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CHAPTER 1

INTRODUCTION TO INTRA-INDUSTRY TRADE
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INTRODUCTION TO INTRA-INDUSTRY TRADE

Intra-Industry Trade (IIT) is defined as "a trade where same or almost the same products are getting exported and imported by a country"; OR - "it is a trade where a country exports and imports the products of same industry". This type of trade pattern is in contrast to inter-industry trade where a country exports and imports the products of different industry. This is a comparatively new concept to explain the reason for international trade and the trend has been identified in the late 1960s. As far as the condition of India is concerned little work have been done to explore the nature, pattern and determinants of its intra-industry trade. Therefore, the present study discusses about nature, pattern and determinants of India’s intra-industry trade.

The present chapter is divided into 5 sections, the first section deals with the basic concept of intra-industry trade, second section will define the meaning of industry, third section will discuss about different determinants of intra-industry trade, the fourth section will highlight the importance of intra-industry trade and the last fifth section will discuss about the rationale of the study.

1.1 INTRA-INDUSTRY TRADE: BASIC CONCEPT

International Trade has always been a fascinating field for economists and different theories have been proposed to discuss the reason for involvement of a country in international trade. Initially the reason for international trade was explained by the classical and neo-classical theories of trade mainly emphasized that a country will produce and export those goods in which it has absolute/comparative advantage and import that goods in which it is at absolute/comparative disadvantage. The advantages
and disadvantages were decided by the availability of factors of production and hence
these theories focus the supply side factor as determining factor for the trade. If a country
is having absolute/comparative advantage for producing a product, it is very much
possible that the country is having similar advantage of all the products belonging to that
industry. Similarly, different countries may have advantages in different industries and if
they get engaged in the international trade with other countries, they will export the
products in which they are having advantages and import the products in which the other
countries are having an advantage. This type of production and exchange of the products
of different industries by different countries is called as “inter-industry trade”. Therefore,
initially it was discussed that international trade is mainly inter-industry and exchange of
goods of different industries are taking place. It was never thought of that exchange of
goods from the same industry is possible between the two countries.

Later on, with the development of research on trade theories, it was found that countries
also exchange products of same industry and this finding surprised the world because
earlier it was never thought of. This type of trade was termed as “intra-industry trade
(IIT)” and was defined as “simultaneous export and import of very similar goods and
services by a country”. For example, Germany exports cars to France and simultaneously
imports cars from France. This type of trade suggests that countries engage themselves in
a narrower form of specialization, they are specializing themselves in a particular product
within a given industry and exchanging these products for other products belonging to the
same industry. Thereafter it was found that most of the countries of the world, specially
developed, are involved in this type of trade and therefore it clearly shows that demand of
different varieties of a product, across the world, increased which leads to increase in
intra-industry trade.

The phenomenon of intra-industry trade was first noted empirically with the trade
behavior of European Common Market and after then it was realized that it is a general
characteristics of international trade flow. The distinction between inter-industry trade
and intra-industry trade is important mainly for three respects; first, the classical and neo-
classical trade theories were unable to explain the reasons for intra industry trade,
second, intra-industry trade do affect the pattern of industrialization of a country, and
third, it reveals the pattern of demand structure of a country. Now all these three points have been discussed here, one by one:

First, the foundation of classical and neo-classical theories were absolute/comparative advantage of a country and according to them a country will produce and export those goods and services in which it is having some advantage therefore theories supports the view that international trade will leads to inter industry specialization and different country will specialize in different products and their specialization will govern their trade behavior. The theory was based on the supply side factors as determinants of international trade and the corollary of the theory was that the country will not engage themselves in the exchange of similar goods and services. Therefore, a country will either only export goods within the same industry, or only import these goods, but not simultaneously export and import goods within the same industry. But when it was realized that intra-industry trade does exist and in-fact it is an integral part of the international trade, it changed the perspectives of researchers to analyze the behavior of international trade. Since the existing trade theories were unable to explain the behavior of the trade pattern therefore the need of new theory, which could have explained the behavior, was felt and that led the birth of the theory of intra-industry trade. The theory of intra-industry trade stated that a country will engage itself in simultaneous export and import of goods and services with same industry, i.e., similar goods and services. Here the word “similar” means the goods are from the same industry and may be treated as an imperfect substitute, and they are not hundred per cent identical. The nature of similar products can be understood with the example of car trade between Germany and France, as discussed here: Volkswagan, is a product of Germany and is exported to France, while Peugeot is a product of France but is, at the same time, exported to Germany. So both Germany and France simultaneously exports and imports the cars with each other. But here we cannot say that both of these two brands of cars are exactly same, they may be imperfect substitutes but not perfect. Therefore, intra-industry trade focuses on the exchange of the similar products which are imperfect substitutes.

Second, the classical and neo-classical trade theories were based on the development of inter-industry specialization and the welfare effect of the trade was considered in the
respect that countries will be able to consume a greater bundle of the two goods after the international trade than before. While in case of intra-industry trade, almost similar kinds of products will be manufactured by both the countries that mean it will lead to the development of same type of industries in both the countries. Therefore, in case of inter-industry specialization, each country will experience a decline of some industries and the expansion of others; on the other hand, in case of intra-industry specialization, producers decrease the varieties of the products they produce, they decrease the number of varieties produce by them and specialize themselves in producing only a few varieties and the other varieties of the product is imported. Therefore, in this type of industrialization, there is a scope of development of all kinds of industries because the adjustment pressure caused by expansion of trade is lesser than that of inter-industry specialization.

Third, the reason for the existence of intra-industry trade is a demand for different varieties of a product of a country, that is why it is said that the determinants of intra-industry trade is the demand rather than supply (in the form of factor abundance or comparative advantage). But mere the existence of demand of different varieties of a product does not suffice the cause of intra-industry trade. It can also be questioned that why domestic producers cannot produce different varieties of a product to satisfy the need of consumers of a country. Logically this question can be answered in this way that, if all the producers will start producing a number of varieties of a product then economically it may not be feasible for them to earn sufficient profit to run the business; while on the other hand if they will concentrate on producing fewer varieties only then they may operate at larger scale and economies of scale may allow them to reduce the cost of production and earn market share and hence sufficient profit. The above explanation can also be justified because if initial investment costs is large and variable costs per unit are comparatively smaller, then as the level of operation increases, it will reduce the average cost per unit, that means the company will operate on economies of scale. This means that, a producer will be able to maximize its profit if he concentrates on producing few varieties at large scale rather than a large number of varieties at small scale and the variety which is not produced by a country can be imported from another country to meet the demand.
1.2 **INTRA-INDUSTRY TRADE: DEFINING INDUSTRY**

As discussed above, intra-industry trade means simultaneous exchange of goods and services of an industry by a country. In this definition, one has to be careful while deciding about an industry, i.e., what constitutes an industry. The literature suggests (Grimwade, 2000) three broad definitions of industry, these are:

Substitution in Production – means that each product is produced with roughly similar proportions of factors or inputs even-if the end-use of the product is different, for example – cars and tractors.

Substitution in Consumption – means that each product has more or less similar end uses, i.e., they are substitutes for the other product although their production requires a different combination of inputs, for example – leather shoes and sports shoes.

Identical Technology Intensity – in this categorization the products are grouped together on the basis of technology employed in their production. Here technology used in production is almost similar, for example – production of petroleum products.

Looking at these three definitions of industry, it can be understood that different definitions will give different sets of products for an industry. Therefore one has to be careful while selecting a criterion for an industry. Normally it depends on the objective of the study, for example – if one wants to analyze the validity of Heckscher-Ohlin theorem then substitution in production will be the most suitable criteria, on the other hand, if the objective is to understand consumer preferences in determining the trade pattern, then substitution in consumption would be the most suitable criteria.

Since different sets of classifications gives different group of products therefore the concept of intra-industry trade suffers from a degree of ambiguity. Hence, to avoid any ambiguity, ITC-IHS classification (Indian Trade Classification – Harmonised System) for classifying the products has been used here. In this system of classification, there are about 8000 products, each product is given a 8-digit unique number and grouped into 22 sections and 98 chapters. Details of the categorization (HS-Code at the two-digit) are given in Annexure I. Therefore the degree of accuracy of the present study depends upon
the degree of accuracy of the classification of the products, under the system of ITC-HS classification.

1.3 INTRA-INDUSTRY TRADE: DETERMINANTS

Lots of empirical works have been carried out to find out the factors which may affect intra-industry trade. Broadly these determinants can be categorized into two groups (Grimwade, 2000) – inter-country determinants and inter-industry determinants. These two determinants which affect the level of intra-industry trade have been briefly discussed over here:

1.3.1 INTER-COUNTRY DIFFERENCES:

This is considered to be the most important determinant of intra-industry trade. In general it is assumed that developed economy will show a higher degree of intra industry trade because their economic condition is good and per-capita income of the people is high which creates more demand for different varieties of a product. In the same way, both developing countries and least-developed countries are supposed to have a lower degree of IIT. But this is not a universal fact and degree of IIT should be checked carefully for a country, before reaching to any conclusion. Different factors which explain the effect of country differences in the level of intra-industry trade are as follows:

The higher the level of a country's per capita income, the higher will be the proportion of intra-industry trade – this is because the people will have more disposable income to spend and they will demand different varieties of a product which ultimately leads to increase in the level of intra-industry trade.

Lesser the difference in the per-capita income of two countries, higher will be the intra-industry trade between them – this is because similar economies will demand similar products which lead to increase in the level of trade and hence intra-industry trade between the two countries may also increase.
The larger the size of a country, as measured by GDP, the higher the level of IIT – this is because normally the demand of a bigger economy will be more than that of a smaller economy and this increased overall demand will also lead to increased level of intra-industry trade.

The higher the degree of economic integration between the two countries, the higher will be the level of intra-industry trade – this is because normally as the level of economic integration will increase, the level of trade between the two countries will also increase and this may lead to increased level of intra-industry trade.

Intra-industry trade between the neighboring country should be more – this is because if the distance between the two countries are less then transportation costs for shipping or carrying the product to the neighboring country will also be less and therefore there will not be any price escalation and final price of the product in the foreign market will also be lower which leads to increase in the demand of the products in the foreign market and ultimately the level of intra-industry trade will increase.

1.3.2 INTER-INDUSTRY DIFFERENCES:

The kind of industry also affects the degree of intra-industry trade. Substantial differences among product groups in the level of intra-industry trade have been found. Normally, the degree of intra-industry trade is higher in the products of manufacturing industry than that of primary commodities, this is because product differentiation is easily possible in the products of manufacturing industries while it is comparatively difficult with the products of primary commodities. Some of the major inter-industry factors affecting the level of intra-industry trade are considered here:

The higher the degree of product differentiation, the higher the level of intra-industry trade – this is because product differentiation leads to increase in the variety of a product of the same industry and if more variety of a product is traded, it will lead to increase in the level of intra-industry trade.

Economies of scale leads to increase in the level of intra-industry trade – this is because as economies of scale increases, the per unit costs of the product decreases which leads to
increase in intra-industry specialization and therefore the level of intra-industry trade will increase.

Intra-Industry Trade now has acquired a major portion of the world trade and its contribution in the world trade is increasing day by day. As discussed above, it is more with developed economy and with products of manufacturing sectors. Although the degree of intra industry trade decreases as the product group is disaggregated to a higher level, but it does not become zero and this suggests that intra-industry trade is a pure phenomenon rather than statistical aggregation of the products. The evolution of the theory and the concepts of intra-industry trade have been discussed later in this thesis.

1.4 INTRA-INDUSTRY TRADE: SIGNIFICANCE

Intra-Industry Trade represents a major portion of world trade and is supposed to be more important than inter-industry trade because it stimulates innovations and exploits economies of scale (Ruffin 1999). Some of the points which highlight the importance of intra-industry trade have been discussed here:

a) Comparative advantage is not a necessity – the classical and neo-classical theory emphasizes the importance of comparative advantage of a country to reap the benefits of international trade and did not explain that what will happen to a country not having the advantage in any sector. According to the theory they will lose the ground with their participation in international trade. But the theory of intra-industry trade does not support this argument. Since in this case, countries will trade in more or less similar products (i.e., differentiated products of an industry) therefore even-if two countries are producing the same products, they can enter into international trade with each other and getting benefitted out of it.

b) Equitable Income Distribution since classical and neo classical theories emphasizes that “factor abundance” is the reason for international trade therefore the outcome of the trade would be the transfer of income from a “factor scarce” country to “factor abundant” country and this would lead to concentration of
wealth in already rich countries. Intra-Industry does not support this form of international trade and emphasize that trade between the two countries are possible even if they are endowed with the same level of factors of production because in this case both of the countries would produce and trade similar products. Therefore both the countries will be benefitted from international trade which leads to equitable income distribution in both the countries.

e) Adjustment Costs are lower – since intra-industry trade promotes the trade of products of same industry therefore if a country is getting involved in it, the industrial structures need not to be changed. Countries will focus on producing fewer varieties of the same products rather than shifting its industrial base. Hence adjustment costs will be lower in case of intra-industry trade.

d) Promotes Innovation – in case of intra-industry trade, since firms are producing different varieties of a product therefore to capture more market share a firm would like to make innovations in the product. This is not the case with traditional theories of international trade because there the focus was producing altogether different products of different industry therefore the firms were focusing on producing a different set of products rather than trying to innovate in the same product line.

e) Focus on Economies of Scale – intra-industry trade focusing the gains from trade by exploiting economies of scale and this is possible because firms are producing different varieties of a product using the same infrastructure. As the level of output will increase and firm reaches towards economies of scale, the average cost of the product decreases and this decrease in the cost then passed on to the consumer by charging less price from them.

Therefore looking at all these points it can be said that intra-industry trade represent world trade in a better way apart from this the benefits of intra-industry trade will reach to each partner rather than getting concentrated in few hands.
1.5 RATIONALE OF THE STUDY

Intra-Industry Trade Has become a very important factor now for formulating trade policy because it produces extra gains from international trade by creating a larger market (Krugman and Obstfeld, 1988). The major benefit of a country by getting involved in IIT is that it can simultaneously reduce the number of products produced and increase the variety of products so that the adjustment costs would be less and therefore the income distribution effect would also be small.

The overall objective of the present study is – to analyze nature, pattern and determinants of India’s IIT and to find-out its potential in different sectors so as to formulate the trade policy in such a way which increases the international trade, reduces the adjustment costs, minimizes the income distribution effects and produces maximum benefits to India. The present study broadly tries to answer the following questions regarding India’s intra-industry trade:

- Does the degree of intra-industry trade increases with the passage of time?
- Does the aggregation level affect the degree of intra-industry trade?
- Does the contribution of intra-industry trade in total trade increases with time?
- Whether export or import is contributing more in intra-industry trade?
- Whether intra-industry trade is vertically dominated or horizontally dominated?
- Does the liberalization process have affected the degree of intra-industry trade?
- How does the intra-industry trade varies with different product groups, i.e., is it higher with more differentiated products and lower with less differentiated products?
- Whether intra-industry trade is more with similar economies or with dissimilar economies?
- How HIIT and VIIT are related to different country groups?
- What are the major determinants of intra-industry trade with different country groups? How per-capita income differences, capital-labor ratio and trade share affect the degree of intra-industry trade with different country groups?
- Does the nature and pattern of intra-industry trade reflect any changes in the economic conditions/development of India?
- Do the nature and pattern of intra-industry trade reflect any changes in the industrial structure of India?

Thereafter few sectors have been selected and the effects of trade policy on the trend and potential of intra-industry trade of the sectors have been discussed.