

India's Trade with Six EU Countries: Trends and Patterns

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By

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Declaration

I declare that the dissertation entitled '**India's Trade with Six EU Countries: Trends and Patterns**' has been prepared by me under the guidance of Dr. Sandeep Kaur Bhatia, Assistant Professor, Centre for South and Central Asian Studies, Central University of Punjab. No part of this dissertation has formed the basis for the award of any degree or fellowship previously.

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Abstract

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India and European Union trade relations go back to 1960s. Both sides started their bilateral trade relations after their first summit which, was held in 2000 and after that India-EU has gone through various rounds of summits and negotiations for improving the bilateral trade ties. As a result, Free Trade Agreement was agreed upon between them in 2007 but it is still not fully implemented. EU is India's largest trading partner which has accounted 14.8 percent in its total trade in 2011. The study has taken up six nations of EU namely Belgium, France, Germany, Italy, Netherlands and UK as these countries have a large average share of trade with India during 1996-2011. The study strives to find out the trade competitiveness and patterns of India with these six EU countries by using various indices like Trade Intensity Index (TII), Revealed Comparative Advantage Index (RCA), Revealed Symmetric Comparative Advantage Index (RSCA) and Intra Industry Trade Index (IIT). The study finds out that India's growth of exports are more as compared to imports towards these countries. Among EU's six countries, UK, Germany, Netherlands and France are the main trade partners of India. Regarding commodity composition, India's 'iron and steel', 'organic chemicals' and 'electrical equipments' are the main top ten export commodities and 'pearls and precious stones metals & coins etc', 'organic chemicals', 'electrical equipment', 'iron and steel', 'nuclear reactors', 'optical photos' and 'commodities elsewhere classified' are in the top ten import commodities of India from these six countries. Regarding RCA index of India with these countries commodities namely 'silk', 'cotton', 'articles of accessories' and 'articles of leather' and 'animals guts' have still remained in top position during the whole study period and with the severe effect of Euro crisis, some of the commodities lost their earlier place in 2011 like Indian 'cotton', 'tea coffee' and 'carpets'. RSCA index shows almost same results for these commodities. Then in the IIT index for 'chemicals and allied industries.', 'wood and wood products', 'metals' and 'machinery electrical' accounted higher value of IIT index in 2000 but it has been decreasing in 2011. The study suggested that, there is diversification in goods and latest technology should be used to benefit from bilateral trade. There is still further scope to improve the FDI flows between India-EU. India should adopt policies which are open, attractive and investor friendly to enhance the FDI flows. There is a need to implement the FTA agreement at fast pace, for this there is great requirement of political will.

Keywords: India, European Union, Trade Indices, Free Trade Agreement, Euro Crisis, Bilateral Trade.

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Chapter 1

Introduction

India is an emerging economy and plays a significant role in the global world. The economy of India is currently the world's fourth largest in terms of real GDP (Gross Domestic Product) after the USA, China and Japan. It has registered ninth position in terms of GDP (Gross Domestic Product) and fourth position in terms of PPP (Purchasing Power Parity) and recorded highest constant growth rates in the 21st century. It has accounted for a remarkable rate of growth in 2011-12, which is estimated at 7.1 per cent (Economic Survey 2011-12). Going back, in the Year of 1947, when India achieved independence from British rule, it had faced stagnation in economy and was caught up in a vicious circle of poverty. Then Indian government took a policy of 'laissez fair', which was articulated by Jawaharlal Nehru. India focused on the import substitution policy. As a result country imposed prohibitions on the imports of unnecessary and luxury goods by imposing licence quota and heavy tariff rates (Roy, 2002). With effect of this policy India faced sharp decline in balance of payment at that time (Chand, 2002). Therefore in 1950s Indian government set up a uniform policy in regard to trade facilitation and export promotion and reduced the export duties, quantitative & qualitative restrictions. Indian government decided to establish an export promotion council, for suggesting trade related implications and policies to increase the exports and foreign exchange reserves in 1960s. As a result of these efforts, India's balance of payments reached at a satisfactory level (Kusum, 2002).

Although in 1970, India experienced a severe impact of oil crisis which happened due to the sharp rise in the crude oil prices. Hence India's world trade situation worsened and exports depressed at that time. So, Indian trade policy was reviewed in 1981-82, which allowed liberal and flexible trade with global economy. For this purpose, government established an Export- Import bank of India at the same time. Therefore India adopted a series of economic reforms and brought the situation under control which was earlier badly affected by factors like oil crises, unfavourable balance of payments, the Gulf war as well as implementation of structural adjustment programmes announced for the

development of India's foreign trade. Along with these factors, collapse of Soviet Union (USSR) was also one of the major factors which enforced for its liberal trade policy and suggested to eliminate the tariff rate which was necessary for the growth of trade (Mukherji, 2006). Afterwards, the East Asian Crisis in 1990s and imposition of WTO guidelines in 1995 made India to frame a new trade policy with lesser or removed quantitative restrictions. Being a founder member of this organization (WTO), India reduced the licensing quota restrictions on imports and promoted the export initiatives. As a result, its exports increased from 10.7 percent in 1990s to 20.9 percent in 2011 and in terms of imports, it has increased from 9.2 percent in 1990s to 32.1 percent in 2011. Then Indian trade policy was reviewed again during WTO conference in 2000 for the acceleration of India's international trade with all member countries and India was advised to facilitate trade, competition policy and multilateral regime on investment.

In 2004, India launched a new trade policy to enhance the trade relations with the rest of the world with tariff reduction, de licensing and reduction in import restriction. Trade liberalization was one of the major factors which attracted the developed countries during liberalization, privatization and globalization. India focused on developed countries and took a 'look east' trade policy and is having significant trade towards- Japan, China, Korea, ASEAN, EU and US (Panagariya, 2006). As a result, India established closer relationship with developed countries by negotiating on the proliferation of free trade agreement. It adopted a very cautious approach to regionalism and was engaged in only a few bilateral/ regional initiatives mainly through preferential trade agreement. So, India began implementing in principle the agreements which cover FTA in goods, services, investment and identified areas of economic cooperation. Such agreements are becoming more popular, extending to areas beyond tariff reduction. Even the world trading system has been taking such initiatives for regional integration and liberalising trade with the help of Regional Trade Agreements (RTA), tariff concessions, common level of tariffs or free trade agreements. Such initiatives may be Preferential Trade Agreements (PTA), Free Trade Agreement (FTA), Customs Union (CU) and Integration of national economic policies.

On these lines, India signed South Asia Free Trade Agreement (SAFTA) in 2006 which was an association of South Asian countries. It covers a

framework of agreement on comprehensive economic cooperation between ASEAN and India (Nag, 2011). FTA was signed between Bangladesh, India, Myanmar, Sri Lanka and Thailand for economic cooperation (BIMSTEC) in 2004. Further India has signed FTA with European Union in 2007, which forces both economies to eliminate 90 percent tariff restrictions. With effect of these regional trade agreements, India's trade has significantly increased with global world as well as other large economies such as European Union (Godderis, 2011).

India has significant trade with WANA (West Asia and North Asia), North East Asia, EU, ASEAN and US. According to the Government of India statistics, India has accounted highest share in total trade with EU (8.30 percent) followed by ASEAN (5.25 percent) and North East Asian regions (1.07 percent) in 2011. India and EU bilateral relations have continuously improved since 1960 in the global economy due to their position in the world. India was one of the first countries to establish diplomatic relations with the EEC (European Economic Community). Both have also signed many treaties and agreements which are concerned to economic, political and social cooperation. Therefore, Commercial Cooperation Agreement launched bilateral ties between India and EEC in 1970s. India and EU became stronger through the five year commercial and economic cooperation agreement in 1980s. During the period of 1990s the partnership and development cooperation agreement went further to improve the economic ties. The cooperation agreement signed between India and EU strengthened bilateral relations beyond simple trade and economic cooperation in 1994 (Giri, 2001). Later on, in the beginning of 21st century the first EU-India summit was held in 2000. At that time they decided to enhance strategic relations. After that they had signed joint action plan in 2005 that increased bilateral trade and economic cooperation and to tackle barriers to trade and investment. Within the Joint Action Plan they launched a High Level Trade Group (HLTG) and explored ways and means to deepen and widen the bilateral trade and investment relationship (Joint Action Plan , 2005). The negotiations for FTA were launched in June 2007 and so far, 12th negotiating rounds have been held. The last EU-India Summit took place on 10 February 2012 in New Delhi. Instead of much expectation, both trading partners could not finalise the agreement before the official summit. Under bilateral free trade agreement both sides are trying to reduce 90% tariff on

merchandise trade. The emphasis is on the importance of the strategic partnership and also on reinforced cooperation in security particularly in counter-terrorism, cyber security and counter-piracy, as well as trade, energy, research and innovation (Jaffreolt, 2012). India and EU have established strategic relationship by enhancing their position on trade and climate change. However, India needs better diplomatic defences against the natural tendencies. EU and India's economic relations are better, probably because India has an economic interest in EU and it's the largest trading partner of third world and largest source of private foreign investment. But there is a need of institution between India and EU so that their on-going dialogues and consultations on different issues can be mounted and EU acts as an effective actor in international policies (Pandey and Jain, 2010).

Being a large trading partner, European Union has affected India's trade due to its economic downturn. So far, some studies have identified the severe impact of Euro crisis. It has affected India's trade as well, as there was some sluggishness in the credit and asset growth of Indian banking sector and slowing down the global growth. Besides, increase in the global uncertainty, weak industrial growth, and slowdown in investment activity and depreciation in Indian rupee led to slow down in output growth. Inflation may originate from cheap domestic energy prices, incomplete pass-through of rupee, depreciation and fall page in fiscal deficit. Further oil, food and commodity inflation has led to policy tightening. As a result India's growth has come down from 7.6 percent to 6.9 percent in 2010-2011. With the Euro zone heading for a recession and the global growth slowing again after a short recovery, growth in India too was moderately slow. It has created uncertainty in Indian economy (Sinha, 2012)

The present study mainly focuses on the EU and India's merchandise trade relations since 1996. For India, cooperation with EU represents a huge opportunity to become an important partner in the new market, including information technology and bio-technology. Such cooperation would boost the India's growth and India & EU would mutually benefit. India's trade with EU, particularly six countries namely Belgium, France, Germany, Italy, Netherlands and UK, has been accounting largest share of its total trade. Table (Appendix A) has been showing the highest average share of trade of these six countries with

India. It depicts that total trade of these six countries is significantly more as compared to other EU countries. It is showing that UK has accounted highest average share viz. 10.47 percent followed by Germany (10.39 percent), Belgium (9.45 percent), Italy (5.27 percent), France (5.01 percent) and Netherlands (4.13 percent). The present study has focussed on these six countries only. Keeping in view the significance of India and EU relations, the present study mainly focuses on the following objectives:

Objectives of the Study:

- To analyze the trends and composition of India's trade with six EU countries during 1996-2011.
- To study revealed comparative advantage and competitiveness in trading commodities of India with six EU countries
- To analyze the impact of Euro crisis on India's trade with six EU countries.

The primary question addressed is that whether the trade intensity and competitiveness of India has any significance with six countries of EU or not. For this purpose, the study uses various trade indices viz. Trade Intensity Index, Revealed Comparative Advantage, Revealed Symmetric Comparative Advantage and Intra Industry Trade of India with these countries.

The study has been divided into six chapters including the present one. Second chapter (Chapter-2) is the survey of existing literature related to the present study. The study reviews are aimed to highlight the importance and future potential of India's trade with EU. Third Chapter (Chapter-3) includes the detailed methodology for the study. Fourth chapter (Chapter-4) studies the trade trends and composition of commodities and also finds out the trade intensity of India with EU particular these six countries. Then Fifth chapter (Chapter-5) measures the different tools used to assess the competitive advantage and intra industry trade of India with six countries of EU. To end with, Sixth chapter (Chapter-6) is an attempt to conclude the findings of the study and includes some possible suggestions to enhance the Indo-EU trade relations.

Chapter: 2

Review of Literature

The existing literature on the subject provides an overview of bilateral trade relations of India and EU. When India established its democratic relations with European Community, at that time EU was not formed properly. The present chapter has taken limited number of studies conducted on the subject to fulfil above objectives. This chapter has been divided into two sections- section one compiles the studies on India- European Union's relations. Section two discusses about the different studies using different indices that have been used in present study.

India and European Union both are large entities with complex structures and diverse demographic situations. India is one of the strongest economies in the global economy. As discussed in the earlier chapter, due to the liberalization and new phase of economic reforms, India established a look east policy towards developed countries since 1991. Therefore its economic and political activities have improved with rest of the world. European Union has also established good diplomatic relations with India. Therefore, some economists argued that European Union has perused diplomacy with India (Allen, 2010). India established bilateral and strategic relations with European Economic Community in 1960. After that bilateral cooperation agreement was signed in 1973 and took bilateral relations beyond simple trade and economic cooperation in 1994. Therefore, India and EU have continuously grown in the global economy due to their position in the world. Thus there is a need to pursue studies and explain the relations of India and EU. The present section is an attempt to explain their relations.

Jadhav (2003) revealed the mounting economic ties between India and EU in 21st century and considered that EU is one of the important trading partners of India and is fourth largest economy since 2003. Study also focused that eastern countries of EU imposed more tariff lines against Indian exporters and have complementarities among both nations. Study also suggested that there is need that both nations focus on trade policy and reduce the tariff lines from both sides.

Geetanjali (2004) presented that EU is a strategic trading partner of India and focused on the increasing trends in trade between both. The study concluded that EU and India both have insignificant exports due to the highest imposition of non-tariff barrier on exports by EU in certain areas and concluded that percent share of EU in India's exports decreased slightly in 2002-03, though India's share in EU's exports was insignificant. It revealed the top ten items and concluded that EU is undoubtedly an important trading partner for India and has drawn attention on an issue that some of the leading countries of EU are not having significant trade with India. The study also identified the enlargement of EU on Indian market through their discrimination trade policy. The study suggested that India should formulate its trade policy which can effectively struggle the problem of non-tariff barriers imposed by EU and also continue to strengthen trade relations towards EU with strong strategic trading relations.

Cameron et. al. (2005) mainly focused on the potential of EU and India bilateral strategic relations. It also covered the whole areas in which both nations cooperate with each other. The study revealed that EU and India, both are major democratic bodies with vast diversity (linguistic, cultural, ethnic, economic, political, and geographical). The study concluded that they have much to learn from each other in terms of how to ensure good governance and simultaneously tackle such diversity with tolerance. Thus study concludes that EU and India play very important role in directing and managing global affairs and the emergence of a new geo-strategic geometry, accompanied by awareness. It suggested that EU and India should engage in a broader dialogue concerning multiculturalism, globalisation, discrimination and religious.

Hughes (2005) explained the critical perspectives of EU and India's dissimilarities and similarities. It revealed that EU and India both are dependent on the supply of oil from west Asian countries after the 1st crisis of oil in 1973 and their cooperation of energy is also likely to be promoted in other forms of generating power such as coal, hydro, solar and nuclear. It also studied that EU's trade interests are also developing in India through merchandise trade, investment and flows of services. It also revealed that both have developed their relation through Galileo Project (2008), information communication technology (ICT) sector infrastructure like rails, links roads, ports and power sector. The

study suggested that they should actively cooperate through multilateral trade politics.

Raoul (2006) showed India-EU relation, which has become an integral part of global economy and had a colossal impact on business affairs. Due to business relationship Indian companies bought around 62 global businesses for approximately US\$ 1.7 billion and on the second hand many EU companies have set up manufacturing bases in India to powerful advantages. As a result EU also holds manifold investment opportunities for Indian companies. Both nations are also engaging themselves in diverse areas such as civil aviation, maritime transport, science and technology. The study suggested that nations have to be remove tariff or non-tariff barriers in service sector and provide a platform through the two mighty geographies for strongest ties.

HLTG (2006) examined the India – EU summit, which was held in 2006. It has discussed on the bilateral trade agreements- trade in goods, services, investment trade, facilitation public procurement, intellectual property right etc. and also analysed that there are essential complementarities trends in economic development between India-EU. Study concluded that both nations have strong complementarily and positive trend in bilateral trade. This report also measured that expansion in trade and investment has great potential for growth which enhances their relation in removing the trade barriers in goods (approximates 90% of tariff lines) as well as non-tariff barriers. The report suggested that trade in services and investments have increased due to elimination of discrimination between both parties and provide a liberal, attractive and investor friendly environment.

Sachdeva (2008) studied the economic ties between India- European Union. The study revealed that India's trade with EU has significantly increased in absolute terms, but there are disturbing trends. The reason behind is the slow growth of European Union in the last decades. It studied also that EU is a significant destination for cross border investment and overseas acquisition by Indian companies. On the other hand EU companies also want to engage with India. But study concluded that the on-going FTA and trade growth was extremely slow due to the sovereign debt crises. Further the study suggested

that there is a strong political will on both sides and they should be focused on the broad agreement which have already reached.

Francois and Balaoing (2008) studied that India had applied most-favoured nation tariffs on goods of 16 per cent, with very high tariff peaks (up to 160 per cent) on a relatively small list of goods. This, coupled with the relatively small (25 per cent, excluding petroleum products) and declining European Union market share (from more than 40 per cent in the early 1990s) and the low level in production structures between the European Union and India, suggested that there is a scope for trade diversion for India. For the European Union, India's share in imports and exports is around 1.5 per cent with some increase during the past decade. The low share of trade with the European Union, coupled with the low tariffs applied by the European Union on Indian exports (although with a higher incidence of tariff peaks), suggest that there is little scope for trade creation and have a greater possibility of trade diversion.

Holmes and Shingal (2008) discussed the core trade interests of EU and outlined some key concerns of a potential deal for India in the area of goods, services and investment and intellectual property rights and government procurement. The study also focused on the free trade deal with political concerns both of countries and took some issues regarding financial crisis. It argued that India's trade with EU could significantly increase for agricultural and non-agricultural products due to the free trade agreement and revealed that tariff cuts and removal of export restrictions have increased the volume of exports for these products. In terms of services and investment flows, they have been increased due to the FTA. However on the other hand India had to cut the capital account due to the crisis. It suggests that India should intend government official to use trade restrictiveness and make strong policies for examination of food and livelihood security in India.

Mitaritonna (2011) mainly discussed the impact of free trade agreement on India- EU relations. It concluded that FTA between the EU and India would have a positive impact on European exports. The reason behind this advantage that India's opening is more natural than the EU. It also explained why EU terms of trade are improving under all the alternative proposals and resulted that trade

impacts on India are positive under both scenarios and exports from India to the EU would increase in all sectors. Total increase of Indian exports to the world in 2020 would be approximately US\$ 9 billion under both scenarios, of which US\$ 5 billion to the EU. Thus the study suggested that inclusion of significant sectors and the services sector in negotiations will be important for India to reap the full welfare benefits of a FTA with the EU.

Sengupta (2012) focused on the EU–India's changing relationship with a spiralling Euro zone crisis. It recognised that free trade agreement would enhance their bilateral trade and investment. The study also argued that it could not take place due to the misconceptions. The main reason behind these misconceptions was that the EU's member state competed with each other in India for trade dealings as well as India also preferred to deal with some of the leading countries of EU rather as whole. The study also suggested that a balanced package by the end of 2012 can provide a new thrust to the bilateral trade and investment through break up of their political and official bottlenecks by both nations.

Sengupta (2012) analysed, the more recent issue of government procurement in the EU and India FTA, which would be proposed by EU. It is demanding access to India's government procurement markets for contracts above a certain cut-off value. On the other hand GP (Government Procurement) is most powerful tool for India's domestic market. Thus it is controversial issue between both of them. So this study suggested that India shouldn't agree on behalf of his transparency under the GP chapter in this FTA.

Mukherjee (2012) studied the India-EU investment relations. It concluded that Eastern Europe is an important destination for Indian investment and have complementarities. It also revealed that the present level of Indian investment in Eastern Europe is low and limited to a few countries and sectors. A majority of the Indian investments are directed towards Russia and most of these investments are made in the manufacturing and mining sector. The study set up the result that lack of market knowledge, poor governance structure and high level of corruption, non-transparent public procurement process and cumbersome customs procedures are some factors hindering Indian investments

in the region. The study has suggested that measures to remove the barriers to investment for India-EU Broad based Trade and Investment Agreement and strengthening the diplomatic ties.

II

The present study uses many measures and tools for the examination of pattern and competitiveness of India's trade with EU. The following literature mainly focuses on those studies which have already used many indices for measurement of pattern and competitiveness of trade.

Utkulu and Seyman. (2004) analysed the competitiveness and the pattern of trade flows/trade specialisation from Turkey to the EU on sectoral levels and mainly based on different measures of Revealed Comparative Advantage (RCA). Study concluded that Turkey has revealed comparative advantages for seven of the 63 product groups: 'clothing and clothing accessories', 'vegetables and fruit', 'sugar & sugar preparations', 'honey', 'tobacco', 'oil' and also registered the highest RCA values are the 'clothing and clothing accessories' and 'vegetables and fruit'. Then Study revealed that these commodities seem to lose their level of comparative advantages in time 'seeds and oleaginous fruits' 'rubber manufactures' 'textile yarn', 'fabrics and related products'. Overall results suggested that 80 per cent of the commodity groups having comparative advantage are the manufactured products. The study suggested alternative revealed comparative advantage indices for measuring the trade competitiveness of Turkey and EU.

Chaddha (2007) made an attempt to study the Indian trade since liberalization period and concluded that intra industry trade (IIT) of the country is accepted to expand. Thus it attempts to measure the growth in India's IIT for a nineteen years period from 1987-88 to 2005-06 and looks at the growth in IIT with respect to the various Country Groups. The change in the trade flow owing to IIT as revealed by marginal intra-industry trade (MIIT) is also evaluated. The study results that while IIT has expanded, the growth has been low. This is also reflected in the growth in IIT for India and certain products are doing extremely well on the IIT front. In terms of direction, the study reveals that India's IIT is greater with Asia and Europe. On the other hand America and Middle East are fast spreading up and Africa shows the growth in IIT in the region at highest rate.

However, the component of IIT in total trade with the region is quite small when compared to the other regions.

Mathur (2008) determined the changes in comparative advantage status of India's major agricultural exports vis-a-vis other Asian players during the post reforms period (1991-2004). It has been found that in exports of certain commodities like 'cashew and oil meals', India has been able to maintain its comparative advantage, but several others like 'tea, coffee, spices, marine products', etc. have been negatively affected. India has been found losing out its comparative advantage in export of some of the agricultural commodities to other Asian competitors during the period after economic reforms. The study has also shown that exports of various agricultural commodities from India have responded differently in terms of comparative advantage during the post-reforms period. India has enjoyed a comparative advantage in tea exports but has depicted a declining trend over the years. However, Sri Lanka has shown a far better advantage in comparison to India and other countries like China and Indonesia. A similar pattern has been observed in coffee exports also, where India has been found losing its comparative advantage to other coffee exporters like Vietnam and Indonesia. An unstable pattern of comparative advantage has been observed in case of rice exports with ups and downs in the status. India's comparative advantage in most of the important agricultural exports has been found to be eroding and losing out to other Asian competitors in certain commodities during the period after economic reforms. There have been few studies so far on the proposed European Union-India FTA.

Sahoo (2009) used the Revealed Comparative Advantage (RCA) at both the aggregated and disaggregated levels for analysing the changing demand structure and comparative advantages of both India and Korea, the economies in complementary sectors. The study concluded that RCA between them is relatively low as compared to the size and structural complementarities of the two economies and also explored trade and investment relations of India and Korea. It revealed that the increase in merchandise trade between the two countries has been mainly because of the Korea has been specialising in a few high value-added manufacturing products and India's exports have been more diversified. The study also indicated that both the countries have comparative advantages in different products in the same industry, revealing the opportunity for intra-industry

trade (IIT).The study also calculated trade intensity index that revealed that Korea is doing much better and there is scope for India to improve its export intensity with Korea. The study suggested that there is huge potential for trade in services in areas such as information technology, science and technology, pharmaceutical industry, broadcasting, tourism, healthcare and human resource development. Removal of tariff and non-tariff barriers, especially sector specific barriers, will give a major boost to bilateral trade and investment relations

Paswan (2010) explored the improvement of trade relations and trade potential between New Zealand and India. It used the analysis of Kojima indices of trade intensities, revealed comparative advantage, intra-industry trade and trade potential indices. The study identified the extent and significance of bilateral trade and future opportunities in the context of Free Trade (FTA) and Comprehensive Economic Cooperation Agreements between New Zealand and India. Overall, the study shows that bilateral trade has been increasing and economic integration is expected to have a positive impact on trade of integrated nations with on-going trade potential.

Kocyigit and Sen (2010) explained the extent of intra-industry trade (IIT) in Turkey's foreign trade, mainly its most important trading partner, the European Union (EU).The study resulted that, turkey's IIT trade has moving towards EU and dramatically shifting from low-technology products to high-technology industries. At the same time, parallel to Turkey's trade with the rest of the world and also identified Turkey's share of IIT in total trade which is lower with the European Union than rest of the world for the entire period. Study suggested that economic integration (Customs Union) with European Union has changed the production structure of Turkey towards the European Union industrial base

Sudharshan and Chandarn (2010) studied the Revealed Comparative Advantage (RCA) of India – ASEAN especially on fishery products in the context of free trade agreement. The study showed that there are trade complementarities between India and ASEAN to be blowing up which can enhance bilateral trade. Study resulted that India has accounted comparative advantage in the marine exports is mainly on the 'crustaceans' whether in 'shell or not and molluscs', whether in shell or not and all the major ASEAN countries got trade similarity with India. Thus study suggested that India-ASEAN agreement should place major import and export items of 'marine' trade under

negative list. The study also used Trade Intensity Index (TII) and revealed that India's export intensity as well as import intensity with ASEAN is at highest level. Thus it concluded that India's exports and imports are intense with ASEAN countries compared with its trading pattern with rest of the world. It also revealed that ASEAN's export Intensity Index is higher than Import Intensity Index as compared to India. It suggested that both countries have removed their tariff barrier on those products which have comparative disadvantage and low trade intensity for their further development.

Ohlan (2012) analysed India's future prospects with ASEAN countries by examining the pattern and trends in both nations by using revealed comparative advantage in different commodities and trade intensity. The study also use the Lafy's index for examining the trade specialization of both of them and concludes that during three decades India's share in ASEAN countries for merchandise trade has increased, however it has been low as compared to China and Japan. It also results that India has faced trade deficit with ASEAN and India's trade intensity has declined with ASEAN because ASEAN economies are more open than India. Then study suggests that India should give more attention towards trade liberalization.

The above-mentioned studies explained the importance of India's economic and trade linkages with European Union. As there is a lot of potential of India's trade with this region but a handful literature is available to understand the importance and potential of it. Being largest trading partner of India, there is need for quantitative assessment of bilateral trade to understand the pattern of trade and competitiveness of India's trade with these nations of EU. The present study is a direction towards this.

Chapter 3

Database and Methodology

The entire investigation of trade and trade related concerns need a methodical research that acquires an explanation of performance for various sectors of an economy. The present study uses the analytical tools for examining the competitiveness and pattern of trade of India with the six countries of EU, i.e. Belgium, France, Germany, Italy, Netherlands and United Kingdom.

Data Base:

The study mainly concentrates the period of 1996-2011. The indices have been calculated at four points of time i.e. 2000, 2003, 2007 and 2011. Secondary data has been collected from the following sources:

- Data on India's trade trends with whole EU has been obtained from Reserve Bank of India Statistical Yearbook of various issues.
- Data of India's trade with EU's six countries has been taken from Government of India, Ministry of Commerce and UNCTAD.
- Data for commodity composition of India with six EU countries and competitiveness has been collected from UN COMTRADE Database, 2011

Methodology

The study is following different indices to find out the trade pattern, trade competitiveness and trade specialization of India with EU.

Trade Intensity Index (TII):

The trade intensity index is used to determine whether the value of trade between two countries is greater or smaller than would be expected on the basis of their importance in world trade. It is defined as the share of one country's exports going to the partner (Weldemicael, 2010). Trade intensity of India with six EU countries and within the EU's countries have been calculated by dividing the intra country share by the share of country to total world trade at four points of time 2000, 2003, 2007 and 2011.

$$I_{ij} = X_{ij}/X_i / M_j / (M_w / M_i)$$

Where I_{ij} = Trade Intensity Index of country i with j

X_{ij}/X_j = Share of country j in i^{th} country's exports.

M_j , M_i , and M_w = Imports of country j, i and world respectively.

It ranges between 0 to $+\infty$. Values greater than 1 indicate an intense trade relationship and vice-versa. In other words, an index of more (less) than one indicates a bilateral trade flows that is larger (smaller) than expected given the partner country's importance in world trade (Kojima 1964).

Revealed Comparative Advantage:

The degree of trade specialization of India with six EU countries is calculated by using two indices, Balassa's Revealed Comparative Advantage index (1965) and Revealed Symmetric Comparative Advantage at four points of time i.e. 2000, 2003, 2007 and 2011 for India's top ten trade commodities with six EU countries.

Balassa's Revealed Comparative Advantage index (RCA):

It is defined as the share of a commodity in the total exports of a given country, divided by the share of the same commodity in total world exports (Utkulu and Seymen 2004).

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

Where,

X_{ij} - Value of Country i^{th} Exports of Commodity j

X_{wj} - Value of World's Exports of Commodity j

X_{it} - Country i^{th} Total Exports

X_{wt} - World's Total Exports.

A country has a revealed comparative advantage only in those products for which its market share of world exports is above its average share of world exports. RCA_{ij} ranges from 0 to $+\infty$. A value of less than unity implies that the

country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have revealed comparative advantage in the product (Mahmood 2000)

There are some misconceptions in RCA and it suffers from the problem of asymmetry as the 'pure' RCA is basically not comparable on both sides of unity. A country is said to be under-specialized in a given sector if the value of index ranges from zero to one; while the value of the index ranges from one to infinity, if country is specialized in that particular sector. Dalum et. al. (1998) suggested a methodology to make the index symmetric and the new index is called 'revealed symmetric comparative advantage' (RSCA). Mathematically, it is;

$$RSCA = (RCA-1) / (RCA+1)$$

This measure varies between -1 and +1. A commodity is said to have comparative advantage in its exports if the corresponding RSCA value is positive and vice versa. In the present study, the RSCA is used to find the India's comparative advantage with EU particular six countries namely (Belgium, France, Germany, Italy, Netherlands and UK)

Intra Industry Trade:

Intra-industry trade (IIT) arises if a country, in same period of time, imports and exports similar types of goods or services. Similarity means goods or services taken from the same sector. IIT allows a country to take advantage of larger markets. Most commonly used index to measure the IIT is Grubel- Lloyd (G-L) index (1975). G-L Index computes the ratio of net exports in a commodity category to its total trade i.e.

$$GL_i = 1 - (\text{Export sector}_i - \text{Import sector}_i / \text{Export sector}_i + \text{Import sector}_i)$$

The Grubel–Lloyd index (1975) varies between zero (perfect inter-industry trade) and one (perfect intra-industry trade). It ranges between 0 and 100 if multiplied by 100. Zero value of the G-L index means there are no exports or imports of a particular commodity group, i.e. no IIT in that particular commodity category. On the other hand, the G-L index value equals 100 if exports exactly equals to the imports, both being positive. IIT is driven by economies of scale

and commodity gains. By being engaged in IIT, a country can reduce the number of similar commodities it produces and benefit from scale of economies and specialization. A higher IIT value suggests that these sources of gains are being exploited. It also indicates that the adjustment cost would be lower when compared to inter-industry trade in the process of trade expansion (Sahoo, et.al. 2009).

It is based on the Grubel-Lloyd (G-L) formula; G-L Index for bilateral trade is used to find out the intra-industry trade between India and EU. It is a modified form used by Sahoo (2009). The formula is;

$$GL_i = 1 - \{|X_{kij} - M_{jik}| / (X_{jik} + M_{jik})\}$$

Where,

X_{jik} -Exports of commodities from industry j from India to EU.

M_{jik} - Imports of commodities from industry j to India from EU.

Thus the present study has used various indices to analyse the quantitative assessment of India's trade six countries of European Union namely Belgium, France, Germany, Italy, Netherlands and United Kingdom.

Chapter 4

Growth and Performance of India's Trade with Six Countries of European Union

EU is the third largest trading partner of India after WANA (West Asia and North Africa) and North East Asian countries. Six countries of EU namely Belgium, France, Germany, Italy, Netherlands and UK are the major trading partners of India as these have major share in India's trade. Therefore, present chapter analyses growth and performance of India's trade with these six countries. Further, it also discusses the commodity composition by explaining top ten exports and imports commodities. Also, this chapter is also an attempt to find the impact of current European crisis on the different trends of Indian trade with these countries of EU.

India's Trade with whole EU: Table 4.1 shows the trade trends of India with EU during 1996-2011. It explains these trends with whole EU and six countries of EU i.e. Belgium, France, Germany, Italy, Netherland and United Kingdom, which have largest share in India's trade. Exports of India to whole EU have increased from US\$ 17705.1 million in 1996 to US\$ 64272.1 million in 2008 i.e. increased by 263.02 percent points during 1996-2008. However the effect of Euro crisis has pushed back India's exports from US\$ 68452.3 million in 2009 and reached at level of US\$ 64141.6 million in 2010 (6.29 percent annual growth) which is low as compared to the previous years. These exports have increased to US\$ 84600.6 in 2011. This revival may be due to the bilateral free trade agreement in 2007, though it has not fully implemented. Similar trends have occurred for imports. India's imports from EU have increased since 1996. It has increased from US\$ 36914.3 million in 1996 to US\$ 64272.1 million in 2008 i.e. increased by 141.30 percent points.

Euro crisis led to this negative trend of imports, which also came in 2010. Its imports have decreased from US\$ 96387 million in 2009 to US\$ 94143 million in 2010 (-2.3 percent annual growth rate). Despite the given fact, imports have been also reviving and reached at a level of US\$ 105302.3 million in 2011.

Table 4.1: India's Trade Trends with EU

(US\$ Million)

Year	India's Trade with whole EU				India's Trade with Six EU Countries				Share of Six EU Countries in India's Total Trade
	Exports	Imports	Total Trade	Index	Exports	Imports	Total Trade	Index	(% Share)
1996	17705.1	19209.5	36914.3	48.26	7534.9	9224.48	16759.36	42.39	45.4
1997	18601.4 (5.06)	19456.9 (1.28)	38058.3 (3.09)	49.75	7904.2 (4.67)	9764.09 (5.53)	17668.28 (5.14)	44.69	46.25
1998	19484.9 (4.76)	21335.8 (9.65)	40820.7 (7.25)	53.37	7643.4 (3.41)	9910.9 (1.48)	17554.34 (0.64)	44.41	43
1999	19264 (1.13)	21859.7 (2.45)	41123.7 (0.74)	53.76	8044 (4.98)	10141.4 (2.27)	18185.53 (3.47)	46.01	44.22
2000	21106.6 (9.56)	21364.3 (2.26)	42470.9 (3.27)	55.52	8885.7 (9.47)	9599.48 (5.64)	18485.17 (1.62)	46.76	43.52
2001	23473.6 (11.21)	20157.9 (5.64)	43631.5 (2.73)	57.04	8355.3 (6.35)	9369.8 (2.45)	17725.06 (4.29)	44.84	40.6
2002	21622.1 (7.88)	20640.6 (2.39)	42262.7 (3.14)	55.25	9744 (14.25)	11185.3 (16.23)	20929.39 (15.31)	52.95	49.52
2003	26382.1 (22.01)	23301.1 (12.88)	49683.7 (17.56)	64.95	11673 (16.52)	12825.6 (12.78)	24498.51 (14.56)	61.98	49.3
2004	29629.2 (12.3)	29572.1 (26.91)	59201.3 (19.16)	77.4	14607 (20.09)	16229.1 (20.97)	30836.26 (20.55)	78.01	52.08
2005	36494.8 (23.17)	39989.1 (35.22)	76484.7 (29.19)	100	17830 (18.08)	21697.5 (25.2)	39527.72 (21.98)	87.89	51.68
2006	45836.6 (25.59)	51796.8 (29.52)	97633.6 (27.65)	127.6	21050 (15.29)	23923.5 (9.3)	44973.24 (12.1)	113.78	46.06

Contd....

(US\$ Million)

Year	India's Trade with whole EU				India's Trade with Six EU Countries				Share of six Countries in India's Total Trade
	Exports	Imports	Total Trade	Index	Exports	Imports	Total Trade	Index	(% Share)
2007	53056.9 (15.75)	65349.3 (20.73)	118496. (21.37)	154.9	26660 (21.04)	31287.6 (23.53)	57947.78 (22.39)	146.6	48.9
2008	64272.1 (21.13)	89048.8 (36.26)	153321 (29.39)	200.4	29446 (9.46)	34630.7 (9.65)	64076.3 (9.56)	162.1	41.79
2009	68452.3 (16.5)	96387 (8.24)	164839.3 (7.51)	215.5	29987 (1.8)	30983.1 (11.7)	60969.91 (5.09)	154.2	36.98
2010	64141.6 (6.29)	94143 (2.32)	158284.6 (3.98)	206.9	35921 (16.52)	35708.6 (13.23)	71629.6 (14.88)	181.2	45.25
2011	84600.6 (31.89)	105302. (11.85)	189902.9 (19.98)	248.3	32721 (9.77)	34312.4 (4.07)	67033.61 (6.87)	169.59	35.69
Compound Growth	15.32	13.05	13.61		12.94	11.71	12.88		—
Average Share	14.28*	15.51*	13.06*	110.6*	9.27*	6.33*	9.66*	92.3*	45

Source: RBI Statistical Yearbook of Various Issues.

Note: Figures in parentheses shows the percentage change at annual base and figures which are denoted with (*) shows average value of percentage Change.

The index of whole EU countries shows the increase from 48.26 in 1996 to 215.51 in 2008. However, due to the crisis index has decreased and reached at a level of 206.94 in 2010. In 2011, there was a significant increase in this index, which was at a level of 248.28. On the other hand compound growth rate of India's exports and imports to European Union (27) have registered (15.32 percent and 13.05 percent) respectively. The average share has accounted i.e. 13.06. Figure (i) in Appendix (B) is showing India's trade with whole EU countries. The trend line is showing the increasing trend of India's exports and imports while it also shows the effect of Euro crisis in fluctuating mode with six major trade partners of EU namely Belgium, France, Germany, Italy, Netherlands and UK.

India's Trade with Six EU Countries: Table also depicts the exports of India with Belgium, France, Germany, Italy, Netherlands and United Kingdom. During the period of 1996-2008, it has increased from US\$ 7534.9 million in 1996 to US\$ 29446 million in 2008 i.e. increased by 290.79 percent points. Even a slow growth rate has also been found in 2009, which is due to the economic crisis in Euro zone and exports reached at a level of US\$ 29987 million. The similar situation has been found in 2011, exports decreased from US\$ 35921.0 million in 2010 to at levels of US\$ 33721 million in 2011. In terms of imports, it has increased from US\$ 9224.48 million in 1996 to US\$ 89048.8 million in 2008 at 363.57 percentage points. Euro crisis has affected the imports in 2009 and it has decreased at level of US\$ 30983.08 million, which is low as compared to previous years. It has also decreased from US\$ 35708.68 million and reached at level of US\$ 34312.43 in 2011.

The compound growth rates of India's exports and imports have accounted i.e.12.94 percent and 11.71 percent respectively. Figure (ii) given in Appendix (B) is showing increased trend of India's trade with these six countries. The share of these six countries in India's trade with whole EU has been found fluctuating during study period. Its average share is 45 percent.

Therefore, it clearly predicts that Belgium, France, Germany, Italy, Netherlands and UK are significant trading partners of India. It is found that

India's exports to six EU countries have grown at a highest rate than imports. However, on the other side, its share has rapidly decreased in 2009 due to Euro debt crisis.

Direction of India's Trade with Six EU Countries

Exports

Country wise analysis given in Table 4.2 shows that during 1996 -2011, the exports of India to six EU countries have been witnessing continuous increase with occasional downturn since 1996. India's exports to Belgium have increased from US\$ 1092.67 million in 1996 to US\$ 2871.23 million i.e. increased by 61.94 percent points in 2005. Belgium recorded consistent increase in exports except 2009 (decreased from US\$ 4480.32 million in 2008 to US\$ 3759.26 million in 2009). France has also played significant role in Indian export market during the study period 1996-2011. It has increased from US\$ 716.17 million in 1996 to US\$ 2079.59 million in 2005, an increase by 190.38 percent points. It has not affected from slow market of EU in the period of crisis and increased from US\$ 3819.83 million in 2009 to US\$ 5209.57 million in 2010. However, it has been come back in 2011 and reached at level of US\$ 3276.59 million due to the Euro crisis to six EU countries. Germany has been the second most significant export partner of India in 1996. Exports have been increasing from US\$ 1893.06 million in 1996 to US\$ 2826.25 million in 2005, an increase by 49.29 percent points. It has increased from US\$ 6388.54 million in 2009 to US\$ 6751.18 million in 2011 i.e. increased by 31.82 percent points. Italy has accounted consistently in Indian exports from US\$ 933.7 million in 1996 to US\$ 2519.04 million in 2005, an increase by 169.79 percent points. However it has been decreasing since Euro crisis and registered US\$ 3400.25 million in 2009 which was low as compared to previous year in 2008 i.e. US\$ 3824.58 million. Exports to Italy have also decreased from US\$ 4551.58 million in 2010 to US\$ 3704.09 million in 2011. India's exports to Netherlands have been consistently increasing since 1996. It has increased from US\$ 852.37 million in 1996 to US\$ 2474.78 million in 2005, an increase by 190.34 percent points. During 2009, its exports have registered i.e. US\$ 6397.56 and increased at level of US\$ 7677.56 million in 2010. However, Indian exports have been found in decreasing trend i.e.

US\$ 7171.28 million. Now United Kingdom has accounted for highest in Indian exports i.e. US\$ 2046.23 million in 1996 and increased by 147.16 percent during 1996-2005. It has been affected from Euro zone crisis, decreased from US\$ 6649.53 million in 2008 and reached at a level of US\$ 6221.39 million in 2009. During 2010-11, it has decreased from US\$ 7284.96 million to US\$ 6484.72 million among six EU countries. The Indian exports have declined which have shown in the trend line (figures from table 4.2 i.e. in Appendix B).

During 1996-2011, Netherlands has registered highest compound growth rate of 19.89 percent followed by France (13.88 percent), Belgium (12.56 percent), Italy (12.17 percent), UK (11.18 percent) and Germany (10.11 percent). And also the average share of UK in India's exports to six EU countries i.e. 23.7 percent in India's exports to six EU countries is maximum followed by Germany (20.02 percent), Belgium (14.92 percent), Netherlands (14.24 percent), Italy (12.94 percent) and France (11.02 percent). The results show that in terms of average share among EU's six countries UK and Germany are the largest export partners of India during the study period. In terms of growth rate France and Netherlands are the main exports partners. However, the bad impact of Euro debt crisis affected India's exports towards these countries.

Imports

Table 4.3 shows the trends of India's imports from six EU countries namely Belgium, France, Germany, Italy, Netherlands and UK. Indian imports from Belgium have registered US\$ 2230.87 million in 1996, which has increased and reached at level of US\$ 4725.14 million in 2005 i.e. increased by 111.87 percent points. Imports from Belgium have consistently increased from US\$ 6019.20 million in 2009 to US\$ 8606.82 million in 2010. However, in 2011, Indian imports have decreased and reached at level of US\$ 7736.38 million due to the low demand that is resulted from the EU crisis. France has accounted for an increase from US\$ 698.80 million in 1996 to US\$ 4113.30 million in 2005, an increase by 488.62 percent points. The same trend occurred in 2009 as the severe crisis of EU has decreased Indian imports from US\$ 4192.17 million and reached at level of US\$ 2805.35 million in 2011. In Germany it has registered consistent increase since 1996 i.e. US\$ 2830.31 million to US\$ 6023.63 million

2005. On the other hand, it has not affected from Euro downturn continuously increased from US\$ 10318.18 million in 2009 to US\$ 11839.6 million in 2011, an increase by 14.74 percent points. Italy has accounted as a major import partner after United Kingdom and recorded significant increase trends since 1996 from US\$ 915.08 million to US\$ 1855.63 million in 2005 i.e. increased by 102.78 percent points. During Euro crisis period, it has been found that India's imports declined and reached at a level of US\$ 3862.06 million in 2009. However, it has also shown downturn from i.e. US\$ 4256.02 million in 2010 and US\$ 4160.23 million in 2011. In case of Netherlands, it has increased from US\$ 415.46 million in 1996 to US\$ 1049.5 million in 2005 i.e. increased by 152.62 percent points and yet it has decreased after the EU crisis from US\$ 2130.00 million in 2009, and reached at a level of US\$ 1771.25 million in 2011. Indian imports with UK have increased from US\$ 2133.96 million in 1996 to US\$ 3930.30 million in 2005 i.e. increased by 84.1 percent points and in 2009, it has decreased and reached at a level of US\$ 4461.47 million that has affected by slowdown of EU economy. It has increased from US\$ 5396.78 million in 2010 and reached at a level of US\$ 5999.53 million in 2011. Figures (ix, x, xi, xii, xiii, xiv) in (Appendix B), depicts that Belgium, Germany and UK have registered more imports to India. The values of imports have been declining since the period of crisis as shown from the trend line.

The compound growth rate of India's imports with France is the highest i.e. 16.83 percent followed by Germany (15.41 percent), Italy (14.87 percent), Netherlands (13.81 percent), Belgium (7.92 percent) and UK (6.89 percent). The average share of India's imports from EU, Germany have registered highest i.e. 26.99 percent followed by Belgium (23.50 percent), UK (21.81 percent), France (10.59 percent), Italy (9.86 percent) and Netherlands (4.93 percent). Thus Germany, Belgium and UK are the main import partners in terms of growth rate and on the other hand France, in terms of average share Germany and Italy are the main import partners of India during the study period.

Table 4.2: India's Exports to Six EU Countries

(US\$ million)

Year	Belgium	France	Germany	Italy	Netherlands	UK	Six EU Countries
1996	1092.67 (14.50)	716.17 (9.50)	1893.06 (25.12)	933.7 (12.39)	852.37 (11.31)	2046.91 (27.16)	7534.9
1997	1215.31 (15.37)	759.15 (9.60)	1921.1 (24.22)	1113.84 (14.09)	802.39 (10.15)	2092.4 (26.47)	7904.2
1998	1287.88 (16.84)	829.7 (10.85)	1851.94 (21.66)	1054.99 (13.80)	763.53 (9.98)	1855.4 (24.27)	7643.4
1999	1367.65 (17.00)	897.7 (11.15)	1738.39 (21.46)	1119.75 (13.92)	885.76 (11.01)	2034.79 (25.29)	8044
2000	1470.56 (16.54)	1020.01 (11.47)	1907.57 (21.40)	1308.75 (14.72)	880.09 (9.90)	2298.71 (25.86)	8885.7
2001	1390.62 (16.64)	945 (11.31)	1788.36 (21.40)	1206.53 (14.44)	863.88 (10.33)	2160.87 (25.61)	8355.3
2002	1661.84 (17.05)	1074.09 (11.02)	2106.68 (21.62)	1357.08 (13.93)	1047.91 (10.75)	2496.41 (25.89)	9774
2003	1805.72 (15.46)	1280.88 (10.97)	2544.55 (21.79)	1729.4 (14.81)	1289.11 (11.04)	3023.25 (25.20)	11673
2004	2509.71 (17.18)	1680.94 (11.50)	2844.55 (19.47)	2285.99 (15.64)	1604.86 (10.98)	3681.09 (28.37)	14607

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(US\$ Million)

Year	Belgium	France	Germany	Italy	Netherlands	UK	Six EU Countries
2005	2871.23 (16.10)	2079.59 (11.66)	2826.25 (15.85)	2519.04 (14.13)	2474.78 (13.87)	5059.28 (26.71)	17830
2006	3478.18 (16.52)	2103.26 (9.99)	3586.12 (17.03)	3584.65 (17.02)	2674.55 (12.70)	5622.93 (25.15)	21050
2007	4207.08 (15.78)	2599.64 (9.75)	3984.81 (14.94)	3914.02 (14.68)	5249.08 (19.68)	6705.5 (22.58)	26660
2008	4480.32 (15.21)	3020.86 (10.25)	5121.53 (17.39)	3824.58 (12.98)	6348.69 (21.56)	6649.53 (20.74)	29446
2009	3759.26 (12.53)	3819.83 (12.73)	6388.54 (21.30)	3400.25 (11.33)	6397.56 (21.33)	6221.39 (20.28)	29987
2010	5784.38 (16.10)	5209.57 (14.50)	5412.89 (15.07)	4551.58 (12.67)	7677.56 (21.37)	7284.96 (11.35)	35921
2011	5333.32 (16.29)	3276.59 (10.01)	6751.18 (20.63)	3704.09 (11.32)	7171.28 (21.91)	6484.72 (19.81)	32721
Compound Growth Rate	12.56	13.88	10.11	12.17	19.89	11.18	
Average Share	14.92*	11.02*	20.02*	12.94*	14.24*	23.79*	12.91

Source: Government of India, Ministry of Commerce and Handbook of UNCOMTRADE Database 2011.

Note: Values in parentheses shows the percentage share of specific country in India's exports to six EU countries.

Table 4.3: India's Imports from Six EU Countries

(US\$ Million)

Year	Belgium	France	Germany	Italy	Netherland	UK	Six EU Countries
1996	2230.87 (24.18)	698.8 (7.57)	2830.31 (30.68)	915.08 (9.92)	415.46 (4.5)	2133.96 (23.13)	9224.48
1997	2668.08 (27.35)	784.98 (8.04)	2528.3 (25.89)	894.25 (9.15)	445.19 (4.55)	2443.29 (25.02)	9764.09
1998	2876.8 (29.02)	719.6 (7.26)	2140.68 (21.59)	1088.26 (10.98)	464.19 (4.68)	2621.37 (26.44)	9910.9
1999	3681.27 (36.29)	711.81 (7.01)	1840.99 (18.15)	733.95 (7.23)	470.9 (4.64)	2702.57 (26.64)	10141.4
2000	2870.05 (29.89)	640.81 (6.67)	1759.59 (18.33)	723.58 (7.53)	437.53 (4.55)	3167.92 (33.00)	9599.48
2001	2763 (29.48)	844.2 (0.91)	2028.1 (21.64)	704.78 (7.52)	466.47 (4.97)	2563.2 (27.35)	9369.48
2002	3711.93 (33.18)	1094.18 (9.78)	2404.53 (21.49)	811.99 (7.25)	385.74 (3.44)	2777.01 (24.82)	11185.6
2003	3975.89 (30.99)	1090.23 (8.50)	2918.56 (22.75)	1071.03 (8.35)	535.56 (4.17)	3234.33 (25.21)	12825.6
2004	4588.91 (28,27)	1894.1 (11.67)	4015.35 (24.74)	1373.1 (8.46)	791.4 (4.87)	3566.2 (21.97)	16229.1

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Year	Belgium	France	Germany	Italy	Netherlands	UK	Six EU Countries
2005	4725.14 (21.77)	4113.3 (18.95)	6023.63 (27.76)	1855.63 (8.55)	1049.5 (4.83)	3930.3 (18.11)	21697.5
2006	4146.19 (17.33)	4212.42 (17.60)	7552.64 (31.56)	2676.03 (11.18)	1158.4 (4.84)	4177.87 (17.46)	23923.5
2007	4349.93 (13.90)	6265.76 (20.02)	9884.83 (31.59)	3906.72 (12.46)	1926 (6.15)	4953.68 (15.83)	31287.6
2008	5776.77 (16.68)	4632.48 (13.37)	12006.02 (34.66)	4428.19 (12.78)	1914.95 (5.52)	5872.33 (16.95)	34630.7
2009	6019.2 (19.42)	4192.17 (13.53)	10318.18 (33.30)	3862.06 (12.46)	2130 (6.87)	4461.47 (14.39)	30983.1
2010	8606.82 (24.10)	3704.57 (10.37)	11891.37 (33.30)	4256.02 (11.91)	1853.1 (5.18)	5396.78 (15.11)	35708.6
2011	7736.38 (22.54)	2805.35 (8.17)	11839.6 (34.50)	4160.23 (12.12)	1771.25 (5.16)	5999.53 (17.48)	34312.4
Compound Growth Rate	7.92	16.83	15.41	14.87	13.81	6.89	—
Average Share	23.50*	10.59*	26.99*	9.86*	4.93*	21.81*	11.71

Source: Government of India, Ministry of Commerce and Handbook of UNCOMTRADE 2011.

Note: Values in parenthesis shows the percentage share of specific country in India's imports from six EU countries.

Commodity Composition of India's Exports to Six EU Countries:

Table 4.4 shows that the top ten commodity composition of India's exports to EU. Country wise analysis is shown in different sections.

Section (a) shows that in Belgium, Indian pearls and precious stones have counted in the list of top ten commodities in 2011, as its share of exports is 1.28 percent. 'Iron and steel' is having second place in 2011, which was the top most commodity during 2000 and 2007. Indian 'mineral fuels' have recently come in top 10 commodities in 2011 with a share of 0.11 percent. On the other hand, 'organic chemical' has been dominating commodity over the years except 2003. Furthermore, another commodity namely 'articles of apparel and accessories' has calculated significant share and listed in the top ten commodities during the whole study period. Moreover, one new commodity namely 'vehicles other than tramways' has newly added products in 2011. However, 'cotton' has registered share of exports i.e. 0.12 percent in 2000, but lost its presence in the following years due to the Euro debt crisis.

Section (b) of Table 4.4 shows that India's export composition with France. Indian 'minerals' have significance in the list of top ten commodities, with a share of exports i.e. 0.47 percent in 2011. Then another commodity namely 'articles of apparel and accessories' have shifted to the 2nd place at the same time, which was registered at the first place in this list during the earlier years i.e. 2007. On the other hand, the share of the exports of the same commodity has declined in 2011 and reached at level of 0.16 percent with effect of the Euro downturn. Another commodity namely 'aircraft and spacecraft' has changed its place to the fifth place with value of 0.06 percent. Besides this, an 'organic chemical' has been considered as a dominated commodity over the years.

Section (c) of Table 4.4 depicts that in Germany, commodity namely Indian 'articles of apparel and accessories' have registered in the list of top ten commodities with share of 0.23 percent in 2011. The value has been low as compared to previous years, which were 0.51 percent in 2000. Then 'nuclear reactors', 'boilers machinery etc.' have registered in the second place in this list with value of 0.21 percent in 2011. However, 'articles of apparel and accessories'

have registered as a popular commodity over the years, but the share has been declining from 0.45 percent in 2000 to 0.19 percent in 2011.

‘Section (d) of Table 4.4 presents in Italy, Indian ‘iron and steel’ have registered the first position in top most lists with value of 0.15 percent in 2011 followed by vehicles other than railway and tramways’ i.e. 0.13 percent. However, most of the commodities are diversifying and has changed their position over the years and ‘organic chemicals’, ‘nuclear reactors’, ‘articles of apparel and accessories’ have been replaced in 2000. On the other hand, ‘pearls and precious stones’ have replaced cotton in 2007. India’s ‘electrical items’, ‘electronic equipment’, ‘plastic’, ‘articles’, and ‘coffee made spices’ are the newly added products in 2011.

Section (e) of Table 4.4 presents that in Netherlands commodity namely, Indian ‘minerals fuels’, ‘oils distillation products’ and its share has increased from 1.33 percent in 2007 to 1.69 percent in 2011 and has first position in the top ten commodities. Then commodities ‘electrical equipment’ have changed their position and reached at 2nd place in 2011 with value of 0.25 percent. Furthermore, ‘articles of accessories’, ‘organic chemicals’ are the popular commodity over the years. Indian ‘pharmaceutical products’, ‘animal guts’, ‘vegetable fats’ and ‘oils’ are amongst the newly added commodities in 2011. Then Indian ‘Iron and steel’ have been changing its position throughout the whole study period.

Section (f) of Table 4.4 reveals that, in case of UK, commodity namely Indian ‘minerals, fuels, oils’ and ‘articles of accessories’ have registered in the top ten export commodities. However, the same commodities have found decrease in the share from 0.56 percent in 2007 to 0.35 percent in 2011 and 0.47 percent in 2007 and 0.31 percent in 2011 respectively. Then commodity namely, nuclear reactors have been replaced by ‘articles of accessories’ with value of 0.18 percent in the same year which is low as compared to previous period i.e. 0.27 in 2007. Afterwards, commodity namely ‘pearls and precious stones’ has added in the list of top ten commodities and lost its earlier position during the study period. Furthermore, commodity namely ‘pharmaceutical products’ are amongst the newly added products in the top ten commodities during 2011.

As a result from the overall picture it clearly depicts that India's export towards these six countries commodities namely Indian 'articles of accessories', 'iron and steel', 'mineral fuels', 'oils', 'distillation products' etc., 'organic chemicals', 'electrical & electronic products', 'organic chemicals' and 'nuclear reactors' are the most significant commodities which have accounted in the top ten commodities towards these six countries of EU during the entire study period. Many products namely 'iron and steel', 'articles of apparel', 'accessories not knit or crochet', 'pearls and precious stones', 'fish crustaceans', 'molluscs and aquatic invertebrates', 'articles of animal gut', and 'worn other made articles' have lost their earlier strongest position and have declined their share in these countries over the years. It is also found that there has been diversification in some Indian export commodities. However India's exports share in commodities has been declined due to Euro zone crisis.

Commodities Composition of Import Commodities:

Table 4.5 shows the India's top ten import commodities from six EU countries in different section. Section (a) depicts that its imports from Belgium for 'pearls and precious stones' have registered in the list of top ten commodities and the share of these commodities have been decreasing from 5.56 percent in 2000 to 1.48 percent in 2003. The same trend has been showing from 1.70 in 2007 to 0.18 percent in 2011. Indian 'iron and steel products' have replaced by nuclear reactors with value of 0.07 percent in 2011. Afterwards, commodity namely 'inorganic chemicals', 'ores slag and ash' and 'rubber products' are the newly added commodities in 2011. Therefore, almost all commodities have been diversifying over the years.

Section (b) of Table 4.5 depicts that, during 2011 India's imports from France for 'nuclear reactors and boilers' have registered in the top ten commodities during the entire study period except 2000. However its value has been decreasing from 0.30 percent in 2003 to 0.15 percent in 2011. 'Iron, steel, and electronic products' have listed in the top ten commodities over the years. However, commodity namely 'edible vegetables' that have significant share in Indian imports i.e. 0.13 percent in 2000 have lost its position during the following years. Commodities namely 'ships, boats and ores', 'slag and ash' have also not

been found in the following years. One important conclusion is that share of Indian imports from France has declined for almost all commodities.

Section (c) of Table 4.5 shows the highest share of Indian imports with Germany for 'nuclear reactors' have registered (1.01 percent) in 2011 followed by 'electrical goods', 'electronic products' i.e. 0.43 percent in the same period. Furthermore, both of the products have listed in the top most position over the years except 2000. Then 'optical, photos etc.' have changed their position in 2011 and reached at a level of 0.19 percent which is low as compared to previous period. Afterwards, 'iron and steel', 'organic chemicals', 'optical photos', 'plastic and optical thereof' and commodities elsewhere have registered in the top ten commodities over the years. It is also found that commodities namely 'cotton and articles of apparel & accessories' have lost their top position over the following years.

Section (d) of Table 4.5 depicts that in case of Italy, share of Indian imports for nuclear reactors and equipment has registered 0.44 percent in 2011 as it has registered 0.56 percent in 2003 and 0.78 percent in 2007. Due to Euro crisis, its share has declined in 2011. Then 'electrical equipment' has listed in top most lists as its share is 0.10 percent in 2011. Furthermore, commodity namely, 'organic products', 'iron and steel', 'plastic and articles', 'commodities elsewhere', and 'miscellaneous products' have been registered in the top ten Indian import commodities to six EU countries over the years. India's pearls and precious stones and vehicles other than tramways are newly added commodities in 2011.

Section (e) of Table 4.5 shows that imports of India from Netherlands for 'nuclear reactors, boilers and machinery' has registered highest share i.e. 0.07 percent followed by 'iron and steel' commodities i.e. 0.06 percent in 2011. Afterwards commodities namely 'iron steel' and 'mineral fuels' have same position in 2007 and 2011. The share of these commodities has been declining and reached at a level of 0.06 percent and 0.05 percent respectively in 2011. Other commodities namely 'organic chemicals', 'fertilizer' and 'articles thereof, electronic equipment', 'optical photos', 'ships, boats and other floating' structures have accounted in the top ten commodities over the years. Further, 'aluminium and articles' is a newly added product in the Indian import market in 2011. Then,

commodity namely 'textile articles', 'sets, clothing etc.' and 'plastic & articles thereof' and 'articles of apparel & accessories' have lost their position throughout the study period.

Section (f) of Table 4.5 shows that in case of UK, Indian imports for 'pearls and precious stones' has registered highest share i.e. 0.68 percent followed by 'nuclear reactors' i.e. 0.19 percent, 'iron, and steel' i.e. 0.13 percent in 2011. Moreover, 'pearls and precious stones', 'nuclear reactors' have registered in the top ten commodities during the entire study period. However, commodities namely 'iron and steel' commodities have replaced its position with 'electrical equipment' in 2011. Then 'iron and steel', 'optical photos', 'electrical equipment' and 'organic chemicals' have entered in the top ten import commodities during the entire study period.

Hence it is clear that commodities namely 'pearls and precious stones metals & coins etc', 'organic chemicals', 'electrical equipment', 'iron and steel', 'nuclear reactors', 'optical photos' and 'commodities elsewhere classified' have listed in the top ten import commodities of India from these six countries over the entire study period. Moreover most of the commodities namely, 'precious stones, metals', 'iron and steel', 'miscellaneous products', 'plastic and articles thereof', 'electrical electronic equipment', 'nuclear reactors' and 'optical photo, technical etc' have lost their percent share in imports from six EU countries due to the Euro crisis.

Table 4.4: India's Top Ten Export Commodities to Six EU Countries

Section (a): India with Belgium

(Percent)

Name of Commodity	2000	Name of Commodity	2003	Name of Commodity	2007	Name of Commodity	2011
Iron and steel(72)	0.05	Iron and steel(72)	5.49	Pearls, stones, metals etc. (71)	1.25	Pearls, stones, metals etc. (71)	1.28
Pearls, stones, metals etc.(71)	2.17	Ships, boats and other structures(89)	0.27	Iron and steel(72)	0.44	Iron and steel(72)	0.17
Organic chemicals(29)	0.06	Electrical, electronic equipment(85)	0.11	Organic chemicals(29)	0.1	Mineral fuels, oils, distillation products(27)	0.11
Fish, crustaceans, molluscs, aquatic invertebrates (03)	0.05	Dairy products, eggs, honey, edible animal product (04)	0.1	Fish, crustaceans, molluscs, aquatic invertebrates' .(03)	0.08	Organic chemicals(29)	0.1
Articles of apparel, accessories, knit or crochet(61)	0.1	Railway, tramway locomotives, rolling stock, equipment(86)	0.06	Articles of apparel, accessories, not knit or crochet(61)	0.07	Articles of apparel, accessories, knit or crochet(61)	0.06
Articles of apparel, accessories, knit (62)	0.05	Pharmaceutical products(30)	0.05	Nuclear reactors, boilers, machinery (84)	0.07	apparel, accessories, not knit (62)	0.06
Other textile articles, sets, clothing etc. (63)	0.06	Articles of iron or steel(73)	0.05	Zinc and articles thereof(79)	0.06	Articles of iron or steel(73)	0.04
Vegetable textile, paper yarn, (53)	0.05	Vegetable textile paper yarn etc. (53)	0.05	Articles of iron or steel(73)	0.05	Vehicles other than railway, tramway(87)	0.04
Cotton(52)	0.12	Wadding, felt, nonwovens, yarns, twine, cordage(56)	0.04	Articles of apparel, accessories, knit or crochet(62)	0.05	Nuclear reactors, boilers, machinery, etc.(84)	0.04
Electrical, electronic equipment(85)	0.04	Manmade filaments(54)	0.04	Plastics and articles thereof(39)	0.04	Fish, crustaceans, molluscs, (03)	0.04

Contd...

Table 4.4: India's Top Ten Export Commodities to Six EU Countries

Section (b): India with France

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Articles of apparel, accessories, not knit or crochet(61)	0.52	Articles of apparel, accessories, not knit or crochet(61)	0.37	Articles of apparel, accessories, knit or crochet(61)	0.11	Mineral fuels, oils, distillation products(27)	0.47
Articles of apparel, accessories, knit or crochet(62)	0.3	Articles of apparel, accessories, knit or crochet(62)	0.32	Articles of apparel, accessories, not knit or crochet(62)	0.11	Articles of apparel, accessories, not knit or crochet(61)	0.16
Other made textile articles, sets, clothing etc..(63)	0.15	Other made textile articles, sets, clothing etc.(63)	0.13	Mineral fuels, oils, distillation products, etc.(27)	0.05	Articles of apparel, accessories, knit or crochet(62)	0.12
Articles of leather, animal gut, harness, travel goods(42)	0.12	Mineral fuels, oils, distillation products, etc.(27)	0.11	Nuclear reactors, boilers, machinery, etc.(84)	0.04	Electrical, electronic equipment(85)	0.08
Animal, vegetable fats and oils etc.(15)	0.11	Footwear, gaiters and the like, parts thereof(64)	0.07	Electrical, electronic equipment(85)	0.03	Aircraft, spacecraft, and parts thereof(88)	0.06
Pearls, precious stones, metals, coins, etc.(71)	0.08	Articles of leather, animal gut, harness, travel goods(42)	0.07	Other made textile articles, sets, clothing etc.(63)	0.03	Nuclear reactors, boilers, machinery(85)	0.06
Electrical, electronic equipment(85)	0.07	Nuclear reactors, boilers, machinery, etc.(84)	0.06	Footwear, gaiters and the like, parts thereof(64)	0.04	Animal, vegetable fats and oils, cleavage products(15)	0.05
Organic chemicals(29)	0.07	Organic Chemicals(29)	0.06	Aircraft, spacecraft, and parts thereof(88)	0.03	Organic chemicals(26)	0.05
Footwear, gaiters and the like, parts thereof(64)	0.07	Miscellaneous chemical products(38)	0.05	Articles of leather, animal gut, harness, travel goods(42)	0.02	Vehicles other than railway, tramway(87)	0.04
Articles of iron or steel(73)	0.04	Pearls, precious stones, coins, etc.(71)	0.05	Organic chemicals(26)	0.02	Articles of leather, animal gut, harness and travel good(42)	0.08

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Table 4.4: India's Top Ten Export Commodities to Six EU Countries

Section (c): India with Germany

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Articles of apparel, accessories (61)	0.51	Articles of apparel, accessories(61)	0.46	Articles of apparel, accessories(61)	0.32	Articles of apparel, accessories(61)	0.23
Articles of leather, animal gut, harness, travel goods(42)	0.45	Organic chemicals(29)	0.39	Nucleareactors, boilers, machinery, etc.(85)	0.27	Nuclear reactors, boilers, machinery, etc.(84)	0.21
Articles of apparel, accessories, knit or crochet(61)	0.31	Articles of apparel, accessories, not knit or crochet(62)	0.34	Organic chemicals(29)	0.26	Electrical, electronic equipment(85)	0.19
Organic chemicals(29)	0.25	Articles of leather, animal gut, harness, travel goods(42)	0.26	Articles of apparel, accessories, not knit or crochet(61)	0.23	Articles of apparel, accessories, knit or crochet(61)	0.19
Footwear, gaiters and the like, parts thereof(64)	0.23	Nuclear reactors, boilers, machinery, etc.(84)	0.25	Electrical, electronic equipment(85)	0.2	Organic chemicals(29)	0.17
Other made textile articles, sets, clothing etc.(63)	0.23	Electrical, electronic equipment(85)	0.22	Footwear, gaiters and the like, parts thereof(64)	0.17	Articles of iron or steel(73)	0.14
Nuclear reactors, boilers, machinery, etc.(84)	0.2	Footwear, gaiters and the like, parts thereof(64)	0.21	Iron and steel(72)	0.14	Articles of leather, animal gut, harness, travel goods(42)	0.12
Pearls, precious stones, metals, coins, etc.(71)	0.19	Other made textile articles, sets etc.((63)	0.19	Articles of leather, animal gut ,travel goods(42)	0.14	Footwear, gaiters and the like, parts thereof(64)	0.12
Iron and steel(72)	0.16	Carpets and other textile floor coverings(57)	0.16	Articles of iron or steel(73)	0.14	Mineral fuels, oils, distillation products (27)	0.12
Articles of iron and steel(73)	0.16	Pearls, precious stones, metals etc.(71)	0.11	Other made textile article.(63)	0.13	Other made textile articles.(63)	0.1

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Table 4.4: India's Top Ten Export Commodities to Six EU Countries

Section (d): India with Italy

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Cotton(52)	0.26	Cotton(52)	0.22	Pearls, precious stones, metals, coins, etc.(71)	0.29	Iron and steel(72)	0.15
Articles of apparel, accessories, not knit or crochet(61)	0.23	Articles of apparel, accessories, knit or crochet(61)	0.17	Railway, tramway locomotives, rolling stock, equipment(86)	0.22	Vehicles other than railway, tramway(87)	0.13
Organic chemicals(29)	0.15	Iron and steel(72)	0.17	Knitted or crocheted fabric(60)	0.17	Electrical, electronic equipment(85)	0.11
Footwear, gaiters and the like, parts thereof(64)	0.15	Footwear, gaiters and the like, parts thereof(64)	0.16	Other made textile articles, clothing etc.(63)	0.14	Nuclear reactors, boilers, machinery, etc.(84)	0.1
Articles of apparel, accessories, knit or crochet(62)	0.13	Articles of apparel, accessories, not knit or crochet(62)	0.15	Inorganic chemicals, precious metal compound, isotopes(28)	0.13	Organic chemicals(29)	0.1
vehicles and other tramway(87)	0.11	Articles of leather, animal gut, harness, travel goods(42)	0.15	Miscellaneous articles of base metal(83)	0.13	Articles of apparel, accessories, knit or crochet(61)	0.09
Nuclear reactors, boilers, machinery, etc.(84)	0.06	Raw hides and skins (41)	0.14	Articles of apparel, accessories, knit or crochet(62)	0.12	Plastics and articles thereof(39)	0.08
Organic chemicals(29)	0.05	Vehicles other than railway, tramway(87)	0.13	Wool, animal hair, horsehair yarn and fabric thereof(51)	0.12	Articles of apparel, accessories, not knit or crochet(62)	0.08
Raw hides and skins(41)	0.05	Organic chemicals(29)	0.12	Miscellaneous chemical products(38)	0.1	Footwear, gaiters and the like, parts thereof(64)	0.08
Commodities not elsewhere specified(99)	0.03	Salt, sulphur, earth, stone, plaster, lime and cement(25)	0.1	Rubber and articles thereof(40)	0.09	Coffee, tea, mate and spices(09)	0.07

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Table 4.4: India's Top Ten Export Commodities to Six EU Countries

Section (e): India with Netherlands

(Percentage)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Articles of apparel, accessories, not knit or crochet(61)	0.19	Cotton(52)	0.22	Mineral fuels, oils, distillation products (27)	1.33	Mineral fuels, oils, distillation products (27)	1.69
Articles of apparel, accessories, knit etc. (62)	0.16	Articles of apparel, accessories, knit etc.(62)	0.17	Iron and steel(72)	0.15	Electrical, electronic equipment(85)	0.25
Organic chemicals(29)	0.13	Iron and steel(72)	0.17	Articles of apparel, accessories etc. (61)	0.13	Organic chemicals(29)	0.15
Miscellaneous chemical products(38)	0.09	Footwear, gaiters and the like, parts thereof(64)	0.16	Organic chemicals(29)	0.13	Articles of apparel, accessories, not knit or crochet(62)	0.10
Animal, vegetable fats and oils, cleavage products, etc.(15)	0.09	Articles of apparel, accessories, not knit or crochet(62)	0.15	Electrical, electronic equipment(85)	0.13	Vehicles other than railway, tramway(87)	0.09
Articles of leather, animal gut, harness, travel goods(42)	0.08	Articles of leather, animal gut, harness, travel goods(42)	0.15	Articles of apparel, accessories, knit or crochet(61)	0.13	Articles of apparel, accessories, knit or crochet(61)	0.08
Commodities not elsewhere specified(89)	0.08	Raw hides and skins and leather(41)	0.14	Nuclear reactors, boilers, machinery(84)	0.11	Iron and steel(72)	0.07
Electrical, electronic equipment(85)	0.06	Vehicles other than railway, tramway(87)	0.13	Edible fruit, nuts, peel of citrus fruit, melons(08)	0.10	Nuclear reactors, boilers, machinery (84)	0.06
Footwear, gaiters and like, parts thereof (64)	0.05	Organic chemicals(29)	0.12	Miscellaneous chemical products(38)	0.07	Pharmaceutical products(30)	0.06
Manmade staple(55)	0.02	Salt, sulphur, earth, stone, plaster(25)	0.10	Footwear, gaiters and the like, thereof(64)	0.05	Animal, vegetable fats and oils products(15)	0.05

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Table 4.4: India's Top Ten Export Commodities to Six EU Countries

Section (f): India with United Kingdom

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Articles of apparel, accessories, not knit (61)	0.63	Articles of apparel, accessories, not (61)	0.46	Mineral fuels, oils, distillation products(27)	0.56	Mineral fuels, oils, distillation products(27)	0.35
Footwear, gaiters and the like, parts thereof(64)	0.37	Pearls, precious stones, metals(71)	0.41	Articles of apparel, accessories(61)	0.47	Articles of apparel, accessories(62)	0.31
Pearls, precious stones, metals, coins, etc.(71)	0.33	Articles of apparel, accessories(62)	0.38	Nuclear reactors, boilers, machinery(84)	0.27	Articles of apparel, accessories, knit(61)	0.19
Articles of apparel, accessories(62)	0.31	Footwear, gaiters and the like(64)	0.24	Pearls, precious stones, metals, coins, etc.(71)	0.22	Nuclear reactors, boilers, machinery, etc.(85)	0.18
Articles of leather, animal gut, (42)	0.27	Vehicles other than railway, tramway(87)	0.21	Electrical, electronic equipment(85)	0.20	Vehicles other than railway, tramway(87)	0.16
Other made textile articles, sets, clothing etc.(63)	0.24	Other made textile articles, sets, clothing etc.(63)	0.21	Footwear, gaiters and the like, parts thereof(64)	0.16	Pearls, precious stones, metals, coins, etc.(71)	0.16
Nuclear reactors, boilers, machinery, etc.(84)	0.23	Nuclear reactors, boilers, machinery(84)	0.20	Articles of iron or steel(73)	0.15	Footwear, gaiters and the like, parts thereof(64)	0.12
Commodities not elsewhere specified(99)	0.19	Electrical, electronic equipment(85)	0.19	Articles of leather, animal gut, travel goods(42)	0.13	Pharmaceutical products(30)	0.12
Electrical, electronic equipment(85)	0.18	Essential oils, perfumes, cosmetics, toiletries(33)	0.16	Paper & paperboard, articles of pulp, paper and board(84)	0.13	Electrical, electronic equipment(85)	0.11
Cotton(52)	0.17	Articles of iron or steel(73)	0.16	Other textile articles, sets, clothing(63)	0.13	Articles of iron or steel(73)	0.10

Source: Calculations from Handbook of UNCOMTRADE Database 2011

Note: Figures in parenthesis shows commodity codes.

Table 4.5: India's Top Ten Import Commodities from Six EU Countries

Section (a): India from Belgium

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Pearls, precious stones, metals, coins, etc.(71)	5.56	Pearls, precious stones, metals, coins,	1.48	Pearls, precious stones, metals, coins, etc.(71)	1.70	Pearls, precious stones, metals, coins, etc.(71)	0.18
Plastics and articles thereof(39)	0.37	Iron and steel(72)	0.07	Iron and steel(72)	0.12	Nuclear reactors, boilers, machinery, (84)	0.07
Electrical, electronic equipment(85)	0.23	Articles of apparel, accessories, knit or crochet(61)	0.07	Nuclear reactors, boilers, machinery, etc.(84)	0.10	Iron and steel(72)	0.06
Nuclear reactors, boilers, machinery, etc.(84)	0.1	Organic chemicals(29)	0.06	Organic chemicals(29)	0.05	Plastics and articles thereof(39)	0.04
Vehicles other than railway, tramway(87)	0.08	Miscellaneous chemical products(38)	0.05	Plastics and articles thereof(39)	0.03	Inorganic chemicals, precious metal compound, isotopes(28)	0.03
Iron and steel(72)	0.07	Commodities not elsewhere specified(99)	0.05	Tobacco and manufactured tobacco substitutes(24)	0.03	Commodities not elsewhere specified(99_	0.03
Commodities not elsewhere specified(99)	0.06	Electrical, electronic equipment(85)	0.04	Commodities not elsewhere specified(99)	0.02	Ores, slag and ash(26)	0.03
Organic chemicals(29)	0.05	Nuclear reactors, boilers, machinery, etc.(84)	0.03	Electrical, electronic equipment(85)	0.02	Electrical, electronic equipment(85)	0.02
Articles of apparel, accessories, not knit or crochet(61)	0.03	Vehicles other than railway, tramway(87)	0.03	Ships, boats and other floating structures(89)	0.02	Miscellaneous chemical products(38)	0.01
Optical, photo, technical, medical, etc. apparatus(90)	0.02	Articles of apparel, accessories, not knit or crochet(62)	0.03	Pharmaceutical products(30)	0.01	Rubber and articles thereof(40)	0.01

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Table 4.5: India's Top Ten Import Commodities from Six EU Countries

Section (b): India from France

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Iron and steel(72)	0.25	Nuclear reactors, boilers, machinery, etc.(84)	0.30	Nuclear reactors, boilers, machinery, etc.(84)	0.32	Nuclear reactors, boilers, machinery, etc.)84)	0.15
Nuclear reactors, boilers, machinery, etc.(85)	0.2	Aircraft, spacecraft, and parts thereof(88)	0.22	Electrical, electronic equipment(85)	0.27	Electrical, electronic equipment(85)	0.13
Aircraft, spacecraft, and parts thereof(88)	0.16	Electrical, electronic equipment(85)	0.18	Aircraft, spacecraft, and parts thereof(88)	0.27	Aircraft, spacecraft, and parts thereof(88)	0.09
Edible vegetables and certain roots and tubers(07)	0.13	Commodities not elsewhere specified(99)	0.11	Optical, photo, technical, medical, etc. apparatus(90)	0.08	Commodities not elsewhere specified(99)	0.04
Organic chemicals(29)	0.1	Optical, photo, technical, medical, etc. apparatus(90)	0.09	Iron and steel(72)	0.07	Iron and steel(72)	0.04
Commodities not elsewhere specified(99)	0.07	Organic chemicals(29)	0.08	Articles of iron or steel(73)	0.07	Organic chemicals(29)	0.04
Ores, slag and ash(26)	0.06	Edible vegetables and certain roots and(08)	0.07	Pearls, precious stones, metals(72)	0.07	Optical, photo, technical, medical, etc. apparatus(90)	0.03
Electrical, electronic equipment(85)	0.04	Iron and steel(72)	0.05	Miscellaneous chemical products(38)	0.06	Miscellaneous chemical products(38)	0.03
Ships, boats and other floating structures(89)	0.04	Plastics and articles thereof(39)	0.04	Organic chemicals(29)	0.05	Mineral fuels, oils, distillation products, etc.(27)	0.03
Plastics and articles thereof(39)	0.02	Articles of iron or steel(73)	0.04	Commodities not elsewhere(99)	0.05	Plastics and articles thereof(39)	0.03

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Table 4.5: India's Top Ten Import Commodities from Six EU Countries

Section (c): India from Germany

(Percent)

Name of Commodity	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Electrical, electronic equipment(85)	0.43	Nuclear reactors, boilers, machinery, etc.(84)	1.17	Nuclear reactors, boilers, machinery, etc.(84)	1.53	Nuclear reactors, boilers, machinery, etc.(84)	1.01
Commodities not elsewhere specified(99)	0.18	Electrical, electronic equipment(85)	0.54	Electrical, electronic equipment(85)	0.58	Electrical, electronic equipment(85)	0.43
Iron and steel(72)	0.15	Optical, photo, technical, medical, etc. apparatus(90)	0.34	Optical, photo, technical, medical, etc. apparatus(90)	0.29	Vehicles other than railway, tramway(87)	0.21
Cotton(52)	0.13	Organic chemicals(29)	0.23	Iron and steel(72)	0.20	Optical, photo, technical, medical, etc.	0.19
Articles of apparel, accessories, knit	0.12	Iron and steel(72)	0.20	Organic chemicals(29)	0.16	Pearls, precious stones, metals, coins, etc.(71)	0.17
Organic chemicals(29)	0.1	Plastics and articles thereof(39)	0.17	Commodities not elsewhere specified(99)	0.15	Commodities not elsewhere specified(99)	0.16
Optical, photo, technical, medical, etc. apparatus(90)	0.08	Aircraft, spacecraft, and parts thereof(88)	0.10	Plastics and articles thereof(39)	0.12	Organic chemicals(29)	0.15
Plastics and articles thereof(38)	0.08	Miscellaneous chemical products(38)	0.10	Vehicles other than railway, tramway(87)	0.12	Plastics and articles thereof(39)	0.12
Articles of iron or steel(73)	0.07	Commodities not elsewhere specified(99)	0.08	Articles of iron or steel(73)	0.12	Iron and steel(72)	0.11
Miscellaneous chemical products(38)	0.07	Paper & paperboard, articles of pulp, paper and board(48)	0.08	Miscellaneous chemical products(38)	0.07	Articles of iron or steel(73)	0.067

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Table 4.5: India's Top Ten Import Commodities from Six EU Countries

Section (c): India from Italy

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodity	2011
Commodities not elsewhere specified(99)	0.12	Nuclear reactors, boilers, machinery, etc.(84)	0.56	Nuclear reactors, boilers, machinery(84)	0.78	Nuclear reactors, boilers, machinery, (84)	0.44
Cotton(52)	0.11	Electrical, electronic equipment(85)	0.11	Electrical, electronic equipment(85)	0.15	Electrical, electronic equipment(85)	0.10
Electrical, electronic equipment(85)	0.09	Organic chemicals(29)	0.09	Articles of iron or steel(73)	0.13	Pearls, precious stones coins, etc.(71)	0.07
Organic chemicals(29)	0.08	Raw hides and skin and leather(41)	0.05	Organic chemicals(29)	0.06	Articles of iron or steel(73)	0.05
Footwear, gaiters and the like, parts thereof(64)	0.08	Optical, photo, technical etc. (90)	0.05	Optical, photo, technical etc.(90)	0.04	Organic chemicals(29)	0.04
Other made textile articles, sets, clothing etc.(63)	0.07	Articles of iron or steel(73)	0.05	Iron and steel(72)	0.04	Commodities not elsewhere specified(99)	0.04
Vehicles other than railway, tramway(87)	0.05	Miscellaneous chemical products(38)	0.05	Raw hides and skins (other than fur skins) and leather(41)	0.04	Iron and steel(72)	0.04
Miscellaneous chemical products(38)	0.04	Commodities not elsewhere specified(99)	0.05	Plastics and articles thereof(39)	0.03	Plastics and articles thereof(39)	0.03
Plastics and articles thereof(39)	0.04	Plastics and articles thereof(39)	0.05	Miscellaneous chemical products(38)	0.03	Optical, photo, technical, medical, etc. apparatus(90)	0.03
Iron and steel(72)	0.04	Wool, animal hair, horsehair yarn and fabric thereof(51)	0.04	Commodities not elsewhere specified(99)	0.02	Vehicles other than railway, tramway(87)	0.03

Contd...

Table 4.5: India's Top Ten Import Commodities from Six EU Countries

Section (e): India with Netherlands

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Organic chemicals(29)	0.12	Organic chemicals(29)	0.14	Electrical, electronic equipment(85)	0.12	Nuclear reactors, boilers, machinery, etc.(85)	0.07
Articles of apparel, accessories, not knit or crochet(61)	0.1	Nuclear reactors, boilers, machinery, etc.(85)	0.09	Iron and steel(72)	0.12	Iron and steel(72)	0.06
Nuclear reactors, boilers, machinery, etc.(84)	0.08	Plastics and articles thereof(39)	0.06	Mineral fuels, oils, distillation products, etc.(27)	0.09	Mineral fuels, oils, distillation products, etc.(27)	0.05
Commodities not elsewhere specified(99)	0.07	Optical, photo, technical, medical, etc. apparatus(90)	0.06	Nuclear reactors, boilers, machinery, etc.(85)	0.08	Organic chemicals(29)	0.04
Optical, photo, technical, medical, etc. apparatus(90)	0.06	Electrical, electronic equipment(85)	0.06	Organic chemicals(29)	0.08	Electrical, electronic equipment(85)	0.04
Other made textile articles, sets, clothing etc.(63)	0.06	Iron and steel(72)	0.03	Ships, boats and other floating structures(89)	0.07	Plastics and articles thereof(39)	0.03
Electrical, electronic equipment(85)	0.05	Ships, boats and other floating structures(89)	0.03	Plastics and articles thereof(39)	0.05	Optical, photo, technical, medical, etc. apparatus(90)	0.02
Plastics and articles thereof(39)	0.04	Miscellaneous chemical products(38)	0.02	Optical, photo, technical, medical, etc. apparatus(90)	0.04	Ships, boats and other floating structures(89)	0.02
Ships, boats and other floating structures(89)	0.04	Pulp of wood, fibrous cellulosic material, waste etc.(47)	0.02	Articles of iron or steel(73)	0.02	Miscellaneous chemical products(38)	0.02
Commodities not elsewhere specified(99)	0.03	Commodities not elsewhere specified(99)	0.02	Miscellaneous chemical products(38)	0.01	Aluminium and articles thereof(76)	0.01

Contd...

Table 4.5: India's Top Ten Import Commodities from Six EU Countries

Section (f): India from United Kingdom

(Percent)

Name of Commodities	2000	Name of Commodities	2003	Name of Commodities	2007	Name of Commodities	2011
Pearls, precious stones, metals, coins, etc.(71)	4.03	Pearls, precious stones, metals, coins, etc.(71)	2.16	Pearls, precious stones, metals, coins, etc.(71)	2.66	Pearls, precious stones, metals, coins, etc.(71)	0.68
Nuclear reactors, boilers, machinery, etc.(84)	0.39	Nuclear reactors, boilers, machinery, etc.(84)	0.39	Nuclear reactors, boilers, machinery, etc.(84)	1.07	Nuclear reactors, boilers, machinery, etc.(84)	0.19
Electrical, electronic equipment(85)	0.25	Electrical, electronic equipment(85)	0.30	Electrical, electronic equipment(85)	0.47	Iron and steel(72)	0.13
Iron and steel(72)	0.18	Iron and steel(72)	0.21	Optical, photo, technical, medical, etc. apparatus(90)	0.25	Electrical, electronic equipment(85)	0.09
Optical, photo, technical, medical, etc. apparatus(90)	0.11	Optical, photo, technical, medical, etc. apparatus(90)	0.10	Iron and steel(72)	0.25	Optical, photo, technical, medical, etc. apparatus(90)	0.05
Organic chemicals(29)	0.1	Ships, boats and other floating structures(89)	0.09	Organic chemicals(29)	0.16	Aluminium and articles thereof(76)	0.04
Articles of iron and steel(73)	0.09	Organic chemicals(28)	0.08	Copper and articles thereof(74)	0.15	Mineral fuels, oils, distillation products, etc.(27)	0.03
Commodities not elsewhere specified(99)	0.07	Paper & paper board, articles of pulp, paper and board(48)	0.06	Aircraft, spacecraft, and parts thereof(88)	0.15	Vehicles other than railway, tramway(87)	0.03
Vehicles other than railway, tramway(87)	0.07	Aircraft, spacecraft, and parts thereof(88)	0.06	Mineral fuels, oils, distillation products, etc.(27)	0.10	Copper and articles thereof(74)	0.03
Miscellaneous chemical products(38)	0.05	Miscellaneous chemical products(38)	0.05	Aluminium and articles thereof(76)	0.10	Organic chemicals(29)	0.03

Source: Calculations from Handbook of UNCOMTRADE DATABASE 2011

Note: Figure in parenthesis shows commodity codes.

Trade Intensity Index

After finding the performance of trade and commodity composition of India with major trading partners of European Union, there is a need to look into intensity of Indian trade with these six countries. For this, Trade Intensity Index (TII) is used to determine whether the value of trade between two countries is greater or smaller than what would be expected on the basis of their importance in world trade (Bowen, 1983). Table 4.6 shows the TII of six EU countries and India during 2000-11 periods. Country wise analysis shows that Belgium's trade intensity was more intense with France i.e. 9.84 followed by India (6.86) and UK (5.20) in 2000. During 2007, Belgium's highest trade intensity has been registered with Netherlands i.e. 7.86 followed by India (7.07) and with France (6.70). In 2011, the decline in value has been observed with five EU countries namely France, Germany, Italy, Netherlands and UK as well as with India. France has accounted highest trade intensity with Germany i.e. 7.79 followed by Belgium (3.12) and India (1.85) in 2000. Its trade was more intense with Italy (8.77) followed by India (6.55) in 2007. However, it has declined with Italy at a level of 7.07 and with India i.e. 1.19 in 2011. Germany has accounted highest trade intensity with India (4.12) followed by Belgium (3.12) during 2000 and other countries have not accounted significant trade intensity. In 2003, it has accounted highest trade intensity with Netherland (6.26) followed by India (5.3), Belgium (5.26), France (5.10) and UK (4.31). In 2007, It has recorded highest value with Netherlands i.e. 3.34 followed by Belgium (3.11), France (3.07), UK (2.78) and Italy (2.74). It has increased with India from 2.50 in 2007 to 8.48 in 2011, and decreased with these countries of EU. Afterward, Italy has registered highest trade intensity with Belgium i.e. 9.94 followed by UK (8.29) and Netherlands (7.23) in 2000. However, with India its trade was not more intense i.e. 1.96 at the same time and increased at a level of 4.82 in 2007. In 2011, the index has found decrease with UK (4.01), Belgium (3.88) but increased with France (6.59) and India (4.82). Further Netherlands trade intensity was highest with Belgium i.e. 3.20, followed by Germany (1.83) and India (1.06) in 2000. However, it has not significant trade intensity with other countries during the same period. After that, UK has accounted highest trade intensity with Germany i.e. 5.91 followed by India (4.78) in 2000 and have not significant trade intensity

with other countries. In 2007, its trade was more intense with Netherlands (6.90) followed by Belgium (6.13), France (0.05), Italy (3.3) and Germany (1.62). On the other hand it has registered more intense trade with India i.e. 8.64 during the same time period. In 2011 UK has low trade intensity with these countries. Figures (xiii, xiv, xv, xvi, xvii, xviii) that derived in the (Appendix B) have been showing same picture of trade intensity between six countries of EU and India.

Table also shows that trade intensity analysis of India with EU's six countries, which are the major trading partner of India, during the study period. It depicts that in 2000, India's trade was more intense with France i.e. 9.13 followed by Germany (5.50), Belgium (3.8), UK (1.93), Italy (1.86) and Netherlands (1.69). During 2007, India has highest trade intensity with Germany i.e. 4.60, Netherlands (4.24), UK (3.96), Italy (2.48), France (1.97) and Belgium (2.06). During 2011, India has accounted more trade intensity with Netherlands i.e. 7.82, followed by UK (6.17), France (4.72), Italy (3.68), Belgium (1.42), and Germany (1.03).

Thus India's trade has more intense with France and Netherlands than other these countries of EU during study period as these countries have more exports with India. Also Belgium, Germany and UK have accounted significant trade intensity with India during the study period. However the index has been decreasing due to Euro zone slowdown emerged in 2009. And also this index showed from figure (xix) that trade intensity of India with these countries has fluctuated during the whole study period especially it has decreased due to the EU crisis, which highly affected Indian trade particularly with Belgium, France, Germany, Italy, Netherlands and UK.

Table 4.6: Trade Intensity Index of India and Six EU countries

Country	Year	Belgium	France	Germany	Italy	Netherland	United Kingdom	India
Belgium	2000	—	9.84	3.06	3.21	1.48	5.2	6.86
	2003	—	1.11	3.6	5	1.57	6.25	3.3
	2007	—	6.7	1.85	2.71	7.86	3.68	7.07
	2011	—	5.52	1.33	2.1	6.38	3.19	2.28
France	2000	3.12	—	7.79	2.22	1.47	1.46	1.85
	2003	3.01	—	5.97	1.87	1.14	0.014	1.32
	2007	1.38	—	2.51	8.77	5.11	0.007	6.55
	2011	1.13	—	2.22	7.03	4.11	0.005	1.19
Germany	2000	4.25	3.38	-	1.13	2.76	2.29	4.12
	2003	5.26	5.1	-	5.18	6.26	4.31	5.38
	2007	3.11	3.07	-	2.74	3.34	2.78	2.5
	2011	2.25	2.68	-	2.28	2.78	2.31	8.48
Italy	2000	9.94	1.63	1.26	-	7.23	8.29	1.96
	2003	5.5	0.17	3.84	-	4.78	7.17	1.15
	2007	3.08	6.59	1.74	-	2.23	4.01	4.82
	2011	2.07	5.09	1.25	-	7.23	8.29	1.96
Netherland	2000	3.2	1.21	1.83	1.06	-	1.16	1.06
	2003	1.68	6.64	4.63	5.84	-	7.27	4.78
	2007	9.99	3.72	2.5	2.89	-	4.96	2.13
	2011	8.58	3.45	2.06	2.42	-	4.25	5.4
UK	2000	2.27	1.47	5.91	1.06	2.52	-	4.78
	2003	1.6	1.27	404	8.5	1.91	-	4.76
	2007	6.13	5.05	1.62	3.3	6.9	-	8.64
	2011	4.34	3.55	1.11	2.12	5.44	-	2.43
India	2000	3.8	9.13	5.5	1.86	1.69	1.93	-
	2003	4.18	1.97	5.68	1.95	2.09	2.51	-
	2007	2.06	1.97	4.6	2.48	4.24	3.96	-
	2011	1.42	4.72	1.03	3.68	7.82	6.17	-

Source: Calculations from Handbook of UNCOMTRADE Database 2011.

Conclusion:

European Union is a significant trading partner of India as compound growth rates of India's exports and imports to whole EU have registered (15.32 percent and 13.05 percent) respectively during 1996-2011. The share of India's trade to whole EU is 13.06 during the study period. However, the compound growth rate of India's exports and imports to six EU countries are 12.94 percent and 11.71 percent respectively. The share of these six countries in India's trade with whole EU has been found fluctuating during study period but still its average share is 45 percent during the study period. Therefore it is clearly predicts that Belgium, France, Germany, Italy, Netherlands and UK are significant trading partners of India. It is found that India's exports to six EU countries have grown at a highest rate than imports. However six EU countries share in India's trade decreased in 2009 due to Euro debt crisis.

The direction of India's exports to six EU countries shows that during 1996-2011, Netherlands has registered highest compound growth rate of 19.89 percent followed by France (13.88 percent), Belgium (12.56 percent), Italy (12.17 percent), UK (11.18 percent) and Germany (10.11 percent). And also the average share of UK in India's exports to six EU countries i.e.23.7 percent in India's exports to six EU countries is maximum followed by Germany (20.02 percent), Belgium (14.92 percent), Netherlands (14.24 percent), Italy (12.94 percent) and France (11.02 percent). The results show in terms of average share among these six countries of EU, UK and Germany are the largest export partners of India during the study period. However Euro debt crisis has decreased the volume of Indian exports towards these countries.

Regarding India's imports from six EU countries the compound growth rate of India's imports with France is the highest i.e. 16.83 percent followed by Germany (15.41 percent), Italy (14.87 percent), Netherlands (13.81 percent), Belgium (7.92 percent) and UK (6.89 percent). The average share of India's imports from Germany have registered highest i.e. 26.99 percent followed by Belgium (23.50), UK (21.81), France (10.59 percent), Italy (9.86 percent) and Netherlands (4.93 percent). In terms of average share of India's imports from EU, Germany, Belgium and UK are the main partners of India and in terms of growth

rate, France, Germany and Italy are the main import partners of India during the entire study period.

Then, in case of commodity composition of India's exports to these six countries of European Union, it is found that commodities namely Indian 'articles of accessories', 'iron and steel', 'mineral fuels', 'oils', 'distillation products' etc., 'organic chemicals', 'electrical & electronic products', 'organic chemicals' and 'nuclear reactors' are the most significant commodities which have accounted in the top ten commodities towards these EU's six countries during the entire study period. Many products namely 'iron and steel', 'articles of apparel', 'accessories not knit or crochet', 'pearls and precious stones', 'fish crustaceans', 'molluscs and aquatic invertebrates', 'articles of animal gut', and 'other made articles' have lost their earlier strongest position and have declined their share in these countries over the years. It is also found that there has been diversification in some Indian export commodities. However India's exports share in commodities has been declined due to Euro zone crisis. In case of India's imports from six EU countries it is clear that commodities namely 'pearls and precious stones metals & coins etc.', 'organic chemicals', 'electrical equipment', 'iron and steel', 'nuclear reactors', 'optical photos' and 'commodities elsewhere classified' have listed in the top ten import commodities of India from these six countries over the entire study period. Moreover most of the commodities namely, 'precious stones', 'metals & stones', 'iron and steel', 'miscellaneous products', 'plastic and articles thereof', 'electrical electronic equipment', 'nuclear reactors' and 'optical photo & technical' etc. have lost their percent share in imports from six EU countries due to the Euro crisis.

Regarding the trade intensity of India with six EU countries, it predicts that India's trade has more intense with France and Netherlands than other countries of EU during study period as these countries have more exports with India. Also Belgium, Germany and UK have accounted significant trade intensity with India during the study period. However the index has been decreasing due to Euro zone slowdown which emerged in 2009. And also from figure (xix) given in (Appendix part B) it is clear that trade intensity of India with these six countries has fluctuated during the whole study period especially it in 2009 has due to the EU crisis.

Chapter 5

Trade Competitiveness of India with Six Countries of European Union

After analysing the trade trends and commodity composition in previous chapter, the present chapter is an attempt to examine the competitiveness of commodities and intra industry trade of India with six countries of EU. For this, the different indices like Revealed Comparative Advantage Index, Revealed Symmetric Comparative Advantage Index and Grubel and Lloyd Index (1975) have been calculated.

Revealed Comparative Advantage (RCA):

The Revealed Comparative Advantage is an index which is used for calculating the relative advantage or disadvantage of certain goods or services in the trade flows of a particular country. It can be measured with the help of Revealed Comparative Advantage Index (RCAI) which uses the trade pattern to identify the sectors in which an economy has a comparative advantage, by comparing the country's trade with the world average (Blassa, 1965). The greater the RCA of a commodity, the more an economy specializes in that commodity's exports. Following the structure of RCAs over time reveals an economy's comparative advantage development and export promotion process (Laderman, 2001). RCA indicators have been computed by using annual basis data for HS 02 digit commodity level at four points of time i.e. 2000, 2003, 2007 and 2011 for India's top ten export commodities to EU's six countries i.e. Belgium, France, Germany, Italy, Netherlands and UK.

Table 5.1 depicts that, during the year 2000, India has enjoyed greater RCA with Belgium for 'articles of leather' (572.7), 'animals' gut' (112.01), 'stone and plaster' (32.74), and 'cotton' (32.65) and 'wool and animal's hairs' (23.84). In case of France India has greater RCA for 'fish crustaceans' (206.66), 'articles of apparel accessories', 'knot or crochet' (158.36), 'miscellaneous chemical products' (136.52), 'animal, vegetable fats and oils etc.' (127.25). Germany has accounted for highest RCA for 'oil seeds', fruit etc.' (204.47), 'articles of apparel & accessories', 'knit or crochet' (60.84) and 'articles of leather etc.' (59.75). Besides, Indian 'cotton' has highest RCA with Belgium, Netherlands and UK and there is a diversification in comparative advantage among the commodities.

Table 5.1: Revealed Comparative Advantage of India with Six EU Countries in 2000

Country	Commodities
Belgium	Articles of leather and animal guts (572.76), Pearls and precious stones etc. (112.60), Stones, plasters, cement etc. (32.74), Cotton (32.65), Wool, animal hairs etc. (23.84), Articles of apparel accessories (18.59), Manmade filaments (9.01), Optical, photos etc. (8.78), Lac, gums and vegetable saps (7.96) and Vehicles other than railway (15.23)
France	Fish crustaceans (206.66), Articles of apparel, accessories, knot or crochet (158.36), Miscellaneous chemical products (136.52), Animal gut, Vegetable fats and oils etc. (127.25), Other base metals and cements, Articles thereof (60.83), Oil seed, fruits (45.54), Cotton (36.38), Commodities not elsewhere specified (15.94), Stones, plaster, cement, asbestos etc. (14.61) and Lac, gums and vegetable saps (10.45)
Germany	Oil seeds, fruit etc. (204.47), Articles of apparel, accessories, knit or crochet (60.84), Articles of leather etc. (59.75), Carpets and other textile (47.51), Animal gut, vegetable fats and oils (41.28), Stone, plaster, cement etc. (34.13), Tanning, dyeing extracts (16.25), Manmade filaments (16.24), Footwear, Gaiters thereof (14.77) and Cotton (10.4)
Italy	Toys, games (199.75), Oil seed, fruits etc. (91.94), Stone, plaster, cement etc. (81.59), Miscellaneous edible preparation (41.70), Vegetables plating material (40.53), Vehicles other than railway (35.53), Articles of apparel (32.22), Manmade filaments (24.56), Footwear's, gaiters etc. (23.29) and Special Woven of tufted fabric (18.59)
Netherlands	Knitted or crochet fabric (175.78), Oil seeds, fruits etc. (132.09), Articles of apparel accessories (107.36), Aircraft spacecraft parts (93.23), Miscellaneous chemicals products (63.61), Bird skin etc. (49.22), Meat fish and seafood (41.14), Cotton (40.02), Articles of apparel accessories (38.47) and Edible vegetables and certain roots (36.99)
United Kingdom	Organic chemicals (205.02), Cotton (160.38), Fish crustaceans etc. (144.68), Articles of apparel (143.79), Animals and vegetable fats (69.47), Accessories, knit or crochet (55.85), Cement, articles etc. (41.27), Other base metals (36.47), Fibres (30.37) and Pearls, precious stone etc. (23.40).

Source: Calculation from Handbook of UNCOMTRADE Database, 2011.

Table 5.2: Revealed Comparative Advantage of India with Six EU Countries in 2003

Country	Commodities
Belgium	Glass and glassware's (101.89), Bird skin, flowers and hairs (59.47), Silk (20.43), Fabric, textile (12.68), Works of art and antique (9.28), Fish crustaceans invertible (8.18), Cotton (7.29), Coffee and tea (6.55), Gums vegetables (5.6) and Manmade staple fibres (5.34)
France	Silk (31.87), Gums and vegetables saps (17.82), Works of art and antique (16.45), Woven and textile articles (15.90), Carpets and textile (14.52), Apparel and Knit (9.92), Articles of leather (8.68), Raw hides (8.46) and Cereals(5.31)
Germany	Silk (42.02), Lac gums and vegetable saps (22.69), Articles of lather, Animals guts (17.68), Worn made textile (11.54), Work of art (8.83), Cotton (8.20), Articles of apparel, knit or crochet (7.22), Footwear, gaiters (6.83), Vegetables plaiting (5.85) and Raw hides and Skeins (5.58)
Italy	Works of art (22.67), Coffee and tea (19.07), Silk (15.07), Cotton(15.03), Articles of leather (13.75), Carpets and textile (13.35), Worn and textile articles(11.79), Tin and articles thereof (10.92),Vegetable plating (9.62) and Bird skin, artificial flowers (9.35)
Netherlands	Silk (41.26),Vegetable and Textile(16.29), Work of Arts (14.49), Lac gums and vegetable saps (12.13), Articles of leather (11.75), Worn and textile articles (7.48), Coffee and tea (6.99),Cotton(6.26), Pearls and Stones (6.24) and Articles of accessories (6.06)
United Kingdom	Silk (46.01), Coffee and tea (15.69), Lac and vegetable saps (13.54), Worn and other made textile articles (11.79), Cotton (10. 80), Cereals (10.35), Vegetable, Textile, Fibres (9.85), Articles of leather (8.31), Salt sulphur stone (6.82) and Footwear gaiters (6.72).

Source: Calculation from Handbook of UNCOMTRADE Database, 2011.

Table 5.3: Revealed Comparative Advantage of India with Six EU Countries in 2007

Country	Commodities
Belgium	Silk (19.58), Pearls and precious stones (8.58), Lac, gum and vegetable saps (8.20), Carpets and other textile (8.09), Fish, crustaceans (6.98), Zinc and articles (6.93), Manmade staple (6.46), Fibres, paper yarn (6.01), Cotton (5.65) and Worn and other made textile articles (4.96)
France	Silk (18.71), Worn other made textile (12.45), Carpets and other textile (11.93), Vegetables plating, materials etc. (10.42), Articles of apparel, accessories etc. (9.22), Animal, vegetable fats and oils (8.65), Articles of accessories (7.82), Articles of leather, animals gut etc. (7.00), Works of arts and antique (6.32) and Special woven or tufted fabric (5.36)
Germany	Silk (29.46) ,Carpets and other textile (22.97), lac, gums etc. (18.54), Articles of leather, animal guts, etc. (13.90), Worn other made textile articles (12.04), Vegetable textile fibres (11.50), Cotton (9.40), Footwear, gaiters and the like (7.58), Articles of accessories (7.26), Vegetable plating materials and Vegetable products (6.68)
Italy	Textile (21.01), Lac, Gums vegetable saps (17.07), Bird skin and feathers (14.29), Carpet bird skin, feathers (14.29), Cotton (12.25) Coffee and Tea (11.19), Worn other made textile (9.83), Salt sulphur (9.38), Zinc and articles thereof (7.77) and Silk (7.64).
Netherlands	Articles of leather, animals guts (112.93), Footwear, gaiters(32.21), Articles of apparel (10.08), Carpets and other textile fibres (8.77), Printed books and pictures (7.97), Cotton(7.32), Lac, gums vegetables saps (5.68), Edible fruits (1.78), Coffee tea (1.76) and Iron and Steel (1.69)
United Kingdom	Silk (41.69), Salt and sulphur (14.30), Coffee and tea (10.03), Worn textile articles (8.41), Articles of Leather, Animal gut (7.74), Cotton (6.26), Articles of apparel accessories (5.91), Vegetable textile (5.78), Lac, gums and Vegetable saps (5.62) and Cereals (5.48)

Source: Calculation from Handbook of UNCOMTRADE Database, 2011.

Table 5.4: Revealed Comparative Advantage of India with Six EU Countries in 2011

Source: Calculation from Handbook of UNCOMTRADE Database, 2011 .

Country	Commodities
Belgium	Silk (15.45), Pearls and precious stones (7.76), Manmade staple fibres (6.51), Lac, gums vegetable saps (5.77), Cotton (5.52), Albuminoids, modified starches (4.83), Vegetable textile fibres (4.51), Carpets and other textile floor (3.98), Fish, crustaceans (3.75), and Tobaccos and manufactured tobaccos (2.69).
France	Vegetable plating materials/ products (7.97), Meat, fish and seafood preparation (7.55), Wool animal hair and fabric (6.96), Manmade filaments (6.38), Worn other textile articles (5.67), Footwear (5.55), Special woven or tufted fabric (5.37), Articles of accessories and crochet or knit (4.50) Impregnated laminated textile (3.94) and Headgear and parts thereof(3.36).
Germany	Lac, gums and vegetable saps (28.35), Silk (19.99), Vegetable textile fibres (18.39), Carpets and other textile (12.96), Cotton (10.89), Articles of Leather, Animals guts (10.49), Woven and other made textile articles (9.02), Manmade Staple Fibres (6.49), Footwear, gaiters (5.54) and Articles of apparel accessories (4.87).
Italy	Vehicles other than (75.19), lac, gum and vegetable saps (24.77), Nuclear reactors, boilers, machinery etc.(15.32), Coffee, tea and spices (9.81), Furniture, lighting signs etc. (9.37), Cotton (7.42), Worn other made textile etc. (6.49), Bird skein, feathers etc. (6.34), Manmade staple fibres (5.46), Articles of leather and animal guts (4.42).
Netherlands	Vegetable textile fibres (20.47), Silk (13.31), Lac, gums and vegetable saps (10.69), Worn and other made textile (3.56), Articles of leather, Animals guts (3.46), Articles of apparel, Accessories (3.03), Articles of apparel, Accessories knit or crochet (2.75), Carpets and other textile floor (2.48), Cotton (2.47) and Ships boats and other floating (2.43).
United Kingdom	Lead and articles thereof (17.49), Pulp and wood, fibres, waste (7.42), Iron and Steel (7.33), Pearls , Raw hides and Skin and Leather (3.91), Copper and articles thereof (3.78), Photographic or cinema photographic goods (3.23), Aluminium and articles thereof (2.73), Precious, Stones (2.30), Printed books and newspaper (2.08) and Nickel and other articles(2.05).

On the other hand, France and Germany have found more RCA for 'articles of accessories' and 'oil seed and fruits'. However, Indian 'articles of leather' and 'fish crustaceans' have accounted highest value with Belgium (572.7) and France (206.66). Then, Indian 'oil seeds' has enjoyed great extent with Germany (204.47), Italy (199.75) and Netherlands (175.78).

Table 5.2 depicts this picture for the year 2003. Country wise analysis shows that India has greater RCA with Belgium for Glass and glassware's (101.89) followed by 'Bird skin', 'flowers and hairs' (59.47) and 'silk' (20.43). With France, it is for Indian 'silk' (31.87), 'gums and vegetables saps' (17.82) and 'works of art and antique' (16.45). In case of Germany, Indian 'silk' (42.02), 'lac gums and vegetable saps' (22.69) have enjoyed greater RCA. Further with Italy, 'works of art' (22.67), 'coffee and tea' (19.07) and 'silk' (15.07) have higher RCA. With Netherlands, 'silk' (41.26), 'vegetable textile' (16.29), 'work of arts' (14.49) has great extent of RCA. Afterwards, India's greater RCA for 'silk' (46.01), 'coffee and tea' (15.69) is with UK. So far most of the commodities have been entering as compared to 2000, as 'glass and glassware' and 'bird skein, fur etc.' have registered higher RCA with Belgium. Then in case of France, Germany, Netherlands and UK, Indian 'silk' has been emerged as a highest competitive advantage commodity as compared other commodities for the same year.

Table 5.3 shows India's RCA with six EU countries in 2007. India has greater RCA with Belgium among commodities like 'silk' (19.58), 'pearls & stones' (8.58) and 'lac gums vegetable saps' (8.20). India has highest RCA with France for 'silk' (18.71), 'other made textile' (12.45), 'carpets and other textile' (11.93). Afterwards, India's RCA with Germany for lac, gums and vegetable saps was (28.35), 'silk' (19.99) and 'vegetable textile fibres' (18.39). India's RCA with Italy is for 'carpets and textile' (21.01), 'lac, gums and vegetable saps' (17.07), 'bird Skin, feathers' (14.29), 'cotton' (12.25) and 'coffee and tea' (11.19). In case of Netherlands, RCA is for 'articles of leather' (112.93) and 'footwear' (32.21). India accounted highest RCA with UK for 'silk' (41.69), 'salt and sulphur' (14.30), 'tea and coffee' (10.03). Indian 'textile' and 'articles of leather' have accounted more value of RCA with Italy, Netherlands than from 2003.

Table 5.4 shows the highest RCA for India's top ten commodities with six EU countries in 2011. India's highest RCA with Belgium for 'silk' is (15.45), 'pearls and precious stones' (7.76) and 'manmade staple fibres' (6.51). Then with France, India enjoyed advantage for 'vegetable plating materials/ products' (7.97), 'meat and fish and seafood preparation' (7.55). After that India's RCA with Germany has accounted for 'lac, gums and vegetable saps' (28.35), 'silk' (19.99) and 'vegetable textile fibres' (18.39). In case of Italy, India has enjoyed more RCA for 'vehicles' (75.19), 'lac, gum and vegetable saps' (24.77) and 'nuclear reactors, boilers & machinery' etc. (15.32). Then with Netherland, highest RCA is for 'vegetable textile fibres' (20.47) and 'silk' (13.31). Further India has registered great extent of competitive advantage for 'lead and articles thereof' (17.49), 'pulp and wood and fibres, waste' (7.42) with UK.

Then India's 'oil seeds' enjoyed great extent with Germany (204.47), Italy (91.94) and Netherlands (132) at the same time. While during 2003, commodities namely 'glass and glassware' and 'bird skin and fur' has highest value of this index with Belgium. In case of France, Germany, Netherlands and UK Indian 'silk' has been emerged as a highest competitive advantage, as compared to other commodities in the same year. On the other hand commodities namely 'textile' and articles of leather' has accounted more RCA with Italy and Netherlands in 2007. India's 'silk' and 'pearls and precious stones' have accounted the same position with Belgium. Then in case of France, Germany and Italy, some changes have been found. For example, 'silk', 'vegetable plaiting' has changed their position with France. On the other hand, with severe effect of Euro crisis, some of the commodities lost their earlier place in 2011 like Indian 'cotton', 'tea coffee' and 'carpets'. Then commodities namely 'silk', 'cotton', 'articles of accessories' and 'articles of leather' and animal's guts' have still remained in top position during the whole study period.

Revealed Symmetric Comparative Advantage (RSCA):

After analysing the top ten export commodities of India to six countries of EU, there is a need to analyse the problem of asymmetry because RCA is basically not comparable on both sides of unity. It ranges from 1 to infinity for commodities in which a country reveals comparative advantage, but only from

zero to 1 for commodities which reveal comparative disadvantage. This asymmetry creates problems in the study of specialization patterns of trade (Lapadre 2001).

Table 5.5 depicts RSCA with EU's six countries for the year 2000. India has great extent of symmetric competitive advantage index with these selected countries in the top ten listed commodities. It is found that the value of RSCA for all these products is at least 0.99. Netherlands has registered highest value of RSCA for 'wool and animals hairs', 'iron & steel' and 'fur skein' i.e. 1.00. Most of the commodities have been diversified within the countries. However, commodities like 'explosive pyrotechnics' with value of 0.99 have registered symmetric advantage with Belgium, France, Germany and UK during this time.

Table 5.6 shows India's RSCA for the year 2003. It has RSCA with countries like Belgium, France and Germany for Indian 'silk, lac, gums and vegetable saps', 'works of art'. Germany has accounted highest value of these indices for 'glass and glass ware' (0.98) followed by 'bird skin', 'feathers' (0.97), 'silk' (0.90), 'vegetable textile fibres' (0.90). France has highest RSCA for 'silk' i.e. 0.93. Germany has also registered highest RSCA for 'silk' (0.95) followed by 'lac, gums and vegetable saps' (0.91). Italy has greater RSCA for 'works of art' (0.92), 'coffee and tea' (0.90), 'silk' (0.88). India has registered RSCA with Netherlands for 'silk' i.e. (0.95), for 'fibres preparation' (0.88) and for 'works of art' (0.87). In case of UK, India has accounted greater RSCA for 'silk' (0.96), followed by 'coffee & tea' (0.88) and 'lac gums and vegetable saps' (0.86).

Table 5.7 shows India's RSCA with EU's six countries in 2007. Indian 'silk' (0.90), 'stone & metals etc.' (0.79) and 'lac, gums and vegetable saps' (0.78) have registered greater RSCA with Belgium. France, Germany and UK have registered highest value of these indices for the commodities which have been shown in the list of top ten commodities. Italy has higher value for 'carpets and other textile' (0.91), 'lac, gums and vegetable saps' (0.89), 'bird skin', and 'feathers' (0.87). After that India has greater RSCA with Netherlands for 'articles of leather', 'animals' guts', 'footwear, gaiters thereof' (0.94) and 'articles of apparel accessories' (0.83). Thus Indian 'silk' has enjoyed a greater advantage with UK and Belgium. 'lac, gums and vegetable saps' have accounted for most

popular commodities with Belgium, Italy, Netherland and UK. Most of the commodities like 'cotton', 'textile' and 'articles of leather' have experienced competitiveness over the year with these countries. Indian 'silk' has registered a value of 0.90; on the other side 'glass and glassware' has dropped its position which was at the first place in 2003 with Belgium and in case of France, Germany and Italy most of the commodities have been diversifying in the 2007. For example, Indian 'articles of leather' and 'articles of accessories' have changed their position and came at the first position in 2007 with Netherlands. Then Indian 'silk' has remained same place with UK and 'coffee and tea, lac, gum' and 'vegetable saps' have reduced with UK at the same time

Table 5.8 shows that India's highest RSCA with EU's six countries in 2011. Indian 'silk' (0.88) and 'lac, gums and vegetable saps' (0.79) have found advantage with Belgium. Then France has registered highest value of RSCA for 'vegetable plating materials' (0.78) followed by 'meat, fish and seafood' (0.77) and 'wool & animal's fur' (0.75). Further with Germany it is for 'lace, gums and textile fibres' (0.89), 'vegetable saps' (0.93), 'silk' (0.90) and 'vegetable and textile fibres' (0.89). However, India enjoyed greater advantage with Italy for all top ten listed commodities. In case of Netherlands, Indian 'vegetable and textile fibres' (0.91), 'silk' (0.86), 'lace, gums and vegetable saps' (0.83), 'lead, and articles thereof' (0.89) have enjoyed advantage. India has found greater RSCA for 'lead and articles thereof' (0.89), 'pulp of wood, waste etc.' (0.76) and 'iron and steel' (0.76) with UK. India's 'silk', vegetable plating', 'lac, gum and vegetable saps', 'fish crustaceans', 'vegetable textile fibres' and 'lead' have registered greater RSCA over the period. India has great benefit with Italy, which has accounted RSCA at least 0.99 for all top ten commodities. Indian 'silk' and 'lac, gum and vegetable saps' have registered same position with Belgium at that time. The severe crisis has affected Indian products as these have lost their position and their value of RSCA with these countries has come down. France, Germany, Italy and UK have accounted for the commodities, which have changed and moved from their previous position. However, Indian 'live animals', 'pulp of wood' have moved and come down in 2011.

It is clear from the above analysis that all top ten commodities have been accounted great extent of RSCA with six countries of European Union in 2000.

Commodities namely 'fertilizer' 'explosives pyrotechnics etc.' and 'ships boats and other floating' have enjoyed symmetric competitiveness with Belgium, France, Germany and UK at the same period. On the other side, commodities namely 'wool and animals hairs', 'Iron and steel' and 'fur skin and artificial aquatic' have accounted great extent of RSCA with Netherlands. Then Indian 'silk' has enjoyed highest value of this index with Belgium, Germany, Italy, Netherlands and UK in 2003. Then commodities namely 'lac gums and vegetable saps' and 'cotton' have higher value of this index with Belgium, France, Germany and UK at the same period. In 2007 India's silk has accounted highest RSCA with Belgium, Italy and UK. Then commodity namely 'lac, gums and vegetable saps' has enjoyed more symmetric competitiveness with Belgium, Italy, UK and Netherlands. On the other side 'cotton' also accounted highest value of this index with Italy, Netherlands and UK. During 2011, RSCA is higher for 'silk', 'lac, gums and vegetable saps'. However, many commodities having higher RSCA have entered during the whole study period though the severe crisis has affected the value of RSCA of some commodities. Indian RSCA with France, Germany, Italy and UK is not consistent with most of the commodities throughout period. Then commodities namely 'silk', 'cotton', 'articles of accessories' and 'articles of leather and animals guts' have still remained in top position during the whole study period. However, the value of RSCA has been decreased for Indian 'live animals' and 'pulp of wood' in 2011 due to the Euro crisis.

Table 5.5: Revealed Symmetric Comparative Advantage of India with Six EU Countries in 2000

Country	Commodities
Belgium	Fertilizers (0.99), Articles of apparel accessories (0.99), Cork and articles of cork (0.99), Milling products (0.99), Explosive pyrotechnics, Matches (0.99), Cereal, milk products (0.99), Wood and wood articles (0.99), Carpets and other textiles (0.99), Impregnated, coated filaments (0.99) and Other base metals (0.99)
France	Ships, boats and other floating structures (0.99), Umbrellas, walking-sticks (0.99) Ores, slag and ash (0.99), Coca and cocoa preparation (0.99), Zinc and articles thereof (0.99), Explosives, pyrotechnics etc. (0.99), Manufactures of plating material etc. (0.99), Arms and ammunition, parts thereof (0.98), Residues, wastes of food industry (0.98) and Milling products, malt etc. (0.97)
Germany	Mineral fuels, oils, distillation products etc. (0.99), Lead and articles thereof (0.99), Cork and articles of cork (0.99), Fertilizers (0.99), Ships, boats and other floating (0.99), Umbrellas, walking- sticks etc. (0.99), Explosives, pyrotechnics, matches etc. (0.99), Live animals (0.99), Nickel and articles thereof (0.98), Printed books and Newspapers etc. (0.98)
Italy	Beverages, spirits and vinegar(0.99), Vegetable textiles and fibres (0.99), Coffee and tea (0.99), Headgear and parts (0.99), Zinc and articles of (0.99), Other base metals (0.99), Cereals products (0.99), Ceramic products (0.99), Miscellaneous manufactured (0.99) and Pearls and precious stones (0.99)
Netherlands	Wool and animals hairs (1.00), Iron and steel (1.00), Fur skin and artificial aquatic (1.00), Worn and textile articles (0.99), Vehicles other than railway (0.99), Commodities not else ware (0.99), Miscellaneous products (0.99), Other base metals (0.99) and Soaps lubricants (0.99)
United Kingdom	Meat and edible meat (0.99), Railway, tramway locomotives etc. (0.99), Umbrellas, walking sticks etc. (0.99), Fertilizer (0.99), Explosives, pyrotechnics etc. (0.99), Ships, boats and other floating structure (0.99), Pulp of wood, fibrous and waste etc. (0.99), Meat fish and seafood preparations (0.99)

Source: Calculation Based on the UNCOMTRADE Database, 2011.

Table 5.6: Revealed Symmetric Comparative Advantage of India with Six EU Countries in 2003

Country	Commodities
Belgium	Glass and glassware (0.98), Bird skin, feathers (0.97),Silk (0.90), Vegetable Textile Fibres (0.90), Works Of Arts (0.80), Fish Crustaceans (0.78),Cotton (0.76), Coffee, Tea (0.73), Lac, Gums and Vegetable Saps (0.69) and Manmade staple fibres(0.68)
France	Silk (0.93) Lac ,gums and vegetable saps (.89), Works of Art (0.88), Worn and other textile articles (0.88), Carpets and other textile Floor (0.87), Articles of apparel accessories (0.81), Articles of apparel accessories (0.79) and Cereals (0.68)
Germany	Silk (0.95), Lac, gums and vegetable saps (0.91), Articles of Leather, animals guts (0.89), Worn and textile articles (0.84), Works of Arts (0.79), Cotton (0.78), Footwear gaiters (0.74), Articles of apparel accessories (O.75), Vegetable plaiting material (0.71), Raw hides and Skins (0.69)
Italy	Works of Art (0.92), Coffee and Tea (0.90), Silk (0.88), Cotton (0.87), Carpets And Other Textile (0.86), Tin And Articles Thereof (0.83), Worn and other made textile (0.84), Vegetable plaiting materials (0.82) and Bird skin feathers (0.81)
Netherlands	Silk (0.95), Fibres preparation (0.88), Works of Art (0.87), Articles of Leather, Animals guts (0.84), Articles of Accessories (0.78), Articles of Accessories (0.78), Won and other made articles (0.76), Pearls and precious stones (0.72), Knit or crochet (0.72), Edibles fruits, nuts(0.69) and Animals, vegetables (0.63)
United Kingdom	Silk (0.96), Coffee and Tea (0.88), Lac, Gums and Vegetable Saps (0.86), Cotton(0.83), Vegetable Textile Fibres (0.81), Artificial Leather and Animals Guts (0.78),Fish Crustaceans, Molluscs (0.74), Manmade Filaments (0.72), Knitted or Crochet Fabrics (0.72) and Carpets and other Textile Floor (0.69)

Source: Calculation from Handbook UNCOMTRADE Database, 2011.

Table 5.7: Revealed Symmetric Comparative Advantage of India with Six EU Countries in 2007

Countries	Commodities
Belgium	Silk (0.90) stones, metals etc. (0.79), Lac, gums and vegetable saps (0.78), Fish crustaceans (0.78), Zinc and articles thereof (0.75), Manmade staple fibres (0.73), Vegetable textile articles(0.72), Cotton(0.69) and Worn and textile articles (0.66)
France	Live animals (0.99), Pulp of wood, Fibrous calluses material etc. (0.99), Dairy product, eggs etc. (0.99), Ships, boats and other floating etc. (0.99), Meat and edible meat (0.99), Photographic or cinematographic goods (0.99),Fertilizers (0.99), Nickel and articles thereof (0.97), Cereal, flour, starch etc. (0.97) and Lead and articles thereof (0.97)
Germany	Commodities not elsewhere specified (0.99), Works of arts and antique (0.99), Miscellaneous manufactured articles (0.99), Toys, games etc. (0.9), Furniture, lighting etc. (0.99), Arms and ammunition, parts etc. (0.99), Musical instruments, parts and accessories (0.99), Clock watches and parts thereof (0.99), Optical, photo etc. (0.99), Ships and boats and other floating (0.98)
Italy	Carpets and other textile (0.91),Lac, gums and vegetable saps (0.89), Bird skin, feathers (0.87), Cotton(0.85), Coffee tea (0.83), Worn other made textile (0.82), Salt and sulphur etc. (0.81), Zinc and articles thereof (0.77), Silk (0.77) and Special woven of tufted fibres (0.76)
Netherlands	Articles of leather, animals guts, footwear, gaiters thereof (0.94), Articles of apparel accessories (0.83), Carpets and other textile (0.79), Printed books and newspaper (0.77), Lac, gums and vegetable saps (0.76), Edible fruits, nuts etc. (0.28), Coffee and tea (0.27) and Iron and steel (0.25)
United Kingdom	Silk (0.95), Salt and sulphur (0.87), Coffee and tea (0.82),Worn and other made textile (0.79), Articles of apparel accessories (0.77), Vegetable textile fibres (0.71), Lac, gums and vegetable saps (0.69) and Cereals (0.69)

Source: Calculation based from Handbook of UNCOMTRADE Database, 2011.

Table 5.8: Revealed Symmetric Comparative Advantages of India with Six EU Countries in 2011

Country	Commodities
Belgium	Silk (0.88), Lac, gums and vegetable saps (0.79), Manmade staple fibres (0.73), cotton (0.69), Albuminoids modified starches (0.66), Vegetable textile fibres (0.64), Carpets and other fibres (0.64), Carpets and textile fibres (0.59), Fish crustaceans (0.50) and Worn and other textile (0.43)
France	Vegetable plating materials (0.78), Meat, fish and seafood (0.77), Wool, animals fur (0.75), Manmade filaments (0.73), Worn and a manmade textile (0.70), Footwear, gaiters and parts thereof (0.69), Special woven, fabric etc. (0.69), Articles of accessories (0.64), Impregnated, coated or laminated textile fabric (0.59) and Head gear and parts thereof (0.54)
Germany	Lace, gums and textile fibres (0.89), Vegetable saps (0.93), silk (0.90), Vegetable and textile fibres (0.89), Carpets and other textile floor (0.88), Cotton(0.83), Articles of leathers, Animals gut (0.83), Worn other made textiles (0.73), Manmade staple fibres (0.73), Footwear, gaiters and parts thereof (0.69) and Articles of apparel accessories not knit or crochet (0.66)
Italy	Tin and articles thereof (0.99), Dairy products (0.99), Cocoa and Cocoa preparation (0.99), Meat and edible meat (0.99), Tramway locomotives, Rolling stock (0.99), Tobacco and Manufactured (0.99), Artificial fur, manufactures (0.99), Clocks and watches (0.99), Musical instrument (0.99) and Fertilizers (0.98)
Netherlands	Vegetable and textile fibres (0.91), Silk (0.86), lace, gums and vegetable saps (0.83), Worn other made textile articles (0.56), Articles of leathers , Animal gut (0.55), Rawhides and skins (0.55), Articles of accessorise knit or crochet (0.50), Articles of accessories (0.47), Carpets and other textile (0.43) and Cotton (0.43)
United Kingdom	Lead and articles thereof (0.89), Pulp of wood, waste etc. (0.76), Iron and steel (0.76), Pearls and precious stones (0.68), Rawhides and skins (0.59), Copper and articles thereof (0.58), Photographic or Cinematographic goods (0.53), Aluminium and articles thereof (0.51) and Wool ,animals hairs and fabric (0.48)

Source: Calculation from Handbook of UNCOMTRADE Database, 2011

Intra Industry Trade Index (IIT):

The traditional models of trade were set out by the model of David Ricardo and Hecksher Ohlin in 1970s; these models explained the occurrence of international trade. These models have used Revealed Comparative Advantage to explain that why two countries trade with each other. However, many economists argued that these models have not provided the explanation of intra-industry trade under the assumptions of same factor endowments trade and produce goods domestically. Intra industry trade explains that countries of the same factor endowments would still trade due to differences in technology, as this would encourage specialisation and trade (Krugman 1981). Therefore, intra industry trade refers to the exchange of similar products belonging to the same industry. The term is usually applied in international trade where the same types of goods or services are imported and as well as exported. In other words, it is an indicator of the similarity of industrial structures among countries. The higher the level of IIT, the more similar is the sectoral composition in two trading nations. If certain sectors reveal high IIT in two nations, then these sectors are likely to be spread over the group. Second, IIT enhances the trade at industrial level, particularly when applied to change in trade patterns (Bruhart 1995). So Grubel-Lloyd (1975) proposed an alternative index which is most commonly used for measuring the intra-industry trade (Anderson, 2002). Therefore, this study calculates this most widely preferred index given by Grubel-Lloyd (G-L) during the study period by using Harmonised Section (HS 02) digit level, data at four points of time.

Table 5.9 highlights the change in value of G_L index (IIT) of India with six countries of EU during 2000-2011. It shows that the level of IIT is the highest for 'metals' (1.95) followed by 'woods products' (1.62), 'chemicals products' (1.36), and 'machinery electrical' (1.18) of India with Belgium in 2000. These products have been showing downturn over the years as this index has decreased and reached at a level of 0.58, 0.48, 0.60 and 0.85 for the said commodities respectively in 2011. The value of IIT was for 'animal products' (0.06), 'vegetable products' (0.26), 'foodstuff' (0.07), 'mineral products' (0.42), 'chemical and allied industries' (0.58) in 2011. In case of France, this index is particularly high for 'chemicals' (0.99), 'plastic' (0.98), 'leather' (0.99), 'textile' (1.00), 'footwear' (1.00), 'stones' (1.00), 'metals machinery' (1.00), 'transportation' (1.00) and 'miscellaneous' (0.98) in 2003. IIT with

Germany has recorded highest for 'minerals' (0.92), 'chemicals' (0.88), and 'footwear' (0.74) in 2000. However, these indices for these same products have been decreasing and reached at level of 0.18, 0.88 and 0.62 respectively in 2011. However, 'transportation' and 'miscellaneous products' have increased from 0.61 and 0.33 in 2000 to 0.87 and 0.67 in 2011. With Italy, this index was 0.79 for 'wood and for wood products' and glassware' i.e. 0.99 in 2000. The index for these products decreased and attained the level of 0.22 and 0.85 respectively in 2011. The reason behind the reverse situation is severe crisis of EU. It badly affected India's IIT with Netherlands at significant level for the commodities section 'chemicals', 'stones and glass' i.e. 0.77, 0.88 and 0.66 in 2000 have decreased and come down at a level of 0.33, 0.68, and 0.38 respectively in 2011. Next UK has observed highest value of IIT for 'plastic' i.e. 0.87 in 2000 which has increased i.e. 0.97 in 2011. On the other hand India has been losing IIT for foodstuff reached at level i.e. 0.29 in 2011. Indian 'stones and glass', 'metals', 'machinery and miscellaneous products' have registered highest value of this index i.e. 1.67, 1.38, 1.47 and 1.79 in 2000 and all these same commodities have lost their intra industry trade in 2011. Therefore figure (xiv) shows that points a, b and c have been accounted highest IIT for 'foodstuff, plastic' and 'footwear' with Belgium as compared to other countries. Then in figure (xv) the points 'e', 'd' and 'c' have been showing the highest value of this index for 'raw material', 'footwear' and 'machinery' with UK. Figure (xvii) shows that 'animal gut', 'foodstuff' and 'footwear' have accounted more value of this index with France, Netherlands and UK. Afterwards figure (xvii) shows that 'animals gut', 'mineral products' and 'textile has significant IIT with UK and France as compare other countries.

Hence from the analysis, it is clear that Indian foodstuff, stones, glass wares and chemicals have registered highest IIT with six EU countries during the study period. On the other hand, animal products and mineral products have accounted for more IIT index only with Belgium and UK over the years. Indian vegetables have registered highest value of IIT with Belgium and France. 'Machinery electrical', 'transportation' and 'miscellaneous products' have diversified during entire study period and the decreasing shares of commodities have been showing the sluggish impact of European Union. Most of the commodities of India have lost their value in 2011 due to the Euro crisis. For instance, 'animal and animal product sector',

'vegetable products', 'food stuff', 'mineral products', 'chemicals and allied products', 'plastic and rubber', 'raw hides', 'skin and leather', 'wood and wood products', 'textile', 'footwear stones' and 'glass & glassware products' have lost their intra industry trade with Belgium due to sluggishness of these economies. Further in case of France, Indian 'vegetable product sector', 'plastic and rubber', 'stones and metals' and 'miscellaneous products' have found decline in the value of this index with given effect of Euro zone crisis. Then with Germany for 'foodstuff', 'mineral products', 'raw hides and bird skin', 'textile', 'footwear', 'stone and machinery' have accounted decrease in IIT index in 2011. After that, with Italy G-L index have fall down for 'raw hides, skin, leather' and fur', 'wood', 'textile', 'stones and metals', 'machinery' and 'miscellaneous products' due to the severe effect of European Union crisis. Further, India has also registered low level of this index with Netherlands for 'plastic and rubber', 'raw hides, skin, leather and fur', 'wood and wood products', 'metals and stones', 'machinery' and 'miscellaneous products'. In case of UK, Indian 'mineral product sector', 'raw hides, skin', and 'textile' have registered low value of intra industry trade index in 2011. Thus, it clearly indicates that debt crisis have vigorously affected Indian pattern of trade with these six countries.

Table 5.9: India's Intra- Industry Trade Index with Six EU Countries

Commodities	Belgium				France				Germany				Italy				Netherland				United Kingdom			
	2000	2003	2007	2011	2000	2003	2007	2011	2000	2003	2007	2011	2000	2003	2007	2011	2000	2003	2007	2011	2000	2003	2007	2011
Animal and animal products sector (01-05)	0.06	0.94	0.1	0.06	0.01	0.00	0.09	0.38	0.02	0.04	0.08	0.22	0.06	0.03	0.07	0.12	0.11	0.48	0.14	0.51	0.00	0.09	0.07	0.13
Vegetable products (06-15)	0.02	0.98	0.17	0.26	0.30	0.96	0.87	0.49	0.29	0.12	0.24	0.15	0.18	0.53	0.13	0.20	0.26	0.15	0.07	0.40	0.04	0.03	0.03	0.17
Foodstuffs (16-24)	0.04	0.96	0.49	0.07	0.85	0.69	0.76	0.90	0.27	0.42	0.74	0.43	0.15	-3.88	0.25	0.88	0.67	0.92	0.30	0.87	0.32	0.51	0.44	0.90
Mineral products (25-27)	0.04	0.96	0.57	0.42	0.37	-0.77	0.10	0.23	0.92	0.89	0.53	0.18	0.40	0.71	0.80	0.87	0.77	0.16	0.09	0.33	0.90	0.43	0.37	0.29
Chemicals and allied industries (28-38)	1.36	-0.36	0.95	0.58	0.05	0.99	0.76	0.73	0.88	0.98	0.64	0.88	0.79	0.83	0.17	0.99	0.81	0.60	0.55	0.68	0.69	0.69	0.60	0.75
Plastic / rubbers (39-40)	0.85	0.15	0.84	0.84	0.92	0.98	0.63	0.54	0.40	0.57	0.31	0.83	0.80	0.41	0.71	0.83	0.39	0.36	0.76	0.30	0.87	0.93	0.83	0.97
Raw hides, skins, leather and furs (41-43)	0.01	0.99	0.06	0.04	0.62	0.99	0.18	0.36	0.11	0.11	0.23	0.06	0.69	0.81	0.42	0.40	0.57	0.48	0.65	0.51	0.13	0.18	0.15	0.13

Contd....

Commodities	Belgium				France				Germany				Italy				Netherland				United Kingdom			
	2000	2003	2007	2011	2000	2003	2007	2011	2000	2003	2007	2011	2000	2003	2007	2011	2000	2003	2007	2011	2000	2003	2007	2011
Wood and wood products (43-49)	1.62	-0.62	0.4	0.48	0.73	0.99	0.26	0.31	0.06	0.15	0.07	0.42	0.86	-2.62	0.71	0.22	0.05	0.15	0.72	0.14	0.55	1.46	0.62	0.64
Textile (50-63)	0.05	0.95	0.11	0.06	0.21	1.00	0.05	0.09	0.06	0.07	0.15	0.08	0.23	0.93	0.17	0.1	0.16	0.16	0.04	0.31	0.03	0.07	0.06	0.06
Footwear/ headgear (64-67)	0.01	0.99	0.01	0.01	0.01	1.00	0.04	0.03	0.09	0.02	0.03	0.02	0.25	0.65	0.09	0.92	0.09	0.05	0.01	0.03	0.01	0.01	0.01	0.22
Stones / glass (68-71)	0.01	0.99	0.59	0.27	0.97	1.00	0.78	0.81	0.74	0.8	0.81	0.62	0.52	0.44	0.96	0.65	0.36	0.48	0.23	0.46	0.2	1.67	0.38	0.23
Metals (72-83)	1.95	-0.95	0.69	0.6	0.6	1.00	0.59	0.58	0.18	0.74	0.42	0.96	0.99	0.8	0.68	0.85	0.66	0.59	0.88	0.38	0.88	1.38	0.71	0.59
Machinery/ electrical (84-85)	1.18	-0.18	0.59	0.85	0.13	1.00	0.38	0.41	0.53	0.3	0.15	0.49	0.19	0.91	0.19	0.41	0.46	0.81	0.74	0.6	0.84	1.47	0.62	0.72
Transportation (86-89)	0.58	0.42	0.94	0.29	0.75	0.99	0.47	0.7	0.61	0.73	0.41	0.87	0.98	0.59	0.22	0.55	0.66	0.91	0.69	0.89	0.8	0.66	0.57	0.57
Miscellaneous (90-97)	0.73	0.27	0.83	0.12	0.62	0.98	0.9	0.83	0.33	0.42	0.22	0.67	0.26	0.38	0.56	0.47	0.24	0.37	0.58	0.34	1.00	1.79	0.25	0.89

Source: Calculations from Handbook of UNCOMTRADE Database, 2011

Note: Figure in parenthesis shows commodity codes.

Conclusion:

Thus from the above analysis it clearly indicates that Indian 'articles of leather' with Belgium (572.7) and 'fish crustaceans' with France has accounted highest RCA in 2000. Then India's 'oil seeds' enjoyed great extent with Germany, Italy and Netherlands i.e. (204.47, 91.94, 132) at the same time. While during 2003, commodities namely 'glass and glassware' and 'bird skin and fur' have higher value of this index with Belgium. In case of France, Germany, Netherlands and UK Indian 'silk' has been emerged as a highest competitive advantage, as compared to other commodities in the same year. On the other hand commodities namely 'textile' and articles of leather' has accounted more RCA with Italy and Netherlands in 2007. India's 'silk' and 'pearls and precious stones' has accounted at the same position for comparative advantage with Belgium. Then in case of France Germany and Italy, some diversification has been found in it. For example, 'silk', 'vegetable plaiting' has changed their position with France. On the other hand, with severe effect of Euro crisis, some of the commodities lost their earlier place in 2011 like Indian 'cotton', 'coffee and carpets' have decreased their competitive advantage at the same period.

In terms of Revealed Symmetric Comparative Advantage, it clearly indicates that all most commodities have been accounted great extent of RSCA with six countries of European Union during 2000. Commodities namely 'fertilizer' 'explosives pyrotechnics etc.' and 'ships boats and other floating' and has enjoyed symmetric competitiveness with Belgium, France, Germany, and UK at the same period. On the other side commodities namely 'wool and animal's hairs', 'Iron and steel' and 'fur skin' and 'artificial aquatic' has accounted great extent of RSCA with Netherlands in 2000. Then Indian 'silk' has enjoyed highest value of this index with Belgium, Germany, Italy, Netherlands and UK in 2003. Then commodities namely 'lac gums and vegetable saps' and 'cotton' have highest value of this index with Belgium, France, Germany and UK at the same period. On the other hand, during 2007 India's 'silk' has accounted highest RSCA with Belgium Italy, and UK. Then commodity namely 'lac, gums and vegetable saps' has enjoyed more symmetric competitiveness with Belgium Italy, UK and Netherlands. Therefore, Revealed Symmetric Comparative Advantage (RSCA) is highest for 'silk', 'lac, gums and vegetable saps'. However commodities have

diversified during the whole study period. The severe crisis has affected Indian products and these have lost their position and value of RSCA with these countries. Then with France, Germany, Italy and UK have accounted that all most commodities which change and move from their previous position. For instance 'carpets' and 'textile' and 'silk' have listed at the top position with highest value (0.43 and 0.80) respectively which is less as compared to earlier year. However 'live animals', 'pulp of wood' have been moved and come down in 2011.

Thus the analysis of Intra Industry shows that Indian 'foodstuff', 'stones, glass wares' and 'chemicals' have registered highest IIT with six EU countries during the study period. On the other hand, 'animal products' and 'mineral products' have accounted for more IIT index only with Belgium and UK over the years. Indian vegetables have registered highest value of IIT with Belgium and France. 'Machinery electrical', 'transportation' and 'miscellaneous products' have diversified during entire study period and the decreasing shares of commodities have been showing the sluggish impact of European Union. The one thing is also shown from the above analysis that most of the commodities of India have lost their value in 2011 due to the Euro crisis. For instance, 'animal and animal product sector', 'vegetable products', 'food stuff', 'mineral products', 'chemicals and allied products', 'plastic and rubber', 'raw hides', 'skin' and 'leather', 'wood and 'wood products', 'textile', 'footwear stones' and 'glass and glassware products' have lost their intra industry index with Belgium due to sluggishness of these economies. Further in case of France, Indian vegetable product sector, plastic and rubber, stones and metals, miscellaneous products have come down their value of indices with given effect of Euro zone crisis. Then with Germany 'foodstuff', 'mineral products', 'raw hides and bird skin', 'textile', 'footwear', 'stone, machinery' have accounted decrease in IIT index in 2011. After that with Italy G-L index have fall down for 'raw hides, skin, leather and fur', 'wood', 'textile', 'stones and metals', 'machinery' and 'miscellaneous products' due to the severe effect of European Union. Further India has also registered low level of this index with Netherlands for 'plastic and rubber', 'raw hides, skin, leather and fur', 'wood and wood products', 'metals and stones', 'machinery' and 'miscellaneous products'. In case of UK Indian mineral product sector, 'raw hides & skin' and

'textile' have registered low value of intra industry trade index in 2011. Thus it's clearly intends that debt crisis have vigorously affected Indian commodity pattern.

Chapter 6

Conclusion

The present study is an attempt to examine the growth, performance and composition of India's trade with selected six countries of the European Union, namely Belgium, France, Germany, Italy, Netherlands and UK by calculating different indices like Trade Intensity Index (TII), Revealed Comparative Advantage Index (RCAI), Revealed Symmetric Comparative Advantage Index (RSCAI) and Intra Industry Trade Index (IITI) during 1996-2011.

European Union is a significant trading partner of India as compound growth rates of India's exports and imports from whole EU are 15.32 percent and 13.05 percent respectively during 1996-2011. The average share of India's trade to whole EU is 13.06 percent during the study period. However the compound growth rates of India's exports and imports from six EU countries are 12.94 percent and 11.71 percent respectively. The share of trade of these six countries out of trade of all EU countries with India has been found fluctuating during the study period but still its average share is 45 percent during the study period. Therefore, it is clear that Belgium, France, Germany, Italy, Netherlands and UK are significant trading partners of India. It is found that India's exports to six EU countries have grown at a higher rate than imports. However, the share of trade of these countries in India's trade decreased in 2009 due to Euro debt crisis.

At the same time, the direction of India's exports to six EU countries shows that during 1996-2011, Netherlands has registered higher compound growth rate of 19.89 percent followed by France (13.88 percent), Belgium (12.56 percent), Italy (12.17 percent), UK (11.18 percent) and Germany (10.11 percent). And also the average share of UK in India's exports to six EU countries i.e. 23.7 percent is maximum followed by Germany (20.02 percent), Belgium (14.92 percent), Netherlands (14.24 percent), Italy (12.94 percent) and France (11.02 percent). The results show that in terms of average share among EU's six countries, UK and Germany are the main export partners and in case of growth rate, the Netherlands and France are the main export partners during the study period. However, Euro debt crisis affected India's exports towards these six countries. Regarding India's imports from six EU countries, the compound growth

rate of India's imports with France is the highest i.e. 16.83 percent followed by Germany (15.41 percent), Italy (14.87 percent), Netherlands (13.81 percent), Belgium (7.92 percent) and UK (6.89 percent). The average share of India's imports from Germany has registered highest i.e. 26.99 percent followed by Belgium (23.50), UK (21.81), France (10.59 percent), Italy (9.86 percent) and the Netherlands (4.93 percent). Though India's imports from these countries have been affected due to the economic downturn of EU countries yet they have registered some increase in 2011. In terms of average share of India's imports from EU, Germany, Belgium and UK are the main import partners of India and in terms of growth rate, France, Germany and Italy are the main import partners of India during the entire study period.

Regarding the commodity composition of India's exports to these six countries of the European Union, it is found that commodities namely 'Indian articles of accessories', 'iron and steel', 'mineral fuels', 'oils', 'distillation products' etc., 'organic chemicals', 'electrical & electronic products', 'organic chemicals' and 'nuclear reactors' are the most significant commodities which have accounted in the top ten export commodities towards these EU's six countries during the entire study period. Many products namely 'iron and steel', 'articles of apparel', 'accessories not knit or crochet', 'pearls and precious stones', 'fish crustaceans', 'molluscs and aquatic invertebrates', 'articles of animal gut', and 'worn other made articles' have lost their earlier strongest position and have declined their share in these countries over the years. However, India's export share in certain commodities has been declined due to the Euro zone crisis. In case of India's imports from six EU countries, it is clear that commodities namely 'pearls and precious stones metals & coins etc.', 'organic chemicals', 'electrical equipment', 'iron and steel', 'nuclear reactors', 'optical photos' and 'commodities elsewhere classified' have listed in the top ten import commodities in India from these six countries over the entire study period. Moreover most of the commodities namely 'precious stones, metals & stones', 'iron and steel', 'miscellaneous products', 'plastic and articles thereof', 'electrical electronic equipment', 'nuclear reactors' and 'optical photo, technical' etc. have lost their percent share in imports from six EU countries due to the same crisis.

Trade Intensity Index of India with six EU countries is more intense with France and Netherlands than other six countries of the EU during the study period as these countries have more exports to India. Also in Belgium, Germany and UK have accounted significant trade intensity with India during the study period. However the index has been decreasing due to Euro zone slowdown emerged in 2009, which highly affected Indian trade particularly with Belgium, France, Germany, Italy, Netherlands and UK.

Revealed Comparative Advantage of India with six EU countries, Indian 'articles of leather' with Belgium (572.7) and 'fish crustaceans' with France (206.6) have accounted highest RCA in 2000. India's 'oil seeds' enjoyed great extent with Germany (204.47), Italy (91.94) and the Netherlands (132) in 2000. While during 2003, commodities namely 'glass and glassware' and 'bird skin and fur' have the highest value of this index with Belgium. In case of France, Germany, Netherlands and UK, Indian 'silk' has been emerged as a higher competitive advantage, as compared to other commodities in the same year. On the other hand, commodities namely 'textile' and 'articles of leather' have accounted more RCA with Italy and Netherlands in 2007. India's 'silk' and 'pearls and precious stones' have accounted the same position with Belgium. In case of France, Germany and Italy, some changes have been found. For example, 'silk', 'vegetable plaiting' has changed their position with France. With the severe effect of Euro crisis, some of the commodities lost their earlier place in 2011 like Indian 'cotton', 'tea & coffee' and 'carpets'. Then commodities namely 'silk', 'cotton', 'articles of accessories' and 'articles of leather' and animals guts' have still remained in top position during the whole study period.

The results of Revealed Symmetric Comparative Advantage show that all top 10 commodities have accounted a great extent of RSCA with the six countries of the European Union during 2000. Commodities namely 'fertilizer' 'explosives pyrotechnics etc.' and 'ships, boats and other floating' have enjoyed symmetric competitiveness with Belgium, France, Germany and UK at the same period. On the other side, commodities namely 'wool and animals hairs', 'Iron and steel' and 'fur skin and artificial aquatic' have accounted great extent of RSCA with Netherlands. Then Indian 'silk' has enjoyed the highest value of this index with Belgium, Germany, Italy, Netherlands and UK in 2003. Then

commodities namely 'lac gums and vegetable saps' and 'cotton' have higher value of this index with Belgium, France, Germany and UK at the same period. In 2007 India's silk has accounted highest RSCA with Belgium, Italy and UK. Then commodity namely 'lac, gums and vegetable saps' has enjoyed more symmetric competitiveness with Belgium, Italy, UK and Netherlands. On the other side, 'cotton' also accounted highest value of this index with Italy, Netherlands and UK. During 2011, RSCA is higher for 'silk', 'lac, gums and vegetable saps'. However, many commodities have remained in the same position during the whole study period though the severe crisis has affected the value of RSCA of these commodities. Indian RSCA with France, Germany, Italy and UK is not consistent with most of the commodities throughout the period. Then commodities namely 'silk', 'cotton', 'articles of accessories' and 'articles of leather and animals guts' have still remained in top position during the whole study period. However, the value of RSCA has decreased for Indian 'live animals' and 'pulp of wood' in 2011 due to Euro crisis.

From the analysis of Grubel-Lloyd Index (1975), Indian 'foodstuff', 'stones, glass wares' and 'chemicals' have registered highest Intra Industry Trade with six EU countries during the study period. On the other hand, 'animal products' and 'mineral products' have accounted for more IIT index only with Belgium and UK over the years. Indian 'vegetables' have registered highest value of IIT with Belgium and France. 'Machinery electrical', 'transportation' and 'miscellaneous products' have diversified during the study period and the decreasing shares of commodities have been showing the sluggish impact of the Euro debt crisis. And also, most of the commodities of India have lost their value in 2011, for instance, 'animal and animal product sector', 'vegetable products', 'food stuff', 'mineral products', 'chemicals and allied products', 'plastic and rubber', 'raw hides', 'skin and leather', 'wood and wood products', 'textile', 'footwear stones' and 'glass and glassware products' with Belgium. Further in case of France, 'Indian vegetable product sector', 'plastic and rubber', 'stones and metals', 'miscellaneous products' have come down their value of indices with a given effect of the Euro zone crisis. Then with Germany 'foodstuff', 'mineral products', 'raw hides and bird skin', 'textile', 'footwear' and 'stone metals & machinery' have accounted decrease in the IIT index in 2011. After that with Italy, G-L index has come down

for 'raw hides', 'skin', 'leather and fur', 'wood', 'textile', 'stones, metals, & machinery' and 'miscellaneous products' due to the severe effect of European union. Further, India has also registered low level of this index in the Netherlands for 'plastic and rubber', 'raw hides', skin, leather & fur', 'wood and wood products', 'metals, stones & machinery' and 'miscellaneous products'. In case of UK, Indian 'mineral product sector', 'raw hides' & 'skin' and 'textiles' have registered low value of the intra industry trade index in 2011. On the other side, 'chemicals and allied sector', 'wood and wood products', 'metals' and 'machinery electrical' accounted higher value of the IIT index in 2000 but it has been decreasing in 2011. Thus, the debt crisis has vigorously affected the Indian commodity pattern.

Policy Implications:

Volume of India's trade with the European Union has significantly increased due to the Free Trade Agreement which was negotiated between them in 2007. Though the Euro crisis has affected their trade, yet European Union is India's important trading partner. As the study found that India has registered significant trade intensity with six EU countries but due to the Euro downturn it has come down in 2011. Therefore, there is a need to reform the existing EU-India bilateral trade agreement which would further enhance the trade intensity. There is a need to implement the FTA agreement, for this there is a great requirement of political will. FTA agreement implementation may be beneficial apart from benefits from capital trade, human resources and trading goods and services. Besides, India has a comparative advantage in trade areas like information technology & services, software engineering and call centers which should also be explored for liberalization (Wounters, 2013).

Among the top ten commodities, the share of certain commodities namely 'iron and steel', 'organic chemicals', 'articles of accessories' in India's exports to six EU countries remains high. Therefore, the study suggests that there is further potential for gaining from these products in the near future by adopting new technology and diversification. The commodities namely 'silk', 'articles of accessories', 'articles of leather' and 'Lac, gum and vegetables saps' have higher RCA and RSCA and also, India has enjoyed great extent of intra- industry trade

for Indian 'foodstuff', 'stones, glassware and chemicals', therefore, these commodities should be included in free trade agreement as their advantage can be enhanced through deeper integration of FTA and tariff reduction.

European Union's foreign trade policy is more liberal and open as compared to India. On the other hand, India's trade policies are not as liberal as whole EU and the country has acquired the reputation of having protectionist policies of international trade, which are not easily molded to favor the other trading partner countries (Mukherji, 2006).

FTA will improve India's relative attractiveness as an investment location vis-à-vis other countries (e.g. in Southeast Asia). It may provide a strong boost to inward investments, particularly from the EU (Francois et.al. 2009). As per Department of Industrial policy and Promotion, there are four European Union countries namely Netherlands, UK, France and Germany which are among the top ten countries contributing FDI inflows in India in 2011-12, There is still further scope to improve the FDI flows between India-EU. India should adopt policies which are open, attractive and investor friendly to enhance the FDI flows.

The present study will serve as a base for future studies to assess India's trade with the whole European Union.

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Appendix (Part-A)

Table A1: India's Trade with EU (27) Countries

(US\$ Million)

Year	Austria	Belgium	Bulgaria	Cyprus	Czech	Denmark	Estonia	Finland
1996	0.64	9.00	0.10	0.05	0.25	0.91	0.01	0.69
1997	0.44	10.20	0.07	0.09	0.18	0.66	0.01	0.61
1998	0.34	10.20	0.04	0.06	0.19	0.70	0.01	0.62
1999	0.34	12.28	0.12	0.09	0.18	0.84	0.02	0.48
2000	0.35	10.22	0.07	0.08	0.18	0.75	0.01	0.63
2001	0.35	9.52	0.06	0.08	0.18	0.62	0.02	0.53
2002	19.58	12.72	0.41	0.06	0.34	0.77	0.01	0.64
2003	0.62	11.64	0.08	0.06	0.40	0.94	0.01	0.77
2004	0.64	11.99	0.08	0.06	0.44	0.97	0.02	0.90
2005	0.62	9.93	0.07	0.08	0.47	1.21	0.03	1.03
2006	0.60	7.81	0.08	0.15	0.47	0.82	0.06	0.82
2007	0.65	7.22	0.17	0.16	0.53	0.81	0.07	0.99
2008	0.78	6.69	0.10	0.27	0.44	0.69	0.04	0.97
2009	0.63	5.93	0.06	0.04	0.45	0.71	0.04	0.74
2010	0.89	9.09	0.09	0.04	0.56	0.74	0.06	1.21
2011	0.57	6.88	0.09	0.03	0.38	0.55	0.13	0.91
Average Share	1.75	9.46	0.11	0.09	0.35	0.79	0.03	0.78

contd...

(US\$ Million)

Year	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxemburg	Malta	Netherlands
1996	12.80	0.30	0.10	0.22	5.01	0.03	0.01	0.02	0.02	3.43
1997	11.69	0.32	0.13	0.27	5.28	0.05	0.01	0.02	0.12	3.28
1998	9.78	0.36	0.11	0.26	5.25	0.05	0.01	0.01	0.01	3.01
1999	8.70	0.27	0.11	0.33	4.51	0.03	0.05	0.02	0.07	3.30
2000	4.61	0.32	0.14	0.41	4.79	0.04	0.02	0.03	0.02	3.10
2001	8.75	0.31	0.16	0.43	4.38	0.02	0.02	0.03	0.03	3.05
2002	10.67	0.41	0.16	0.55	5.13	0.03	0.04	0.07	0.08	3.39
2003	11.00	0.50	0.24	0.57	5.64	0.03	0.06	0.12	0.24	3.67
2004	11.59	0.56	0.24	0.67	6.18	0.03	0.08	0.04	0.12	4.05
2005	11.57	0.81	0.15	0.58	5.72	0.05	0.08	0.04	0.18	4.61
2006	11.41	0.90	0.23	0.53	6.41	0.07	0.06	0.05	0.27	3.93
2007	11.70	0.55	0.29	0.49	6.60	0.08	0.06	0.04	28.75	6.06
2008	11.17	0.62	0.41	0.45	5.38	0.10	0.41	0.02	0.07	5.39
2009	10.14	0.37	0.28	0.32	4.41	0.12	0.08	0.02	0.44	5.17
2010	10.93	0.29	0.35	0.33	5.56	0.19	0.13	0.03	0.49	6.02
2011	9.79	0.39	0.29	0.31	4.14	0.10	0.14	0.03	0.45	4.71
Average Share	10.39	0.45	0.21	0.42	5.27	0.07	0.08	0.04	1.96	4.14

Contd...

(US\$ Million)

Year	Poland	Portugal	Romania	Slovak Rep	Slovenia	Spain	Sweden	United Kingdom
1996	0.29	0.26	0.27	0.02	0.11	1.72	1.42	11.33
1997	0.32	0.33	0.20	0.10	0.04	1.58	1.16	11.92
1998	0.31	0.28	0.15	0.04	0.05	1.75	0.86	10.97
1999	0.32	0.32	0.08	0.04	0.05	1.67	0.94	11.52
2000	0.30	0.36	0.08	0.04	0.09	1.90	0.98	12.87
2001	0.32	0.37	0.14	0.05	0.13	1.94	1.28	10.83
2002	0.34	0.42	0.17	0.05	0.22	2.34	1.64	12.48
2003	0.37	0.37	0.24	0.06	0.20	2.54	1.85	12.59
2004	0.45	0.41	0.46	0.08	0.14	3.00	1.99	12.24
2005	0.44	0.38	0.46	0.08	0.13	2.85	1.96	11.75
2006	0.43	0.41	0.47	0.06	0.13	2.57	2.38	10.04
2007	0.54	0.45	0.57	0.08	0.15	2.78	2.26	9.84
2008	0.51	0.32	0.55	0.05	0.15	2.32	1.64	8.17
2009	0.49	0.27	0.34	0.05	0.19	1.90	1.25	6.48
2010	0.66	0.39	0.42	0.09	0.18	2.56	1.42	8.01
2011	0.56	0.34	0.25	0.07	0.14	1.88	1.13	6.57
Average Share	0.42	0.36	0.30	0.06	0.13	2.21	1.51	10.48

Source: RBI Statistical Yearbook of Various Issues

Appendix (Part B)

Fig.(i): India's Trade with whole EU

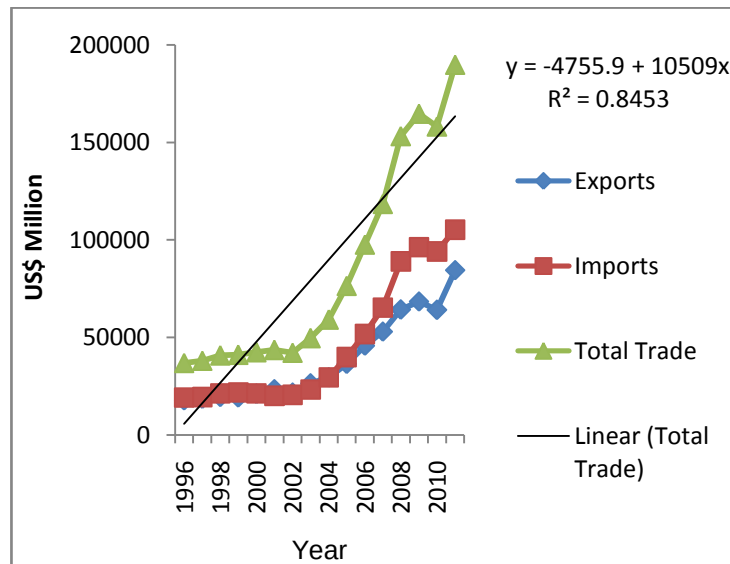
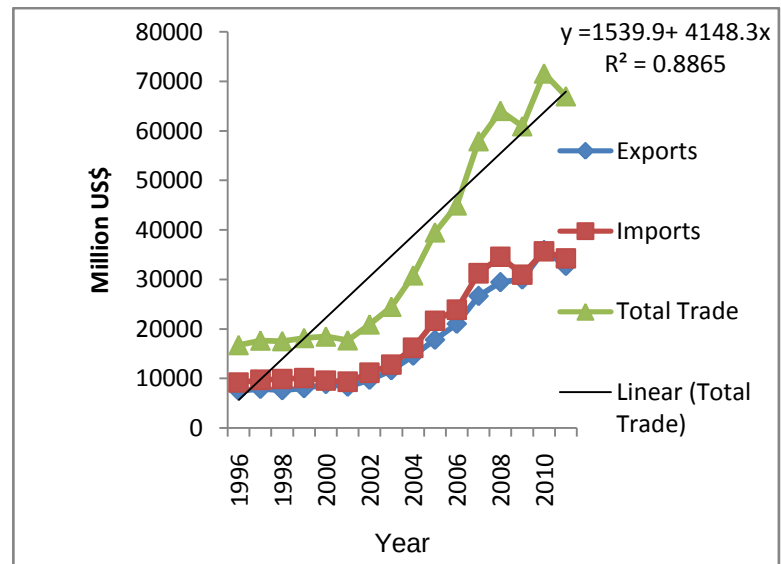


Fig.(ii): India's Trade with six EU Countries



Source: Figures from Table 4.1

Figure (iii): India's Exports to Belgium

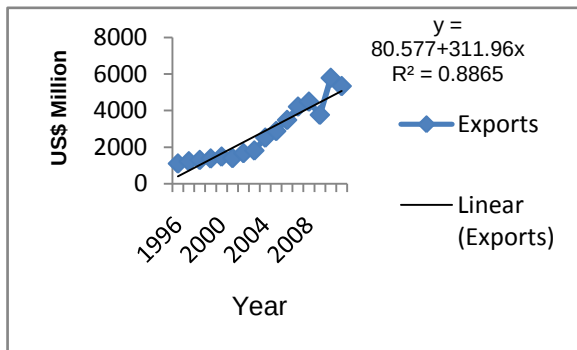


Figure (iv): India's Exports to France

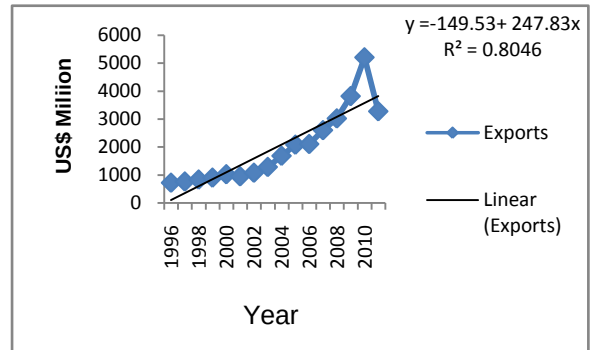


Fig (v): India's Exports to Germany

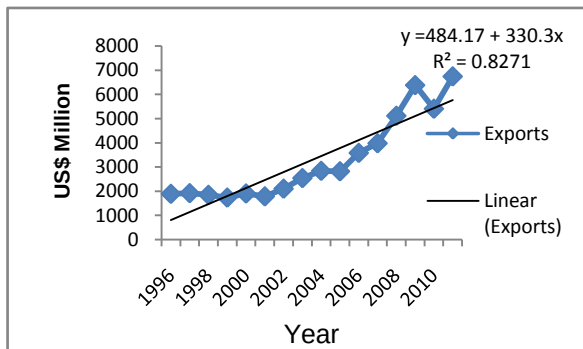


Fig (vi): India's Exports to Italy

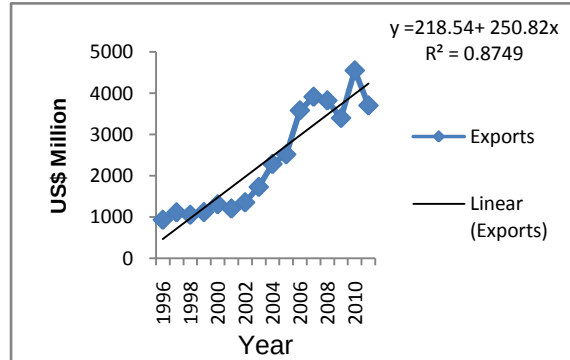


Fig (vii): India's Exports to Netherlands

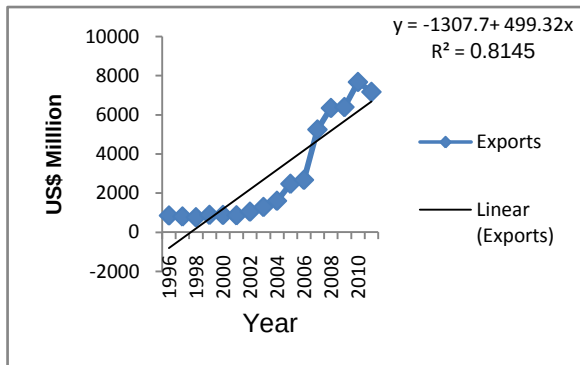
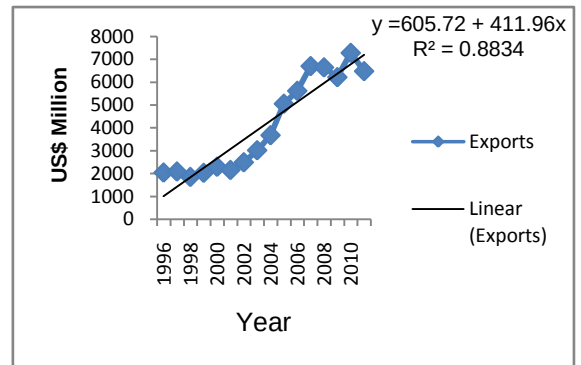


Fig.(viii): India's Exports to UK



Source: Figures from Table 4.2

Fig.(ix): India's Imports from Belgium

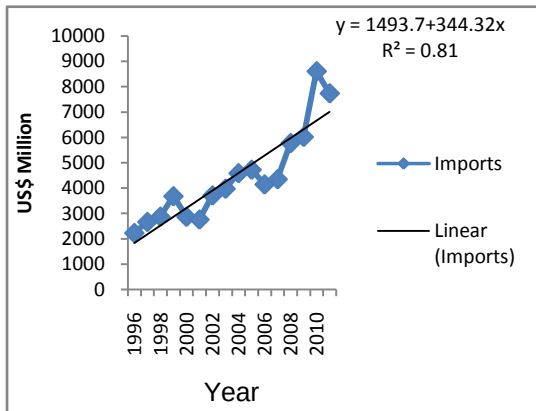


Fig.(x): India's Imports from France

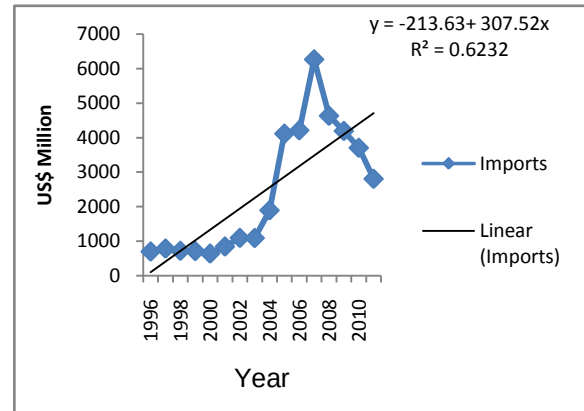


Fig.(xi): India's imports from Germany

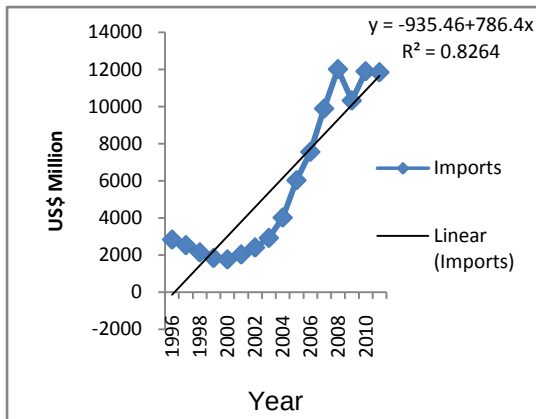


Fig.(xii): India's Imports from Italy

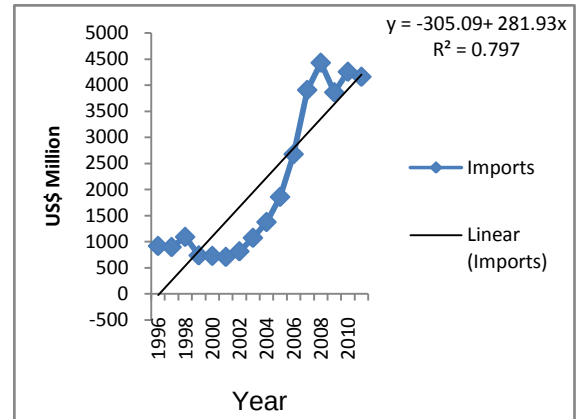


Fig.(xiii): India's imports from Netherlands

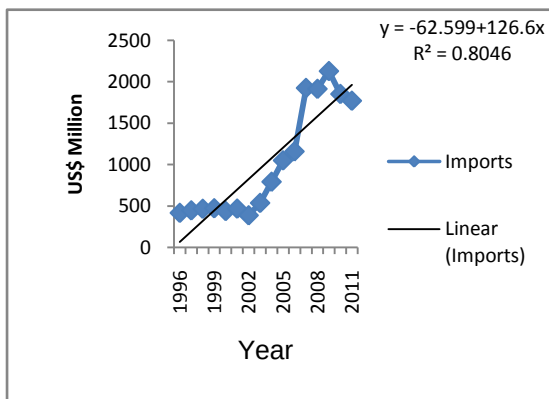
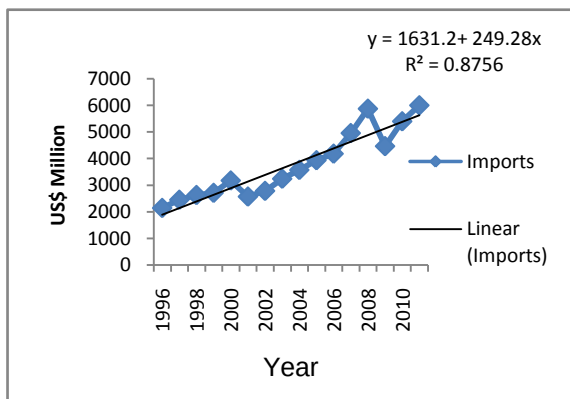


Fig.(xiv): India's imports from UK



Source: Figures from Table 4.3

Fig.(xv): Trade Intensity Index of Belgium

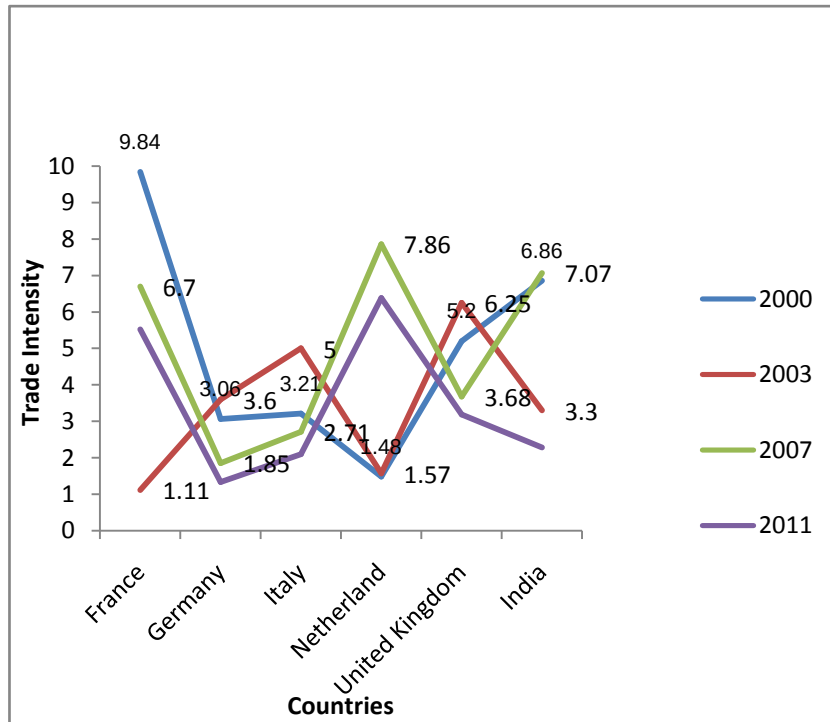
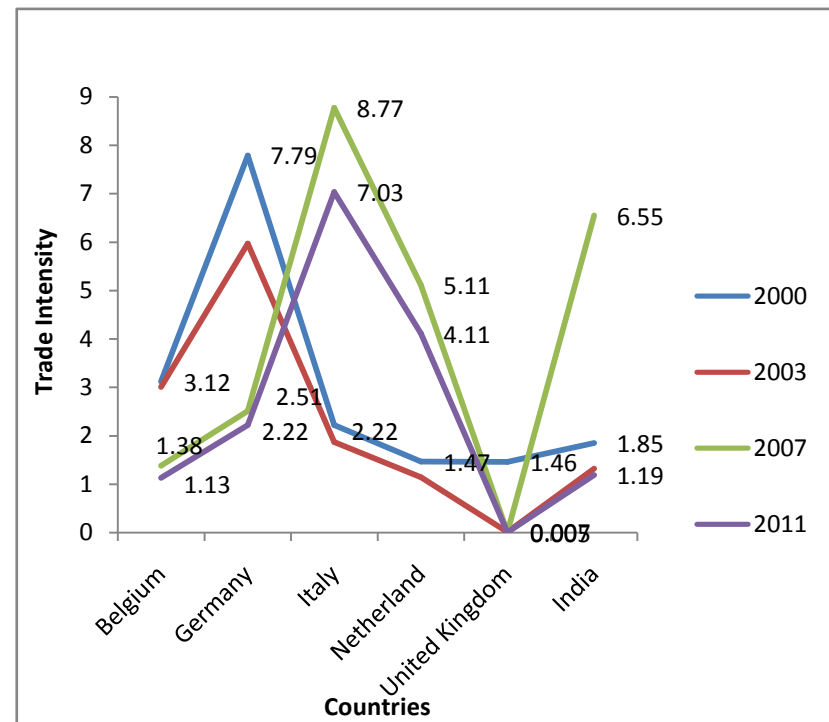


Fig.(xvi): Trade Intensity Index of France



Source: Figures from Table 4.6

Fig. (xvii): Trade Intensity Index of Germany

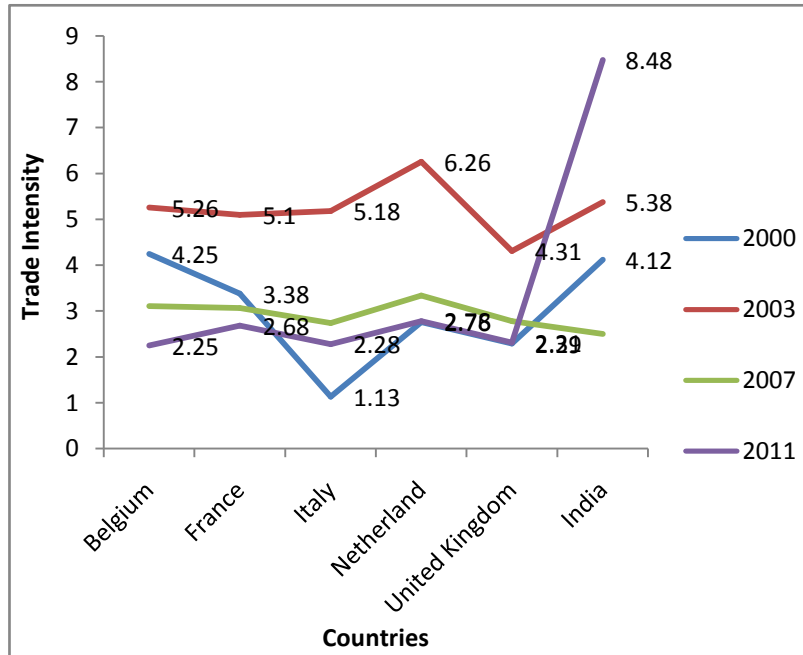
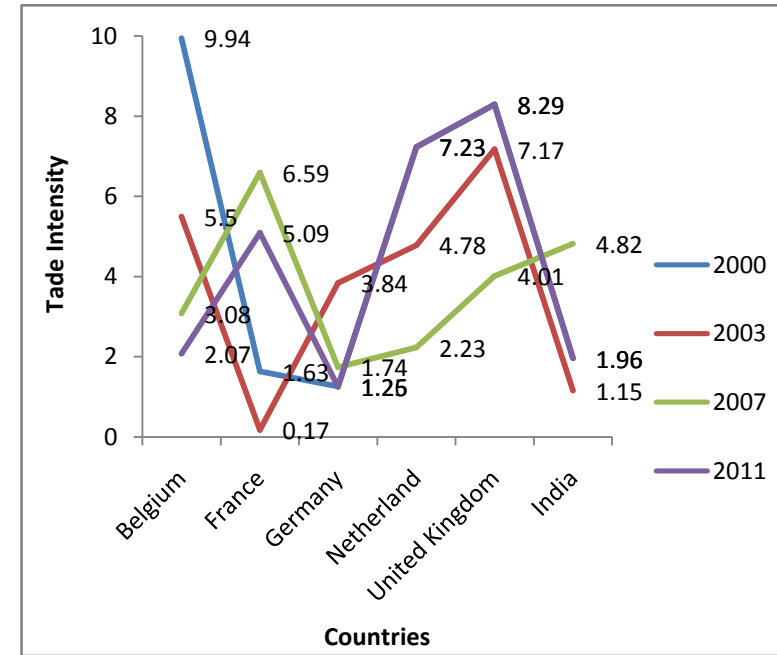


Fig.(xviii): Trade Intensity Index of Italy



Source: Figures from Table 4.6

Fig.(xix): Trade Intensity Index of Netherlands

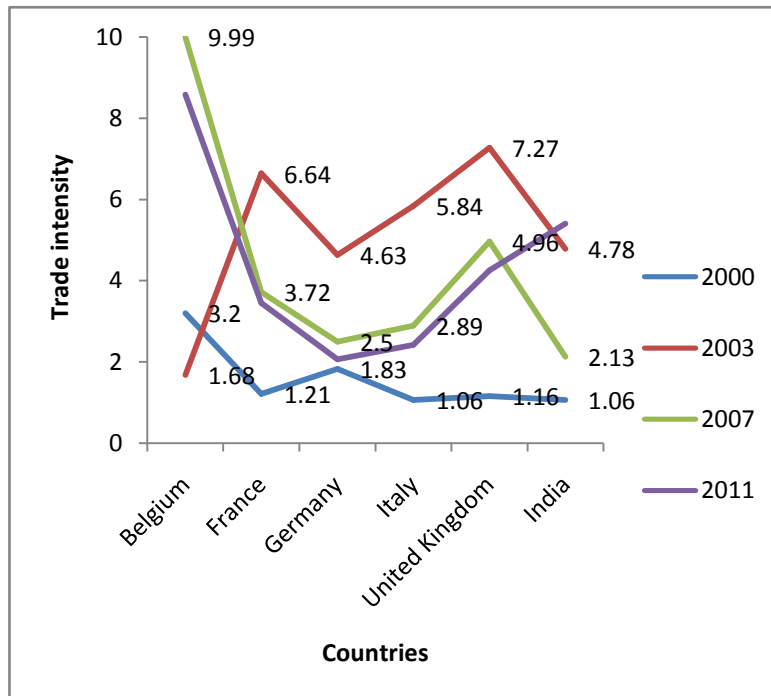
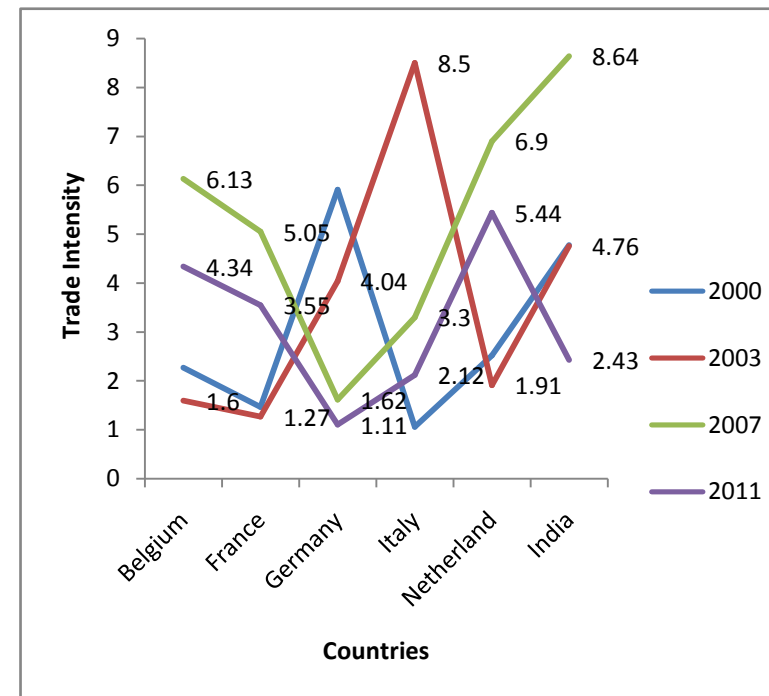
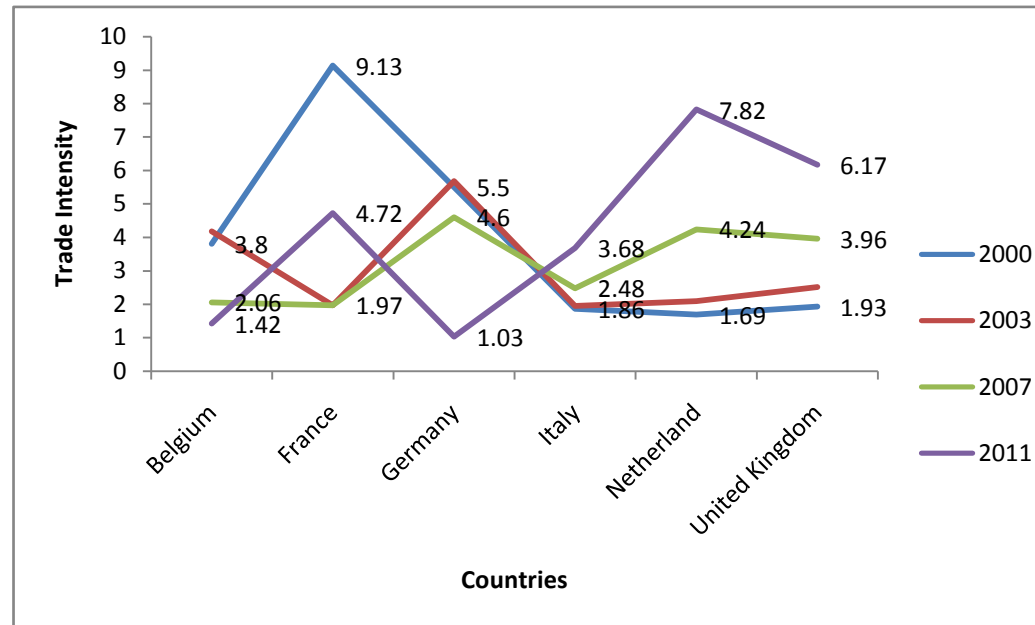


Fig.(xx): Trade Intensity Index of UK



Source: Figures from Table 4.6

Fig. (xxi): Trade Intensity Index of India



Source: Figure from Table 4.6

Fig.(xxii): Intra Industry Trade Index of India in 2000

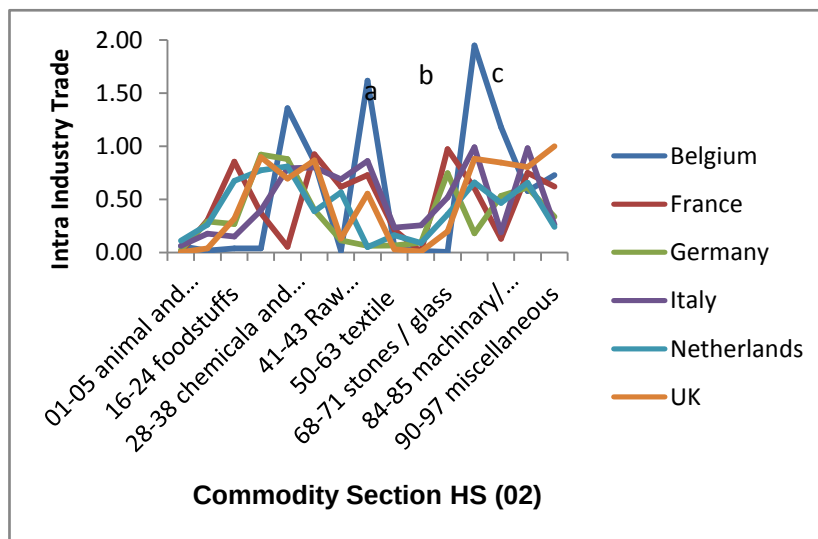
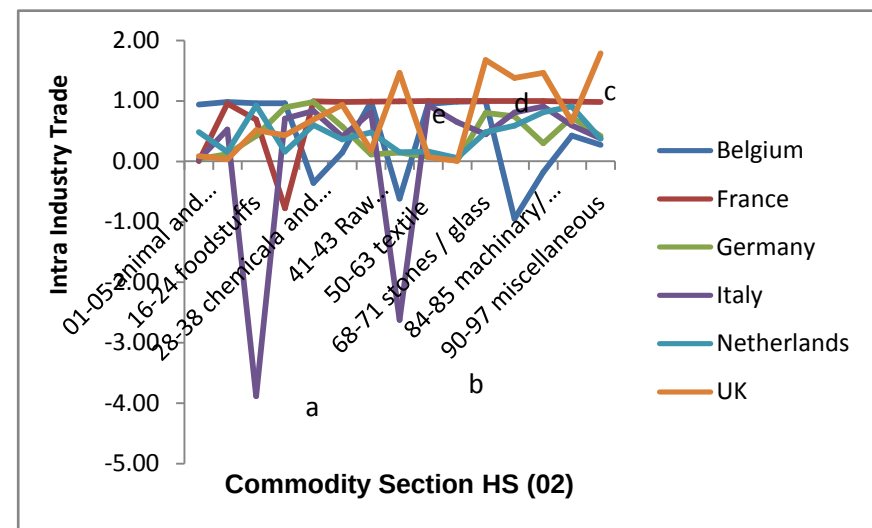


Fig.(xxiii): Intra Industry Trade Index of India in 2003



Source: Figures from Table 5.9

Fig.(xxiv): Intra Industry Trade Index of India in 2007

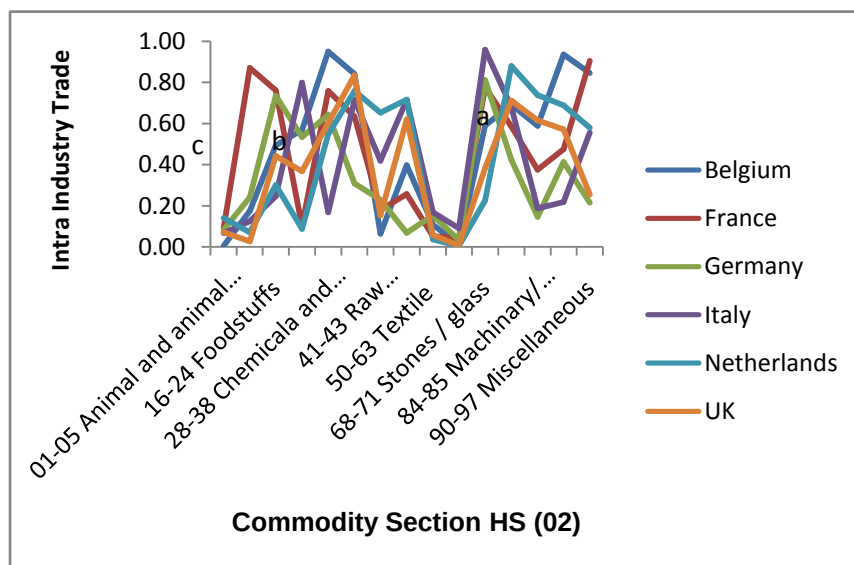
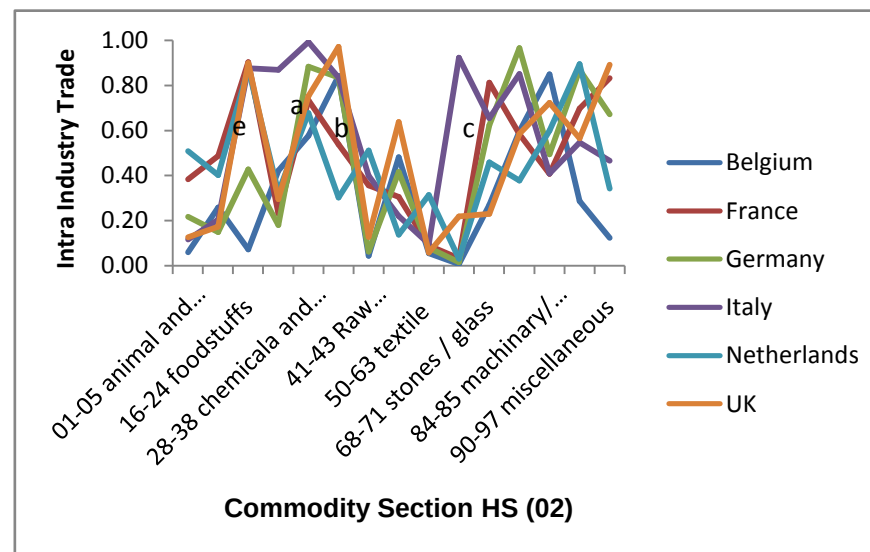


Fig.(xxv): Intra Industry Trade Index of India in 2011



Source: Figures from Table 5.9

