GII 2021 at a glance

The Global Innovation Index 2021 captures the innovation ecosystem performance of 132 economies and tracks the most recent global innovation trends.

Global leaders in innovation, 2021

Top three innovation economies by region

Top three innovation economies by income group

High-income	Upper middle-income	Lower middle-income	Low-income
1. Switzerland	1. China	1. Viet Nam	1. Rwanda ↑
2. Sweden	2. Bulgaria ↑	2. India ↑	2. Tajikistan ☆
3. United States of America	3. Malaysia ↓	3. Ukraine ↓	3. Malawi ☆

↑↓ Indicates the movement of rank within the top three, relative to 2020, and

☆ indicates a new entrant into the top three in 2021.

† Top three in Northern Africa and Western Asia (NAWA) – excluding island economies. The top four in the region, including all economies, are as follows: Israel (1st), Cyprus (2nd), United Arab Emirates (3rd) and Turkey (4th).

* Top three in sub-Saharan Africa (SSA) – excluding island economies. The top five in the region comprise Mauritius (1st), South Africa (2nd), Kenya (3rd), Cabo Verde (4th) and the United Republic of Tanzania (5th).

Source: Global Innovation Index Database, WIPO, 2021.

Notes: World Bank Income Group Classification (June 2020). Year-on-year GII rank changes are influenced by performance and methodological considerations; some economy data are incomplete (see Appendix I).

Global Innovation Index 2021 rankings

GII rank	Economy	Score	Income group rank	Region rank
1	Switzerland	65.5	1	1
2	Sweden	63.1	2	2
3	United States of America	61.3	3	1
4	United Kingdom	59.8	4	3
5	Republic of Korea	59.3	5	1
6	Netherlands	58.6	6	4
7	Finland	58.4	7	5
8	Singapore	57.8	8	2
9	Denmark	57.3	9	6
10	Germany	57.3	10	7
11	France	55.0	11	8
12	China	54.8	1	3
13	Japan	54.5	12	4
14	Hong Kong, China	53.7	13	5
15	Israel	53.4	14	1
16	Canada	53.1	15	2
17	Iceland	51.8	16	9
18	Austria	50.9	17	10
19	Ireland	50.7	18	11
20	Norway	50.4	19	12
21	Estonia	49.9	20	13
22	Belgium	49.2	21	14
23	Luxembourg	49.0	22	15
24	Czech Republic	49.0	23	16
25	Australia	48.3	24	6
26	New Zealand	47.5	25	7
27	Malta	47.1	26	17
28	Cyprus	46.7	27	2
29	Italy	45.7	28	18
30	Spain	45.4	29	19
31	Portugal	44.2	30	20
32	Slovenia	44.1	31	21
33	United Arab Emirates	43.0	32	3
34	Hungary	42.7	33	22
35	Bulgaria	42.4	2	23
36	Malaysia	41.9	3	8
37	Slovakia	40.2	34	24
38	Latvia	40.0	35	25
39	Lithuania	39.9	36	26
40	Poland	39.9	37	27
41	Turkey	38.3	4	4
42	Croatia	37.3	38	28
43	Thailand	37.2	5	9
44	Viet Nam	37.0	1	10
45	Russian Federation	36.6	6	29
46	India	36.4	2	1
47	Greece	36.3	39	30
48	Romania	35.6	40	31
49	Ukraine	35.6	3	32
50	Montenegro	35.4	7	33
51	Philippines	35.3	4	11
52	Mauritius	35.2	41	1
53	Chile	35.1	42	1
54	Serbia	35.0	8	34
55	Mexico	34.5	9	2
56	Costa Rica	34.5	10	3
57	Brazil	34.2	11	4
58	Mongolia	34.2	5	12
59	North Macedonia	34.1	12	35
60	Iran (Islamic Republic of)	32.9	13	2
61	South Africa	32.7	14	2
62	Belarus	32.6	15	36
63	Georgia	32.4	16	5
64	Republic of Moldova	32.3	6	37
65	Uruguay	32.2	43	5
66	Saudi Arabia	31.8	44	6
67	Colombia	31.7	17	6
68	Qatar	31.5	45	7
69	Armenia	31.4	18	8
70	Peru	31.2	19	7
71	Tunisia	30.7	7	9
72	Kuwait	29.9	46	10
73	Argentina	29.8	20	8
74	Jamaica	29.6	21	9
75	Bosnia and Herzegovina	29.6	22	38
76	Oman	29.4	47	11
77	Morocco	29.3	8	12
78	Bahrain	28.8	48	13
79	Kazakhstan	28.6	23	3
80	Azerbaijan	28.4	24	14
81	Jordan	28.3	25	15
82	Brunei Darussalam	28.2	49	13
83	Panama	28.0	50	10
84	Albania	28.0	26	39
85	Kenya	27.5	9	3
86	Uzbekistan	27.4	10	4
87	Indonesia	27.1	27	14
88	Paraguay	26.4	28	11
89	Cabo Verde	25.7	11	4
90	United Republic of Tanzania	25.6	12	5
91	Ecuador	25.4	29	12
92	Lebanon	25.1	30	16
93	Dominican Republic	25.1	31	13
94	Egypt	25.1	13	17
95	Sri Lanka	25.1	14	5
96	El Salvador	25.0	15	14
97	Trinidad and Tobago	24.8	51	15
98	Kyrgyzstan	24.5	16	6
99	Pakistan	24.4	17	7
100	Namibia	24.3	32	6
101	Guatemala	24.1	33	16
102	Rwanda	23.9	1	7
103	Tajikistan	23.9	2	8
104	Bolivia (Plurinational State of)	23.4	18	17
105	Senegal	23.3	19	8
106	Botswana	22.9	34	9
107	Malawi	22.9	3	10
108	Honduras	22.8	20	18
109	Cambodia	22.8	21	15
110	Madagascar	22.5	4	11
111	Nepal	22.5	22	9
112	Ghana	22.3	23	12
113	Zimbabwe	21.9	24	13
114	Côte d'Ivoire	21.0	25	14
115	Burkina Faso	20.5	5	15
116	Bangladesh	20.2	26	10
117	Lao People's Democratic Republic	20.2	27	16
118	Nigeria	20.1	28	16
119	Uganda	20.0	6	17
120	Algeria	19.9	29	18
121	Zambia	19.8	30	18
122	Mozambique	19.7	7	19
123	Cameroon	19.7	31	20
124	Mali	19.5	8	21
125	Togo	19.3	9	22
126	Ethiopia	18.6	10	23
127	Myanmar	18.4	32	17
128	Benin	18.0	33	24
129	Niger	17.8	11	25
130	Guinea	16.7	12	26
131	Yemen	15.4	13	19
132	Angola	15.0	34	27

Source: Global Innovation Index Database, WIPO, 2021.

Note: For an explanation of classifications, see Economy profiles, note 1.

High-income
Uper middle-income
Lower middle-income
Low-income

Europe
Northern America
Latin America and the Caribbean

South East Asia, East Asia, and Oceania
Central and Southern Asia

Northern Africa and Western Asia
Sub-Saharan Africa

Innovation performance at different income levels, 2021

	High-income group	Upper middle-income group	Lower middle-income group	Low-income group
Performance above expectations for level of development	Switzerland	China	Viet Nam	Rwanda
	Sweden	Bulgaria	India	Malawi
	United States of America	Thailand	Ukraine	Madagascar
	United Kingdom	Brazil	Philippines	Tajikistan
	Republic of Korea	Iran (Islamic Republic of)	Mongolia	Burkina Faso
	Netherlands	South Africa	Republic of Moldova	Uganda
	Finland	Peru	Tunisia	Mozambique
	Singapore	Malaysia	Morocco	Mali
	Denmark	Turkey	Kenya	Togo
	Germany	Russian Federation	United Republic of Tanzania	Niger
	France	Montenegro	Uzbekistan	Ethiopia
	Japan	Serbia	Cabo Verde	Guinea
	Hong Kong, China	Mexico	El Salvador	Yemen
	Israel	Costa Rica	Kyrgyzstan	
	Canada	North Macedonia	Pakistan	
	Iceland	Belarus	Bolivia (Plurinational State of)	
	Austria	Georgia	Senegal	
	Ireland	Colombia	Honduras	
	Norway	Armenia	Cambodia	
	Estonia	Jamaica	Nepal	
	Belgium	Bosnia and Herzegovina	Ghana	
	Luxembourg	Azerbaijan	Zimbabwe	
	Czech Republic	Jordan	Zambia	
	Australia	Albania	Egypt	
Performance in line with level of development	New Zealand	Indonesia	Sri Lanka	
	Malta	Paraguay	Côte d'Ivoire	
	Cyprus	Ecuador	Bangladesh	
	Italy	Namibia	Lao People's Democratic Republic	
	Spain	Guatemala		
	Portugal	Argentina	Nigeria	
	Slovenia	Kazakhstan	Algeria	
	Hungary	Lebanon	Cameroon	
	Slovakia	Dominican Republic	Myanmar	
	Latvia	Botswana	Benin	
	Poland		Angola	
	Croatia			
	Mauritius			
	Chile			
	Uruguay			
All other economies	United Arab Emirates			
	Lithuania			
	Greece			
	Romania			
	Saudi Arabia			
	Qatar			
	Kuwait			
	Oman			
	Bahrain			
	Brunei Darussalam			
	Panama			
	Trinidad and Tobago			

Source: Global Innovation Index Database, WIPO, 2021.

Key takeaways

The state of innovation throughout the COVID-19 crisis

1. The GII 2021 finds that investment in innovation has shown great resilience during the COVID-19 pandemic, often reaching new peaks, but that it varies across sectors and regions

Investment in innovation reached an all-time high prior to the pandemic, with research and development (R&D) having grown an exceptional 8.5 percent in 2019.

When the pandemic hit, the big question was what its effect on innovation would be. Historical evidence suggested a severe cutback in innovation investments.

However, despite the human toll and the economic shock resulting from the pandemic, scientific output, R&D expenditure, IP filings and venture capital (VC) deals continued to grow in 2020, building on peak pre-crisis performance:

- Publication of scientific articles worldwide grew by 7.6 percent in 2020.
- Government budget allocations for the top R&D spending economies that have already disclosed their R&D budgets continued to grow in 2020. The top global corporate R&D spenders, for which data is available, grew overall R&D expenditure by around 10 percent in 2020, with 60 percent of R&D-intensive firms reporting an increase.
- International patent filings via WIPO reached a new all-time high in 2020. An increase of 3.5 percent was driven by medical technology, pharmaceuticals and biotechnology.
- VC deals grew by 5.8 percent in 2020, exceeding the average growth rate for the past 10 years. Strong growth in the Asia Pacific region more than compensated for declines in Northern America and Europe. Africa and Latin America and the Caribbean also registered double-digit increases. First quarter figures suggest VC activity will be even more vibrant in 2021.

Firms whose innovation was at the heart of measures to contain the pandemic and its fallout – notably (i) software and information and communication technology (ICT) services, (ii) ICT hardware and electrical equipment and (iii) pharmaceuticals and biotechnology – amplified their investments in innovation. Firms in sectors heavily hit by the pandemic's containment measures – such as transport and travel – cut back their innovation outlays.

However, despite such cutbacks, available data suggest that innovation investments overall proved resilient in the face of the pandemic; and especially so when compared to the depth of the economic downturn.

2. Technological progress at the frontier holds substantial promise

The rapid development of COVID-19 vaccines powerfully fulfills the promise of technological progress. Progress also continues apace in other technology fields – for example, ICT and renewable energy – with the potential to raise living standards, improve human health and protect the environment.

Results of the Global Innovation Index 2021

3. Only a few economies have consistently delivered peak innovation performance

- Switzerland, Sweden, the U.S., and the U.K. have all ranked among the top 5 in the past three years, while the Republic of Korea joins the top 5 of the GII for the first time in 2021.
- The majority of the GII top 25 most innovative economies continue to be from Europe.
- Five Asian economies feature among the top 15 – the Republic of Korea (5th) and Singapore (8th) are in the top 10, followed by China (12th), Japan (13th) and Hong Kong, China (14th).

4. Selected middle-income economies are changing the innovation landscape, starting with China, Turkey, Viet Nam, India and the Philippines are now pulling their weight

- China remains the only middle-income economy among the top 30 most innovative economies globally. Few other middle-income economies have managed to catch-up in innovation.
- Turkey (41st), Thailand (43rd), Viet Nam (44th), the Russia Federation (45th), India (46th), Ukraine (49th) and Montenegro (50th) make it into the GII top 50 this year.
- The TVIP economies alone (Turkey, Viet Nam, India and the Philippines) are systematically catching up. Beyond China, these four particularly large economies together have the potential to change the global innovation landscape for good.

5. Several developing economies are performing above expectation on innovation relative to their level of economic development

- India, Kenya, the Republic of Moldova, and Viet Nam hold the record for overperforming on innovation relative to their level of development for the 11th year in a row.
- Brazil, the Islamic Republic of Iran and Peru overperformed in 2021 for the first time ever.
- Sub-Saharan Africa is the region with the largest number of overperforming economies.

6. The geography of global innovation is changing unevenly

- Northern America and Europe continue to lead far in front of other regions for innovation.
- The innovation performance of South East Asia, East Asia, and Oceania (SEAO) has been the most dynamic in the past decade, and is the only region closing the gap.
- Northern Africa and Western Asia, Latin America and the Caribbean, Central and Southern Asia, and sub-Saharan Africa then follow in that order, albeit – despite strong performances by the Islamic Republic of Iran, Chile, the United Arab Emirates and South Africa – they remain stubbornly a long distance behind.
- In Latin America and the Caribbean, only Chile, Mexico, Costa Rica and Brazil rank among the top 60. Except for Mexico, few economies in this region have managed consistently to up their ranking over the past 10 years.
- In sub-Saharan Africa, only Mauritius and South Africa rank in the top 65; and only Kenya and the United Republic of Tanzania have remained firmly in the top 100 and improved their performance over time. Rwanda regained the lead position among low-income economies in this year's edition of the GII.

7. New science and technology (S&T) clusters are emerging, with the majority located in only a handful of countries

- Tokyo–Yokohama is the top performing S&T cluster once again, followed by Shenzhen–Hong Kong–Guangzhou, Beijing, Seoul and San Jose–San Francisco.
- The U.S. continues to host the highest number of clusters, followed by China, Germany, and Japan. Clusters in China recorded the largest increases in S&T output.
- Brazil, China, India, the Islamic Republic of Iran, Turkey, and the Russian Federation are all middle-income economies hosting top S&T clusters, with big growth seen in Delhi, Mumbai and Istanbul.