

# India's International Trade of Fabrics; pile fabrics, Including long pile fabrics and terry fabrics, knitted or crocheted (ITCHS 6001)

## Section 1: Introduction

The study uses trade indicators to analyze merchandise export and import data in a way that should be useful for the purpose of formulation of policy. The indicators provide a glimpse of the trade patterns of the world and the performance of India in comparison to various other countries. They have been used in the case of India's exports of Pile & terry fabrics (ITCHS 6001), to indicate the possible directions policy may take.

Computations are primarily based on data at the ITC-HS two-digit level (HS-60) and ITC-HS six-digit level (HS-600110) and the latest finalized data available on the UN Comtrade Database up to year 2021.

*Table 1: ITC'HS Classification of Pile Fabrics)*

<b>ITC HS Code</b>	<b>Name/Description</b>
6001	Fabrics; pile fabrics, including long pile fabrics and terry fabrics, knitted or crocheted
600110	Fabrics; long pile fabrics, knitted or crocheted

## Section 2: Trends in International Trade i.e. Exports and Imports of Pile & Terry Fabrics

A glimpse of the top fifteen exporters of Pile & Terry Fabrics, in the world is given in table 2.

Table 2: Exports of Pile & Terry Fabrics (ITC HS -600110) in million US \$

Country	2017	2018	2019	2020	2021
China	3400.93	3993.23	4304.07	3996.68	5628.83
South Korea	273.34	259.96	210.26	169.72	0.00
Malaysia	140.67	145.96	170.42	152.72	172.35
Italy	95.20	114.54	100.08	79.41	108.63
USA	103.55	88.06	84.98	58.80	70.61
Germany	75.38	67.63	64.70	67.76	79.48
Viet Nam	57.43	73.58	98.84	92.60	0.00
Turkey	43.22	45.84	48.72	50.29	79.66
Spain	48.91	49.96	49.64	39.99	56.62
Hong Kong SAR	62.86	52.14	38.47	38.33	52.68
Netherlands	44.68	41.71	34.57	28.60	47.50
Singapore	35.53	36.94	35.52	42.30	0.00
India	12.74	14.49	19.09	13.26	53.08
Thailand	21.27	26.09	30.72	27.72	0.00
United Kingdom	20.57	21.31	19.32	17.84	23.34
Others	463.27	399.85	386.61	341.40	365.77
<b>Grand Total</b>	<b>4899.55</b>	<b>5431.31</b>	<b>5696.02</b>	<b>5217.43</b>	<b>6738.54</b>

Sources: Computed from UN Comtrade Database

Table 3: Shares of countries in % in world exports of Pile & Terry Fabrics of (ITC'HS - 600110)

Country	2017	2018	2019	2020	2021
China	69.41	73.52	75.56	76.60	83.53
South Korea	5.58	4.79	3.69	3.25	0.00
Malaysia	2.87	2.69	2.99	2.93	2.56
Italy	1.94	2.11	1.76	1.52	1.61
USA	2.11	1.62	1.49	1.13	1.05
Germany	1.54	1.25	1.14	1.30	1.18
Viet Nam	1.17	1.35	1.74	1.77	0.00
Turkey	0.88	0.84	0.86	0.96	1.18
Spain	1.00	0.92	0.87	0.77	0.84
Hong Kong SAR	1.28	0.96	0.68	0.73	0.78
Netherlands	0.91	0.77	0.61	0.55	0.70
Singapore	0.73	0.68	0.62	0.81	0.00
India	0.26	0.27	0.34	0.25	0.79
Thailand	0.43	0.48	0.54	0.53	0.00
United Kingdom	0.42	0.39	0.34	0.34	0.35
Others	9.46	7.36	6.79	6.54	5.43
<b>Grand Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Sources: Computed from UN Comtrade Database

Tables 2 and 3 show the top fifteen exporters of Pile & Terry Fabrics and their percentage shares. China, South Korea, Malaysia, Italy & USA are the top five exporters of Pile & Terry Fabrics from 2017 to 2021. Together, these five countries covered more than 88.75% per cent of export value in 2021.

Table 4: Imports of Pile & Terry Fabrics (ITC HS -600110) in million US \$

Country	2017	2018	2019	2020	2021
Viet Nam	202.28	201.10	345.59	358.76	0.00
Mexico	220.79	231.17	213.32	141.41	211.57
China	202.11	187.75	173.91	154.89	184.15
Indonesia	64.36	136.01	172.05	189.21	249.89
Brazil	127.09	137.20	132.32	138.40	231.12
Morocco	101.22	164.83	209.14	207.84	0.00
USA	125.03	122.08	121.21	114.31	147.10
Turkey	155.36	99.72	97.93	93.51	161.52
Jordan	174.64	172.26	134.72	104.42	0.00
Pakistan	116.37	110.22	62.37	80.37	121.84
Hong Kong	138.32	99.39	68.00	59.62	79.42
Russia	75.75	95.62	120.12	126.92	0.00
Poland	35.25	51.24	51.88	60.80	80.06
Egypt	48.59	42.14	53.82	54.39	58.88
Italy	60.41	54.25	46.86	48.36	45.69
Others	1049.13	1058.21	1165.22	961.82	1021.99
<b>Grand Total</b>	<b>2896.70</b>	<b>2963.19</b>	<b>3168.46</b>	<b>2895.01</b>	<b>2593.22</b>

Sources: Computed from UN Comtrade Database

Table 5: Shares of countries in % in world imports of Pile & Terry Fabrics of (ITC'HS – 600110)

Country	2017	2018	2019	2020	2021
Viet Nam	6.98	6.79	10.91	12.39	0.00
Mexico	7.62	7.80	6.73	4.88	8.16
China	6.98	6.34	5.49	5.35	7.10
Indonesia	2.22	4.59	5.43	6.54	9.64
Brazil	4.39	4.63	4.18	4.78	8.91
Morocco	3.49	5.56	6.60	7.18	0.00
USA	4.32	4.12	3.83	3.95	5.67
Turkey	5.36	3.37	3.09	3.23	6.23
Jordan	6.03	5.81	4.25	3.61	0.00
Pakistan	4.02	3.72	1.97	2.78	4.70
Hong Kong	4.78	3.35	2.15	2.06	3.06
Russia	2.61	3.23	3.79	4.38	0.00
Poland	1.22	1.73	1.64	2.10	3.09
Egypt	1.68	1.42	1.70	1.88	2.27
Italy	2.09	1.83	1.48	1.67	1.76
Others	36.22	35.71	36.78	33.22	39.41
<b>Grand Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Sources: Computed from UN Comtrade Database

Tables 4 and 5 show the top fifteen importers of Pile & Terry Fabrics in the world and their percentage shares. Vietnam, Mexico, China, Indonesia & Brazil are the top five importers of Pile & Terry Fabrics from 2017 to 2021. Together, these five countries contribute 33.81% per cent of import value in 2021.

Table 6: India's Exports of Pile & Terry Fabrics (ITC HS -600110) to various countries (in million US \$)

Partner Country	2017	2018	2019	2020	2021
Bangladesh	7.35	7.64	8.37	4.89	18.94
Sri Lanka	3.51	3.64	4.62	2.96	18.49
USA	0.02	0.08	0.07	2.75	3.74
Kenya	0.01	0.02	0.01	0.05	3.91
Brazil	0.11	1.04	0.83	0.48	0.45
Viet Nam	0.04	0.28	0.93	0.18	0.92
Djibouti	0.00	0.00	0.00	0.00	2.33
Nepal	0.18	0.28	0.28	0.39	1.17
Myanmar	0.00	0.00	1.84	0.13	0.00
Egypt	0.57	0.13	0.44	0.05	0.00
United Kingdom	0.00	0.00	0.18	0.22	0.62
Mauritius	0.14	0.12	0.16	0.15	0.00
El Salvador	0.04	0.33	0.00	0.00	0.18
United Arab Emirates	0.04	0.03	0.17	0.08	0.17
Ethiopia	0.00	0.11	0.00	0.00	0.32
Others	13.48	15.30	20.28	14.20	54.92
<b>Grand Total</b>	<b>25.48</b>	<b>28.99</b>	<b>38.19</b>	<b>26.53</b>	<b>106.15</b>

Sources: Computed from UN Comtrade Database

Table 7: Varies countries share in % in Indian exports of Pile & Terry Fabrics of (ITC'HS - 600110)

Partner Country	2017	2018	2019	2020	2021
Bangladesh	28.84	26.35	21.93	18.44	17.84
Sri Lanka	13.76	12.55	12.09	11.16	17.42
USA	0.07	0.28	0.19	10.35	3.52
Kenya	0.02	0.06	0.02	0.19	3.68
Brazil	0.43	3.58	2.16	1.82	0.42
Viet Nam	0.15	0.95	2.43	0.68	0.86
Djibouti	0.00	0.00	0.00	0.00	2.19
Nepal	0.70	0.96	0.75	1.48	1.10
Myanmar	0.00	0.00	4.81	0.48	0.00
Egypt	2.23	0.45	1.15	0.18	0.00
United Kingdom	0.01	0.01	0.48	0.82	0.59
Mauritius	0.56	0.43	0.43	0.58	0.00
El Salvador	0.15	1.13	0.00	0.00	0.17
United Arab Emirates	0.17	0.12	0.45	0.31	0.16
Ethiopia	0.00	0.37	0.00	0.00	0.30
Others	52.90	52.77	53.12	53.51	51.74
<b>Grand Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Sources: Computed from UN Comtrade Database

Tables 6 and 7 below show the top fifteen destinations for Indian exports of Pile & Terry Fabrics, denoting the values and percentage shares respectively. Bangladesh, Sri Lanka, USA, Kenya & Brazil are the countries which constituted the largest markets for India's exports of commodity class ITC-HS 600110 from 2017-2021 with export-value share of 42.88% in 2021.

*Table 8: India's import of Pile & Terry Fabrics (ITC'HS - 600110) from Varies countries (in million US \$)*

<b>Partner Country</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
China	22.84	35.48	39.72	28.94	54.15
Germany	2.67	2.17	1.97	1.58	2.24
Malaysia	0.01	0.12	2.70	2.36	2.35
Bangladesh	1.16	1.24	1.81	0.91	1.87
Thailand	0.02	0.17	0.10	0.52	1.44
Rep. of Korea	0.33	0.68	0.45	0.19	0.47
Hong Kong SAR	0.12	0.37	0.38	0.73	0.35
Turkey	0.61	0.11	0.60	0.03	0.10
Australia	0.04	0.23	0.33	0.18	0.47
Viet Nam	0.04	0.35	0.04	0.14	0.28
Italy	0.23	0.23	0.18	0.07	0.11
Spain	0.15	0.19	0.14	0.01	0.06
Japan	0.00	0.03	0.16	0.10	0.26
United Arab Emirates	0.05	0.19	0.09	0.18	0.04
Austria	0.10	0.12	0.18	0.04	0.03
Others	30.28	43.59	49.41	37.85	66.82
<b>Grand Total</b>	<b>58.74</b>	<b>85.51</b>	<b>98.34</b>	<b>73.85</b>	<b>131.35</b>

*Sources: Computed from UN Comtrade Database*

*Table 9: Varies countries share in % in Indian imports of Pile & Terry Fabrics of (ITC'HS - 600110)*

<b>Partner Country</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
China	38.89	41.49	40.39	39.19	41.23
Germany	4.54	2.54	2.00	2.14	1.70
Malaysia	0.02	0.14	2.74	3.19	1.79
Bangladesh	1.98	1.45	1.84	1.23	1.42
Thailand	0.03	0.19	0.10	0.71	1.10
Rep. of Korea	0.57	0.80	0.45	0.25	0.36
China, Hong Kong SAR	0.20	0.44	0.39	0.98	0.27
Turkey	1.04	0.13	0.61	0.04	0.08
Australia	0.07	0.27	0.33	0.25	0.36
Viet Nam	0.07	0.40	0.04	0.19	0.22
Italy	0.38	0.26	0.18	0.09	0.08
Spain	0.26	0.23	0.14	0.01	0.05
Japan	0.00	0.04	0.16	0.14	0.20
United Arab Emirates	0.09	0.23	0.09	0.24	0.03
Austria	0.18	0.14	0.19	0.05	0.02
Others	51.56	50.98	50.25	51.25	50.87
<b>Grand Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

*Sources: Computed from UN Comtrade Database*

Similarly, tables 8 and 9 show the top fifteen destinations for Indian imports of Pile & Terry Fabrics denoting the values and percentage shares respectively. China, Germany, Malaysia, Bangladesh and Thailand are the countries from which India imported Pile & Terry Fabrics, in descending order of magnitude of import-values, from 2017-2021 with total import-value share of 47.24% in 2021.

### 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 60, Pile & Terry Fabrics belong.

Table 10: Export Trade Intensity Indices for Pile & Terry Fabrics of (ITC'HS - 60) of countries w.r.t. India

COUNTRIES	2016	2017	2018	2019	2020
China	0.01	0.11	0.15	0.05	0.04
South Korea	2.36	1.00	2.87	1.55	1.46
Malaysia	2.48	1.21	0.55	0.18	0.54
Italy	0.05	0.31	0.05	0.04	0.01
USA	4.06	4.67	4.58	4.45	6.54
Germany	0.16	0.13	0.16	0.14	0.12

Source: Computed from UN Comtrade database

Table 10 shows that the Export Intensity Indices of India with South Korea, Malaysia and USA are  $> 1$ , implying India gives much more importance to these countries as a destination for its exports of Pile & Terry Fabrics (ITC'HS - 60) & w.r.t other countries such as China, Italy & Germany are  $< 1$ , implying India gives less importance to these countries as a destination for its export of Pile & Terry Fabrics (ITC'HS - 60).

### 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 Pile & Terry Fabrics, 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 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 countries overall imports than in world imports, and vice versa.

For the year 2020, the RCA of various countries' exports of Pile & Terry Fabrics, (ITC-HS Chapter 60) is given in table 11 below. India is at disadvantage in supply-side for exports of Pile & Terry Fabrics, to the world since  $RCA > 1$  as seen from table 11 below.

Table 11: RCA of various countries exports of Pile & Terry Fabrics of (ITC'HS - 60)

Countries	2016	2017	2018	2019	2020
Sri Lanka	27.04	26.48	27.84	34.86	36.44
USA	1.03	1.16	1.13	0.88	1.36
Bangladesh	8.80	6.88	5.97	6.58	4.66
Ethiopia	6.81	8.42	15.78	16.11	20.63
UAE	0.22	0.30	0.13	0.13	0.21
EI Salvador	34.65	89.20	113.42	65.67	14.66

Source: Computed from UN Comtrade database

Similarity, if the RCII in the destination country is greater than 1 then the country imports Pile & Terry Fabrics, 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 shows the RCII indices of various countries' imports of Pile & Terry Fabrics, (ITC-HS Chapter 60), further, it shows that Sri Lanka and EI Salvador have greater RCII > 1 indicating a higher than average appetite for imports of the commodity than the rest of the world and these countries should thus serve as potent destination markets for India's Pile & Terry Fabrics exports.

*Table 12: RCII of various countries imports of Pile & Terry Fabrics of (ITC'HS - 60)*

Countries	2016	2017	2018	2019	2020
Sri Lanka	34.77	29.84	NIL	NIL	50.17
USA	0.93	1.25	2.97	2.50	1.44
Nicaragua	NIL	155.46	5.09	0.73	52.32
EI Salvador	30.43	95.15	270.13	131.26	17.82
Egypt	2.63	2.56	13.42	3.36	1.10
Ethiopia	3.35	NIL	NIL	NIL	0.14
India	1.06	1.13	0.91	0.81	0.81

*Source: Computed from UN Comtrade database*

## **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 Pile & Terry Fabrics 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 top exporters of Pile & Terry Fabrics (China, Hong Kong, Sri Lanka Vietnam, and South Korea). For Indian exports, the index is very high only for Sri Lanka (>1). It has less values, especially for Vietnam & South Korea, implying India must step up its game in these importing countries to compete with other exporters of Pile & Terry Fabrics.

*Table 13: Competitiveness Indices Product) of various exporter countries w.r.t Pile & Terry Fabrics of (ITC HS - 60)*

Countries	2016	2017	2018	2019	2020
China	1.75	1.54	1.51	1.40	1.41
Hong Kong	0.53	0.30	0.71	1.22	1.34
Sri Lanka	27.35	23.09	NIL	NIL	17.76
Viet Nam	NIL	NIL	0.43	0.55	0.76
South Korea	0.24	0.28	0.41	0.42	0.32

*Source: Computed from UN Comtrade database*

Table 14: Competitiveness Indices Market) of various exporter countries w.r.t Pile & Terry Fabrics of (ITC'HS - 60)

Countries	2016	2017	2018	2019	2020
China	4.34	4.68	5.16	4.95	4.43
Hong Kong	3.29	1.61	1.33	1.57	1.40
Sri Lanka	40.70	38.16	20.29	32.17	27.06
Viet Nam	0.30	0.41	0.81	1.17	1.84
South Korea	0.70	0.76	1.09	0.92	0.63

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.

The following table (Table 15) shows varying degrees of IIT between India and some major partners. The values are very high (>0.9) between India and Thailand, 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.

Table 15. Intra-Industry Trade in Pile & Terry Fabrics, ITC-HS 60) between India and Some Major Importing Countries in 2020)

IIT between India and Partner Countries	
Countries	Grubel-Lloyd Index in 2020
China	NIL
Germany	0.38
Malaysia	0.57
Bangladesh	0.56
Thailand	0.87
South Korea	0.61
Hong Kong	0.31

Source: Computed from UN Comtrade database



## **Section 6: Summary**

For Pile & Terry Fabrics, China, South Korea, Malaysia, Italy & USA are the top five exporters of Pile & Terry Fabrics from 2017 to 2021. Together, these five countries covered more than 88.75% per cent of export value in 2021. Vietnam, Mexico, China, Indonesia & Brazil are the top five importers of Pile & Terry Fabrics from 2017 to 2021. Together, these five countries around 33.81% per cent of import value in 2021. Bangladesh, Sri Lanka, USA, Kenya & Brazil are the countries which constituted the largest markets for India's exports of commodity class ITC-HS 60 from 2017-2021 with export-value share of 42.88% in 2021. China, Germany, Malaysia, Bangladesh & Thailand are the countries from which India imported Pile & Terry Fabrics, in descending order of magnitude of import-values, from 2017-2021 with total import-value share of 42.74% in 2021. The market indicators for India in terms of Pile & Terry Fabrics trade can be improved with respect to other major importers. Lower values of the Competitiveness index between India and the major importing countries, particularly Vietnam and South Korea are a testimony to this. Export Intensity Indices of India with Malaysia, South Korea & USA are greater than 1, implying India gives much more importance to these countries as a destination for its exports of Pile & Terry Fabrics than the rest of the world does.

## Appendix A

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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 or 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:

$$TCI = 1 - \frac{|m_{ik} - x_{ij}|}{2}$$

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, are  $m_{ik}$  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).

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

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 agreements.

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

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

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.

$$HI = [Z \text{Sq}(x_i/X_t)]$$

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

9.

$$IIT_{jk} = 1 - \frac{X_{ijk} - M_{ijk}}{X_{ijk} + M_{ijk}}$$

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 equaling imports) to 0 (no inter industry trade at all).

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