India's International Trade of Gold (including gold plated with platinum) Unwrought, Semi-manufactured forms, or in Powder Form (ITC-HS 7108)

Section 1: Introduction: The study uses trade indicators to analyse 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 imports of Gold (including gold plated with platinum) Unwrought, Semi-manufactured forms, or in Powder Form (ITC-HS 7108), to indicate the possible directions policy may take.

The data used in this study has been sourced from the United Nations Comtrade Database and the Export Import Data Bank, Department of Commerce. Computations are primarily based on data at the ITC-HS two-digit level (HS-71) and ITC-HS four-digit level (HS-7108) and the latest finalized data available on the UN Comtrade Database up to year 2020. In several cases, trends from 2016 to 2020 have been shown.

Table 1: (ITC-HS 7108) Classification of Gold, Unwrought, Semi-manufactured, Powder Form.

ITCHS Code	Name/Description
7108	**Name:** Gold (including gold plated with platinum) Unwrought, Semi-manufactured forms, or in Powder Form (ITC-HS 7108) **Description:** Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form.

Section 2: Trends in International Trade i.e. Imports & Exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form.

A glimpse of the top 15 importers of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form in the world is given in below Table: 2

Table 2 & 3 shows the top 15 importers of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form. Switzerland, UAE, Ghana, USA, South Africa are the top 5 importers from 2016 to 2020 comprising more than 34% of the world imports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form in 2020.

Table 2: Imports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITC HS 7108) in Million US dollars.

Country	2016	2017	2018	2019	2020
Switzerland	1301.58	1858.72	1536.66	1510.91	940.47
United Arab Emirates	260	409.72	218.96	331.93	252.88
Ghana	127.56	254.46	292.11	188.19	85.25
USA	132.39	212.39	212.22	161.13	74.68
South Africa	118.88	187.19	104.64	160.43	141.31
Peru	47.19	146.14	221.9	160.62	132.48
Bolivia (Plurinational State of)	12.28	59.23	76.52	79.57	101.36
China, Hong Kong SAR	22.58	53.43	66.36	31.61	61.77
Burkina Faso	12.58	55.36	63.37	63.34	31.14
Dominican Rep.	57.78	53.54	51.14	43.65	17.75
United Rep. of Tanzania	28.19	61.1	51.83	57.87	15.9
United Kingdom	6.12	8.57	60.83	88.37	42.14
Australia	31.26	54.68	55.03	41.79	23.06
Guinea	11.32	39.26	29.08	22.44	81.27
Colombia	22.31	26.07	35.85	39.26	37.79
Others	2396.88	3751.06	3274.78	3254.56	2345.19
Total Import Value	**4588.90**	**7230.92**	**6351.28**	**6235.67**	**4384.44**

Sources: Computed from UN Comtrade database

Table 3: Shares of countries in % in world import of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108)

Country	2016	2017	2018	2019	2020
Switzerland	28.36	25.71	24.19	24.23	21.45
United Arab Emirates	5.67	5.67	3.45	5.32	5.77
Ghana	2.78	3.52	4.60	3.02	1.94
USA	2.89	2.94	3.34	2.58	1.70
South Africa	2.59	2.59	1.65	2.57	3.22
Peru	1.03	2.02	3.49	2.58	3.02
Bolivia (Plurinational State of)	0.27	0.82	1.20	1.28	2.31
China, Hong Kong SAR	0.49	0.74	1.04	0.51	1.41
Burkina Faso	0.27	0.77	1.00	1.02	0.71
Dominican Rep.	1.26	0.74	0.81	0.70	0.40
United Rep. of Tanzania	0.61	0.84	0.82	0.93	0.36
United Kingdom	0.13	0.12	0.96	1.42	0.96
Australia	0.68	0.76	0.87	0.67	0.53
Guinea	0.25	0.54	0.46	0.36	1.85
Colombia	0.49	0.36	0.56	0.63	0.86
Others	52.23	51.86	51.56	52.18	53.51
Total Import Value	**100**	**100**	**100**	**100**	**100**

Sources: Computed from UN Comtrade database

Similarly, tables 4 and 5 below show the total export of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form. by the top fifteen countries and their percentage shares respectively. The top five exporters in the list consist of UAE, Switzerland, Turkey, Singapore and South Africa comprising more than 50% of the world exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form in 2020

Table 4: Exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108)

Country	2016	2017	2018	2019	2020
United Arab Emirates	430.08	227.25	0.00	0.63	0.00
Switzerland	3.46	0.00	0.00	5.64	19.19
Turkey	0.00	0.00	0.00	0.00	6.28
Singapore	0.00	0.00	0.00	2.02	0.00
South Africa	0.00	0.00	0.00	1.88	0.00
Guinea	0.00	0.00	0.02	0.00	0.05
China, Hong Kong SAR	0.01	0.00	0.00	0.00	0.02
United Kingdom	0.00	0.00	0.00	0.00	0.00
Germany	0.00	0.00	0.00	0.00	0.00
Oman	0.00	0.00	0.00	0.00	0.00
Netherlands	0.00	0.00	0.00	0.00	0.00
USA	0.00	0.00	0.00	0.00	0.00
Canada	0.00	0.00	0.00	0.00	0.00
Indonesia	0.00	0.00	0.00	0.00	0.00
Fiji	0.00	0.00	0.00	0.00	0.00
Others	433.54	227.25	0.03	10.19	25.53
Grand Total	**867.09**	**454.50**	**0.05**	**20.36**	**51.07**

Sources: Computed from UN Comtrade database

Table 5: Shares of countries in % in world exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108)

Country	2016	2017	2018	2019	2020
United Arab Emirates	49.6	50.0	0.0	3.1	0.0
Switzerland	0.4	0.0	0.0	27.7	37.6
Turkey	0.0	0.0	0.0	0.0	12.3
Singapore	0.0	0.0	0.0	9.9	0.0
South Africa	0.0	0.0	0.0	9.2	0.0
Guinea	0.0	0.0	40.0	0.0	0.1
China, Hong Kong SAR	0.0	0.0	0.0	0.0	0.0
United Kingdom	0.0	0.0	0.0	0.0	0.0
Germany	0.0	0.0	0.0	0.0	0.0
Oman	0.0	0.0	0.0	0.0	0.0
Netherlands	0.0	0.0	0.0	0.0	0.0
USA	0.0	0.0	0.0	0.0	0.0
Canada	0.0	0.0	0.0	0.0	0.0
Indonesia	0.0	0.0	0.0	0.0	0.0
Fiji	0.0	0.0	0.0	0.0	0.0
Others	50.0	50.0	60.0	50.1	50.0
Grand Total	**100**	**100**	**100**	**100**	**100**

Sources: Computed from UN Comtrade database

Tables 6 and 7 below show the top fifteen destinations for Indian imports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108) denoting the values and percentage shares respectively. UAE, China, Hong Kong, SAR, Switzerland, Qatar, Singapore are the countries which constituted the largest markets for India's imports of commodity class ITC-HS 7108 from 2016-2020 with import-value share of 98% in 2020.

Table 6: India's imports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108)

Partner Country	2016	2017	2018	2019	2020
United Arab Emirates	622.66	387.59	85.61	77.75	24.22
China, Hong Kong SAR	0.01	0.01	4.58	49.05	4.00
Switzerland	7.56	0.00	0.00	5.71	6.12
Qatar	0.10	0.00	0.03	0.00	2.91
Singapore	1.01	0.10	0.31	0.09	0.34
Australia	0.40	0.04	0.02	0.03	0.01
Italy	0.00	0.01	0.00	0.02	0.48
Jordan	0.00	0.00	0.00	0.05	0.11
China	0.00	0.02	0.01	0.00	0.03
Malaysia	0.00	0.00	0.00	0.05	0.01
Canada	0.00	0.00	0.00	0.01	0.03
Viet Nam	0.00	0.02	0.00	0.00	0.00
Germany	0.00	0.01	0.00	0.00	0.00
USA	0.00	0.01	0.00	0.00	0.00
Thailand	0.00	0.00	0.00	0.01	0.00
Others	0.00	0.00	0.01	0.00	0.01
Grand Total	**631.74**	**387.81**	**90.57**	**132.77**	**38.27**

Sources: Computed from UN Comtrade database

Table 7: Various countries' share (in %) in Indian imports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108)

Partner Country	2016	2017	2018	2019	2020
United Arab Emirates	98.56	99.94	94.52	58.56	63.29
China, Hong Kong SAR	0.00	0.00	5.06	36.94	10.45
Switzerland	1.20	0.00	0.00	4.30	15.99
Qatar	0.02	0.00	0.03	0.00	7.60
Singapore	0.16	0.03	0.34	0.07	0.89
Australia	0.06	0.01	0.02	0.02	0.03
Italy	0.00	0.00	0.00	0.02	1.25
Jordan	0.00	0.00	0.00	0.04	0.29
China	0.00	0.01	0.01	0.00	0.08
Malaysia	0.00	0.00	0.00	0.04	0.03
Canada	0.00	0.00	0.00	0.01	0.08
Viet Nam	0.00	0.01	0.00	0.00	0.00
Germany	0.00	0.00	0.00	0.00	0.00
USA	0.00	0.00	0.00	0.00	0.00
Thailand	0.00	0.00	0.00	0.01	0.00
Others	0.00	0.00	0.02	0.00	0.03
Grand Total	**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 exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108) denoting the values and percentage shares respectively. Switzerland, UAE, USA, Ghana and Peru are the countries from which India exported Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108) in descending order of magnitude of import-values, from 2016-2020 with total import-value share of around 82% in 2020

Table 8: India's exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108)

Partner Country	2016	2017	2018	2019	2020
Switzerland	1280.84	1818.11	1586.80	1621.17	1002.95
United Arab Emirates	213.68	309.16	199.93	312.75	271.73
USA	173.38	238.44	194.85	150.90	55.47
Ghana	70.52	253.58	286.04	169.29	0.00
Peru	44.92	140.15	213.75	149.90	102.84
Bolivia (Plurinational State of)	11.83	57.47	73.78	73.99	71.50
China, Hong Kong SAR	35.78	71.47	70.59	38.66	66.73
Dominican Rep.	53.45	52.48	64.89	40.24	17.80
Burkina Faso	12.53	26.03	46.01	56.37	29.32
United Rep. of Tanzania	28.15	59.67	1.55	60.21	14.94
Australia	21.81	52.03	52.97	18.57	6.04
Brazil	8.76	21.39	45.77	36.28	23.44
Singapore	20.79	37.57	13.91	16.18	45.74
Lao People's Dem. Rep.	8.13	15.68	12.59	8.93	10.84
Saudi Arabia	0.00	0.00	0.00	35.89	0.00
Others	40.06	32.46	25.94	27.00	34.28
Grand Total	**2024.63**	**3185.69**	**2889.38**	**2816.33**	**1753.62**

Sources: Computed from UN Comtrade database

Table 9: Various countries' share in % in Indian exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108)

Partner Country	2016	2017	2018	2019	2020
Switzerland	63.26	57.07	54.92	57.56	57.19
United Arab Emirates	10.55	9.70	6.92	11.10	15.50
USA	8.56	7.48	6.74	5.36	3.16
Ghana	3.48	7.96	9.90	6.01	0.00
Peru	2.22	4.40	7.40	5.32	5.86
Bolivia (Plurinational State of)	0.58	1.80	2.55	2.63	4.08
China, Hong Kong SAR	1.77	2.24	2.44	1.37	3.81
Dominican Rep.	2.64	1.65	2.25	1.43	1.02
Burkina Faso	0.62	0.82	1.59	2.00	1.67
United Rep. of Tanzania	1.39	1.87	0.05	2.14	0.85
Australia	1.08	1.63	1.83	0.66	0.34
Brazil	0.43	0.67	1.58	1.29	1.34
Singapore	1.03	1.18	0.48	0.57	2.61
Lao People's Dem. Rep.	0.40	0.49	0.44	0.32	0.62
Saudi Arabia	0.00	0.00	0.00	1.27	0.00
Others	1.99	1.04	0.91	0.97	1.95
Grand Total	**100**	**100**	**100**	**100**	**100**

Sources: Computed from UN Comtrade database

Section3:ExportIntensityIndex

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 71, Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin belong

Table 10: Export Trade Intensity Indices for Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71) of Countries w.r.t. India

Countries	2016	2017	2018	2019	2020
UAE	5.47	3.82	4.50	5.10	3.75
Australia	0.83	1.04	1.27	1.17	1.06
USA	2.63	2.72	3.08	2.97	2.16
China	0.02	0.04	0.06	0.04	0.06
Brazil	0.41	0.04	0.02	0.02	0.01
Japan	0.47	0.42	0.57	0.63	0.69
UK	0.12	0.18	0.35	0.12	0.15
Germany	0.14	0.13	0.13	0.11	0.13

Source: Computed from UN Comtrade database

Table 10 shows that the Export Intensity Indices of India with UAE, Australia, and USA are greater than 1, implying India gives much more importance to these countries as a destination for its exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108) 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 Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108), 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 than1 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 Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71)

Countries	2016	2017	2018	2019	2020
Hong Kong	5.62	6.50	7.04	7.27	9.50
Botswana	1.43	3.19	5.39	5.58	7.93
Turks C Is	0.73	1.58	6.55	6.78	2.50
India	3.54	3.58	3.66	3.17	2.34
Sint Maarten (Dutch Part)		7.15		6.44	
U AE	2.72	2.66	2.68	2.84	2.07

Source: Computed from UN Comtrade database

For the year 2020, the RCA of various countries' exports of Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin(ITCHS 71)is given in table 11. Hong Kong, Botswana, Turks C Is, UAE & India are at an advantage in supply-side for exports of Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin(ITCHS 71)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 Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin(ITCHS 71)to an extent more than overall world trends warrants. Therefore, if India seeks to expand its exports, these countries are the preliminary list of options.

Table 12: RCII of various countries' imports of Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71)

Countries	2016	2017	2018	2019	2020
Iceland		270.89		1.11	
Swaziland	46.74	63.68		2.62	
Tunisia	23.82		21.04		64.29
Dominica	4.53	2.44		79.33	20.39
India	3.54	3.58	3.66	3.17	2.34

Source: Computed from UN Comtrade database

Table 12 shows the RCII indices of various countries' imports Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71)

Table 12 below shows that Iceland, Swaziland, Tunisia, Dominica 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 Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71)India is at an advantage in supply-side for exports of Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin(ITCHS 71)to the world since RCA >1 as seen from table 12.

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 Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71) 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 >1 is definitely good for India, similarly, an index value <1 shows that it has been overshadowed by the products of other exporters. -

Table 13: Competitiveness Indices (Product) of various exporter countries w.r.t Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71)

Countries	2016	2017	2018	2019	2020
USA	2.95	2.91	3.28	3.47	2.41
UAE	3.94		3.43	3.78	2.58
China	0.55	0.63	0.78	0.48	1.13
UK	0.16	0.21	0.34	0.13	0.11
Germany	0.15	0.13	0.13	0.15	0.2

Source: Computed from UN Comtrade database

Table 13 shows the indices of Indian exports as well as other top exporters of Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71). UAE, USA, UK, China & Germany are the top importing countries. For Indian exports, the index is high only for UAE & UK (>1). It has poor values, especially for USA, China and Germany, implying India must step up its game in these importing countries (with index < 1) to compete with other exporters of Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71)

Table 14: Competitiveness Indices (Market) of various exporter countries w.r.t Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71)

Countries	2016	2017	2018	2019	2020
USA	7.95	8.62	8.97	8.2	3.82
China	4.25	4.73	5.59	3.23	4.02
UAE	3.27		2.15	2.22	1.37
Germany	1.09	0.98	0.95	0.94	0.79
UK	0.68	0.92	1.41	0.49	0.32

Source: Computed from UN Comtrade database

Table 14 shows the indices of Indian imports as well as other top importers of Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71). UAE, USA, UK, China & Germany are the top exporting countries. For Indian imports, the index is high only for UAE, USA, UK, China& Germany (>1).

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 Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin (ITC-HS Chapter 71) between India and Some Major Importing Countries in 2020)

IIT between India and Partner Countries	
Countries	**Grubel-Lloyd Index in 2020**
Malaysia	0.98
Germany	0.98
Italy	0.92
Canada	0.92
Uruguay	0.89
Indonesia	0.88

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 Malaysia, Germany, Italy & Canada and India is 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.

Section 6: Summary

For Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form(ITCHS 7108), UAE, Switzerland, Turkey, Singapore & South Africa are the top five exporters from 2016 to 2020 covering more than 25 percent of world export value of the commodity. The top five importers consist of Switzerland, UAE, Ghana, USA, South Africa comprising 34% of the world imports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108).The market indicators for India in terms of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form (ITCHS 7108).can be improved with respect to other major importers. Lower values of the Competitiveness index between India and the major importing countries, particularly China, UK & Germany are testimony to this. Export Intensity Indices of India with UAE, Australia & USA are greater than 1, implying India gives much more importance to these countries as a destination for its exports of Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form(ITCHS 7108)than the rest of the world does.

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Appendix A

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,

$$RCAij = (xij/Xit)/(xwj/Xwt)$$

Where, xij = country i's exports of commodity j
Xit = country i's total exports
xwj= world exports of commodity j
Xwt= total world exports.

When RCAij > 1, i.e. when j's weight in i's exports (xij/Xit) is more than j's weight in world exports (xwj/Xwt), country i is said to have a revealed comparative advantage in commodity j. There is a revealed comparative disadvantage if RCAij < 1. When RCAij = 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. (xij/Xit) may have risen less or fallen more than proportionately than (xwj/Xwt)

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).

$$ESI = (xij/Xit)/(mkj/Mkt),$$

Where, mkj = import of commodity j to market k
Mkt= world imports of commodity k.

(mkj/Mkt) gives the weight of j in market k. So, if RCAij 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.

$$RCII = (mij/Mit)/(mwj/Mwt)$$

Where mij = country i's imports of commodity j
Mit = country i's total imports
mwj= world imports of commodity j
Mwt= 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:

$$TCI = 1 - \sum (|mik - xij|/2)$$

Where, mik= share of commodity i in the imports of market k
xij = 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 mik and xij 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).

$$TII = (xij/Xit)/(xwj/Xwt)$$

where xij = country i's exports to country j
Xit = country i's exports to the world
xwj = world exports to country j
Xwt = 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 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.

$$XSI = \sum [\min (Xij, Xik)*100]$$

Where, Xij= share of commodity i in exports of country j
Xik= share of commodity i in exports of country k

XSI can vary between 0 and 100. It will be seen that when Xij= Xik for all i's, XSI = 100, which means complete export similarity between countries j and k. As Xij and Xik 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, xi is the country's exports of commodity i
Xt 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).

$$IITjk = 1 - [\sum |Xijk - Mijk| / (Xijk + Mijk)]$$

Where, Xijk = exports of products of industry i from country j to country k
Mijk = 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)
