

# CHAPTER 2

## REVIEW OF LITERATURE

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### 2. Review of Literature

The study extensively reviews various studies used to express the meaning of regionalism and its developments theoretically and empirically. The study also reviews the ongoing debate on growing regionalism than multilateralism in the world. Due to the spread of regionalism, there is a rise in intra-industry trade. Therefore, there are various studies on intra-industry trade which measures the impact of regionalism in the world. The study also provides theoretical and empirical aspects of intra-industry trade and the use of widely accepted model of Grubel Lloyd index for its welfare measurement. There are many researchers who studied the growing importance of ASEAN as a regional bloc and its growing relation with India through trade especially after 'Look East Policy' in 1991 and 'Trade in Goods Agreement' in 2010. The study also reviews the literature available on Intra-industry trade between ASEAN and India.

Much of the existing research on regionalism focuses on the welfare implications of regional trading arrangements (RTAs), both for members and the world as a whole. But questions comes whether a regional arrangement is "trade creating" or " trade diverting," is it really allow firms in member-states to achieve economies of scale, and whether it helps them to improve their terms of trade (Viner 1950). Does RTA membership have increased income, greater job stability, lower prices for the products they consume, and so on? Many such questions need to be answered and the study provides fair justification through literature review.

Apart from its static welfare effects, economists also devoted considerable thought to whether regionalism will accelerate or hold back multilateral trade liberalization, this is an issue that has been referred to as "the dynamic time-path question" (Bhagwati 1993; Bhagwati and Panagariya 1996). Regional trading arrangements have a two-sided quality, liberalizing commerce among members, while discriminating against third parties. Various studies have shown that these arrangements can strengthen multilateral system and openness, for example, by reducing the number of actors engaged in multilateral negotiations, thereby muting problems of bargaining and collective action that can hamper such negotiations, or by inducing members to undertake and consolidate economic reforms, and that these reforms are likely to promote multilateral

openness (for example, Lawrence 1991; 1996). However, clear limits also exist on the ability of preferential agreements to boost multilateralism.

The issues emerged in the literature review are following:

- What is regionalism – as per different thoughts and definitions?
- How Regionalism and Multilateralism is to be taken.
- What is an impact of Regionalism?
- Role regional trading agreements in promoting Intra-Industry Trade in the world
- To assess an impact of Trade agreement on Intra-Industry Trade.
- Role of ASEAN as an emerging regional bloc
- Aspects of ASEAN-India trade relations.
- What is an impact of ASEAN-India FTA (AIFTA) on Intra-Industry Trade index?
- To analyze the diversification in the pattern of Trade especially after AIFTA.

The present chapter is divided into three major sections. The first section reviews the literature available on definitions, theoretical and empirical developments of regionalism in the world than multilateralism. Second section studies the literature available on Intra-industry trade as to measure country's welfare impact from trade in terms of 'trade creation' and 'trade diversion', models used to measure IIT index and determinants of IIT. The second section also reviewed literature on the use of Grubel Lloyd index to measure IIT index with the availability of other models and its limitations. The last section studies the literature available on growth of ASEAN as a regional bloc and its growing relation with India in terms of regional trade. The section studies the impact of ASEAN-India Free Trade Agreement (AIFTA) in promoting IIT and changing structure of trade in regional arrangements.

## **2.1 Review of literature on various definitions of Regionalism**

There are many arguments for the definitions of regionalism, therefore its necessary to define what region; regionalism and regionalization means. The study closely reviews and analyzes some recent research on regionalism. Despite widespread usage and interest in regionalism, the definition of regionalism lacks its consensus. Commonly used definition about region is "regions which are frequently defined as groups of countries are located in the same geographic space". Furthermore, many researchers are agree to region implies more than just physical proximity.

## **2.2 Literature on the definition of Region, Regionalism and regionalization**

Many researchers made a clear distinction between region, regionalism and regionalization process. The best studies by Deutsch et al. (1957) defines region with high level of interdependence across multiple dimensions including economic, communications and political values that determines a group of countries in the region. Russett (1967) defines region as based on geographic proximity, social and cultural homogeneity, shared political attitudes and political institutions, and economic interdependence. Thompson (1973) analyze region as geographic proximity, extensively interactive and share perception on various aspects. Apart from the geographic definition of region, non-geographic terms also define regions such as the study by Solingen (1998) includes region's boundaries to the respective grand planning of different political alliances. Katzenstein (2005) puts it, "regions are politically made".

There were many studies which explain the differences between regionalism and regionalization. Many political scientists argue that regionalism is a political process marked by cooperation and policy coordination, whereas regionalization is an economic process in which trade and investment within the region grow more rapidly than the region's trade and investment with the rest of the world.

Haggard (1993), Gamble & Payne (1996), Breslin & Higgott (2001), and Ravenhill (2009) defines regionalism as the process of institution creation and regionalization as bottom up, societal driven process. For Hurrell (1995) regionalization is a feature of regionalism, he related regionalization as the growth of societal integration within a region and relates to undirected processes of social and economic interaction. Fawcett (2004) defines regionalization as a policy and project which preceded and flowed with regionalism.

Another school of thought had come from Marchand et al. (1999) reflected regionalization as state and non-state forces reacting in opposition to globalization whereas regionalism involves ideas, identities and ideologies related to regional project. Katzenstein (2006) defines regionalism as institutionalized practices and regionalization as process that engages actors. Munakata (2006) studies that regionalism involves institutions established by governments to encourage regional economic integration but emphasizes the varying levels of commitment by members. However many researchers found the difference between regionalism and regionalization as the former is a political process and latter is economic or social process.

## **2.3 Literature on regionalism defined as Economic, Political, Security, Geographic, Social & Cultural Integration**

There are various studies and opinions to the concept of regionalism in the world. Various studies connect regionalism with economic motive, politically inclined regions, social and cultural forces drive to regionalism, closeness between nations or neighborhood defines the scope of regionalism and finally international security influence regionalism. The idea of 'region' holds various views such as physical, political and economic criteria without looking at the development theory. With the end of the cold war and the trend toward economic globalization as well as increasing complexity of international relations, the concept of region has become an important idea to pursue for the nations.

### **2.3.1 Economic Integration**

Major work in the literature available is of regionalism which relates to economic activities and economic integration. The literature also involves various issues like reduction of tariff and non-tariff barriers, trade creation and diversion as welfare effect, natural trading partners, spaghetti bowl arrangements and hub and spoke arrangements.

There are widely shared views on regionalism that leads to growth in trade, which is a demonstration of economic regionalization (Aitken 1973; Frankel 1993; Winters and Wang 1994). The growth of economic activity across national and regional borders will increase the movement of goods and services trade flows (Nesadurai 2002). This argument gained its importance more, when decrease in tariff and non-tariff barriers between two or more countries reduced or eliminated. The value of modern trade agreements derived from investment, service liberalization and the removal of non-tariff barriers rather than the changes in tariff and quotas (Baldwin 2011; Schiff and Wang 2003).

The reduction in tariff and non-tariff barriers originated from the theory of customs union propounded by Jacob Viner in 1950, "*The Customs Union Issue*" discuss preferential trading arrangements which have the welfare effects on different groups in terms of trade creation and trade diversion. But researchers also debated, that all customs union are not always beneficial. Denis O'Brien (1976) argued that the benefits of trade creation were believed to exceed the trade diversion losses and the treaties were also provoke reductions in general tariff levels. Summers (1991) consider trade diversion is something that could be minimal, if natural trading partners are geographically proximate. Bhagwati (1993) first questioned the validity of this assertion,

pointing to an earlier important contribution by Lipsey (1957) that had spelt out the welfare improvement criteria in a specific model that differed from the ones defining the “natural trading partners.”

During this debate, the Wonnacott and Lutz (1989), Summers (1991), Krugman (1991) and others have also stated that if the member countries were geographically proximate and already traded intensively with one another, they were “natural trading partners” and the union among them would be largely trade creating. Bhagwati (1995), Panagariya (1996) and Bhagwati and Panagariya (1996) criticized his ideas and showed systematically that natural trading partners hypothesis has no logic and an analytic base. Further Panagariya (1996), explained the volume of trade and expressed that there was a presumption about the more a small country imported from its union partner, the more it would lose from liberalizing preferentially.

Various others associated terms had become famous such as ‘spaghetti bowl’ by Jagdish Bhagwati in 1995, discussed that the growing numbers of PTAs in the world making trade procedures more complicated by increasing the number of tariffs and rules of origin. And this concept was equally relevant for CUs and FTAs. Schiff and Wang (2003) explains the problem of multiple memberships may generate duty free market-access and zero tariffs on imports with many trading partners and therefore this policy attracts national policy makers as a substitute to free trade.

Another contribution in the literature of regionalism had come as hub-and-spoke arrangements; it can be traced back to Wonnacott (1975, 1982), Kowalczyk and Wonnacott (1992) who explore the effect of hub-and-spoke system in the context of NAFTA. Recently Puga and Venables (1997) analyze how hub-and-spoke arrangements affect the location of industries in the Dixit-Stiglitz world. This arrangement analyzes the trade between a country pair changes as free trade expands to a third country. For instance, Mexico has free trade agreements with both the US and European Union, but there is no FTA between the US and the EU. Therefore, Mexico is the hub whereas the US and the EU are the spokes.

### **2.3.2 Geographic Integration**

The definition of region has changed drastically over the years due to a change in the character or its functions of regions. Mansfield and Milner (1997) emphasized on geographical proximity and specificity is the traits of region. Alan Winters (1994) discuss the concept of multilateralism in length but untouched regionalism; he defined regionalism as a policy which reduces trade

barriers between a subset of countries regardless of whether those countries are close to each other or contiguous. The region has various levels of analysis – global, regional, and national and the links between each other. During the cold war period, regions were characterized as political or mercantile cluster of neighbors. There is also growing differentiation between physical (geographical and strategic) regions and functional (economic, environmental and cultural) regions, but much change has been considered for the first one.

Geographical proximity has also developed the idea of trade costs, which was firstly developed by Tinbergen (1962) and he used gravity equation for this. The old Newton's gravity equation has the basis of Tinbergen gravity model which describes that international trade between two partner nations linked to their economic sizes and inversely related to the distance between them, the later acts as proxy of trade costs, Subsequently, Krugman (1991), Stein and Wei (1995), Frankel (1996) and his associates, Frankel and Wei (1997) have strongly pushed the idea of presence of transport costs which makes PTAs more attractive option for countries. The idea gains major popularity because Viner (1950), Meade (1955) and Lipsey (1957) have not mentioned transport costs or proximity as a factor in determining the PTAs.

Anderson (1979) derived the gravity equation from the system of expenditure equations and provided theoretical base to the gravity model of international trade. But McCallum (1995) again estimated the traditional gravity equation for the bilateral trade between U.S and Canada, and assumed distance and border as proxies for the trade costs. He establishes that the U.S.-Canadian border led to trade between Canadian provinces that is a factor 22 (2,200 percent) times trade between U.S. states and Canadian provinces. Anderson and Wincoop (2003) introduced trade costs exogenously to the model and assumed a particular type of trade cost function to represent these. They were also of the opinion that not only the bilateral trade barriers but multilateral trade barriers too affect the international trade, named as multilateral resistance term, the resistance from the other trading partners. The pioneering work of transport costs had further derived in length by Paul Krugman where geographically closer countries have more desirability and feasibility to join a regional bloc, as it reduces transportation costs among countries in the bloc.

Latest work in this regard is put forth by Novy (2008), who used the gravity model of international trade by Anderson and Wincoop (2003). After applying some manipulations, he derived a micro-founded measure for the international trade costs. Khan and Kalirajan, (2011)

study discusses some of the important issues in measuring trade costs and said that the literature is still in the early stages of understanding. Then after, many economists have started using different proxies for trade costs, such as: common border, common language, tariffs and remoteness among others, which led to the debate over the rationale behind the use of gravity equation in international trade.

### **2.3.3 Political Integration**

Haberler (1943) expresses strong support for regional trade blocs for political more than economic reasons. Balassa (1987) has defined economic integration both as a process and as a state of affairs. This distinction, though missing theoretical significance, is useful for empirical purposes. Considered as a process, economic integration comprises the set of political and economic measures “designed to eliminate discrimination between national economies”.

Balassa interpreted state of affairs as, “It represents the absence of various forms of discrimination between national economies”. The process of economic integration then can be regarded as the path that is followed between decreasing levels of economic discrimination among countries. On the other hand, political and military motives also defined region as North Atlantic Treaty Organization (NATO) and the Organization of African Unity (OAU). Since late 1980s, the regions were defined as sub regional and micro regional organizations, which were more common, for example, the Baltic Council of Ministers, the Shanghai Group and Mercosur. Finally these trends in the recent years fragmented into great-power blocs like Eastern Europe and Central Asia.

The dimension of political economy of regional trade agreements were also subjected to number of empirical studies. Levy (1997) demonstrated that bilateral free trade agreements can undermine political support for further multilateral trade liberalization. Krishna (1998) found preferential arrangements that divert trade away from the rest of the world are more likely to be supported politically and preferential arrangements will reduce the incentives for multilateral liberalization. Bird and Rajan (2002) contended that trade-first approach to regional integration is essentially a political outcome as broadening and deepening of RTAs requires very strong political commitment and it is rarely exhibited as most RTAs are protectionist for strategic reasons.

#### **2.3.4 Security Integration**

Few studies also provide literature on the need of security in the region which leads to the origin of regionalism in the world. Few regional blocs initiated concerning the security issues such as origin of ASEAN. The countries require the commitment to common goals and policies while at the same time providing common security system. Paul Papayoanou (1997) argued that economic interests of the major powers drive them to engage in regional security arrangements. Many scholars did mention about Western European region as regional security community in which mutual interdependence and identity were the strong point. There is a better way to describe a political arrangement between non-allied states that possess a common interest and capacity to reduce the level of international conflict in their region by their common actions without resorting to mutual competition or free-riding. Buzan (1991) states “regional security complex” which defines a group of states whose primary security concerns link sufficiently to their national securities which are not considered apart from one another.

#### **2.3.5 Social Integration**

The researchers were also interested to know the process of regional formation, therefore the study of regionalism has undergone methodological change which argued between rationalist and constructivist. The justification by the constructivist approach explains regions rise from the norms and identities by governments, civic groups and business firms. Meinig (1956) defined region as the use of common cultural identities, which was observed as the construction of “culture blocs”. Regions are also identified as “social bloc” in whom regions were shaped by the collective perception of identities with ever shifting boundaries. Murphy (1991) and Adler (1997) defined region as dynamic structure thrive by common institutional and economic ties. Agnew and Corbridge (1995) and Newman (1999) have delineated region by linking physical and functional concepts by focusing on border less nations due to globalization and identity formation and extra-territorial challenges to sovereignty that these forces unleash.

The conclusion from the literature on definitions on regionalism suggests clearly that a region can take up any shape (economic, geographic, political, security or social and the combination of all). Now the literature will provide theoretical developments in regionalism in the world and debate between multilateralism and regionalism in the aegis of General Agreement on Tariff and Trade (GATT).

## **2.4 Literature on Theoretical Developments in Regionalism- International studies**

The amount of work in regionalism is very vast and enormous; therefore the study gives theoretical developments of regionalism separately. The section gives literature on the work being done by the economists and researchers in the field of regionalism which is more in depth. Many studies after 1950 with the names like Jacob Viner, Meade, Richard Lipsey and Harry Johnson became important to understand the degree of economic integration in shaping 'Regionalism'. And another work on regionalism started in 1991 with big-thinkers followed by Paul Krugman, Larry Summers, and Jagdish Bhagwati, Arvind Pangariya who laid down the strong foundation of regionalism.

The journey of regionalism started with Second World War II, there had been intense theoretical explanations and debate by trade theorists on the impact of regionalism on the international trade flows of commodities. The two major issues dealt deeply by trade economists, one is to how the formation of Regional Trading Blocs impacts the welfare of the members and second world at large and since the inception of WTO, the debate among economists and policy makers emerged as whether regionalism help or hinder (building bloc or stumbling bloc) the process of multilateralism. But till today, economists had not been able to resolve this issue and there is no harmony amongst themselves on the magnitude and direction of the impact. Now the study starts with first issue on the impact of regionalism on the welfare of the members.

### **2.4.1 Literature on the Theory of Preferential Trading Agreements (PTAs)**

The theory of preferential trade agreements (PTAs) and the contributions by Jagdish Bhagwati separates this into two distinct phases. The phase I is a static theory which deploys the traditional tools and phase II is a dynamic theory as 'time path analyses.

Phase I starts with the pioneering work as '*The Customs Unions Issue*' by Jacob Viner and primarily worked on what Jagdish has called "static" welfare. The phase II started in the early 1990s and focused on the political-economy considerations behind PTAs and the dynamic 'time path' of whether PTAs are building or stumbling blocs of multilateral freeing of trade. The enormous work by Jagdish Bhagwati made important contributions to the former literature and influential contributions to the latter.

#### **2.4.1.1 Static Theory – phase I**

Four distinct approaches can be identified in the pre-1990s literature on static theory of PTAs:

- The Vinerian welfare analysis using the influential concepts of trade creation and trade diversion;
- The Kemp-Wan approach focusing on identifying customs unions that would be necessarily welfare improving;
- The Cooper-Massell-Johnson-Bhagwati analysis of a customs union to minimize the cost of industrialization; and
- Bhagwati-Brecher approach to analyzing the effect of changes in the exogenous variables such as the external tariff and the terms of trade on individual members of the union.

The literature on Viner has already been discussed above which considers a union as trade creating or trade diverting. Viner concluded that free traders who supported PTAs probably had trade-creating customs unions in mind while protectionists who supported them expected them to be trade diverting.

Many researchers had doubt in Vinerian analysis and to solve this ambiguity economist's looked for criteria that would allow them to determine whether a specific union would be largely trade creating or trade diverting. The Wonnacott and Lutz (1989), Summers (1991), Krugman (1991) and others emphasize that if the member countries were geographically proximate and already traded intensively with one another, they were "natural trading partners" and the union among them would be largely trade creating.

In further theories, Bhagwati (1993) questioned the validity and pointed to early work of Lipsey (1957) that had defined the welfare improvement criteria which was different from the ones defining the "natural trading partners." Subsequently, Bhagwati and Panagariya (1996) offered a systematic critique of the natural trading partner's hypothesis. The recent literature by Bhagwati and Panagariya (1996) verifies that would allow to judge whether a union is welfare improving or welfare worsening remain vague, the Kemp-Wan approach to customs unions, recently extended to free trade areas (FTAs) by Panagariya and Krishna (2002), who does offer a clear picture to get around the trade diversion problem by adjusting the external tariff appropriately.

At last, Cooper and Massell (1965), Johnson (1965) and Bhagwati (1968) developed an alternative approach for developing countries to welfare-improving customs unions which will later achieve a certain level of industrialization. The analysis by Bhagwati and Brecher (1980) analyzed small open country where a national welfare is impacted due to exogenous changes in the terms of trade and outside tariffs in the presence of foreign-owned factors.

#### **2.4.1.2 The Dynamic 'Time Path' Analysis - Phase II**

Bhagwati (1991) had introduced whether PTAs would serve as building blocs or stumbling blocs to multilateral free trade. Bhagwati (1993), After 1990s contribution on preferential trading agreements became more significant because the question of PTA improves or worsen the static efficiency or whether the PTA would take the world more quickly and efficiently to multilateralism. As Levy (1997) mentioned in his important work as:

(i) Whether multilateral free trade which is initially infeasible can be made feasible by the option to form PTAs (PTAs as building blocs).

(ii) Whether multilateral free trade that is initially feasible can be rendered infeasible by the option to form PTAs (PTAs as stumbling blocs).

The answers for the above questions were negative noting that a PTA will be formed only if it increases the value of the government's political support function. And if it does so, the value of the political support function is now even higher than multilateral free trade, making it even less inclined to go for the latter. Thus, PTAs do not serve as building blocs. Secondly, the option to form PTAs does provide a previously feasible multilateral liberalization infeasible; therefore the PTAs turn into stumbling blocs. Krishna (1998) in his analysis explained that the greater the trade diversion by the PTA, the more likely it turns into a stumbling bloc. The literature after 1990s, examined models that make the decision to form FTAs endogenous. The pioneering work on this issue is the Grossman-Helpman (1995) paper which shows that FTAs are more likely to be accepted when export lobbies can gain access to the partner's market without a threat to domestic import-competing lobbies from the partner countries. Panagariya and Findlay (1996) study allowed tariffs to be determined endogenously through lobbying.

#### **2.4.2 Literature on the debate between Multilateralism and Regionalism**

Many renowned economists debated on the issue of multilateralism and regionalism at various levels and degrees, but still could not find common consensus on the issue.

The famous economists, Baldwin (1995) developed the "*Domino theory*" of regionalism to answer the question of why countries prefer regional integration than multilateral liberalization. He has divided regionalism as shallow and deeper integration. He did mention the political equilibrium that balances anti-membership and pro-membership forces. Among the pro integration forces are firms that export to the regional bloc. Since closer integration reduces the profits of non-member firms, the exporters in the non-member country initiate greater pro-

regional political activity. This additional activity may tilt the balance in favor of regional integration in a country which otherwise remained unbiased to it. As the bloc enlarges, the cost to the non-members increases since they now face a cost disadvantage in an even greater number of markets. This will bring more pro-regional political activity in non-members countries resulting in further expansion of the bloc. Therefore regionalism reached fast and wide across the globe than multilateralism.

According to Baldwin (2008) the interaction between the domino theory and juggernaut theory suggests that regional trade blocs are building blocs towards free trade at least in most of the cases. But he also reported some limiting cases especially South-South FTAs which cannot create domino and juggernaut effects. According to Baldwin, regionalism is here to stay and there is a need for deep multilateral integration.

The regionalism versus multilateralism debate has a long account and not easy to resolve positively even after large number of theoretical and empirical studies on this issue. Some economists argue regionalism as a stumbling bloc Bhagwati (1993, 1996) to the progress of multilateral trade liberalization which is a first best option for countries to improve their welfare; others see it as a building bloc- Frankel (1997), Summers et. al. (1991) as it supplements and complements the multilateral process.

Foroutan (1998) delineates in his study that it is hard to believe that countries that are highly protectionist are willing to liberalize after joining a RTA unless they follow a more open import policy. Vamvakidis (1999) studied regionalism versus broad liberalization in the context of member countries growth and showed that economies grew faster after broad liberalization, in both the short and the long run, but slower after participation in an RTA. Venables (2000) found that the effects of RTAs on the world trading system are not clear cut. There are slight evidences that regionalism has retarded multilateral liberalization. Brown, Deardorff and Stern (2000) said welfare gains from multilateral trade liberalization are therefore considerably greater than the gains from preferential trading arrangements and more uniformly positive for all countries. Madani (2001) studied industrial growth of three Andean pact countries and showed that unilateral liberalization had a more positive impact on output growth, through the channel of greater imports of intermediate inputs than regional trading arrangements.

The effects of regionalism on the predictions for multilateral liberalization have been addressed from two distinct theoretical perceptions. Based on the assumption that world welfare is likely to

be maximized under global free trade, the First approach aims at analyzing how PTAs affect the feasibility or sustainability of a multilateral free trade agreement. However, there is no such agreement at this level. On the one hand, Levy (1997), Krishna (1998) and McLaren (2002) argue that PTAs can render infeasible an otherwise feasible multilateral free trade agreement. On the other hand, Cadot et al. (2001), Freund (2000a, 2001) and Ornelas (2005a) suggest that regionalism can pave the road to global free trade. Riezman (1999) finds that PTAs may either decrease or increase the likelihood of a coalition leading to multilateral free trade, while Bagwell and Staiger (1997b) show that the effects of PTAs on the sustainability of a multilateral free trade agreement are equally ambiguous. This aspect of the literature has been helpful in highlighting long run possible consequences of regionalism.

The second approach explains that how regionalism affects the current attitude of countries towards multilateralism. The issue in question here is more precise, and concerns mainly the effects of preferential liberalization on countries' incentives to alter their multilateral most favoured nations (MFN) trade barriers. It is well known by trade economists that, if the formation of a preferential trading bloc is accompanied by sufficiently deep reductions in the tariffs against third countries, the arrangement is more likely to enhance aggregate world welfare without harming excluded countries. In contrast, if the trading bloc raises its trade barriers against the excluded countries—or even if it fails to reduce them deeply enough—trade with the rest of the world is likely to be inefficiently diverted towards the preferential bloc, in which case the arrangement could reduce world welfare. Bagwell and Staiger (1997a) study reflects that preferential trade agreements are incompatible with the efficiency of GATT/WTO negotiating rules.

In further studies Kemp and Wan (1976) shows that in any customs union there is a set of external tariffs that leaves welfare of non-members unaffected. If external tariffs fall below that level, then the non-member countries welfare consequences of the recent regionalism trend, we must therefore understand first how it alters countries' incentives to adjust their tariff policies. Here, too, results are very conflicting, despite considerable theoretical research and despite the type of agreement being considered, free trade areas or customs unions. On the one hand, Richardson (1993), Bagwell and Staiger (1997b), Freund (2000b), Bond et al. (2004) and Ornelas (2005b) argue that countries tend to reduce their external trade barriers after entering into free trade area. On the other hand, Richardson (1995) and Panagariya and Findlay (1996)

suggest the opposite should occur. Similarly, whereas Syropoulos (1999), Freund (2000b), and Bond et al. (2001) indicate that countries may want to raise external tariffs after forming a customs union, Richardson (1995) and Panagariya; Findlay (1996) argue that tariffs tend to fall with the union. Ornelas (2004) points out that the type of PTA does not matter if countries cooperate at the multilateral level, and that any PTA in such an environment would tend to induce members to lower external tariffs. The central distinction between the two types of PTAs is that free trade areas allow member countries to maintain autonomous external trade policy, while customs union members must share the same external tariff structure.

Fiorentino Verdeja and Toqueboeuf (2006) argued that the proliferation of RTAs is a challenge as well as opportunities for WTO members and RTAs should be designed and implemented to address this dichotomy so as to ensure RTAs complement the multilateral process. They explored the effect of the proliferation of regional trading agreements on the multilateral trading system and explained that there are widespread disagreements on the effects of regional trade agreements on the multilateral trading system.

The ongoing debate on regionalism so as to stumbling or building bloc to multilateralism few studies done the analysis empirically. In an influential paper of Limao (2005) finds that U.S. preferences worked as stumbling blocs of U.S. multilateral trade liberalization in the Uruguay Round (UR). In particular, he finds that U.S. liberalization, as a percent of the pre-UR prevailing tariff, was relatively smaller in products where preferences were utilized. He argues that the U.S. was hesitant to liberalize those PTA products because it uses preferences to extract concessions from the recipients in other areas, such as cooperation on drugs or labor standards. With lower external tariffs, those preferences would be eroded. Karacaovali and Limao (2005, henceforth KL) offer a similar study of the European Union, though the methodology is somewhat different. In particular, KL considers PTA goods to be those where preferential duties are zero, i.e. only products with full preferences. They then examine whether tariff cuts (in percentage points) are similar for PTA and non-PTA goods. Again, they find that liberalization of PTA goods was shallower than on non-PTA goods. The findings in these papers underscore the potential danger of preferences for the world trade system.

Foroutan (1998) provides a general account of how countries forming regional trade blocs have adjusted their external tariffs. She examines trade and trade policy in over fifty developing countries. She finds that integrating countries have been more active in reducing multilateral

trade barriers than non-integrating countries. Though her results suggest that regionalism is benign, a concern is that she does not control for other factors that may have induced countries to behave as they did, making it impossible to disentangle the effect of trade agreements from other global or regional trends. Moreover, constraints on data availability at the time of her study prevented her from using detailed industry-level data and also from fully capturing the effects of the large number of agreements completed in the 1990s.

As many were in favour of regionalism than multilateralism but literature also provide insights, which were in support of multilateralism than regionalism in the world. Many researchers studied the theoretical developments on regionalism (DeRosa, 1998; Panagaria, 2000; Lloyd and Maclaren, 2004; Piermartini and Teh, 2005). DeRosa (1998) extensively reviewed the static theory of regional integration arrangements and considers the economic impact of such arrangements, based on recent quantitative studies of customs unions and free trade areas. Panagaria (2000) based on systematic economic analysis argued strongly in favour of multilateral trade liberalization than regional agreements as PTAs can divert trade and lower welfare for the participating nations. For instance, Magee and Lee (2001) show that the ECC reduced their external tariffs after its formation, while Krueger (2000) observes that most of the external tariffs in NAFTA have fallen in parallel with internal liberalization.

#### **2.4.3 Literature on the Impact of Regionalism**

After studying the issues on the debate of multilateralism and regionalism, the study reviews literature on the impact of regionalism. The work on regionalism started with the theory of Customs Union. The pioneering work on the theory of regional integration was presented by Viner (1950) in his important work "*The customs union issue*". Viner empirically in his work explained that preferential trade need not necessary is to improve the welfare of the members always but sometimes it reduces trade by diverting trade from low cost country to high cost country. Viner used two notions which became popular as 'trade creation' and 'trade diversion' to explain the economic outcome of the regional integration. 'Trade creation' means high cost domestic producer is replaced by a low cost partner firm and the consumer can buy more at cheaper prices. In 'trade diversion' the low cost rest of the world partner is replaced by a high cost partner country and therefore it is a welfare loss for the home country. The 'trade creation' is beneficial as the union partner replacing home country's less efficient industry and the consumers can avail the same commodity at a lower price. The 'trade diversion' effect arises from a union

member displacing a more efficient outside supplier by taking advantage of the tariff preference it enjoys in a partner country and this is harmful. Viner explained that since PTAs liberalize trade preferentially, they 'create' new trade between union members; while on the other hand, they 'divert' trade from low-cost outside suppliers to high cost within union suppliers. The Viner model had two major shortages. Firstly it is a partial equilibrium model which could not accommodate the modern neoclassical trade theory which is based on the general equilibrium theory. Secondly it could not explain the case of 'large' bloc countries of regionalism.

After Viner, Meade (1955) discussed the modern static theory of regional integration arrangements in his book *"The Theory of Customs Union"*. Meade made many developments over Viner's theory. He criticized the Vinerian assumption of constant costs of production in trading countries and recognized the necessity of ensuring equilibrium in international balance of payments. He also mentioned that a customs union or free trade area in which external tariffs and other trade restrictions are sufficiently high that the home country and the partner country trade exclusively with one another and the regional integration arrangement is completely trade diverting.

Further the welfare effect of customs union has been observed by Lipsey (1960) rather than looking the trade creation and trade diversion aspects. He studied welfare effects of customs union depends on the combination of its effect on the location and cost of the world production. Lipsey in his model showed that the welfare effect follows the formation of a customs union which results solely in the diversion of trade from lower to higher cost sources of supply. But this welfare gain may be enjoyed by the country whose import trade is diverted, by the customs union.

The well-known Kemp-Vanek-Ohyama-Wan established that if two or more countries form a customs union by freezing their net external trade vector through common external tariff and eliminating internal trade barriers, the union as a whole and the rest of the world cannot be worse off than before.

Many studies gave logical argument for the terms-of-trade effects on the PTA. The world's market prices also decide the countries involvement in a PTA, apart from the trade creation and trade diversion effects. Bhagwati, Krishna, and Panagariya (1999) identified two distinct approaches. First, suppose a PTA expands its membership. Will that reduce or increase welfare? If expansion increases welfare, then PTAs are seen as building blocks. Second, will a PTA

expand its membership? And if so, is there an incentive for expansion to eventually cover the entire world, with nondiscriminatory free trade for all, or will it stop short? This approach uses political economy considerations.

Some partial answers to these questions were provided by Krugman (1993), Deardorff and Stern (1994), Baldwin (1996), Levy (1997), and Krishna (1998). The most recent, comprehensive analyses by Zissimos and Vines (2000) and Andriamananjara (2002) acknowledge that joining a PTA is the best safe-haven strategy when other countries are doing so. But they find that because PTA membership confers a terms of trade gain to members at the expense of nonmembers, at least some members will be better off limiting PTA membership than allowing expansion to cover the world as a whole.

Since the 1990s the number of PTAs expanded radically. In addition to first and second wave, new preferential initiatives by the EU, ASEAN and the United States, the third wave is being introduced by including players such as Japan. Until 2002 Japan was the only member of WTO not to participate in any PTA (although it was a member of nondiscriminatory Asia-Pacific Economic Cooperation (APEC)). Its first agreement, the Japan-Singapore Economic Agreement for a New Age Partnership, demonstrated other many new age agreements i.e. apart from terms of trade and TC and TD. Instead, the agreement focuses on new age issues—especially e-commerce and services. Other such agreements also include FDI, competition policy, government procurement, labor, and environmental standards.

Despite the development of third-wave or new age agreements, there has been very little literature dealing with the effects of preferential non-tariff provisions. There are two exceptions, Pomfret (1997, chapter 10) and Ethier (1998a, b, 1999, 2001), who dealt primarily with effects on investment. Pomfret (1997) does not discuss in detail the economic welfare effects of discriminatory provisions governing foreign direct investment, but his discussion of the welfare effects of preferential nontariff barriers to trade is suggestive. Pomfret (1997) notes that the critical distinction is whether nontariff barriers are rent generating—allowing a markup of price over cost—or whether they are cost escalating—increasing the real resource costs of doing business. Thus the welfare implications of preferentially liberalizing investment provisions are more positive than they were for preferential tariff liberalization because of the possibility of saving real resources. But the potential for losses from investment diversion also remains. And in a series of papers of Ethier (1998a,b, 1999, 2001) develops variants of a model in which

investment responds in “beachhead” fashion to the preferential trade provisions of PTAs been mentioned and explained.

## **2.5 Literature on the Intra-Industry Trade (IIT)**

Earlier trade theories mainly dependent on the constant returns to scale, homogeneous products and perfect competition and major aim to justify inter-industry trade based on comparative advantages. However, since 1960s major trade took a form of intra-industry trade (IIT) rather than inter-industry trade. Therefore, traditional trade theories were not been able to explain this emerging new trade pattern. Intra-industry trade defined as the simultaneous export and import of products belonging to the same product category.

The phenomenon of IIT has received increasing attention since Verdoon (1960) and Balassa (1960) found evidence of increasing IIT during the years following CU formation in Europe. Grubel and Lloyd (1975) estimated that 71% of the increase in trade between EEC countries from 1959-1967 was due to intra-industry trade. This observation has opened the aspects of imperfect competition developed into the new trade theories. The study focused on the impact of regionalism which was seen in terms of IIT and its effect in the form of Trade creation and Trade diversion.

IIT has been explained by many other models also. And a group of such models started with the neo-Heckscher-Ohlin models whose explanations were based on factor endowments by linking product specifications to different combinations of the basic factors, such as capital and labour. The main explanation for the occurrence of IIT is differences in the capabilities of different countries to produce more quality goods – “vertical differentiations” and this is based on differences in endowments of the basic factors of production. And the class of models explained IIT were the “neo-Chamberlinian models. In these models the explanation for IIT is that goods which are horizontally differentiated” that is varieties differ in characteristics and this difference may be actual and perceived. Another group of models are neo-Hotelling models which are related with neo-chamberlinian models but differ in how they consider consumers’ demand for variety.

The models of IIT developed on the basis of monopolistic competition and product differentiation by Dixit and Stiglitz (1977). They began work with the Krugman (1979, 1980, and 1981), Lancaster (1980) and Helpman (1981) who developed models of horizontally differentiated intra-industry trade with monopolistic competition—these models, and their

derivative, are further summarized in Helpman and Krugman (1985). Falvey (1981) also gave a pioneering work of horizontal and vertical product differentiation and further Falvey and Kierzkowski (1987) provided the work on vertical product differentiation. Models of horizontally differentiated intra-industry trade under oligopolistic competition, of the form of Eaton and Kierzkowski (1984), followed shortly after. Vertically differentiated intra-industry trade with perfect competition has been modeled by Caves (1981) also by using a version of the classical Heckscher-Ohlin international trade model as well as oligopolistic models of vertically differentiated intra-industry trade, such as Shaked and Sutton (1984). Helpman and Krugman (1989), who cite the occurrence of intra-industry trade as “one of the key empirical reasons for emphasizing the role of increasing returns and imperfect competition in the world economy”.

Many studies have analyzed the determinants of intra-industry trade and did empirical study also on the same (e.g. Leitão and Faustino 2008, Rasekhi 2008, Wang 2009), however very limited amount of literature is focused on the country-specific determinants of vertical and horizontal intra-industry trade. Greenaway et al. (1994) were the first to examine country-specific factors of horizontal and vertical intra-industry trade in the UK and found that vertical IIT is more important in the UK than horizontal IIT and that the inter-country pattern of vertical IIT is systematically related to a range of explanatory variables. Aturupane et al. (1999) searched for the determinants of horizontal and vertical intra-industry trade between Eastern Europe and the European Union and proved that the determinants of the two types of IIT are likely to differ, with vertical IIT being more a reflection of endowment or technology-based factors, and horizontal IIT being more dependent on factors such as scale economies and imperfect competition.

Kandogan (2003) analyzed IIT of transition countries and concluded that variables from the increasing returns trade theory, such as scale economies, similarity of income levels, and number of varieties produced play an important roles in horizontal IIT, on the other hand, factors such as comparative advantage or dissimilarity in income levels are more related to vertical IIT. Zhang and Li (2006) explored country-specific factors of intra-industry trade in China’s manufacturing and emphasize that the more countries differ in relative country size and relative factor endowments, the less likelihood there is for IIT and horizontal IIT. They also emphasized that difference between countries in relative factor endowments lead to more inter-industry trade, which in turn suppresses IIT and vertical IIT also. Fertő (2005, 2007) analyzed Hungarian intra-industry Agri-food trade patterns with the EU15 and established the comparative advantage

explanation of vertical IIT, while stressing that using a measure of IIT that reflects the level of trade produces better regression results than those based on the degree or share of IIT. Caetano and Galego (2007) were searching for the determinants of intra-industry trade within an enlarged Europe and found that determinants of horizontal and vertical IIT differed, although both had a statistically significant relationship with a country's size and foreign direct investment.

Turkcan and Ates (2010) investigated for the determinants of IIT in the U.S. Auto-Industry and besides confirming that determinants of horizontal and vertical IIT difference showed that vertical IIT is positively associated with average market size, differences in market size, differences in per capita GDP, outward FDI and distance, while it is negatively correlated with the bilateral exchange rate variable. Leitao (2011) observed intra-industry trade patterns in the Portuguese automobile sector and concluded that intra-industry trade occurred more frequently among countries that were similar in terms of factor endowments as well as pointed out that no positive statistical association existed between HIIT and Heckscher-Ohlin variables.

In the recent years, many researchers instead of finding the growth of IIT focusing on the impact of FDI on IIT in particular sectors. The recent contribution in this area has been made by Ambroziak (2011, 2012a, 2012b, 2013) investigated the relationship between FDI and IIT in the Visegrad countries and found that FDI encouraged not only VIIT in the region but also HIIT. Recently in 2017, he also linked the impact of FDI on the growth of IIT in automotive products in six new members (the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia) of EU. He has also looked at the impact of economic crisis on an IIT in the automotive industry in the EU. Ferto and Jambhor (2013) analyze the relationship between the factor endowment and the pattern of intra-industry trade. Their empirical analysis relates to Hungary's intra-industry trade in agri-food products with 26-member states of the EU over the period 1999-2010. Cabral M., Falvey, R., Milner, C. (2013) the empirical relationship between differences in endowments and different types of trade is investigated in this paper. Although net trade (NT) and vertical intra-industry trade (IIT) are both broadly viewed as reflecting endowment differences and there will be systematic differences in the way their shares of trade adjust as endowment differences become larger. Empirical evidence for European Union trade with its 52 major trading partners confirms this. The share of horizontal IIT (net trade) decreases (increases) for all increases in absolute endowment differences, but the share of vertical IIT can both increase and decrease with increases in endowment differences.

Dautovic, E., Orszaghova, L., Schudel, W. (2014) studies a product-level trade flows database and by employing linear and non-linear panel data specifications, the paper finds determinants of intra-industry trade between the EU15 as the main trading block and CESEE, which are further divided into the ‘new’ EU member states (NMS) and the EU candidate countries and potential candidates (CCPC). The analysis explains the importance of intra-industry trade in terms of achieving real convergence. The paper finds that there exist some common factors driving IIT across the sample, such as the corporate tax rate, the flexibility of exchange rate regimes and the quality of political institutions. Jambor, A., (2014) identifies the determinants of horizontal and vertical intra-industry agri-food trade between New Member States (NMS) and the EU-27 in 1999–2010, by applying static and dynamic models with different specifications to panel data. Results show that IIT is mainly of a vertical nature in the NMS, though the majority of NMS export low quality agri-food products to EU-27 markets. The results suggests that HIIT and VIIT are better if a NMS exports agri-food products to another NMS while EU accession has had positive and significant impacts on both HIIT and VIIT and suggested that economic integration fosters IIT.

Razvan and Camelia (2015) examined the determinants of IIT in the motor vehicle parts and accessories sector from Romania. Ambroziak (2016) investigates the extent to which foreign direct investment (FDI) influenced intra-industry trade (IIT) in automotive products in six New EU Member States (the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia) in the 1995–2014 period. The research indicates that IIT in automotive products allowed manufacturers and consumers from the new EU Member States to benefit more from international trade. FDI inflow to the automotive sector of the NMS has been a key factor shaping IIT in automotive products.

### 2.5.1 Review of models used to measure Intra-Industry Trade

There are various ways of calculating intra-industry trade been proposed in the empirical literature including the Balassa Index (1966), the Grubel-Lloyd (G-L) index (1975), Aquino index. Balassa (1966) proposed the first index of intra-industry trade that measured the degree of trade overlap—simultaneous import and export—of goods within an industry:

$$B_j = \frac{|X_i - M_i|}{(X_i + M_i)} \dots\dots\dots (1)$$

Where  $i$  = commodity within industry  $j$ . This index, the ratio of net trade to gross trade, ranging from 0 to 1, with 0 representing “perfect” trade overlap, and therefore pure intra-industry trade, while 1 represents pure inter-industry trade. In order to calculate the degree of intra-industry trade for all industries (country level), Balassa took an unweighted average for each  $B_j$ :

$$B = \frac{1}{n} \sum B_j \quad \dots\dots\dots (2)$$

Where  $n$  = number of industries. This can be generalized to be a weighted index:

$$B = \sum_j w_j B_j \quad \dots\dots\dots (3)$$

Where  $w_j$  = industry  $j$ 's share of total trade.

Though the essence of this index has remained intact to this day, an index that measured intra-industry trade that gave pure intra-industry trade a value of zero was not intuitively appealing.

Grubel and Lloyd (1975) proposed an alternative index:

$$GL = \frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)} \quad \dots\dots\dots (4)$$

Where  $i$   $\equiv$  commodity within industry  $j$ , that assigned pure intra-industry trade a value of 1 and pure inter-industry trade a value of 0. As with the Balassa Index, the Grubel-Lloyd Index has been calculated as an (un)weighted average to measure the degree of intra-industry trade at the country level.

The models which are widely used for measuring IIT index is Herbert Grubel and Peter Lloyd (1975) who provided the definitive empirical study on the importance of intra-industry trade and how to measure it. Research on two-way trade in similar products in the 1960s and the 1970s was mainly focused on the empirical estimation of the phenomenon of intra-industry trade. Thus Grubel and Lloyd (1975) empirically confirmed that intra-industry trade is a real phenomenon and that the levels of intra-industry trade grow faster within the trade between developed countries which are members of custom unions or other regional trading arrangements, than in the trade of the developed countries with other countries. The most widely used method for computing the IIT among these is developed by Grubel and Lloyd (1971). However, beside aggregation bias, the traditional G-L index has two problems often cited in the empirical literature. First, the unadjusted G-L index is negatively correlated with a large overall trade imbalance. With national trade balances, the level of IIT in a country will be clearly underestimated. To avoid this problem, Grubel and Lloyd (1975) proposed another method to

adjust the index by using the relative size of exports and imports of a particular good within an industry as weights. The second problem of the unadjusted G-L index is that it does not distinguish vertical IIT from horizontal IIT in data although theory suggests determinants of IIT for both types are quite different.

As mentioned briefly above, to overcome this problem, many studies including Durkin and Kryger (2000), Blanes and Martin (2000), Martin and Orts (2001), and Gullstrand (2002) use unit value differences originally developed by Abd-el-Rahman (1991) to decompose the total IIT into vertical IIT and horizontal IIT. In recent years, an alternative method is suggested by Fontagne and Freudenberg (1997), Fontagne et al. (1997), and Fontagne et al. (2006) to disentangle bilateral trade flows into one-way trade (OWT), two-way trade in vertically differentiated goods (TWTV), and two-way trade in horizontally differentiated (TWTH). As Fontagne and Freudenberg (1997) point out that the G-L index can create a problem that there are two different explanations for the same majority trade flow (such as exports): inter-industry part of the majority flow by traditional trade theory and intra-industry part of the majority flow by the new trade theories. To avoid this problem, Fontagne and Freudenberg (1997) proposed a new criterion that trade in a product is considered to be two-way trade when the value of the minority flow represents at least 10 percent of the majority flow. Otherwise, both exports and imports are regarded as inter-industry trade. Given the criticisms of Fontagne and Freudenberg (1997) over the measurement of intra-industry, we apply both the G-L type trade decomposition method and the Fontagne and Freudenberg (FF) method to the U.S.'s auto-industry trade with its trading partners to decompose bilateral trade flows into its components of inter-industry trade, horizontal IIT and vertical IIT.

One of the important distinctions made in theoretical literature is a distinction between horizontal and vertical product differentiation. The former arises when different varieties of the product are of a similar quality and the latter when varieties of the product are differentiated by quality. Thus vertical product differentiation is related more to the traditional theory of international trade and its modified version, while horizontal product differentiation is related to the new theories of international trade, which supposes horizontal product differentiation. All of this is well known, but it was empirically under researched due to difficulties connected with disentangling vertical and horizontal intra industry trade. Therefore, the majority of studies investigated intra industry trade exchange between highly developed economies. These works on IIT, which estimated

regression models for developed countries, have generally found more support for the importance of country specific effects (i.e. GDP per capita) as opposed to industry specific factors (Greenaway, Hine, and Milner 1995). Horizontal and vertical intra-industry trade of the five observed CEFTA countries was measured by using the Greenaway, Hine and Milner (1994; 1995) methodology. There also exists an alternative methodology for the measurement of horizontal and vertical intra-industry trade proposed by Fontagne and Freudenberg (1997), which is not useful for the measurement of multilateral trade of the five observed countries. Nielsen and Lüthje (2002) also showed that the methodology introduced by Greenaway, Hine and Milner is more appropriate for the measurement of horizontal and vertical intra-industry trade than the alternative methodology mentioned above.

### **2.5.2 Literature on Determinants of IIT**

If a country simultaneously exports and imports in similar types of goods then Intra-industry trade (IIT) emerges. The concept of IIT has been introduced in 1960s. And since then there are large number of studies theoretical and empirical been conducted to understand the determinants of IIT. The first empirical work on IIT was done by Verdoon (1960) and Balassa (1966) given some evidence of intra-industry trade among the members of European Economic Community (EEC) and since then the studies revealed the trend of IIT in developed economies by using the studies of Grubel and Lloyd, Aquino and Greenway and Milner, (1984) and on less developed countries Balassa (1979). Linder (1961) did emphasize the role of differentiated products in the international trade among similar countries.

Intra-industry trade models were not based on the traditional trade theories assumptions such as perfect competition, homogeneous products and constant returns to scale. IIT models mainly were based on imperfect competition, increasing returns to scale and product differentiation as developed by Krugman (1979, 1980), Lancaster (1980), and Helpman (1984). These models combine the Chamberlin model with H-O theory (C-H-O theory) which suggests factor endowments differences with product differentiation and economies of scale. It has been recommended that comparative advantage determine inter-industry trade through specialization, while economies of scale determine intra-industry trade. Further based on these assumptions IIT differentiated between: Horizontal intra-industry trade (HIIT) and vertical intra-industry trade (VIIT). The former occur when different varieties of a product are of a similar quality Helpman and Krugman (1985) and the latter when varieties are of different qualities Falvey (1981), Falvey

and Kierzkowski (1987) and Flam and Helpman (1987). The horizontal differentiation happens between countries with similar factor endowments where else the vertical differentiation comes through with dissimilarity across countries with respect to factor endowments. Abd-el-Rahman (1991), Greenaway et al. (1994, 1998) and Fontagne and Freudenberg (1997) presented a method to distinct the vertical from horizontal IIT and showed that the dominant part of the IIT is dedicated to the VIIT as it is dependent on factor endowments where else the HIIT refers to economies of scale and the consumer's preferences for variety.

There are various studies that segregated the determinants of IIT into broad categories such as, country specific factors, industry specific factors and gravity model factors. All these factors affect the intra-industry trade between countries. Several empirical studies on IIT have more empirical support for country-specific determinants (i.e., income levels, endowments, economic dimension, and foreign direct investment) and industry-specific determinants (market structure, scale economies, product differentiation). All the factors have been mentioned below in detail:

#### **2.5.2.1 Country specific factors affecting IIT:**

##### **2.5.2.1.1 Level of development:**

One of the significant factors affecting the intra-industry trade is the level of development. Balassa and Bauwens (1987), Kenen (1994) and Anderson (2002) presented the factors of IIT as demand side and supply side. The demand side factors indicates the potential demand for different factors and on the supply side, it indicates the supplying ability of these products and also the degree of economies of scale. Therefore the expected relationship of VIIT with the level of development has been evaluated as positive. To measure the level of development, the average human development index (HDI) has been used. Caetano and Galego (2007), in which, Education as a proxy of human capital probably develops vertically and horizontally differentiated products that promote the intra-industry trade. Also, a high (low) life expectancy implies the high (low) level of development and so the index may directly affect the IIT. To calculate this variable, the data has been collected from the Human Development Report (HDR).

##### **2.5.2.1.2 Differences in the Market size (dgdp)**

On the other hand Linder (1961) theory represents the differences in the level of development. The countries with similar income structure have a similar demand structure (but differentiated).

Greenaway and Milner (2002) supported this similarity which favored a trade of varieties of same quality or horizontal IIT. Moreover, Melitz (2003) discussed the models of firm heterogeneity that countries with similar demand structure tend to establish a trade of differentiated goods. The Neo-H-O framework postulates that an IIT with different quality between countries of different sizes should be used to examine the behaviour of trade flows between such countries. There are studies that evaluated the differences in market size through the absolute difference of two countries population. The data is collected from the World Development Indicator (WDI).

To measure the Linder (*LIND*) variable, the relationship developed by Balassa and Bauwens (1987) has been used:

$$LINDER_{ij,ordgdp_{ij}} = 1 + \frac{[w_{ij} \ln w_{ij} + (1 - w_{ij}) \ln(1 - w_{ij})]}{\ln 2}$$

$$w_{ij} = \frac{GDP_i}{(GDP_i + GDP_j)} \quad (1)$$

The expression  $w$  in equation 1 illustrates a ratio of incomes (GDP) between trade partners. The  $dgdp$  refers to differences in gross domestic products between trade partners.

#### 2.5.2.1.3 Differences in Per Capita Income (dpcgdp)

Differences in per capita incomes are another variable which affects IIT. Blanes and Martín, (2000); Durkin and Krygier (2000); Gullstrand (2002); Sohn and Zhang (2006); Turkcan and Ates (2010), the  $dpcgdp$  can majorly viewed as determinant of IIT. The C-H-O theory can be used to explain how small differences in per capita income between countries might positively affect the IIT. Similarly, Flam and Helpman (1987) suggested that the IIT of vertically differentiated goods is determined by country size and income distribution variables. In totality, the differences in income distribution produce a demand for trade of both low and high quality products. It is constructed in the same way as in eqn. 1 with the difference that  $w$  refers to per capita GDP between trading countries. Refer to eqn. 2. The initial data have been collected from the World Development Indicator (WDI).

$$w_{ij} = \frac{GDPPC_i}{(GDPPC_i + GDPPC_j)} \quad (2)$$

#### 2.5.2.1.4 Differences in factor endowments:

Falvey (1981) assumes that countries with similar factor endowments (similar capital-labour ratios) are likely to focus on trade of varieties with similar qualities (HIIT), on the other hand with different factor endowments tend to major in trade of varieties of different qualities (VIIT). The differences in capital-labour between trading partners are also known as the differences in capital (labour) intensity. Due to non-availability of data on capital and labour ratios, there are studies that used the Gross Fixed Capital Formation (corrected by inventories depreciation).

Helpman and Krugman (1985) establish the volume of IIT depends on both relative factor endowments and economic size of trading nations. As the countries differ in their relative factor endowments, the smaller the share of IIT. The size of the smaller country will have a positive impact on the share of IIT. Clark and Stanley (1999) expect the sign of IIT to be negative to differences in factor endowments proxy by differences in per capita GDP and positively related to the size of GDP of the developing country.

Flam and Helpman (1987), Falvey and Kierzkowski (1987), and Falvey (1981) viewed vertical differentiation (VIIT) based on quality differences rather than as a result of economies of scale or HIIT. Each industry specializes in the variety of products differing in quality. Technology reflected labour productivity differences and factor endowments determine the range of qualitative products under each industry. Falvey (1981) and Falvey and Kierzkowski (1987) - Factor endowments are also linked with differences in physical capital endowments, although Torstensson (1991, 1996) included human capital rather than physical capital and supported with the determinant of VIIT. This variable is built on the basis of difference in absolute terms, of the percentage of the population between 25 and 64 years who have reached at least university, college or technical education.

#### 2.5.2.1.5 Trade openness

Trade openness represents the greater participation of a particular country in the world market. According to Balassa and Bauwens (1987) represented trade orientation is an indicator of trade openness. Therefore, higher the openness of trade, positive will be an impact on HIIT and VIIT. Falvey's (1981) model shows clearly that countries with lower trade barriers will have higher levels of IIT. It has been followed by Stone and Lee (1995), Balassa and Bauwens (1987), and Balassa (1986), trade orientation is proxy by the residuals of regression of per capita trade

(exports plus imports) on per capita income and population. Empirical support of trade orientation as one of the IIT determinants which can be found in the works of Thorpe and Zhang (2005) for the East Asian economies, Ekanayabe (2001) for the Mexican economy and Clark and Stanley (1999, 2003) for the U.S. economy. The share of IIT is positively correlated with the developing country's trade openness. The variable Trade openness ( $to$ ) is constructed by following Balassa and Bauwens (1987) out of the residuals of a regression in export per capita with respect to income per capita and population:

$$\log\left(\frac{X_{hf}}{P_h}\right) = \alpha + \beta \log\left(\frac{Y_h}{P_h}\right) + \delta \log P_h + \varepsilon_h \quad (3)$$

Where  $to = \varepsilon$  X represents bilateral exports between  $h$  home country and  $f$  foreign country. P represents per capita income and Y is a variable for the GDP.

#### 2.5.2.2 Industry specific factors affecting IIT:

There are variables which come under the industry specific factors affecting IIT. Economies of scale, technology intensity or research and development expenditure; presence of foreign capital and tariff are such examples which affect IIT. Each variable is explained in detail:

##### 2.5.2.2.1 Economies of scale:

Economies of scale arise of three sources – size of the firms, size of plants and length of the production runs. The heterogeneous industrial structure of various economies of scale in the model is of vital importance. Initial methodology in this regard has been developed by Caves (1981) which has been used in various empirical studies Balassa (1986a), Balassa and Bauwens (1987), Bano (1991) and Blanes and Martín (2000) and studies dealing with Mexican industrial structure. The Cave's (1981) has given methodology as follows:

$$ee_{it} = \frac{tme_{it}}{drc_{it}} \quad (4)$$

The variable  $ee$  stands as the ratio between the minimum size efficient plant,  $tme$ , in relation to the relative disadvantage of costs,  $drc$ .

The equation (4) shows a positive relation is expected to occur between economies of scales and horizontal IIT. The equation is only set for horizontal IIT

##### 2.5.2.2.2 Technology intensity or Research and development (R&D):

Martín-Montaner and Orts, 2002 developed this variable as the average percentage set aside for Research and technological development by manufacturing firms. The *ryd* variable denotes that spending on R&D is an image of efforts by firms to offer a greater number of varieties for the local market and export industry (horizontal IIT). On the other hand, the *ryd* variable could also be denote efforts realized by companies to provide a great number of variety to consumers in improving the quality of the products traded by a country (vertical IIT), this phenomena was developed by Faruq (2006). The relationship concerning HIIT or VIIT is a positive one. The variable *ryd* has considered as essential variable to its integrity. Melitz (2003) also suggested this variable as an explanation of firm participation in international trade.

#### **2.5.2.2.3 Presence of Foreign Direct Investment (FDI)**

Trade liberalization and consequent freedom in foreign direct investment allowed this variable to become an important variable in the IIT determinants. The empirical use of foreign direct investment as one of the determinants of trade flows between developed and developing countries as well as in IIT studies by Blanes and Martín, (2000); Fukao, et al (2003); Melitz, (2003); Sohn and Zhang, (2006); Turkcan and Ates, (2010). The variable is used through the average percentage of the participation of foreign capital in the manufacturing industry. Various studies predicted the relationship between the presence of foreign capital and different types of IIT is to be positive.

#### **2.5.2.2.4 Intensity of human capital**

Differences in factor endowments will increase trade in products of different qualities, especially in the case of VIIT. Significant parts of VIIT that are explained in various studies are the arising through differences in factors endowments. The methodology used by Martín-Montaner and Orts (2002) for the construction of the variable *khum*. This variable is defined by taking the difference between the salaries paid to skilled workers and wages paid to unskilled workers. Then this difference is multiplied by the total number of workers qualified at the industrial branch level. The equation of this determinant is as follows:

$$khum_{it} = (w - s)L_{it} \quad (5)$$

In the equation,  $w$  refers to the salaries of skilled workers;  $s$  represents the wages of unskilled workers and  $L$  corresponds to the number of skilled workers. The relationship expected to be positive with different types of IIT.

#### **2.5.2.2.5 Tariffs**

Continuous tariff liberalization between nations encouraged trade flows in respect of IIT especially the tariff reduction in transportation and machinery tariffs. There are various studies on NAFTA, EU and ASEAN tariff liberalization which has allowed IIT indices to change after signing an agreement. The tariff variable is used as a dummy variable which takes the value of 0 for the pre-agreement period and 1 for the post-agreement period.

### **2.5.2.3 Gravity model factors affecting IIT:**

The first attempt to apply gravity model to analyze international trade flows was done by Tinbergen (1962) and Pölyhönen (1963). The studies discovered that trade flows between two countries are determined by their national incomes and the geographical distance between them. In the late 19<sup>th</sup> century, the gravity sort of equation was used to analyze migration, capital (investment and FDI), human migration, tourism and other social flows in terms of gravitational forces of human interaction (Sichei, Erero, and Gebreselassie 2008). Though the support of enough literature in this field was initially poor but since 1970s onwards several theoretical improvements had come in support of gravity model. Anderson (1979) made his first attempt to derive the gravity equation from a model that assumed product differentiation. Bergstrand (1985, 1989) linked gravity equations with simple monopolistic models in his various papers determining bilateral trade. Helpman and Krugman (1985) used increasing returns to scale in differentiated product framework. Deardorff (1995) proved that gravity model characteristics are similar with many other models of standard trade theories.

Berstrand (1985), Helpman (1987), Wei, (1996), Soloaga and Winters (1999), Limao and Venables (1999), and Bougheas et al, (1999) have contributed to the refinement of explanatory variables in the analysis and added new variables to the gravity equation. Henceforth, the gravity model has become a popular tool to estimate international trade flows. In the gravity model, GDP and population are proxies for national income (economic mass) and geographical distance between country pairs is a proxy for resistance effect on trade flows (transportation and transaction costs). Therefore the larger and closer these countries are to each other, the stronger the attraction.

In recent years, augmented gravity model often used independent variables which include market size, national income level, purchasing power, country surface area, and population. It is employed as a resistances factor that can either promote or hinder trade flows (Sichei et al 2008).

Other less frequently used conditioning variables include difference in per capita income, exchange rate volatility, remoteness, infrastructure endowment, and market openness. There are time-invariant dummy variables such as common language, FTA membership (i.e., EU, NAFTA, MERCOSUR and ASEAN), geographic characteristics (i.e., landlocked, island, and coastal), common colonial history, and region of the world (i.e., Africa, Americas, Asia, and Europe). Greene (2013) had used basic and augmented factors affecting exports of US to India and several conditioning independent variable to control for unobserved country characteristics that can either promote or hinder US exports to India. The variables are as follows: per capita GDP, stage of economic development, population, population density, physical land area, exchange rates, geographical distance between capitals or business centers in kilometers, openness to imports, common language, common culture, an index of trade freedom, trade-weighted tariffs, an index of market access barriers, a measure of the prevalence of trade barriers, stage of economic competitiveness, an index of openness to international trade, an index of overall competitiveness, and an index of infrastructure quality

## **2.6 Literature review on ASEAN - as a regional bloc**

In the context of rising regionalism and tensions in multilateralism Panagariya (1994) examined whether East Asia pursue the regional route to sustain growth in the region argued that the costs of such sub-regional preferential trading schemes outweigh their benefits than multilateralism. Ng and Yeats (2003) studied the intra-industry trade and production sharing in the East Asian region and found that intra-trade has had a major positive influence on regional cooperation and growth in East Asia. Since the mid-1980s, East Asian intra-trade has been growing at a rate roughly double that of world trade, and at a rate far higher than the intra-trade of NAFTA or the European Union. Sohn (2002) explained intra-regional trade and investments in East Asia has increased during the last few decades and significantly increased since 1990s mainly due to active and connecting roles of newly industrializing economies (NIEs) and concentrated FDI flows within the region. The concentrated FDI flows have led to the internationalization of production networks, of which ethnic Chinese networks have been particularly significant. Sohn (2004) also explained growing regionalism in East Asia which had become integrated trade bloc through intensified intra-regional trade. East Asia comprised of northeast and southeast Asia. Damuri et al (2006) studied the regional integration process and the resultant trade specialization in East Asia. The study also observed that there is no indication of a "low-productivity

specialization trap", as all East Asian countries shown a trend towards specializing in products with higher sophistication and technological intensity. Gavin (2006) looked into the effects of rapidly growing RTAs on regional integration and trade liberalization and the prospects of trade creation in East Asia. The study observed that service sector can give more welfare gains to RTAs as applied tariff in manufactured products in East Asia is very low. Yang Jiemian (2006) had study the growing regionalism in Asia and taking a new form of 'ASEAN'. Asian Development Bank (ADB) report (2008) explained Asia as an emerging platform for economic development which will benefit individual economies of Asia and develops the Asia and world as a whole. The Asia's economic integration remains market friendly and to be very responsive towards private sector and open markets for influential Asian economies ahead. Stuchlíková Zuzana (2008) explained changing regionalism definition in South East Asia with respect to new regionalism theory and stand of Japan towards regionalism in Asia today.

Many researchers further studied ASEAN as a growing regional bloc in Asia. The study also shows that East Asia plays an important part in improving ASEAN's growth; and there is a sufficient empirical basis to push for bilateral regional FTAs such as prominent ones – ASEAN + India, ASEAN + Japan, ASEAN + Korea, ASEAN + 6 and ASEAN + China. Acharya Amitav and Christie Ken (1988) focused on the choice facing ASEAN is essentially a choice between regional integration and multilateral trading system. The study also explained economic security as one of the main reason for choosing the path of regionalism in Asia. Bowles Paul and Maclean Brian (1996) gave explicit analysis of the political economy of ASEAN states and ASEAN's relationship to the global economy. The study also mentioned that earlier studies do not provide satisfactory explanation for the formation of AFTA. Tran Van Tho (2002) assessed the trade effect of ASEAN free trade agreement (AFTA) and said while AFTA is contributing to the increasing confidence and stability of ASEAN countries, its effects on the development of these countries are not as important as the interdependence and dynamic division of labor between ASEAN and other economies in East Asia. Yoshimatsu (2002) examined the development of regional economic integration in the ASEAN region and observed that foreign multinationals operating in small local markets seek larger markets to achieve an efficient production level, seek preferences for regional economic arrangements, and these preferences function as critical factors in promoting regional economic integration.

Jayanthakumaran and Sanidas (2005) also found ASEAN-5 emerged as a powerful integrated area due to its unilateral, preferential and regional trade liberalization. The ASEAN rely on both outward orientation and positive aspects of regionalism as these countries have complementarity within the group of countries. Guangsheng (2006) discussed the performance of ASEAN Economic Integration and observed the performance of ASEAN economic integration is modest due to deep rooted concept of sovereignty and limited market scale of internal regional market. Unless these two issues are addressed progress of ASEAN economic cooperation will not change dramatically. Cabalu and Alfonso (2007) found that AFTA had trade creation effects, with little evidence of trade diversion. This is mainly because major import sources for ASEAN member countries are outside the region and ASEAN countries having similar production and trade structures and would source most of their diverse imports from the rest of the world. Lendle Andreas (2007) investigated empirically whether the ASEAN Free Trade Agreement had a building bloc or stumbling bloc effect on subsequent changes in MFN tariffs of four major ASEAN members. The study found significant building bloc effects for Indonesia, Philippines and Thailand as MFN tariffs of preferential products were reduced by more than for non-preferential products. But for Malaysia the results originated from the study were uncertain. Therefore the study suggests that overall the AFTA had rather helped than hindered multilateral trade liberalization.

To show the changing pattern of trade, Cheong (2008) used fixed effects poisson quasi-maximum likelihood estimator to study changes in trade patterns of ASEAN at the Harmonized System (HS) six-digit level in the period 2001 to 2003. The estimates from the study showed that ASEAN preferential margins had a trade-creating effect at the product level and majority of ASEAN countries benefited significantly from this trade creation. These results suggested ASEAN trade liberalization in the early 2000's had positive welfare effects. Sanidas (2009) study calculated the revealed comparative advantage (RCAs) for the 100 largest countries in the world, taking 14 different important industrial sectors and showed that for East and South East Asia, there is substantial competition for 2-3 industries such as IT and electronics and showed countries with particular RCAs are at a particular stage of development. Kurlantizick Joshua (2012) studied ASEAN in the past and different aspect of ASEAN in today's time. The study also reflects on the member countries growth indicators which have changed significantly after becoming a member of ASEAN.

Many studies did empirical analysis of ASEAN in terms of its impact on the member nations and in the region. Llyod and Smith (2004), in their study explored the methods to achieve ASEAN Economic Community. It required elimination of both border and beyond-the-border measures that discriminate against foreign goods or persons, the harmonization across the borders of standards, laws and regulations that inhibit trade. The study used simulation methods to study East Asian integration between ASEAN and four main Asian countries namely Japan, Korea, China and India covering all goods and services. The simulation results showed that trade liberalization produces significant effects for the parties involved and excluding the "sensitive" agricultural products from the liberalization reduces the gains of integration for ASEAN by more than a third. Simulations showed that ASEAN would derive more from a hub and spokes agreement in which it would be the only one to have free access to the markets of the region's large economies. Bhir and Fouquin (2006) used CEPII'S Computable General Equilibrium (CGE) model and simulated for four different scenarios to get the welfare implications. The simulation results showed ASEAN can benefit most by forging separate bilateral negotiations within the region and to include agricultural products as it will give ASEAN easier access to its main natural partners. For India, a gradual involvement in a process of liberalization is recommended as there are higher levels of protection. Mohanty and Pohit (2007) used simulation exercise based on a monopolistic version of CGE to identify ideal group formation and integration scheme that would benefit ASEAN the most. When India joins the ASEAN+3, the absolute level of welfare of the caucus rises between 30.5 per cent to more than 34 per cent depending upon the level of liberalization. Park (2008) quantitatively evaluated the likely impact of proposed East Asian RTA strategies on the East Asian economies and the world economy using a multi-country and multi-sector CGE model. The study found expansionary ASEAN+3 RTA can be a sustainable Pareto efficient policy option because the members' gains were significantly positive and evenly distributed, positive world welfare and the insignificant negative effect on nonmembers.

To promote deeper integration, various studies related to ASEAN is been considered to understand its importance as a strong regional bloc in the world. Mahani (2002) observed that Asian crisis slow down the integration efforts in ASEAN and asserted that it needs to be strengthened and expanded through production networks to attract investments and by liberalizing its service sector. Presently more efforts are made on trade facilitation whose impacts

are felt in the long run only. Chew (2005) in his paper presented three strategic models for more intensified economic and monetary cooperation between ASEAN+3 and India. Either to have an interlink web of free trade agreements consolidating an ASEAN+3 FTA, or a Japanese investment-led model, or a China/India inspired east Asian growth and consolidation model could be used to effectively integrate the region, though unlike Europe, the model would be more functional than institutional. Lee and Park (2005) in their study tried to identify the appropriate form of a regional trading agreement in East Asia and concluded that ASEAN-3 (China, India and Japan) would be the natural policy choice for the formation of a regional trading agreement in East Asia as it is based on the principles of open regionalism and multilateralism and called for a formal institutional framework to strengthen the relationships. Kumar (2005) called for a JACIK approach to East Asian integration as a preferred option over the ASEAN+3 approach. To deepen the ties in Asia, financial and monetary policy cooperation in the region has the potential to augment production capacity, provide energy security, and enhance infrastructure development and cooperation in core technologies such as ICT and biotechnologies. Rana (2005) studied economic cooperation between south Asia and East Asia in the context of the Pan Asian Economic integration and observed that there exists significant complementarity between two regions. These include expansion of markets for goods and services and economies of scale, lower prices from increased competition, FDI, technology transfer and increased productivity, deeper integration among partners and cooperation on infrastructure and trade facilitation. Soesastro (2005) observed ASEAN Economic Community (AEC) can only be achieved if there is a clear blueprint of AEC, which identifies the end goal, the processes to reach the end goals and a complete framework for proper assessment and evaluation of the costs and benefits of an AEC, it should not be based on the AFTA in which an agreement was reached first and the details negotiations are happening afterwards. Batra (2006) study evaluated the most efficient approach to regional economic integration in Asia and emphasized there is efficiency of a prior alignment with ASEAN for all the plus four economies (China, India, Japan and South Korea). Rana (2006) pointed out that increasing trade and financial integration in East Asian region is now starting will lead to synchronization of business cycles in a selected group of countries, further enhancing the case for monetary integration among these countries. Kawai (2007) examined East Asia's economic architecture and suggested policy directions for greater regional economic cooperation in the region. These include consolidation of multiple, overlapping FTAs

into a single East Asian agreement; achieve "deep, WTO-plus" integration and exchange rate policy coordination by financial authorities. Plummer and Wignaraja (2007) in their study looked in to the desirability of having monetary union in East Asia or having expanded free-trade areas (FTAs) in the region. The study concluded that, at present, the post sequencing of economic integration in Asia is developing such that trade agreements will ultimately complement the movement toward financial and monetary integration. Sen (2007) analyzed the implications of ASEAN's ongoing FTAs which range from limited to highly comprehensive and examined its role in fostering deeper economic integration in Asia. The study also felt the emergence of 'noodle bowl' phenomenon in ASEAN which result in potential trade diversion away from the spokes towards the emerging hubs and inefficient utilization of scarce negotiating resources. The paper concluded that ASEAN require institutional and legal infrastructure for economic integration and should pursue unilateral liberalization and simultaneously implement multilateral trade policy to get desired result. Kawai and Wignaraja (2008) argued for the consolidation of multiple and overlapping FTAs into a single East Asian FTA as it can lessen the harmful noodle bowl effects of different rules of origins (ROOs) and standards. The paper suggested the consolidation at the ASEAN+6 level which would yield the largest gains to East Asia among plausible regional trade arrangements—while the losses to non-members are relatively small. For this to happen ASEAN must deepen economic integration, the plus-three countries (China, Japan, and Korea) need to collaborate more closely, and India needs to pursue further structural reforms. Kim and Lee (2008) examined the real and financial integration in East Asia and concluded that the degree of regional financial integration within Asia is far smaller than the degree of global financial integration and financial integration lags real integration. Fukase and Winters (2003) in their study examined the dynamic effects of regional integration when a new member country joins AFTA. The study showed that AFTA accession likely to offer better access to foreign knowledge, while trade liberalization is likely to stimulate the returns to capital which in turn stimulates investment.

## **2.7 Literature review on ASEAN- India trade relations**

This section provides literature review on ASEAN and India's relations with South-East Asian countries in different fields. The section considered various books and journal papers on the issues raised on ASEAN and India trade relations. Some of the major works have been reviewed and analyzed.

In very early days, the book by K.P. Saksena in *Cooperation in Development: Problems and Prospects for India and ASEAN* (1986) analyses India-ASEAN relations with a view to assess the problems and prospects of cooperation in development. The book explores India's trade relations with Indonesia, Malaysia, the Philippines, Singapore, Thailand and Brunei in socio-cultural relations with these countries. This book led to increasing emphasis on regional and inter-regional cooperation among the developing countries generally referred to as South-South cooperation. An expansion of trade among above countries would reduce the age old dependence of the countries of the South upon the developed and rich industrialized countries of the North.

Bhabani Sen Gupta in his edited book *SAARC-ASEAN Prospects and Problems, Intra-regional Cooperation* (1988) covers the important issues of the prospects and problems of cooperation between South Asian Association for Regional Cooperation (SAARC) and ASEAN. This book suggests improving trade relationship between SAARC and ASEAN countries.

Puneet Kumar Aggrawal in his book on *India's Foreign Economic Relations* (1991) has highlighted the trade between India and the countries of ASEAN grouping, individually as well as collectively. The study is mainly related to India and ASEAN countries' import and export partnership.

Kripa Sridharan has done a pioneer work -*The ASEAN Region in India's Foreign Policy* (1996). The book seeks to define Indian policy towards the ASEAN region over a period of about decades, from 1967-1995. The study shows India's foreign policy concerns, i.e., maintenance of its autonomy and territorial integrity; its variable relations with the major powers- US, the former USSR and China, its close understanding with the Indochina part of the Southeast Asian region; and its post-cold war concern to align its foreign policy to the requirements of its newly reformed economic policies. The book is a mix of political and economic ties between ASEAN region and India.

The edited work by Shri Prakash and others entitled *India and ASEAN-Economic Partnership in the 1990s and Future Prospects* (1996) explains emerging relations between India and Southeast Asia in the coming decades. The study explains a partnership should lead to a new pattern of economic cooperation leading India to become an integral part of the Asia-Pacific region in the form of Asia Pacific Economic Cooperation (APEC). The book strongly argues India's prospects as an investment destination in coming years' vis-à-vis Southeast Asia following the impact on the appreciation in real effective exchange rates of some of the ASEAN economies.

In the book titled *ASEAN and South Asia: Development Experience* (1998) by Baladas Ghoshal studies the various aspects of ASEAN and its style of functioning. The book examines the ASEAN experience in establishing a regional community as well as its relevance for South Asia. K.S. Nathan's book on *India and ASEAN-The Growing Partnership for the 21st Century* (2000) is an important work on India and ASEAN. This special volume brings out an overview of strategic perceptions held by India and ASEAN of each other, and how they affect foreign policy. The book takes the view that ASEAN's strategic relationship with India cannot be seen in isolation from the grouping's relations with other external powers. Some attention has also been given to the economic dimension of the India-ASEAN relationship.

Ramesh Chander Bhatia in his work *Indo-South East Asian Economic Relations* (2000) highlights Southeast Asian countries' economic and Industrial development. The book takes into account the economies of the two regions which have some complimentary features and the scope of import-export exists.

Frederic Grare and Amitabh Mattoo in their edited work *India and ASEAN: the Politics of India's Look East Policy* (2001) deal with India's relationship with South-East Asian countries. The book explains China's economic, political and military influence on ASEAN states. It also gives a brief analysis of India's Look East policy and its engagement with Southeast Asian countries. Another book by Frederic Grare and Amitabh Mattoo's on *Beyond the Rhetoric-The Economics of India's Look East Policy* (Volume-II, 2003). The book entirely divided into two parts as the first four chapters explains the rationale behind the 'Look East' Policy as well as the opportunities offered by the emerging relationship between India and ASEAN, both in terms of trade opportunities as well as the potentials offered by the presence of a significant Indian diaspora in South-East Asia. The second part of the book addresses the structural problems of the Indian economy. Although not necessarily specific to the relationship between India and ASEAN, they do hamper the broader and deeper development of this relationship.

Atul Sharma and Pradeep Kumar Mehta in *Exploring Indo-ASEAN Economic Partnership in Globalizing World* (2002) explore India-ASEAN trade relationships and focus on India's trade with the five founding members of ASEAN viz. Thailand, Singapore, Malaysia, the Philippines and Indonesia. They emphasize particularly on the overall growth in India-ASEAN trade in the pre-liberalization and post-liberalization period.

Sanjay Ambatkar, in his work *India and ASEAN in the 21st Century: Economic Linkages* (2002) highlights the development of ASEAN and India's economies by pointing out the economic scenario in the world, India and ASEAN brings out comparative significance of India and ASEAN in global trade and investment transactions. It focuses on trade intensity of India in ASEAN market and vice-versa. The book comprehensively covers various aspects of trade such as commodity structures, competitive advantages, Indo-ASEAN investment interaction and highlights India's involvement policy vis-à-vis other competitors such as China. The book covers the impact assessment on the basis of trade creation and trade diversion associated with regional trading arrangements. Sanjay Ambatker (2002) also contributed towards the outcome of India-ASEAN economic partnership since 1985 by highlighting two-way trade and investment transactions between them. The research paper addresses an impact of 'Look East Policy' on India's trade and investment relations with ASEAN countries.

Nagesh Kumar and others in their edited work *India-ASEAN Economic Relations: Meeting the Challenges of Globalization* (2006) addresses the problems concerning trade liberalization in both regional and multilateral contexts and to examine the prospects for investment flow and trade in financial services and information and communication technology between India and ASEAN.

Sheereen Zeba (2005) gives a brief outline of the rise of major regional trade blocs and their development and forms of various regional and sub-regional groupings in Asia. An Analysis of economic opportunities and possible benefits to India from these groupings in the form of SAARC and ASEAN have been discussed in detail.

Panday Snehalata (2011) observed that India's 'Look East' policy had resulted in India's economic and strategic partnership with the ASEAN member countries as well as with other countries like Australia, Japan, Korea, US and Europe. 'Look east' policy's impact had been positive on infrastructure and economic development of northeastern states following India's engagement with ASEAN. According to the author's view challenges are many as most of the ASEAN countries aspire to be key regional powers as well as want to enter the UN Security Council as permanent member.

One of a very different study done by Saqib and Taneja (2005) tried to study the non-tariff barriers that Indian exporters face while exporting to ASEAN countries and found that the incidence of NTMs imposed by ASEAN has increased during 1997-98 to 2002-03. Palit's

Amitendu (2009) examines the key aspects of India's economic engagement with Southeast Asia since the end of the Cold War and the introduction of the 'Look East' policy. It looks closely at bilateral trade, investment, sub-regional cooperation initiatives and the salient aspects of the India-ASEAN FTA. The paper critically examines the challenges that both India and ASEAN need to overcome in order to enhance deeper economic engagement and the enabling vision for such engagement. Jha N.N. (2011) explores the challenges which threaten India's territorial integrity and national unity. The author discusses how India is facing countless challenges in this entire region from Afghanistan to China. These challenges are of an unprecedented kind, well beyond anything experienced before or during the entire 64 years of India's independence.

The review of literature shows that a number of books and articles have dealt with various aspects of regional organizations including ASEAN as also with India's relations with South-East Asian countries, ASEAN and SAARC. However most of the review focused more on the economic relations of ASEAN – India had historical, security and cooperation perspective and very less literature had focused on the real impact of ASEAN-India.

## **2.8 Literature review on impact of AIFTA on Intra-industry trade and structure of trade**

Although many studies have been done on the impact assessment of trade agreement on intra-industry trade but most of them were for developed countries and very few of them were for developing countries. As far as the case of India is concerned the numbers of studies are very less and scarce especially on the impact of trade in goods agreement (Trade in Goods agreement, 2009 between ASEAN-India) on IIT index. Many studies considered impact of AIFTA between ASEAN members with India, but not considered ASEAN as a regional bloc with India.

Veeramani's papers (1999; 2001; 2004; 2007) assessed two aspects in totality – first one was on India's IIT on manufactured commodities under economic liberalization as between 1987-88, 1994-95, and 1998-99 to understand the impact of trade liberalization on IIT. Second was on the influence of various country specific factors and industry specific factors on the intensity and probability of IIT in the manufacturing sector with major trading partners. There are also papers by Varma (2012) analyzed the structure of trade in agricultural products between India and its two major trading partners (the USA and EU) without analyzing the determinants of IIT. The study by Ramakrishnan and Varma (2014) and Varma and Ramakrishnan (2014) focus on the India's trade with Asian and South Asian countries to analyze the impact of FTAs on IIT. The

study by Varma and Ramakrishnan (2014) study the structure and determinants of IIT in the processed sector, the study shows India's huge potential and an expansion of trade which assumes greater significance. The paper by Varma (2015) study the country specific determinants of two types of IIT as VIIT and HIIT by applying both Panel Corrected Standard Errors (PCSE) and dynamic Generalized Methods of Moments system (GMM-SYS) panel data techniques for India's food processing industry with its major trading partners.

Francis Smitha (2011) studied ASEAN-India FTA; the trade bloc's members will get enlarged access to the Indian market for semi-processed and processed agricultural products and close substitutes, which could badly impact the Indian agricultural sector. Indian small and medium enterprises in food and other agriculture-related products, some intermediate goods and light manufacturing products are also likely to suffer. But import liberalization in intermediate goods will encourage multinational corporations to undertake production rationalization across the region in the transport equipment, machinery, chemicals and iron & steel sectors. This could lead to India's deeper integration in production networks in such sectors with ASEAN.

Mondal Bitan, Sirohi Smita and Thorat Vishal (2012) analyzed the impact of AIFTA on Indian diary trade. Partial equilibrium model (SMART) had been used to stimulate the trade impacts as per the proposed tariff reduction schedule.

Sikadar and Nag (2011) studied the impact of FTA on India and the ASEAN members, study used cross country analysis by using applied general equilibrium model. The simulation results reveal that post FTA, India's exports to ASEAN increase substantially with the largest accessed gained in Thailand, Cambodia, Vietnam, Malaysia, Philippines and Lao PDR. And the main sources of imports are Vietnam followed by rest of the members of ASEAN. The study also attempted to analyze the long term effects of the FTA on India. Shrivastava A. and Medury (2011) try to analyze the nature and pattern of India's IIT at 6-digit level. The paper shows that, with the passage of time, not only the degree of IIT but also the contribution of IIT in total trade have increased significantly. The paper reveals overall India's IIT is vertical in nature and decrease in tariff rate helped in increasing the degree of IIT.

Choudhary Sonam, Kallummal Murali, Varma Poornima (2013) attempt to analyze the trade creation and trade diversion effects of India Sri-lanka FTA (ISFTA) at the sectoral level. The sectors identified for the study were textiles, base metals and machinery equipments. The methods used for the study were Revealed Comparative Advantage (RCA), VIIT and Finger

Kreinin (FK). The overall study indicated that trade creations effects are stronger than trade diversion effects in ISFTA.

Das Upendra and Dubey Dev Jay (2014) study analyzed the determinants of IIT, which has not been explained by traditional trade theories. The study demonstrates on FTA in goods among ASEAN+6 under Regional Comprehensive Economic Partnership. The study divides IIT into Horizontal Intra-Industry Trade (HIIT) and Vertical Intra-Industry Trade (VIIT) and considered at 6 digit HS code. The study indicated not only the growth of IIT between India and ASEAN+6 but sustainability of those trade values are also important over the years.

Yean Tham and Yi Andrew (2014) reassessed the impact of AIFTA on the exports of manufactured goods from ASEAN to India vice versa. And also to assess the relative importance of the scheduled tariff liberalization in the AIFTA compared with other contributory factors in the exports of manufactured goods from ASEAN to India. The study used gravity model for the assessment and results were found that ASEAN gains more from the scheduled tariff liberalization in this agreement compared to India. However, the impact of tariff liberalization on the exports of manufactured goods from ASEAN and India with each other is relatively smaller compared to other contributory factors, especially trade costs.

Aggarwal S. and Chakraborty D. (2017) examines the patterns and determinants of aggregate bilateral intra-industry trade (IIT) between India and 25 major trading partners in which ASEAN countries are added amongst 25 major trading partners during 2001–2015 in a panel data framework. India's bilateral IIT indices with select countries generally display an upward trend over the sample period. The empirical results indicate that vertical intra-industry trade (VIIT) significantly explains India's IIT pattern with the selected countries. The analysis further concludes that trade facilitation among the trading partners may significantly enhance bilateral IIT level with respect to India's high-income partners, while the same effect is non-significant for low-income countries.