Chapter 1
INTRODUCTION

Trade occurs because a country can purchase goods and services abroad more cheaply than it can produce at home. Why study international trade? “No man is an island”. Today International Trade is vital to almost every country. International trade attempts to determine the causes of trade, that is, to determine why one country, for example, imports machinery and exports textiles. It also analyses the consequences of trade that is whether the global welfare of the trading world increases because as trade takes place, production transformation takes place in the form of change in consumption. As a result there will be change in factor prices, commodity prices and hence change in income distribution and hence global welfare.

International trade is traditionally thought to consist of each country exporting the goods most suited to its factor endowment, technology and climate while importing the goods least suited for its national characteristics. The standard trade theory involves trade in homogeneous products; hence, with perfect competition there is only inter-industry trade. The origin of international trade could be traced back to Mercantilists. This doctrine had evolved during sixteenth and seventeenth century (1571-1641) by John Hales and Thomas Mun. They advocated more efforts towards accumulation of gold and other metals with which they could equip its armies, maintain navy to consolidate its power and protect the country from foreign aggression. Exports were considered desirable for growth of an economy and imports were considered unfavorable. They followed a policy of strict watch and control on flow of trade.
Adam Smith (1776) expounded the free trade doctrine. He advocated the principle of absolute advantage, which is based on specialization and division of labour, which state that trade, occurs if one country has an absolute advantage in producing one commodity and other country having absolute advantage in the production of other commodity.

David Ricardo (1772 – 1823) formulated theory of comparative advantage, which is an extension of Smithson theory. It states that even if a country has advantage or disadvantage in producing both commodities, yet a country will produce those goods in which it has lower labour costs, or higher productivity. But Ricardian model cannot explain how trade impacts the income distribution within a country. Heckscher-Ohlin model (1933) describes a model of trade based on factor endowments. Each country is differently endowed with various factors of production (Land, labour and capital). Thus countries will specialize in production of that commodity which uses it abundant factor intensively and import those goods that used the scarce factor more intensively. The second feature is that trade based on factor endowments benefits abundant factors and hurts scarce factors. For Example a country like US, which is richly endowed with high technology skills and farmland, will export high-tech products and agricultural goods. So when the US exports wheat, the owners of wheat land benefit, but when the US imports textiles, the unskilled workers in the textile industry are hurt. The third feature is that international trade results in a tendency towards factor price equalization. Since exports would increase the demand for the products using the abundant factor, its price would be driven up, while imports would increase the supply of
goods using the scarce factor and drive its price down. Thus trade would offset relative scarcity of factors and lead to equalization of prices of factors. In the year 1954 Leontief tested Heckscher-Ohlin proposition by analyzing capital-labour ratios for 200 exports industries and import competing industries in US based on trade data for 1947. He found that capital-labour ratio for US export industries was low and concluded that exports were less capital intensive than import competing goods. This finding contradicted the factor endowment theory, and is known as Leontief Paradox.

Thus the above traditional major studies made in the direction of basic causes of trade focused on trade differences between countries and were based on premise that more trade will always imply more gains. It was assumed that trade in comparison to autarky leads to increased gains to the participating countries in the form of increased production and higher standard of living, international specialization, economic development, optimum utilization of resources, increased variety of goods and expansion of size of market etc. Thus it was assumed that there exists positive correlation between trade and welfare.

It was also assumed that trade results in increased economic growth and welfare as it was possible to access and consume these goods which earlier were not possible and consequently many measures were taken with a view to increase trade by adopting free trade policy.

GATT (General Agreement on Tariffs and Trade) a\d WTO (World Trade Organization) were developed with the objective of
removing restriction and increase the welfare and gains. While GATT was an organization aimed at safeguarding the conduct of international trade and promoting multilateral trade through removal of discrimination in international trade and reduction in trade barriers, WTO was designed to play the role of watch dog in the spheres of trade in goods, services, foreign investment, intellectual property rights etc.

The other important objectives were to ensure that developing countries secure a better balance in the sharing of advantages resulting from the expansion of trade, to expand and utilize world resources to the best, to demolish all hurdles to an open world trading system and usher in international economic renaissance because the world trade is an effective instrument to foster economic growth.

But as discussed by Jagdish Bhagwati in Theory of Immiserising Growth that effects of growth on trade may not always be welfare improving. Though in a small country any growth would lead to increase in welfare, but for a large country growth need not be welfare increasing. An expansion in a large country’s volume of trade will lead to terms of trade against it and this will reduce the welfare gains. In the extreme case terms of trade could move against the growing country to such an extent that its welfare be reduced.

Trade so far has been based on dissimilar commodities as discussed in the above theories of trade but during the past few decades the trend has been found that the major part of trade has been among similar items such as passenger cars, electronics equipments. Computers manufactured by IBM are
sold abroad, while the United States imports computers produced by Hitachi of Japan.

Thus a great deal of trade takes place between similar countries and similar goods instead of different countries and different goods. Thus in a way the new type of trade (new trade theory) contradicts the traditional standard trade theory. Verdoon (1960) first noted the existence of such transaction between countries.

This new type of commodity transaction can be defined as inter-country exchange of commodities belonging to same industry as Balassa (1966) first called it "intra-industry Trade".

Interest in Intra-Industry Trade arose mainly because the traditional theory of comparative costs, dealing with homogenous products, is incapable of explaining the simultaneous exports and imports to a country of the same statistical category. Intra-industry trade describes trade in similar, but slightly differentiated products based on imperfect competition, or trade in close substitutes demanded by consumers in different countries who may have distinct tastes or preferences.

As far as different models explaining intra-industry trade, Krugman (1979) gave the first formal model on horizontal intra industry trade. In this model trade (which consists of mutual exchange of horizontal product varieties between exactly identical trading partners in a chamberlinian monopolistics competition environment) occurs solely due to increasing return to scale. The scale factor (along with rising availability of varieties) also guarantees gains from trade. Subsequently Dixit & Norman (1980), Lancaster 1980), Krugman (1980, 81)
Ethier (1982), all used variants of chamberlinian monopolistic competition approach to intra-industry trade. Thus neo factor proportions theory includes human-capital hypothesis (Kravis 1956a) skill-intensity hypothesis (Leontief 1956) and Keesing (1965, 1968, 1971), R & D hypothesis Gruber, Mehta & Vernon (1967), multiple regression models (Baldwin 1971).

Neo technology theory of international trade includes product cycle hypothesis (Vernon, 1966), product innovation model (Johnsen, 1968), Krugman, model with process innovations (1994). Similarly an empirical test of neo-technology includes leads and lags (Hufbauer's 1966), soete tests (Soete 1981).


All the models constitute the new trade theory, which incorporates oligopolistic market structure, increasing returns to scale, product differentiation and monopolistic competition. All these models will be discussed in detail in review of literature.

In study of intra-industry trade basic stress is on two factors technology and transport costs. The objective will be to study the effects on developing and developed countries and the future impact on World Trade.

Thus as said Intra-industry trade in which a country simultaneously imports and exports similar products (defined as belonging to the same Standard International Trade
Classification (SITC 3-digit product group) is an indicator of the sophistication of consumer markets and industrial development (OECD 2002). As barriers to trade and investment are reduced, multinational enterprises increasingly engage in production activities across a range of locations seeking to apply their firm’s assets with location-specific advantages, including abundance of particular types of resources or a favorable geographic position.

In the discussion on intra-industry trade both economies of scale and product differentiation are essential factors. The increasing returns to scale often play an important role for intra-industry trade (Hansson 1989). It is the economies of scale in production, which makes each firm to produce only a specific set of varieties of products within a product group. A stated by Krugman in the year 2000 economies of scale is the fundamental reason for intra-industry trade. In the case of constant returns to scale, the production is determined by comparative advantages. Intra-industry trade also arises from product differentiation. Every product or product group consist of a collection of characteristics, which means, that each product can be differentiated into many varieties (Parjanne 1989). There are two definitions of differentiated product, one from Lancaster’s (1979) product characteristics approach and the other from Dixit and Stiglitz (1977), and Spence (1976). These definitions are based on consumer’s demand of product variation. According to the economists, consumers want as many varieties as possible, and their utility increases as the varieties increases. Thus the more sport utility vehicles ford makes, the lower will be the unit cost. Intra-industry trade arises if a country simultaneously imports and exports similar types of goods or services. The goods
or services being classified in the same “sector” identify similarity here.

Before explaining types and causes of intra-industry trade an attempt has been made to explain the term “industry” used in the intra-industry trade. The term industry is grouping products together and defining them as constituting the output of an industry. The following criteria are used to define industry.

a) Substitution in product, which means that each product produced by the industry has roughly similar input requirements or factor intensities (automotives and tractors).

b) Identical Technology Intensity, which means that each product is manufactured by roughly similar method or process of production.

c) Substitution in consumption, which means that each product has broadly similar uses such that consumers in some measure substitute one for the other in use (Plastic containers & metal containers).

It is clearly visible that there exists a conflict between above criteria. The choice of criteria depends upon the purpose for which data is required.

Two different types of intra-industry trade exists horizontal intra-industry trade and Vertical intra-industry trade. Whereas horizontal type of trade refers to the simultaneous exports and imports of goods classified in the same sector and at the same stage of processing. It is mainly based on product differentiation, for example South Korea’s simultaneous import and export of
mobile telephones in the final processing stage. As these mobile phones are produced using similar technologies and provide similar functions they are classified in the same sector. Nonetheless, the exported Samsung telephones differ in appearance and product characteristics slightly from the imported Nokia telephones, catering to the desires of different types of consumers; Vertical intra-industry trade refers to the simultaneous exports and imports of goods classified in the same sector but at different stages of processing. It is mainly based on the increasing ability to organize “fragmentation” of the production process into different stages, each performed at different locations by taking advantage of the local conditions. China, for example, imports technology-intensive computer components and uses its abundantly available labor force to assemble these components in the labor intensive final production stage, before the components (as part of a Intra-industry trade, the simultaneous import and export of similar types of goods or services, is to some extent based on lumping together different types of goods in one sector (aggregation problem), can be based on (horizontal) product differentiation or (vertical) fragmentation, is associated in particular with the production of sophisticated manufactured goods, and is an increasingly important part of (intra-firm) total trade flows in today’s globalizing world, particularly for developed countries. The same type of trend has been witnessed in developing countries.

The presence of Intra-industry trade has been found in functionally identical commodities, which have perfect substitutability in use. In other words these commodities have high positive cross elasticity of demand. Intra-industry trade
could exist in the form of 1) Aggregation bias in which commodities are grouped together, which are not close substitutes; 2) Cross border Trade in which trade occurs in products, which are “weight gaining”. For example Bricks, cement necessitate locating production nearest to market. Because of the costs of transportation, it will not be profitable for producers to transport the product long distances; 3) Differentiation in time where some products are seasonal in nature. During their off season, they are imported from abroad; 4) Joint production and joint consumption in which products are produced jointly. Even proportions in which they are produced cannot be varied. Unless local demand combines these products in same proportions, the result will be excess supply of some products and excess demand for others. The result is that country will both export certain products and import other products resulting in intra-industry trade; 5) Entrepot trade which is a process of importation of finished product for packaging labeling, warehousing before being re-exported to the final market. For example country like Singapore, which is situated near port, has acquired a great deal of experience in conducting such type of trade. Thus much of trade will show up as intra-industry trade; 6) Cross hauling by Multinational Companies: It is a practice of Multinational Companies relocating the processing or final assembly stages of manufacturing at sites based in developing countries.

The growth of duopolistic markets is another cause of increased intra-industry trade. Since market in concentrated in the hands of few, it leads to extreme uncertainly for each producer because of unpredictable reaction of his rivals. Thus
firms may seek to increase their market share by methods like Product differentiation other than price competition.

Since most of the trade is technology driven, technology is one of the important sources of intra-industry trade. In inter-industry trade, technology was assumed as given and stable. Basis for trade is attributed to differing labour productivities, factor endowments and national demand structures. In a dynamic world, technological innovations result in new methods of producing existing commodities or in the production of new commodities. Monopoly power is often based on the possession of a superior technology. Hence technology affects comparative advantage and pattern of trade.

An advantage to country that has greater access to R&D enjoys monopoly power and other country import the good or new technology. Trade is created during the period of the imitation gap. The benefits an innovating country achieves from its technological gap are short lived, as foreign producers begin to imitate the production process. The innovative country gradually loses its comparative advantage and its exports decline. (Example of US and Japanese radio manufactures reflects the above theory).

There is no doubt that gains to advanced nations will always be more as they will always be technologically advanced and LDCs will be step behind them. But if LDCs tries to invest in R&D and exploit their resources then with the help of low labour costs, the gains can be confined to their country.

A number of researches have been carried out on the determinants of intra-industry trade. The different factors that
affect level of Intra-industry trade of country are 1. Level of country’s per capita income: Higher the level of country’s Per Capita income, greater the demand for variety. This in turn increases the degree of product differentiation which promotes intra-industry trade; 2. Degree of inequality between countries: The more equal the level of Per Capita income of any two countries, the greater will be intra-industry trade; 3. Stage of economic development of a country - Higher the stage of development of a country, greater the importance of a manufacturing industry. Since intra-industry trade is higher in manufacturing products, so country’s level of intra-industry trade will be higher; 4. Difference in the level of economic development of any two countries: Lower the level of intra-industry trade, lower the trade between developed & developing countries. Difference in factor endowments promotes inter-industry not intra-industry specialization; 5. Size of country: Countries with large GDP offers wide market. Thus large countries will tend to be relatively more competitive in differentiated goods and small countries in standardized goods. But that does not mean that all small countries will have low intra-industry trade; 6. Degree of integration: High levels of intra-industry trade exist between countries which are the part of a regional trading zone such as Free trade area, common market; 7. Geographical closeness: intra-industry trade is greater between countries which share a common border.

As far as Industry differences in level of intra-industry trade are concerned, 1. Degree of product differentiation- Greater the degree of Product Differentiation, higher the level of intra-industry trade; 2. Economics of Scale: level of intra-industry trade will increase with the increase in economies of scale. The higher
degrees of product differentiation and tendency for average cost to fall will lead to intra-industry trade; 3. the type of market structure.

A large number of studies have been carried out to measure level of intra-industry trade in different countries. H.G. Grubel and P. J. Lloyd in their book “Intra-Industry Trade” in 1975 measured average level of intra-industry trade in ten OECD countries for some 160 product groups at three digit level of SITC. It has been found that average level of intra-industry trade rose from 36% in 1959 to 48 percent in 1967. The highest level of intra-industry trade has been obtained in manufactured goods, which rose from 54% in 1964 to 60 percent in 1967. The West European countries like France, UK, Belgium-Luxembourg and the Netherlands had highest levels of intra-industry trade. In almost all the countries intra-industry trade above 70% was found. In the year between 1970 and 1980 change in the share of intra-industry trade was calculated (Culem and Lundberg (1986)). Except for Australia, Sweden and US, intra-industry trade grew faster between developed countries and less developed countries than between developed countries and other developed countries. In 1996, 57 percent of United States trade took place within 4 digit standard International Trade Classification industries (SITC). For US-India trade, for the years 1996-2001, intra-industry trade increased from 0.6256 to 0.6360 in the year 1999 but declined slightly to 0.5638 in the year 2001. However any value over 0.5 would suggest that trade is more of intra-industry type. Since all index numbers are greater than 0.5, it is inferred that intra-industry trade has been important factor for trade (USA-India IIT by Vani Kotcherlakota). Intra-industry trade constitutes more than 60% of trade & 20%
of Japanese trade. In India an upward trend in levels of intra-industry trade is found. The GL Index increased by more than 11% points in 1995 over 1988. The extent of intra-industry trade in 1995 at the 3-digit level for selected countries is also measured. In USA 71.7% of trade is found to be intra-industry in nature. US trade with Asian newly industrialized countries is 41.4 percent and with Latin America 66.0 percent is intra-industry trade. High intra-industry trade of the amount 73.5% is found with NAFTA countries and 74.0% with OECD counties is found. In developing countries like Bangladesh a comparatively low intra-industry trade of the amount 10.0% is seen (NAPES). The trend is present in most of the individual commodity sections except gems & Jewellery and Instrument & Apparatus.

Thus in the light of above discussion on growing level of intra-industry trade in almost all countries it becomes very important to study the extent of intra-industry trade for all the commodities under SITC particularly in India since it is one of the fastly developing countries of the world. Since Indian economy has witnessed various reforms in 1990 and has moved from closed economy with licenses and quotas to a free and globalized economy. Thus it becomes important to analyze the effects of intra-industry trade on the Indian economy.

The economic growth in India over the last two decades has increased demand for all transport services. The rising income and urbanization has resulted in growing vehicle ownership. The total numbers of vehicles registered in the year 1981 were 5391 thousands which increased phenomenally to 67033 thousands in 2003. Similarly if we just calculate the numbers of cars, the number increased from 1160 thousands in 1981 to 8619...
thousands in 2003. With the increase in number of vehicles, the fuel consumption of petrol driven cars increased from 1629 thousands in 1980 to 2404 in 1985 and finally to 3840 thousands in 1990. Not only demand for petrol increased diesel oil consumption also increased from 8140 in 1980 to 15427 in 1990 (IEA). Thus rapid increase in number of cars has spurred the demand for fuels consumption. Most of this increased production of the vehicles is technology driven.

Since major part of intra-industry trade consists of automobile sector so it becomes important to examine the sector in detail. The conventional theories are based on the assumption of constancy of transport costs. But in the study of intra-industry trade transport costs is one of the main sources of trade. The intra-industry trade has been possible because of change in transport costs. Transportation cost refers to the cost of moving goods, including freight charges, packing and handling expenses and insurance premium. These costs can modify international trade pattern (both inter industry and intra industry). The inclusion of transport cost in inter industry trade will alter trade patterns. A product will be traded internationally as long as the pre trade price differential between trading patterns is greater than the cost of transporting the product between them. For few goods such as lumber, cement, stone or bricks, transport costs are very high relative to the value of good itself. Thus it is rational to buy such goods from nearest supply point, which means from a source across national borders rather than from the national suppliers. But suppose the cost of transportation increases. There can be two possibilities either there will be no trade at all because of availability of substitute or country will like to substitute it for domestic good or decrease
in the volume of trade as it will be uneconomical to purchase goods at increased prices.

As already mentioned above the increased demand for cars has resulted in increased consumption of oil from 6.7% per annum between 1980 and 1990. The fuel consumption of petrol driven cars increased from 1629 thousands in 1980 to 2404 in 1985 and finally to 3840 in 1990. Not only demand for petrol but diesel oil consumption also increased from 8140 in 1980 to 15427 in 1990 (IEA). Thus total consumption of oil is of the order 9100 million tones. With population of 6 billion the per capita consumption comes out to be 1500kg. It is estimated that by the year 2030, world population will rise to 8 billion and per capita consumption will rise to 16000 million tones of oil. Thus both population and consumption are increasing at almost same rate. If this trend continues the oil reserves, which are already limited in number, will be source of threat to oil importing countries. Then oil-importing countries will be left with no other alternative but to hike the price. It can be seen that price of oil increased from US$ 11 per barrel in February 1999 increased to US$ 39 per barrel in the year 2004. The trend continued to increase in 2007 when the price became US$ 92 per barrel. It is expected that by the end of year 2008 the price will cross US$ 100 per barrel. Developing countries and especially India will be more hurt for this price increase but there are no alternatives to oil. On the one hand higher oil prices increase the foreign exchange cost of imported oil, and on the other domestic increase in price will increase the production cost of all industries. The increased price will adversely affect GDP, Employment, inflation and other variables of the economy. So the question arises that with continuous increase in price of oil
how long the oil-importing countries will be able to maintain oil reserves. As a result the trade becomes more and more uneconomical for all the countries and especially for India, which has limited resources.

In the light of above discussion it will be interesting to study the sustainability of intra-industry trade in the long run.

Gains from inter-industry trade has already been discussed where it is assumed that trade expands the consumption, utility and production possibility frontier. There is no doubt that inter-industry trade brings product transformation in the form of changes in factor prices, commodity prices & hence changes in income distribution. In comparison to free trade, trade leads to gains in production, higher standard of using, international specialization, optimum utilization of resources, increased variety of goods and expansion of the market. Thus a positive relation between trade & welfare is found. But gains from intra-industry trade are affected by several factors. The availability of several product varieties, gains from specialization either from economies of scale or reallocation of resources are to be measured. A limited research has been done on this issue. So the objective of our study will be to examine the gains from intra-industry trade

Intra-Industry Trade enhances the gains from trade through better exploitation of economies of scale as trade leads countries to concentrate on a limited number of products within any particular industry. Specialization within industrial categories may also stimulate innovation. Thus producing a greater variety and number of goods increases our general
knowledge about technology, and greater knowledge implies smaller costs of knowledge accumulation.

II reduces the demands for protection because in any industry there are both exports and imports, making it difficult to achieve unanimity among those demanding protection (Marvel & Ray 1987).

As far as analyzing the consequences of trade, we will be facing questions whether the global welfare of trading would increases because of international trade or not.

It is said that the residents of countries, when trade liberalization takes place, enjoy two kinds of welfare benefits. The first occurs where a close foreign substitute replaces it with domestic competitors in the market. The very act of substitution signifies that the new product is better in some sense in the eyes of the consumer: it may be of superior quality if prices are the same, or it may be lower priced if the quantities are the same, or it may be both cheaper and of better quality than the product it replaces. In either case the consumers benefit.

The second welfare effect is based on availability of wide range of products. Whether consumers really benefit, from being able to choose from an increased number of close substitutes has been doubted by some economists and social commentators (Galbraith, Schitovsky, and Easterlin).

Consequently at micro level and in partial equilibrium context a decrease in price, or increase in quality at the same price, or increase in variety is likely to shift the consumer to a higher level of welfare. But this also requires a detailed analysis
of the effect of quality and variety on welfare of individuals. Therefore, at the micro level it will be useful to discuss how quality and variety variations can influence welfare.

Increase in variety may not always lead to increase in welfare. It implies more effort for selecting the good and higher cost because of additional expenditure on advertising as a result of tough competition. Also net gain due to increased variety can be nil or negligible because to the first time buyer’s welfare remains the same since the need satisfied by it is the same. The only additional source of satisfaction can be its newness. For example in case of automobiles industry, a new model is attached with additional costs like new tools, dyes, cost of R&D, traffic and parking problems etc. Similarly choosing from long list of menu in hotel creates dissatisfaction in the form of waste and not so affordable items rather than satisfaction.

There are two potential costs associated with the increase in variety. Whereas the first cost involves the potential costs of adjustment in the industry, the second cost involves the possibility that more varieties will increase transactions costs. Each cost requires modification of the basic assumptions of the model in a way that conforms more closely to the real world. Firstly the movement to free trade requires adjustment in the industry in both countries. Although firm output rises, productive efficiency rises as well. Thus it is possible that each firm will need to lay off resources - labor and capital - in moving to free trade. Even if each firm did not reduce resources it is possible (indeed likely) that some firms will be pushed out of business in moving to the long-run free trade equilibrium. Now it is impossible to identify which country’s firms would close,
however, it is likely to be those firms who lose more domestic customers than they gain of foreign customers, or firms that are unable or unwilling to adjust the characteristics of their product to serve the international market rather than the domestic market alone. For firms that close, all of the capital and labor employed will likely suffer through an adjustment process. The costs would involve the opportunity cost of lost production, unemployment compensation costs, search costs associated with finding new jobs, emotional costs of being unemployed, costs of moving, etc. Eventually these resources are likely to be re-employed in other industries. The standard model assumption is that this transition occurs immediately and without costs. In reality, however, the adjustment process is likely to be harmful to some groups of individuals. Secondly potential cost of free trade arises if one questions the assumption that more variety is always preferred by consumers. Consider for a moment a product in which consumers seek their ideal variety. A standard (implicit) assumption in this model is that consumers have perfect information about the prices and characteristics of the products they consider buying. In reality, however, consumers must spend time and money to learn about the products available in a market. For example, when a consumer considers the purchase of an automobile, part of the process involves a search for information. One might visit dealerships and test drive selected cars, one might purchase magazines that offer evaluations, and one might talk to friends about their experiences with different autos. All of these activities involve expending resources - time and money - and thus represent, what we could call, a transactions cost to the consumer.
Before we argued that because trade increases the number of varieties available to each consumer, each consumer is more likely to find a product, which is closer to her ideal variety. In this way more varieties may increase aggregate welfare. However, the increase in the number of varieties also increases the cost of searching for one's ideal variety. More time will now be needed to make a careful evaluation. One could reduce these transactions costs by choosing to evaluate only a sample of the available products. However, in this case there might also arise a psychological cost because of the inherent uncertainty about whether the best possible choice was indeed made. Thus in welfare would be diminished among consumers to the extent that there are increased transactions costs because of the increase in the number of varieties to evaluate.

On the other hand any improvement in quality is always associated with higher expenditure on R&D, retooling and advertisement costs. But two things, which need to be associated with higher quality products, are better service and enhanced durability. So any discussion on welfare impact of quality needs to consider these two aspects. It has been noticed that rates of obsolescence has increased in many countries Choi (2001) and Hang (2003). So for analyzing the impact of quality and variety all the above factors need to be taken into consideration.

At the macro level and in the general equilibrium framework, analysis of the effect of intra-industry trade on welfare requires to study its likely impact on balance of payments, terms of trade, employment etc. of the participating country. The idea here is that individuals in the long run can gain if the country gains and in the international market,
country can gain if the terms of trade improves or its competitiveness increases, which in turn, requires production of new technologies which can generate product innovation that can allow it to compete on equal basis in the international market. The motive is that the basis of intra-industry trade is superior technology and to remain competitive in the market continuous technological progress is required, which requires recurring expenditure on R&D. So welfare is assumed to be function of needs and their welfare providing capacities (WPC) and intensity of urgency of that need to human beings. As long as product variety involves improvement in functional cheat act and beneficial for majority of consumers, variety may be assumed to be welfare increasing.

At the bigger level, effect of intra-industry trade on welfare requires likely impact on balance of payments, Terms of trade, employment etc.

It is generally assumed that society created by industrial revolution, which is guided by market forces, is said to be happy society. The question arises if money is ultimate goal, than why we are living in unhappy world. If markets facilitate choices, why, within our means, do we not choose the things that make us happy? Robert and E. Lane in market economy describes that markets often inhibit rather than facilitate, the immunization of utility. It is the people not money that makes people happy. It is empirically proved that as countries go from poverty towards wealth, increases in per capita national income are associated with substantial gains in SWB (Subjective well being). The data has shown that over the past twenty-five years in richest nation in the world, there has been decline in
happiness and increase in depression. The indicators studied are happiness of marriage, satisfaction from job, satisfaction with financial situation, place of residence etc. SWB has curvilinear path through history increasing initially, but after brief period, turns down. This law of diminishing returns applies to money as it does to everything that money buys.

Even from a utility point of view, what is use of increasing abundance, if it does not succeed in calming the miseries of the greatest number but on he contrary, only serves to increase their impatience (Durkeim).

Man & Development: September 1991 describes that man through his rational thinking creates an over affluent joyless economy where his biological survival is assured. It is believed that material scarcity is the source of all problems. Thus his perceived aspiration, desires increases with the time. Thus as means got better of him, state of insecurity moun's. Any deprivation of above creates disharmony. Thus this state of existence of 'Development ' can only be called 'anti Development'

A disharmony index is created which finds the current level of needs-dissatisfaction of various. Only five indices that create negativities of the present day living are considered. Suicides, Homicides, Death by motor vehicle accidents, industrial accidents leading to fatal injuries, drug & Medicament related facilities.

A strong positive association between material progress & all the three indices of disharmony suggests that life demands more than mountains of 'butter & guns'. Thus a rising per capita
income and enhanced quality of life should not be misread as betterment of human existence.

It is said that one of the advantages of trade liberalization is increase in variety or availability of wide range of products. Whether consumers really benefit, from being able to choose from an increased number of close substitutes has been doubted by some economists and social commentators (Galbraith, Schitovsky, and Easterlin).

**Considering the above scenario, the objectives of the study will be to examine**

1. The measurement of intra-industry trade for all the broad category of industries under SITC classification for selective years under two-digit classification; from the year of liberalization to the recent year for which data is available.

2. Considering the growing importance of transport sector in general and car industry in particular, the study also measures the extent of intra-industry trade under two digit classifications and also examines the trend of IIT of car industry under four and six digit of ITC (Indian Trade Classification).

3. In view of rising intra-industry trade the study attempts to examine the welfare impact of intra-industry trade.

4. To examine whether the current trends of intra-industry trade in long run are sustainable or not.
**Preview of Chapter Scheme**

The present study has been organized into seven chapters, which are discussed below:

Chapter one is exploratory in nature. Besides focusing on the need to undertake a study in its present mould, it spells out the objectives of the study and also discusses its related aspects.

Chapter II provides a review of the studies as have been done on the different aspects of intra-industry trade.

Chapter III discusses the different methods of measurement of intra-industry trade. The first method to measure intra-industry trade has been discussed by Grubel-Lloyd. Thereafter, marginal measures of IIT have been discussed as given by Hamilton-Kniest, GHME measure, Brulhart etc. The Chapter also provides the necessary details pertaining to sources of data collection, primary and secondary data methodology, years of the study, concepts and variables used in the study. The source of the data is a journal published by DGCI&S giving imports and exports figures called as MSFTI (Monthly statistics of foreign trade of India).

Chapter IV examines the trends of India’s IIT in broad categories of goods. The analysis of present study pertains to commodities that include two-digit level of Indian trade classification (ITC) for broad categories of commodities in general.

Chapter V discusses the trends of India’s IIT in Transport equipment. Because of the increased importance of automobile sector in the Indian industry and increased exports and imports
of cars in the last few years a detailed analysis of transport equipment category has been done.

Chapter VI studies the analysis of determinants of car purchase and level of satisfaction with the help of questionnaire based survey. The different scales and ranks have been chosen on the basis of different questions. The interpretation of the surveyed data has also been carried out in the chapter. The chapter also empirically examines the relationship between level of satisfaction from buying car and its determinants. The results of Ordered Probit Model, Ordinary Least Square method have been discussed.

Chapter VII of the study attempts to capture the major findings and overall conclusions of the study. It also brings out some policy implications along with some suggestions as emerging from our analysis.