

India's International Trade of Pharmaceutical Products-Medicaments,therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale (ITCHS 3004)

Section 1: Introduction:The study uses trade indicators to analyse merchandise export and import data in a way that should beuseful for the purpose of formulation of policy. The indicators provide a glimpse of the trade patterns ofthe world and the performance of India in comparison to various other countries. They have been usedin the case of India's exports ofPharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage (ITCHS 3004), to indicate the possible directions policy may take

Description:Pharmaceutical Products means any substances resulting from preparing, preserving or compounding of medicinal drugs, vitamins or other materials used to enhance personal health.Any medicine intended for human use, presented in its finished *dosage form* that is subject to control by pharmaceutical legislation (registered). A product may be sold under a *brand name* (e.g., Valium) or under the *generic name* (e.g., diazepam).

The data used in this study has been sourced from the United Nations Comtrade Database and the ExportImport Data Bank, Department of Commerce. Computations are primarily based on data at the ITC-HStwo-digit level (HS-30) and ITC-HS four-digit level (HS-3004) and the latest finalized data available onthe UN Comtrade Database up to year 2021. In several cases, trends from 2017 to 2021 have been shown.

Table 1: ITCHS Classification of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale

ITCHS Code	Name/Description
3004	<p>Name:Medicaments, therapeutic, prophylactic use, in dosage</p> <p>Description:Medicaments (excluding goods of heading No. 30.02, 30.05 or 30.06) consisting of mixed or unmixed products for therapeutic or prophylactic uses, put up in measured doses or in forms or packings for retail sale.</p>

Section 2: Trends in International Trade i.e Exports & Imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale

A glimpse of the top 15 exporters of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc. in the world is given in below Table: 2

Table 2 & 3 shows the top 15 exporters of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc. Germany, Switzerland, USA, France and Italy are the top 5 exporters from 2017 to 2021, comprising 53% in 2021 of the world exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc.

Table 2: Exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc. (ITCHS 3004) in Million US dollars.

Countries	Export Value (in Million USD)				
	2017	2018	2019	2020	2021
Germany	52723.09	55805.77	56523.28	60623.48	64294.26
Switzerland	41002.11	44824.84	47063.98	47351.66	49733.36
USA	20017.15	20616.01	22860.43	23081.43	29020.65
France	24464.63	25443.91	26222.40	28051.41	27002.95
Italy	18233.47	19426.29	24190.71	26945.34	25745.26
Belgium	17328.46	18880.81	20790.69	23763.12	21263.10
The Netherlands	14279.88	16356.41	17786.68	19443.39	19235.28
U K	20478.11	18928.42	18038.87	18412.59	19053.21
India	11530.33	12789.71	14638.75	16635.02	17122.45
Denmark	11261.61	12884.18	15398.85	16590.27	15925.55
Spain	7647.72	8014.42	9308.65	10218.04	10813.65
Canada	5118.77	6679.44	7370.47	7274.79	8526.64
Slovenia	2781.90	3279.87	5031.94	7205.89	8439.46
Sweden	6199.19	6694.35	8044.21	9101.15	8015.38
Austria	5285.12	5384.82	5491.14	6040.36	6459.80
Others	62667.80	72666.51	66767.79	74403.91	41441.00
Total Export Value	321019.35	348675.76	365528.84	395141.87	372092.02

Sources: Computed from UN Comtrade database

Table 3: Shares of countries in % in world export of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc. (ITCHS 3004)

Countries	Export Value (Share %)				
	2017	2018	2019	2020	2021
Germany	16.42	16.01	15.46	15.34	17.28
Switzerland	12.77	12.86	12.88	11.98	13.37
USA	6.24	5.91	6.25	5.84	7.80
France	7.62	7.30	7.17	7.10	7.26
Italy	5.68	5.57	6.62	6.82	6.92
Belgium	5.40	5.42	5.69	6.01	5.71
The Netherlands	4.45	4.69	4.87	4.92	5.17
U K	6.38	5.43	4.94	4.66	5.12
India	3.59	3.67	4.00	4.21	4.60
Denmark	3.51	3.70	4.21	4.20	4.28
Spain	2.38	2.30	2.55	2.59	2.91
Canada	1.59	1.92	2.02	1.84	2.29
Slovenia	0.87	0.94	1.38	1.82	2.27
Sweden	1.93	1.92	2.20	2.30	2.15
Austria	1.65	1.54	1.50	1.53	1.74
Others	19.52	20.82	18.26	18.84	11.13
Total Export Value	100	100	100	100	100

Sources: Computed from UN Comtrade database

Similarly, tables 4 and 5 below show the total import of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. by the top fifteen countries and their percentage shares respectively. The top five importers in the list consist of USA, Germany, Switzerland, China, and Japan comprising more than 48% in 2021 of the world imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc.

Table 4: Imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc.(ITCHS 3004) in Million US dollars.

Countries	Import Value (in Million USD)				
	2017	2018	2019	2020	2021
USA	65042.40	71615.65	78878.16	81861.05	84496.72
Germany	26132.42	28665.30	30619.83	34142.70	33877.30
Switzerland	19301.91	19417.20	21030.22	25885.32	27021.44
China	17180.74	18146.64	21200.45	21163.30	23503.28
Japan	14815.93	16561.28	16701.58	16948.88	18130.05
France	14685.52	15469.14	15786.33	18151.10	17937.34
Italy	15171.51	16156.92	16786.50	18366.71	17327.14
Belgium	13899.75	14344.57	17779.64	18930.83	16370.20
U K	17536.55	16652.28	14712.94	14875.81	15033.32
The Netherlands	8617.53	9635.43	9558.32	11275.04	13388.04
Spain	9778.31	10495.23	10222.26	11037.10	11900.04
Canada	7155.65	7607.67	8351.14	8494.74	9463.45
Australia	5535.52	5444.39	5420.35	5799.98	5758.87
Poland	4439.89	5051.82	5049.87	5223.64	5739.15
Slovenia	1060.07	1632.52	3913.64	5322.54	5626.10
Others	111783.46	116971.04	118871.02	120879.43	84976.11
Total Import Value	352137.15	373867.09	394882.25	418358.16	390548.54

Sources: Computed from UN Comtrade database

Table 5: Shares of countries in % in world imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. (ITCHS 3004)

Countries	Import Value (Share %)				
	2017	2018	2019	2020	2021
USA	18.47	19.16	19.98	19.57	21.64
Germany	7.42	7.67	7.75	8.16	8.67
Switzerland	5.48	5.19	5.33	6.19	6.92
China	4.88	4.85	5.37	5.06	6.02
Japan	4.21	4.43	4.23	4.05	4.64
France	4.17	4.14	4.00	4.34	4.59
Italy	4.31	4.32	4.25	4.39	4.44
Belgium	3.95	3.84	4.50	4.53	4.19
United Kingdom	4.98	4.45	3.73	3.56	3.85
Netherlands	2.45	2.58	2.42	2.70	3.43
Spain	2.78	2.81	2.59	2.64	3.05
Canada	2.03	2.03	2.11	2.03	2.42
Australia	1.57	1.46	1.37	1.39	1.47
Poland	1.26	1.35	1.28	1.25	1.47
Slovenia	0.30	0.44	0.99	1.27	1.44
Others	31.74	31.29	30.10	28.89	21.76
Total Import Value	100	100	100	100	100

Sources: Computed from UN Comtrade database

Tables 6 and 7 below show the top fifteen destinations for Indian exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc.(ITCHS 3004)denoting the values and percentage shares respectively. USA, South Africa, U K, NigeriaandRussiaare the countries which constituted thelargest markets for India’s exportsofcommodity class (ITC-HS 3004) from 2017-2021with export-value share of 30% in 2021.

Table 6: India’s exports ofPharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. (ITCHS 3004) tovarious countries (in million US dollars)

Countries	Export Value (in Million USD)				
	2017	2018	2019	2020	2021
USA	4375.43	4801.12	6123.10	6716.14	6331.44
South Africa	487.15	529.06	506.40	683.36	630.72
U K	394.28	519.19	436.62	538.70	605.73
Nigeria	316.14	352.17	310.00	354.65	489.72
Russia	396.28	396.84	460.97	407.50	469.53
France	153.76	179.19	210.72	265.34	373.83
Australia	207.87	235.99	239.49	278.54	328.79
Brazil	163.53	206.08	213.05	230.14	316.08
Canada	150.98	221.79	236.22	304.21	312.13
Germany	151.58	182.48	255.60	284.52	277.19
Philippines	167.51	176.23	200.36	229.94	246.61
Kenya	179.64	203.43	221.69	203.66	246.22
Belgium	148.59	177.39	181.23	246.99	230.50
The Netherlands	113.28	103.13	154.69	193.02	222.69
United Rep. of Tanzania	213.82	118.95	185.17	214.70	219.00
Others	15440.83	17176.39	19342.19	22118.62	22944.74
Total Export Value	23060.67	25579.42	29277.50	33270.03	34244.91

Sources: Computed from UN Comtrade database

Table 7: Various countries’ share (in %) in Indian exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. (ITCHS 3004)

Countries	Export Value (Share %)				
	2017	2018	2019	2020	2021
USA	18.97	18.77	20.91	20.19	18.49
South Africa	2.11	2.07	1.73	2.05	1.84
United Kingdom	1.71	2.03	1.49	1.62	1.77
Nigeria	1.37	1.38	1.06	1.07	1.43
Russian Federation	1.72	1.55	1.57	1.22	1.37
France	0.67	0.70	0.72	0.80	1.09
Australia	0.90	0.92	0.82	0.84	0.96
Brazil	0.71	0.81	0.73	0.69	0.92
Canada	0.65	0.87	0.81	0.91	0.91
Germany	0.66	0.71	0.87	0.86	0.81
Philippines	0.73	0.69	0.68	0.69	0.72
Kenya	0.78	0.80	0.76	0.61	0.72
Belgium	0.64	0.69	0.62	0.74	0.67
Netherlands	0.49	0.40	0.53	0.58	0.65
United Rep. of Tanzania	0.93	0.47	0.63	0.65	0.64
Others	66.96	67.15	66.07	66.48	67.00
Total Export Value	100	100	100	100	100

Sources: Computed from UN Comtrade database

In similar vein, tables 8 and 9 show the top fifteen destinations for Indian imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc.denoting the values and percentage shares respectively. USA, Belgium, Germany, U K and Switzerland are the countries from which India imported Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc.in descending order of magnitude of import-values, from 2017-2021 with total import-value share of around 31% in 2021.

Table 8: India's imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. (ITCHS 3004) from various countries (in million US dollars)

Countries	Import Value (in Million USD)				
	2017	2018	2019	2020	2021
USA	221.12	185.60	155.62	160.68	327.98
Belgium	25.72	72.44	127.89	157.12	240.06
Germany	148.02	136.50	142.23	112.85	185.03
U K	57.88	44.48	41.08	44.50	183.48
Switzerland	85.85	182.79	181.07	184.92	145.78
Spain	19.24	9.68	2.95	4.50	116.53
Denmark	68.33	65.52	72.73	67.62	94.43
Brazil	70.30	65.52	76.02	75.52	81.92
Italy	72.84	52.48	43.95	44.21	62.54
The Netherlands	11.92	48.16	251.47	56.61	55.81
Russia	0.66	1.28	0.15	0.25	45.96
France	53.99	30.81	26.94	27.46	43.44
Ireland	8.75	10.88	12.16	11.75	30.36
China	25.67	27.25	23.84	14.46	27.66
Sweden	17.78	8.47	19.70	18.23	24.26
Others	1170.20	1183.64	1397.65	1138.32	1876.87
Total Import Value	2058.28	2125.50	2575.44	2119.00	3542.09

Sources: Computed from UN Comtrade database

Table 9: Various countries' share in % in Indian imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. (ITCHS 3004)

Countries	Import Value (Share %)				
	2017	2018	2019	2020	2021
USA	10.74	8.73	6.04	7.58	9.26
Belgium	1.25	3.41	4.97	7.41	6.78
Germany	7.19	6.42	5.52	5.33	5.22
United Kingdom	2.81	2.09	1.60	2.10	5.18
Switzerland	4.17	8.60	7.03	8.73	4.12
Spain	0.93	0.46	0.11	0.21	3.29
Denmark	3.32	3.08	2.82	3.19	2.67
Brazil	3.42	3.08	2.95	3.56	2.31
Italy	3.54	2.47	1.71	2.09	1.77
Netherlands	0.58	2.27	9.76	2.67	1.58
Russian Federation	0.03	0.06	0.01	0.01	1.30
France	2.62	1.45	1.05	1.30	1.23
Ireland	0.43	0.51	0.47	0.55	0.86
China	1.25	1.28	0.93	0.68	0.78
Sweden	0.86	0.40	0.77	0.86	0.68
Others	56.85	55.69	54.27	53.72	52.99
Total Import Value	100	100	100	100	100

Sources: Computed from UN Comtrade database

Section 3: Export Intensity Index

Export Trade Intensity Index (ETII) of a country with respect to an importing country is the share of the exporting country's merchandise going to that particular importing country divided by the share of world exports going to that importing country. In other words, it is the importance of that importing country as a destination for the exporting country's merchandise outflow, as compared to the importance that importing country enjoys as a destination of world exports. But algebraically, it is equal to the exporting country's share in the importer's market as compared to the same country's market share in the world market. Table 10: below shows the indices of some countries with respect to India for ITC-HS Chapter 27, Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc. belong.

Table 10: Export Trade Intensity Indices for Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc (ITC-HS Chapter 30) of Countries w.r.t. India

Countries	2016	2017	2018	2019	2020
USA	2.34	1.76	1.60	2.02	1.62
South Africa	8.12	7.77	7.84	8.42	9.46
U K	0.55	0.67	1.09	0.68	0.70
Russia	1.52	1.26	1.25	1.37	1.17
Nigeria	11.62	9.77	12.05	9.24	8.56
Canada	0.49	0.56	0.70	0.73	0.88
Brazil	1.25	1.16	1.41	1.57	1.58
Germany	0.16	0.23	0.26	0.21	0.27

Source: Computed from UN Comtrade database

Table 10 shows that the Export Intensity Indices of India with USA, South Africa, UK, Russia, Nigeria and Brazil are greater than 1, implying India gives much more importance to these countries as a destination for its exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc. than the rest of the world does.

Section 4: RCA and RCII

While looking at the Export Intensity Index is one approach, the other involves the use of information regarding source countries which places high importance on its exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc. in terms of value, relative to the importance in world exports; and likewise, also enjoying similar relative importance in the destination country's imports. The first is known as Revealed Comparative Advantage (RCA) and the second Revealed Comparative Import Inclination (RCII). RCA index for a commodity (or commodity group) exported from the source country is higher than 1 if its importance is more in the source country's total exports than in world exports, and vice versa. Similarly, RCII index for the destination country's imports for a commodity (or commodity group) is higher than 1 if its importance is more in the destination country's overall imports than in world imports, and vice versa.

Table 11: RCA of various countries' exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc.(ITC-HSChapter30)

Countries	2016	2017	2018	2019	2020
Germany	1.85	1.56	1.88	1.79	1.52
Switzerland	7.11	6.29	7.33	7.67	5.83
Ireland	7.89	7.89	9.69	9.43	7.75
USA	0.99	0.74	0.84	0.93	0.80
Belgium	3.39	2.69		3.52	3.37
France	1.98	1.61	1.80	1.91	1.69
Italy	1.52	1.47	1.65	1.98	1.64
India	1.61	1.17	1.34	1.52	1.47

Source: Computed from UN Comtrade database

For the year 2021, the RCA of various countries' exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc.(ITC-HSChapter 30) is given in table 11. India is at an advantage in supply-side for exports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc, except USA to the world since $RCA > 1$ as seen from table 11.

Similarity, if the RCII in the destination country is greater than 1 then the country imports Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc. to an extent more than overall world trends warrant. Therefore, if India seeks to expand its exports, these countries are the preliminary list of options.

Table 12: RCII of various countries' imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc(ITC-HSChapter30)

Countries	2016	2017	2018	2019	2020
USA	1.23	1.14	1.51	1.43	1.40
Germany	1.39	1.31	1.53	1.41	1.40
Switzerland	2.75	3.06	3.66	3.24	3.22
Belgium	2.81	2.43		3.08	3.08
China	0.39	0.37	0.42	0.47	0.41
France	1.18	1.07	1.30	1.15	1.22
Japan	1.21	0.95	1.16	1.10	1.11
India	0.14	0.12	0.14	0.15	0.16

Source: Computed from UN Comtrade database

Table 12 shows the RCII indices of various countries' imports of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. ports of (ITC-HS Chapter 30). Table 12 below shows that USA, Germany, Switzerland, Belgium, France & Japan have $RCII > 1$ indicating a higher than average appetite for imports of the commodity that the rest of the world and these countries should thus serve as potent destination markets for India's Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc in heading no (ITC HS 3004) goods exports.

Section 5: Competitiveness Index and Intra-Industry Trade

The idea of market dominance can be viewed from a different perspective. The competitiveness index of India's export of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. tells how important India's product is (in terms of market value share) with respect to its competitors in a destination country. While an index value greater than 1 is definitely good for India, a value less than 1 shows that it has been overshadowed by the products of other exporters. Table 13 shows the indices of Indian exports as well as other top exporters of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc. (USA, South Africa, UK, Russia and Nigeria) for the top importing countries (USA, South Africa, UK, Russia and Nigeria). For Indian exports, the index is high for USA, South Africa, Russia and Nigeria (>1). It has poor values, especially for UK, implying India must step up its game in these importing countries (with index < 1) to compete with other exporters of Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc.

Table 13: Competitiveness Indices (Product) of various exporter countries w.r.t Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc. (ITC-HS Chapter 30)

Countries	2016	2017	2018	2019	2020
USA	3.15	2.64	2.17	2.34	2.21
South Africa	7.44	8.92	8.83	7.82	9.14
UK	0.58	0.53	0.82	0.64	0.79
Russia	1.97	2.10	1.87	1.73	1.72
Nigeria	16.44	18.93	15.37	8.04	8.24

Source: Computed from UN Comtrade database

Table 14: Competitiveness Indices (Market) of various exporter countries w.r.t Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc. (ITC-HS Chapter 30)

Countries	2016	2017	2018	2019	2020
USA	3.85	3.10	2.60	2.65	2.75
South Africa	4.67	4.69	5.55	4.10	4.75
UK	1.12	0.92	1.49	1.18	1.83
Russia	3.86	4.09	3.62	2.93	3.24
Nigeria	8.34	9.52	7.64	1.73	2.83

Source: Computed from UN Comtrade database

Intra-industry trade is of importance as it can increase and expand markets. The standard indicator is the Index of Intra-industry Trade (IIT). The index can be calculated within individual sectors as well. Intra-industry trade is generally high in case of the manufacturing sector. An increase in IIT may signify a maturing of this sector, and hence, a regular monitoring of this index may be useful. Intra-industry trade is a common world-wide phenomenon export and import of the commodities produced by the same industry or sector. The degree to which this occurs is generally measured by the Grubel-Lloyd Index, which is the difference between the exports of the particular sector to a partner country and imports of the products of the same sector from the same partner, divided by the sum of these two, and whole thing obtained subtracted from one.

Table 15: Intra-Industry Trade in Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale etc.(ITC-HSChapter30) between India and Some Major Importing Countries in 2020

IIT between India and Partner Countries	
Countries	Grubel-Lloyd Index in 2020
Germany	0.71
Switzerland	0.11
Ireland	0.90
USA	0.08
Belgium	0.88
France	0.64

Source: Computed from UN Comtrade database

Table 15 shows varying degrees of IIT between India and some major partners. The values are very high (>0.9) between India and Ireland showing greater interdependence (exports and imports by the same sector) in international trade within the same industry. The sources of gains from intra-industry trade between similar economies namely, the learning that comes from a high degree of specialization and splitting up the value chain and from economies of scale are not contradictory to the earlier theory of comparative advantage.

Section6: Summary

ForPharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc., Germany, Switzerland, USA, France andItalyare the top five exporters in 2021 covering 53% ofworldexportvalueof the commodity. The top five importersin the list consist of USA, Germany, Switzerland, China, and Japan comprising more than 48% in 2021 of the world imports of Pharmaceutical Products ...etc.

USA, South Africa, U K, Nigeria andRussia are the countries which constituted thelargest markets for India's exportsof commodity class (ITC-HS 3004) from 2017-2021 with export-value share of 30% in 2021. USA, Belgium, Germany, U K and Switzerland are the countries from which India imported Pharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc.in the magnitude of import-values, from 2017-2021 with total import-value share of around 31% in 2021.

The market indicators for India in terms ofPharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale ...etc.,can be improved with respect to other major importers. Higher values of the Competitiveness indexbetween India and the major importing countries USA, South Africa, UK, Russia and Nigeria.

Export Intensity Indices of India with USA, South Africa, UK, Russia, Nigeria and Brazilaregreaterthan 1, implying India gives much more importance to thesecountriesasadestinationforitsexportsofPharmaceutical Products-Medicaments, therapeutic, prophylactic use, in dosage or in forms or packaging for retail sale...etc.than the rest of the world does.

1. Revealed Comparative Advantage Index (RCA): RCA for a commodity exported from a country means the importance of this commodity in the export trade of the country in comparison with the importance of the commodity in world exports. Mathematically,

$$RCA_{ij} = (x_{ij}/X_{it})/(x_{wj}/X_{wt})$$

Where, x_{ij} = country i's exports of commodity j

X_{it} = country i's total exports

x_{wj} = world exports of commodity j

X_{wt} = total world exports.

When $RCA_{ij} > 1$, i.e. when j's weight in i's exports (x_{ij}/X_{it}) is more than j's weight in world exports (x_{wj}/X_{wt}), country i is said to have a revealed comparative advantage in commodity j. There is a revealed comparative disadvantage if $RCA_{ij} < 1$. When $RCA_{ij} = 1$, there is neither comparative advantage nor disadvantage.

By studying the RCA for a commodity exported from a country over time, it can be seen whether the country in question is gaining in comparative advantage regarding a particular commodity. If RCA is falling, the reasons require investigation. (x_{ij}/X_{it}) may have risen less or fallen more than proportionately than (x_{wj}/X_{wt})

2. one way of checking the reasons for a fall in RCA for a particular commodity is seeing which markets are responsible for this fall. This can be seen from another, slightly different, indicator called Export Specialization Index (ESI).

$$ESI = (x_{ij}/X_{it})/(m_{kj}/M_{kt}),$$

Where, m_{kj} = import of commodity j to market k

M_{kt} = world imports of commodity k.

(m_{kj}/M_{kt}) gives the weight of j in market k. So, if RCA_{ij} is seen to fall, then it can be found out for which markets ESI has fallen. Special attention may then be given to those markets regarding the commodity in question.

3. Like RCA, the revealed comparative import intensity (RCII) can also be measured.

$$RCII = (m_{ij}/M_{it})/(m_{wj}/M_{wt})$$

Where m_{ij} = country i's imports of commodity j

M_{it} = country i's total imports

m_{wj} = world imports of commodity j

M_{wt} = total world imports.

This gives an idea whether the proportion of imports of any commodity is more than expected, in terms of the share of that commodity in world imports

4. Bilateral trade between countries is an important area of trade policy in that bilateral trade agreements are signed to increase trade. However, some points require to be examined before entering into

these agreements. Firstly, it is necessary to see whether there is trade complementarity between the two countries. That is, whether the exports of one country match with the imports of the other, and vice versa.

Naturally, when trade complementarity is high between two countries, it is beneficial to enter into a trade agreement. If a partner country does not import what India generally exports, there is little point in entering into a trade agreement with that country. The Trade Complementarity Index (TCI) is given as follows:

$$TCI = 1 - \sum (|m_{ik} - x_{ij}| / 2)$$

Where, m_{ik} = share of commodity i in the imports of market k
 x_{ij} = share of commodity i in the exports of country j .

It is evident that TCI can have values between 0 and 1. When these shares, m_{ik} and x_{ij} are close to each other, (i.e. when trade complementarity increases) TCI is close to 1. As their difference increases, TCI falls.

TCIW = TCI between a country and the World.

RTCI (Relative Trade Complementarity Index) between country k and country j = (TCI between country k and country j) / (TCI between country k and the world)

RTCI gives a measure of the complementarity between two countries as compared to the complementarity between the first country and the world.

5. But another fact may be checked while proceeding to enter into a trade agreement. The trade between the two countries may already be quite high. This can be measured by the Export Intensity Index (EII).

$$EII = (x_{ij}/X_{it}) / (x_{wj}/X_{wt})$$

where x_{ij} = country i 's exports to country j

X_{it} = country i 's exports to the world

x_{wj} = world exports to country j

X_{wt} = total world exports.

This essentially measures the relative importance of country j in country i 's export trade, in comparison with country j 's importance as world export destination. $EII < 1$ or > 1 implies less than or more than expected bilateral trade, respectively. If EII is already high, there is little scope of further increasing bilateral trade between i and j . But if it is low, and if TCI is high, bilateral trade can very well be increased through trade agreement.

6. A related indicator is the Export Similarity Index (XSI), which helps us identify a country's competitors.

$$XSI = \sum [\min (X_{ij}, X_{ik}) * 100]$$

Where, X_{ij} = share of commodity i in exports of country j

X_{ik} = share of commodity i in exports of country k

XSI can vary between 0 and 100. It will be seen that when $X_{ij} = X_{ik}$ for all i 's, $XSI = 100$, which means complete export similarity between countries j and k . As X_{ij} and X_{ik} start to differ, XSI falls. Countries exporting the same commodities are competitors in the world market, and export strategies, taking in to account such competition, have to be designed accordingly.

7. It is necessary to know whether the exports of a country are concentrated in a few products. A high concentration, while enabling a country to reap the benefits of specialization and economies of scale, also

exposes a country to the risks arising from the vicissitudes of global trade. The Hirschman Index (HI), used by UNCTAD, is a handy measure for monitoring export concentration.

$$HI = \sqrt{[\sum Sq(xi/Xt)]}$$

Where, x_i is the country's exports of commodity i

X_t is the country's total exports.

HI ranges from $(1/n)$ to 1. The higher the value of HI, the higher the concentration of exports.

8. Intraindustry trade is of importance as it can increase and expand markets. The standard indicator is the Index of Intraindustry Trade (IIT).

$$IIT_{jk} = 1 - [\sum |X_{ijk} - M_{ijk}| / (X_{ijk} + M_{ijk})]$$

Where, X_{ijk} = exports of products of industry i from country j to country k

M_{ijk} = imports of products of industry i from country k to country j .

IIT can take values from 1 (extremely high intra-industry trade, exports equalling imports) to 0 (no interindustry trade at all)
