

# Impact of Regional Economic Integration on Trade and Investment

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## Abstract

Economies that have a negotiated regional trade agreement (RTA) are liberalising various economic norms among member nations (including trade, investment, environment and other strategic parameters) to strengthen long-term flows of goods, services and capital. Hence, numerous studies have been conducted to empirically examine the impact of regional integrations on trade and investment using various econometric tools and techniques. The present study was an attempt to state and identify the contribution of such studies. An insight into the existing literature depicted varied results; rather than: some studies stated that the regional economic integration is facilitating world trade and also supporting the flow of capital among member nations, whereas few studies depicted a non-collaborated association between RTA and trade/investment. Further, a review of the literature depicted that few RTAs still need to work towards enhancing the depth of trade and investment provision to further strengthen the flows of trade and investment in the years to come.

## Keywords

Regional trade agreement, trade, investment, trade creation, trade diversion, investment creation, investment diversion

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## Introduction

Regional economic integration (REI) or regional trade agreement (RTA) is an agreement under the aegis of the WTO to liberalise and stimulate trade and trade-associated activities. RTAs have emerged as one of the most important wings of world trade and, hence, are becoming the backbone of multilateral trading mechanism world over. RTAs not only build and boost trade and trade-related activities but also strengthen and support channels that stimulate finance and investment among member economies.

### *An Upsurge in Regional Trade Agreement*

An upsurge in the number of RTAs negotiated on the world map has supported the world as a global market for trade and investment to facilitate trade, reduce (and even remove) tariff (and non-tariff) barriers, stimulate finance and channels of investments and strengthen the free flow of goods, services and factors of production. Furthermore, new regional blocs with deeper provisions for liberalisation of trade and investment can be registered as reflectors of intra-regional growth of trade and investment flows have not only reflected trade *creation and diversion impacts* but also recorded a wave of *investment creation and diversion effects* for RTA-negotiating economies. Upsurges in RTA also indicate that economies within the bloc have an intent to come up with compatible policies and legislatures and build infrastructure that supports the flow of trade and capital movement among the members. Hence, new-generation RTAs are seen as an instrumental move to strengthen both trade and investment and are strongly motivated by the desire for more intra-bloc foreign direct investment (FDI) flows (Park & Park, 2008).

### *Impact of RTAs on Trade*

While negotiating for a regional bloc, economies within the bloc come up with policies and measures to stimulate trade and to reduce/minimise trade barriers. Such an intent helps to stimulate trade and trade-related activities among the members of a trade agreement (RTA/insider-insider). Further, RTAs support reduction in tariff structures and, hence, encourage members within the bloc to expand the market size, search for better and competitive products, reduce trade and information cost and strengthen production and distribution networks. Hence, *trade creation* can be seen between members within RTAs (RTA/insider-insider). However, on account of tariff preference, RTA non-members (RTA/insider-outsider) lose the market even if the RTA/outsider economy is better equipped to produce cost-effective cheaper products. Tariff preference makes a member economy more lucrative to trade, and hence, *trade diversion impact* is registered.

## *Impact of RTAs on Investment*

As discussed earlier, new-age RTAs are not only liberalising trade among the negotiating countries but also promoting flow of investments. Hence, assessing the impact of *investment creation* and *investment diversion* as a result of RTA formation also becomes a vital zone to study. Various domains of the underlying relationship between RTA and FDI can be illustrated as follows:

1. The first example can be associated with jumping effects. Prior to negotiating an RTA agreement, an economy, say X, has high trade barriers, and hence, a high cost of serving through the market is registered. In the given scenario, a foreign investor belonging to country Y intends to jump the existing tariff structure and establish foreign affiliations in the home country X, promoting horizontal FDI. However, the jumping effect can be seen only in case both the economies have a similar cost structure and consumer market to serve. Further, if both countries X and Y subsequently enter into an RTA and support a reduced tariff structure then trade *creation* impact is likely to be seen and dilution of jumping effect is bound to happen.
2. The above-mentioned impact can be registered in case the products offered in both economies are either similar or identical. However, in case the products offered and manufactured in both economies are heterogeneous (and not homogenous) and/or are manufactured via advantage of local factors of production then liberal trade channels cannot substitute investment with trade. Hence, horizontal FDI will still dominate and even get strengthened with liberal trade channels. The support for RTA formation on investment can be registered in such a case.
3. Further, RTA formation can strengthen international vertical integration effects in case the host country, say X, has labour abundance or technical know-how and the market is available in both economies X and Y. In such a scenario, a reduction in trade barriers and a strong compatible infrastructural and policies framework via the formation of RTA will boost FDI among members. An *investment creation* impact as a result of vertical integration can be seen.
4. Lastly, the era of 'new regionalism' has promoted 'deep integration' of economies that has strengthened both trade and investment channels. Hence, intra-bloc members (insider-insider) are supporting policies that reduce the transaction cost associated with homogenising legal setups and liberalising investment flows and institutional setups to reduce/minimise cross-border disputes. Further, new RTAs are formed with explicit investment policies and provisions that strengthen FDI flows among members of a bloc.

### *Diversion and Dilution Effect of FDI*

In case the home and host economies find the members as a more attractive location for FDI investment and non-members as a less attractive or more cumbersome

destination for investment flows post the RTA formation, then RTA may promote FDI diversion. Hence, FDI from the source economy to non-member countries might decline as the host country within the bloc becomes a better destination for investment flows. Further, in case the bloc members propose to expand the existing RTA, entry of new members enlarges the bloc and hence relocation of investment towards more than one host takes place, leading to the FDI dilution effect.

#### *Extended Market and Redistribution Effect of FDI*

The formation of RTA promotes less trade tariff for the source country and enhances a larger market, promoting the extended market effect and also redistribution effect. However, the source country may sometimes lose horizontal FDI (as explained earlier in point 1) and may gain in terms of vertical FDI (point 2). Hence, the redistribution net gain or loss may depend on factors such as labour endowment, availability of investment opportunities and extended market size for each member economy.

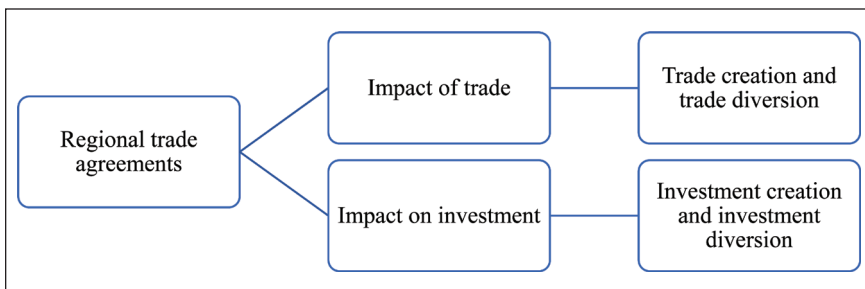
## Objectives of the Study

The objectives of the study are as follows:

1. To review the literature and study the impact of RTA on trade.
2. To review the literature and study the impact of RTA on investment.

## Review of the Literature

As discussed, the present study chalks down the studies that empirically evaluated the impact of RTAs on trade and investment; therefore, we have divided our literature into two sub-divisions, namely impact of RTAs on trade (evaluating trade creation and trade diversion) and impact of RTAs on investment (examining investment creation and investment diversion) (see Figure 1).



**Figure 1.** RTA, Trade, and Investment.

### *Studies Examining Trade Impact of RTAs*

Numerous theoretical and empirical studies have investigated the growth of world trade in association with the proliferation of RTAs. Pioneer studies on RTA can be associated with Jacob Viner (1950) and Johnson (1960), who explained the economic effects of trade creation and trade diversion of an RTA.

Rahman et al. (2006) examined trade creation and trade diversion effects for few RTAs with major concern for South Asian Free Trade Area (SAFTA), using the augmented gravity model with country-pair-specific as well as year-specific fixed effects. The study incorporated traditional gravity variables such as gross domestic product (GDP), population, distance, common border and common language with export flow as dependent variables. For depreciation or appreciation of the domestic currency, the study incorporated the real exchange rate of dollars (EXCH) in terms of the domestic currency. A variable import–GDP ratio (IM/GDP) was taken as a proxy indicator of openness. Two dummy variables  $RTA_1$  and  $RTA_2$  were included, where  $RTA_1$  is 1 when both exporting and importing countries are member nations of the same RTA at a given time, otherwise 0, whereas  $RTA_2$  is 1 in case the exporting country is the member of an RTA at the given time, otherwise 0.  $RTA_1$  measures the intra-bloc export creation (or export diversion) and  $RTA_2$  measures the net export creation (or net diversion) for a particular member country. Another dummy variable, RTAC, was incorporated to see the impact of RTA on an individual member nation. The study found the coefficient of GDP for both countries are positive, and even common border, common language and import–GDP ratio demonstrate positive and significant coefficients. But distance and population variables have a negative impact on bilateral export flows. The growth of population in the exporting country had little effect on bilateral trade flows. The study stated that all member nations of SAFTA don't have equal results for trade creation and trade diversion. Bangladesh, Pakistan and India show positive signs for trade creation, but other member nations of SAPTA show negative export performance mainly due to structural limitations. However, the study indicated a significant rise in bilateral exports due to the openness of importing countries and found significant intra-bloc export creation in SAPTA and evidence of net export diversion in SAPTA using a gravity model. The study suggested a reduction in tariff (and non-tariff barriers) and changes in structural rigidities could lead to a substantial increase in intra–South Asian Association for Regional Cooperation (SAARC) trade.

Guilhot (2010) employed the panel data gravity model to assess the impact of three main east Asian trade agreements [Association of Southeast Asian Nations (ASEAN), ASEAN–China and ASEAN–South Korea) over the period 1985–2007 to estimate the impact of intra-regional and extra-regional trade. The study incorporated 12 economies (10 ASEAN, South Korea and China) along with 22 main trading partners to determine the bilateral export flow. The study included GDP as an indicator of economic size, GDP per capita as an indicator of economic developments and geographical distance as a variable representing the impact on transportation cost. Apart from the above-said traditional variables, the study also

referred to relative distance measuring remoteness, and the variable was computed as the sum of the distance between exporting and importing countries divided by the GDP of importing countries. The variable compared the distance in relative terms with the alternative trading partners. To measure the nature of commodities traded, the study incorporated a gap in the economic development variable, that is, absolute difference between the GDP per capita of both the countries. For evaluating the impact of free trade agreement (FTA) (regional bias) in terms of trade creation and trade diversion, three regional indicator variables were taken. The first variable, *Fta*, measured intra-regional trade, where *Fta* was taken as 1 if both countries were part of the same regional bloc, otherwise 0. The second variable, *FtaX*, indicated the impact of an agreement on exports to rest of the world; therefore, *FtaX* was taken as 1 when the exporting country was not part of the agreement, otherwise 0. The last variable, *FtaM*, took the value 1 if the importing country was not part of an RTA, otherwise 0, so that the effects of imports on the rest of the world could be estimated. The GDP and GDP per capita for exporting and importing countries were found to be significant and positive. The variable difference in economic development was found to be positive, indicating the existence of inter-industrial trade between countries whose degree of development differed. The remoteness variable was found to be insignificant, implying an increasing distance from alternative trade partners has no impact on bilateral trade. The variable *Fta* had a positive coefficient and supported both intra-regional and extra-regional exports. But *FtaM* was significant and negative, implying import into ASEAN is less from rest of the world. The study suggested that the ASEAN Free Trade Area (AFTA) is more trade generating than trade diverting. The study found ASEAN to be supportive both for regionalism and for multilateral trade agreement. But the FTA, ASEAN–China and ASEAN–South Korea still did not support intra-regional trade and thus did not have impact on East Asian trade flows.

Akhter and Ghani (2010) used the gravity model based on cross-sectional and pooled data to measure the bilateral trade flows and trade effects for member and non-member countries for the period 2003–2008. The study covers the benefits of FTAs for SAARC countries. It explains the gravity model of trade equation, with bilateral trade flow as a dependent variable. For explaining the bilateral trade flow explanatory variables, GDP and GDP per capita have been incorporated for economic size as well as the distance for transportation cost. The variable tariff captures the trade cost. The dummy variable border captures whether the countries have a common border. Two other dummy variables, SAFTA and non-SAFTA, are taken to estimate the trade creation and trade diversion impact of SAFTA. The estimation of the cross-sectional data gives the variation in trade potential. GDP and GDP per capita are positive but less than proportional. The coefficient for distance is negative and statistically significant, indicating an increase in distance increases the transportation cost, leading to reduction in trade flow. The tariff variable indicating trade cost is negative and significant, indicating a rise in tariff deteriorates trade. The dummy variable SAFTA also has a negative coefficient, implying member countries divert trade. The RTA of SAFTA countries also has a negative coefficient for the non-SAFTA variable, indicating trade diversion for

non-member nations. The study suggests an upsurge in trade for SAFTA countries by bring changes in the economic conditions and growth of infrastructure. The estimation by pooled data provides similar results. However, trade volume and trade creation in the region can increase only if the major partners (Pakistan, India and Sri Lanka) sign RTAs. The study provides evidence of trade creation for Pakistan, India and Sri Lanka but trade diversion for other members.

Lee and Shin (2006) cover 17 RTAs across the globe. The study employs the conventional gravity model of international trade with some standard gravity variable along with some additional variables. The average value of real bilateral trade has been taken as a dependent variable. The study quantitatively examines how much trade creation and trade diversion occur and what characteristics of member nations contribute to trade creation and trade diversion. The variables real GDP, population, distance, area of landmass, common border, common language and ex-colonial relations along with the year variable denoting a specific year have been incorporated to examine bilateral trade flow. In addition to the above, two more RTA dummy variables have been constructed, one for intra-bloc country trade creation, that is, RTA/creation (degree of trade creation), and another for trade among members and non-members, that is, RTA/diversion (degree of trade diversion). The results indicate distance with a negative and significant coefficient. The estimated coefficients for GDP, GDP per capita, common language dummy, common border dummy and common ex-colonial dummy variables are found to be positive. Positive GDP and GDP per capita indicate greater economic size leads to increase in trade. The estimated coefficients for both RTA/creation and RTA/diversion are found to be positive and statistically significant. This implies RTAs lead to trade creation but do not divert trade from the rest of the world in the sample study conducted. The results for both gravity-specific variables (random estimation and country-pair fixed effects) are nearly similar. The study suggests RTAs lead to global trade. The study also incorporates the hypothesis of 'natural trading partners' and states that the RTAs can improve welfare levels if member countries are considered 'natural trading partners'. 'Natural trading partners' are those which lead to reduction in transaction cost, and with these given criteria, the study identifies three characteristics for member nations that affect trade creation and trade diversion, that is, geographical distance, land border and common language. Therefore, the study invites six new variables with the given characteristics, that is, RTA/creatDis, RTA/divertDis, RTA/creatBorder, RTA/divertBorder, RTA/creatLang and RTA/divertLang. RTA/creatDis is found to be highly significant and negative, implying an increase in bilateral distance leads to a decline in bilateral trade. The dummy variables for RTA/creatBorder and RTA/creatLang are found to be significant and positive. But RTA/divertDist is negative and highly significant, indicating closer the member nation, smaller the trade diversion from rest of the world. RTA/divertLang is negative and highly significant, implying a common language between members contributes towards increasing trade diversion. In a nutshell, the study indicates RTAs involving natural trading partners located in proximity and sharing a common border create more trade but less trade diversion. In case RTAs have unnatural trading partners, they may



not fully create trade among members and even divert trade substantially. The study tries to support the hypothesis of 'natural trading' partners.

Afesorgbor et al. (2011) use the gravity model for 35 countries for the years 1995–2006 to estimate the impact of RTAs in Africa. Two major RTAs in Africa, Economic Community of West African States (ECOWAS) and Southern African Development Community (SADC), are major concerns of the study. The study also compares them with the benchmark of integration in the EU. A measure of overlapping multi-RTA membership of trading economies has been considered. The study considers groups of countries that are involved in RTAs and have a multi-membership nature. ECOWAS and SADC are therefore important RTAs under the study. The dependent variable is the total bilateral trade, and export has been taken as the measure of total bilateral trade. The explanatory variables are divided into two parts: controlling variables such as population, distance, land area, shared colonial relationship, common currency and GDP and variables of interest covering dummy variables for measuring the impact of each respective RTA and other dummy variables for multiple memberships. For RTAs, the dummy variable ECOWAS assumes value 1 if the home and host countries belong to the same regional bloc ECOWAS, otherwise 0. Similarly, dummy variables SADC and EU are taken for each trade bloc of SADC and EU, respectively. Dummy variable ECOWAS\_EU is one where the home country belongs to ECOWAS and the host country belongs to EU. Similarly, dummy variables such as SADC\_EU, EU\_ECOWAS and EU\_SADC are incorporated in the study. Another dummy variable multi\_RTAs represents the number of RTAs the home and host countries belong to. Although for the gravity model pooled cross section, random effects, fixed effects and Hausman–Taylor estimators have been used, the results obtained by fixed effects are found to be valid, and therefore, the major section of the study applies fixed effects estimations. The results for controlling variables are overall significant and have expected signs. The results for variables of interest and dummy variables for African RTAs are positive and significant, but the impact for African RTAs is found to be less than that for the EU dummy variable largely due to the difference in the stage of integration. The ECOWAS dummy variable is positive and highly significant, but the results of SADC are found to be better than those for ECOWAS for intra-regional trade. SADC membership appears to be relatively stronger due to more diversified trade and tariff-free access to both primary and industrial goods. The impact of overlapping membership has a positive coefficient. The country pairs belonging to an additional RTA show an increase in trade. But the impact of overlapping membership for ECOWAS has been more significant and completely insignificant for SADC.

Jošić and Basic (2021) empirically evaluated the trade creation and trade diversion impact for Croatia's two regional trade agreements, namely Central European Free Trade Agreement (CEFTA) and the European Union using gravity specification. The study evaluated the benefits and drawbacks associated with these regional blocs. To empirically evaluate the impact of these blocs, Croatia's imports, exports and total trade flows with 180 trade partners were evaluated over the period 2000–2016 using cross-country panel regression via gravity specification with pooled OLS, fixed effects, random effects, robust Tobit and PPML



estimations. The result for random effects supported the positive impact of the Croatia–CEFTA bloc for trade creation in imports, exports and trade flows in aggregate. The outcome for Croatia–EU RTA depicted no significant effect for trade creation for imports, exports and total trade flows. Further, a trade diversion effect for imports and total trade flows was registered. Using the Tobit model, CEFTA depicted trade creation in imports, exports and total trade flows, whereas EU registered trade diversion for imports and total trade flows. Lastly, the robust PPML estimator found CEFTA members creating trade for imports, exports and total trade flows and EU members diverting trade for imports and exports and trade creation for total trade flows.

Vollrath and Hallahan (2009) conducted a study using panel data from 1975 to 2005 and gravity framework to empirically estimate whether RTAs create trade in agricultural countries belonging to a common reciprocal agreement. The study used panel data for mutual membership (member–member) and asymmetric membership (member–non-member) to estimate the gravity model. Export by the home country to the host country was taken as a dependent variable. The study covered the explanatory variable GDP to quantify the market size where the GDP of the exporting country indicated the potential supply of goods from that country and the GDP of the importing country captured the potential demand. Exporter–importer factor endowment ratio was measured by arable land and total labour. The distance between the home and the host country was taken to measure the transportation cost. Common border, common language and colonial heritage were taken as dummy variables. To capture the trade policies, two dummy variables, mutual membership (MA) and asymmetric membership (AA), were included. The mutual agreement (MA) index had the value 1 in case both the countries jointly belonged to the same RTA, otherwise 0. A positive coefficient of MA indicated bilateral trade between countries belonging to the same RTA. The asymmetric agreement index (AA) had the value 1 whenever the exporter was not the member of an RTA to which the importer belonged, otherwise 0. A negative but significant AA indicated a fall in the import by an RTA member from a non-member as a result of asymmetric membership. The study used the benchmark model (gravity model) and Heckman output equation for estimation. Both the methods generated similar estimations for the given coefficients. The coefficients for exporter income, importer income and factor endowment were found to be positive and statistically significant. The elasticity of importer income with respect to agricultural trade was found to be significant and indicated high food demand in the lower-middle income countries. Even, the elasticity of factor endowment with respect to agricultural trade was positive and captured the need for natural resources as a significant determinant of cross-border agricultural trade. Coefficients for variables such as landlockedness, common border, language similarity and colonial heritage were found to be statistically significant. The result of the study indicated that if both the trade policy variables (MA and AA) are part of the model then the statistical evidence shows that RTAs expand trade between member counties but show no evidence of trade contraction from non-members. However, later in the study, each of the two variables of trade policy (MA and AA) is treated individually as a part of separate equations. The results for only MA

estimation indicate an increase in bilateral trade between countries which belong to same RTAs, and estimation for only AA indicates that asymmetrical RTA membership lowers bilateral trade. However, the percentage increase in trade expansion among RTA members is more than the percentage fall in trade due to asymmetrical RTAs.

Singh (2021) evaluated the impacts on the India–ASEAN Free Trade Agreement (IAFTA) and estimated trade creation and trade diversion for the said trade agreement. The study employed gravity specification over the period 1996–2018 and incorporated multilateral resistance terms while examining the trade creation (diversion) impact. The study formed a panel data set of 45 economies that incorporated India, ASEAN-10 economies and top 34 Indian trading partners for the year 2018. The study found that IAFTA supports trade creation for total bilateral trade (in terms of exports and imports) and also that the import creation impact of IAFTA was more as compared to the export creation impact.

Taguchi (2015) explored the trade creation and diversion impact for ASEAN Plus One FTAs by employing the gravity model over the period 1993–2013. To address the endogeneity issue, the study employed panel-data estimation with fixed effects. The results depicted that the trade creation impact of ASEAN–China FTA (ACFTA) was stronger than those of ASEAN–Korea FTA (AKFTA) and ASEAN–Japan FTA (AJFTA). Further, the study also estimated that the trade diversion impacts were negative for ACFTA, AKFTA and AJFTA as per conventional results for diversion impact. The study stated that the larger trade creation impact of ACFTA can be attributed to the wider gap between the general tariff rate and the preferential tariff rate for ASEAN vis-a-vis China. The study supported the formation of RCEP to maximise the benefit of trade creation effect and minimise the diversion impact as inclusion of countries such as Korea, China and Japan as part of the ASEAN bloc will stimulate trade creation via unified preferential tariff rates.

Muhammad and Yucer (2010) conducted a study to find whether RTAs have trade creation or trade diversion impact. The study uses gravity model with 38 countries covering six RTAs [ANDEAN, Caribbean Community and Common Market (CARICOM), Central American Common Market (CACM), Latin American Integration Association (LAIA), Southern Common Market (MERCOSUR) and North American free trade agreement (NAFTA)] in the Western Hemisphere for the years 1986–2006. Export from the home to host country has been taken as a dependent variable. The study states three models. The first model covers the GDP of the exporting country, the GDP of the importing country and the distance and GRTA (a dummy variable) as independent variables. In the second model, all variables of the first model are incorporated except distance in order to avoid the bias caused due to possible omitted variables. Therefore, all country-pair characteristics (such as common language, common border, distance, landlockedness, etc.) are captured in a dyad (two individuals regarded as a pair) fixed variable in the second model. The third model is an addition to the second model, which instead of using an aggregate trade creation dummy variable uses 6 RTA-tc for each of the six RTA trade creation and 6 RTA-td to capture the trade diversion impact of all 6 RTAs individually. The result of the first model

indicates significant coefficients for GDP importer, GDP exporter, distance and membership of RTA (GRTA variable). The second model suggested positive and significant result for both importer and exporter GDP. RTA membership (GRTA) is found to be positive. Therefore, the study states the efficient of trade agreement in the region after controlling the dyad variables. In the third model, the individual impact of each RTA for trade creation and trade diversion is calculated. All coefficients of trade creation variables are found to be significant except for NAFTA and LAIA. The trade diversion coefficient of NAFTA is significant and negative. MERCOSUR is also trade diverting. But ANDEAN and CACM are not trade diverting, and they create trade with both members and non-members. LAIA, however, has a negative impact on trade between both members and non-members.

Handoyo et al. (2021) examined trade creation and trade diversion impacts of ASEAN Plus Six FTA over the period 2007–2017. The study examined the variables using the Poisson pseudo-maximum likelihood (PPML) approach via gravity estimation for 16 ASEAN Plus countries and 22 non-partners for a sample of 8 varied groups of products. The results for the study indicated that the ASEAN Plus Six formation has supported trade creation impact for primary goods, manufactured goods and natural resources–based commodities. Further, the results suggested that ASEAN Plus Six FTA has strengthened exports of manufactured commodities and primary goods to extra-FTA economies. Moreover, results for natural resources–based and primary products suggested significantly adverse effects for the years 2008, 2010 and 2016 largely due to product-specific trade shocks. Trade-related shocks for manufactured goods were found to be relatively less; hence, ASEAN Plus largely strengthened the intra-regional trade of manufactured products over the said sample period. A disaggregation of manufactured and non-manufactured products suggested intra-bloc and extra-bloc export creation for high- and low-tech goods and trade diversion of imports for low-tech manufactured products. For agricultural raw goods, the study suggested trade creation in exports for intra-bloc flows and trade creation in imports for extra-bloc flows.

Mattoo et al. (2022) stated that the number of preferential trade agreements have been negotiated in the recent past, and extended forms of the preferential trade area (PTA) can be seen that cover not only tariff reduction but also provision for investment, services, environment, competition and intellectual property rights. The study empirically evaluated the trade effects of deeper PTAs. The results for the study indicated that deeper agreements have better trade creation and significantly lesser trade diversion than shallow PTA agreements. Furthermore, the study stated that few provisions of deeper PTA support better public good aspect and boost trade even with non-member economies.

Asante and Stanley (2022) stated that the African region has low intra-regional trade, and efforts are been taken to boost trade within the continent. The objective of the study was to evaluate whether or not adopting a common currency will boost intra-regional trade in SACU and ECOWAS countries and whether countries within the blocs are over-trading or under-trading among themselves. The study adopted PPML estimates to examine the variables. The results found that GDP, GDP per capita and common colonial heritage stimulated trade in both

the blocs. Adopting a common currency might unleash trade potentials in both the blocs. The coefficient of distance depicted a negative sign for both the blocs, but exchange volatility depicted a positive impact on trade for the SACU bloc and a negative effect on the ECOWAS bloc. The result also depicted that economies in both the blocs were under-trading, but the SACU bloc had better trade potential than the ECOWAS bloc. The study suggested that the ECOWAS countries should achieve a nominal convergence for the common currency to unleash trade potential. Further, the study suggested the addition of more members to the SACU bloc to enhance trade potentials.

### *Studies Examining Investment Impact of RTAs*

Similar to trade, an upsurge in the international capital flows can be seen. Numerous studies indicate RTAs may attract investments among member nations. The investment creation and diversion effects of RTAs have been estimated and examined by various studies.

Park and Park (2008) conducted an empirical study covering East Asia to quantitatively estimate the investment creation and investment diversion effects of RTAs by using the extended gravity model. The study covers domestic reforms as a commitment device for RTA membership. To examine the investment creation and investment diversion, the stock of FDI has been taken as a dependent variable and market size, skill (factor endowment), investment cost and trade cost as explanatory variables. The relationship among the members of the same RTA has been examined by using the RTA/insider variable, and similarly, the relationship between members of an RTA and non-members has been established by using the RTA/outsider variable. Other variables captured are common language, common border and ex-colonisation. For empirical estimation, the study examines both vertical and horizontal FDI by using the knowledge-capital model (model by Carr, Maskusen and Markus) covering both investment and trade cost. Horizontal FDI has been captured by market size, and vertical FDI has been explained by factor endowment variable. In the study, the domestic reform indicates the extent to which policies and regulations of member nations are suggestive of economic freedom covering size of government, legal structure, protection of property rights, access to sound money and international exchange and regulation. The parameter of RTA/insider-reform reflects the domestic reforms within a trading bloc, and the parameter of RTA/outsider-reform tells the reformatory effects for non-member nations. The study finds a significant positive coefficient for RTA membership, larger market size and better skilled labour towards FDI stock without causing investment diversion. As per the study, even lower trade cost, high trade dependence and reformatory measures attract more FDI. Domestic reform has been found to be stronger than RTA membership for investment creation. The study finds a complementary relation between trade and investment. The study not only supports the investment creation effects of RTA membership but also emphasises on the need for better investment environment for member nations to improve the inflow of FDI.

Yeyati et al. (2003) covers 20 Organization for Economic Cooperation and Development (OECD) source countries to 60 OECD/non-OECD host countries from 1982 through 1998. The study empirically examines that RTAs can have a very important effect on FDI using the gravity model. The same FTA has been captured as integration variables to examine the tariff-jumping effects (horizontal FDI), international vertical integration (vertical FDI) and potential effects of investment provisions (investment environment). The study incorporates that the formation of FTA eliminates or reduces trade barriers and discourages horizontal FDI and the incentive to jump tariff barriers; the formation of FTA member countries takes advantage of the difference in factor endowment and support vertical FDI; such formation also encourages member countries to liberalise the environment which supplements investment flow along with the trade flow. The explanatory variable extended market host has been taken as a joint GDP of all countries to which the host country has tariff-free access due to common FTA. The extended market source variable takes account of the joint GDP of the source country and all countries that are FTA partners of the source country to capture diversion and dilution effects. The study also considers other variables such as common language, common border, past colonial links, distance, investment environment and GDP per capital. The study finds common FTA membership has a positive impact on bilateral FDI stock, and on an average, the FDI stock doubles as a result of FTA membership. An increase in the market size, better investment environment and more openness (trade/GDP) support FDI. Moreover, the study finds FDI and trade are complementary. However, the study finds lesser results for economies with closed international trade, less similar factor endowment and unattractive investment environment.

Jang (2011) covers the impact of bilateral trade agreement (FTA) on bilateral FDI and covers 30 OECD countries and 32 non-OECD countries between 1982 and 2005. The study uses the knowledge capital model for the theoretical frameset of variables to explain both horizontal FDI and vertical FDI, and it empirically explains the variables by applying the regression model. The outward FDI stock has been used as a dependent variable. The explanatory variable covers the sum of GDP of both the home and the host country used for economic size. The variable SIMI is used to measure the closeness of economic size between the two partner countries. Other dependent variables covered are skill differences, distance and trade openness. BIT, a dummy variable, is introduced, which is 1 if both countries have signed a bilateral investment treaty, otherwise 0. A similar dummy variable for the common FTA has been taken. Two variables covering skill difference are stated as a part of the regression equation. The first is DIST. $\Delta$ SK (the interaction of distance and skill difference), which covers vertical FDI with the extent of bilateral nearer. The second is GDP. $\Delta$ SK, which reflects vertical FDI along with the extent of bilateral nearness/proximity. Two more variables,  $\Delta$ IST.FTA and  $\Delta$ SK.FTA, reflecting the impact with FTA membership, are included. The study found statistically significant coefficients for market size (sum of GDP), BIT and openness. The coefficient for  $\Delta$ SK.FTA is positive, signifying countries with difference in skill and are part of the same FTA attract more FDI. But the coefficient for  $\Delta$ SK.GDP is negative and significant. The coefficients for SIMI. $\Delta$ SK, DIST.

$\Delta SK$  and  $\Delta IST.FTA$  are statistically insignificant. The coefficients used for FTA are significant and show that bilateral FTA affects FDI negatively in the case of intra-OECD countries and positively in the case of extra-OECD countries. The negative coefficient for  $DIST.FTA$  shows that negative effects of FTA on FDI for intra-OECD countries increase with an increase in geographical distance. Similarly, effects of FTA on FDI in extra-OECD countries decrease as the geographical distance between two countries increase. The coefficient for  $\Delta SK.FTA$  is statistically insignificant for intra-OECD country pairs, but there are positive effects of FTA on FDI in extra-OECD country pairs when the skill difference increases.  $\Delta IST.FTA$  and  $DSK.FTA$  coefficients support that horizontal FDI dominates vertical FDI among developed countries (intra-OECD) while vertical FDI dominates horizontal FDI between developed and developing countries (extra-OECD).

Jaumotte (2004) conducted a study to investigate whether the market size of RTA is a determinant of FDI received by participating countries. The study covers a sample of 71 developing countries during the period 1980–1999 using the regression model. For the market size, the study covers both domestic and regional market size. The variable domestic market size is measured by the real GDP and its expected growth. The variable regional market size is measured as the sum of domestic market size plus market size of all countries of the common RTA. However, in case the country belongs to more than one RTA then the variable regional market size has been considered collectively for all the member nations belonging to multiple RTAs. These variables capture the extent of trade liberalisation and also the degree of integration. Agglomeration effect has been taken as another variable to capture the quality of infrastructure present in the member nation providing the incentive to locate FDI. To measure vertical FDI, labour cost and skill have been captured, and in order to measure investment/business climate (the additional cost of doing business in a foreign country), the financial index of the host country has been considered. The variable degree of openness has been taken to encompass the tariff-jumping effect of FDI and the stimulation of vertical FDI. The study designs the ‘domestic model’ regression equation first with independent variables such as domestic market size (GDP), real GDP growth, *education level* for factor endowment, *financial stability* measured by the financial risk index, quality of infrastructure captured by the number of TV per capita and openness captured by export/GDP. Later, it incorporates ‘regional model’ with independent variables such as regional market size (domestic size plus market size of all countries of common/multiple RTAs), average real growth rate in all partner countries of RTA clubbed together, gap between domestic and average RTA educational level, gap between financial stability and gap between infrastructure. The three variables education, financial stability and infrastructure cover locational advantages. The regional variables are added to the domestic model, and domestic market size is replaced by regional market size in the regional model. The findings of the domestic model show positive results for all independent variables covering education, financial stability and openness. The coefficient for infrastructure is found to be insignificant. But the growth of market size is significant, whereas the domestic market (GDP) is found to be insignificant. The findings of the regional



model are different from those of the domestic model. The regional market size coefficient is found to be positive. The gap between domestic and RTA education plus financial stability is found to be positive, implying that the partner RTA with better education and financial stability exerts a negative influence on FDI received by the home country. The average growth of the regional market has no significant impact, implying countries part of RTA are dynamic and therefore attract FDI. The calculated RTA market size has a significant and positive effect. Even the countries with relatively higher educated labour supply and financial stability tend to attract more FDI. The creation of RTA boosts competitions among member nations, leading to an improvement in their domestic investment climate to avail better returns of RTA formation. The study empirically found evidence of FDI diversion between RTA members and RTA non-members.

Medvedev (2006) empirically found the relationship between preferential trade liberalisation and net FDI inflows using a panel of 143 countries over the years 1980–2003. The study has been conducted on the basis of methods that remain consistent in the presence of panel-level heteroscedasticity and autocorrelation. The net FDI inflows have been taken as a dependent variable. The independent variables are classified under four categories, namely PTA effects, global effects, local effects and institutional effects. PTA effects cover the extended common market variable (PTAGDP) and expected PTA dummy variables to capture the potential link between preferential trade liberalisation and FDI. For countries with at least one PTA, PTAGDP has been taken as 0 prior to entering PTA and thereafter combined the GDP of all PTA members. In case a country is a member of more than one PTA, PTAGDP is the sum of GDP of all partners of various PTAs. In the case of extension or addition of a new country to an existing PTA, PTAGDP may include the GDP of such a country from the year of entry. For a country which is not part of any PTA, PTAGDP is taken as 0. In order to measure the global effects, the study considers two variables, global FDI (WLDFDI) and global growth variable (WLDGRO). Both variables have been taken as the world aggregate of WDI rather than the sum of all countries. For local factors, the study incorporates the level of GDP and its growth rate (GDPGRO), the outward orientation of the economy (openness, i.e., OPEN), the per capita income relative to US (GNIREL) and inflation (CPIGRO) as variables. The inflation level has been taken as a percentage change to the consumer price index for each country with CPI and 2000 as the base year. However, the GDP and GDP per capita have been taken to depict the impact of market size. Trade to openness has been taken to measure openness. The ratio of capita (GNIpc to GNIpc USA) has been taken to determine the relative per capita to US for each country in the sample. GDP growth rate for each country has been taken as the annual percentage change. The study also talks about the provisions signed under PTAs such as service sector liberalisation, mechanism for dispute settlement and access to larger market size, which has strengthened the investment climate. These ‘deeper integration’ provisions along with investment clause have influenced the liberalisation of investment for both incoming and outgoing FDI. The result of the study depicts a positive effect of GDP growth on FDI inflow, while the impact of inflation is negative but relatively insignificant. The coefficients of global variables, that is, world growth and world



FDI, depict faster growth in rest of the world as compared to the home country, which makes it less lucrative for investment, whereas the rising total world FDI tends to increase the net FDI inflow for an average host country. The size of the extended common market and proximity has a significant and positive impact on the net FDI inflow. Even signing of PTA (membership) is positively associated with a greater flow of the net FDI inflow. Overall, the result supports the hypothesis that deeper integration PTAs are more significantly associated with net FDI; therefore, FDI is the strongest for the period 1990–2000 when most ‘deep integration’ PTA agreements were signed.

Velde and Bezemer (2006) focus on the relation between regional integrations and foreign investment covering the real stock of UK and US in developing countries over the period 1980–2001. The study considers two significant variables along with other standard explanatory variables to explain the impact of regional grouping or RTAs on FDI. First is the impact of specific investment and trade provisions of RTAs on FDI, and the second is the variable named ‘black box’, that is, 0/1 (dummy or binary variable), which describes whether a country is a member of regional grouping or not. The study measures the trade and investment provisions over time. The investment index measures the investment provisions starting with 0 if not member, 1 if some investment provisions are present in the bloc, 2 for advance investment provisions, 3 if there is complete investment in the region and –1 if there are more restrictive provisions in the region. Similarly, the trade index has been taken ranging from 0 to 3 depending on the depth of trade rules for tariff reduction. The study also covers the standard explanatory variables such as GDP, membership, market size, human capital, inflation, infrastructure, etc. Later, the study also includes the interaction between RTA and the position of the country within the region to measure the difference in the impact of RTA with respect to each country within the bloc. The variable POSITION has been also divided into three categories. First, the POSITION variable captures the position of the host country in terms of real GDP of the host country to the largest economy in the region, the GDP per capita of the host country compared to the richest (productive) country in the region and the distance of the host country from the largest market in the region. Another dummy variable Region has been incorporated, where 1 is assigned if the country belongs to any regional developing country bloc. To capture the nature of region, 7 variables each for ANDEAN, ASEAN, CARICOM, Common Market for Eastern and Southern Africa (COMESA), MERCOSUR, NAFTA and SADC are taken. The result of the study found a positive and significant impact of variables such as infrastructure, education and membership of RTAs. The coefficients for regional and inflation variable are insignificant. The coefficient for nature of region is found to be positive and significant, implying countries attract FDI if they belong to one of these blocs. However, the formation of CARICOM, ASEAN, ANDEAN and NAFTA attracts more extra-regional FDI as compared to other regional blocs. Moreover, each country part of a bloc may not have a similar pull towards FDI. The impacts for investment and trade provisions are positive, but the magnitude is larger in case the countries have advanced or complete provisions for trade and investment. For POSITION variable, a country with a higher GDP (larger as compared to others in

the group) may attract more FDI. In case the POSITION refers to GDP per capita, countries with less GDP per capita may attract less FDI and countries with a larger distance from the largest economy in the regional grouping may attract less FDI. Therefore, the study suggests that countries with a large geographical size and geographically nearer to large economies can expect an increase in inward FDI as a result of joining RTAs.

Leshier and Miroudott (2006) quantify the investment provisions of various RTAs to find the impact on trade and investment flows. To estimate the impact on trade, the study uses OLS regression technique and robust standard error, and in order to examine the impact on investment, the study incorporates the tobit regression model. The various explanatory variables examined are distance, common border, colonial relationship, common language, GDP and exchange rate volatility. Apart from the above-said variables, the variables covering the substantive investment provisions and depth of investment provisions are also incorporated. The first dummy variable explains whether the country pair has an RTA with substantive investment coverage, and the variable also captures the degree to which substantive investment provisions explain trade and investment flows. The second dummy variable indicates whether the country pair is party to BIT protection and promotion provisions for member nations. The above-said variables are incorporated in the first regression model established in the study. However, the study modifies the first regression model and converts the binary (dummy) variables into aggregate indexes. The aggregate indexes are created by giving scores to each member nation depending on the depth of investment liberalisation based on consideration factors such as the most favoured nation treatment, national treatment, service sector, investment regulation and protection, etc. The variable measures the depth of investment provisions for each given RTA. Inclusion of index for investment protection is essential to strengthen the flow of trade and investment. The modified regression also includes a variable RTA to capture the trade investment and diversion impact as a result of entry into an RTA. The first section of the RTA variable explains the aggregate index in case both home and host countries are members of the same RTA, and the second and third sections of the RTA variable assume the aggregate index when only the home country is part of RTA or only the host country is part of RTA, respectively. The findings of the study show a positive and significant coefficient for distance, language and colonial relationship but a negative and significant coefficient for exchange rate volatility. For the trade model, the tariff variable is negative and significant, but for the investment model, the variable is found to have ambiguous effects on investment flows. For the trade model, joint GDP (explaining market size) is negative and significant but insignificant for investment model. Such results are probably due to fluctuation in the exchange rate, GDP per capita, population and GDP each year. Therefore, for such fluctuations, the study also incorporates the fixed effects specifications, and as a result the exchange rate and joint market size take significant signs and magnitude. The BIT dummy variable in the investment model has been also found to be insignificant mainly due to the nature of provisions covered under BIT which are more towards investment protection rather than investment liberalisation. The dummy variable indicating RTA with substantive investment provisions has a

significant and positive coefficient for both trade and investment models. Both for trade and investment models, even the index of investment provisions is found to be positive and significant. The study indicates that trade and investment are complementary and not substitutes. For the trade model, all three sections of the RTA variable are found to be significant and positive towards trade creation. But for the investment model, the coefficient for the RTA variable is ambiguous, where most of the home country RTA variables with the rest of the world are found to be positive (which indicates investment flow from other countries) and the RTA variable for both home and host countries is found to be positive (representing trade creation within a trade bloc). The results indicate that investment provisions are positively associated with trade and, to an even greater extent, investment flows. Further, we observe insignificant effects of bilateral investment treaties on investment flows, suggesting either substantive provisions in RTAs or a combination of substantive investment rules and provision and liberalising jointly make an impact on trade and FDI flows.

Baltagi et al. (2008) conducted an empirical study to estimate RTA effects on FDI covering European agreements between members of EU and 10 Central and Eastern European countries. The study applied the HAC estimator technique for testing. The explanatory variable SGDP, the sum of home and host country, captures the market size of both parent and host countries. The study also covers the difference in the market size and skill endowment to capture the horizontal and vertical FDI impact of RTA. It empirically found strong evidence for the impact of European agreements on bilateral FDI in Europe (RTA increases FDI by up to 78% among European countries). Moreover, the estimation found relocation of FDI from Western European countries to Eastern European countries flowing from Europe agreements.

Utama (2021) stated that international investment agreements (IIAs) are an important aspect of new-age RTAs negotiated. The study talks about Regional Comprehensive Economic Partnership (RCEP) membership that covers extensive and rich investment agreement. The study empirically evaluates the impact of investment provisions as part of RCEP and its impact on the bilateral FDI on RCEP countries. Hence, the study evaluates investment creation and investment diversion on RCEP economies using panel data over the period 2009–2018 and employed Driscoll–Kraay standard errors estimation as an empirical tool. The results depict a positive and significant relationship between inward FDI and investment provisions in IIAs. Further, the study also depicts a positive and significant coefficient for investment protection and promotion provisions as part of bilateral investment treaties on the inward FDI for RCEP countries. The results also support that the ASEAN membership has led to the investment creation for RCEP economies.

## **Conclusion**

The present study divided the RTA-associated literature into two categories, namely covering the impact of regional trade agreement on trade and the impact

of regional trade agreement on investment. The RTA-examining studies covered varied in terms of regional coverage, variables examined, time span, methodology applied and outcome derived. However, a significant number of the studies examined adjacent variables, historical variables, market size variable, economic development, infrastructure, trade cost, investment cost, tariff variable and RTA membership to ascertain the impact on trade and investment.

Most of the studies covering the impact of RTA on trade had varied results for intra-regional trade creation among member countries and for other explanatory variables empirically examined. Studies conducted by Lee and Shin (2005), Guilhot (2010), and Rahman et al. (2006) depicted a positive coefficient for GDP, GDP per capita and adjacent variables but a negative (and significant) coefficient for distance. The negative coefficient of distance depicted that an increase in transportation cost negatively affects trade. Further, talking about the trade creation and trade diversion variables for various regional blocs, few studies conducted in the region of South Asia did not depict a uniform result for the intra-SAARC bloc. Rahman et al. (2006) found a positive sign for intra-trade creation for India, Pakistan and Bangladesh but a negative coefficient for other countries. Similarly, Akhter and Ghani (2010) found trade diversion for both members and non-members, due to the structural limitations in the region. Few studies conducted for major African RTAs (ECOWAS and SADC) showed a positive coefficient for trade creation. Afesorgbor et al. (2011) stated that the trade creation coefficient was better for SADC as compared to ECOWAS. Another study conducted (in the region of Africa) by Lee and Shin (2006) found a positive coefficient for trade creation but no trade diversion was reported. However, the study stated that 'natural trading partners' (countries which lead to a reduction in transaction cost) create more trade and have less trade diversion. Further, Guilhot (2010) captured three major East Asian trade agreements (ASEAN, ASEAN–Korea and ASEAN–China) and found ASEAN trade agreement supporting both intra-regional and extra-regional trade, but the other two trade agreements had no positive coefficient for intra-regional trade. Muhammad and Yucer (2010) covered six RTAs in the Western Hemisphere and found trade creation for all RTAs except NAFTA and LAIA. For LAIA, the study found a negative impact on trade for both members and non-members.

Further, studies examining the impact of RTAs on investment depicted non-uniform results for FDI creation and FDI diversion, but most of the investment-related studies suggested a positive coefficient for variables associated with a large market size (capturing horizontal FDI), better skill (capturing vertical FDI), openness and better investment environment. Park and Park (2008) supported lower trade cost and domestic reformatory measures for attracting FDI and treated reforms as a commitment device for RTA membership. Yeyati et al. (2003) found a positive impact of RTA on investment, but non-satisfactory results were seen for economies with closed international trade, less similar factor endowment and unattractive investment environment. Further, Jang (2011) covered 30 OECD and 32 non-OECD countries and found horizontal FDI dominates vertical FDI for intra-OECD countries, while vertical FDI dominates horizontal FDI for extra-OECD countries. Jaumotte (2004) covered 71 developing countries with both

domestic and regional variables and found that RTAs lead to FDI creation among member nations and FDI diversion not only for RTA members but also for RTA non-members. Medvedev (2006) found stronger results of FDI creation over the period 1990–2000 (a period of deeper integration). Velde and Bezemer (2006) found a positive coefficient for all trade blocs, but each bloc depicted a different pull coefficient for FDI. Leshier and Miroudot (2006) found substantive investment provisions having a positive impact on intra-regional FDI, but bilateral investment treaty (BIT) variables were found to be insignificant.

An insight into the literature suggested that regional trade agreements are emerging as a commitment tool for trade and investment among member nations, hence supporting not only trade creation but also investment creation among various trade blocs on the world map. However, few RTAs still need to work towards enhancing the depth of trade and investment provision in order to witness a positive and significant coefficient for trade and investment creation.

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