

# **India's Export Trade with Germany in 2018 – Aspects**

## **Preface**

The object of this study is to demonstrate the utility of trade indicators in analysing merchandise export and import data which may be used for the purpose of formulation of policy. The indicators provide a glimpse of the trade patterns of the world, country-wise and commodity-wise, the performance of India in comparison to them. They have been used in case of India's exports to Germany, to indicate the possible directions policy may take. The reason for selecting Germany is that it is the largest importer (and exporter) in the European Union, the most important trading bloc in the world. Moreover, from a preliminary scanning of indicators, the information was gathered that India's trade with Germany, as with a number of other EU countries, is below the level warranted by world trade patterns.

The data used in this study has been sourced from the United Nations Comtrade Database. Computations are based on data at the ITC-HS six-digit level as the ITC-HS codes are uniform across countries only upto this level. The latest finalised data available on the UN Comtrade Database is of 2018. In some cases, trends from 2014 to 2018 have been shown.

The lay-out of the study is as follows:

Section 1: Introduction which provides a broad overview of Germany's imports.

Section 2: Deals with India's Export Intensity with respect to Germany.

Section 3: Explores the trade complementarities between India and Germany.

Section 4: Discusses the Revealed Comparative Advantage of Indian export items and the Revealed Comparative Import Inclinations of Germany, and using these indicators, attempts to identify items which may have a further export potential – from India to Germany. The lists of items are in Appendices 1 and 2.

Section 5: Examines Concentration of Exports from India to Germany

Section 6: Intra-Industry Trade of India and Germany

Section 7: Export Similarity between India and Germany

Appendix A: List of items deserving product-specific export promotion policies

Appendix B: List of items deserving market-specific export promotion policies

Appendix C: The formulae of the trade indicators used.

## Section 1: Introduction

**1.1** Germany has for long been a major economy, fourth largest in the world as per 2018 United Nations Statistics Division data in terms of current GDP in US dollars, almost touching the \$ 4 trillion mark and trailing only the USA, China and Japan. It is a very open economy, the openness index in 2018 being as high as 0.72, with merchandise exports of about \$ 1.6 trillion and merchandise imports almost reaching \$ 1.3 trillion. (Henceforth, by ‘exports’ and ‘imports’ we will mean ‘merchandise exports’ and ‘merchandise imports’, unless specified otherwise). Both as an exporter and as an importer, the country ranks third in the world, after the USA and China. Hence, it is a large and lucrative market, and any exporting nation would strive to obtain a sizeable share in this economic engine of Europe. And countries bent on import-substitution would like see what items imported from Germany may be produced at home.

**1.2** A glimpse of Germany’s imports from the top twenty source countries (and from India, Vietnam and South Korea, which have been included for comparison). is given in Table 1A below. China continues to outstrip the other source countries, with a steady rise in both the absolute value and the percentage share.

**Table 1A: Germany’s Imports of Merchandise in billion US dollars**

| Country            | 2014        | 2015        | 2016        | 2017        | 2018         |
|--------------------|-------------|-------------|-------------|-------------|--------------|
| World              | 1,214.92    | 1,057.54    | 1,060.88    | 1,167.75    | 1,292.73     |
| China              | 107.58      | 103.33      | 105.74      | 116.48      | 126.75       |
| Netherlands        | 107.89      | 88.09       | 86.31       | 94.40       | 104.91       |
| USA                | 67.53       | 69.10       | 65.96       | 71.76       | 78.30        |
| France             | 88.57       | 74.11       | 72.74       | 73.06       | 77.30        |
| Italy              | 64.12       | 54.11       | 57.20       | 62.37       | 71.25        |
| Poland             | 52.68       | 49.59       | 51.45       | 56.96       | 65.26        |
| Czechia            | 48.84       | 43.46       | 46.72       | 51.50       | 56.42        |
| Switzerland        | 53.87       | 47.89       | 49.63       | 52.47       | 55.32        |
| Belgium            | 51.03       | 39.47       | 40.06       | 44.62       | 53.41        |
| Austria            | 47.68       | 40.86       | 42.10       | 45.27       | 49.46        |
| UK                 | 50.63       | 41.94       | 39.05       | 40.96       | 43.53        |
| Spain              | 32.96       | 29.33       | 30.84       | 35.39       | 38.35        |
| Hungary            | 29.18       | 26.36       | 27.63       | 29.72       | 32.52        |
| Russian Federation | 37.04       | 23.45       | 21.04       | 25.40       | 30.61        |
| Japan              | 26.50       | 23.28       | 25.34       | 27.05       | 29.28        |
| Turkey             | 17.88       | 16.14       | 17.13       | 18.35       | 19.35        |
| Romania            | 13.58       | 11.91       | 13.84       | 16.84       | 18.85        |
| Sweden             | 18.64       | 15.49       | 15.83       | 17.49       | 18.72        |
| Slovakia           | 17.02       | 15.04       | 15.82       | 16.52       | 16.99        |
| Ireland            | 11.79       | 12.01       | 13.09       | 13.17       | 16.04        |
| <b>India</b>       | <b>9.60</b> | <b>8.55</b> | <b>8.61</b> | <b>9.67</b> | <b>10.76</b> |

|                    |              |             |             |              |              |
|--------------------|--------------|-------------|-------------|--------------|--------------|
| <i>Vietnam</i>     | <i>8.09</i>  | <i>9.00</i> | <i>9.83</i> | <i>10.95</i> | <i>11.63</i> |
| <i>South Korea</i> | <i>10.66</i> | <i>8.56</i> | <i>8.64</i> | <i>12.92</i> | <i>14.42</i> |

*Source: UN Comtrade Database*

Table 1B shows the percentage shares of imports of merchandise, again of the top 20 source countries, and of India, Vietnam and South Korea, which have been included for comparison.

**Table 1B: Percentage shares of countries in Germany's Imports of Merchandise**

| <b>Countries</b>   | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> |
|--------------------|-------------|-------------|-------------|-------------|-------------|
| China              | 8.85        | 9.77        | 9.97        | 9.97        | 9.80        |
| Netherlands        | 8.88        | 8.33        | 8.14        | 8.08        | 8.12        |
| USA                | 5.56        | 6.53        | 6.22        | 6.14        | 6.06        |
| France             | 7.29        | 7.01        | 6.86        | 6.26        | 5.98        |
| Italy              | 5.28        | 5.12        | 5.39        | 5.34        | 5.51        |
| Poland             | 4.34        | 4.69        | 4.85        | 4.88        | 5.05        |
| Czechia            | 4.02        | 4.11        | 4.40        | 4.41        | 4.36        |
| Switzerland        | 4.43        | 4.53        | 4.68        | 4.49        | 4.28        |
| Belgium            | 4.20        | 3.73        | 3.78        | 3.82        | 4.13        |
| Austria            | 3.92        | 3.86        | 3.97        | 3.88        | 3.83        |
| UK                 | 4.17        | 3.97        | 3.68        | 3.51        | 3.37        |
| Spain              | 2.71        | 2.77        | 2.91        | 3.03        | 2.97        |
| Hungary            | 2.40        | 2.49        | 2.60        | 2.54        | 2.52        |
| Russian Federation | 3.05        | 2.22        | 1.98        | 2.18        | 2.37        |
| Japan              | 2.18        | 2.20        | 2.39        | 2.32        | 2.27        |
| Turkey             | 1.47        | 1.53        | 1.61        | 1.57        | 1.50        |
| Romania            | 1.12        | 1.13        | 1.30        | 1.44        | 1.46        |
| Sweden             | 1.53        | 1.47        | 1.49        | 1.50        | 1.45        |
| Slovakia           | 1.40        | 1.42        | 1.49        | 1.41        | 1.31        |
| Ireland            | 0.97        | 1.14        | 1.23        | 1.13        | 1.24        |
| <b>India</b>       | <b>0.79</b> | <b>0.81</b> | <b>0.81</b> | <b>0.83</b> | <b>0.83</b> |
| <i>Vietnam</i>     | <i>0.67</i> | <i>0.85</i> | <i>0.93</i> | <i>0.94</i> | <i>0.90</i> |
| <i>South Korea</i> | <i>0.88</i> | <i>0.81</i> | <i>0.81</i> | <i>1.11</i> | <i>1.12</i> |

*Source: Computed from UN Comtrade Database*

## **Section 2: Export Intensity Index**

**2.1** The two tables above show that Germany imports most of its merchandise from other European Union, which is expected, given the absence of trade barriers among them and the geographical proximity. India's share in German imports is only 0.83, while her share in world merchandise exports is around 1.70. This brings her Export Intensity Index with respect to Germany to only about 0.5. Export Intensity Index 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. (See Appendix C for the formula of Export Intensity Index). Hence, in this case, Germany enjoys only about half the importance as a destination of India's exports compared to what she does as a destination world exports. This is because many of the large EU economies have a high Export Intensity Index with Germany. Table 2A below shows the indices of the countries Germany imports her merchandise mainly from. India's index is shown for comparison.

**Table 2A: Export Intensity Indices of Countries w.r.t Germany**

|              | 2014          | 2015          | 2016          | 2017          | 2018          |
|--------------|---------------|---------------|---------------|---------------|---------------|
| China        | 0.5869        | 0.5694        | 0.5052        | 0.5724        | 0.5708        |
| USA          | 0.5614        | 0.6065        | 0.5426        | 0.6240        | 0.6227        |
| Netherlands  | 4.5781        | 4.3467        | 3.6272        | 3.9905        | 4.1666        |
| France       | 3.1300        | 2.9920        | 2.6210        | 2.7006        | 2.6747        |
| Italy        | 2.3690        | 2.2821        | 2.0462        | 2.2660        | 2.2786        |
| Poland       | 4.9029        | 5.0304        | 4.3869        | 4.9549        | 5.1437        |
| Czechia      | 6.0511        | 6.0213        | 5.2753        | 5.9813        | 5.9232        |
| Switzerland  | 2.8764        | 2.6577        | 2.3310        | 2.7571        | 2.7923        |
| Belgium      | 3.1748        | 3.1529        | 2.7091        | 3.0243        | *             |
| Austria      | 5.5157        | 5.5226        | 4.7795        | *             | 5.4817        |
| <b>India</b> | <b>0.4612</b> | <b>0.4973</b> | <b>0.4481</b> | <b>0.5094</b> | <b>0.5074</b> |

*Source: Computed from UN Comtrade Database*

\*Index values not available, owing to non-reporting.

Table 2A shows that among the main exporters to Germany, the EU countries have Export Intensity Indices way above 1, i.e. they give much more importance to Germany as a destination of their exports than the whole world does. China, and even the USA, have index values much lower than 1, but significantly higher than India's. (In any case, India has no room for complacency on the ground that China's index is lower than 1, because China has much higher index values with respect to other major industrialised countries, the USA being one among them.) All these bring home the point that India needs to improve its Export Intensity Index with respect to Germany, at least to 0.6-0.7 level, if not to 1.

**2.2** For drawing up a plan to increase the export intensity with respect to Germany, a look at the export intensities for commodity groups is important – in order to identify those groups which have very low indices, and which have thus brought the overall index down to 0.5. An ITC-HS two-digit code level study will be of help in finding out the industries which need to be targeted. Table 2B, which refers to 2018 figures (the overall scenario was not substantially

different in 2016 or 2017), shows the ITC-HS two-digit level commodity group-wise export intensity figures for India with respect to Germany.

It is clear from Table 2B that agricultural and related product groups, from Chapters 1 to 24 of ITC-HS, have indices less than 1, sometimes much less. This is also true for minerals and ores, Chapters 25 to 27. But none of these, except 27, i.e. mineral fuels, oils, distillation products, etc. are in the top twenty of Germany's imports. Let us take a benchmark of 0.5% for identifying ITC-HS Chapters with not-so-insignificant shares in German imports. Among the ITC-HS Chapters for which index value < 1, the imports of the following have a share of 0.5% or more in Germany's total imports and these are the ITC-HS chapters responsible for India's low Export Intensity Index with respect to Germany:

- 02 – Meat and edible meat offal
- 04 – Dairy products, eggs, honey, edible animal products
- 07 – Live trees, plants, bulbs, roots, cut flowers etc
- 08 – Edible vegetables and certain roots and tubers
- 12 – Oil seed, oleaginous fruits, grain, seed, fruit, etc., nes
- 20 – Vegetable, fruit, nut, etc., food preparations
- 22 – Beverages, spirits and vinegar
- 26 – Ores, slag and ash
- 27 – Mineral fuels, oils, distillation products, etc.

**Table 2B: ITC-HS Chapter-wise Export Intensity Indices for India w.r.t Germany  
in 2018**

| ITC-HS Chapter | Index value | ITC-HS Chapter | Index value | ITC-HS Chapter | Index value | ITC-HS Chapter | Index value | ITC-HS Chapter | Index value |
|----------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|
| 01             | 0.00000     | 21             | 0.13923     | 41             | 0.72382     | 61             | 1.06838     | 82             | 1.19436     |
| 02             | 0.00006     | 22             | 0.00586     | 42             | 2.76920     | 62             | 0.68510     | 83             | 0.85235     |
| 03             | 0.09692     | 23             | 0.71963     | 43             | 3.19332     | 63             | 0.73772     | 84             | 1.31754     |
| 04             | 0.04709     | 24             | 0.44035     | 44             | 0.62675     | 64             | 1.52731     | 85             | 0.96195     |
| 05             | 0.39107     | 25             | 0.30311     | 45             | 0.06659     | 65             | 0.83929     | 86             | 0.30231     |
| 06             | 0.45061     | 26             | 0.19314     | 46             | 1.76805     | 66             | 0.08708     | 87             | 0.32822     |
| 07             | 0.21221     | 27             | 0.00020     | 47             | 0.02455     | 67             | 0.11461     | 88             | 1.29235     |
| 08             | 0.39236     | 28             | 0.29326     | 48             | 0.13385     | 68             | 0.83459     | 89             | 0.00118     |
| 09             | 0.60349     | 29             | 0.69017     | 49             | 0.16196     | 69             | 0.33285     | 90             | 1.06996     |
| 10             | 0.07411     | 30             | 0.26562     | 50             | 1.25009     | 70             | 0.50008     | 91             | 1.33154     |
| 11             | 0.11752     | 31             | 0.09391     | 51             | 0.37495     | 71             | 0.12932     | 92             | 1.69319     |
| 12             | 0.75932     | 32             | 0.87829     | 52             | 0.67620     | 72             | 0.24671     | 93             | 0.36181     |
| 13             | 0.82549     | 33             | 0.56759     | 53             | 1.67691     | 73             | 0.76563     | 94             | 0.90898     |
| 14             | 0.37975     | 34             | 0.24218     | 54             | 0.28385     | 74             | 0.32333     | 95             | 0.94458     |
| 15             | 0.24969     | 35             | 0.29216     | 55             | 0.44913     | 75             | 0.29715     | 96             | 1.19586     |

|    |         |    |         |    |         |    |         |    |         |
|----|---------|----|---------|----|---------|----|---------|----|---------|
| 16 | 0.06409 | 36 | 0.10630 | 56 | 0.26072 | 76 | 0.11915 | 97 | 0.42475 |
| 17 | 0.09236 | 37 | 0.05034 | 57 | 1.01304 | 78 | 0.00030 | 99 | 1.00472 |
| 18 | 0.82058 | 38 | 0.40479 | 58 | 0.32792 | 79 | 0.00803 |    |         |
| 19 | 0.08900 | 39 | 0.50240 | 59 | 0.70745 | 80 | 0.05866 |    |         |
| 20 | 0.49851 | 40 | 0.80985 | 60 | 0.15404 | 81 | 1.42572 |    |         |

*Source: Computed from UN Comtrade Database*

Moving on from the primary products, among manufactures, going again by the 0.5% rule, and an export intensity index figure of less than 1, the following may be short-listed as the ITC-HS chapters responsible for driving the Export Intensity Index of India with respect to Germany low:

- 28 – Inorganic chemicals, precious metal compound, isotopes
- 29 – Organic chemicals
- 30 – Pharmaceutical products
- 32 – Tanning, dyeing extracts, tannins, derivatives, pigments etc.
- 33 – Essential oils, perfumes, cosmetics, toiletries.
- 38 – Miscellaneous chemical products.
- 39 – Plastics and articles thereof
- 40 – Rubber and articles thereof
- 44 – Wood and articles of wood, wood charcoal
- 48 – Paper & paperboard, articles of pulp, paper and board
- 62 – Articles of apparel, accessories, not knit or crochet
- 70 – Glass and glassware
- 71 – Pearls, precious stones, metals, coins, etc
- 72 – Iron and steel
- 73 – Articles of iron or steel
- 74 – Copper and articles thereof
- 76 – Aluminium and articles thereof

- 83 – Miscellaneous articles of base metal
- 85 – Electrical, electronic equipment
- 87 – Vehicles other than railway, tramway
- 94 – Furniture, lighting, signs, prefabricated buildings
- 95 – Toys, games, sports requisites

## Section 3: Trade Complementarity Index

**3.1** The ITC-HS chapters identified in Section 2 above is only a short-list, for it narrates half the story. Trade takes place when there is a complementarity of demand and supply, in the present case, between the demand of Germany and the supply of India. The Trade Complementarity Index (TCI) is a measure of this match, and the value of the index between Indian exports and German imports in 2018 stood at 0.34, which is not very high, given that the index between Indian exports and world imports was over 0.38. Hence, the Relative Trade Complementarity Index is 0.87 (i.e.  $< 1$ ), meaning that India's exports have less complementarity with German imports than with world imports. (See RTCI in Appendix C).

**Table 3A: Trade Complementarity Index and Relative Trade Complementarity Index between India and Germany**

|         | 2014   | 2015   | 2016   | 2017   | 2018   |
|---------|--------|--------|--------|--------|--------|
| TCI *   | 0.3184 | 0.3325 | 0.3287 | 0.3293 | 0.3359 |
| TCIW**  | 0.3893 | 0.4125 | 0.3786 | 0.3981 | 0.3826 |
| RTCI*** | 0.8181 | 0.8059 | 0.8683 | 0.8273 | 0.8780 |

*Source: Computed from UN Comtrade Database*

\*TCI – Trade Complementarity Index between India and Germany

\*\*TCIW – Trade Complementarity Index between India and the World

\*\*\*RTCI = (TCI/RTCI)

TCI is computed by taking the shares of each commodity (here, at the ITC-HS 6-digit level) in the export basket of India, and then the corresponding shares of these commodities in the import basket of Germany, calculating the absolute value of the difference between the two for each 6-digit level commodity, summing the differences up, dividing the sum by 2, and subtracting what we get from 1. So, the differences in the shares are the major determinants. In case of India and Germany, the value of the index may not be high, but it is a

composite value depending on all the differences taken together. The differences at the individual ITC-HS 2-digit level are examined to find out where lie the complementarities.

The ITC-HS 2-digit code-wise composition of Indian exports and German imports is given in Table 3B below.

**Table 3B: Composition of India's Exports and Germany's Imports  
(ITC-HS chapter-wise)**

| ITC-HS chapter | India's Exports (bn \$) | Shares of chapters (%) | ITC-HS chapter | Germany's Imports (bn \$) | Shares of chapters (%) |
|----------------|-------------------------|------------------------|----------------|---------------------------|------------------------|
| 01             | 0.03                    | 0.0097                 | 1              | 1.92                      | 0.1484                 |
| 02             | 3.74                    | 1.1587                 | 2              | 8.00                      | 0.6192                 |
| 03             | 6.38                    | 1.9796                 | 3              | 4.81                      | 0.3722                 |
| 04             | 0.48                    | 0.1493                 | 4              | 9.60                      | 0.7427                 |
| 05             | 0.13                    | 0.0416                 | 5              | 1.16                      | 0.0900                 |
| 06             | 0.08                    | 0.0250                 | 6              | 3.38                      | 0.2612                 |
| 07             | 1.23                    | 0.3806                 | 7              | 7.18                      | 0.5551                 |
| 08             | 1.53                    | 0.4756                 | 8              | 11.87                     | 0.9185                 |
| 09             | 3.12                    | 0.9682                 | 9              | 4.29                      | 0.3320                 |
| 10             | 7.72                    | 2.3939                 | 10             | 3.19                      | 0.2471                 |
| 11             | 0.31                    | 0.0970                 | 11             | 0.77                      | 0.0598                 |
| 12             | 1.62                    | 0.5024                 | 12             | 6.24                      | 0.4825                 |
| 13             | 1.06                    | 0.3294                 | 13             | 0.67                      | 0.0522                 |
| 14             | 0.05                    | 0.0148                 | 14             | 0.05                      | 0.0039                 |
| 15             | 1.12                    | 0.3469                 | 15             | 4.26                      | 0.3296                 |
| 16             | 0.43                    | 0.1330                 | 16             | 3.57                      | 0.2759                 |
| 17             | 1.17                    | 0.3642                 | 17             | 1.87                      | 0.1444                 |
| 18             | 0.19                    | 0.0602                 | 18             | 4.96                      | 0.3840                 |
| 19             | 0.52                    | 0.1616                 | 19             | 4.98                      | 0.3854                 |
| 20             | 0.59                    | 0.1843                 | 20             | 5.88                      | 0.4550                 |
| 21             | 0.76                    | 0.2357                 | 21             | 4.06                      | 0.3142                 |
| 22             | 0.33                    | 0.1024                 | 22             | 8.74                      | 0.6757                 |
| 23             | 1.68                    | 0.5198                 | 23             | 4.60                      | 0.3559                 |
| 24             | 0.98                    | 0.3051                 | 24             | 2.83                      | 0.2186                 |
| 25             | 2.25                    | 0.6968                 | 25             | 2.35                      | 0.1816                 |
| 26             | 1.66                    | 0.5134                 | 26             | 9.15                      | 0.7081                 |
| 27             | 48.59                   | 15.0682                | 27             | 117.70                    | 9.1047                 |
| 28             | 2.03                    | 0.6297                 | 28             | 8.14                      | 0.6295                 |
| 29             | 17.78                   | 5.5128                 | 29             | 46.45                     | 3.5928                 |
| 30             | 14.30                   | 4.4343                 | 30             | 58.02                     | 4.4881                 |
| 31             | 0.14                    | 0.0422                 | 31             | 1.09                      | 0.0845                 |
| 32             | 3.23                    | 1.0028                 | 32             | 7.24                      | 0.5604                 |

|    |       |         |    |       |        |
|----|-------|---------|----|-------|--------|
| 33 | 1.94  | 0.6003  | 33 | 8.69  | 0.6719 |
| 34 | 0.60  | 0.1855  | 34 | 4.95  | 0.3832 |
| 35 | 0.25  | 0.0776  | 35 | 2.52  | 0.1947 |
| 36 | 0.12  | 0.0373  | 36 | 0.29  | 0.0225 |
| 37 | 0.01  | 0.0036  | 37 | 1.14  | 0.0882 |
| 38 | 4.42  | 1.3713  | 38 | 16.60 | 1.2844 |
| 39 | 7.87  | 2.4389  | 39 | 49.01 | 3.7908 |
| 40 | 3.16  | 0.9799  | 40 | 16.97 | 1.3126 |
| 41 | 0.78  | 0.2423  | 41 | 0.86  | 0.0668 |
| 42 | 2.49  | 0.7736  | 42 | 4.88  | 0.3779 |
| 43 | 0.01  | 0.0040  | 43 | 0.18  | 0.0137 |
| 44 | 0.43  | 0.1348  | 44 | 9.62  | 0.7440 |
| 45 | 0.00  | 0.0012  | 45 | 0.12  | 0.0093 |
| 46 | 0.03  | 0.0102  | 46 | 0.13  | 0.0098 |
| 47 | 0.00  | 0.0011  | 47 | 4.92  | 0.3805 |
| 48 | 1.82  | 0.5655  | 48 | 15.13 | 1.1707 |
| 49 | 0.38  | 0.1179  | 49 | 3.24  | 0.2510 |
| 50 | 0.08  | 0.0257  | 50 | 0.06  | 0.0044 |
| 51 | 0.19  | 0.0583  | 51 | 0.77  | 0.0592 |
| 52 | 8.09  | 2.5099  | 52 | 1.03  | 0.0795 |
| 53 | 0.42  | 0.1297  | 53 | 0.08  | 0.0062 |
| 54 | 2.27  | 0.7037  | 54 | 1.83  | 0.1417 |
| 55 | 1.91  | 0.5923  | 55 | 1.82  | 0.1406 |
| 56 | 0.42  | 0.1299  | 56 | 1.76  | 0.1363 |
| 57 | 1.75  | 0.5435  | 57 | 1.26  | 0.0976 |
| 58 | 0.37  | 0.1146  | 58 | 0.30  | 0.0235 |
| 59 | 0.25  | 0.0771  | 59 | 1.35  | 0.1041 |
| 60 | 0.42  | 0.1303  | 60 | 0.53  | 0.0413 |
| 61 | 7.56  | 2.3457  | 61 | 20.43 | 1.5807 |
| 62 | 8.07  | 2.5011  | 62 | 19.91 | 1.5403 |
| 63 | 5.23  | 1.6217  | 63 | 4.66  | 0.3604 |
| 64 | 2.84  | 0.8817  | 64 | 13.33 | 1.0311 |
| 65 | 0.04  | 0.0136  | 65 | 0.73  | 0.0563 |
| 66 | 0.00  | 0.0008  | 66 | 0.27  | 0.0213 |
| 67 | 0.22  | 0.0670  | 67 | 0.25  | 0.0196 |
| 68 | 1.51  | 0.4668  | 68 | 3.95  | 0.3056 |
| 69 | 1.52  | 0.4705  | 69 | 3.38  | 0.2617 |
| 70 | 0.89  | 0.2771  | 70 | 6.60  | 0.5108 |
| 71 | 39.23 | 12.1657 | 71 | 17.94 | 1.3878 |
| 72 | 9.95  | 3.0851  | 72 | 33.14 | 2.5639 |
| 73 | 7.09  | 2.1979  | 73 | 25.79 | 1.9953 |
| 74 | 1.60  | 0.4975  | 74 | 12.17 | 0.9414 |
| 75 | 0.06  | 0.0186  | 75 | 1.89  | 0.1466 |
| 76 | 5.16  | 1.5999  | 76 | 19.82 | 1.5335 |
| 78 | 0.44  | 0.1349  | 78 | 0.59  | 0.0458 |

|    |        |        |    |         |         |
|----|--------|--------|----|---------|---------|
| 79 | 0.74   | 0.2284 | 79 | 1.93    | 0.1490  |
| 80 | 0.01   | 0.0033 | 80 | 0.52    | 0.0401  |
| 81 | 0.06   | 0.0197 | 81 | 2.76    | 0.2136  |
| 82 | 0.88   | 0.2727 | 82 | 6.24    | 0.4827  |
| 83 | 0.62   | 0.1909 | 83 | 5.74    | 0.4437  |
| 84 | 20.43  | 6.3338 | 84 | 167.19  | 12.9329 |
| 85 | 11.84  | 3.6728 | 85 | 161.05  | 12.4585 |
| 86 | 0.51   | 0.1579 | 86 | 3.20    | 0.2477  |
| 87 | 18.24  | 5.6558 | 87 | 132.10  | 10.2189 |
| 88 | 2.04   | 0.6318 | 88 | 17.16   | 1.3273  |
| 89 | 3.55   | 1.1001 | 89 | 2.48    | 0.1918  |
| 90 | 3.21   | 0.9945 | 90 | 44.62   | 3.4517  |
| 91 | 0.09   | 0.0293 | 91 | 2.48    | 0.1921  |
| 92 | 0.02   | 0.0059 | 92 | 0.77    | 0.0595  |
| 93 | 0.12   | 0.0365 | 93 | 0.26    | 0.0204  |
| 94 | 1.66   | 0.5140 | 94 | 21.76   | 1.6832  |
| 95 | 0.39   | 0.1218 | 95 | 9.05    | 0.6998  |
| 96 | 0.60   | 0.1871 | 96 | 3.38    | 0.2612  |
| 97 | 0.14   | 0.0435 | 97 | 0.83    | 0.0640  |
| 99 | 0.18   | 0.0553 | 99 | 15.26   | 1.1803  |
|    | 322.49 | 100    |    | 1292.73 | 100     |

*Source: Computed from UN Comtrade Database*

**3.2** Complementarity in respect of a particular commodity group (here, ITC-HS two-digit level code) implies that India's exports of the commodity (to the world) is substantial, and so is the German imports of the commodity (from the world). Already, the criterion of 0.5% of German imports (as referred to in Section 2) has been applied. For the sake of examining complementarity, it may be checked that those commodity groups already short-listed enjoy at least a 0.5% share in India's exports. This ensures a match between India's supplies and Germany's demand. If India does not export a particular commodity in substantial amounts, owing maybe to domestic production structure, it will not be worthwhile to examine them even if Germany has a high demand for it.

Applying this criterion, commodities under ITC-HS Chapters 04, 07, 20, 22, 44, 70, 83, 95 may be dropped from the list. The remaining may be considered to be the commodities included in the ITC-HS chapters owing to which India's Export Intensity Index with respect to Germany is low, without there being a credible reason based on demand and supply conditions. Exactly which ITC-HS 4-digit, 6-digit or 8-digit level codes are the culprits only a detailed analysis at the specific commodity level may identify. This study above is illustrative as to the use of the export intensities and trade complementarities in finding out areas which need a closer look. For the time being, the identification of ITC-HS chapters, which broadly indicate industries, has been aimed at. It may also be mentioned that some 4, 6 or 8-digit level commodities in the 2-digit codes not included in the list (of identified ITC-HS

chapters in Section 2) may deserve export promotion measures – these may also be identified through a similar analysis at the appropriate level of granularity.

**3.3** As it is required to identify the sectors (ITC-HS 2-digit chapters) which have contributed most to the low level of complementarity, the absolute difference in shares – between the share in Indian exports and the share in German imports – for each 2-digit code is computed. Table 3C below shows the twenty 2-digit codes which have seen the highest differences. This will be of interest to framers of policy if a need to align India’s exports to German imports is recognized.

**Table 3C: Top Twenty Chapters with highest absolute difference in shares (in Indian exports and German imports)**

| Codes | Descriptions                                           | Difference in Shares (%) | Higher Share in |
|-------|--------------------------------------------------------|--------------------------|-----------------|
| 71    | Pearls, precious stones, metals, coins, etc            | 10.7779                  | Indian exports  |
| 85    | Electrical, electronic equipment                       | 8.7857                   | German imports  |
| 84    | Nuclear reactors, boilers, machinery, etc              | 6.5991                   | German imports  |
| 27    | Mineral fuels, oils, distillation products, etc        | 5.9635                   | Indian exports  |
| 87    | Vehicles other than railway, tramway                   | 4.5632                   | German imports  |
| 90    | Optical, photo, technical, medical, etc apparatus      | 2.4571                   | German imports  |
| 52    | Cotton                                                 | 2.4304                   | Indian exports  |
| 10    | Cereals                                                | 2.1468                   | Indian exports  |
| 29    | Organic chemicals                                      | 1.9200                   | Indian exports  |
| 03    | Fish, crustaceans, molluscs, aquatic invertebrates nes | 1.6073                   | Indian exports  |
| 39    | Plastics and articles thereof                          | 1.3519                   | German imports  |
| 63    | Other made textile articles, sets, worn clothing etc   | 1.2613                   | Indian exports  |
| 94    | Furniture, lighting, signs, prefabricated buildings    | 1.1692                   | German imports  |
| 62    | Articles of apparel, accessories, not knit or crochet  | 0.9608                   | Indian exports  |
| 89    | Ships, boats and other floating structures             | 0.9082                   | Indian exports  |
| 61    | Articles of apparel, accessories, knit or crochet      | 0.7650                   | Indian exports  |
| 88    | Aircraft, spacecraft, and parts thereof                | 0.6955                   | German imports  |
| 09    | Coffee, tea, mate and spices                           | 0.6362                   | Indian exports  |
| 44    | Wood and articles of wood, wood charcoal               | 0.6093                   | German imports  |
| 48    | Paper & paperboard, articles of pulp, paper and board  | 0.6053                   | German imports  |

*Source: Computed from UN Comtrade Database*

It is evident from Table 3C that in case of major high-technology manufactures like ‘Electrical, electronic equipment’, ‘Nuclear reactors, boilers, machinery, etc,’ ‘Vehicles other than railway, tramway’, ‘Optical, photo, technical, medical, etc apparatus’, ‘Aircraft, spacecraft, and parts thereof’, which are important German imports in terms of value, the shares in German imports substantially outweigh those in Indian exports. This is also true in case of some not-so-high end manufactures like ‘Plastics and articles thereof’, ‘Furniture,

lighting, signs, prefabricated buildings’, ‘Wood and articles of wood, wood charcoal’, and ‘Paper & paperboard, articles of pulp, paper and board’, but the differences in these cases is generally lower than in the earlier list of more sophisticated manufactures. The commodity groups in case of which shares in Indian exports outstrip those in German imports include many items which do not involve sophisticated manufacturing – ‘Cotton’, ‘Cereals’, ‘Fish, crustaceans, molluscs, aquatic invertebrates nes’, ‘Other made textile articles, sets, worn clothing etc’, ‘Articles of apparel, accessories, not knit or crochet’, ‘Articles of apparel, accessories, knit or crochet’, and ‘Coffee, tea, mate and spices’. Hence, this indicates that an increased accent on production and exports of high-end manufactures in India could have had a positive impact on India’s exports to Germany, as the complementarities would improve.

## Section 4: RCA and RCII

**4.1** The earlier approach was one way of looking at things. Another way involves the use of information regarding sectors which have a relative importance, in terms of value, in India’s exports (relative to the importance in world exports), and which enjoy a similar relative importance in Germany’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 India is higher than 1 if its importance is more in India’s exports than in world exports, and vice versa. Similarly, RCII index for German imports for a commodity (or commodity group) imported to Germany is higher than 1 if its importance is more in Germany’s imports than in world imports, and vice versa.

Hence, those sectors – we analyse at the ITC-HS two-digit code level – which have both RCA for India and RCII for Germany higher than 1 are the sectors which India exports and Germany imports to an extent more than overall world trends warrant. Hence these are the sectors which are expected to see substantial Indian exports to Germany. Tables 4A and 4B shows values of RCA for Indian exports and of RCII for German imports for 2018. Those chapters for which both values are above 1 are in red, for values marginally below 1 and which may be included, blue is used.

**Table 4A : RCA of Indian exports in 2018 – ITC-HS chapter-wise**

| Chapter | RCA    | Chapter | RCA    | Chapter | RCA    | Chapter | RCA    |
|---------|--------|---------|--------|---------|--------|---------|--------|
| 1       | 0.0780 | 26      | 0.4811 | 51      | 0.6544 | 76      | 1.6029 |
| 2       | 1.8334 | 27      | 1.3536 | 52      | 9.6487 | 78      | 3.4741 |
| 3       | 3.3652 | 28      | 1.0201 | 53      | 5.4851 | 79      | 2.4413 |
| 4       | 0.3030 | 29      | 2.5271 | 54      | 2.6674 | 80      | 0.1144 |
| 5       | 0.6995 | 30      | 1.1891 | 55      | 3.0157 | 81      | 0.1899 |
| 6       | 0.1980 | 31      | 0.1447 | 56      | 0.8968 | 82      | 0.7198 |
| 7       | 1.0824 | 32      | 2.1741 | 57      | 6.9246 | 83      | 0.4760 |
| 8       | 0.9047 | 33      | 0.6981 | 58      | 1.6649 | 84      | 0.4935 |
| 9       | 4.4859 | 34      | 0.5635 | 59      | 0.5579 | 85      | 0.2700 |
| 10      | 4.6424 | 35      | 0.4585 | 60      | 0.7112 | 86      | 0.6847 |
| 11      | 0.8892 | 36      | 1.4975 | 61      | 2.1996 | 87      | 0.6725 |

|    |        |    |        |    |        |    |        |
|----|--------|----|--------|----|--------|----|--------|
| 12 | 1.1684 | 37 | 0.0502 | 62 | 2.1931 | 88 | 0.4005 |
| 13 | 7.0856 | 38 | 1.2568 | 63 | 4.667  | 89 | 1.6557 |
| 14 | 3.1921 | 39 | 0.7732 | 64 | 1.2546 | 90 | 0.3086 |
| 15 | 0.6946 | 40 | 0.9854 | 65 | 0.2675 | 91 | 0.0959 |
| 16 | 0.4990 | 41 | 1.8574 | 66 | 0.0423 | 92 | 0.1642 |
| 17 | 1.6805 | 42 | 1.5578 | 67 | 1.3666 | 93 | 0.5311 |
| 18 | 0.2473 | 43 | 0.0695 | 68 | 1.5072 | 94 | 0.3629 |
| 19 | 0.3657 | 44 | 0.1750 | 69 | 1.3672 | 95 | 0.193  |
| 20 | 0.5376 | 45 | 0.0814 | 70 | 0.6789 | 96 | 0.6519 |
| 21 | 0.5863 | 46 | 0.8309 | 71 | 3.4326 | 97 | 0.2811 |
| 22 | 0.1288 | 47 | 0.0040 | 72 | 1.4701 | 99 | 0.019  |
| 23 | 1.3588 | 48 | 0.5885 | 73 | 1.272  |    |        |
| 24 | 1.1901 | 49 | 0.5510 | 74 | 0.6218 |    |        |
| 25 | 2.9487 | 50 | 2.0714 | 75 | 0.1428 |    |        |

Source: Computed from UN Comtrade Database

**Table 4B : RCII of German imports in 2018 – ITC-HS chapter-wise**

| Chapter | RCA    | Chapter | RCA    | Chapter | RCA    | Chapter | RCA    |
|---------|--------|---------|--------|---------|--------|---------|--------|
| 1       | 1.4204 | 26      | 0.4899 | 51      | 0.6768 | 76      | 1.4917 |
| 2       | 1.0648 | 27      | 0.6273 | 52      | 0.3607 | 78      | 1.0663 |
| 3       | 0.5575 | 28      | 0.8867 | 53      | 0.2428 | 79      | 1.4610 |
| 4       | 1.7729 | 29      | 1.4460 | 54      | 0.6467 | 80      | 0.6664 |
| 5       | 1.5916 | 30      | 1.4986 | 55      | 0.7710 | 81      | 1.3230 |
| 6       | 2.5508 | 31      | 0.2515 | 56      | 1.0854 | 82      | 1.3918 |
| 7       | 1.7863 | 32      | 1.2402 | 57      | 1.3671 | 83      | 1.2448 |
| 8       | 1.3263 | 33      | 0.9194 | 58      | 0.4595 | 84      | 1.0991 |
| 9       | 1.2327 | 34      | 1.1906 | 59      | 0.9339 | 85      | 0.7922 |
| 10      | 0.4632 | 35      | 1.2272 | 60      | 0.3383 | 86      | 1.5991 |
| 11      | 0.6520 | 36      | 0.9496 | 61      | 1.3510 | 87      | 1.4946 |
| 12      | 0.7637 | 37      | 1.1469 | 62      | 1.2894 | 88      | 0.9397 |
| 13      | 1.3134 | 38      | 1.1300 | 63      | 1.2365 | 89      | 0.4265 |
| 14      | 0.5534 | 39      | 1.1242 | 64      | 1.4047 | 90      | 1.1102 |
| 15      | 0.6426 | 40      | 1.2710 | 65      | 1.1216 | 91      | 0.6411 |
| 16      | 1.0430 | 41      | 0.4782 | 66      | 1.2842 | 92      | 1.5729 |
| 17      | 0.7595 | 42      | 0.8726 | 67      | 0.8775 | 93      | 0.4430 |
| 18      | 1.3831 | 43      | 0.4630 | 68      | 1.2111 | 94      | 1.5511 |
| 19      | 1.0930 | 44      | 0.9579 | 69      | 1.1260 | 95      | 1.1754 |
| 20      | 1.3379 | 45      | 0.8763 | 70      | 1.2131 | 96      | 1.0669 |
| 21      | 0.8325 | 46      | 0.9817 | 71      | 0.3974 | 97      | 0.5288 |

|    |        |    |        |    |        |    |        |
|----|--------|----|--------|----|--------|----|--------|
| 22 | 1.2272 | 47 | 1.0739 | 72 | 1.1611 | 99 | 1.1014 |
| 23 | 0.7967 | 48 | 1.3544 | 73 | 1.2536 |    |        |
| 24 | 0.9226 | 49 | 1.2415 | 74 | 1.0460 |    |        |
| 25 | 0.6220 | 50 | 0.3693 | 75 | 0.8430 |    |        |

*Source: Computed from UN Comtrade Database*

Hence, from Tables 4A and 4B above, the chapters which should see high exports from India to Germany are 02,07,08,09,13, 28, 29, 30, 32, 36, 38, 40, 57, 61, 62,63,64, 67, 68, 69, 72, 73, 76, 78 and 79. Let this set be called set A.

**4.2** But are India's exports of these product groups to Germany really sufficiently high? If the RCA of India to Germany (not to the world, as was being discussed earlier) for the elements in set A  $> 1$ , it may be said that the exports are sufficiently high. This is true because Germany's RCII (for the world) for the product is also  $> 1$ . Otherwise, the condition would not be applicable. The reason is not far to seek. Let the share of imports of product P in world imports be  $r\%$ . (That will theoretically be the percentage share of P in world exports, too). If Germany's RCII for P  $> 1$ , the share of P in her imports,  $y > r$ . Had all the countries of the world had the same RCA (in that case all, including India would have  $RCA = 1$ ), the share of P exports of all countries, including India, would be  $x$ . Share in imports in different countries would vary according to their RCII for P. So, the share of P in India's exports to Germany should be  $y$ , and not less than  $y$  (if other factors do not come into play to spoil the whole thing), to another country it might be  $z$ , its RCII (which might be  $<$  or  $> 1$ ). So, even if India's RCA for P = 1, its RCA for P in case of exports to Germany would be  $> 1$  ( $= y$ ). Now, commodities which have RCA for India  $> 1$  have been chosen. Let share of P in India's exports be  $q$  ( $q > r$ , as RCA for India for P  $> 1$ ). Thus, RCA for P in case of exports from India to Germany should be  $> 1$  (actually it should equal  $y*q$ , both  $y, q > 1$ , but we may go with the weaker condition). Hence, the necessity of both  $y$  and  $q$  to be  $> 1$ .

If the RCA of P in India's exports to Germany  $< 1$ , it needs closer examination. For some reason, Indian exporters do not exports sufficient amounts of P (in value terms) while they export their wares to Germany. The policy measures in this case must be directed towards making Indian exporters increase the share of P in their export basket to Germany.

Let the chapters which have an RCA in exports from India to Germany  $> 1$  constitute set B. So,  $B = \{05, 06, 08, 09, 12, 13, 18, 20, 23, 29, 32, 39, 40, 42, 43, 44, 46, 50, 53, 57, 59, 61, 62, 63, 64, 65, 68, 70, 73, 81, 82, 83, 84, 85, 88, 90, 91, 92, 94, 95, 96, 99\}$ .

The set  $A \cap B = \{08, 09, 13, 29, 32, 40, 57, 61, 62, 63, 64, 68, 73\}$ .

These are the 13 sectors, for which RCA in Indian exports to Germany is (expectedly)  $> 1$ , as both their RCAs in India's exports and their RCII in Germany's imports are  $> 1$ . But the set  $A - B = \{02, 07, 28, 36, 38, 67, 69, 72, 76, 78, 79\}$ , gives us the sectors for which RCA in Indian exports to Germany is  $< 1$ , though both their RCAs in India's exports and their RCII in Germany's imports are  $> 1$ . For the set A - B, product-specific export-promotion measures for the German market may be adopted by India.

**Table 4C : RCA of Indian exports to Germany in 2018 – ITC-HS chapter-wise**

| Chapter | RCA    | Chapter | RCA    | Chapter | RCA    | Chapter | RCA    |
|---------|--------|---------|--------|---------|--------|---------|--------|
| 1       | 0.0000 | 26      | 0.1987 | 51      | 0.6319 | 76      | 0.3801 |
| 2       | 0.0001 | 27      | 0.0002 | 52      | 0.3941 | 78      | 0.0008 |
| 3       | 0.1378 | 28      | 0.5325 | 53      | 1.1788 | 79      | 0.0191 |
| 4       | 0.1499 | 29      | 1.4266 | 54      | 0.3393 | 80      | 0.0706 |
| 5       | 1.1155 | 30      | 0.5429 | 55      | 0.5380 | 81      | 4.1140 |
| 6       | 2.4454 | 31      | 0.0534 | 56      | 0.5324 | 82      | 3.2646 |
| 7       | 0.6907 | 32      | 1.8436 | 57      | 2.3706 | 83      | 1.9745 |
| 8       | 1.2584 | 33      | 0.9789 | 58      | 0.3344 | 84      | 2.7118 |
| 9       | 1.5596 | 34      | 0.5188 | 59      | 1.2236 | 85      | 1.7882 |
| 10      | 0.0668 | 35      | 0.5917 | 60      | 0.0970 | 86      | 0.7083 |
| 11      | 0.1202 | 36      | 0.2057 | 61      | 3.1912 | 87      | 0.8939 |
| 12      | 1.3186 | 37      | 0.0909 | 62      | 2.1244 | 88      | 3.0548 |
| 13      | 1.6315 | 38      | 0.9254 | 63      | 1.8038 | 89      | 0.0007 |
| 14      | 0.6338 | 39      | 1.0957 | 64      | 4.4859 | 90      | 2.3571 |
| 15      | 0.2849 | 40      | 2.2719 | 65      | 2.3200 | 91      | 2.0727 |
| 16      | 0.1355 | 41      | 0.8359 | 66      | 0.2316 | 92      | 5.0241 |
| 17      | 0.1213 | 42      | 4.9091 | 67      | 0.1388 | 93      | 0.3197 |
| 18      | 2.1872 | 43      | 1.8737 | 68      | 1.8349 | 94      | 2.6558 |
| 19      | 0.1567 | 44      | 1.3263 | 69      | 0.6351 | 95      | 2.2567 |
| 20      | 1.4488 | 45      | 0.1070 | 70      | 1.2617 | 96      | 2.3634 |
| 21      | 0.2337 | 46      | 4.4951 | 71      | 0.0929 | 97      | 0.7782 |
| 22      | 0.0103 | 47      | 0.0462 | 72      | 0.5878 | 99      | 1.2018 |
| 23      | 1.5029 | 48      | 0.3454 | 73      | 2.1578 |         |        |
| 24      | 0.6280 | 49      | 0.5040 | 74      | 0.7086 |         |        |
| 25      | 0.4123 | 50      | 1.5872 | 75      | 0.5785 |         |        |

Source: Computed from UN Comtrade Database

**4.3** By a similar logic as given above, it can be established that if, for a particular commodity, RCA for India and RCII for Germany are both  $> 1$ , it can be expected that RCII for that commodity in German imports from India will be  $> 1$ . If this is not the case, the reasons thereof need to be investigated, and appropriate policy measures taken. Actually it implies that the importers of Germany are not importing the particular commodity in sufficient amount (in value terms) while importing from India. It is not necessarily that they are averse to buying from India in general, they may very well purchase other commodities from India, but – for some reason – not this particular product. Policies designed to make these products from India attractive to German importers need to be adopted.

#### 4.4 Table 4D : RCII of German imports from India in 2018 (ITC-HS chapter-wise)

| Chapter | RCII | Chapter | RCII | Chapter | RCII | Chapter | RCII |
|---------|------|---------|------|---------|------|---------|------|
|---------|------|---------|------|---------|------|---------|------|

|    |        |    |        |    |        |    |        |
|----|--------|----|--------|----|--------|----|--------|
| 1  | 0.0151 | 26 | 0.0266 | 51 | 0.3485 | 76 | 0.2941 |
| 2  | 0.0000 | 27 | 0.0390 | 52 | 0.7456 | 78 | 0.2106 |
| 3  | 0.2886 | 28 | 1.1562 | 53 | 0.9439 | 79 | 0.0244 |
| 4  | 0.1369 | 29 | 1.3418 | 54 | 0.2692 | 80 | 0.0130 |
| 5  | 5.8845 | 30 | 0.7816 | 55 | 0.7174 | 81 | 2.4137 |
| 6  | 1.4366 | 31 | 0.0911 | 56 | 0.4820 | 82 | 2.1901 |
| 7  | 0.6670 | 32 | 1.8100 | 57 | 1.6116 | 83 | 1.5199 |
| 8  | 3.6857 | 33 | 1.0225 | 58 | 0.5028 | 84 | 1.5609 |
| 9  | 1.6689 | 34 | 0.5644 | 59 | 0.7459 | 85 | 1.5135 |
| 10 | 0.1832 | 35 | 1.0894 | 60 | 0.2367 | 86 | 0.4767 |
| 11 | 0.1532 | 36 | 0.3392 | 61 | 2.6425 | 87 | 0.7656 |
| 12 | 1.1407 | 37 | 0.0062 | 62 | 2.2409 | 88 | 1.8636 |
| 13 | 1.5170 | 38 | 0.8328 | 63 | 1.3457 | 89 | 0.0029 |
| 14 | 0.3233 | 39 | 1.0502 | 64 | 3.0624 | 90 | 1.3246 |
| 15 | 1.7707 | 40 | 1.9673 | 65 | 1.9877 | 91 | 1.6143 |
| 16 | 0.2238 | 41 | 0.5395 | 66 | 2.2027 | 92 | 4.4838 |
| 17 | 0.7011 | 42 | 2.9189 | 67 | 0.1671 | 93 | 0.4073 |
| 18 | 1.5813 | 43 | 1.2302 | 68 | 1.2333 | 94 | 1.7018 |
| 19 | 0.2064 | 44 | 1.3027 | 69 | 0.5841 | 95 | 1.3028 |
| 20 | 1.5426 | 45 | 0.2469 | 70 | 1.1902 | 96 | 1.7656 |
| 21 | 0.2725 | 46 | 0.4199 | 71 | 0.0917 | 97 | 0.2113 |
| 22 | 0.0639 | 47 | 0.0027 | 72 | 0.7617 | 99 | 1.7271 |
| 23 | 1.4993 | 48 | 0.2998 | 73 | 1.4961 |    |        |
| 24 | 1.5643 | 49 | 0.3887 | 74 | 0.3875 |    |        |
| 25 | 0.1601 | 50 | 0.9497 | 75 | 0.2867 |    |        |

Source: Computed from UN Comtrade Database

From Table 4D above, it is seen that the following chapters, comprising a third set C, record RCII values from Germany to India which are  $> 1$ :  $C = \{05, 06, 08, 09, 12, 13, 15, 18, 20, 23, 24, 28, 29, 32, 33, 35, 39, 40, 42, 43, 44, 57, 61, 62, 63, 64, 65, 66, 68, 70, 73, 81, 82, 83, 84, 85, 88, 90, 91, 92, 94, 95, 96, 99\}$ .

$$A \cap C = \{08, 09, 13, 28, 29, 32, 40, 57, 61, 62, 63, 64, 68, 73\}.$$

These are the 14 sectors, for which RCII in German imports from India is (expectedly)  $> 1$ , as both their RCAs in India's exports and their RCII in Germany's imports are  $> 1$ . But the set  $A - C = \{02, 07, 30, 36, 38, 67, 69, 72, 76, 78, 79\}$ , gives us the sectors for which RCII in Indian exports to Germany is  $< 1$ , though both their RCAs in India's exports and their RCII in Germany's imports are  $> 1$ . For the set  $A - C$ , product-specific measures to lure German importers, and, maybe, to do away with roadblocks to Indian exports to Germany (if any such hurdles exist) may be contemplated.

$$A - B = \{02, 07, 28, 36, 38, 67, 69, 72, 76, 78, 79\},$$

$$A - C = \{02, 07, 30, 36, 38, 67, 69, 72, 76, 78, 79\}$$

(A – B) and (A – C) are almost identical, except that 28 and 30 are only in A – B and A – C, respectively. So, the set  $D = \{02, 07, 36, 38, 67, 69, 72, 76, 78, 79\}$  includes all those chapters, i.e. sectors, which need special product-specific policy measures, directed both at Indian exporters and German importers, to increase their shares in Indian exports to Germany.

**4.5** This was a sector-wise analysis, and the policies to be adopted need to address the sector at large. There may be, in a particular chapter, 6-digit commodities which may satisfy the conditions satisfied by the chapter as a whole, and there may many which do not. There may even be occasions wherein no 6-digit commodity of a particular chapter individually satisfies the conditions but the chapter as a whole does. This may be because RCA and RCII of some commodities in India's exports to Germany  $< 1$  (which brings down the RCA and RCII of the chapter as a whole), but their RCAs in case of India's exports (to the whole world) or their RCII in case of Germany's imports (from the whole world) may also be  $< 1$ . In case of other commodities of the same chapter, both may be  $> 1$ . On the other hand, a chapter as a whole may not satisfy the conditions, but some 6-digit commodities included in it may.

So, ITC-HS 6-digit code-wise analysis is more relevant, because the greater granularity permits better focussing of policy measures. The list of chapters may not be consistent with the list of ITC-HS six-digit commodities, because of the reasons mentioned above. The analytical framework elaborated above, with chapters as the basis, was mainly for the purpose of elucidation of the methodology adopted, but also for giving a sector-wise status. But for policy formulation, the analysis with the highest possible granularity is the best option. Hence, it will be most expeditious to consider the ITC-HS six-digit commodities which emerge, as the candidates for the policies mentioned above, when the methodology set out above is employed at the 6-digit level. This list is given in Appendix A.

**4.6** So much for product-specific policies. Market (i.e. destination) specific policies need to be considered, too. If India has a market share in the world, for commodity P (say s), which is greater than India's overall market share (for all commodities) in the world (say t), there is no reason to expect that India's market share for P in Germany, say  $g < s$ .  $g$  can be  $< s$  only when, for some reason, Germany imports P, but not sufficiently from India. In such cases, market or destination-specific promotional policies will be needed. The same will be true when Germany's share in India's export of P falls below Germany's share in total world imports of P. When both coincide, there is an even stronger case for adoption of the market-specific promotional policies. Appendix B shows the list of such commodities in case of India's exports to Germany.

For commodities appearing in both the lists – in Appendix A and Appendix B, both product-oriented and market-oriented promotional policies are required to be adopted.

## Section 5: Export Concentration

**5.1** The standard measure of concentration of exports over a range of commodities is the Hirschman-Herfindahl Index (HHI), which is the sum of the squares of the shares of the

commodities (in terms of value) in the export basket.(See Export Concentration Index in Appendix C). The index has been calculated over all ITC-HS six-digit commodities, the highest level of granularity allowed by comparable international data. The index is more meaningful the more granular is the data.

**5.2** In case of India’s exports to Germany, Table5A shows an increase of the index from 2014 to 2018, though it had dipped slightly in 2015. It may be noted that the index for India’s exports to the world is significantly higher than it is for India’s exports to Germany, though there has been some decline in the former between 2014 and 2018. A lower level of concentration of exports is reassuring as it is a sign of greater diversification of India’s exports to Germany than to the world, which indicates a broader production base and lesser risk. However, there may be lesser gains from specialization.

**Table 5A: Hirschman-Herfindahl Index for India to the World and for India to Germany**

|      | India to Germany | India to the World |
|------|------------------|--------------------|
| 2014 | 0.0735           | 0.1716             |
| 2015 | 0.0715           | 0.1323             |
| 2016 | 0.0733           | 0.1342             |
| 2017 | 0.0909           | 0.1339             |
| 2018 | 0.0980           | 0.1489             |

*Source: Computed from UN Comtrade Database*

## Section 6: Intra-Industry Trade

**6.1** 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 1.(See Appendix C for the Index of Intra-Industry Trade).

**6.2** In the present case, the Grubel-Lloyd Index values (computed on exports from India to Germany and imports from Germany to India) in Table A show that, in 2018, in case of agricultural products and processed farm products, intra-industry trade between India and Germany is generally low, except ‘Milling products, malt, starches, inulin, wheat gluten’ (chapter 11) and ‘Animal, vegetable fats and oils, cleavage products, etc.’ (chapter 15). This is understandable, as, owing to wide differences in soil and climatic conditions, the two countries have little in common as regards crops and other agricultural produce.

**Table 6A : Grubel-Lloyd Index for India and Germany in 2018 – Agricultural and Related Products (Chapters 01-24)**

| ITC-HS chapter | Description                                            | Grubel-Lloyd Index |
|----------------|--------------------------------------------------------|--------------------|
| 01             | Live animals                                           | 0.0000             |
| 02             | Meat and edible meat offal                             | 0.0000             |
| 03             | Fish, crustaceans, molluscs, aquatic invertebrates nes | 0.0606             |
| 04             | Dairy products, eggs, honey, edible animal product nes | 0.8103             |
| 05             | Products of animal origin, nes                         | 0.0001             |
| 06             | Live trees, plants, bulbs, roots, cut flowers etc      | 0.0131             |
| 07             | Edible vegetables and certain roots and tubers         | 0.0610             |
| 08             | Edible fruit, nuts, peel of citrus fruit, melons       | 0.0039             |
| 09             | Coffee, tea, mate and spices                           | 0.0227             |
| 10             | Cereals                                                | 0.0000             |
| 11             | Milling products, malt, starches, inulin, wheat gluten | 0.6974             |
| 12             | Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | 0.1921             |
| 13             | Lac, gums, resins, vegetable saps and extracts nes     | 0.2884             |
| 14             | Vegetable plaiting materials, vegetable products nes   | 0.0018             |
| 15             | Animal,vegetable fats and oils, cleavage products, etc | 0.5340             |
| 16             | Meat, fish and seafood food preparations nes           | 0.0178             |
| 17             | Sugars and sugar confectionery                         | 0.3069             |
| 18             | Cocoa and cocoa preparations                           | 0.1519             |
| 19             | Cereal, flour, starch, milk preparations and products  | 0.4136             |
| 20             | Vegetable, fruit, nut, etc food preparations           | 0.0729             |
| 21             | Miscellaneous edible preparations                      | 0.6971             |
| 22             | Beverages, spirits and vinegar                         | 0.0172             |
| 23             | Residues, wastes of food industry, animal fodder       | 0.3354             |
| 24             | Tobacco and manufactured tobacco substitutes           | 0.4425             |

*Source: Computed from UN Comtrade Database*

**6.3** The same is true for ores and minerals, as the two countries are differently endowed with these natural resources. Table 6 B, shows the low index values of the chapters 25, 26 and 27. In case of ‘Mineral fuels, oils, distillation products, etc’ (chapter 27), neither of these two countries are rich in the raw materials, but India imports a lot of petroleum products – not crude oil, of course – from Germany, but exports little to that country.

**Table 6B : Grubel-Lloyd Index for India and Germany in 2018 – Mineral Products ( Chapters 25-27)**

| ITC-HS chapter | Description                                           | Index value |
|----------------|-------------------------------------------------------|-------------|
| 25             | Salt, sulphur, earth, stone, plaster, lime and cement | 0.4081      |
| 26             | Ores, slag and ash                                    | 0.3786      |
| 27             | Mineral fuels, oils, distillation products, etc       | 0.0133      |

*Source: Computed from UN Comtrade Database*

**6.4** The scenario changes as one moves on to chemicals and chemical-based industries. ('Rubber and articles thereof' may also be included in this group as nowadays, artificial, and not natural, rubber is mostly used.). Germany is a traditional hub of chemical industries, and India's industry has developed significantly in the last few decades. So, very high intra-industry trade in sectors like 'Organic Chemicals' (chapter 29) or in 'Pharmaceutical Products' (chapter 30) is not unexpected. Seven out of thirteen chapters included in this group – shown in Table 6C below – have their Grubel-Lloyd indices above 0.5.

**Table 6C : Grubel-Lloyd Index for India and Germany in 2018 – Products of Chemical or Allied Industries (Chapters 28-40)**

| ITC-HS chapter | Description                                            | Index value |
|----------------|--------------------------------------------------------|-------------|
| 28             | Inorganic chemicals, precious metal compound, isotopes | 0.3759      |
| 29             | Organic chemicals                                      | 0.8159      |
| 30             | Pharmaceutical products                                | 0.9890      |
| 31             | Fertilizers                                            | 0.0124      |
| 32             | Tanning, dyeing extracts, tannins, derivs, pigmentsetc | 0.9173      |
| 33             | Essential oils, perfumes, cosmetics, toileteries       | 0.9572      |
| 34             | Soaps, lubricants, waxes, candles, modelling pastes    | 0.1269      |
| 35             | Albuminoids, modified starches, glues, enzymes         | 0.2382      |
| 36             | Explosives, pyrotechnics, matches, pyrophorics, etc    | 0.6220      |
| 37             | Photographic or cinematographic goods                  | 0.0149      |
| 38             | Miscellaneous chemical products                        | 0.4736      |
| 39             | Plastics and articles thereof                          | 0.5196      |
| 40             | Rubber and articles thereof                            | 0.9488      |

*Source: Computed from UN Comtrade Database*

**6.5** Again, when it comes to chapters dealing with products of plant and animal parts, as included in the groups shown in Table 6D below, the intra-industry trade index falls. Only 'Raw hides and skins (other than furskins) and leather' (chapter 41) and, 'Furskins and artificial fur, manufactures thereof' (chapter 43) have high index values.

**Table 6D : Grubel-Lloyd Index for India and Germany in 2018 – Leather, Wood and Paper Chapters 41-49**

| ITC-HS chapter | Description                                            | Index value |
|----------------|--------------------------------------------------------|-------------|
| 41             | Raw hides and skins (other than furskins) and leather  | 0.8035      |
| 42             | Articles of leather, animal gut, harness, travel goods | 0.0153      |
| 43             | Furskins and artificial fur, manufactures thereof      | 0.6158      |
| 44             | Wood and articles of wood, wood charcoal               | 0.2764      |

|    |                                                       |        |
|----|-------------------------------------------------------|--------|
| 45 | Cork and articles of cork                             | 0.3398 |
| 46 | Manufactures of plaiting material, basketwork, etc.   | 0.1522 |
| 47 | Pulp of wood, fibrous cellulosic material, waste etc  | 0.0001 |
| 48 | Paper & paperboard, articles of pulp, paper and board | 0.2155 |
| 49 | Printed books, newspapers, pictures etc               | 0.4920 |

*Source: Computed from UN Comtrade Database*

**6.6** The group comprising textiles and clothing, shown in Table 6E, shows low index values, except for artificial materials, which both countries produce and export, like ‘Man-made Filaments’ (chapter 54) and ‘Man-made Staple Fibres’ (chapter 55). Natural materials and products made of them do not experience high intra-industry trade, as cotton, silk, etc. are not grown in Germany, but there much more wool is produced than in India.

**Table 6E : Grubel-Lloyd Index for India and Germany in 2018 – Textiles, Textile Articles, Footwear and Headgear (Chapters 50-65)**

| ITC-HS chapter | Description                                            | Index value |
|----------------|--------------------------------------------------------|-------------|
| 50             | Silk                                                   | 0.0136      |
| 51             | Wool, animal hair, horsehair yarn and fabric thereof   | 0.4298      |
| 52             | Cotton                                                 | 0.0953      |
| 53             | Vegetable textile fibres nes, paper yarn, woven fabric | 0.1473      |
| 54             | Manmade filaments                                      | 0.9152      |
| 55             | Manmade staple fibres                                  | 0.7265      |
| 56             | Wadding, felt, nonwovens, yarns, twine, cordage, etc   | 0.5071      |
| 57             | Carpets and other textile floor coverings              | 0.0233      |
| 58             | Special woven or tufted fabric, lace, tapestry etc     | 0.7767      |
| 59             | Impregnated, coated or laminated textile fabric        | 0.4600      |
| 60             | Knitted or crocheted fabric                            | 0.3556      |
| 61             | Articles of apparel, accessories, knit or crochet      | 0.0034      |
| 62             | Articles of apparel, accessories, not knit or crochet  | 0.0098      |
| 63             | Other made textile articles, sets, worn clothing etc   | 0.0478      |
| 64             | Footwear, gaiters and the like, parts thereof          | 0.0226      |
| 65             | Headgear and parts thereof                             | 0.2139      |

*Source: Computed from UN Comtrade Database*

**6.7** The assorted group in Table 6F shows that in case stones, plaster, cement, asbestos, mica and articles, ceramic products, glass and glassware and pearls, precious stones, metals, coins, etc., intra-industry trade is high – both the countries produce and export these commodities to each other in sufficient amount b(in value terms).

**Table 6F : Grubel-Lloyd Index for India and Germany in 2018 – Assorted Group of Items (Chapters 66-71)**

| ITC-HS chapter | Description | Index value |
|----------------|-------------|-------------|
|----------------|-------------|-------------|

|    |                                                      |        |
|----|------------------------------------------------------|--------|
| 66 | Umbrellas, walking-sticks, seat-sticks, whips, etc   | 0.2510 |
| 67 | Bird skin, feathers, artificial flowers, human hair  | 0.0508 |
| 68 | Stone, plaster, cement, asbestos, mica, etc articles | 0.7300 |
| 69 | Ceramic products                                     | 0.6794 |
| 70 | Glass and glassware                                  | 0.5822 |
| 71 | Pearls, precious stones, metals, coins, etc          | 0.9842 |

*Source: Computed from UN Comtrade Database*

**6.8** As regards metals and articles made thereof, there is high intra-industry trade in iron and steel and articles made of them because there are large deposits of iron ore in both countries, and both have large and developed iron and steel industries. In case of tools and implements made of metals, intra-industry trade is high because both countries manufacture these products. However, owing to differential endowment of resources like lead, zinc, nickel and tin, the index is low in these cases. Table 6G shows the index values for chapters 72 to 83.

**Table 6G : Grubel-Lloyd Index for India and Germany in 2018 – Base Metals and Articles of Base Metals (Chapters 72-83)**

| ITC-HS chapter | Description                                   | Index value |
|----------------|-----------------------------------------------|-------------|
| 72             | Iron and steel                                | 0.6746      |
| 73             | Articles of iron or steel                     | 0.9103      |
| 74             | Copper and articles thereof                   | 0.3352      |
| 75             | Nickel and articles thereof                   | 0.1139      |
| 76             | Aluminium and articles thereof                | 0.5821      |
| 78             | Lead and articles thereof                     | 0.0048      |
| 79             | Zinc and articles thereof                     | 0.1018      |
| 80             | Tin and articles thereof                      | 0.0208      |
| 81             | Other base metals, cermets, articles thereof  | 0.5313      |
| 82             | Tools, implements, cutlery, etc of base metal | 0.7880      |
| 83             | Miscellaneous articles of base metal          | 0.4699      |

*Source: Computed from UN Comtrade Database*

**6.9** The last group, half of which are high-end manufactures, show varying values of the Grubel-Lloyd Index. It is extremely heartening to observe that India has high index values for chapters like ‘Nuclear reactors, boilers, machinery, etc’ (chapter 84) and ‘Electrical, electronic equipment’ (chapter 85), wherein Germany is a major player in world trade and industry. Table 6H shows the index values for chapters 84 to 99.

**Table 6H : Grubel-Lloyd Index for India and Germany in 2018 – High-End Manufactured Products, Furniture, Sports Goods and Works of Art (Chapters 84-99)**

| ITC-HS chapter | Description                               | Index value |
|----------------|-------------------------------------------|-------------|
| 84             | Nuclear reactors, boilers, machinery, etc | 0.5118      |
| 85             | Electrical, electronic equipment          | 0.5077      |

|    |                                                        |        |
|----|--------------------------------------------------------|--------|
| 86 | Railway, tramway locomotives, rolling stock, equipment | 0.1701 |
| 87 | Vehicles other than railway, tramway                   | 0.5976 |
| 88 | Aircraft, spacecraft, and parts thereof                | 0.3617 |
| 89 | Ships, boats and other floating structures             | 0.0020 |
| 90 | Optical, photo, technical, medical, etc apparatus      | 0.2749 |
| 91 | Clocks and watches and parts thereof                   | 0.3321 |
| 92 | Musical instruments, parts and accessories             | 0.2746 |
| 93 | Arms and ammunition, parts and accessories thereof     | 0.2358 |
| 94 | Furniture, lighting, signs, prefabricated buildings    | 0.9734 |
| 95 | Toys, games, sports requisites                         | 0.2249 |
| 96 | Miscellaneous manufactured articles                    | 0.7533 |
| 97 | Works of art, collectors pieces and antiques           | 0.6754 |
| 99 | Commodities not elsewhere specified                    | 0.0412 |

*Source: Computed from UN Comtrade Database*

## Section 7: Export Similarity

**7.1** The similarity in the export baskets of two countries, i.e. similarities in the shares of different commodities in the total exports of two countries, is measured by the Export Similarity Index. It is calculated by taking the percentage shares of each commodity (here ITC-HS six digit level commodities have been taken) in both the countries, taking the minimum of the two, and then summing up these minima over all the commodities. (See Appendix C for the Export Similarity Index). The index values vary from 0 to 100.

Table 7A shows the values of this index for India and Germany, India and USA, India and UK, India and China and India and Japan.

**Table 7A: Export Similarity Index – India and a few countries**

|                         | 2014         | 2015         | 2016         | 2017         | 2018         |
|-------------------------|--------------|--------------|--------------|--------------|--------------|
| <b>India -- Germany</b> | <b>28.14</b> | <b>29.86</b> | <b>29.61</b> | <b>29.88</b> | <b>30.61</b> |
| India-USA               | 32.55        | 32.62        | 32.00        | 31.74        | 31.91        |
| India-UK                | 30.08        | 30.99        | 31.94        | 31.44        | 31.00        |
| India- China            | 26.56        | 26.77        | 27.52        | 26.97        | 28.06        |
| India-Japan             | 21.43        | 23.03        | 23.54        | 23.87        | 23.62        |

*Source: Computed from UN Comtrade Database*

**7.2** The Export Similarity Index between India and Germany is not very high, but it is not significantly lower than that between India and the USA or that between India and the UK. It is actually higher than the index between India and China, and India and Japan.

Table 7B below shows that Germany's Export Similarity Index values with other developed countries like the USA, the UK and Japan are much higher than those with India. Interestingly, values with respect to China are higher than with respect to India, but much lower than with respect to the USA, the UK and Japan. China, though the workshop of the world, is still a developing country.

**Table 7B: Export Similarity Index – Germany and a few countries**

|               | 2014  | 2015  | 2016  | 2017  | 2018  |
|---------------|-------|-------|-------|-------|-------|
| Germany-USA   | 56.56 | 56.64 | 56.93 | 55.83 | 53.18 |
| Germany-UK    | 54.91 | 54.91 | 57.47 | 57.35 | 54.67 |
| Germany-China | 35.66 | 35.57 | 36.35 | 37.09 | 37.91 |
| Germany-Japan | 52.60 | 52.03 | 52.80 | 52.38 | 52.14 |

*Source: Computed from UN Comtrade Database*

## **Section 8: Summing Up**

India's exports to Germany, though substantial, is below the level warranted by global trade patterns – this is evident from a lower-than-one Export Intensity Index value. The trade complementarity between India and Germany is lower than between India and the world. From an exercise using the Revealed Comparative Advantage index of Indian exports and the Revealed Comparative Import Inclination index, it is evident that in case of a large number of ITC-HS six-digit codes, product-specific and market-specific export promotion measures need to be undertaken to improve India's export trade with Germany. Concentration of India's exports to Germany is rather low, when compared to concentration of India's exports to the world – this is reassuring. Indian and German exports are not similar, and the level of development and the differences in the structure of the economy may, among other factors, explain it to some extent.

## Appendix A

### Commodities requiring product-specific export-promotion policies

| Commodity Code | Commodity Description                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------------|
| 040900         | NATURAL HONEY                                                                                                              |
| 081340         | OTHER FRUIT:                                                                                                               |
| 090961         | SEEDS OF ANISE, BADIAN, CARAWAY OR FENNEL; JUNIPER BERRIES NEITHER CRUSHED NOR GROUND                                      |
| 091091         | MIXTRS OF TWO OR MORS PRODCTS OF DIFF HDG                                                                                  |
| 110630         | FLOUR,MEAL AND PWDR OF THE PRDCTS OF CHPTR 8                                                                               |
| 120242         | GROUND-NUT, NOT ROASTED OR OTHERWISE COOKED, WHETHER OR NOT SHELLLED OR BROKEN-IN SHELLLED WHETHER OR NOT BROKEN           |
| 120750         | MUSTARD SEEDS W/N BROKEN                                                                                                   |
| 151499         | OTHER RAPE, COLZA, MUSTERED OILS OTHER THAN CRUDE                                                                          |
| 151590         | OTHR FXD VEGTBL FATS AND OILS AND THR FRACTNS                                                                              |
| 170230         | CHMCCLY PURE GLUCOS AND ITS SYRP WITHOUT OR WITH < 20% BY WGT OF FRACTOS IN DRY STATE                                      |
| 200799         | OTHR                                                                                                                       |
| 220710         | UNDENATRD ETHYL ALCHL OF AN ALCHLC STRNGTH OF 80 PERCNT OR HIGHER BY VOL.                                                  |
| 250100         | SALT (INCL TABLE SALT AND DENATRD SALT) AND PURE SODIM CHLRDE W/N AQS SOLN SEA WTR                                         |
| 250870         | CHAMOTTE OR DINAS EARTHS                                                                                                   |
| 251200         | SILICS FOSIL MEALS (KIESELGHUR TRIPOLITE DIATMTE) AND SMLR SILICS ERTHS W/N CALCND SPOF AN APPRNT SPECIFIC GRVTY OF 1 OR L |
| 251710         | PEBBLES GRVL BRKN/CRSHD STONE COMMONLY USDFR CONCRTE AGRGTS FR RO MTLNG/RLY/OTHR BALAST SHINGLE AND FLINT W/N HEAT-TREA    |
| 252620         | NATRL STEATITE CRUSHED/POWDERED                                                                                            |
| 282490         | OTHR LEAD OXIDES                                                                                                           |
| 282749         | OTHER CHLORIDE OXIDES AND CHLORID HYDROXIDES                                                                               |
| 283919         | OTHER SODIUM SILICATES                                                                                                     |
| 284020         | OTHER BORATES :                                                                                                            |
| 284180         | TUNGSTATES (WOLFRAMATES)                                                                                                   |
| 291211         | METHANAL (FORMALDEHYDE)                                                                                                    |
| 291440         | KETONE-ALCOHOLS AND KETONE ALDEHYDES                                                                                       |
| 291615         | OLEIC LINOLC/LINOLNC ACDS,THR SLTS AND ESTRS                                                                               |
| 291734         | OTHER ESTERS OF ORTHOPHTHALIC ACID                                                                                         |
| 292019         | OTHER:                                                                                                                     |
| 293332         | PIPERIDINE AND ITS SALTS                                                                                                   |
| 300490         | OTHER MEDCNE PUT UP FOR RETAIL SALE                                                                                        |
| 300670         | GEL PREP TO BE USED IN HUMAN OR VETERINARYMEDICINE AS A LUBRICANT FOR PARTS OF BODYFOR SURGI OPER/PHYS EXAM BETWN BODYAND  |
| 320500         | COLR LAKES                                                                                                                 |
| 320641         | ULTRAMARIN AND PRPTNS BASD THEREON                                                                                         |
| 340111         | SOAP AND ORGNC SURFACE ACTV PRDCTS ETC FOR TIOLET USE (INCL MEDICATED PRDCTS)                                              |
| 340600         | CANDLES TAPERS AND THE LIKE                                                                                                |
| 382370         | INDUSTRIAL FATTY ALCOHOL                                                                                                   |
| 392190         | OTHR PLTS,SHTS,FILM FOIL,STRIP ETC,NONCLLR                                                                                 |
| 392390         | OTHR ARTCLS FOR THE CNVYNCE/PCKNG OF GOODS                                                                                 |
| 400520         | SOLUTIONS; DISPRSNS OTHR THN THOSE OF SUBHEADING NO. 400510                                                                |

|        |                                                                                                                        |
|--------|------------------------------------------------------------------------------------------------------------------------|
| 401120 | NEW PNMTC TYRES USED ON BUSES/LORRIES                                                                                  |
| 401140 | NEW PNMTC TYRES OF A KIND USED ON MTRCYCLS                                                                             |
| 401320 | INNER TUBES OF RUBBER USED ON BICYCLES                                                                                 |
| 401511 | SURGICLE GLOVES,MITTENS AND MITTS                                                                                      |
| 441194 | OF A DENSITY NOT EXCEEDING 0.5 GM/CM 3 :                                                                               |
| 480261 | OTHER PAPR 7 PAPRBORD IN ROLLS OF WHCH>10%BY WT OF TOTL FBR CNTNT CONSIST OF FBRS OBTND BY MCHNCL/CHEMI-MCHNCL PROCESS |
| 480269 | PAPER AND PAPERBOARD OTHER THAN ROLL/SHEET OFWHCH >10% BY WT OF TOTL FBR CNTNT.                                        |
| 480431 | OTHER CRAFT PAPER AND PAPERBOARD WEIGHING 150 G/M2 OR LESS UNBLEACHED                                                  |
| 480519 | OTHER FLUTING PAPER                                                                                                    |
| 481019 | PAPR/PAPRBORD OTHER THAN ROLLS/SHEETS                                                                                  |
| 482010 | REGISTRS ACCT/NOTE/ORDR/RECPT BOOKS LETR/ MEMO PADS DIARIS AND SMLR ARTCLS OF PAPR                                     |
| 482090 | OTHR ARTCLS OF STATIONARY OF PAPR/PAPRBORD                                                                             |
| 500600 | SLK YRN AND YRN SPUN FROM SLK WAST PUT UP FOR RETAIL SALE,SLK-WORM GUT                                                 |
| 510710 | YARN OF COMBED WOOL CONTNG>=85% WOOL BY WTNOT PUT UP FOR RETAIL SALE                                                   |
| 510720 | YARN OF CMBD WOOL CONTNG < 85% WOOL BY WT                                                                              |
| 540331 | OTHR YARN OF VISCOSE RAYON,SNGL,UNTWSTD/ WITH A TWIST NT EXCDNG 120 TURNS PER METRE                                    |
| 540710 | WOVN FBRS OBTND FROM HIGH TENACITY YRN OFNYLON OR OTHR POLYAMIDES,OR OF POLYESTERS                                     |
| 551521 | FBRS OF ACRYLC/MODACRYLC STPL FBR MXD MAINLY/SOLELY WITH MAN-MADE FILAMENTS                                            |
| 551611 | WVN FBRS CNTNG 85% OR MORE BY WT OF ARTFCL STPL FBRS,UNBLCHD/BLCHD                                                     |
| 560312 | MAN-MADE FILMNT WGHNG>25G /SQM                                                                                         |
| 570292 | CRPTS AND OTHR TXTL FLR CVRNGS OF MAN-MADE TXTL MATRLS,NT OF PILE CONSTRCTN,MADE UP                                    |
| 580126 | CHENILLE FABRICS OF COTTON                                                                                             |
| 610333 | JACKETS AND BLAZERS OF SYNTHETIC FIBRES                                                                                |
| 610791 | BATHROBS DRESSING GOWN ETC.OF COTTON                                                                                   |
| 611710 | SHWL,SCRV,MUFLR,MANTLAS,VEILS AND THE LIKE                                                                             |
| 620319 | SUITS OF OTHER TEXTILE MATERIALS                                                                                       |
| 620339 | JACKETS AND BLAZERS OF OTHER TEXTILE MATRLS                                                                            |
| 620343 | TROUSERS,BIB AND BRACE,OVERALLS,BREECHES AND SHORTS OF SYNTHETIC FIBRS,MEN'S OR BOYS'                                  |
| 620349 | TROUSERS BIB AND BRACE OVERALLS,BREECHES AND SHORTS OF OTHER TXTL MATERIALS-MEN'S/BOYS'                                |
| 620412 | SUITS OF COTTON                                                                                                        |
| 620930 | BABIES GRMNTS AND CLOTHNG ACCESS OF SYN FIBR                                                                           |
| 620990 | BABIES GARMENTS AND CLOTHING ACCESSORIES OF OTHER TEXTILE MATERIALS                                                    |
| 630229 | PRINTED BED LINEN OF OTHR TXTL MATRLS                                                                                  |
| 630291 | OTHER LINEN OF COTTON                                                                                                  |
| 630710 | FLOOR-CLOTHS,DISH-CLOTHS,DUSTERS AND SIMILAR CLEANING CLOTHS                                                           |
| 630790 | OTHER MADE UP ARTICLES                                                                                                 |
| 631010 | SORTED RAGS,SCRP TWNE,CORDGE,ROPE ETC                                                                                  |
| 640199 | OTHER WATER PROOF FOOTWEAR                                                                                             |
| 640219 | OTHER SPORTS FOOTWEAR WITH OUTER SOLES AND UPPER OF RUBBER/PLASTIC                                                     |
| 680293 | OTHER GRANITE                                                                                                          |
| 700719 | OTHR TOUGHENED(TEMPERED)SAFETY GLASS                                                                                   |
| 701010 | AMPOULES                                                                                                               |
| 701110 | GLASS ENVELOPS FOR ELECTRIC LIGHTING                                                                                   |
| 711311 | ARTCLS OF JEWELLERY AND PRTS THEREOF OF SLVR W/N PLTD/CLD WTH OTHR PRCS MTL                                            |

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|--------|----------------------------------------------------------------------------------------------------------------------|
| 720219 | OTHER FERRO-MANGANESE                                                                                                |
| 720299 | OTHER FERRO-ALLOYS                                                                                                   |
| 720851 | FLT-ROLD PRDCTS, NOT IN COILS OF A THCKNS EXCD 10 MM NT FRTHR WRKD THN HT RLD PCKLD                                  |
| 720852 | FLAT-ROLD PRDCTS,NOT IN COILS OF A THICKNESS>=4.75MM BUT <=10MM NOT FURTHER WORKED THAN HOT-ROLD PICKLED             |
| 721049 | OTHR PRDCTS OF IRON/NON-ALLOY STEEL OTHERWISE PLTD/COTD WTH ZINC                                                     |
| 721590 | OTHR BARS AND RODS OF IRON/NON-ALLOY STL                                                                             |
| 721699 | OTHER :                                                                                                              |
| 721914 | HT-RLLD PRDCTS IN COILS OF THCKNS<3 MM                                                                               |
| 722012 | HT-RLLD PRDCTS OF THCKNS <4.75 MM                                                                                    |
| 722020 | COLD ROLLED PRODUCTS OF STAINLESS STEEL OFWIDTH LESS THAN 600 MM                                                     |
| 730449 | OTHR TUBE,PIPE AND HOLO PROFILE OF CIRCULR CROSS-SECTION OF OTHER STAINLESS STEEL                                    |
| 730630 | OTHER, WELDED, OF CIRCULAR CROSS-SECTION, OF IRON OR NON-ALLOY STEEL:                                                |
| 730640 | OTHER, WELDED, OF CIRCULAR CROSS-SECTION, OF                                                                         |
| 730711 | CAST FITTINGS OF NON-MALLEABLE CAST IRON                                                                             |
| 730820 | TOWERS AND LATTICE MASTS                                                                                             |
| 731029 | OTHR TNKS,CASKS AND SMLR CNTNRS OF CPCTY<50L                                                                         |
| 732010 | LEAF-SPRINGS AND LEAVES THEREFOR                                                                                     |
| 750521 | WIRE OF NICKEL,NOT ALLOYED                                                                                           |
| 760120 | ALUMINIUM ALLOYS                                                                                                     |
| 761210 | COLLAPSIBLE TUBULAR CONTAINERS                                                                                       |
| 761300 | ALMNM CONTAINERS FOR COMPRESSED/LQFD GAS                                                                             |
| 820140 | AXES BILLHOOKS AND SIMLR HEWING TOOLS                                                                                |
| 820190 | OTHER HAND TOOLS OF A KIND USED IN AGRICULTURE, HORTICULTURE OR FORESTRY                                             |
| 820510 | DRILLING THREADING OR TAPING TOOLS                                                                                   |
| 820530 | PLANES,CHISELS,GAUGES AND SMLR CUTTING TOOLSFOR WORKING WOOD                                                         |
| 830520 | STAPLES IN STRIPS                                                                                                    |
| 843280 | OTHER MACHINERY :                                                                                                    |
| 843290 | PRTS OF AGRCLTRL AND HORTCULTRL MACHINERY                                                                            |
| 843699 | PARTS OF OTHR AGRICULTUTAL,HORTICULTURAL ANDFORESTRY MACHINE INCL GERMINATION OF PLANT                               |
| 845210 | SEWNG MCHNS OFHOUSEHOLD TYPE                                                                                         |
| 846711 | PNEUMATIC ROTARY TYPE(INCL COMBINED ROTARY-PERCUSSION)                                                               |
| 850164 | A.C.GENRTRS(ALTRNTRS)OF AN OUTPUT EXCEEDING 750 KVA                                                                  |
| 870321 | VHCL WTH SPRK-IGNTN INTRNL CMBSTN RCPRCTNGPISTON ENGE OF CYLNDR CPCTY<=1000CC                                        |
| 870322 | VEHICLES WITH SPARK-IGNITION INTERNAL COMBUSTION RECIPROCATING PISTON ENGINE OF CYLINDR CAPACITY>1000CC BT NT>1500CC |
| 871410 | OF MOTORCYCLES (INCLUDING MOPEDS):                                                                                   |
| 871492 | WHEEL,RIMS AND SPOKES                                                                                                |
| 871493 | HUBS,EXCL COASTER BRKNG HUBS AND HUB BRAKES,AND FREE-WHEEL,SPROCKET-WHEELS                                           |
| 871494 | BRAKES,INCL COASTER BRAKING HUBS AND HUB BRAKES AND PRTS THEREOF                                                     |
| 871496 | PEDALS AND CRANK-GEAR AND PRTS THEREOF                                                                               |
| 900590 | PARTS AND ACCESSORIES(INCL MOUNTINGS) OF BNCLRS,MNCLRS AND OTHR OPTICAL TELESCOPES                                   |
| 900653 | OTHER, FOR ROLL FILM OF A WIDTH OF 35 MM:                                                                            |
| 950640 | ARTICLES AND EQUIPMENT FOR TABLE-TENNIS                                                                              |
| 960810 | BALL POINT PENS                                                                                                      |
| 960910 | PNCL AND CRYNS WTH LEADS ENCLSD IN RGD SHTH                                                                          |

## Appendix B

### Commodities requiring market-specific export-promotion policies

| Commodity Code | Commodity Description                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------|
| 030369         | OTHER FROZEN FISH OF THE FAMILIES BREGMACEROTIDAE, EUCLICHTHYIDAE, GADIDAE EXCLUDING LIVERS AND ROES             |
| 030719         | OYSTERS OTHERS                                                                                                   |
| 040811         | EGG YOLKS DRIED                                                                                                  |
| 040900         | NATURAL HONEY                                                                                                    |
| 060390         | OTHR CUT FLWRS AND FLOWER BUDS SUITABLE FOR BOQETS/FOR ORNMNTL PURPOSES                                          |
| 060490         | OTHER (EXCL FRESH) FOLIAGE, BRANCHES AND PLANTS, WITHOUT FLOWERS BUDS AND GRASSES, MOSSESANDLICHENS              |
| 070999         | OTHER LEGUMINOUS VEGETABLES, SHELLLED OR UNSHELLED, FRESH OR CHILLED                                             |
| 080132         | CASHEN NUTS FRESH/DRIED SHELLLED                                                                                 |
| 080450         | GUAVAS,MANGOES/MANGOSTEENS FRESH OR DRIED                                                                        |
| 080610         | GRAPES FRESH                                                                                                     |
| 080620         | GRAPES DRIED                                                                                                     |
| 080720         | PAPAWS (PAPAYAS) FRESH                                                                                           |
| 081090         | OTHER FRESH FRUITS                                                                                               |
| 081340         | OTHER FRUIT:                                                                                                     |
| 090111         | COFFEE NEITHER ROASTED NOR DECAFFEINATED                                                                         |
| 090611         | CINNAMON (CINNAMOMUM ZEYLANICUM BLUME)                                                                           |
| 090811         | NUTMEG NEITHER CRUSHED NOR GROUND                                                                                |
| 090812         | NUTMEG CRUSHED OR GROUND                                                                                         |
| 090822         | MACE CRUSHED OR GROUND                                                                                           |
| 090922         | SEEDS OF CORIANDER:CRUSHED OR GROUND                                                                             |
| 090961         | SEEDS OF ANISE, BADIAN, CARAWAY OR FENNEL; JUNIPER BERRIES NEITHER CRUSHED NOR GROUND                            |
| 091012         | GINGER:CRUSHED OR GROUND                                                                                         |
| 091091         | MIXTRS OF TWO OR MORS PRODCTS OF DIFF HDG                                                                        |
| 100829         | OTHER MILLET EXCL SEED                                                                                           |
| 110311         | GROATS AND MEAL OF WHEAT                                                                                         |
| 110630         | FLOUR,MEAL AND PWDR OF THE PRDCTS OF CHPTR 8                                                                     |
| 120242         | GROUND-NUT, NOT ROASTED OR OTHERWISE COOKED, WHETHER OR NOT SHELLLED OR BROKEN-IN SHELLLED WHETHER OR NOT BROKEN |
| 120750         | MUSTARD SEEDS W/N BROKEN                                                                                         |
| 120799         | OTHR OIL SEEDS AND OLEGNUS FRUITS W/N BROKN                                                                      |
| 130219         | OTHER : EXTRACTS :                                                                                               |
| 130232         | MUCLGS AND THCKNRS W/N MODIFD DERIVD FROM LOCUST BEANS LOCUST BEAN SEEDS/GUAR SEEDS                              |
| 151499         | OTHER RAPE, COLZA, MUSTERED OILS OTHER THAN CRUDE                                                                |
| 151590         | OTHR FXD VEGTBL FATS AND OILS AND THR FRACTNS                                                                    |
| 160529         | OTHER SHRIMPS AND PRAWNS (NOT IN AIRTIGHT CONTAINER)                                                             |
| 170230         | CHMCLY PURE GLUCOS AND ITS SYRP WITHOUT OR WITH < 20% BY WGT OF FRACTOS IN DRY STATE                             |
| 190540         | RUSKS TOASTED BREAD AND SMLR TOASTED PRDCTS                                                                      |
| 200799         | OTHR                                                                                                             |
| 200811         | GROUND NUTS , PRPD/PRSV                                                                                          |

|        |                                                                                                                           |
|--------|---------------------------------------------------------------------------------------------------------------------------|
| 200819 | OTHER, INCLUDING MIXTURES:                                                                                                |
| 210130 | ROASTED CHICORY AND OTHR ROASTED COFFEE SUBSTUTS AND EXTRCTS ESSNCESAND CNCNTRTS THROF                                    |
| 220710 | UNDENATRD ETHYL ALCHL OF AN ALCHLC STRNGTH OF 80 PERCNT OR HIGHER BY VOL.                                                 |
| 250100 | SALT (INCL TABLE SALT AND DENATRD SALT) AND PURE SODIM CHLRDE W/N AQS SOLN SEA WTR                                        |
| 250810 | BENTONITE                                                                                                                 |
| 250850 | ANDALUSITE KYANITE AND SILLIMANITE                                                                                        |
| 250870 | CHAMOTTE OR DINAS EARTHS                                                                                                  |
| 251200 | SILICS FOSIL MEALS (KIESELGHUR TRIPOLITE DIATMTE) AND SMLR SILICS ERTHS W/N CALCND SPOF AN APPRNT SPCIFIC GRVTY OF 1 OR L |
| 251710 | PEBBLES GRVL BRKN/CRSHD STONE COMMONLY USDFR CONCRTE AGRGTS FR RO MTLNG/RLY/OTHR BALAST SHINGLE AND FLINT W/N HEAT-TREA   |
| 252620 | NATRL STEATITE CRUSHED/POWDERED                                                                                           |
| 262190 | ASH AND RESIDUES FROM INCINERATION OF OTHERTHAN MUNICIPAL WASTE                                                           |
| 280300 | CARBON (CARBON BLACKS AND OTHR FORMS NES)                                                                                 |
| 281119 | OTHER INORGANIC ACIDS                                                                                                     |
| 281910 | CHROMIUM TRIOXIDE                                                                                                         |
| 282090 | OTHER MANGANESE OXIDES                                                                                                    |
| 282300 | TITANIUM OXIDES                                                                                                           |
| 282490 | OTHR LEAD OXIDES                                                                                                          |
| 282749 | OTHER CHLORIDE OXIDES AND CHLORID HYDROXIDES                                                                              |
| 283090 | OTHER SULPHIDES AND POLYSULPHIDES                                                                                         |
| 283510 | PHOSPHINATES CHYPHOPHOSPHITES) AND PHOSPHONATES (PHOSPHITES)                                                              |
| 283720 | COMPLEX CYANIDES                                                                                                          |
| 283919 | OTHER SODIUM SILICATES                                                                                                    |
| 284020 | OTHER BORATES :                                                                                                           |
| 284150 | OTHER CHROMATES AND DICHROMATES; PEROXOCHROMATES :                                                                        |
| 284180 | TUNGSTATES (WOLFRAMATES)                                                                                                  |
| 290522 | UNSATURATD ACYCLIC TERPENE ALCOHOLS                                                                                       |
| 290539 | OTHER DIOLS                                                                                                               |
| 290559 | OTHER ACYLIC ALCOHOLS                                                                                                     |
| 290613 | STEROLS AND INOSITOLS                                                                                                     |
| 290719 | OTHER MONOPHENOLS                                                                                                         |
| 291211 | METHANAL (FORMALDEHYDE)                                                                                                   |
| 291219 | OTHR ACYCLIC ALDHYDS WTHOUT OXYGEN FNCTN                                                                                  |
| 291419 | OTHR ACYLC KETONES WTHOUT OTHR OXYGN FNCTN                                                                                |
| 291429 | OTHER CYCLANIC CYCLNIC/CYCLOTRPNC KETONES WITHOUT OTHER OXYGEN FUNCTION                                                   |
| 291440 | KETONE-ALCOHOLS AND KETONE ALDEHYDES                                                                                      |
| 291513 | ESTERS OF FORMIC ACID                                                                                                     |
| 291529 | OTHR ACETIC ACID AND ITS SLTS                                                                                             |
| 291615 | OLEIC LINOLC/LINOLNC ACDS,THR SLTS AND ESTRS                                                                              |
| 291639 | OTHR ARMTC MONOCRBOXYLC ACDS,THR ANHYDRDS HALIDES,PEROXIDES,PEROXYACIDS AND THR DRVTVS                                    |
| 291713 | AZELAIC ACID,SEBACIC ACID THR SLTS AND ESTRS                                                                              |
| 291719 | OTHR ACYLC PLYCRBOXYLC ACDS THR ANHYDRDS HALIDES,PEROXIDES,PEROXYACDS AND THR DRVTVS                                      |
| 291734 | OTHER ESTERS OF ORTHOPHTHALIC ACID                                                                                        |
| 291813 | SALTS AND ESTERS OF TARTARIC ACID                                                                                         |
| 291822 | O-ACETYLSALICYLIC ACID ITS SALTS AND ESTRS                                                                                |

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| 291823 | OTHER ESTERS OF SALICYLIC ACID AND THEIR SALTS :                                                                           |
| 292019 | OTHER:                                                                                                                     |
| 292149 | OTHR ARMTC MONO AMNS AND THR DRVTVS AND SLTS                                                                               |
| 292159 | OTHR ARMTC PLYAMNS AND THR DRVTVS AND SLTS                                                                                 |
| 292229 | OTHR AMINO-NAPTHLS AND OTHR AMINO-PHNLS THR ETHRS AND ESTRS OTHR THN THOSE CNTNG MORE THN ONE KND OF EXYGN FNCTN SLTS THER |
| 292320 | LECITHINS AND OTHER PHOSPHOAMINOLIPIDS                                                                                     |
| 292429 | OTHR CYCLC AMIDES(INCL CYCLC CRBAMATES) AND THEIR DERIVATIVES AND SALTS THEREOF                                            |
| 292519 | OTHR IMIDES AND THR DRVTVS SLTS THEREOF                                                                                    |
| 292800 | ORGNC DRVTVS OF HYDRAZINE/OF HYDROXYLAMINE                                                                                 |
| 293190 | OTHER ORGANO-INORGANIC COMPOUNDS INCL ORGANO ARSENIC COMPOUNDS                                                             |
| 293220 | LACTONES:                                                                                                                  |
| 293332 | PIPERIDINE AND ITS SALTS                                                                                                   |
| 293339 | OTHER : DERIVATIVES OF PYRIDINE :                                                                                          |
| 293399 | OTHER HETERDCYCLIC CMPNDS WITH NITROGEN HETRO ATOM (S) ONLY                                                                |
| 293790 | OTHER HORMONS, NTRL OR RPRDCD BY SYNTHESIS USED AS HORMONS                                                                 |
| 293919 | OTHER ALKALOIDS OF OPIUM ANDTHR DRVTVS,SALTS                                                                               |
| 294190 | OTHER : RIFAMPICIN AND ITS SALTS :                                                                                         |
| 294200 | OTHER ORGANIC COMPOUNDS : CEFADROXIL AND ITS SALTS, IBUPROFANE, NIFEDIPINE, RANITIDINE, DANES SALT OF D(-) PHENY           |
| 300490 | OTHER MEDCNE PUT UP FOR RETAIL SALE                                                                                        |
| 300670 | GEL PREP TO BE USED IN HUMAN OR VETERINARYMEDICINE AS A LUBRICANT FOR PARTS OF BODYFOR SURGI OPER/PHYS EXAM BETWN BODYAND  |
| 320413 | BASIC DYES AND PRE PARATIONS BASED THEREON                                                                                 |
| 320417 | PIGMENTS AND PREPTNS BASED THEREON                                                                                         |
| 320500 | COLR LAKES                                                                                                                 |
| 320619 | OTHR CLRNG MATR CNTNG <80% TITNIUM DIOXLDE                                                                                 |
| 320641 | ULTRAMARIN AND PRPTNS BASD THEREON                                                                                         |
| 320649 | OTHR COLRNG MATR AND OTHR PRPTNS                                                                                           |
| 321100 | PREPARED DRIERS                                                                                                            |
| 321519 | OTHER PRINTING INK                                                                                                         |
| 330125 | ESSENTIAL OILS OF OTHER MINTS                                                                                              |
| 330190 | OTHR CONC OF ESNL OILS IN FATS/FIXD/WAX LIKE TRPNC BYPRDCTS OF DETERPENATION OF ESNL OILS AQUIS DISTLTS/SOLTN OF ESNL      |
| 330290 | OTHER: MIXTURES OF AROMATIC CHEMICALS AND ESSENTIAL OILS AS PERFUME BASE:                                                  |
| 340111 | SOAP AND ORGNC SURFACE ACTV PRDCTS ETC FOR TIOLET USE (INCL MEDICATED PRDCTS)                                              |
| 340219 | OTHR ORNGC SRFCE-ACTV AGNTS W/N FOR RTL SL                                                                                 |
| 340600 | CANDLES TAPERS AND THE LIKE                                                                                                |
| 350110 | CASEIN CASEIN DERIVATIVES CASEIN GLUES                                                                                     |
| 350211 | DRIED (EGG ALBUMIN )                                                                                                       |
| 380210 | ACTIVATED CARBON                                                                                                           |
| 380290 | OTHER(ACTVTD NATRL MNRL PRDCTS ETC)                                                                                        |
| 380892 | FUNGICIDES:                                                                                                                |
| 382319 | OTHER INDUSTRIAL MONOCARBOXYLIC FATTY ACID                                                                                 |
| 382370 | INDUSTRIAL FATTY ALCOHOL                                                                                                   |
| 382430 | NON-AGGLOMERATED METAL CARBIDES MIXED TOGETHER OR WITH METALLIC BINDERS                                                    |
| 392020 | PLTES SHTS ETC. OF POLYMRS OF PROPYLN                                                                                      |

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| 392069 | PLTES SHTS ETC OF OTHR POLYESTERS                                                                                      |
| 392190 | OTHR PLTS,SHTS,FILM FOIL,STRIP ETC,NONCLLR                                                                             |
| 392390 | OTHR ARTCLS FOR THE CNVYNCE/PCKNG OF GOODS                                                                             |
| 400520 | SOLUTIONS; DISPRSNS OTHR THN THOSE OF SUBHEADING NO. 400510                                                            |
| 400821 | PLTS SHTS STRPS OF NON-CELLULAR RUBR                                                                                   |
| 400829 | OTHR OF NON-CELLULAR RUBBER                                                                                            |
| 400921 | TUBES,PIPES AND HOSES OF VULCNSD RUBR REINFORCED/OTHRWSE CMBND ONLY WTH METAL MATERIALS WITHOUT FITTINGS               |
| 400931 | TUBES, PIPES AND HOSES OF VULCNSD RUBR REINFORCED/OTHRWSE CMBND ONLY WTH TEXTILE MATERIALS WTHOUT FITTINGS             |
| 401011 | (CNVYR BLT/BLTNG )RENFRCD ONLY WITH METL                                                                               |
| 401039 | OTHR TRANSMISSION BLTS/BELTING OF VULCANISED RUBBER                                                                    |
| 401120 | NEW PNMTY TYRES USED ON BUSES/LORRIES                                                                                  |
| 401140 | NEW PNMTY TYRES OF A KIND USED ON MTRCYCLS                                                                             |
| 401170 |                                                                                                                        |
| 401190 |                                                                                                                        |
| 401320 | INNER TUBES OF RUBBER USED ON BICYCLES                                                                                 |
| 401511 | SURGICLE GLOVES,MITTENS AND MITTS                                                                                      |
| 401691 | FLOOR COVERINGS AND MATS                                                                                               |
| 401699 | ARTCLS OF VULCANISED RBR EXCL HRD RBR NES                                                                              |
| 430390 | OTHER ARTICLES OF FURSKIN                                                                                              |
| 440290 | OTHER :                                                                                                                |
| 441194 | OF A DENSITY NOT EXCEEDING 0.5 GM/CM 3 :                                                                               |
| 441400 | WOODEN FRAMES FOR PAINTINGS PHOTOGRAPHS MIRRORS OR SIMILAR OBJECTS                                                     |
| 442090 | WOOD MARQUETRY AND INLAID WOOD;CASKETSANDCASESFOR CULTRY AND OTHR SIMILAR ARTICLES OF WOOD                             |
| 442199 |                                                                                                                        |
| 480261 | OTHER PAPR 7 PAPRBORD IN ROLLS OF WHCH>10%BY WT OF TOTL FBR CNTNT CONSIST OF FBRS OBTND BY MCHNCL/CHEMI-MCHNCL PROCESS |
| 480269 | PAPER AND PAPERBOARD OTHER THAN ROLL/SHEET OFWHCH >10% BY WT OF TOTL FBR CNTNT.                                        |
| 480431 | OTHER CRAFT PAPER AND PAPERBOARD WEIGHING 150 G/M2 OR LESS UNBLEACHED                                                  |
| 480519 | OTHER FLUTING PAPER                                                                                                    |
| 481019 | PAPR/PAPRBORD OTHER THAN ROLLS/SHEETS                                                                                  |
| 482010 | REGISTRS ACCT/NOTE/ORDR/RECPT BOOKS LETR/ MEMO PADS DIARIS AND SMLR ARTCLS OF PAPR                                     |
| 482090 | OTHR ARTCLS OF STATIONARY OF PAPR/PAPRBORD                                                                             |
| 490110 | PRINTD BOOKS ETC IN SINGL SHEET W/N FOLDED                                                                             |
| 490510 | GLOBES                                                                                                                 |
| 500300 | SILK WASTE (INCLUDING COCOONS UNSUITABLE FOR REELING, YARN WASTE AND GARNETED STOCK):                                  |
| 500600 | SLK YRN AND YRN SPUN FROM SLK WAST PUT UP FOR RETAIL SALE,SLK-WORM GUT                                                 |
| 510710 | YARN OF COMBED WOOL CONTNG>=85% WOOL BY WTNOT PUT UP FOR RETAIL SALE                                                   |
| 510720 | YARN OF CMBD WOOL CONTNG < 85% WOOL BY WT                                                                              |
| 520291 | COTTON WASTE (GARNETTED STOCK)                                                                                         |
| 520813 | COTN FABRICS CONTNG>=85% BY WT OF COTN UNBLCHD 3/4 THRED TWILL INCL CROSS TWILL WEIGHNG NOT MORE THN 200 GM PER SQM    |
| 520911 | PLAIN WEAVE,UNBLEACHED COTTON FABRICS WEIGHING MORE THN 200 GM PER SQM                                                 |
| 520912 | UNBLCHD 3/4 THRED TWILL INCL CROSS TWILL COTTON FABRICS WEIGING MORE THAN 200 GM PER SQM                               |
| 520919 | OTHER FABRICS                                                                                                          |
| 520951 | PLAIN WEAVE,PRINTED COTN FABRICS WEIGHING MORE THAN 200 GM PER SQM                                                     |

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|--------|---------------------------------------------------------------------------------------|
| 520952 | PRINTD 3/4 THRED TWILL INCLDNG CROSS TWILLCOTTON FABRICS WEIGHING>200 G/SQM           |
| 521112 | MIXED COTTON FBRCS OF 3/4 THRD TWILL INCL CROSS TWILL,UNBLCHD,WGNG >200 G/M2          |
| 530810 | COIR YARN                                                                             |
| 540248 | OTHER, OF POLYPROPYLENE                                                               |
| 540310 | HIGH TENACITY YARN OF VISCOSE RAYON                                                   |
| 540331 | OTHR YARN OF VISCOSE RAYON,SNGL,UNTWSTD/ WITH A TWIST NT EXCDNG 120 TURNS PER METRE   |
| 540710 | WOVN FBRCS OBTND FROM HIGH TENACITY YRN OFNYLON OR OTHR POLYAMIDES,OR OF POLYESTERS   |
| 540822 | OTHER WOVEN FABRICS CNTNG BY WT>=85% OF ARTIFICIAL FILAMENT/STRIP/LIKE,DYED           |
| 550952 | OTHER YARN OF POLYSTR STPLE FIBRS MIXED MAINLY/SOLELY WITH WOOL/FINE ANIMAL HAIR      |
| 550999 | OTHR SYNTHTC YRN MXD MAINLY/SOLELY WTH FBRE OTHR THN COTTON/FINE ANML HAIR AND WOOL   |
| 551110 | YRN OF SYNTHTC STAPLE FIBRES CNTNG 85% OR MORE BY WEIGHT OF SUCH FIBRES               |
| 551429 | OTHER WOVEN FABRICS WHICHEVER IS HIGHER                                               |
| 551521 | FBRCS OF ACRYLC/MODACRYLC STPL FBR MXD MAINLY/SOLELY WITH MAN-MADE FILAMENTS          |
| 551611 | WVN FBRCS CNTNG 85% OR MORE BY WT OF ARTFCL STPL FBRs,UNBLCHD/BLCHD                   |
| 560312 | MAN-MADE FILMNT WGNG>25G /SQM                                                         |
| 570190 | CRPTS AND FLR CVRNGS KNOTTD OF OTR TXTL MTRL                                          |
| 570210 | KLM","SCHMCKS","KRMNE" AND SMLR H                                                     |
| 570249 | CRPTS AND TXTL FLR CVRNGS,WVN,OF OTHR TXTL MATRLS,OF PILE CNSTRCTN,MADE-UP            |
| 570291 | CRPTS AND OTHR TXTL FLR CVRNGS OF WOOL/FINE ANML HAIR,NT OF PILE CNSTRCTN,MADE UP     |
| 570292 | CRPTS AND OTHR TXTL FLR CVRNGS OF MAN-MADE TXTL MATRLS,NT OF PILE CNSTRCTN,MADE UP    |
| 570299 | CRPTS AND OTHR TXTL FLR CVRNGS OF OTHR TXTL MATRLS,NT OF PILE CNSTRCTN,MADE UP        |
| 570390 | CARPETS AND OTHR TEXTILE FLOOR COVERINGS OF OTHER TEXTILE MATERIALS,TUFTD W/N MADE UP |
| 580126 | CHENILLE FABRICS OF COTTON                                                            |
| 590290 | TYRE CORD FABRICS OF VISCOSE RAYON                                                    |
| 610120 | OVRCOAT,CAPES,CLOAKS,ANORAKS ETC OF COTTON                                            |
| 610333 | JACKETS AND BLAZERS OF SYNTHETIC FIBRES                                               |
| 610339 | JACKETS AND BLAZERS OF OTHER TXTL MATERIALS                                           |
| 610349 | TROUSERS,SHORTS ETC OF OTHR TXTL MATRLS                                               |
| 610413 | SUITS OF SYNTHETIC FIBRES                                                             |
| 610443 | DRESSES OF SYNTHETIC FIBRES                                                           |
| 610510 | MEN'S/BOYS' SHIRTS OF COTTON                                                          |
| 610711 | UNDERPANTS AND BRIEFS OF COTTON                                                       |
| 610791 | BATHROBS DRESSING GOWN ETC.OF COTTON                                                  |
| 610821 | BRIEFS AND PANTIES OF COTTON                                                          |
| 610831 | NIGHTDRESSES AND PYJAMAS OF COTTON                                                    |
| 610899 | NEGLIGES BATHROBES ETC OF OTHR TXTL MATRLS                                            |
| 610990 | T-SHIRT ETC OF OTHER TEXTILE MATERIALS                                                |
| 611219 | TRACK SUITS OF OTHR TXTL MATRLS                                                       |
| 611420 | OTHER GARMENTS OF COTTON                                                              |
| 611430 | OTHER GARMENTS OF MAN-MADE FIBRES                                                     |
| 611529 | OF OTHER TEXTILE MATERIALS:                                                           |
| 611710 | SHWL,SCRV,MUFLR,MANTLAS,VEILS AND THE LIKE                                            |
| 620319 | SUITS OF OTHER TEXTILE MATERIALS                                                      |
| 620323 | ENSEMBLES OF SYNTHETIC FIBRES                                                         |
| 620339 | JACKETS AND BLAZERS OF OTHER TEXTILE MATRLS                                           |

|        |                                                                                         |
|--------|-----------------------------------------------------------------------------------------|
| 620342 | TROUSERS BIB AND BRACE OVERALLS BREECHES AND SHORTS OF COTTON FOR MEN'S AND BOYS'       |
| 620343 | TROUSERS,BIB AND BRACE,OVERALLS,BREECHES AND SHORTS OF SYNTHETIC FIBRS,MEN'S OR BOYS'   |
| 620349 | TROUSERS BIB AND BRACE OVERALLS,BREECHES AND SHORTS OF OTHER TXTL MATERIALS-MEN'S/BOYS' |
| 620411 | SUITS OF WOOL OR FINE ANIMAL HAIR                                                       |
| 620412 | SUITS OF COTTON                                                                         |
| 620423 | ENSEMBLES OF SYNTHETIC FIBRES                                                           |
| 620442 | DRESSES OF COTTON                                                                       |
| 620443 | DRESSES OF SYNTHETIC FIBRES                                                             |
| 620444 | DRESSES OF ARTIFICIAL FIBRES                                                            |
| 620452 | SKIRTS AND DIVIDED SKIRTS OF COTTON                                                     |
| 620453 | SKIRTS AND DIVIDED SKIRTS OF SYNTHETIC FIBRS                                            |
| 620459 | SKRTS AND DVDED SKRTS OF OTHER TXTL MATRALS                                             |
| 620520 | MEN'S OR BOYS' SHIRTS OF COTTON                                                         |
| 620630 | BLOUSES,SHIRTS AND SHIRTS-BLOUSES OF COTTON                                             |
| 620690 | BLOUSES,SHIRTS ETC OF OTHR TXTL MATERIALS                                               |
| 620719 | UNDRPNT AND BRIEFS OF OTHR TXTL MATERIALS                                               |
| 620721 | NIGHTSHIRTS AND PYJAMAS OF COTTON                                                       |
| 620791 | OTHR SMLR GRMNTS OF COTN FOR MEN'S/BOYS'                                                |
| 620811 | SLIPS AND PETTICOATS OF MAN-MADE FIBRES                                                 |
| 620819 | SLIPS AND PETTICOATS OF OTHR TXTL MATRLS                                                |
| 620829 | NIGHTDRESSES AND PYJAMAS OF OTHR TXTL MATRLS                                            |
| 620891 | OTHER SMLR GARMENTS OF COTTON                                                           |
| 620920 | BABIES' GRMNTS AND CLOTHNG ACCSSRS OF COTTON                                            |
| 620930 | BABIES GRMNTS AND CLOTHNG ACCESS OF SYN FIBR                                            |
| 620990 | BABIES GARMENTS AND CLOTHING ACCESSORIES OF OTHER TEXTILE MATERIALS                     |
| 621112 | SWIMWEAR FOR WOMEN'S OR GIRLS'                                                          |
| 621142 | OTHR GRMNTS OF COTTON FR WOMEN'S OR GIRLS'                                              |
| 621143 | OTHER GARMENTS OF MAN-MADE FIBRES                                                       |
| 621600 | GLOVES,MITTENS AND MITTS                                                                |
| 630130 | BLANKETS(OTHER THAN ELECTRIC BLANKETS) AND TRAVELLING RUGS,OF COTTON                    |
| 630210 | BED LINEN,KNITTED OR CROCHETED                                                          |
| 630229 | PRINTED BED LINEN OF OTHR TXTL MATRLS                                                   |
| 630231 | OTHER BED LINEN OF COTTON                                                               |
| 630239 | OTHR BED LINEN OF OTHR TEXTILE MATERIALS                                                |
| 630251 | OTHER TABLE LINEN OF COTTON                                                             |
| 630291 | OTHER LINEN OF COTTON                                                                   |
| 630391 | OTHER CURTAIN ETC OF COTTON                                                             |
| 630399 | OTHER CURTAINS OF OTHR TXTL MATERIALS                                                   |
| 630492 | OTHR FRNSHG ARTCLS OF COTN,NT KNTD/CRCHTD                                               |
| 630499 | OTHER FURNISHING ARTICLES OF OTHER TEXTILE MATERIALS,NOT KNITTED/CROCHETED              |
| 630520 | SACKS AND BAGS OF COTTON                                                                |
| 630590 | SACKS AND BAGS OF OTHER TEXTILE MATERIALS                                               |
| 630710 | FLOOR-CLOTHS,DISH-CLOTHS,DUSTERS AND SIMILAR CLEANING CLOTHS                            |
| 630790 | OTHER MADE UP ARTICLES                                                                  |
| 631010 | SORTED RAGS,SCRIP TWNE,CORDGE,ROPE ETC                                                  |

|        |                                                                                                          |
|--------|----------------------------------------------------------------------------------------------------------|
| 640199 | OTHER WATER PROOF FOOTWEAR                                                                               |
| 640212 | SKI-BOOTS AND CROSS-COUNTRY SKI FOOTWEAR AND SNOWBOARD BOOTS                                             |
| 640219 | OTHER SPORTS FOOTWEAR WITH OUTER SOLES AND UPPER OF RUBBER/PLASTIC                                       |
| 640319 | FTWEAR WTH OUTR SOLES OF RUBR,PLSTCS, WITH UPPERS OF LEATHER                                             |
| 680223 | SMPLY CUT/SWN GRANITE WTH A FLT/EVN SURFCE                                                               |
| 680293 | OTHER GRANITE                                                                                            |
| 680430 | HAND SHARPENING OR POLISHING STONES                                                                      |
| 681389 | OTHER                                                                                                    |
| 681410 | PLATES SHEETS AND STRIPS OF AGGLOMERATED OR RECONSTITUTED MICA W/N ON A SUPPORT                          |
| 690100 | BRICKS,BLOCKS ETC OF SILICEOUS FOSSIL MEAL(KIESELGUHR ETC)/OF SMLR SILICEOUS EARTHS                      |
| 690721 |                                                                                                          |
| 690990 | CEREMIC TROUGHS,TUBS;POTS JARS AND THE LIKE                                                              |
| 700420 | GLS COLRD THROUGHOUT THE MASS(BODY TNTD) OPACFD FLSHD/HAVNG A ABSRBNT REFLCTNG OR NON REFLCTNG LAYR      |
| 700719 | OTHR TOUGHENED(TEMPERED)SAFETY GLASS                                                                     |
| 701010 | AMPOULES                                                                                                 |
| 701110 | GLASS ENVELOPS FOR ELECTRIC LIGHTING                                                                     |
| 701190 | OTHER GLASS ENVELOPES                                                                                    |
| 701400 | SIGNLLNG GLSSWARE AND OPTCL ELMNTS OF GLSS (EXCL GOODS OF HDG 7015)NT OPTCLY WRKD                        |
| 701790 | OTHR LBRTRY/HYGNC/PHRMCTCL GLSSWARE                                                                      |
| 711299 | WST AND SCRPF OF OTHR PRECIOUS METAL OR OF METL CLAD WTH PRECIOUS METAL                                  |
| 711311 | ARTCLS OF JEWELLERY AND PRTS THEREOF OF SLVR W/N PLTD/CLD WTH OTHR PRCS MTL                              |
| 711419 | ARTCLS AND PRTS OF OTHR PRCS MTL W/N PLTD OR CLAD WTH PRCS MTL                                           |
| 720219 | OTHER FERRO-MANGANESE                                                                                    |
| 720299 | OTHER FERRO-ALLOYS                                                                                       |
| 720510 | GRANULES OF PIG IRON ETC.                                                                                |
| 720851 | FLT-ROLD PRDCTS, NOT IN COILS OF A THCKNS EXCD 10 MM NT FRTHR WRKD THN HT RLD PCKLD                      |
| 720852 | FLAT-ROLD PRDCTS,NOT IN COILS OF A THICKNESS>=4.75MM BUT <=10MM NOT FURTHER WORKED THAN HOT-ROLD PICKLED |
| 720916 | FLT-ROLD PRDCTS,IN COILS NT FRTHR WRKD THNCOLD-ROLD (COLD RDUCD) OF THCKNS OF >1 MM BUT <3 MM            |
| 721049 | OTHR PRDCTS OF IRON/NON-ALLOY STEEL OTHERWISE PLTD/COTD WTH ZINC                                         |
| 721190 | OTHER FLT-RLLD PRDCTS OF IRN/NON-ALOY STL OF WDTH<600MM,NT CLD,PLATD/COATD                               |
| 721590 | OTHR BARS AND RODS OF IRON/NON-ALLOY STL                                                                 |
| 721610 | U,I OR H SECTIONS,HOT-ROLLED,HOT-DRAWN EXTRUDED,OF A HEIGHT OF LESS THAN 80 MM                           |
| 721669 | ANGLE SHAPES ETC NT FRTHR WRKD THN COLD FRMD/COLD FINSHD OBTND FRM OTHR PRDCTS OTHR THN FLT-ROLD         |
| 721699 | OTHER :                                                                                                  |
| 721914 | HT-RLLD PRDCTS IN COILS OF THCKNS<3 MM                                                                   |
| 721921 | HT-RLLD PRDCTS NT IN COILS OF THCKNS>10MM                                                                |
| 721990 | OTHR FLAT-RLLD PRDCTS OF STAINLESS-STEEL OF WDTH >=600 MM                                                |
| 722012 | HT-RLLD PRDCTS OF THCKNS <4.75 MM                                                                        |
| 722020 | COLD ROLLED PRODUCTS OF STAINLESS STEEL OFWIDTH LESS THAN 600 MM                                         |
| 722220 | BARS AND RODS,COLD-FORMED OR COLD-FINISHED                                                               |
| 722230 | OTHER BARS AND RODS :                                                                                    |
| 722240 | ANGLES,SHAPES AND SECTIONS                                                                               |
| 722300 | WIRE OF STAINLESS STEEL                                                                                  |
| 722410 | INGOTS AND OTHER PRIMARY FORMS                                                                           |

|        |                                                                                                         |
|--------|---------------------------------------------------------------------------------------------------------|
| 722860 | OTHER BARS AND RODS :                                                                                   |
| 730449 | OTHR TUBE,PIPE AND HOLO PROFILE OF CIRCULR CROSS-SECTION OF OTHER STAINLESS STEEL                       |
| 730630 | OTHER, WELDED, OF CIRCULAR CROSS-SECTION, OF IRON OR NON-ALLOY STEEL:                                   |
| 730640 | OTHER, WELDED, OF CIRCULAR CROSS-SECTION, OF                                                            |
| 730711 | CAST FITTINGS OF NON-MALLEABLE CAST IRON                                                                |
| 730721 | FLANGES OF STAINLESS STEEL                                                                              |
| 730799 | OTHR TUBE/PIPE FITTINGS OF OTHR IRON/STL                                                                |
| 730820 | TOWERS AND LATTICE MASTS                                                                                |
| 731029 | OTHR TNKS,CASKS AND SMLR CNTNRS OF CPCTY<50L                                                            |
| 731100 | CONTAINRS FOR COMPRSD/LQFD GAS OF IRN/STL                                                               |
| 731589 | OTHER CHAIN(EXCL ARTICULTD CHAIN)                                                                       |
| 731819 | OTHER THREADED ARTICLES                                                                                 |
| 731990 | OTHER ARTICLES OF 7319                                                                                  |
| 732010 | LEAF-SPRINGS AND LEAVES THEREFOR                                                                        |
| 732391 | OTHR HOUSHLD ARTCLS OF CAST IRN NT ENAMELD                                                              |
| 732393 | OTHR HOUSHOLD ARTICLES OF STAINLESS STEEL                                                               |
| 732510 | OTHR ARTICLES OF NON-MALLEABLE CAST IRON                                                                |
| 732599 | OTHER CAST ARTCLES OF IRON OR STEEL OF MALLEABLE CAST IRON                                              |
| 732619 | OTHER ARTICLES OF IRON OR STEEL FORGED OR STAMPED BUT NOT FURTHER WORKED                                |
| 732690 | OTHER ARTICLES OF HEADING 7326                                                                          |
| 741529 | OTHER ARTICLES,NOT THREADED                                                                             |
| 741810 | TABLE,KITCHEN OR OTH HHLD. ARTICLES AND PARTS, POT SCOURERS AND SCOURING OR POLISHING PADS, GLOVES ETC. |
| 741820 | SANITARY WARE AND PARTS THEREOF                                                                         |
| 741999 | OTHER ARTICLES OF HEADING 7419                                                                          |
| 750521 | WIRE OF NICKEL,NOT ALLOYED                                                                              |
| 760120 | ALUMINIUM ALLOYS                                                                                        |
| 760320 | POWDERS OF LAMELLAR STRUCTURE-FLAKES                                                                    |
| 760900 | ALUMINIUM TUBE OR PIPE FITTINGS (FOR EXAMPLE COUPLINGS,ELBOWS,SLEEVES)                                  |
| 761210 | COLLAPSIBLE TUBULAR CONTAINERS                                                                          |
| 761300 | ALMNM CONTAINERS FOR COMPRESSED/LQFD GAS                                                                |
| 761699 | OTHERS ARTICLES OF ALUMINIUM (OTHERS).                                                                  |
| 820140 | AXES BILLHOOKS AND SIMLR HEWING TOOLS                                                                   |
| 820190 | OTHER HAND TOOLS OF A KIND USED IN AGRICULTURE, HORTICULTURE OR FORESTRY                                |
| 820510 | DRILLING THREADING OR TAPING TOOLS                                                                      |
| 820530 | PLANES,CHISELS,GAUGES AND SMLR CUTTING TOOLSFOR WORKING WOOD                                            |
| 820570 | VICES,CLAMPS AND THE LIKE                                                                               |
| 820740 | TOOLS FOR TAPPING AND THREADING                                                                         |
| 820890 | OTHR KNIVS AND CUTNG BLADES                                                                             |
| 830241 | OTHR MOUNTINGS FITTINGS AND SMLR ARTCLS SUITABLE FOR BUILDINGS                                          |
| 830510 | FITTINGS FOR LOOSE LEAF BINDERS OF FILES                                                                |
| 830520 | STAPLES IN STRIPS                                                                                       |
| 840710 | AIR-CRAFT ENGINES                                                                                       |
| 840999 | PARTS OF OTHER ENGINES(DSL/SMI DSL) OTHER THAN PARTS FOR AIRCRAFT ENGINES                               |
| 841280 | OTHER ENGINES AND MOTORS NES                                                                            |

|        |                                                                                                                            |
|--------|----------------------------------------------------------------------------------------------------------------------------|
| 843069 | OTHER MACHINERY,NOT SELF-PROPELLED                                                                                         |
| 843210 | PLOUGHS                                                                                                                    |
| 843280 | OTHER MACHINERY :                                                                                                          |
| 843290 | PRTS OF AGRCLTRL AND HORTCULTRL MACHINERY                                                                                  |
| 843699 | PARTS OF OTHR AGRICULTUTAL,HORTICULTURAL ANDFORESTRY MACHINE INCL GERMINATION OF PLANT                                     |
| 844250 | PRNTNG TYPE,BLOCKS,PLTS,CYLNDRS AND OTHR PRNTNG CMPNTS;BLCKS,PLTS,CYLNDR AND LTHGRPHCSTONES,PRPRD FR PRNTNG PURPOSES       |
| 844839 | OTHR PARTS AND ACCESSORIES OF HDG 8445                                                                                     |
| 845210 | SEWNG MCHNS OFHOUSEHOLD TYPE                                                                                               |
| 845490 | PARTS OF ARTICES UNDER HDG 8454                                                                                            |
| 845819 | OTHER HORIZONTAL LATHES                                                                                                    |
| 846711 | PNEUMATIC ROTARY TYPE(INCL COMBINED ROTARY-PERCUSSION)                                                                     |
| 846890 | PARTS OF ARTICLES OF HEADING 8468                                                                                          |
| 847290 | OTHR OFFICE MACHINES                                                                                                       |
| 847340 | PRTS AND ACCSSRS OF MCHNS OF HDG NO.8472                                                                                   |
| 848079 | OTHR MOULDS FOR RUBBER/PLASTICS                                                                                            |
| 848299 | OTHER BALL/RLR BEARNG PARTS                                                                                                |
| 848340 | GEARS AND GEARNG,EXCL TOOTHD WHEELS,TRNSMSN ELMNTS PRSNTD SEPRTRY;BALL SCRWS;GEAR BOXSAND SPEED CHNGRS,INCL TORQUE CNVRTRS |
| 848410 | GSKTS AND SMLR JOINTS OF MTL SHTNG CMBND WTHOTHR MTRL/OF TWO/MORE LAYRS OF MTL                                             |
| 850164 | A.C.GENRTRS(ALTRNTRS)OF AN OUTPUT EXCEEDING 750 KVA                                                                        |
| 850300 | PARTS SUTBL FR USE SOLELY/PRNCPLLY WTH THEMCHNS OF HDG NO.8501 AND 8502                                                    |
| 850422 | LQD DIELECTRC TRNSFRMRS HVNG A PWR HNDLNG CAPACITY>650 KVA BUT<=10000 KVA                                                  |
| 850490 | PRTS OF TRNSFRMRS,STATIC CNVRTRS AND INDUCTR                                                                               |
| 851120 | IGNTION MGNTO;MGNTD-DYNAMOS MAGNETIC FLYWHEELS                                                                             |
| 851230 | SOUND SIGNALLING EQPMNT                                                                                                    |
| 853620 | AUTMTC CIRCUIT BREAKERS                                                                                                    |
| 854460 | OTHER ELECTRIC CONDUCTORS, FOR A VOLTAGE EXCEEDING 1000 V                                                                  |
| 860711 | DRIVING BOGIES AND BISSEL-BOGIES                                                                                           |
| 860729 | OTHR BRAKES AND PARTS THEREOF                                                                                              |
| 860791 | PARTS OF LOCOMOTIVES                                                                                                       |
| 870321 | VHCL WTH SPRK-IGNTN INTRNL CMBSTN RCPRCTNGPISTON ENGNE OF CYLNDR CPCTY<=1000CC                                             |
| 870322 | VEHICLES WITH SPARK-IGNITION INTERNAL COMBUSTION RECIPROCATING PISTON ENGINE OF CYLINDR CAPACITY>1000CC BT NT>1500CC       |
| 870821 | SAFETY SEAT BELTS                                                                                                          |
| 870899 | OTR PRTSANDACCSSRS OF VHCLS OF HDG 8701-8705                                                                               |
| 871410 | OF MOTORCYCLES (INCLUDING MOPEDS):                                                                                         |
| 871491 | FRAMES,FORKS AND PRTS THEREOF                                                                                              |
| 871492 | WHEEL,RIMS AND SPOKES                                                                                                      |
| 871493 | HUBS,EXCL COASTER BRKNG HUBS AND HUB BRAKES,AND FREE-WHEEL,SPROCKET-WHEELS                                                 |
| 871494 | BRAKES,INCL COASTER BRAKING HUBS AND HUB BRAKES AND PRTS THEREOF                                                           |
| 871496 | PEDALS AND CRANK-GEAR AND PRTS THEREOF                                                                                     |
| 871499 | OTHR PRTSANDACCSSRS OF BICYCLESAND OTHR CYCLES                                                                             |
| 880330 | OTHER PARTS OF AEROPLANES OR HELICOPTERS                                                                                   |
| 880390 | OTHR PARTS OF GOODS OF HDG 8801 OR 8802                                                                                    |
| 900590 | PARTS AND ACCESSORIES(INCL MOUNTINGS) OF BNCLRS,MNCLRS AND OTHR OPTICAL TELESCOPES                                         |

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|--------|--------------------------------------------------------------------------------------------------------------------------|
| 900653 | OTHER, FOR ROLL FILM OF A WIDTH OF 35 MM:                                                                                |
| 901720 | OTHER DRAWING, MARKING-OUT OR MATHEMATICAL CALCULATING INSTRUMENTS :                                                     |
| 902221 | APPRTS BSD ON USE OF ALPHA,BTA/GMA RADTNS FOR MEDICAL,SURGICAL,DENTAL/VETERINARY USEINCL RADIOGRAPHY/RADIOTHERAPY APPRAT |
| 902230 | X-RAY TUBES                                                                                                              |
| 903300 | PRTS AND ACCESSORIES FR MACHINES,APPLIANCES,INSTRUMENTS/APPARATUS OF CHAPTER 90,NES                                      |
| 920992 | PARTS AND ACCESSORIES FOR THE MUSICAL INSTRUMENTS OF HEADNG NO.9202                                                      |
| 930700 | SWORDS,CUTLASSES,BAYONETS,LANCES AND SMLR ARMS AND PRTS THROF AND SCABBARDS AND SHEATHS                                  |
| 940169 | OTHR SEATS WTH WOODEN FRAMES                                                                                             |
| 940430 | SLEEPING BAGS                                                                                                            |
| 940490 | OTHR MATRESS SUPORT AND ARTCLS OF BEDNG ETC                                                                              |
| 950640 | ARTICLES AND EQUIPMENT FOR TABLE-TENNIS                                                                                  |
| 950699 | OTHER SPORTS EQUIPMENTS                                                                                                  |
| 960810 | BALL POINT PENS                                                                                                          |
| 960860 | REFILLS FOR BALL POINT PENS,COMPRISING THEBALL POINT AND INK RESERVOIR                                                   |
| 960891 | PEN NIBS AND NIB POINTS                                                                                                  |
| 960910 | PNCL AND CRYNS WTH LEADS ENCLSD IN RGD SHTH                                                                              |

## Appendix C

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).

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

$m_{kj}$  = 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, 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).

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

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 agreements.

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.

$HI = \sqrt{\sum (x_i/X_t)}$

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. 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 equaling imports) to 0 (no interindustry trade at all).