Research Paper International Trade

# An Empirical Analysis of India's Merchandise Trade

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**ABSTRACT**

The present paper explores the potentials of enhancing trade between India and Germany and aims at identifying the possible gains that would accrue to each of the economies. Also, identifies the pattern of trade flows between the two economies in a perfectly competitive world characterized by free trade. An analysis of trend, composition and intensity is needed for international trade as it assist in finding out why exporters are not able to exploit their full potential and to what extent it is imported. Analysis of data is done with the help of comparisons of tables and formula of intensity indices of trade.

**KEYWORDS** FTA (Free Trade Agreement), trends, composition and intensity.

**Introduction**

Since 1991, India's trade reforms have made significant improvement in India's bilateral trade. India's policy makers understood that increasing the openness of India's economy was key catalyst for sustaining faster and sustainable economic growth. In fact, India's international trade volume has grown faster than GDP due to increasing exports of goods and services. The Diaspora in both India and EU brings people and cultures together leading to enhancing economic policy and cooperation for developing trade and investment. India has embarked on a process of economic reform and progressive integration with the global economy that aims to put it on the path of rapid sustained growth. However, India's trade regime and regulatory environment remains uneasy and comparatively restrictive. In 1994 cooperation agreement signed between EU and India took bilateral relation which was set-up beyond trade and economic cooperation. The trade has multi-dimensional relationship in which India maintain one third of the exports reaching to EU destination.

In EU, Germany has emerged as the most strategically essential trade destination for India. In this connection, a landmark agreement of 'Agenda for German- Indian Partnership in the 21st Century' came out which, adopted by the foreign ministers of two countries in May, 2000, give a structure to the deepening relations between the two nations that unfolded in the last decade of the 20th century. While focusing on economic, cultural, and scientific cooperation, the agenda also stipulated new fields of cooperation to address global challenges and work towards the mutual fulfilment of each other's interests. The ten-point agreement became the origin and point of reference of all future agreements between India and Germany.

Due to India's protectionist economic policy and a system of mixed economy, until 1990, trade volume remained limited. But, a substantial rise in trade took place after 1991 but still Germany was keenly interested in the East and trading with the 'Asian Tigers'. Nevertheless, Indo-German trade continued to expand, 1998 and 1999, being two years when trade disrupted due to sanctions imposed on India after its nuclear tests. Starting from 2003, the trade volume has increased impressively. Not only trade, within the field of Foreign Direct Investment, since 2005, there have been massive boost of German investments in India. Several treaties and agreements like avoiding double taxation, secure investments and social security also strengthened economic ties between India and Germany.

**Objective of the study**

The following three objectives of this study are as followed:

1. To analyze the trends in India's merchandise trade with Germany.
2. To analyze the composition of India's merchandise trade with Germany.
3. To analyze the exports and imports intensity of India's merchandise trade with Germany.

**Methodology.**

To study the empirical analysis of trade relationship between India and European for last twelve years, the secondary data is extracted from relevant sources of the official website of Business Portal (DGCI&,S Directorate General of Commerce Intelligence & Statistics).The data used for the study has been retrieved as 2-digit code of grouped commodities. The other source of data information has been UN COM Trade& World Integrated Trade Solution (WITS). Studying the composition of trade involved sorting of the major commodities from hundred in both cases (that is export & import) for all period of time is the first task. Thereafter top five major commodities in both cases, imports and exports, are found based on the absolute value and percentage share from hundred of commodities.

Following are the formulae for finding the trade intensity indices :

**a) For finding Export intensity.**

**(XIJ/XI) ÷ (MJ/MW-MI) ×100**

Where, XIJ represents total exports of India to EU for all study period of years.

XI represents total exports of India to world for all study periods of years.

MJ represents total imports of EU from world for study periods of years.

MW represents total imports of world for all study period of years.

MI represents total imports of India from world for all period of years.

**b) For finding Import intensity.**

**(MIJ/MI) ÷ (XJ/XW-XI) ×100**

Where, MIJ represents total imports of India from EU for all study period of years.

MI represents total imports of India from world for all study period of years.

XJ represents total exports of EU to world for all study periods of years.

XW represents total exports of world for all study periods of years.

XI represents total exports of India to world for study periods of years.

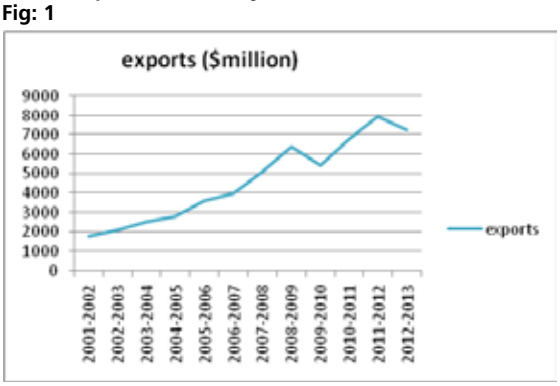
**Analysis and Interpretation**
**Exports trend of India to Germany**
**Table 1 India's export to Germany ($ Millions)**

| Year | Exports | % share | % Growth |
|---|---|---|---|
| 2001-2003 | 1788.36 | 4.08 | |
| 2002-2003 | 2106.68 | 4.00 | 17.80 |
| 2003-2004 | 2544.55 | 3.99 | 20.78 |
| 2004-2005 | 2826.25 | 3.38 | 11.07 |
| 2005-2006 | 3586.12 | 3.48 | 26.89 |
| 2006-2007 | 3984.81 | 3.15 | 11.12 |
| 2007-2008 | 5121.53 | 3.14 | 28.53 |
| 2008-2009 | 6388.54 | 3.45 | 24.74 |
| 2009-2010 | 5412.89 | 3.03 | -15.27 |
| 2010-2011 | 6751.18 | 2.69 | 24.72 |
| 2011-2012 | 7942.79 | 2.60 | 17.65 |
| 2012-2013 | 7246.2 | 2.41 | -8.77 |

**Source: calculated from monthly statistics of Indian foreign trade**

Table 1.1 depict that export increases with the increase in the year. This shows positive trend in trade relationship between India and Germany. The export drop drastically from $6388.4 million to $5412.89 million in early 2009 and the percentage growth fall from 24.74% to -15.27%.

**India's export to Germany (2001-2013)**
**Fig: 1**




**Source: calculated from monthly statistics of Indian foreign trade**

From figure 1, the export of Germany initially increases but starts falling from the beginning of 2008 and reach to $5412.89 million in 2010 this was the effect of European crisis which almost for two consecutive years. But it gradually improves in the beginning of 2010 and reached to $6751.18 at the end of 2012 due to financial stabilization. India has gain the export previously but due to debt crisis at the end of 2012 in Europe again the export falls to $7642.6 million affecting the India's export to Germany.

**Imports trend of India from Germany**
**Table 2 India's import to Germany ($ millions)**

| Years | Imports | % Share | % Growth |
|---|---|---|---|
| 2001-2003 | 2,028.10 | 3.94 | |
| 2002-2003 | 2,404.53 | 3.92 | 18.56 |
| 2003-2004 | 2,918.56 | 3.73 | 21.38 |
| 2004-2005 | 4,015.35 | 3.60 | 37.58 |
| 2005-2006 | 6,023.63 | 4.04 | 50.02 |
| 2006-2007 | 7,552.64 | 4.07 | 25.38 |
| 2007-2008 | 9,884.83 | 3.93 | 30.88 |
| 2008-2009 | 12,006.02 | 3.95 | 21.46 |
| 2009-2010 | 10,318.18 | 3.58 | -14.06 |
| 2010-2011 | 11,891.37 | 3.22 | 15.25 |
| 2011-2012 | 15,601.13 | 3.19 | 31.20 |
| 2012-2013 | 14,325.79 | 2.92 | -8.17 |

**Source: calculated from monthly statistics of Indian foreign trade**

The imports increase drastically from $9884.83 million to $12006.02 million in early 2008 and the percentage growth fall from 30.88% to 21.46%.. As the financial improvement begins in early 2010 and import boosted to $11891.37 million and as a result growth percentage increases to 15.25%. But the share percentage falls due to less import to Germany and more Indian export is distributed among other European Union nation.

Again the there was drastic fall on the import of $14325.79 million with negative in growth percentage -8.17%.

**Fig: 2 India's import from Germany (2001-2013)**




**Source: calculated from monthly statistics of Indian foreign trade**

From figure 2, the import of Germany initially increases but starts falling from the beginning of 2009 and reach to $11891.37 million at the end of 2011 But it gradually improves in the beginning of 2011 and reached to $15691.13 at the end of 2012 due to financial stabilization.

Composition of India's exports of top five commodities to Germany

Composition of export includes top five commodities which plays vital role over the period of 2001 to 2013.

**Table 3 India's export items to Germany ($ millions)**

| Commodities | CLOTHING ACCESSORIES, KNITTED. | CLOTHING ACCESSORIES NOT KNITTED. | ORGANIC CHEMICALS | ELECTRICAL MACHINERY AND EUIPMENT. | NUCLEAR REACTORS, BOILERS |
|---|---|---|---|---|---|
| 2001-2002 | 167.07 | 195.58 | 115.25 | 63.67 | 96.21 |
| % share | 9.34 | 10.94 | 6.44 | 3.56 | 5.38 |
| 2002-2003 | 257.78 | 218.29 | 176.30 | 121.06 | 105.08 |
| % share | 9.23 | 10.36 | 8.37 | 5.75 | 4.99 |
| 2003-2004 | 277.19 | 219.93 | 249.56 | 139.08 | 161.86 |
| % share | 10.89 | 8.64 | 9.81 | 5.47 | 6.36 |
| 2004-2005 | 256.74 | 193.83 | 247.13 | 166.50 | 193.68 |
| % share | 9.08 | 6.86 | 8.74 | 5.89 | 6.85 |
| 2005-2006 | 369.64 | 309.02 | 295.39 | 220.80 | 232.66 |
| % share | 10.31 | 8.62 | 8.24 | 6.16 | 6.49 |
| 2006-2007 | 342.56 | 305.64 | 355.39 | 234.65 | 292.80 |
| % share | 8.60 | 7.67 | 8.92 | 5.89 | 7.35 |
| 2007-2008 | 490.53 | 370.35 | 411.29 | 312.49 | 428.92 |
| % share | 9.58 | 7.23 | 8.03 | 6.10 | 8.37 |
| 2008-2009 | 688.88 | 429.30 | 465.80 | 71.30 | 467.66 |
| % share | 10.78 | 6.72 | 7.29 | 1.12 | 7.32 |
| 2009-2010 | 584.00 | 473.63 | 398.61 | 439.09 | 350.50 |
| % share | 10.79 | 8.75 | 7.36 | 8.11 | 6.48 |
| 2010-2011 | 489.52 | 593.83 | 438.79 | 601.17 | 487.75 |
| % share | 7.25 | 8.80 | 6.50 | 8.90 | 7.22 |
| 2011-2012 | 632.26 | 528.98 | 522.91 | 543.38 | 629.40 |
| % share | 7.96 | 6.66 | 6.58 | 6.84 | 7.92 |
| 2012-2013 | 489.43 | 501.38 | 539.93 | 477.89 | 568.51 |
| % share | 6.75 | 6.92 | 7.45 | 6.60 | 7.85 |
| Total export | 5045.60 | 4339.76 | 4216.35 | 3391.08 | 4015.03 |
| Total share | 110.57 | 98.16 | 93.74 | 70.38 | 82.58 |

**Source: calculated from monthly statistics of Indian foreign trade**

From the table 1.11 the commodities are article on clothing with knitted top the list with the value of $5045.6 million followed by share of 110.57% as total from the year 2001 to 2013. For all periods starting from 2000-2013, this commodity is dominating the rest of the items which is clearly seen from the respective total values.

Composition of India's imports of top five commodities from

**Germany**

Composition of import includes top five commodities which plays vital role over the period of time from the year 2001 to 2013.

**Table 4 India's import item to Germany ($ millions)**

| Commodities | NUCLEAR REACTORS, BOILERS. | ELECTRICAL MACHINERY AND EQUIPMENT. | ORGANIC CHEMICALS | PLASTIC AND ARTICLES THEREOF. | ARTICLES OF IRON OR STEEL |
|---|---|---|---|---|---|
| 2001-2002 | 592.72 | 307.26 | 125.30 | 91.77 | 37.19 |
| % Share | 29.23 | 15.15 | 6.18 | 4.52 | 1.83 |
| 2002-2003 | | | 667.01 | 226.26 | 75.16 |
| % Share | | | 27.74 | 9.41 | 3.13 |
| 2003-2004 | 884.41 | 444.04 | 178.26 | 132.83 | 66.29 |
| % Share | 30.30 | 15.21 | 6.11 | 4.55 | 2.27 |
| 2004-2005 | 1262.34 | 657.36 | 218.23 | 159.60 | 85.99 |
| % Share | 31.44 | 16.37 | 5.43 | 3.97 | 2.14 |
| 2005-2006 | 2211.05 | 877.58 | 265.84 | 197.62 | 131.96 |
| % Share | 36.71 | 14.57 | 4.41 | 3.28 | 2.19 |
| 2006-2007 | 3083.05 | 1001.03 | 304.29 | 227.44 | 168.07 |
| % Share | 40.82 | 13.25 | 4.03 | 3.01 | 2.23 |
| 2007-2008 | 3637.06 | 1416.91 | 379.93 | 302.34 | 250.21 |
| % Share | 36.79 | 14.33 | 3.84 | 3.06 | 2.53 |
| 2008-2009 | 4013.61 | 1550.81 | 431.65 | 339.84 | 247.35 |
| % Share | 33.43 | 12.92 | 3.60 | 2.83 | 2.06 |
| 2009-2010 | 3159.87 | 1357.67 | 484.91 | 395.55 | 219.92 |
| % Share | 30.62 | 13.16 | 4.70 | 3.83 | 2.13 |
| 2010-2011 | 3820.44 | 1480.23 | 545.09 | 505.97 | 253.59 |
| % Share | 32.13 | 12.45 | 4.58 | 4.25 | 2.13 |
| 2011-2012 | 5036.29 | 1998.02 | 702.26 | 602.71 | |
| % Share | 32.28 | 12.81 | 4.50 | 3.86 | |
| 2012-2013 | 4310.06 | 1527.49 | 726.71 | 659.29 | 348.54 |
| % Share | 30.09 | 10.66 | 5.07 | 4.60 | 2.43 |
| Total import | 32010.90 | 12618.40 | 4362.47 | 3614.96 | 1809.11 |
| Total share | 363.84 | 150.89 | 52.46 | 41.79 | 21.95 |

**Source: calculated from monthly statistics of Indian foreign trade**

From the table 1.16 among these commodities nuclear reactor product top the list with the value of $32010.90 million followed by share of 363.84% as total from the year 2001 to 2013. Next highest commodity is electrical and machinery and equipment product with total value of $12618.40 million with share of 150.89% as total. The organic chemical comes as the third highest of imports commodities with value of $4362.47 million and share of 52.46% over all total from the year 2001 to 2013.

Trade Intensity Indices: import and export intensity indices

The following table shows the result of intensity index for twelve consecutive years (2001-2013). The trade pattern is viewed with the significant level of 100% in the intensity figure as high level of trade relation with India and top Germany.

**Table 5 Trade Intensity index of India and Germany**

| Year | Export intensity (% age) | Import intensity (% age) |
|---|---|---|
| 2001 | 51.68 | 37.85 |
| 2002 | 49.98 | 37.56 |
| 2003 | 49.50 | 36.37 |
| 2004 | 44.86 | 33.70 |
| 2005 | 45.63 | 38.79 |
| 2006 | 40.76 | 40.45 |
| 2007 | 41.51 | 38.78 |
| 2008 | 42.17 | 36.57 |
| 2009 | 42.14 | 41.77 |
| 2010 | 36.99 | 35.81 |
| 2011 | 37.54 | 36.06 |
| 2012 | 35.40 | 34.32 |

**Source: Calculated from United Nations Commodity Trade Statistics Database.**

Table 1.26, shows the intensity index of import and export of India to Germany from the year 2001 to 2013. In the initial period export intensity was high with 51.68% as compared to import intensity of 37.85% which has huge gap in intensity, but in 2006 import and export are tangent and with near to similar level of intensity of 40.76% and 40.56% of export and import respectively but not exactly equal.

**CONCLUSION**

Although, governments of both countries were able to avoid diplomatic frictions, relations remained on a low profile and didnot move beyond development aid and cultural exchange. Germany's interest in investments and trade in India came only towards the end of the century. But, economic and strategic developments have been encouraging. It is evident from the table that both import and export intensity shows insignificant as the figures are below 100%., import and export of India to Germany was not intense which is evident from the intensity index of import and export of India to Germany. Though there was Free Trade Agreement between India and EU in 2004 it does not impact India-Germany trade relation much as bilateral trade relation on this twelve consecutive years (2001-2013) of observation. More over it is evident that Germany comes under top five trading partner of India and important member of European Union but the pattern of trade is insignificant and unfavourable.

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