STATIC AND DYNAMIC THEORIES OF TRADE INTEGRATION
REVISITED

T.U.I. Peiris¹, M. Azali¹, M.S.Habibullah and A. Hassan⁴

¹Department of Accountancy and Finance, Faculty of Management Studies, Sabaragamuwa University of Sri Lanka, Sri Lanka. ²,³,⁴Department of Economics, Faculty of Economics and Management, Universiti Putra Malaysia, Malaysia.
¹tuipeiris@gmail.com

ABSTRACT

Regional trade agreements (RTAs) are considered as one of the major growth stimulant factors in the contemporary world due to their potentiality in generating welfare gains. When assessing welfare effects of RTAs, until recently, the attention of most researchers confined to the static theory, which addresses the resource allocation effect of trade integration (TI). Even though dynamic theory roots back to the same era that static theory was grounded, the importance of attending to the dynamic efficiency of RTAs became popular in the recent past. Findings of this survey indicate that both theories independently provide a significant assessment on the desirability of RTAs. Thus, this study emphasizes the requirement of attending to both static and dynamic theories when assessing the desirability of RTAs.

Keywords: Static theory, Dynamic theory, Regional trade agreements and Trade integration.

INTRODUCTION

The term “Economic Integration” (EI) is not often defined, because it does not have an apparent meaning for all the economists and most of them believe it as a complex notion which must be defined with care¹. Nonetheless, some rational definitions in this regard are available in the literature. Prominent economists, who attempt to define EI, have used three approaches. Some regard it as a combination of a state and a process. Some define it as a process, while others argue it as a means towards a particular objective. However, these definitions provide some vital fundamentals despite of their categorization. They are: formation of more comprehensive systems; abolish discrimination between economic units; prices of all similar goods and factors are equalized; process towards a union; co-ordination of economic policies; free movement of goods and factors of production; means towards an end. With these fundamentals in mind, it can be broadly defined as a move towards a union with some common objectives by abolishing discriminations between economic units to ensure the availability of comprehensive systems that guarantee: free movement and price equalization of goods and factors of production; and the harmonization of policies of economic sectors in the participating countries. Some key definitions under above categorization are further listed with the rest of this section in order to provide an explicit idea about EI.

EI as a Process and/or State

Balassa (1961, 1976) under the implicit assumption, that discrimination actually affecting economic intercourses, defines EI as “a process and as a state of affairs. Regarded as a process, it encompasses measures designed to abolish discrimination between economic units belonging to different national states; viewed as a state of affairs, since it can be represented by the absences of various forms of discrimination between national economies”. Holzman (1976) believes that “EI is a state in which the price of all similar goods and factors in two regions are equalized”. Swann (1996) defines EI as “a state of affairs or a process that involves a combination of previously separated economies into larger arrangements”.

EI as a Process

Pinder (1968) believes EI as a process towards a union, during which both the removal of discrimination between member countries and the co-ordination of economic policies have to be considered as important elements of integration. Hence, Pinder suggests a definition as “both the removal of discriminations between the economic agents of the member countries, and the formation and application of co-ordinated and common policies on a sufficient scale to ensure that major economic and welfare objectives are fulfilled”. Vajda (1971) has criticized the Pinder’s definition due to its generality. However, Vajda agrees with the requirement of considering policy co-ordination as an important consideration in this process. Mennis and Sauvant (1976) indicate EI “as a process, whereby boundaries between national states become less discontinues, thus leading to the formation of more comprehensive systems. EI consists in the linking up and the merging of industrial apparatus, administration and economic policies of participating countries”. Maksimova (1976) believes it as “a process of developing deep and stable relationships about the division of labor between national economies. This process aims at the formation of international economic entities, within the framework of groups of countries with the same type of socio-economic system, which are consciously regulated in the interest of the ruling classes of these countries” (Jiawen Yang). Molle (1991) believes EI as a step by step process. Molle argues that in the initial stages, tariffs on goods are removed and then movements of production factors are liberalized. In the third stage, the national policies with regard to economic sectors are harmonized.

EI as a Means

Staley (1977) indicates that EI is involved with the “utilization of all potential opportunities of efficient division of labor”. With that, Staley believes it as a means to utilize human resource efficiently. According to Robson (1987) when EI comes into its optimum level, full integration, free movement of goods and factors of production and the absence of discrimination should enhance the efficiency in resource usage. Thus, Robson also regards it as a means to obtain efficiency in resource utilization. Jovanovic (1998) believes EI as one of the means of increasing national welfare, especially through TI. Pinder (1968) while defining EI as a process believes it as a means to achieve welfare objectives of the participating countries.

Levels of EI

A review on EI is considered as incomplete without a proper note on levels or types of EI, because the theoretical development of the subject matter heavily depends on welfare effects of different levels of integrations. Depending on various grounds, especially with and without considering the concepts of corporation and integration, many suggestions are given to the phenomenon of levels of EI. Balassa (1961) clearly distinguishing economic corporation: includes actions taken to reduce discrimination; and EI: a process in which some forms of discriminations are suppressed, introduce five levels in this regard. They are: a free trade area (FTA), a custom union (CU), a common market (CM), an economic union, and complete integration. In a FTA all the tariffs or the quantitative restrictions in trade are completely removed among the member countries, but each member country keeps its own tariff barriers in trade with non-member countries. Some examples for these are: NAFTA, formed in 1993; ASEAN FTA, came in to force in 1992; and SAFTA, formed in 2005. A CU is similar to a FTA, but tariffs on non-member countries are equalized by the union partners. That is, a common external tariff is applied on the goods import from the non-members. This common tariff can differ across goods but not across member countries. The EEC (from 1957 to 1992) can be considered as the best example for a CU. A CM is similar to a CU, but a higher form of EI is attained through the abolishment of restrictions on factor movement among union members. The European Union (EU) in the beginning of 1993 showed the features of a CM. Balassa (1961) defines the next levels of integration as, “an economic union, as distinct from a CM, combines the suppressions of restrictions on commodity and factor policies, in order to remove discrimination that was due to disparities in these polices. Total EI presupposes the unification of monetary, fiscal, social and countercyclical policies and requires the setting up of a supra-national-authority whose decisions are binding for the member states”. The best example for this type of integration is the EU. This five stage integration process can possibly be seen as continuum from a lower integration level to deeper integration levels. However, most of the present world EI arrangements are still at the initial stages of FTAs and CUs.

Balassa (1961) indicates that the theory of EI is evolving base on the effects of these various levels of integration to the respective economies of participating countries. Since most of the EI arrangements today are TI agreements, either FTAs
or CUs, the literature is abandoned with theoretical and empirical analysis of these two forms of integration arrangements. Effects of TI arrangements on economic welfare and growth have been theatrically proved in several perspectives. In the most comprehensive sense, they can be categorized into the static analysis of TI and the dynamic analysis of TI (Bhagwati and Panagariya, 1996). Hence, the following sections will theoretically and empirically review the static and dynamic theories.

**STATIC THEORY**

Viner (1950) introduced the static theory through the concepts of trade creation (TC) and trade diversion (TD). Viner (1950) believes that TC leads to welfare rising as trade shifts from a high cost supplier member country to a low cost supplier member country in the union. Meanwhile, TD lowers the welfare as it leads to shift trade from a low cost supplier non member country to a high cost supplier member country in the union. These two concepts, TC and TD, can be further explained with the help of following example in Table 1.1.

<table>
<thead>
<tr>
<th>Price of commodity X</th>
<th>Country A</th>
<th>Country B</th>
<th>Country C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35</td>
<td>20</td>
<td>15</td>
</tr>
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</table>

In general, TC indicates that a regional trade agreement (RTA) generates trade that would not have existed otherwise. Thereby, supply of the product occurs from a more efficient producer. According to the above example if country A enters into a FTA either with country B or country C, in both cases, country A will start importing commodity X from the contracting country since the domestic price of commodity X in country A (35) is higher than country B (20) or country C (15). Thus, the direction of trade will shift from a high cost member country (country A) to a low cost member country (country B or C) generating a TC.

On the other hand, TD indicates that a RTA diverts trade away from a more efficient supplier outside the RTA and towards a less efficient supplier within the RTA. In the above example let’s further assume that country A levies a tariff of 100% on commodity X. So, new prices of commodity X from country B is 40 and country C is 30. Hence, country A would buy the commodity from country C, who is the low cost producer in this case. Later, if country A forms a FTA with country B, then country A will buy it from country B, because due to the FTA, the price of commodity A falls to 20 in country B. This indicates that the direction of trade has shifted from an initial low cost non-member country (country C) to the high cost member country (country B) by generating a TD. For more examples in this regard better to refer Lipsey (1960) and Hosny (2013).

**Subsequent Developments to the Static Theory**

Many developments have been made to the static analysis of TI mainly criticizing Viner’s conclusion on trade diverting unions. J. E. Meade is considered as the first economist to further develop Viner’s theory. Meade (1955) in his book, “the theory of customs unions”, appreciates Viner’s work and simultaneously criticizes it with the argument that Viner’s analysis is acceptable only under the conditions of inelastic demand and completely elastic supply. However, if demand is allowed to be more elastic, then Meade believes that a CU may actually increase the degree of trade even under the conditions of TD. Further, Meade argues that this effect, which is termed as “trade expansion”, should be included to the traditional Viner analysis of TC and TD (Hosny, 2013 and Hay, 1957).

Viner’s argument on trade diverting CUs is also criticized on the ground that Viner has concentrated only on the production side effects and has ignored the supply side effects in the analysis of CUs (Lipsey, 1957, 1960; Gehrels, 1956-1957; Krauss, 1972; Sheer, 1982). For instance, Lipsey (1957) indicates that the relative price change due to tariff reductions between member countries of a CU brings two effects. First, a production side effect as illustrated by Viner (1950); and second, consumption effect which leads to increase the consumption of members through the exchange of each other’s products, while reducing the consumption from countries outside the union. Thus, Lipsey shows that TDs are not always welfare reducing. Very much the same belief is carried to his next article, “the theory of CUs: a general survey” published in “The Economic Journal” in 1960, in which he clearly indicates that “Viner’s analysis implicitly assumed that commodities are consumed in some fixed proportion which is independent of the structure of relative prices”. Cooper and Massell (1965) briefly Lipsey’s (1957) argument of welfare rising TDs in such a way that “when a CU is formed, some dutiable goods formally imported from outside sources will be replaced by some goods imported
by the partner country, duty-free but at a higher real cost. The shift to a higher-cost source of supply tends to lower the country’s real income, and consequently consumer welfare; but the removal of constraint on consumption may raise welfare. If the second effect is favorable, and outweighs the first effect, there is a net raise in welfare. Gehrels (1956-1957), in the study, “customs union from a single-country viewpoint”, points out that assessing the gains of CUs merely through the production effects will provide a biased judgment and further reveals the importance of considering the response of consumers to the reduction in import prices cause by the tariff removals. Thereby, he argues that the omission of consumption effects will result in underestimating the gains and making unfavorable conclusions, where a union would in fact benefit the members.

As reported by Krauss (1972), Lipsey (1957) and Gehrels (1956-1957) introduce the first exception to the alleged Vinerian law that TD necessarily reduces welfare. In this regard, they relax Viner’s assumption of fixed proportions in consumption. Krauss (1972) believes that the applicability of Viner’s conclusions are limited not only because of the fixed proportions in consumption assumption, but also due to the assumption of constant costs in home country, since both fail to describe the real world conditions. Hence, the next exception is obtained by relaxing Viner’s assumption of constant costs in home country. By doing so, Michaely (1965) and Bhagwati (1971) also show the existence of welfare gains that can exceed the welfare losses resulting from a TD. Thus, a net welfare gain can occur to the home country even with a trade diverting union.

Sheer (1982) also argue against the Viner’s assumption of independent consumption to the price reductions that RTAs bring to their members. Therefore, with the study, “a survey of the political economy of custom unions”, Sheer indicates that even though these arrangements shift the imports from a low-cost source to a high-cost source, will result in higher consumption gains due to the change in relative price levels. Thereby, Sheer believes this increase in consumption will induce a production response in the import sector and it also can be considered as a gain from TI. Johnson (1975) believes the argument; TD may be welfare increasing in the sense that the welfare loss from diversion is outweighed by the gains of consumption substitution, as one of the relics of criticism on Viner’s distinction between TC and TD. Thereby, he indicates that if TC and TD are identified with reference to the volume of trade ignoring the shifts in production location, then as any TD gain must involve an increase in the volume of trade; such increase can be considered as TC like any other TC source of gain.

The importance of analyzing the impact of these production and consumption effects to the complementary and substitutable products can be considered as another major development to the static theory. Meade (1955) explains this by using a small tariff reduction in a single product: Holland reduces its tariff on beer imports from Belgium while the duty on beer imports from other countries remains unchanged. In order to assess the welfare gain, “one must trace out the repercussions of this change upon all the quantities of all products traded internationally, and one must then weight each change in the volume of a product traded by the difference between its price in the county of export and its price in the country of import” (cited from Hawtrey, 1956).

Subsequently, depending on the form of tariff reduction (small reduction, large reduction, complete removal, or gradual reduction) many researchers contribute to the static theory. Lipsey and Lancaster (1956-1957) in their study, “the general theory of second best”, assuming “country A initially charges a uniform ad valorem rate of tariff on imports of X and Y; A then forms a CU with country B; now X is imported duty free while the pre-union tariff is still applies to Y”, indicate that if tariffs are gradually removed, then the welfare must raise in the initial stages of tariff removal and it lowers in the final stages. Another important conclusion is suggested by indicating “nothing can be said about the welfare effects of a complete removal of the X tariff”. In case of small removals of tariff, they believe welfare must rise while in a large reduction it may raise or lower. De Melo, Panagariya and Rodrik (1993) indicate that gradual tariff removals are more likely to be bringing greater economic welfare than the complete tariff removals (cited from Hosny, 2013).

Lipsey (1960) introduces another development by considering the size of expenditure on the three classes of commodities namely, domestically purchased commodities, commodities purchased from the union partner and those purchased from non-partner countries. Lipsey believes that if a country’s proportion of international trade with its union partner is high and it is lower with the non-partners, then the union is more likely to produce welfare gains. In the same time, “a custom union is
more likely to raise welfare the lower is the total volume of foreign trade, for the lower is foreign trade, the lower must be purchases from the non-partner countries relative to the purchases of domestic commodities”.

The analyses of terms of trade effect on economic gains from CUs can also be considered as one of the major development to the Vinerian analysis of static gains. Krauss (1972) believes whenever terms of trade are permitted to vary in an analysis that will dramatically change the perspective of the analysis. Thus, each variation will provide a new contribution. Further, he indicates that an analysis of this nature varies according to the amount of non-member trade that is assumed to survive with the formation of a CU with TD production effect. Melvin (1969) indicates that in a trade diverting CU if terms of trade are permitted to change, the probability for the welfare improvement is very less under the assumption that no trade with outside countries survive the formation of the CU. Later, this argument is criticized by Krauss (1972) on the ground that, Melvin has failed to recognize the TC production effect and thus, he has wrongly believed a pure TD production effect. Hence, he suggests a correct form to the Melvin’s conclusion: “the greater the terms of trade loss from the TD production effect, the greater the gross TC required, whether from production or consumption sources, for union to improve welfare”.

Johnson (1962), with an alternative assumption: some non-member country trade does survive, states that a CU with TD production effects has the tendency to make improvements to the terms of trade and on the top of that, the amount of loss from the TD can be either reduced or eliminated through such improvements in the terms of trade. Cooper and Massell (1965) also indicate that “the loss from TD effect is less the greater the improvement in the terms of trade” (Cited from Krauss, 1972). Arndt (1968) analyzes the home country’s economic welfare in contrast to the changes in member country’s tariff policy as a result of implementing a common external tariff. Arndt indicates that in order to implement a common tariff on non-member countries if a member country has to raise its tariff while the home country’s tariff remains unchanged, then the home country receives a terms of trade gain. Other researchers who contributed in this regard include Spraos (1964), Kemp (1969), Vanek (1965).

Depending upon the solution to the inquiry, whether the removal of tariffs on trade is more advantageous if the trade is between complementary countries than it is between competitive countries, another significant addition is made to the static theory. Meyer (1956) in his study, “complementarity and lowering of tariffs”, states that trade gains generate from the complementary goods received in exchange to the goods retained by each party to the transaction. On the other hand, there is no such certainty of gains from trade if the goods exchanged are competitive to the goods retained. Mayer further indicates that “the benefit will be the greater, the larger the number of initially rival economies that participate to trade”. Viner (1950), Lipsey (1960) and Sheer (1981) also believe a CU would raise gains if the countries are producing the same commodity. Makower and Morton (1953) point out those gains are higher in unions that have a widely different production advantageous situation. In other words, the economic gains will be larger the larger is the difference between the production costs in unions, where the same commodity is produced.

International trade literature believes that countries with similar demand structures or in other words countries with similar per capita income levels would develop similar industries and thus, they would enjoy more trade potential (Linder, 1961; and Kemp 1965). Sakamoto (1969) believes that the similarity in the demand structures or the income per capita levels is a significant determinant for the success of EI processes. Later, many researchers indicate that the greater the similarity in the per capita income between members of a union the greater is the potentiality for intra-industry trade (Lancaster, 1980; Greenway, 1981; and Zdenek and Greenway, 1984). However, on the one hand, when countries have similar per capita incomes Linder hypothesis states that intra industry trade should increase and on the other hand, when countries have dissimilar per capita incomes comparative advantage theory states that inter industry trade should increase. Herein, Hosny (2013) concludes as “the impact on per capita income on trade is not settled in the literature” and “the increase or decrease in trade flows between member countries of a union will be determined by the similarity of per capita income and the pattern of trade; whether it follows the line of inter industry or intra industry trade”.

**Empirical Evidences on Static Welfare Gains**

As mentioned in the above theoretical review on static theory, TC and TD are the two main static outcomes of a RTA. Empirical evidences on this regard are substantial. Hence, sub section one
provides empirical evidences of European integration arrangements (Aitken, 1973; Endoh, 1999; Plezman, 1977; Han, 1992). Sub section two concentrates on North American integration (Schwanen, 1997; Helliwell, Lee and Messinger, 1998; Head and Ries, 1999; Clausing, 2001; Krueger, 1999; Fukao, Okubo and Stern, 2001). Sub section three empirically reviews the Asian integration arrangements (Ooi, 1981; Devan, 1987; Ramasamy, 1995; Imada, 1993; Elliott and Ikemoto, 2004; Siah, Choong, and Yusop, 2009; Endoh, 2000; Roberts, 2010). Finally, in the sub section four, some further evidences are provided from other counterparts of the world.

**European TI Arrangements**

Aitken (1973) with the study, “the effect of the EEC and EFTA on European trade: a temporal cross-section analysis” published in “the American Economic Review”, investigates the existence and the approximate sizes of TC and TD during the period 1951 to 1967. As the title of the study indicates a cross-sectional trade model is employed for the European Economic Community (EEC) and for the European Free Trade Association (EFTA). Aitken indicates the existence of both TC and TD effects during this period. The TC effect of EEC is substantially greater than that of EFTA and approximately $9.2 billion and $1.3 billion, respectively. Further, he confirms the fact that, the integration effects of EEC and EFTA are consistence with the theoretical expectations. Endoh (1999) examines these static effects in EEC, Lathing American Free Trade Association (LAFTA) and Council of Mutual Economic Assistance (CMEA) over the period 1960 to 1994. Endoh implements a simplified version of gravity model in this regard. Results of the gravity model indicate that each of the TI arrangements provides significant TC and TD effects. However, during 1990s these effects are relatively lower in all cases. Among other researchers who investigate these static effects in European countries: Plezman (1977) concentrates on the EEC, EFTA and CMEA; Hnag (1992) examines the impact of European Community (EC) on non-member countries.

**North American TI Arrangements**

Schwanen (1997) with the study, “Trading up: the impact of increased continental integration on trade, investment and jobs in Canada”, investigates the influence of Canada-US Free Trade Agreement (CUSFTA) and its successor North American Free Trade Agreement (NAFTA) on the trade flow of Canada during 1989 and 1995. Schwanen compares the trade flows of liberalized and non liberalized sectors under these agreements. His findings confirm a significant improvement of trade in the liberalized sectors. This indicates a significant TC impact. Helliwell, Lee and Messinger (1998) investigate the impact of CUSFTA by employing both aggregate and industry level data. They also confirm a significant improvement in Canadian international trade following this agreement.

The study, “rationalization effects of tariff reductions” by Head and Ries (1999) examines the impact of CUSFTA on the manufacturing sector of Canada. Here, the term “rationalization” is justified as “a decline in the number of plants accompanied by increases in output per plant”. Head and Ries use a panel of 320 Canadian manufacturing industries during the six years following the agreement. Their findings provide substantial rationalization of tariff reductions as the number of plants decreased by 21% while the output per plant increased by 34%. Clausing (2001) also investigate the impact of CUSFTA on trade flows between Canada and US by using commodity level data during the period 1989 and 1994. Clausing concludes that CUSFTA leads to substantial TC effects while TD is very little.

Krueger (1999) with her study, “trade creation and trade diversion under NAFTA”, uses a gravity equation in a pooled time series cross section in order to assess the impact of NAFTA especially to the Mexican trade flows during 1987 to 1997. Krueger confirms a significant improvement in the Mexican trade flows suggesting a TC. Two possible reasons have identified on this regard: Mexican reduction in tariffs and quantitative restriction; and the alteration of exchange rate policy by Mexico. This study further confirms a TD effect as NAFTA’s imports from non members significantly reduced. The study titled, “an econometric analysis of trade diversion under NAFTA”, by Fukao, Okubo and Stern (2001) attempt to investigate the TD phenomenon of NAFTA by using both industry and commodity level data. Fukao at el. use a “partial equilibrium model of differentiated product industries under monopolistic competition”. This model is implemented through the fixed effect panel analysis over the period 1992 to 1998. Significant TDs are found in many industries while, US imports of textile and apparel products depict the strongest TD effect. When they extend the study to the commodity level (HS 4-digit level) textile,
apparel and some footwear products indicate a significant TD effect.

**Asian TI Arrangements (Except South Asia)**
Ooi (1981) with his study titled “the ASEAN preferential trading arrangements (PTA): an analysis of potential effects of intra-ASEAN trade” investigates the potential TC effects of two specific events: the 20% tariff reduction of all items with import value of less than US$ 50,000, and the consideration of increasing this cutoff ceiling to US$500,000 as proposed by the “ASEAN Economic Ministers”. This analysis is done on the aggregate basis at the one digit level of SITC code for Philippines and Thailand. Ooi’s results indicate a significant TD effect for Philippines and Thailand, approximately 98.21% and 97.98% respectively. Devan (1987) with his study, “the ASEAN preferential trading arrangements: some problems, ex-anta results, and a multipronged approach to future intra-ASEAN trade development”, extends the Ooi’s investigation in several ways: specifically concentrates on the manufactured products and commodities at the seven digit CCCN level; concentrates on the effect of 25 per cent or/and 50 per cent margins of preference; and concentrates on four ASEAN countries (Malaysia, Thailand, Philippines, and Indonesia). Devan’s results indicate that whatever the margins of preference the selected countries would gain a 4.8 per cent or US$ 110.57 million TC gain in average. Further, when petrol based products are excluded, the TC gain increase up to 5.2 per cent. The TD effect is valued at US$ 58.67 million or 6.3 per cent of ASEAN’s 1984 extra-ASEAN import value.

The study titled “production and trade effects of an ASEAN free trade area” by Imada (1993) is considered as the first study of this nature that investigates the supply side effects within the region (Ramasamy, 1995). Imada indicates that all previous studies in the region concentrated only on the price elasticity approach in estimating the impact of tariff reductions on import growth. Hence, she points out the importance of investigating the closer integration on export, production and consumption as well. Though, she does not specifically investigate the TC and TD effects, the results of the study show the potentiality of expanding intra-ASEAN trade if intra-regional trade is liberalized, partially or completely. Ramasamy (1995) concentrates on the negative resource allocation effect of ASEANs with the study titled “trade diversion in an ASEAN free trade area”. Ramasamy assumes that the imports from member countries and rest of the world are not perfect substitutes, thus the elasticity of substitution is 1. Under this assumption, his results indicate that TD is highest in Philippine and followed by Singapore, Thailand, Malaysia, and Indonesia respectively. The net welfare impact, that is when TC is considered, is depicting a gain for Indonesia and Thailand, but for Malaysia and Singapore it is a net loss.

Elliott and Ikemoto (2004) investigate the ASEAN intra-trade and extra-trade bilateral trade patterns during the periods before and after the signing of ASEAN Free Trade Area (AFTA) and crucial years around Asian crisis. Elliott and Ikemoto use a modified gravity equation in this regard. Their results confirm the findings of previous studies that focused on AFTA because no evidences are found for the significant influences on trade flows in the immediate years after the signing the AFTA. Hence, they indicate that the TC effect is lower with compared to the preceding period 1988-1992. However, when only inter-ASEAN trade is considered, some positive AFTA effects are found. The study titled “AFTA and the intra-trade patterns among ASEAN-5 economies: trade-enhancing or trade-inhabiting?” by Siah, Choong, and Yusop (2009) examine the ability of ASEAN integration in promoting intra-ASEAN trade. In this regard, a modified gravity model is implemented within the autoregressive distributed lag (ARDL) framework during the period 1970 to 2001. Their conclusion confirms the importance of AFTA in increasing intra-ASEAN trade. However, they point out the possibility that the trade deflection might not allow all ASEAN countries to benefit from this agreement.

Endoh (2000) with his study “the transition of post war Asia-Pacific trade relations” examines the behavior of trade patterns among Asia-Pacific countries. A gravity model is employed during the period 1960 to 1995 to arrive at the desired objectives. The results of the gravity model indicate that ASEAN’s impact on intra-regional trade is insignificant, East Asia Economic Caucus (EAEC) countries are showing higher intra-regional trade volumes and at a growing trend along with those of Asia-Pacific Economic Cooperation (APEC) counties. Finally, he states the existence of a close trade relation among EAEC countries. Roberts (2010) investigates the impact of China-ASEAN free trade area (CAFTA) on the trade flows of respective countries with his study titled “a gravity study of the proposed China-ASEAN free trade area”. As the title of the study
suggests gravity model is employed in this regard. With the results, Roberts first confirms the desirability of gravity model as its outcomes well explained the trade flows within CAFTA. Then he states the requirement of well defined policies and strategies to maximize the expected benefits. Further, he indicates that the potential TC effect is insignificant and even though, the TD is not explicitly modeled the “inconsequential effect of CAFTA” would take the form of TD.

More Evidences from Other Counterparts of the World
Becker, La, and Suarez (2001) with the study titled “trade creation and trade diversion for MERCOSUR” investigate the effect of MERCOSUR trading bloc on the trade flows of the member countries (Brazil, Argentina, Uruguay and Paraguay). A modified gravity model is used to analysis the bilateral trade flows in between the member countries and the selected non-member countries. The findings of the study provide sufficient evidences to conclude the existence of TD effects in Brazil, Uruguay and Paraguay. Argentina reports neither TC nor TD effects following this integration arrangement. Yeats (1998) with his study published in the “World Bank Economic Review” also indicates that the MERCOSUR TI arrangement leads to substantial TD effect due to higher discriminatory tariffs against non-members. The study titled “The common market for Eastern and Southern Africa (COMESA) and Kenya’s export trade” by Musila (2004) attempts to answer the empirical question whether the COMESA integration arrangement helps Kenya to promote and diversify their exports. The gravity model is employed in this regard. Results of the model indicate that the COMESA leads to significant TC effects. Hence, Kenya’s export performances are positively affected by this agreement. Further, no TD effects are reported. Boughanmi (2008) investigates the impact of old and immersing RTAs on the trade flows of Middle East and North African (MENA) countries with the study titled “The trade potential of the Arab Gulf Cooperation Countries (GCC): a gravity model approach”. The results of the study indicate that the GCC intra-trade is not significantly changed and had probably reached its fullest potential during the first decade of DCC creation. Further, Boughanmi indicates that the regions’ trade with Mashreq countries is more significant than the Maghreb countries². Finally, Boughanmi concludes the fact that the newly launched trade agreements have the potentiality of improving regions trade.

Soloaga and Winters (2000) with the study “Regionalism in the nineties: what effect on trade?” investigate the effect of RTAs on the trade flows of respective regions. They use a gravity equation to analysis the bilateral trade flows of nine selected RTAs namely: MERCOSUR, NAFTA, ASEAN, Central American CM (CACM), ANDLEAN, GCC, EU, EFTA and Latin American Integration Association (LAIA). Soloaga and Winters could not find sufficient evidences for the TC effect in any of the trading blocs considered. However, EU and EFTA report significant TD effects and export diversions. The study titled “Assessing regional trade arrangements: are South-South RTAs more trade diverting?” by Cernat (2001) investigates the potential impact of nine RTAs on the intra-regional and extra-regional trade of respective regions. The nine RTAs considered herewith are: AFTA, ANDEAN Community, Caribbean Community (CARI.COM), Common Market for Eastern and Southern Africa (COMESA), Economic Community of West African States (ECOWAS), EU, MERCOSUR, NAFTA, and Southern African Development Community (CADC). An expanded gravity model is employed in order to assess the specific TC and TD effects of these RTAs. Results indicate that both South-South RTAs and African RTAs are less trade diverting when compared to other RTAs. Cernat also states that the significant improvements in both intra-regional and extra-regional trade of South-South RTAs may possibly result from the RTA formation. This indicates a substantial TC effect in South-South RTAs.

DYNAMIC THEORY

Improvement of welfare must be the ultimate objective of an economic activity. Hence, the desirability or the successfulness of TI must be evaluated through its contribution to the welfare generation (Balassa, 1961). Many prominent researches indicate that the Vinerian analysis of TC and TD and its developments are insufficient in assessing welfare of a TI arrangement. Thus, the requirement of an alternative way of evaluating the

² Mashreq countries are Egypt, Syria, Lebanon, Jordan and Iraq. Maghreb countries are Tunisia, Algeria, Morocco, Libya and Mauritania.
welfare is emerged (Balassa, 1961; Hasson, 1962; Cooper and Massell, 1965; Krauss, 1972; Sheer, 1982). Balassa (1961) believes that the economic welfare resulting from an integration arrangement can be measured by using four criterions. They are “(a) a change in quantity of commodities produce, (b) a change in degree of discrimination between domestic and foreign goods, (c) a redistribution of income between nationals of different countries, and (d) income redistribution within individual countries”. First two criterions measure the change in potential welfare or in the static sense it is the improvement in the allocation of resources at a given point of time. Other two measure the welfare effects of income redistribution. Balassa indicates that the potential welfare in the static sense or the “static efficiency, however, is only one of the possible success criteria that can be used to appraise the effects of economic integration”. Further he points out the importance of expanding an investigation to study the impact of integration on “dynamic efficiency” instead of limiting to the resources allocation under static assumption. Balassa (1961) defines the “dynamic efficiency” as “the hypothetical growth rate of national income achievable with given resource use and saving ratio. In technical terms, whereas static efficiency would require that the economy operates on its production possibility frontier; dynamic efficiency can be represented by the movement of this frontier in the northeast direction”. As he indicates, technological progress, the allocation of investment, dynamic inter-industry relationships in production and investment, and uncertainty and inconsistency in economic decisions can be considered as the factors affecting the dynamic efficiency of an economy.

C. A. Cooper and B. F. Massell are considered as the other two pioneering economists who intensified the requirement of dynamic analysis. Cooper and Massell (1965) in their study, “a new look at custom union theory” published in “the economic journal”, question the usefulness of static analysis in evaluating CUs. They point out that the formation of a CU may not necessarily reduce the tariffs of a participating country depending on its initial tariff level. Hence, “the static analysis fails to show why a CU may be acceptable when a tariff reduction is not, and it fails to analysis how a CU may more efficiently serve the ends previously served by non-preferential protection”. Moreover, they state that the static analysis fails to assess the gains from the changes in the terms of trade, economies of scale, and reductions in unemployment which should otherwise be evaluated in a different analytical framework.

Krauss (1972) in his interpretive survey of resent developments in CUs theory indicates that the dynamic effects explained by Cooper and Massells (1965) carry two separate arguments: first, “being concerned with the effects of protection on the efficiency with which the firm operates, according to a given technology and market structure”; second, “larger markets permits the exploitation of economies of scale and the adoption of more up to date technology”. Moreover, Krauss (1972) emphasizes the requirement of empirical researches to investigate the welfare effects of CUs on the basis of the location of production, consumption patterns, terms of trade, and economies of scale. Schiff and Winters (1998) in their review, “dynamics and politics in regional integration arrangements: an introduction”, indicate that though, an integration arrangement leads to small or even negative static gains it may possibly provide dynamic gains. Meanwhile, they mention about the difficulty of recognizing the forms of these gains and how they come about. This might be mainly due to lack of precise theoretical evidences. Thus, with the intention of adding more concreteness to this phenomenon, they summarize the dynamics of an integration arrangement as anything that affects to the rate of economic growth of participating countries. Further, they define dynamics as both permanent improvements and temporary but long lived improvements in the rate of economic growth.

Empirical Evidences on Dynamic Welfare Gains
The dynamic theory believes that several dynamic factors of participating countries are affected positively as a result of entering into a trade agreement. For instance, these dynamic factors may include economies of scale, technological progress, dynamic inter-industry relationships in production and investment, risk and uncertainty, market structures and competition, and productivity and growth. Because these factors are not clearly defined in the theoretical literature, anything that affects the rate of economic growth as a result of TI is considered as dynamic effects. Recently, many researches empirically reviewed the dynamic theory of economic integration in several dimensions. Some of those prominent works are reviewed with the rest of this section.

Economies of Scale
Corden (1972) with his study, “economies of scale and CU theory", investigates the influence of
economies of scale on the traditional static theory. He indicates that upon the formation of a CU the average cost per unit of domestic output reduces due to the expansion in the domestic output. This positive welfare effect is termed as the “cost reduction effect”. A negative welfare effect is also observed as the imports from more efficient producers replace the less efficient domestic producers. This is termed as the “trade suppression effect”. Corden concludes that when economies of scale are allowed in an analysis of static welfare TC and TD concepts must be supplemented by the concepts of cost reduction and trade suppression effects. However, Krauss (1972) criticizes Corden’s (1972) conclusion on the ground that both these concepts TC verses cost reduction effect and TD verses trade suppression effect are integral components of the same phenomenon. Hence, economies of scale effect “should be accommodated by extending the definitions of TC and TD, not supplementing them”.

Rate of Return to Capital
The empirical question how an integration arrangement affects to the rate of return to capital (RRC) of a participating country is also researched under the concept of dynamics of TI. The Heckscher-Ohlin (HO) model suggests that an integration arrangement between North-South countries or between Industrial and Developing countries tends to lower RRC in the North or Developing countries because international trade leads to decreasing returns in the scarce factors (Schiff and Winters, 1998). As reported by Falvey (1995) and Schiff and Winters (1998), this HO model is limited in nature to assess the above phenomenon because it can be applied only to models with equal numbers of factors of production and it presumes the homogeneity of products being traded, but in reality they are not valid conditions specially in case of TI arrangements. However, many researchers later point out several facts that a TI arrangement may possibly increase RRC in all participants. As reported by Schiff and Winters (1998) they may include: the reduction in transaction cost of tradable goods than those on non-tradable goods; reductions in tariffs on imports of capital equipments; improvements in financial sector will reduce the cost of funds; and by influencing on the greater credibility of government policies it may provide a better atmosphere for investments (Baldwin, Forslid and Haaland, 1996; and Baldwin and Seghezza, 1996a, 1996b).

Credibility in Government Policies
Whalley (1996) in his study, “why do countries seek regional trade agreements”, indicates that the expectation of strengthening domestic policy reforms as one of the main objective of a country’s decision to participate in to a regional integration arrangement. Whalley believes that the credibility of domestic policies can be improved by binding a country to a TI agreement because domestic policy reforms are difficult to implement thereafter. He points out the Mexican negotiations on NAFTA as one of the best example on this regard. Later, Francois (1997) confirms the argument that TI leads to increase the credibility of economic policies of participating countries by referring specially to Mexican negotiations on NAFTA, and then EU integration and Meditteranean countries. Wacziarg (2001) also points out several reasons to this phenomenon of policy credibility improvement. Wacziarg indicates that the credibility of government policies increases as a result of boundedness through the integration agreements and due to the threat of capital flight. Also he states that the requirement of ensuring a competitive environment for the domestic firms, who participate in international trade, pressurizes the local governments to maintain the macroeconomic policies stable. Baldwin, Francois and Portes (1997) with the study “the costs and benefits of eastern enlargement: the impact on the EU and the central Europe” indicates in detail how both micro and macroeconomic policy stabilization came about in central and eastern European countries (CEEC), who seemed likely to join the EU. Baldwin et al, (1997) report that “on the micro side, EU membership greatly constrains arbitrary trade and indirect tax policy changes. It also locks in well defined property rights and codifies competition policy and state-aid policy. By securing convertibility, open capital markets and rights of establishment, membership assures investors that they can put in and take out money. Finally, EU membership guarantees that CEEC-produced products have unparalleled access to the EU 15 markets. On the macro side, membership puts the CEECs on a path to eventual monitory union and thus provides a solid hedge against inflation spurts”. Further, they indicate that both these effects probably ensure the credibility and stability of economic activities of CEECs and thus, significant improvements in the investor confidence.

Foreign Direct Investment
Because it is thoroughly believed that the FDI sensitivity of TI as another significant dynamic
effect many researches keep on studying the effect of TI on inward FDIs. Studies that concentrate on EU, NAFTA and ASEAN are substantial in literature. Brenton (1996) studies the behavior of FDI in relation to the EU single market concept in his study “the impact of the single market on FDI in the EU”. He states that the single market concept have influenced EU firms positively to invest in the EU countries. Following this argument, Brenton and Mauro (1999) study the impact of deepening EI between EU and CEECs on FDI flows. They conclude that the FDI stock in CEECs diverge very little as a result of deepening integration. However, their results “contradicts to those who have argued that current FDI in the CEECs is very small compared to overseas investment in countries of similar income in different parts of the world”. Also they indicate that the “additional integration between the EU and the CEECs, have not substantially reduce the flows of overseas investment going to other European countries”. Another study on the relationship between inward FDI and European EI is conducted by Egger and Michael (2002). They assess the reaction of bilateral European FDI relations for the three integration events of the “single market programme”, “the 1995 enlargement” and “the agreement between EU and the CEECs”. Their results confirm a “substantial positive anticipation effect” of FDI only during announcement and the formal establishment of each event. Hence, they conclude that these integration arrangements in Europe depict significant effects on FDI, but the relation still seems like anticipatory.

This phenomenon is also heavily researched with respect to NAFTA. However, Feils and Rahman (2008) point out that all the previous studies in this regard concentrate only on a particular country in the region and thus, failed to address the effect of NAFTA in attracting FDI to the entire region as a whole and country level compression thereof. Therefore, with their study, “regional economic integration and FDI: the case of NAFTA”, an attempt is given to fill the gap in resent literature in the region. They conclude that NAFTA favorably influencing inward FDIs to the region as whole, but most of these have acquired by United Stets and Canada. Southeast Asian integration arrangements also have succeeded in attracting FDIs to the region and for its member countries. For instance, a recent study by Uttama and Peridy (2009), “the impact of regional integration and third country effect on FDI”, confirm the ability of ASEAN EI in attracting FDI. With this study they investigate the determinants of FDI specially by considering bilateral determinants, third country determinants and regional EI in a single framework. Their main findings indicate that all these considered determinants simultaneously affect the FDI inflows to the region.

Technology Transfer through FDI

Many researches subsequently, investigate the expected benefits of inward FDIs with the view of dynamic gains of TI. As a result, the direct and indirect benefits of FDIs became a significant part of dynamic gains. The mostly researched phenomenon in this regard is the potential ability of multinational firms in transferring technology, knowledge or know-how to the host countries. The process of technology transfer through FDIs can possibly take two forms. That is horizontal and vertical process of technology transfer. The horizontal process may involve in transferring the full technology needed in production of a particular good. But in the vertical process, only the technology required to produce a particular stage or stages of a product is transferred. Vertical technology transfer occurs in situations, where the production process is carried out partly in the source country and partly in the host country of FDI. As reported by Javorcik (2010) depending on the level of industrialization or the development of the source and host country the conclusions of the studies that focus on the causal relationship between foreign ownership and firm performance are not consistent. These inconsistent conclusions are due to variations in the technological gap in between the multinational companies and their acquisition targets. Higher the gap higher goes the performance of the acquired firms. Harris and Robinson (2003) with their study published in “Review of Industrial Organization” concentrate on UK manufacturing sector and attempt to answer the question “are foreign owned plants better”? Their general conclusion indicates that the country of origin is a significant determinant of technology transfer and hence, the results vary significantly across the countries. Moreover, they indicate that “there is little evidence of a clear productivity advantage of EU owned plants over domestic plants”. These results might be influenced by the little technological gap existed in between UK and EU owned plants in the manufacturing sector.

In the mean time, researches on developing countries provide evidence for significant technology transfers from FDI. This may be due to the weak research and development (R&D) base, limited investment in R&D, weak infrastructure, weak production and manufacturing capacity in
developing countries (Whab, Rose and Osman, 2012; Lado and Vozikis, 1996; Tepstra and David, 1985), and because most of the inward FDIs to these countries originate from the developed countries. Thus, the technology gap is significantly high. As a result, these FDIs generate a positive effect on the productivity of developing countries. This indicates a significant technology transfer. Lee and Tan (2006) study the intensity of technology transfer through FDI and import of machinery in the selected ASEAN countries (Singapore, Malaysia, Thailand and Indonesia). They confirm a substantial technology transfer through FDI to the region. The intensity of technology transfer has followed the intensity of FDI inflows to the region. This indicates that, higher the FDIs acquire higher the possibility of experiencing technology transfer. Further, they conclude that Japan and US, two highly industrialized nations, as the most significant contributors of FDI and technology transfer to the region.

Apart from the technology transfer, FDIs may influence economic growth of host countries through the spillover effects on other growth stimulants as well. Nabende, Ford and Slater (2001) examine the spillover effects of FDI on human capital, labor force, technology transfer, international trade and learning-by-doing. With the presence of spillover effects they extend the study to investigate the inward FDI sensitivity of APTA. Their findings indicate that the spillover effects of FDI are significant on human capital, technology transfer and learning-by-doing. Further, AFTA significantly influence the inward FDIs to the region. Hence, they confirm a positive impact of AFTA on human capital, technology transfer and learning-by-doing. Arnold and Javorcik (2009) by using micro data from Indonesian manufacturing sector investigate the causal relationship between foreign ownership and firm performances. They conclude that the productivity of the firms acquired by multinational companies is improving and this improvement starts from the acquired year itself and goes on to the subsequent years. Javorcik (2010) indicates that Arnold and Javorcik (2009) did not directly concentrate on the technology transfer phenomenon. However, their findings, “productivity improvements take place simultaneously with increases in investment in machinery and equipments, employment, wages and output”, suggest a restructuring process on those firms acquired by multinational companies. Javorcik further indicates that in addition to the technology transfer the spillover effect of tacit knowledge, know-how, management techniques and marketing strategies of multinationals’ may be equally important for the FDI recipients.

**Technology Transfer through Trade**

The trade expansion effect of RTAs either through TC or TD may itself leads to a significant technology transfer. International trade literature provides a substantial amount of empirical studies that concentrate on the links between trade and technology transfer. (Parente and Prescott, 1994; Coe and Helpman, 1995; Coe, Helpman and Hoffmaister, 1997; Bayoumi, Coe and Helpman, 1999). Parente and Prescott (1994) with their study “barriers to technology adoption and development” state that some countries make it inherently difficult for their firms to adopt new technologies by maintaining differences in political, regulatory, legal and social factors with other counter parts of the world. Moreover, he indicates that international trade eliminates such barriers to technological adoption for some extent and thus, trade may affect growth as a result of technological progress. Coe and Helpman (1995) introduce a model to capture the dependency in between the total factor productivity and both local and foreign research and development capital. Their results suggest that the domestic productivity is benefitted from the foreign research and development capital. Further, they conclude that these benefits are higher as the countries more open to the international trade. Later, Coe, Helpman and Hoffmaister (1997) reproduce the earlier study by introducing legal origin and patent protection as instrumental variables in a panel cointegration framework. These new results, while confirming the earlier key results, indicate that “institutional differences are important determinants of total factor productivity and that they impact the degree of research and development spillover”.

Bayoumi, Coe and Helpman (1999) in their study “research and development spillovers and global growth” investigate the impact of research and development, international research and development spillover, and trade on economic growth of developed and developing countries. They found evidences to suggest that all these three factors significantly boost the economic growth in both industrialized and developing countries. Moreover, they conclude that open trade policies can benefit developing nations via facilitating technology transfer from industrial countries. The studies of Parente and Prescott (1994); Coe and Helpman (1995); Coe, Helpman and Hoffmaister (1997); and Bayoumi, Coe and Helpman (1999) concentrate on a country’s imports of all goods,
that is, no distinction is given to the consumption and capital goods. According to Saggi (2002) the technological know-how that can be attained through the reverse engineering of consumption goods serves little to the technology transfer process. But trade in capital goods that can be used in the production of other consumption goods should provide more technology transfer than the consumption goods. Xu and Wang (1999) distinguishing total imports of OECD countries into capital goods and non-capital goods investigated the significance of trade in the process of technology transfer. They indicate that the capital goods influence significantly and explain more of the variation in the productivity than the total imports. Further, non-capital goods have failed to significantly influence the productivity of these countries.

According to Saggi (2002) dynamic welfare analysis of TI is highly curious about exploring the ways and forms of technological progress turns up in the participating countries. Technology spreads among participating countries through number of channels. It can be directly through the international trade in technology or by the indirect forms like trade in goods and international movement of factors of production. The existence of multitude of channels makes it difficult to assess exactly how technology transfer takes place. Hence, most researchers focus only on one or two channels. Of these, FDI and trade have received the most attention. However, Saggi (2002) in his literature survey published in “the world bank research observer” summarized the potentials channels of knowledge or technology spillovers as “demonstration effect”: imitation or the reverse engineering activities of local firms; “labor turnover”: the employees swish from multinational firms to local firms may transfer some important knowledge; and “vertical linkages”: technology transfer can take place to the potential suppliers of intermediate goods or to the buyers of their products. Meanwhile, a literature survey on technology transfer mechanisms of multinational companies by Whab, Rose and Osman (2012) also summarize these channels in a broader sense. They are: formal market channels and non-market channels of technology transfer. Under formal market channels they identify direct exporting, FDI, licensing, and international joint ventures. On the other hand, under the non-market channels five means are identified. Those are: imitation, movement of personal, data in patent application and test data, communication media, and temporary migration.

RTAs AND ECONOMIC GROWTH

Shiff and Winters (1998) in their empirical review on dynamics of regional TI arrangements indicate the limitedness of theoretical and empirical studies that specifically focus on the growth effects of RTAs. However, the EI literature provides some empirical studies that concentrate on trading blocs and their subsequent impact on the economic growth of participating countries. Most of these studies evidence the likely effect of RTAs on growth (Ben-David, 1993 and 1996; Henrekson, Torstensson and Torstensson, 1997; Walz, 1997; and Vamvakidis, 1998), while Brada and Mendez (1988) and De Melo, Panagariya and Rodrik (1993) conclude the opposite. Ben-David (1993) with his study titled “Equalizing Exchange: Trade Liberalization and Economic Convergence” examine the growth convergences of EEC, EFTA and CUSFTA member countries following their rectification of respective RTAs. Results indicate a significant income convergence for each trading bloc and moreover, this convergence is upward with faster growth rates for poor countries (Shiff and Winters, 1998). Later, Ben-David (1996) with his study published in the “Journal of International Economics” compare the relationship between international trade and income convergence of member countries in a specific trading bloc with selected group of non-member trading partners. Ben-David (1996) confirms that the convergence among trading partners within a trading bloc is more likely than with non-member trading partners.

Henrekson at el. (1997) examine the effects of EC and EFTA on the growth trajectories of member countries with the study titled “Growth Effects of European Integration”. They employ a base regression model with appropriate proxies for growth rate, level of development, human capital, investment and two dummy variables for EC and EFTA over the period 1976 to 1985. They conclude the fact that RTAs “may not only affect resource allocation, but also long run growth rates” since, results of the regression model indicate that both EC and EFTA lead to positive and significant growth effects for the member countries. The study titled “Growth and Deeper Regional Integration in a three-country Model” conduct by Walz (1997) employs the endogenous growth models of Romer (1990) and Grossman and Helpman (1991) in to a three-country model in order to assess the growth effects of regional integration. Appling the TC and
TD effects in static theory into the dynamic setting, he concludes the fact that dynamic effects of TI are not always growth enhancing, since a union with TC effects would leads to positive growth effects while a union with TD effects lowers the steady-state growth rate. However, Walz indicates that the aforesaid relationship depends on the “general specialization patterns of the integrating nations” and therefore, reverse relationship is also possible. For instance, as indicate by Shiff and Winters (1998), TD may rise growth and TC may lowers it, if a country specializes in the traditional sector.

Vamvakidis (1998) with the study titled “Regional Integration and Economic Growth” attempt to answer the empirical question, whether the openness, market size, and level of development in a specific regional bloc leads to economic growth of home countries by considering ASEAN, The Andean Pact, CACM, Central African Customs and Economic Union (UDEAC), and the EU. In this regard, cross country and time series growth regressions are employed over the period 1970 to 1990. His findings indicate that except EU all the other considered RTAs fail to influence growth of member countries. Moreover, Vamvakidis concludes the fact that “countries with open, large and more developed neighboring countries do experience positive spillovers”. Nabende, et al. (2001) examine the influence of AFTA in attracting FDI and subsequent spillover effects of FDI on economic growth with their study titled “FDI, Regional Economic Integration and Endogenous Growth: Some Evidence from Southeast Asia”. Ordinary least square and three-stage least square techniques are employed on data gathered over the period 1970 to 1996 for ASEAN-5 countries. Their findings indicate that AFTA significantly influences the inward FDI to the region and the spiller effects of FDI on growth are significant through human capital, technology transfer and learning-by-doing.

Though empirical evidences on the aforementioned phenomenon are limited, empirical studies that concentrate on trade openness and economic growth are substantial (among others, Grossman and Helpman, 1992; Edwards, 1993; Sachs and Warner, 1995; Coe, Helpman and Hoffmaister, 1997) and theoretically rich, because they confirm few possible channels through which trade openness may influence growth (Wacziarg, 2001; and Arora and Vamvakidis, 2005). Some of these channels can be applied even for an analysis that considers the impact of RTAs on growth. Hence, some selected studies that concentrate on the relationship between openness and economic growth are also reviewed in this section.

Wacziarg (2001) introducing a new measure of trade policy openness and more specifically identifying six channel variables that trade policy influences economic growth, attempt to investigate dynamic gains of trade. These channels include: government size, quality of macroeconomic policies, price distortions, factor accumulation and another two variables that capture the effect of technology transmission namely, FDI and manufactured exports. In this regard, a structural model is estimated using three-stage least squares in a panel of 57 countries over the period 1970 to 1989. The findings of the study indicate that the economic growth is positively influenced by the trade openness and among channel variables, accumulation of physical capital, technology transmission, and improvements in macroeconomic policies are significant. Accumulation of physical capital is found as the main cannel through which openness affects growth. Arora and Vamvakidis (2005) also ignoring the influence the RTAs, examine the effect of trading partners on the growth rate of home country, with their study titled “How Much Do Trading Partners Matter for Economic Growth”. A fixed-effect panel data model is estimated for 101 countries during 1960 to 1999. Independent variables use in this regard includes: Convergence, demographic development, investment in physical capital, human capital, macroeconomic stability, trade openness, trading partners GDP growth, and an interaction term that captures the level of openness. Further, world real per capita GDP, non trading partners real per capita GDP and distance-weighted real per capita GDP are used as control variables for common global and regional trends. The results of the panel model indicate a strong relationship between trading partners GDP growth and home country GDP.

**SOUTH ASIAN RTAs**

Regional TI is one of the major concerns of South Asian countries over the last two three decades. It is institutionalized with the formation of SAARC in 1985 and the subsequent rectification of SAPTA, SAFTA, and SATIS. The impact of such TI on South Asian countries is investigated even before the formation of SAARC. For instance, Jayaraman (1978) and Rahman, Bhuyan, and Reza, (1981) independently investigate the potential effects of a hypothetical CU which comprises of Bangladesh, India, Nepal, Pakistan and Sri Lanka. However, as
report by Bandara and Yu (2003) quantitative research studies that concentrate on this phenomenon within the region are limited due to four possible reasons. First, the regions’ contribution to the global trade, investment, and growth is not momentous. Second is the data constraint in the region. Third, the published data do not provide the real picture as the “illegal trade” volume in the region is high. Finally, the existence of non-tariff barriers, which are difficult to recognize and quantify, also leads to the limitedness of such quantitative studies. Despite these possible constraints literature provides some empirical evidences on the desirability of TI in the region, especially on SAPTA and early stages of SAFTA. Hence, the following section provides a descriptive review on some of those studies, thereby highlighting the literature gap that prevails in the South Asian region.

Early studies that focus on desirability of SAPTA use the partial equilibrium framework in order to assess the price elasticities of goods demand by the region. Govindan (1994) with the study titled “A South Asian Preferential Trading Arrangement: Implications for Agricultural Trade and Economic Welfare” evaluate the trade effects of SAPTA by estimating the price elasticities of food imports by the member countries. The results of the study confirm the potentiality of SAPTA in improving the economic welfare and specially in securing the food security in the region. DeRosa and Govindan (1995 and 1996) point out the requirement of a further study as Govindan (1994) does not devote his attention on the third country effects and consider only the effects of food imports by the member countries. Hence, DeRosa and Govindan with their study “Agriculture, Trade and Regionalism in South Asia” extend the previous study by investigating the implications of SAPTA-APEC relations and including trade in manufactures as well. In this regard, they evaluate the unilateral tariff reductions by SAARC countries with in a partial equilibrium framework. DeRosa and Govindan while confirming the findings of Govindan (1994) state that SAPTA expands the intra-SAARC trade in manufactures, especially in labor-intensive and other light manufactures. Moreover, they indicate that the trade liberalizations with other counterparts of the world (eg: APEC) will bring more welfare gains to the region when compared to intra-regional liberalizations.

The study titled “Is SAARC a viable economic block? Evidence from gravity model” conducted by Hassan (2001) devoting special attention to the Bangladesh trade patterns attempt to answer the empirical question, whether intra-SAARC trade is welfare improving or not. In addition, the impact of SAPTA and hypothetical trading blocs between Bangladesh and other regional blocks like ASEAN, NAFTA and EEC are also investigated. As the title of the study suggests a basic gravity model with appropriate proxy variables for size of the economy, level of economic development, and transportation cost or distance between countries are employed in arriving at the results. Based on the results of the gravity model, he point out the requirement of further TI commitments, since the prevailed integration arrangements are failed in creating welfare benefits to the countries of the region. Bandara and Yu (2003) use the GTAP model in their study titled “How Desirable is the South Asian Free Trade Area? A Quantitative Economic Assessment” in order to evaluate the welfare gains of SAPTA and proposed SAFTA. In this regard, they use the GTAP version five databases and aggregate it into 12 regions considering Bangladesh, India, Sri Lanka and rest of the South Asia as separate regions. Further, 17 industries are considered in this regard. Bandara and Yu conclude the fact that SAPTA and the proposed SAFTA as a TI arrangement is highly undesirable and would lead to a significant TD effect. Further, they indicate that South Asia have the potentiality of gaining much more through unilateral and multilateral trade liberalizations than preferential trading arrangements. Yet still, hypothetical FTAs with NAFTA and EU depict the potentiality of welfare gains to the region.

Hirantha (2004) examines the TC and TD effects of intra-regional (SAPTA) and extra-regional (ASEAN, NAFTA and EU) trade arrangements with his study titled “From SAPTA to SAFTA: Gravity Analysis of South Asian Free Trade”. A basic gravity model is employed by using both panel and cross sectional data analysis techniques in order to analysis the bilateral trade data during 1996 to 2002. Hirantha indicates that the results of the study contradict with the most of the previous studies within the region as it depicts a significant intra-regional TC effect. Also, insignificant TD effect is found as the region imports mostly from non-member countries. Further, he concludes the fact that this significant TC effect of SAPTA will lead positively for the success of proposed SAFTA. Tumbarello (2006) investigates the TC and TD effect of several preferential trading arrangements including SAPTA. A gravity equation as proposed by Soloaga and Winters (2000) is employed by
using both panel and cross sectional data analysis techniques during 1984 to 2003. Tumbarello confirms the significance of all the basic gravity variables like, economic size, per capita income, bilateral distance, common language, and common border. Moreover, he confirms the existence of TC effects and also the absences TD effects for almost all the RTAs considered including SAPTA. Kumar and Saini (2007) with the study titled “Economic Co-operation in South Asia: The Dilemma of SAFTA and Beyond” use the GTAP model once again to assess the potential impact of SAFTA on member countries. Further, Kumar and Saini examine the effects of alternative trade liberalization scenarios: extended trade relations with ASEAN, NAFTA and EU; unilateral and multilateral trade liberalizations; and a hypothetical CU for South Asia. They also made a conclusion quit similar to the Bandara and Yu (2003), which indicates that “the welfare basis for establishing SAFTA or for deeper trade policy coordination is not very strong. Nor it is obvious that cooperation among South Asia would be forthcoming given the anticipated welfare impacts”.

The study titled “Trade Potential in SAFTA: An Application of Augmented Gravity Model” conduct by Rahman, Shadat and Das (2006) examine the static welfare effect of several RTAs with special focus on SAFTA. In this regard, the gravity model is augmented by introducing bilateral exchange rates and bilateral free trade agreements. They estimate this augmented gravity model by using panel data approach with country-pair and time specific fixed effects during 1991 to 2003. Rahman at el. indicate the existence of both export creation and export diversion in SAFTA. In addition, they state that Bangladesh, India, and Pakistan are likely to be gain while other countries (Bhutan is not considered with this study due to the data constraint) are negatively affected. Moktan (2008) investigate the desirability of SAPTA with the study titled “Evaluating the Intra-regional Exports and Trade Creation and Trade Diversion Effects of Trade Agreements in SAARC Countries”. An augmented gravity model (augmented by introducing policy variable and time specific fixed effects) is employed in a pooled panel data framework during the period 1980 to 2005. The time period is broken down to five sub periods as Pre-SAARC (1980-1984), Post-SAARC (1985-2005), Pre-SAPTA (1980-1994), Post-SAPTA (1995-2005), and Pre+Post (1980-2005). Results indicate a significant impact of trade agreements on exports during Post-SAARC and Post-SAPTA periods while it is insignificant in Pre-SAARC and Pre-SAPTA period. Also he confirms the existence of significant TC effects within the region. Further, he indicates these TCs possibly result from the effect of SAPTA and the “delayed impact of bilateral trade agreements” between member countries of the region.

Once again, Moktan (2009) with his study “The Impact of Trade Agreements on Intra-regional Exports: Evidence from SAARC countries” investigates the desirability of trade agreements in SAARC countries by introducing several adjustments to his previous study. In this study, generalized gravity model or so called unilateral trade model and panel data set are used over the expanded period of 1971 to 2005. This 35 year period is broken down to five sub periods as Pre-SAARC1 (1971-1979), Pre-SAARC2 (1980-1984), Pre-SAPTA (1985-1995), Post-SAPTA (1996-2005), and SAARC 1&2 (1985-2005). Estimated results indicate that the impact of trade agreements during Pre-SAARC1, Pre-SAARC2 and Pre-SAPTA are not significant while during Post-SAPTA and SAARC 1&2 are significant. Moreover, when the potential significance of SAPTA is tested, results show the failure of SAPTA in inducing a TC effect within the region and confirm the fact that the actual impact on exports in Post-SAPTA periods came from the delayed impact of bilateral trade agreements between member countries of the region.

The research paper titled “Does South-South Trade Agreements Enhance Member Countries’ Trade? Evaluating Implications for Development Potential in the Context of SAARC” conduct by Bhattacharya and Das (2009) examine the potential influence of SAFTA on member countries by devoting special attention to the “behind the border” and “beyond the border” constraints to bilateral trade flows during 1995 to 2008. Following the available literature, they define “behind the border” constraints as “the unfavorable policy environments in the home country” while those in the partner country were define as “beyond the border” constraints. In this regard, the error term, , of a gravity model measured through the maximum likelihood framework is decomposed into “single sided error term”, , which captures the combine effect of “behind the border” constraints and into “double sided error term”, , which denotes “beyond the border” constraints and normal error term. Four hypothetical tariff reductions (25%, 50%, 75% and 100%) are evaluated in arriving at the results. The findings of the study indicate that, the “behind the border”
constraints significantly influence the exports of member countries. Further, relatively smaller member countries will achieve the maximum gain when a FTA among SAARC members fully operational. Moinuddin (2013) using a resent data set (1992-2011) investigates the determinants of trade flows and the effects of SAFTA with the study titled “Fulfilling the Promises of South Asian Integration: A Gravity Estimation”. A gravity model with standard gravity variables and additional explanatory variables are used to represent SAFTA and countries that link to “multi fiber agreements”. The reported results on determinants provide several conclusions: all the standard gravity variables are significant; the impact of currency depreciation or appreciation measured by using exchange rate is not significant for all the countries; the proxy for the openness (Import-GDP Ratio) is significant; the measure of restriction indicates that the reductions in tariffs will positively affect the intra-regional trade. Further, Moinuddin confirms the existence of TC effects within the region as a result of SAFTA.

In addition to above reviewed empirical evidences that focus on static welfare effects of intra-SAARC trade integrations, very few researchers devote their attention on the dynamic aspect as well (Alam, 2000; Pradan, 2002; Sirinivasan, Kalaivani, and Ibrahim, 2011; Athukorala, 2013). An exploratory study titled “Intra-Regional FDI and Economic Integration in South Asia: Trends, Patterns and Prospects” conduct by Athukorala (2013) examines the behavior of FDI within the South Asian region. In this study, Athukorala clearly mentions the lack of research studies that concentrate on the intraregional-FDI and FDI-Trade nexus for the region. However, depending on his investigation on inward and outward FDI trends several conclusions are made. He indicates that the majority of intraregional-FDIs within the region are horizontal FDIs, while the vertical FDIs are limited. Further, he states that though the impact of SAFTA and other bilateral FTAs on inward-FDI is yet to investigate for the region, FDI trends suggest that cross border trade liberalizations and liberalization of investment regimes may lead to attract intraregional vertical FDIs. However, the scope of other studies limited to the FDI and its effect on the growth trajectories of the region. Or in other words, these studies concentrate on the causal relationship between inward FDI and economic growth ignoring the phenomenon of integration. Alam (2000) examine the impact of FDI on Bangladesh and Indian economies and conclude the study indicating that the impact is unsatisfactory. Pradan (2002) also stress a similar conclusion with his study conduct for India over the period 1969 to 1997. Both these studies concentrate on one or two countries of the region. But, a recent study, “An empirical investigation of foreign direct investment and economic growth in SAARC countries”, by Sirinivasan at el. (2011) examines the causal nexus between FDI and all the SAARC countries over the period 1970 to 2007. The econometric tool of Johansen Cointegration (JC) test, Vector Error Correction Model (VECM), and Impulse Response Function (IRF) are employed in attaining results. The reported results of JC test indicate a long run relationship between FDI and GDP in Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka. VECM results confirm strong bidirectional link in these two variables for the countries except for India. However, a significant one way causality is depicted from GDP to FDI for India.

CONCLUSION

This study reviews the theoretical and empirical justifications of static and dynamic theories of TI. A careful summarization of static theory and its further developments indicate that a RTA may possibly generate welfare gains mainly through the effects of TC and TD. Though, TD is initially considered as a welfare reducing effect, later it has been proved that TD is not necessarily a negative aspect. Further, some key characteristics of participating countries and the agreement itself may lead to intensify the static welfare gains. These features may include the terms of trade, form of tariff reduction, competitive verses complementary nature of economies, levels of income, volume of trade, and etc. According to many prominent researches mere concentration on static effects is insufficient when assessing the effects of RTAs. Therefore, to have a better understanding on the desirability of RTAs it is required to assess the dynamic effects as well. The dynamic welfare theory concentrates on the factors that lead to increase rate of economic growth as a result of entering into a RTA. TI literature identifies economies of scale, increasing RRC, improvements in government policy credibility, inward FDI, technology transfer, human capital developments, improvements in knowledge and knowhow, and etc. as dynamic factors. However, due to lack studies that concentrate on dynamic effects the
knowledge on this regard is still unsatisfactory. Moreover, this has resulted in a vacuum in literature on the potential growth channels of RTAs. All in all, this literature survey intensifies the requirement of studies that focus on both static and dynamic theories when assessing the desirability of RTAs. However, the existence of undefined and inconclusive region specific other factors may lead to different conclusions for different TI arrangements. Hence, when empirically testing the welfare effects of RTAs it is import to consider region specific trade stimulant and deleterious factors as important. Empirical literature on these welfare effects is quite rich in Europe, North America, and Southeast Asia. However, empirical knowledge on this regard in other counter parts of the world, especially South Asia, is yet to reach a peak due to lack of studies, inconsistency in findings, and especially completely ignorance of dynamic welfare effects.

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