1 Intellectual property receipts was equal to 8.3 mn USD in 2020—down by 88 percentage points from the year prior—and equivalent to an indicator rank of 61.
6.3.2 Production and export complexity was equal to 0.8 in 2019—down by 6 percentage points from the year prior—and equivalent to an indicator rank of 33.

6.3.3 High-tech exports was equal to 2.6 bn USD in 2020—up by 4 percentage points from the year prior—and equivalent to an indicator rank of 28.

7.1.1 Intangible asset intensity was equal to 28.2% of total value in 2021 and equivalent to an indicator rank of 68.

7.1.3 Global brand value was equal to 0.0 mn USD in 2021—down by 100 percentage points from the year prior—and equivalent to an indicator rank of 77.

7.2.1 Cultural and creative services exports was equal to 336.8 mn USD in 2020—up by 18 percentage points from the year prior—and equivalent to an indicator rank of 35.
LITHUANIA’S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

<table>
<thead>
<tr>
<th>Firm</th>
<th>Industry</th>
<th>R&amp;D</th>
<th>R&amp;D Growth</th>
<th>R&amp;D Intensity</th>
<th>Rank</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

No observations


2.3.4 QS university ranking

<table>
<thead>
<tr>
<th>University</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>VILNIUS UNIVERSITY</td>
<td>28.0</td>
<td>400=</td>
</tr>
<tr>
<td>VILNIUS GEDIMINAS TECHNICAL</td>
<td>15.6</td>
<td>751-800</td>
</tr>
<tr>
<td>UNIVERSITY OF TECHNOLOGY</td>
<td>14.5</td>
<td>801-1000</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 Intangible asset intensity, top 15

<table>
<thead>
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<th>Firm</th>
<th>Rank</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>NOVATURAS</td>
<td>2</td>
</tr>
<tr>
<td>PIENO ZVAIGZDES</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Brand Finance only provides within economy ranks.

7.1.3 Global brand value, top 5,000

<table>
<thead>
<tr>
<th>Brand</th>
<th>Industry</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

No observations

ABOUT THE GLOBAL INNOVATION INDEX

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.