Technology and Innovation Report 2021: UNCTAD

March 12, 2021

In news : As per UNCTAD's report, India was the biggest 'overperformer' in frontier technologies among developing countries

About the report

- Report by: United Nations Conference on Trade and Development (UNCTAD)
- It analysed the progress of countries in using frontier technologies, considering their national capacities related to physical investment, human capital and technological effort.

Frontier technologies include artificial intelligence, the internet of things, big data, blockchain, fifth-generation mobile telephony, three-dimensional printing, robotics, drones (remotely controlled flights), gene-editing, nanotechnology and solar power the ones that take advantage of digitalisation and connectivity.

Key findings of the report

India's performance

- According to the country-readiness index released by the UNCTAD, India was the biggest 'overperformer' in frontier technologies than the country's per capita GDP
- As per the report, not only India, but several developing countries showed stronger capabilities to use and adapt frontier technologies above their GDPs, the report highlighted.
- India's rank: Country's actual index ranking was 43, while the estimated one based on per capita income was 108. This meant that India overperformed other countries by 65 ranking positions.

- India was followed by the Philippines, which overperformed by 57 ranking positions.

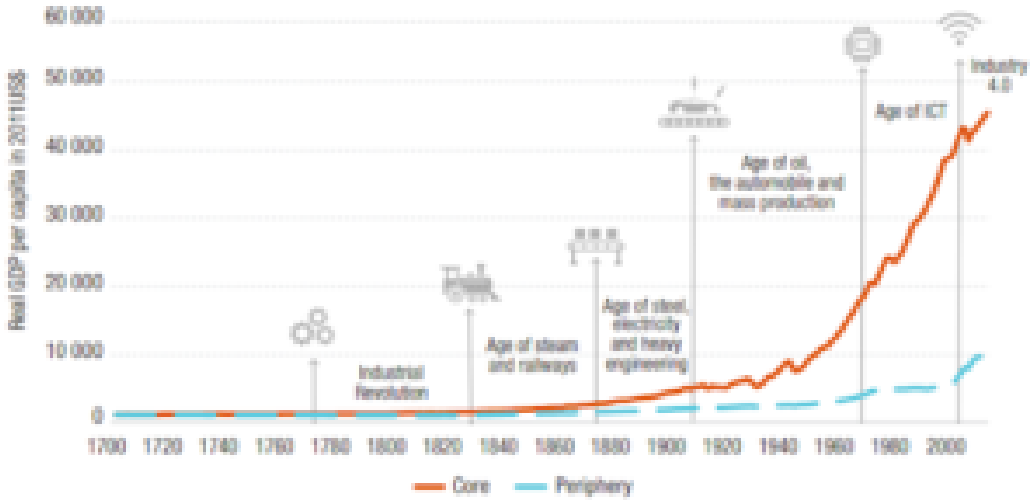
Performance of other countries

- Overperforming countries relative to per capita GDP:

	Country	Overperformance (positions)		Country	Overperformance (positions)
1	India	65	11	Morocco	29
2	Philippines	57	12	Kenya	28
3	Ukraine	47	13	Nepal	28
4	Viet Nam	45	14	Serbia	25
5	China	40	15	Korea, Republic of	24
6	Jordan	34	16	Russian Federation	24
7	Brazil	33	17	Lebanon	24
8	Republic of Moldova	33	18	Togo	23
9	South Africa	29	19	United Kingdom	21
10	Tunisia	29	20	Ghana	20

Source: UNCTAD calculations based on GDP data by the World Bank (World Bank, 2020).

- But Most of the 158 countries assessed were lagging behind.
- The Philippines has a high ranking for industry because of high levels of foreign direct investment in high-technology manufacturing, especially electronics.
- Technological change and inequality through the ages:



Source: UNCTAD, based on data from Maddison Project Database, version 2018, Bolt et al. (2018), Piketty (2003), and Rehavi (2019).

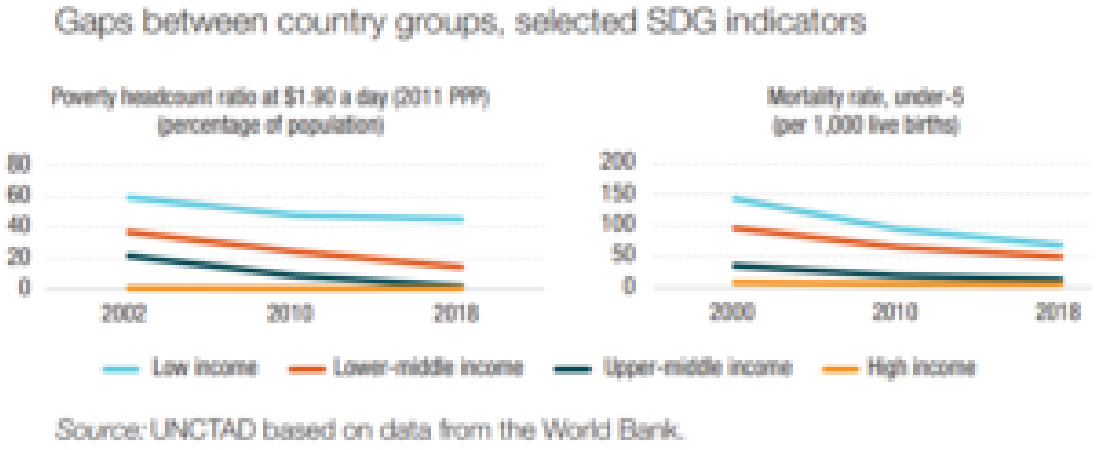
- As per the report, both India and China performed well in research and development(Because-availability of qualified and highly skilled human resources)

- The report highlighted that the United States, Switzerland and the United Kingdom were “best prepared” for frontier technologies

Country name	Total ranking	ICT ranking	Skills ranking	R&D ranking	Industry ranking	Finance ranking
Top 10						
United States of America	1	14	17	2	20	2
Switzerland	2	7	13	13	3	3
United Kingdom	3	17	12	6	11	14
Sweden	4	1	7	16	15	16
Singapore	5	4	9	18	4	18
Netherlands	6	6	10	15	8	23
Korea, Republic of	7	19	27	3	9	8
Ireland	8	24	6	21	1	87
Germany	9	23	16	5	10	39
Denmark	10	2	4	25	21	5
Selected transition and developing economies						
China	25	99	96	1	7	6
Russian Federation	27	39	28	11	66	45
Brazil	41	73	53	17	42	60
India	43	93	108	4	28	76
South Africa	54	69	84	39	71	13

Source: UNCTAD

- According to the report, Most of the best-prepared countries are from Europe, except the Republic of Korea, Singapore and the United States. Some transition economies, such as Russia, also perform well on the index.



Source: UNCTAD based on data from the World Bank.

Suggestions of the report:

- The report urges all developing nations to prepare for a

period of deep and rapid technological change that will profoundly affect markets and societies.

- All countries will need to pursue science, technology and innovation policies appropriate to their development stage and economic, social and environmental conditions.
- This requires strengthening and aligning Science, Technology and Innovation systems and industrial policies, building digital skills among students and the workforce, and closing digital divides.
- Governments should also enhance social protection and ease workforce transitions to deal with the potential negative consequences of frontier technologies on the job market.
- The report also calls for strengthened international cooperation to build innovation capacities in developing countries, facilitate technology transfer, increase women’s participation in digital sectors, conduct technological assessments and promote an inclusive debate on the impact of frontier technologies on sustainable development.