T.C.
ISTANBUL COMMERCE UNIVERSITY
FOREIGN TRADE INSTITUTE
INTERNATIONAL TRADE PROGRAM

IMPACT OF REGIONAL TRADE AGREEMENTS ON FDI FLOWS

MASTER THESIS

Muhammad Moiz

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Istanbul, 2017

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Supervisor: Assist. Prof. Ahmet Oğuz Demir

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APPROVAL PAGE

T.C. İSTANBUL TİCARET ÜNİVERSİTESİ

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yüksek lisans programı ....1000044082..... numaralı öğrencisi .Muhammad.....Moiz.............

..............................'..in.. "....Impact...of....Regional...Trade.......Agreements...

...on.....FDI.....Flows..."

başlıklı tez çalışması jürimiz tarafından Yüksek Lisans Tezi olarak kabul edilmiştir.

TEZ DANIŞMANI	: Yard. Doç. Dr. A. Oğuz Demir	....
JÜRİ ÜYESİ	: Doç. Dr. Elvan Aykan Alp	....
JÜRİ ÜYESİ	: Yard. Doç. Dr. Gökçe Tekin Turhan	....

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Tarih, .../..... sayılı kararı ile onaylanmıştır.

ENS.FR.Y20 04.08.2015

ABSTRACT

Recent proliferation of regional trade agreements has led to both a higher amount of trade and foreign direct investment flows. A number of studies have analyzed the impact of RTAs on the FDI and show that RTAs do lead to higher FDI flows for member countries. However, most of these studies have been conducted on North countries given that the data is readily available for them. A small number of studies have also focused on South countries yet there is a need for more studies. As a part of this study, three RTAs (ASEAN, MERCOSUR, and SACU) have been selected to analyze their impact on FDI flows to emerging economies of Brazil, China, India, and South Africa. The dataset includes 4 host countries and 71 source countries for a 12 year period from 2001 to 2012, totaling 852 observations. The gravity model is used to analyze the data for this study. The results show that ASEAN has a FDI diversion effect for our host countries whereas MERCOSUR and SACU lead to 0.24% and 0.22% higher FDI respectively given that only the host country is a member of the RTA. GDP of home and host countries are seen to have a significant positive impact on the FDI flows. It is concluded that South-South RTAs do not necessarily increase the attractiveness of host countries for FDI.

Keywords: Foreign Direct Investment, Regional Trade Agreements, Gravity Model, Emerging Economies, South-South RTA.

ÖZET

Son zamanlarda bölgesel ticaret anlaşmalarının yaygınlaşması ticaret hacmini genişletirken, doğrudan yabancı yatırım akışını da hızlandırmıştır. Bölgesel ticaret anlaşmalarının doğrudan yabancı yatırımlar üzerindeki etkisini analiz eden bir dizi çalışma, bölgesel ticaret anlaşmalarının üye ülkeler için daha yüksek doğrudan yabancı yatırım akışına imkân sağladığını göstermektedir. Bununla birlikte, bu çalışmaların çoğu, verilerin kolay erişilebilir olduğu Kuzey ülkeleri üzerinde yürütülmüştür. Konu ile ilgili Güney ülkeleri üzerinde çok az sayıda çalışma gerçekleşmiştir. Bu çalışmanın bir parçası olarak, Brezilya, Çin, Hindistan ve Güney Afrika gibi gelişmekte olan ülkelerdeki bölgesel ticaret anlaşmalarının doğrudan yabancı yatırım akışları üzerindeki etkilerini analiz etmek için ASEAN, MERCOSUR ve SACU anlaşmaları seçilmiştir. Veri seti, 2001-2012 yılları arasında 12 yıllık bir dönem için 4 yatırım alan (host) ve 71 yatırım yapan ülke (source) için toplam 852 gözlemi içermektedir. Bu çalışmanın verilerini analiz etmek için Çekim modeli (Gravity Model) kullanılmıştır. Sonuçlar, ASEAN'ın yatırım alan ülkeler için doğrudan yabancı yatırımları saptırıcı bir etkisi olduğunu, ancak yalnızca yatırım alan ülkenin bölgesel ticaret anlaşmalarına üye olduğu göz önüne alındığında MERCOSUR ve SACU anlaşmalarının sırasıyla %0,24 ve %0,22 daha fazla doğrudan yabancı yatırım yapılmasını sağladığını göstermektedir. Yatırım alan ve yatırım yapan ülkelerin Gayri Safi Yurtiçi Hasıla'larının, doğrudan yabancı yatırım akışları üzerinde oldukça olumlu bir etkisi olduğu görülmektedir. Güney-Güney bölgesel ticaret anlaşmalarının, doğrudan yabancı yatırım alan ülkelerin çekiciliğini arttırmadığı sonucuna varılmıştır.

Anahtar Kelimeler: Doğrudan Yabancı Yatırımlar, Bölgesel Ticaret Anlaşmaları, Çekim Modeli, Gelişmekte Olan Ülkeler, Güney-Güney BTA

ACKNOWLEDGEMENTS

This thesis would not have been possible without the help of many individuals who have supported my work and motivated throughout the process. I would like to acknowledge the support that my supervisor Dr. Ahmet Oğuz Demir has provided me in completing this thesis and other works of research. In addition to being my supervisor, he has supported me in taking on research projects, supported my work, and helped me in advancing my knowledge and pursuing my goals. I am also indebted to Mr. Muhammad Anees Khattak, who has provided me support all the way from Pakistan. Without his support and mentorship my research and analytical skills would not be up to the level that they are today. He has been a great support for my academic learning and improving my research skills.

I would like to thank the Presidency for Turks Abroad and Related Communities (YTB) for giving me this opportunity to come to Turkey and pursue my higher educational goals. Without the support of YTB, I would not have been able to pursue my higher studies in Turkey. I would also like to thank Istanbul Commerce University in providing me an opportunity to be a part of this university and learn from the staff and professors. The International Office and the Students Affairs have been of tremendous help in anything that I required and are always available to solve any student problems.

Finally, this task would not be complete without the support of my family and friends. My parents have done a fine job of always supporting my life goals and I thank them for educating me and providing any type of support required. My siblings have also been there to support me in times of need and otherwise, I am especially indebted to my eldest brother and elder sister who have taught me many lessons in life and have been a source of inspiration. My friends have always motivated me to keep thriving for my goals and have provided me with the breaks I needed in this gruesome thesis writing process. I thank anyone who has ever inspired me in learning and pursuing my goals.

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LIST OF ABBREVIATIONS

Andean Community (ANDEAN)

Andean Community of Nations (ACN)

Association of Southeast Asian Nations (ASEAN)

ASEAN International Cooperation Scheme (AICO)

Bilateral Investment Treaty (BIT)

Caribbean Community and Common Market (CARICOM)

Central European Free Trade Agreement (CEFTA)

Common Market for Eastern and Southern Africa (COMESA)

European Union (EU)

European Union Customs Union (EUCU)

Foreign Direct Investment (FDI)

Free Trade Agreement (FTA)

G3 (Colombia, Mexico, and Venezuela)

General Agreement on Trade and Tariffs (GATT)

Gross Domestic Product (GDP)

Gross National Product (GNP)

Investor-to-State Dispute Settlement (ISDS)

Middle East and North Africa (MENA)

North American Free Trade Agreement (NAFTA)

Organization for Economic Co-operation and Development (OECD)

Ordinary Least Squares (OLS)

Preferential Trade Agreement (PTA)

Poisson Pseudo Maximum-Likelihood (PPML)

Regional Integration Agreement (RIA)

Regional Trade Agreement (RTA)

South African Customs Union (SACU)

Southern African Development Community (SADC)

South Asian Free Trade Area (SAFTA)

Southern Common Market (MEROCSUR)

United Nations Conference on Trade and Development (UNCTAD)

World Trade Organization (WTO)

CHAPTER 1

INTRODUCTION

There has been a sudden rise in free trade agreements since World Trade Organization (WTO) was formed in 1995 during the Uruguay round. The formation of WTO was the beginning of a new era in terms of trade agreements. The number of trade agreements increased immensely upon the formation of WTO. Today, 274 regional trade agreements are physically in force, 440 total agreements have been notified to be in force, and a total of 654 RTAs have been signed (WTO, 2017). Countries have been reducing tariffs and duties on exports ever since in order to increase trade among countries and regions. Over the years, this has lead to different ways in which regions are being integrated. However, regional cooperation is nothing new, cooperation among countries and regions has been going on for hundreds of years. In the aftermath of World War II, countries really started to come together to assist each other in rebuilding and cooperating towards mutual benefits. The European Union (EU) is a perfect example of how integration among countries has evolved over time. The EU, which started out as the European Economic Community (EEC) as a result of the Treaty of Rome in 1957, has gone through various phases and currently stands as an economic integration model for other regions. Similarly, many other regions have become integrated through different types of integration agreements. Some of the more known regional integrated areas include Association of Southeast Asian Nations (ASEAN), Common Market for Eastern and Southern Africa (COMSEA), Southern Common Market (MERCOSUR), etc. With time, globalization has also prompted countries to take on deeper integration forms through trade and investment agreements that bring countries and region together on various different trade policies and investment framework.

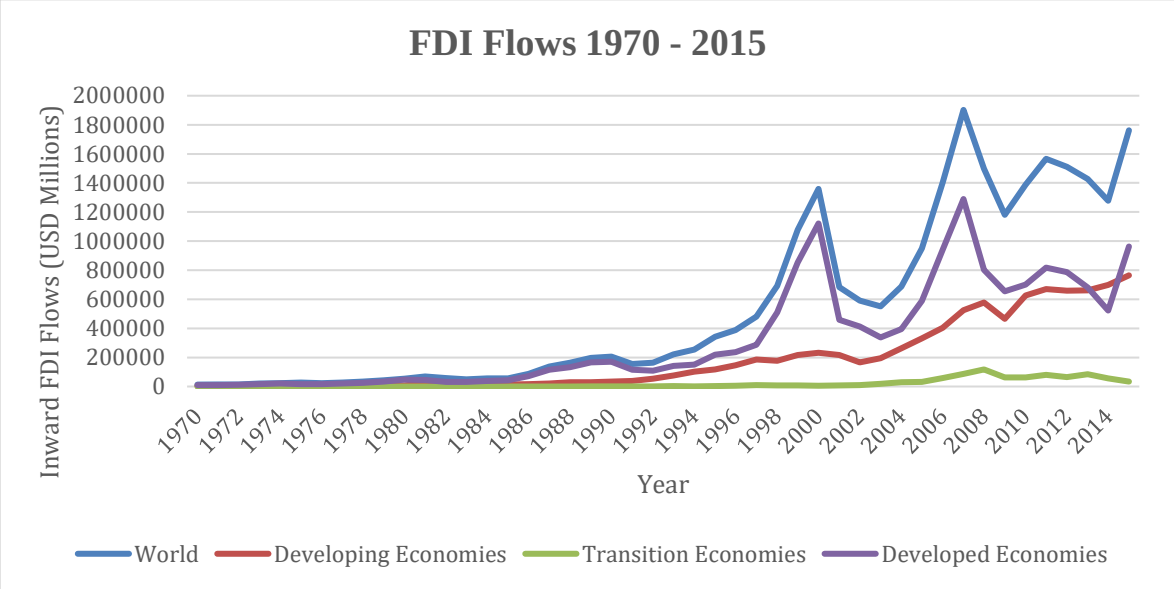
Regional trade agreements in general have provided a platform for multiple countries to come together and form regional blocs to assist their economic and infrastructural development. However, new regional trade agreements have began to focus the investment side of things rather than only focusing on trade. Investment provisions are actively added to regional trade agreements in order to increase the prospects of attracting foreign investment by countries around the globe. Investment provisions that are meant to provide a higher level of protection to foreign investors are readily part of

regional trade agreements today further adding to the level of regional integration. Dispute settlement mechanisms have been placed in new regional trade agreements in order to provide higher protection to foreign investors and make it easier to settle disputes that arise as a result of foreign investment in a country. The North American Free Trade Agreement (NAFTA), signed in 1994, was one of the first regional trade agreement's to introduce a dispute settlement mechanism by incorporating the investor-to-state dispute settlement (ISDS) as part of the agreement.

The new generation regional trade agreements have therefore added depth to the agreement themselves, providing more provisions for investors while integrating systems for higher trade volumes. Tariff reductions are no longer the issue; non-tariff barriers are focused upon when negotiating new regional trade agreements. Additionally, systems are being aligned to make trade easier through new generation agreements that decrease the number of non-tariff barriers.

The introduction of investment provisions, the proliferation of RTAs, and increased globalization has also led to increased foreign direct investment (FDI) around the globe. The FDI flows across the globe have been increasing since the 1990s, however, the formation of the WTO and proliferation of the RTAs added to the speed at which the amount of FDI increased.

Figure 1 Inward FDI Flows to different types of Economies 1970-2015

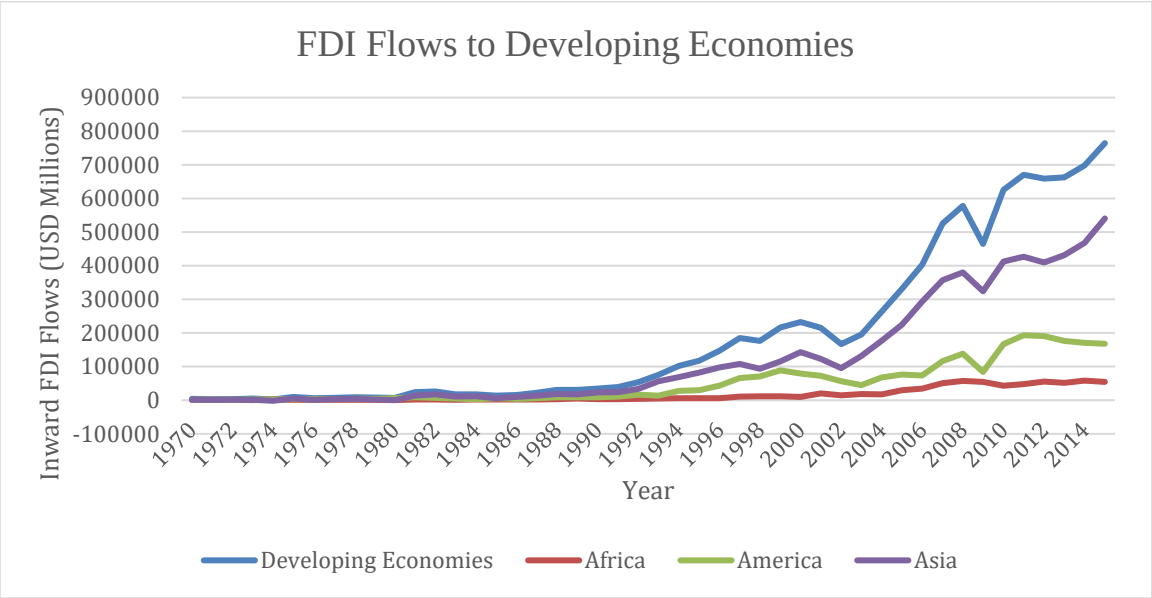


Source: Data gathered from UNCTAD.

The surge in inward FDI flows is visible from Figure 1 in which inward FDI flows for the world, developing, transition, and developed economies is depicted. Although, since 1985 FDI inward flows started to take off, a real dramatic increase can be witnessed after 1995 with a very sharp rise in 1996 and 1997. The amount of FDI to developing economies started to rise after the 1990s and increased its share among the total FDI to the world over the years. The amount of FDI flows to developing economies even surpassed the FDI flows to developed economies in 2013 by a large margin. The percentage of FDI flows to developing economies have remained fairly low lingering anywhere from 20% to 40% up until 2010, in which duration it only crossed 40% twice, once in 1982 (45.4%) and once in 1994 (40.1%). However, since 2010, the amount of FDI flows to developing economies as a percentage of total world FDI flows has remained well above 40% and reaching it's highest point in 2014 (54.69%).

Slowly but surely, developing economies have become a hub for FDI through the implementation of better rules, regulations, improved infrastructure, and increasingly skillful workforce. In addition, the RTAs should be taken into consideration as integrated regions motivate investors and firms to move into those regions to target the integrated markets. One of those regions is the ASEAN, which has integrated the Southeast Asian countries into one region. Through this cooperation ASEAN countries have been able to successfully integrate the concept of global value chains into the region. Developing and transitioning economies are attracting a higher number of FDI flows each year. These FDI flows are helping countries around the globe grow faster and move towards more developed economies. These investments are especially helpful to smaller economies that are not able to have as high growth as much without FDI since their own budgets and growth rates are low. Therefore, FDI assists developing economies in improving their situation while equipping them with better technologies that can lead to higher growth.

Figure 2 Inward FDI Flows to Developing Economies 1970-2015



Source: Data gathered from UNCTAD.

Large discrepancies can be seen in the amount of FDI that different regions have been able to attract over the years. Figure 2 shows the amount of FDI flows that have been directed towards developing countries since 1970. Asian developing economies have been able to attract the highest amount of FDI among all developing economies. The surge in FDI to Asia has especially come after 2002 when FDI grew rapidly. Some of it might be contributed to China, which opened up their markets in the early 2000s. Africa has been on the lower side of attracting FDI; this can also speak to the lack of infrastructure and political stability that has impacted the region negatively. However, looking back at Figure 2 and the numbers, Asian developing economies in the 1970s were attracting comparatively much lower FDI than Africa and America. But, the situation has changed since then and in 2015, Asian developing economies attracted 70.7% of all FDI to developing economies. Asia has become the manufacturing hub for many large brands around the globe. Developing economies in the region are able to provide infrastructural and human resource needs to firms. Given the low wage rates, skillful employees, and integration of the region, firms find themselves in a comfortable position to invest in Asia. The ASEAN bloc has added to the attractiveness of Asia as they have created open economies through which global value chains have been adopted and executed excellently.

The rise of globalization and integration has prompted firms and investors to look beyond borders in an attempt to improve their productivity and maximize their profits. Globalization has benefited stakeholders around the globe in different ways, from brining a variety of products to different markets and transferability of human resources to the acceleration of economic growth. Regional trade agreements are one way that globalization has been accelerated with trade agreements that have opened up countries to reception of new products and firms. Trade agreements are no doubt beneficial to economies through an expansion and improvement in trade; the evidence for such a relation is evidenced in many past studies (Dennis, 2006; Baier & Bergstrand, 2007; Jayasinghe & Sarker, 2008; Caporale et al., 2009; Cooper, 2014). On the other hand, trade is not the only thing that is improving as a result of these trade agreements but rather FDI has also seen a surge due to the increase in the number of RTAs around the world.

Many researchers have studied the impact of regional trade agreements and preferential trade agreements (PTAs) on the amount of FDI flows into a country. Literature shows that RTAs and PTAs have a significant positive impact on the amount of FDI flows to a country and region (Motta & Norman, 1996; Levy-Yeyati, Stein, & Daude, 2003; Lasher & Miroudot, 2006; Te Velde & Bezemer, 2006; Hicks, 2007; MacDermott, 2007; Baltagi, Egger, & Pfaffermayr, 2008; Buthe & Milner, 2008; Kreinin and Plummer, 2008; Liu, 2008; Park & Park, 2008; Medvedev, 2012; Yu, 2012; Berger et al., 2013; Chala & Lee, 2015; Nguyen & Cao, 2016). Earlier studies focused on finding a relationship between the enforced trade agreements and FDI flows. However, over time, the studies have evolved into examining different aspects of the trade agreements such as investment provisions. Several studies find that investment provisions in RTAs play an important role in attracting FDI to member countries (Lesher & Miroudot, 2006; Te Velde & Bezemer, 2006; Shamugia, 2011; Berger et al., 2013). However, most of the studies have focused on Northern economies when assessing the impact of RTAs on FDI flows. Some studies have examined North-South (Developed-Developing) trade agreements but studies on South-South (Developing-Developing) trade agreements are very difficult to find because of data constraints. Usually studies have used the gravity model to assess the relationship, which requires bilateral FDI data; however, this data is difficult to find for developing countries. FDI

flows are available for all countries through UNCTAD but bilateral data for each country is limited to mostly developed economies.

Studies have consistently analyzed the relationship between RTAs and FDI flows but we have yet to find concrete evidence on how different agreements can impact the amount of FDI flows to a country i.e. North-South RTAs in comparison with South-South RTAs. In light of the previous studies, this study focuses on emerging economies in terms of South-South agreements that have been signed over the years. The aim of the study is to focus on the BRICS countries, the acronym BRICS stands for Brazil, Russia, India, China, and South Africa. These are some of the fastest emerging economies around the globe and have attracted a substantial amount of FDI over the years. Especially since their growth rates are quite high, they have been attracting an increasing amount of FDI flows. The South-South RTAs that have been selected for the study include the Association of Southeast Asian Nations (ASEAN), Southern Common Market (MEROCSUR), and South African Customs Union (SACU). These agreements have been selected because they are major agreements in their respective regions of Africa, Asia, and South America. This study will analyze the impact of RTAs on the FDI flows of the BRICS countries. Based on the literature, it is expected that the selected RTAs will have a positive impact on the FDI flows of BRICS countries.

As any other study, there were several limitations for this study as well. Initially it was quite difficult obtain the bilateral FDI data that was required for the gravity model. The data for four of the five BRICS countries was collected through UNCTAD. The data was available for all five countries but it was very limited in terms of missing values. I was able to gather data for Brazil, China, India, and South Africa from a total 71 source countries over a 12 year period from 2001 to 2012. The data for Russia had a very high number of missing values hence it was decided that Russia would not be included in the study. In addition, a different number of source countries were chosen for the host countries. For example, data for 22 source countries has been collected for Brazil, 19 source countries for China, 12 source countries for India, and 18 source countries for South Africa. Due to a small number of data, the results may not be as significant and accurate as preferred.

CHAPTER 2

LITERATURE REVIEW

Regional Integration

Regional Integration (RI) is a key concept when it comes to the discussion of Regional trade and FDI. Integration among countries within a certain region can make way for a larger market, better trade, common policies, harmonized system of regulations, and better implementation of trade as well as investment laws. The European Commission defines regional integration as:

> "Regional integration is the process of overcoming barriers that divide neighbouring countries, by common accord, and of jointly managing shared resources and assets. Essentially, it is a process by which groups of countries liberalise trade, creating a common market for goods, people, capital and services." (European Commission, 2017).

Regional Integration is becoming more important as has been witnessed through the implementation of the World Trade Organization (WTO) and the proliferation of regional integration agreements (RIAs) which include free trade agreements (FTAs), regional trade agreements (RTAs), and preferential trade agreements (PTAs). Since the 1990s, RIAs have been on the rise around the globe, trade has become more open and economies have welcomed new international entrants into their domestic markets. Besides the trade provisions that are an underlying part of RTAs, investment provisions have also become a part of new generational RTAs. In 'classical regionalism', countries focused more on integration of the economies through trade provisions that would allow for free trade across borders. However, 'new regionalism' has focused on provisions other than trade which include investment provisions, alignment of economic policies, increased cooperation in terms of trade and manufacturing, global value chains, and so on. Likewise, 'classical regionalism' was initiated through governments, bringing economies together with mutual economic objectives (Das, 2005). 'New regionalism' is market driven and pursued due to profit-seeking objectives in order to focus on the expansion of flow of goods, resources, technology, and capital (Fakher, 2012). Therefore, 'classic regionalism' is state-driven and the 'new regionalism' is market-driven.

Furthermore, Bilateral Investment Treaties (BITs) have also increased the regional integration in different parts of the world. BITs specifically target investment policies of a country in order to facilitate foreign investment and increase FDI into the economy. The higher the regional integration the easier it becomes for foreign investors and firms to target a specific region as intra-region rules are relaxed while improving institutions within the region. Even though regional integration seems like a rather easy way to attract foreign investors, it is not mandatory that it will lead to an increased FDI in any way. There are many other factors along with regional integration that impact the way investors make their investment decisions. Therefore, it is key to understand the determinants of FDI before making any sort of conclusions regarding regional integration and FDI flows. In addition, previous studies on regional integration provide us an in depth view of ways in which RI impacts FDI.

Niekerk (2005) divides regional integration into three dimensions.

1. Geographic scope illustrating the number of countries involved in an arrangement (variable geometry).
2. The substantive coverage or width that is the sector or activity coverage (trade, labor mobility, macro-policies, sector policies, etc.)
3. The depth of integration to measure the degree of sovereignty a country is ready to surrender, that is from simple coordination or cooperation to deep integration.

Regional integration can be helpful in terms of countries that are willing to work together to exploit their resources in order to achieve higher gains. The European Union (EU) is a perfect example of regional integration, an integration that has progressed over time and expanded through additional member states as well as deeper integration. However, deep regional integration is not an easy task due to disagreements on economic integration, common currency, and political integration. Though, the integration process can be facilitated through common trade agreements and regional integration agreements (RIA), which tend to create a common market and establish better trade policies within a region. Benefits from RIAs are extensive including traditional benefits such as trade gains, higher returns and competition, and investment and non-traditional benefits such as signaling, insurance, stronger domestic reforms, bargaining power and coordination, and security (Niekerk, 2005). Regional integration is able to bring together several countries that can coordinate and work together for prosperity of the region. Regional integration promotes trade and foreign direct

investment through various benefits that it may offer to both intra-regional countries and extra-regional investors who decide to invest in the region. Regional programs can be started by several countries together in order to benefit from their best skills and abilities, as is the way with some of the programs that ASEAN has started over the years.

Regional integration can have different impacts on the member and non-member countries. A reduction or removal of intra-regional tariffs can have a positive impact on FDI from non-member countries, Kindleberger (1966 In: Cattaneo, 2009) termed this as investment creation. In addition, a change in production structures, integration of systems, and higher institutional cohesion can have an impact on the intra-regional FDI within the integrated region, termed as investment diversion by Kindleberger (1966 In: Cattaneo, 2009). In this respect, both the investment creation and diversion is expected to benefit the integrated region through higher FDI from non-member countries to the RTA and member countries to other member countries. Market size is another reason why FDI may increase after becoming a part of an RTA, since being a member will increase the size of the national market through the creation of an integrated market (Cattaneo, 2009). An increase in FDI does not necessarily mean that it will be the same for all countries, as we know that some countries may be more attractive for various reasons. Some countries will be able to attract a higher amount of FDI due to their regulations, infrastructure, and strong institutions. Other countries may be able to attract a higher amount of FDI due to greater incentives or being closer to bigger markets. Therefore, being a part of an RTA doesn't guarantee the same amount of increase for all countries involved rather it may have a positive impact on attracting investors.

ASEAN Industrial Cooperation Scheme (AICO) is an example of how regional integration can promote integrated manufacturing activities among member countries (Te Velde & Bezemer, 2006). AICO was created to increase the trade, investment, private sector participation, and industrial complementation among ASEAN partner countries. By participating in manufacturing which involves at least two companies from two different ASEAN members, the participating firms are able to enjoy a preferential tariff rate between 0-5%. Providing incentives such as these increases cooperation between companies from different partner countries leading to increased economic activity in participating states. Blomström and Kokko (1997) state that regional integration results in economic growth and gains through efficiency. Taking

the example of NAFTA, Schiff and Wang (2003) found that imports from NAFTA member countries increased the productivity within Mexico between 5% - 5.5% whereas imports from all other countries had no impact on productivity. Hence, literature provides evidence that economic growth and higher productivity are the outcome as a result of participation in RTAs. Over time these benefits lead to higher income levels, higher spending, and an increase in the quality of life within a country or an integrated region.

Levy-Yeyati, Stein, and Daude (2003) studied the relationship between regional integration and the location of FDI with data from 20 source and 60 host countries from 1982 to 1999. They found there to be a significant positive impact of membership in a regional integration agreement on the FDI flows of a country. The impact of a RIA on the FDI flows of a member country can be 27% given that the source country is also a member of the RIA. Furthermore, countries that have more different factors (such as factors of production) than that of the source country also have a higher chance of stimulating FDI from the source country. However, like some other studies on FDI, they find that FDI also depends on other factors such as an attractive environment that is beneficial for the foreign investors. A better governance, attractive policies for investors, and a strong framework for operations can have a positive impact on the amount of FDI flows that are attracted by a country.

Similarly, Fakher (2012) studied the impact of economic integration on the FDI flows into ASEAN through an investigation of regional integration in ASEAN from 1995-2008. Instead of using the gravity model, the author used an econometric model that studied the impact of four variables namely GDP, openness, gross fixed capital formation and corruption on the FDI flows into ASEAN. The study finds that regional integration has a significant positive impact on the FDI flows. However, the concentration of the FDI varies among the member countries i.e. this research finds that from 1995-2008 out of the total FDI flows to ASEAN, Singapore received 46%, Thailand received 17.6%, and Malaysia received 14.2%. This is important addition to previous literature as we find that being part of the RTA does not guarantee a large growth in FDI flows, however additional FDI should be expected as a result of entering into RIAs. Some previous studies have also found similar results especially in the case of MERCOSUR, where it was also found that some countries attracted a significantly higher amount of FDI as compared to other RTA member countries.

Regional integration has been on the rise for the last few decades, whether that be economic integration, creation of a single market, or political integration. Mostly the regional integration today is aimed at economic integration that is carried out through FTAs and RTAs. The only "single market" in the world today is the European Union (EU), it has created a single market without any barriers for businesses or human resources and also share a common currency (the Euro). Regional integration has increased rapidly over the years due to a proliferation in the number of trade agreements implemented around the globe. Regional integration around the globe has been done through the creation of many different integrated communities and markets such as ANDEAN, ASEAN, CARICOM, EU, MERCOSUR, NAFTA, SADC, etc. The effect of regional integration on FDI is analyzed through examining the FDI behavior of both the member and non-member states of the regional integration agreement. In the case of member states, they may focus more on vertical FDI as it will be easier for them to set up different parts of the production system in different member states. The harmonization of laws within the region along with decreased trade barriers, lower tariffs, higher trade and investment provisions create an environment that welcomes FDI and provides greater protection to investors.

Non-member countries seek to create higher horizontal FDI usually a tariff jumping FDI to avoid tariffs of the region. Production plants may be created within the regionally integrated area in order to target the integrated market instead of exporting to this region. However, tariffs must be high enough to justify the costs of investing within the region. Horizontal investment is also preferred because investors from outside the integrated are do not want to pay taxes when entering the different countries within an integrated market. Vertical FDI is also a possibility if investors from non-member countries decide to set up multiple production facilities in various countries to gain advantages from within the region. Other investors will consolidate their production facilities within one country either by the size of the market or by the cost and availability of the resources. Although a regionally integrated market will attract higher FDI, the FDI is distributed among the countries unevenly. Levy-Yeyati et al. (2003) explain that regional integration may lead to higher FDI in one country due to firms bringing together their production facilities from different countries in the integration region to achieve economies of scale due to a reduction in trade barriers within the region. Therefore, large countries with large markets may get a bigger piece of the pie

due to the large market that works as an insurance for the firms. However, several other factors can increase the attractiveness of countries for FDI, these include stronger institutional framework, advanced infrastructure, factor prices, institutional transparency, tax treatment for multinationals, etc. (Levy-Yeyati et al. (2003). Separately, FDI diversion may also occur as a result of regional integration. FDI diversions from members can occur in terms of FDI to non-member states. Member states may prefer to do more FDI in other member countries of the regional integration rather than investing abroad into non-member states.

Regional economic integration has different levels of integration which decide how integrated the regional is in terms of economy, legal framework, and regional structure. Carpenter and Dunung (2011) describe four different types of regional economic integration.

1. Free Trade Area – This is known to be the most basic form of economic integration. In a free trade area, members remove all barriers (tariffs) to trade however, they are independent in determining their own trade laws and policies with non-member states. Different examples of free-trade area exist such as North-American Free Trade Agreement (NAFTA), Central European Free Trade Agreement (CEFTA), South Asian Free Trade Area (SAFTA), etc.
2. Customs Union – This is very similar to a free trade area in that the trade barriers are removed between members, creating a free trade zone among member countries. The main difference in a customs union is that the member states decide to deal with non-member states in a similar manner in terms of trade laws and practices. An example of this is the Andean Community (ANDEAN), European Union Customs Union (EUCU), South African Customs Union (SACU), etc.
3. Common Market – This type of integration allows for the member states to become economically integrated markets. In addition to the removal of trade barriers and having a common trade policy for non-member states, the market is integrated so labor and capital can move freely between the member states. Labor do not require any sort of visa or work permit in order to work in other member states. An example of a common market is the Common Market for Eastern and Southern Africa (COMESA) and Southern Common Market (MERCOSUR).

4. Economic Union – This is the type of economic integration that removes trade barriers, creates common trade policy for non-member states, allows for free movement of labor and capital, and creates common economic policies for member states. An example of this is the European Union (EU).

Regional integration can have both positive and negative impacts on the member states. Trade creation is one of the benefits of regional integration; lower barriers within a region can help expand the market size and can help increase the competition levels leading to lower prices and better quality products for consumers. In deeper integration, another benefit may be the free movement of labor that can open up bigger labor markets and provide people with better opportunities for work. Greater cooperation on an economic front may also lead to better political relations; these can facilitate greater cooperation in other aspects and result in higher growth levels. On the other hand, regional integration can also have some drawbacks for member states. For example, labor may move to markets that provide greater benefits therefore impacting smaller economies within the integrated region. In addition, firms may consolidate in one country where they find the lowest costs hence decreasing production in their home country. Therefore, countries must analyze both sides of the coin and make a decision that can best protect the interest of the country and at the same time induce growth.

Economic integration, being an important aspect of regional integration, can lead to higher investments in intra and extra-regional FDI. Economic integration can have an impact on the amount of FDI through three channels including trade provisions, investment provisions, and cooperation provisions and institutional changes as a part of the integration process (Blomström and Kokko, 1997; Aggarwal, 2008 In: Cattaneo, 2009). A common market as evidenced through various studies shows that common regional markets lead to higher investment due to a harmonization of rules and larger consumer markets. Brenton (1996) finds that EU single market program led to an increase in FDI among the region in the late 1980s, that is EU firms investing in other EU countries. Using the gravity model, Brenton, Di Mauro, and Lücke (1999) studied the impact of economic integration on FDI through analyzing the EU and Central and Eastern European countries. Investigating the changes in FDI flows in response to an increased economic integration, they find that economic integration within EU does not have any significant impact on the bilateral distribution of FDI flows over time. In their case, they find no evidence of reduced investment in other EU countries in the 1980s

when increased investment occurred in Spain and Portugal. Similarly, no significant evidence is found that the FDI flows to Central and Eastern European countries in the 1990s had a negative impact on the FDI flows to Spain and Portugal. This study shows that economic integration between EU and Central and Eastern European countries does not seem to have significant impact on the FDI flows on other European countries. The amount of FDI into any of the countries within the EU and Central and Eastern European countries is determined by the income growth and the success of the countries to devise policies that are conducive to business. The study shows provides evidence for determinants of FDI in terms of markets, consumer purchasing power, and business friendly policies that may attract foreign investors to the respective country.

A study by Motta and Norman (1996) also analyzed the relationship between economic integration and foreign direct investment. Through a three country, three-firm model, they find that economic integration does lead to higher FDI from outside the regional bloc. The higher intra-regional market accessibility is a prime motivator in higher investment from non-member countries. Furthermore, in terms of the market this increased competition due to higher FDI leads to lower product prices and lower profits for intra-regional firms. However, the geographical form of the FDI is not purely determined by the size of the country, they state that an increased country size scattered FDI targeting local markets. This study shows that economic integration is beneficial for consumers as it drives down prices, increases the diversity of products, and in some regions it facilitates the labor market as a result of FDI.

Going through the literature of regional integration, we find that integration of any form will generally lead to higher FDI, depending on the region and the countries that are a part of this integration. The extent to which a country or region is able to attract FDI depends on various factors as found in literature. The number and extent of tariffs are an important aspect in respect to the extra-regional FDI that an integrated region may attract. Furthermore, FDI determinants may include the size of the market, the transport costs, policies of a country, investor protection status, resources, infrastructure, income levels, political situation, etc. The motives for investments are high in number as investors seek to do investment for different purposes. Some investment might be market seeking whereas others might be resource seeking or technology seeking. Hence, it is difficult to pin point the determinant of the FDI but rather in can be categorized into two different categories horizontal or vertical FDI. In

order to understand the difference among horizontal and vertical FDI, they are further explained in the following section.

Horizontal FDI

Horizontal FDI is appropriate when firms are looking to move production closer to their consumers and try to avoid the costs associated with trade. The theory of horizontal multinational firms as stated by Markusen (1984), it assumes that avoiding trade barriers is the major reason for foreign firms to produce the same products abroad and at home. Similarly, according to McDermott (2007), horizontal FDI is seen as a substitute for trade and is motivated by the need to jump tariffs or other barriers and investing in the same business abroad. In this scenario, production facilities may be moved to each serving market however, it can be a tradeoff between moving closer to the consumer market and economies of scale. In addition, tariff jumping FDI is only preferred when the benefits of moving production facilities outweigh the tariff costs. Two main causes are seen as motivating factors for horizontal FDI, tariff costs and market size. Tariff costs are a key indicator into the total costs that a firm has to incur in order to reach different regional markets. The higher the tariff costs the more logical it seems to create production facilities within the region to reach the market. Higher trade costs create for higher incentives to establishing production systems close to the target market.

The market size is the other key factor that determines whether to take upon horizontal FDI. An expansion of the market provides greater reason to create production near the market because of higher demand. Higher demand in this case will be a key aspect in the creation of higher revenues. In the case that higher revenues can outweigh the costs associated with creating production facilities, firms will prefer to invest in the market and as an outcome increase their market share. On the contrary, a decrease in trade costs will motivate firms to concentrate their production in a single region and manage their trade flows with the host countries (Lesher and Miroudot, 2006). This is especially the case in regional trade agreements, firms seek to consolidate their production in a single region in order to gain from different factors such as economies of scale, resources, etc. This consolidation of production facilities has been witnessed in the case of the European market, firms from the US have consolidated their operations in single countries and supply the European market from those production locations.

Vertical FDI

Vertical FDI is pursued when firms are looking to expand their facilities into different countries in conducting joint operations that are connected in a similar way as that of global value chains. The vertical multinational firms are said to focus on split up the production process among different regions in order to gain from the comparative advantage (Helpman, 1984). According to Baltagi, Egger, and Pfaffemayr (2008), outsourcing some production operations to low wage countries and trade of intermediate goods among the firm are important for vertical MNCs. Likewise, McDermott (2007) states that firms invest in business operations in other countries besides the home country for example investing in a firm that provides raw materials to the business entity in the home country. A firm in the case of vertical FDI aims to invest in different types of businesses that may work as a part of the business at home or they may be separate entities in different industries. Another motivator for vertical FDI is the desire of firms to carry out labor intensive production in regions that are abundant in unskilled labor (generally speaking, this may be in mostly under-developed and developing economies). The home country in this case has an abundance of skilled labor whereas the host country has an abundance of unskilled labor. Firms are able to invest in areas with abundant unskilled labor in order to produce in the host country and trade the products back to the home country for their own market. This type of FDI may also be associated with regions that are able to provide low cost human resources that are preferred by large MNCs to achieve low product costs and gain higher profits. An increase in vertical FDI can be experienced as a result of low trade costs and a larger difference in labor costs and skills that acts as the prime incentive for industries to move abroad (Lesher and Miroudot, 2006).

Determinants of FDI

FDI has been studied extensively through various different lens, however, it is essential that we realize the determinants of FDI. Why do firms engage in FDI? What type of benefits do they seek? And how do they make the ultimate decision of entering a certain region? FDI determinants can help in recognizing these reasons and find an answer to the aforementioned questions. FDI determinants are also important for us in this study because it can explain to some extent as to why some RTAs generate a higher amount of FDI in comparison to others. Furthermore, FDI determinants will assist us in learning how various different factors within a country can have an impact on the

amount of FDI it can attract. Firms invest abroad for three different reasons as explained by Dunning (1993), these include resource-seeking FDI, efficiency-seeking FDI, and foreign-market seeking FDI.

Resource-seeking FDI pertains to firms that are seeking natural resources such as oil, minerals, etc. However, this is not to say that FDI in natural resources is done to only replace trade, this is not the case as stated by Kudina and Jakubiak (2008); they mention that investment is usually made because the country may lack the technology or technical abilities to extract the natural resources hence international firms making use of them. Further investment may involve upgrading the infrastructure that may be require to export the raw materials outside of the country in which they are extracted (UNCTAD, 1998 In: Kudina and Jakubiak, 2008). The dependence on energy sources such as oil and gas has given a large opportunity to big firms in focusing their investments on regions that are energy rich regions. Efficiency-seeking FDI focuses on creating efficiency for firms through the use of production systems in a limited number of countries in order to supply a greater number of markets (Dunning, 1993). In addition, foreign firms may take advantage of this by investing in integrated regions where concentration of production in a single country can lead to multiple supply markets. Investing in integrated region can also be regarded as efficiency-seeking since vertical investment can be used as the primary mode for investment and used to seek efficiency between different levels of production for the firm. Regionally integrated markets are a key component to investment on the basis of economic-efficiency motive. Lastly, the market-seeking FDI as can is evident from the term itself, it seeks host countries on the basis of market size, market growth, and per-capita income (Kudina and Jakubiak, 2008). Market size has been noted in numerous studies as having been a significant determinant of FDI, hence Chakrabarti (2001) states that it is the most widely accepted determinant. Over time, as firms become more competitive, some firms may have to seek new markets in order to sustain themselves, increase their competitiveness, and in order to benefit from higher revenues.

Besides the three most common determinants of FDI, there are other motivations due to which a region is able to attract investment. Asset acquisition is another determinant for FDI, this is especially the case for emerging economies that invest in western countries with good institutions and a safer environment for investment (Hill and Jongwanich, 2014). Emerging economies also invest in advanced countries in order

to acquire technology which may not be available in their own markets (Dunning and Gugler, 2008). Likewise, firms from developing economies are likely to invest in developed countries in order to raise their research development capabilities and improve their skill structure (Andreff, 2016). Other firms may invest in economies that resemble the home country economy because it makes it easier for the firms to adopt to the new market and work there under similar practices. The motivators for FDI brings into question as to the impact of these factors in making FDI decisions.

In the case of Indian Multi-national Corporations (MNCs), Nayyar (2008) through a survey finds that the main motivator for these MNCs is market access (51%). This shows the impact that a market can have on attracting FDI. Furthermore, Pradhan (2011) finds that Indian MNCs move towards countries with large populations and GDP per capita is also a significant motivator. These studies also go hand in hand with findings from studies that find the market size and the GDP of an economy to be significant factors in attracting higher FDI. Zhang and Daly (2011) find that FDI from China is invested in countries with high GDP growth and high GDP per capita. Again, being an emerging economy, China also focuses on other factors such as natural resources and technology. In the cases of Turkey, Uray, Vardar, and Nacar (2012) have found that Turkish firms invest abroad in order to gain technology and innovation. As seen through the literature, different countries focus on different aspects when making decisions for investing abroad. In the case of emerging economies, they lean towards developed countries for research and development, technology transfer, innovation, and developed markets that have high GDP and GDP per capita. Furthermore, in investing in countries that are close in distance there is a higher focus on the language, closer culture, and closer institutional practices. The institutional practices are an important aspect as it provides firms with a set of framework that they can follow being it is similar to the framework within their own home country.

Developed countries tend to focus more on other developed economies as they have similar markets in terms of GDP per capita and technological advancement. These factors play an important role in terms of investment into new countries since firms from developed economies want to venture into regions that can expand their operations and revenues. This is also evident from the fact that developed countries hold a large part of the FDI stock, however, recent years have seen a sharp increase in the amount of FDI that developing economies have been able to attract. In addition, the rise of

emerging economies such as Brazil, China, India, and Russia have all contributed to the rapid growth of FDI directed towards these countries as developed as well as developing countries aim to capture these markets. Besides the large markets that some of the emerging economics hold, they also are able to provide skillful cheap labor that has been a major attraction to foreign firms looking for investment opportunities. The market size is another major motivator for FDI from developed countries as some of the more developing and under-developed countries hold very large consumer markets especially in the case of China and India, hence firms are looking for ways to capture these markets and expand their operations into different areas.

Besides the most discussed determinants of FDI, there are other factors that have an impact on the way investors make decisions regarding their choice of region for investment. The political environment is an important factor that can appeal to or repulse investors from a region. Some researchers have claimed that political instability and violence should repulse FDI due to higher unpredictability in terms of economic and political situation (Brunetti, Kisunko, and Weder, 1997; Jun and Singh, 1996). Likewise, recent research on the type of government has found that democracies attract higher FDI (Feng, 2001). This may be due to the stability and a greater checks and balances that a democratic system may bring to the political situation hence increasing investors' trust in the economy. In addition, becoming a part of international agreements such as the WTO or any regional integration agreements (FTAs, RTAs, etc.) have a positive impact on the outlook of the country because of its obligations to conform to certain standards and laws that make it more attractive to investors. Büthe and Milner (2008) also find that higher institutionalized commitments such as being a part of WTO and PTA commitments leads to higher FDI.

FDI determinants as discussed earlier are different for different economies depending on their needs for expansion and ways in which they can benefit from those investments. Among the different FDI determinants, we find that some are similar to the factors that studies have found as a result of studying the impact of regional integration and FDI. Especially factors such as market size, market growth, GDP, GDP per capita, closeness in culture, same language, etc. Therefore, studying the literature on FDI determinants provides an alternative way into understanding how integration may impact FDI and what economies can do to become a more attractive location for foreign investors.

Regional Trade Agreements (RTAs)

One part of regional integration is the integration of trade that is done through different types of trade agreements. Specifically, free trade agreements (FTA) and RTAs have been at the forefront of trade policies all over the world.

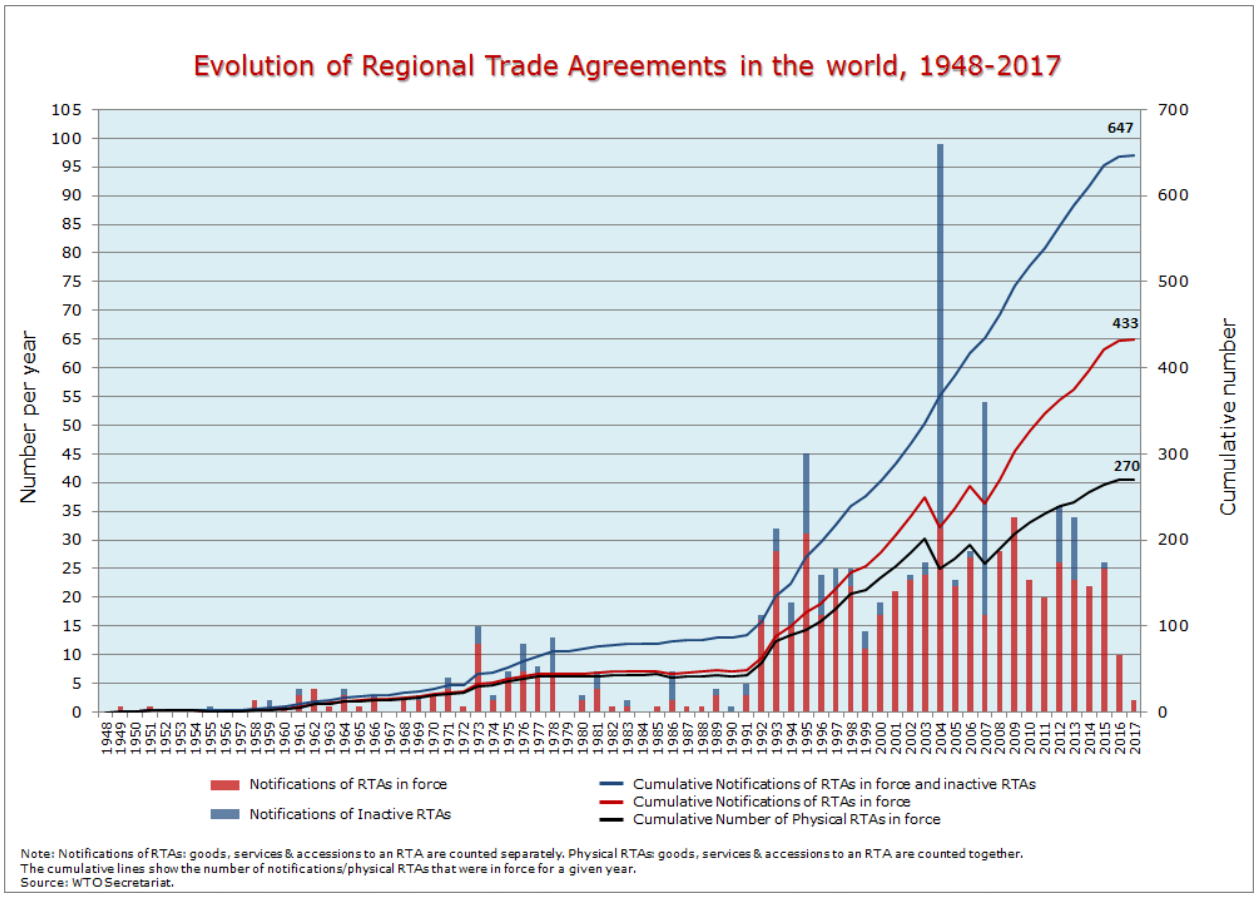
The World Trade Organization (WTO) defines RTA as (WTO, 2017):

> "Regional trade agreements (RTAs) are defined as reciprocal trade agreements between two or more partners. They include free trade agreements and customs unions."

As the definition explains, regional trade agreements are any agreements between two or more partner countries whereas the word regional itself gives the notion that it might be between more than 2 partners however, that is not the case. According to WTO, as of June 2016 all members of the WTO are part of at least one RTA and there are 271 RTAs in force at the moment. In total, 635 RTAs make up the list of all active and non-active RTAs in the world, whereas, a little over 42% of them are active. Countries have been eager to become a part of the global system through taking part in RTAs, whether they are free trade agreements between two member countries or regional agreements among multiple members. The greater participation of countries around the globe has also meant faster economic growth and a surge in the number emerging economies around the world. Literature in the field of FTAs and FDI flows since the 1980s have found RTA membership to be a significant determinant of FDI (Altomonte, 2007).

Figure 3 shows the evolution of the RTAs since the inception of General Agreement on Trade and Tariffs (GATT). The growth of RTAs was quite slow in the beginning years as countries were hesitant to open to trade and focused more on development of their local industries and economy. The added damage from the recent World War II did not help the cause either, therefore, countries focused on domestic development in order to improve their situations. Up until the 1970s there were not many RTAs agreed upon and enforced. However, 1990s saw a boom in the number of RTAs per year especially after the formation of the WTO in 1995 (the third highest number of agreements were signed in 1995 with the number at 43).

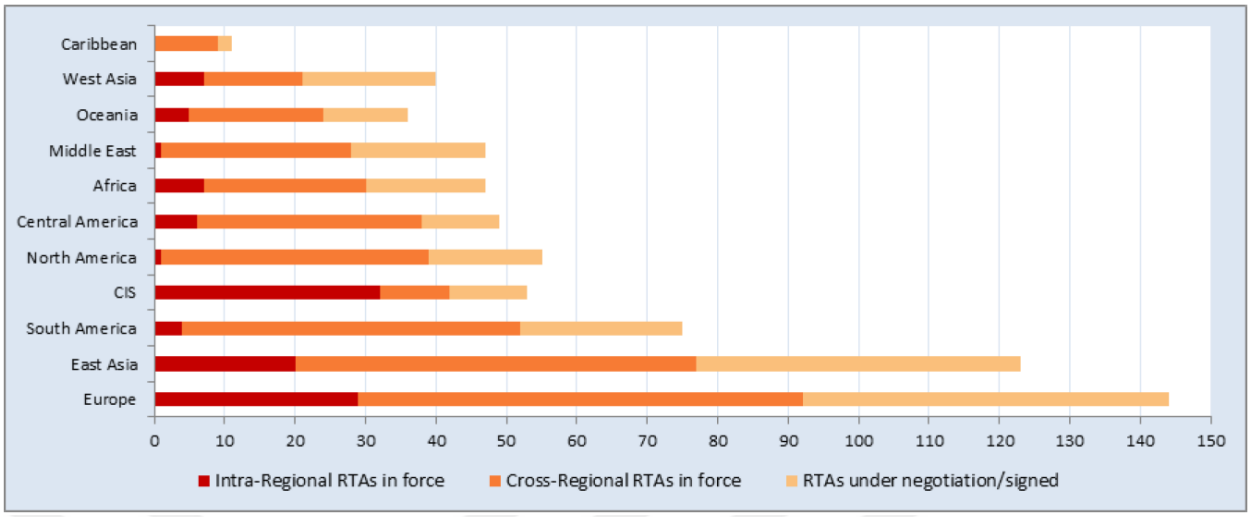
Figure 3 Regional Trade Agreements from 1948 to 2017



Source: WTO

Following the WTO, a rapid increase in RTAs can be seen in the graph where the number of RTAs per year after 2000 increased to new highs. The year 2004 saw the highest number of active and non-active notifications of RTAs by a large margin, 99 notifications were made this year. An interesting observation from the figure is that after the 2007/2008 financial crisis there are mostly notifications of RTAs in force each year as compared to previous years when there were many notifications of inactive agreements as well. Another observation worth noting is the fact that a very few number of RTAs were activated in 2016, the lowest since 2000.

Figure 4 RTAs in force and under-negotiation by Region



Source: WTO (2016)

Figure 4 shows all the RTAs in force (intra-regional and cross-regional) and under-negotiation around the globe. We find that Europe is leading all regions with an over 90 RTAs that are in force. Europe is followed by East Asia (over 75 RTAs in force) and South America (over 50 RTAs in force), respectively. On the other hand, the Caribbean (Less than 10 RTAs in force), West Asia (a little over 20 RTAs in force), and Oceania (Close to 25 RTAs in force) are among the three regions with the least number of RTAs in force. West Asia has done a poor job in opening up to trade, the region which consists of countries such as Afghanistan, Iran, Pakistan, India, etc. Out of these countries, India has progressed in terms of opening up to trade but other countries in the region have fallen behind, hence not having part in many RTAs. However, East Asia has done an exceptional job at opening up their markets to trade. They currently stand second in terms of the highest numbers of RTAs in force around the globe, only second to Europe. Association of Southeast Asian Nations (ASEAN) has been leading the way in terms of creating RTAs and creating higher market integration in the region. Over the years, ASEAN nations have performed well and have improved their economies as well as trade especially through signing RTAs with other countries. Europe has also done an excellent job in not only creating the world's only economic union in European Union but also integrating the region at a very high level. Europe has the highest number of RTAs and continues to drive towards integrating even deeper with more countries around the globe in order to extract the benefits of regional integration.

The importance of regional integration has been discussed earlier with benefits that range from larger consumer markets, higher economic growth, a higher number of available resources, an increase in the amount of FDI, etc. Likewise, this section focuses on the studies that have been conducted on the impact of RTAs on FDI. An in-depth look at what studies have found over the years through the examination of different regions around the globe. Most of the literati in this field have utilized the gravity model for their studies. A review of all the literature available in this particular focus of study has been gathered and reviewed with an extensive list of the past studies and their results. Schuler and Brown (1999) mention that RTAs provide a signal to multinational firms that the state is deepening its commitment to liberal economic policies. This anticipation may also drive FDI flows before the RTA is even put into place due to the expected changes that are to be made in the near future. In the case of NAFTA, Mexico experienced higher FDI flows well in advance of the signing of the agreement due to the anticipatory factors. Kawai and Wignaraja (2008) believe that Free Trade Agreements not only help with trade but can also help nations in harmonizing their institutional and regulatory frameworks. These institutional changes can help provide greater protection and make it easier for investors to invest in the partner countries (Coe et al. 2007).

Medvedev (2012) examined the impact of preferential trade agreements on FDI flows through the examination of the size of the common market created by the PTA and the distance between the trading partners. The study includes data for 153 countries from 1980 to 2004, examining the impact of market size, trade openness, growth rate (annual percentage changes in GNI), inflation, common market size, and distance between countries on the FDI flows. The research found that PTAs and specifically PTAs with deep integration lead to significant FDI inflows. The researcher in this study was able to work with developing countries along with developed countries by using total FDI inflows instead of using bilateral FDI flows that other papers have preferred. The total FDI inflows allows the researcher to include both high and low income countries since data availability for lower income countries is scarce.

MacDermott (2007) studied the impact of RTAs on FDI by focusing on FDI flows from 55 countries to OECD countries while focusing on NAFTA and its impacts. Through the application of a fixed effects gravity model, the study finds a strong positive impact of NAFTA on FDI flows (the RTA caused a 1.28% increase in FDI) and

find that FDI flows are positively related with the size of both home and host economies while finding weak evidence for a decrease in FDI as a result of distance. A decrease in investment due to distance means that a higher distance between countries has an adverse effect on FDI, or in other words firms lean towards investing in neighboring countries. In addition, the increase in investment does not originate from member countries but rather from non-member countries outside the integrated area. Another interesting finding of this study is that an increase in the GDP of either parent or host country leads to an increase in the FDI flows into the host country. This can be associated with growth, as economic growth increase the FDI flows increase. The economic growth factor has been examined in other studies and similar results have been found. As a result of NAFTA, all three countries (Canada, Mexico, and the United States) have experienced an increase in FDI i.e. Canada FDI flows increased by 1.54%, Mexico FDI flows increase by 1.73%, and the United States FDI flows increase by 0.96%. Likewise, Sanchez and Karp (1999 In: MacDermott, 2007) find an increase of 0.56% of FDI inflows for Mexico due to NAFTA. Used Ordinary least squares (OLS) method.

Büthe and Milner (2008) studied the impact of international trade agreements (in particular the GATT, WTO, and PTAs) on the FDI flows through an examination of 122 developing countries from 1970 to 2000. Using the panel analysis, they find that being a member of organizations such as WTO increases the amount of FDI into the country. Being a part of WTO provides greater safety to investors in terms of a country being able to fulfill its obligations and providing appropriate protection to investors. Investor's trust is also raised through being a part of a number of RTAs due to the harmonization and political obligations towards foreign investors that are resultant of these agreements. In addition, find a positive relationship between the capital investment in a country and its number of trade agreements, as the trade agreements increase the capital investment also increases in that country. Governments are able to make credible commitments on the back of these international institutions and agreements. Furthermore, the PTAs are able to provide security on behalf of governments to private investors that their investments are safe and the government is keen on providing a level playing field to international investors. Commitments for more liberal economic policies that are credible can assist developing economies in attracting FDI (Büthe and Milner, 2008). This finding is in line with earlier findings that

have found the positive impact of regional integration on FDI flows. A higher number of trade agreements would mean a higher number of obligations in terms of trade and in providing protection to firms in the region; furthermore, it also means a larger market, which is an essential determinant for FDI.

Baltagi, Egger, and Pfaffermayr (2008) examined the impact of RTAs on FDI in the case of European countries that consisted of 28 host and 24 parent countries from 1989 to 2001. The authors have used the spatial HAC estimator for variance and co-variance for this study, having applied a different approach than many of the other studies in this literature that have used the gravity model. They find that the combined size parent and host country as well as the relative size of parent-to-host country has a positive impact on the bilateral outward FDI. However, the amount of inward FDI as a result of the Europe agreement depends on the host country's economic distance from other host countries in comparison to the parent countries. Interdependence is key in this respect, if the countries have high trade before the agreement or anticipated high trade as a result of the agreement then they have closer economic proximity which means that the consumers could be served better from within production from just one of the two markets. In this case, the parent country will tend to invest in one of the host countries leading to a higher FDI in one country and a lower in another. An interesting finding from the study is that as the European agreements expanded in size through adding eastern European states, the FDI shifted from the western member states to the eastern member states. The FDI have shifted to the eastern countries as an export-platform FDI since production facilities are used in those countries to supply the home countries or export to other consumer markets within Europe.

Davis (2011) finds that a positive relationship exists between the economic size of the RTA market and FDI flows, stating that the existing economic environment in the country has an impact on the FDI flows for example a state with existing production or distribution core will attract higher investment flows than other economies. Higher FDI shouldn't be expected as a result of RTA if weak infrastructure and institutions exist in the country. This plays an important role in RTAs that involve under-developed or developing economies that may not have strong institutions because they may not attract as high of FDI even when being part of an RTA. In other cases, some countries within an RTA may attract higher FDI due to better institutions and higher safety for investors. This can also explain the reason behind the high amount of FDI that has

historically been attracted by developed economies due to their strong institutional framework, better policies, better distribution networks, excellent production facilities, and an advanced consumer market.

Thangavelu and Narjoko (2014) studied the impact of bilateral and regional trade agreements on FDI flows in the Asian Pacific Region through studying of 30 OECD and 9 ASEAN economies from 2000 to 2009. Furthermore, the research examined the inter-ASEAN and intra-ASEAN activities and their impact on the FDI. They found that FTAs have a positive impact on FDI flows depending on the domestic absorptive capacity of the region. The infrastructure, technologies, and human resources should be aligned with the needs of the investors in order for FTA to lead to higher FDI. Provided that the infrastructure is available along with technologies and skilled labor, it provides a better incentive for MNCs to enter the market and start their work at lower costs.

Hicks (2007) tested impact of RTAs and FDI while examining the variations in RTA economic scopes and their independence. The study includes 105 nations with the data from 1970 to 2003, testing the desired relationship using a generalized least squares model and using various time series equations to test for the different variables and their impact on FDI flows. They find that being a part of RTA that has greater economic scope and independence does lead to higher inward FDI. In addition, it pays off for non-OECD countries to be a part of powerful, independent, and economically strong agreements because they paint a positive image to investors. Also, positive trends in inflation, trade openness, and political stability have a positive impact on FDI flows. Hicks have found some very interesting findings; the author finds that being a part of a higher number of RTAs has an adverse impact on FDI flows which is opposite of Buthe and Milner's findings (2005). The results of this study show that not only being a part of RTAs but also being a part of the right RTAs has a more significant positive impact on FDI attractiveness. It is also important not to become part of too many RTAs as it can create a more confused state for investors who may find that the country might be more restricted rather than open to investment.

Liu (2008) examined the impact of RTAs on FDI in the case of China. Using a modified gravity model, the author studied China's FDI with a dataset from 1985 to 2003. The study analyze several different RTAs to see their impact on China's FDI inflows over the years. Their analysis show that several RTAs do not have a significant

impact on China's FDI inflows and that being a part of Asian-Pacific Economic Cooperation (APEC) has a positive and significant impact on China's FDI flows.

A more comprehensive study on BITs and RTAs has been conducted by Berger et al. (2013), they have examined the provisions within these trade and investment agreements in order to figure out whether if certain provisions have an impact on the FDI flows as a result of these agreements. The research comprehensively looks at the liberal admission rules and investor-to-state dispute settlement (ISDS) provisions within BITs and RTAs. Liberal admission rules have a significant impact on the FDI flows as a result of RTAs whereas, ISDS is found to be completely insignificant in increasing FDI flows (Berger et al., 2013). Providing national treatment seems to be the key in attracting FDI through RTAs, given that a country is able to provide liberal admission rules and give national treatment to foreign investors, the FDI flows should increase with RTAs. An interesting finding of this study is that the researchers find RTAs that only promote trade liberalization do not attract higher FDI.

Jang (2011) studied the impact of bilateral FTAs on bilateral FDI in developed countries while analyzing 30 OECD and 32 non-OECD countries from a time period of 1982 to 2005. This paper is significant in the fact that it examines the North-North RTAs relationship which had done been done in the past. Usually papers have focused on comparison between different types of agreements that have involved all different types of agreements. The author finds that trade agreements between developed nations can have a negative impact on the FDI and the economic activity. This claim is backed by the knowledge-capital model, which means that there is a negative impact of reduced trade costs if the skill level of human resources is small between countries; whereas, there is a positive impact can be seen in case of countries that have larger skill difference. Hence, it may not be beneficial for developed countries to get into trade treaties with other developed countries with the goal of increasing FDI. Although, this particular paper has found there to be a negative impact on FDI and economic activity, it can be argued that trade may increase among the countries due to a trade treaty leading to higher economic activity in member countries.

Nguyen and Cao (2016) also conducted a study on the impact of Free Trade Agreements (FTAs) have on the FDI flows in the case of Vietnam. They find that FTAs do in fact increase FDI inflows to Vietnam but only from partner countries that are a part of the FTA due to the preferential treatment they receive as members. They also

find that the exchange rate, WTO membership, and banking crisis of Vietnam has also had an impact on the FDI inflows to Vietnam. In terms of the 1997 banking crisis, the researchers find that it was helpful for Vietnam to attract FDI as a result of the crisis as the Vietnamese economy was not affected as much as compared to other neighboring economies that shifted the FDI from heavily effected economies to Vietnam. Accession into WTO has also had a positive impact on the attraction of FDI into Vietnam. This comprehensive study on the impact of FTAs on FDI shows that various aspects can have an impact on FDI besides being a member of a FTA. Having provisions for investors is key when preparing FTAs since these provisions can provide investors with preferential treatments leading to higher security and advantages for foreign investors.

Worth (1998) studied the impact of RTAs on FDI through examining the determinants of FDI and analyzing how an RTA affected those determinants. The study was carried out with a focus on the manufacturing and agricultural industries. In terms of manufacturing industries, three theories emerge for pursuing FDI, these include ownership advantages, internalization advantages, and locational advantages. The ownership advantage pertains to investment by firms in order to gain an advantage over their competitors through attaining of an intangible asset or superior technology. Internalization theory suggests that firms do FDI in order to safeguard their intangible assets such as technology as well as increasing market power and earning higher profits. A firm through internalization can ensure that the quality of their products/services is upheld and that none of its technological advances are leaked which may otherwise be at risk if franchising or licensing is used as an alternate route. Locational advantages are linked with FDI for tariff jumping, which may be used to enter a market due to high tariffs. Other locational advantages include market size, culture similarity, and factor costs such as labor, utilities, etc. As explained by Worth (1998), in terms of the US, the primary locational factors for FDI are GDP per capita (buying power of the consumers), GDP growth (market growth), and market size whereas other locational factors may include low capital costs as a result of low interest rates and low labor costs but Worth states that those might have much of an impact due to capital intensive investment by US firms. Therefore, the price of labor isn't much of a factor as labor accounts for a small amount of the costs in a capital-intensive industry. In this respect, FDI by manufacturing industries of the US take on a market seeking approach when investing abroad. On the other hand, Worth (1998) finds that agricultural FDI from US follows

similar path as the manufacturing industries in terms of capital intensive investment however, investment is made in order to protect the quality, trademark, and take advantage of economies of scale due to a larger market. He also finds that most of the agricultural FDI by US in the years studied within this research have been to the European Union.

A better understanding of the type of FDI and the industries in which investments are made is necessary since different industries face different sorts of barriers and motivations for investing abroad. For example, an industry that commits to FDI due to reasons other than tariffs will not be affected by an RTA which reduces tariffs among the participating states. Besides a decrease in tariffs, RTAs generally provide a more secure set of rules and legal framework for investors due to which they may lead to higher FDI from different types of investors. The investment climate, being an important factor in investment decision, can have a large impact on the decision making of multinational firms and investors when analyzing a region for investment purposes. This is the reason behind BITs being rather more effective in attracting investment than trade agreements since trade agreements tend to focus more on trade terms such as tariffs, harmonization of trade rules, harmonization of trade quality, etc. whereas, BITs generally focus on investment rules, investment protection for foreign investors, investment incentives, investment policies, etc.

One of the reasons as to why RTAs can have an impact on the amount of FDI entering a region or country is because of the regional integration. The RTA must be able to create higher integration in the region along with expanding the market and creating better policies that enhance the attraction of the countries participating in the RTA. The EU seems to be a good example of regional integration as they were able to successfully integrate many different countries within one region through unilateral policies and strategies. In addition to having unilateral policies and strategies, the EU has over time integrated to a great extent through having a common parliament alongside each country's parliament and having a common currency. Not only a common market has been formed but the Union has continued to grow over the years since its inception. This expansion in the size of the EU has also made it an attractive region for investors since investors are able to consolidate their investment in one of the countries while having the benefit of exporting it to the rest of the countries in EU. An integrated market with strong standardized policies also provides investors with a high

protection and a higher number of customers. As an example, some US food companies reduced the number of production facilities in EU whereas the total value of their assets increased during the same period, this was undertaken to possibly take advantage of economies of scale through higher production at a lower number of production facilities (Worth, 1998). Similarly, in the case of NAFTA, Mexico saw an increase in FDI from other countries whereas FDI from US remained the same as before the agreement (Worth, 1998). In terms of NAFTA, US had already increased investments to Mexico before NAFTA was enacted due to investment policy changes that were made by Mexico in 1989. In 1991, out of the total FDI of $10.939 billion into Latin America, Mexico received almost 40% of it (Jetro, 1993). Mexico at that time received high amounts of investment due to the fact that NAFTA was to be implemented within a few years motivating investors to invest ahead of time. Foreign investors saw it as a way into the US domestic market, also it should be noted that the factors of production were cheaper in Mexico than both Canada and United States of America.

Te Velde and Bezemer (2006) also studied the impact of RTAs on FDI through analyzing the amount of trade between RTA partners and the investment provisions in the RTA. It is a comprehensive study, which examines the FDI by United Kingdom and the United States of America into developing countries from 1980 to 2001. They find that being a member of CARICOM, ASEAN, ANDEAN, and NAFTA leads to an increase in extra-regional FDI, however, this does not apply to SADC, COMESA, and MERCOSUR. They find there to be positive and significant coefficient for regional investment provisions which means that investors from US and UK perceive these provisions as a positive sign. They also find that the larger the country in comparison to others in the region, the more FDI it will attract. This is in line with the observation that investors from both US and UK target largest countries in a region in order to be closer to the largest markets. This also is in line with other literature which states that larger markets are able to attract higher FDI due to their size and higher demand among the customers. In terms of distance, it is found that countries at a distance of 1,000 km from the largest economy in the region decrease the regional investment provisions impact on FDI by about 15%. In terms of this study, countries that want to attract a higher amount of FDI specifically from UK and US should focus on including more provisions for trade and investment in their RTAs. Finally, they find that all countries within RTAs do

benefit in terms of higher FDI but larger economies or countries geographically closer to large economies tend to attract higher FDI.

Paez (2008) also studied the impact of RTAs on FDI and trade, specifically investigating the existing RTAs in the Andean Community. The Andean community is made up of four countries including Bolivia, Colombia, Ecuador, and Peru. The purpose of the study was to investigate how an RTA can impact the FDI from both RTA member countries and external countries. Studying three FTAs that the Andean community reached with NAFTA, CAN, and G3. The ACN is the Andean Communities of Nations pact that created a regional customs union between 5 countries, Bolivia, Colombia, Ecuador, Peru, and Venezuela (Paez, 2008). NAFTA is the free trade agreement between three North American countries, Canada, Mexico, and the United States. Finally, the G3 is an RTA between Colombia, Mexico, and Venezuela. Both, the NAFTA and G3 came into force in 1995. Studying the relationship over a 10-year period from 1992 to 2001, Paez found that an inverse relationship exists between RTA membership and FDI. It is to say that if an FDI source country becomes a member of an RTA with the host country, the source country has higher incentives to trade instead of invest. The attractiveness of exporting ends up substituting the investment behavior that is witnessed prior to the RTA, possibly due to the reduction of tariffs and trade restrictions that are the usual part of a trade agreement. Therefore, investment protection or investment provisions being a part an RTA may not matter much in this case. This study is opposite to the claims of other studies in the field however; one thing that should be observed is that the countries that have been studied are in fact not that far in distance. It is possible that the RTA members prefer trade in this case due to the smaller distances between member countries hence the low costing for exports. The results of this study correspond with earlier results of Motta and Norman (1996), a study in which they found that economic integration leads to intra-regional export FDI platform, where outside firms do FDI for export purposes. Furthermore, intra-regional firms that might have been involved in FDI prior to the economic integration are more likely to switch towards intra-regional exports.

In order to extend the literature on this topic, Lesher and Miroudot (2006) studied the economic impact of RTAs while examining both the trade and FDI impact along with the investment provisions stated in the RTA. Through a sample of 177 countries out of which 51 countries served as the home countries, the study is done over

a period from 1990 to 2004 (15 year period). Testing for different North-North, North-South, and South-South RTAs using a gravity model, the authors find that investment provisions have a positive impact on both trade and FDI flows. They also find that North-South agreements seem to have the highest number of investment provisions; in addition, South-South RTAs seem to be quite advanced in terms of investment provisions scoring slightly lower than North-South agreements. They also find that a complementary relationship exists between BITs and RTAs which means that the investment provisions in both type of agreements do indeed lead to higher FDI flows. It's interesting to find that many South-South agreements are higher up on the index for investment provisions, making them attractive for FDI.

Similar to the previous study, Shamugia (2011) also studied the impact of RTAs and their provisions on FDI flows into transition countries. The study is based on Eastern European countries, it examines 12 FDI host and 50 FDI source countries from 1996 to 2009. In line with many other studies on this topic, the author has applied the gravity model for this study. It is found that being a part of RTA does have a significant impact on FDI flows. In addition, protection of intellectual rights as a provision of the RTA has a significant positive impact on FDI flows. Other factors that are found to have a positive impact on FDI flows include GDP growth, stable exchange rates, distance, diaspora, and strong institutions. In transition countries, strong institutions are important because they provide protection to foreign investors and can assure them of their rights. Under-developed and developing countries should follow suit of these countries in attracting foreign investment through addition of infrastructure and strong institutional framework.

Thangavelu and Findlay (2011) studied the impact of FTAs on FDI into the Asia-Pacific region. In the research they study whether if being part of bilateral or regional trade agreement has an impact on the FDI flows of country through investigating 30 (OECD) source countries and 43 (30 OECD and 13 Non-OECD) host countries from 1986 to 2007. In general, they found similar results to previous studies in that being a part of regional or regional trade agreements leads to higher FDI flows. They also find that a larger national market has a significant positive impact on the FDI flows. Similarly, they also find that home (source) countries are bound to invest in similar economies hence OECD countries will most likely lean towards investing more in other OECD countries instead of investing in developing economies. However, as

opposed to previous studies they did not find any relationship between distance and the FDI flows. This means that the physical distance between source and host countries does not impact the FDI flows to the host country.

Recent research in trade has also focused on the impact of FTAs on the organizations operating within the integrated region, which are firms that engage in either trade within the region or in Greenfield investments prior to becoming a part of an integrated region. Several studies provide insight into the reasons as to why firms within an integrated region opt for exporting to member countries rather than committing to Greenfield investment (Kim, 2009; Tekin-Koru, 2012; Chala and Lee, 2015). This is due to the fact that prior to the FTA or RTA, firms may have been investing in other countries due to high tariffs but since the tariffs are removed firms utilize their exports to reach the markets earlier reached by Greenfield investments. However, this is not the case with all firms, other firms may continue to do Greenfield investment for other benefits such as resources, cheaper labor, export platform investment, etc. Chala and Lee (2015) have examined the impact of RTAs on FDI through a study of bilateral Greenfield investments among 25 organizations. They find that high-income country pairs in OECD observe a negative impact of RTA on intra-regional Greenfield investments, which means that firms in high-income country pairs prefer exports in case of tariff reduction. The reason for a lower FDI is because most firms in high-income countries engage in horizontal investment therefore, with the reduction in tariffs they substitute exports with investment. On the other hand, they find that OECD non-high-income pairs are able to attract higher FDI while being a part of an RTA. According to this, developing countries that are becoming a part of an RTA with high-income OECD income countries can expect to experience an increase in the FDI flows.

Since the thesis will be analyzing South-South RTAs, it is appropriate that we discuss briefly about the differences on the North-South and South-South FDI. It is to get an overview and a slight understanding of the studies that have already been conducted on this matter. In terms of North-South and South-South FDI, we do not have many studies especially due to a lack of data on the south countries. Data is collected much more accurately and frequently in the developed economies however, the same cannot be said for developing and under-developed economies. A lack of data makes

research into this area quite difficult, hence some alternatives have been especially in the case of measuring FDI.

North-South FDI

North-South FDI refers to any Foreign Direct Investment between developed and developing economies. Developed economies have remained interested in developing or emerging economies due to a number of advantages. These advantages lead to investments for different reasons such as resource-seeking, market-seeking, etc. In recent years production functions have moved from developed economies to developing economies due to an advantage of low costs within developing economies. For example, the textile industry being prominent in many emerging or under-developing economies provides evidence for labor-intensive industries being highly utilized due to the need for low skill labor and in turn providing low salaries. Other firms from developed economies may concentrate their FDI into countries that have large consumer markets. As we know many of the largest consumer markets around the global are a part of emerging economies namely Brazil, India, Indonesia, China, etc.

Fakher (2012) suggests that North-South FDI flows between countries that are different in terms of size and factor proportions and are more likely to be a part of vertical FDI. Whereas, Yeyati et al. (2002) states that given the differences among North-South countries, horizontal FDI is still a viable option given that trade barriers among these countries are high. In which case, the horizontal FDI would be appropriate since it would be tariff jumping. Many other factors are involved in selecting a destination for the FDI. In the case of North-South FDI, it could also be into integrated regions or regions that have created unions or trade agreements in among South countries. For example, ASEAN is a RTA among south countries in South-East Asia and are able to attract higher FDI due to their integration and openness to trade. Similarly, other South RTAs can have the same impact and draw North countries into their region through FDI. However, it is also important for South countries to have a strong framework and governance that can provide a safe and constructive environment for foreign investors.

South-South FDI

South-South FDI refers to Foreign Direct Investment between emerging economies. South-South FDI has been increasing over the years as emerging economies become stronger with higher growth and higher GDP. FDI is an important factor for

development as foreign investors look to gain different types of advantages through various types of investment. It helps economic growth through injecting money into the economy and stimulating economic activity. Fakher (2012) states that North-North and South-South FDI tend to be horizontal. However, the horizontal nature of FDI is not necessarily true in the case of North countries because they tend to have low trade barriers, which decreases tariff jumping FDI or in other words horizontal FDI. It is necessary to understand the relationship between countries and whether if trade barriers exist and to what extent, low trade barriers will also reduce the tradeoff between production in home and FDI in host countries.

Gameltoft (2007) finds that FDI from emerging economies into other similar economies is market-seeking and efficiency-seeking as the top two reasons for outward FDI from emerging countries. Likewise, Multilateral Investment Guarantee Agency's (MIGA) study carried out in 2008 is of similar view that South-South FDI is market-seeking, resource-seeking, and efficiency-seeking. This is similar to the reasons as to why even developed economies induce FDI into emerging economies. Whereas, South-North FDI that is emerging economies investing in developed economies is in pursuit of asset-seeking or technology-seeking in order to attain assets or technologies that are not available in the home country (Gameltoft, 2007).

A small number of studies have been conducted on South-South trade agreements hence the literature on the topic is quite limited. Cherif and Dreger (2015) studied the impact of South-South agreements on FDI by comparing the MENA (Middle East and North Africa) region to Latin America and Southeast Asia. Similar to some of the other authors who have worked in this field of study, Cherif and Dreger (2015) also found that RTAs do not necessarily improve the attractiveness of a region to FDI. The institutions, business environment, and framework for conducting business in a country are important factors for foreign investors. Agglomeration effects also seem to be an important variable in attracting FDI, however this is lacking in MENA hence it doesn't seem to show much evidence. In the case of MENA, openness and financial soundness are main drivers for FDI. Furthermore, the authors find that FDI is stimulated by market size and growth potential hence supporting other studies that find higher FDI in case of larger markets and for countries with higher economic growth. Developing countries need to be able to show investors that they have stable institutions that can support foreign investors.

CHAPTER 3

METHODOLOGY

The Gravity Model

Gravity model has been at the center of most of the studies that have examined the impact of trade agreements and FDI. Gravity model is an empirical econometrics model that has been utilized in trade to examine the bilateral trade between countries. The model was initially used to describe the pattern of trade between two countries; the model uses an analogy in line with Newton's universal law of gravitation (Tinbergen, 1962). Several studies in the early 1960s applied the gravity model to analyzing international trade flows (Tinbergen, 1962; Linemann, 1963; Pöyhönen, 1963; Pullainen, 1963). Tinbergen (1962) described the bilateral trade between two countries as *"proportional to the gross national products of those countries and inversely proportional to the distance between them"*. Tinbergen is known to have discovered and pioneered the use of the law of gravity in international economics; his gravity equation is as follows (1):

$$X_{ij} = G \frac{Y_i^a Y_j^b}{D_{ij}^c} \quad (1)$$

The variables of the equation are defined as follows:

X_{ij} – The international flow from the home *i* (origin country) to the host *j* (destination country) or the sum of the flows between the countries, these flows can be of different nature depending on the study i.e. export, import, trade flows, FDI, tourism, migration.

$Y_{i,j}$ – The economic size of both the home *i* (origin country) and the host *j* (destination country). The economic size is usually measured in terms of gross domestic product (GDP). While GDP is the most commonly used variable to measure the economic size of a country, other variables include the gross national product (GNP), GDP per capita, or endowment of production factors.

D_{ij} – The distance between the two countries usually measured from the economic centers of each country.

a, b, and c – The elasticity of X_{ij} to change in Y_i, Y_j, and D_{ij}.

Initially, the model was quite simple as it determined trade flows as a function of the distance between countries however, over the years it has been modified and used in a countless number of studies. The model has been used extensively to explain the relationship between trade flows and distance of countries. The availability of data and

the model's explanatory power has led to the high usage of the model in explaining trade flows. Given the availability of bilateral trade data that is generally available for all countries across the globe, the gravity model has been able to define the trade flows. More recently, the gravity model has been used to explain the bilateral capital flows and also the determinants of FDI (Folfas, 2011).

The model was modified and used to examine the FDI determinants in the 1970s (Liu, 2008). The gravity model has been used for a number of studies with different sets of data and has proven to be quite robust and stable. The model used for FDI is adopted from earlier studies that examined the relationships between the trade flows among countries and their economic size as well as their distance from each other. Studies on the impact of regional integration and FDI have mainly been conducted using the gravity model (Brenton, 1996; Eaton and Tamura, 1996; Brenton, Di Mauro, and Lucke, 1999; Levy-Yeyati, Stein, and Daude, 2003; Lesher and Miroudot, 2006; MacDermott, 2007; Kreinin and Plummer, 2008; Liu, 2008; Paez, 2008; Park and Park, 2008; Busse, Koniger, and Nunnenkamp (2010); Shamugia, 2011; Thangavelu and Findlay, 2011; Berger et al., 2013; Im, 2016; Nguyen and Cao, 2016).

Although the gravity model has been used in a number of studies to examine the FDI flows, there is a limited amount of data available for bilateral FDI flows. The data is usually only available for developed economies or OECD countries, which makes it difficult to use the model for under developed and some developing economies. There are difficulties in collecting the data because bilateral FDI flows are required for the gravity model instead of just FDI flows into a country. The bilateral flows are not available for all countries, although the United Nations Conference on Trade and Development (UNCTAD) have been collecting the main data on trade and capital movement for a number of years, they only have bilateral FDI data for countries from 2001 to 2012. Nevertheless, some studies have been conducted on developing economies as well in terms of FDI flows using the gravity model. Medvedev (2012) conducted an extensive study with a sample of 153 countries while using the total FDI flows per year to a country as the dependent variable to account for the South-South FDI flows. Usually when analyzing the South-South relationship, researchers have tended to use different type of analysis than the gravity model because of the bilateral data that the gravity model requires. Medvedev (2012) used a panel analysis and Büthe Milner (2008) also used the panel analysis, while both of their studies included a high

number of countries where many South countries were used as part of the study. All studies completed in terms of FDI flows show the importance of bilateral FDI data in testing the gravity model and seeing its impact across the different types of countries whether they be North or South countries.

The original equation (1) is changed in this thesis to represent the FDI flows and how they are affected by the RTAs. The variables are adjusted to account for the FDI flows, for example X_{ij} will represent the FDI flows from partner countries (i) into the destination country (j). The rest of the variables will stay the same, the economy is measured by the size of GDP, the distance between the countries is used, and dummy variables are also used as part of the equation. However, modification of the equation is required through the use of a natural log-linear form for the gravity model. Equation (1) is changed into a new equation using the natural logs.

$$lnX_{ij} = cons + alnY_i + blnY_j - clnD_{ij} + dDummy \quad (2)$$

The natural log-linear form is used for this thesis, as we will see in the actual model for our study. The natural log is used in order to account for the skewness of the data (Benoit, 2011). Given that the FDI data can be rather skewed, therefore a model with natural log-linear provides well-behaved residuals (Blonigen and Davies, 2004). Furthermore, the natural log allows us to make better and easier interpretations of the data and results.

In the data collected for this study, one of the main problems that has risen is the phenomena of missing or zero figures. This problem is quite frequent in the gravity model in international trade because at times zero trade flows are recorded, similarly in this case zero FDI flows are recorded. However, log-linear cannot be taken for the zero flows since a number cannot be raised to a power and as a result get zero and the log of zero is undefined (Salvatici, 2013). Several solutions have been proposed to solve this issue of recorded zeros in the data. One solution is to ignore the zeros and apply the log-linear form by OLS, in which case the data might be affected to a large extent depending on the number of zero flows in the data. This is not feasible for our data as it includes at times a large number of zero FDI flows from several countries. If we were to ignore the zero flows, our data would become quite constricted and not give meaningful results. Another proposed solution is to add a small positive value to the FDI flows, X_{ij} + 1, this would result in all zeros values turning to a value of 1. Yet again, this is not feasible because it relies on restrictive assumptions (Slavatici, 2013).

Other methods have also been proposed and tested, however, the one that sticks out is the recommendation of using the Poisson Pseudo Maximum-Likelihood (PPML) estimator with a log-linear function instead of a log-log function. Silva and Tenreyro (2006) proposed that PPML estimator can be used in the case that the gravity equation is estimated with OLS in the presence of heteroscedasticity and zero trade flows.

STATA 13.1 is used to run all of the statistical analysis for this study. The software is able to accurately and easily run the tests that were required in this study, such as the fixed effect model, heteroscedasticity tests, the Poisson Pseudo Maximum-Likelihood, and any other tests for the current study.

Variables

Foreign Direct Investment – FDI is the dependent variable for this study. Different proxies have been used for FDI in previous studies such as FDI flows and FDI stock. This study will use FDI flows as it has been used in many previous studies and gives an accurate understanding of the amount of per year flows. Through the use of FDI flows we are able to understand the changes better than in the case FDI stock was to be used. FDI flows from each country towards Brazil, China, India, and South Africa as used for this study and the data is acquired from UNCTAD online bilateral data statistics.

Gross Domestic Product – The GDP of both home and host countries are used as a proxy for the economy size in this study. The GDP is logarithmized in order to obtain elasticity of FDI inflows in respect to the GDPs of both the home and host countries. The GDP is collected through the GDP data available on the World Bank website. World Bank has a separate database for numerous economic indicators of countries around the globe available on their World Data Bank database. The GDP data is collected in current US Dollar. The GDP is expected to have a positive sign for both home and host countries. The GDP of the home country is positive because the higher the wealth the more opportunity they have to be able to invest in other countries. The GDP of the host country is positive because it shows that there is a higher demand level for different products hence high GDP countries attract a higher amount of investments.

Gross Domestic Product Growth – The growth of an economy is also an important factor in realizing the potential of the economy in long term growth of its market. GDP growth for host countries is used in the study to measure the speed at which the host economies are growing. The GDP growth data is also obtained from the World Bank

database. The data is collected for our host countries of Brazil, China, India, and South Africa.

Domestic Market Size – Several different proxies have been used in literature to measure the market size of an economy. Chakrabarti (2001) cited various papers that used absolute GDP, GDP per capita, GNI, or GNI per capita to estimate the market size. Davis (2011) uses log of GDP per capita purchasing-power parity index to calculate the market size. Whereas, Medvedev (2012) uses natural log (GDP – FDI) to measure the market size in order to find the impact of PTAs exclusive of FDI flows. This study uses the GDP per capita to measure the domestic market size for the host countries (Brazil, China, India, and South Africa). The GDP per capita data is gathered from the World Bank database as well and is reported in current US Dollars. A positive sign is expected for the domestic market size of host country because the higher the domestic market size can determine the firms that want to operate in the country and can influence foreign firms to invest in the region.

Distance – The geographical distance is the variable mentioned in the original gravity model and is also an important variable for realizing the impact of RTAs on FDI. The distance is calculated by taking the distance between the capitals of the home and host countries. The data is logrithmized just like the previous variables. The data is collected from the CEPII database on geographical distance. Distance is expected to have a negative sign because the higher the distance the more differences that arise in culture, language, transportation costs, etc.

Openness – Trade liberalization is the implementation of economic and trade policies that lead to higher trade between nations. Trade openness in turn reflects how liberalized countries are towards trade. Trade openness provides a better platform for businesses and investors to be able use the country as a hub for trade. Trade openness is the ratio of all trade (exports and imports) of a country to the GDP of a country. Trade openness will be obtained from the World Data Bank database that provides an indicator for the Trade as a percentage of GDP. Trade Openness is expected to have a positive sign because higher trade openness would indicate a higher competitive nature of the country.

Regional Trade Agreement – Data for regional trade agreements will be collected from World Trade Organization (WTO) website. WTO website has its own database along with a list of all trade agreements which have been completed over the years. Emerging

economies have been pushing to get involved in more trade agreements in the recent past in a bid to further increase the growth of their economies. This study focuses on BRICS countries with the exception of Russia due to a lack of data. Three RTAs that have been enforced among south countries will be examined to study their impact on Brazil, China, India, and South Africa. These RTAs were selected because they have been formed among these countries and have created larger common markets. The Association of Southeast Asian Nations (ASEAN), Southern Common Community (MERCOSUR), and Southern African Customs Union (SACU) have been selected as the RTAs to be studied. . A signed and enforced RTA has a positive sign because it will create higher cooperation and harmony among member countries. In addition, an RTA creates a larger market for all members and eases the regulations among them hence creating a better environment for investors. Two RTA dummies are used in this study, RTA_1 will be 1 if both home and host countries are members of a RTA (ASEAN, MERCOSUR, or SACU) and 0 otherwise. RTA_2 will be 1 if only the host country is a member of an RTA (ASEAN, MERCOSUR, or SACU) and 0 otherwise.

Border – Contiguity is also a dummy variable that informs us if a home (source) country shares a border with host country. The border dummy variable will be 1 if a home country shares border with a host country and 0 if there is no sharing of the borders. The border variable is expected to have a positive sign because the closeness in proximity of the countries is expected to have a positive impact on FDI flows.

The countries were chosen based on the available data, a high amount of FDI in the host countries, and their location (border countries were chosen if data was available). Many source countries are not listed here and a different number for different host countries because of a lack of data. Although, UNCTAD has data available from 2001 to 2012 for a majority of the countries around the globe, the data itself for those countries is missing for many countries hence making it difficult to get a larger sample.

Table 1 Source Countries for this study

Host: Brazil	Host: China	Host: India	Host: South Africa
Argentina	Canada	France	Australia
Bermuda	Denmark	Germany	Austria
Canada	France	Italy	Belgium
Chile	Finland	Japan	China
China	Germany	Korea	Denmark
France	Hong Kong	Mauritius	Finland
Germany	Indonesia	Netherlands	France
Italy	Italy	Singapore	Germany
Japan	Japan	Spain	Italy
Luxembourg	Korea	Switzerland	Japan
Netherlands	Luxembourg	UK	Korea
Norway	Macau	USA	Luxembourg
Panama	Malaysia		Namibia
Peru	Netherlands		Portugal
Portugal	Philippines		Sweden
Spain	Singapore		Switzerland
Singapore	Thailand		UK
Sweden	UK		US
Switzerland	USA		
UK			
Uruguay			
USA			

Data and Model

The current study uses bilateral FDI flows as the dependent variable between Turkey and its RTA partner countries. The bilateral FDI flow data is based on the inflows of FDI from home countries (j) into the host country (i). The current study examines a sample that covers a time period of 12 years from 2001 to 2012 with a total observations of 852.

$$\ln(FDI_{ijt}) = \beta_0 + \beta_1 ln(GDPhome_{it}) + \beta_2 ln(GDPhost_{jt}) + \beta_3 ln(GDPhostgrowth_{jt}) + \beta_4 ln(Dist_{ij}) + \beta_5\, ln(Open_{jt}) + \beta_6\, ln(Market_{jt}) + \beta_7 \sum_{k=1}^{n} Border + \beta_8 \sum_{k=1}^{n} RTA1_{kt} + \beta_9 \sum_{k=1}^{n} RTA2_{kt} + \mu_t$$

The variables of this model are defined as follows:

FDI_{ijt} – The FDI flows from home country (i) to host country (j) in a year (t).

$GDPhome_{it}$ – The GDP of the home (source) country in the year t.

$GDPhost_{jt}$ – The GDP of the host (Brazil, China, India, or South Africa) country in the year t.

$GDPhostgrowth_{jt}$ – The GDP Growth of the host (Brazil, China, India, or South Africa) country in the year t.

$Dist_i$ – The distance between the home and host (Brazil, China, India, or South Africa) country.

$Open_{jt}$ – The openness of the host (Brazil, China, India, or South Africa) country economy (the proportion of trade to GDP).

$Mrkt_{jt}$ – The market size calculated of the host (Brazil, China, India, or South Africa) country.

$RTA1_{kt}$ – Host country is the member of an RTA (ASEAN, MERCOSUR, or SACU).

$RTA2_{kt}$ – Both home and host countries are members of an RTA (ASEAN, MERCOSUR, or SACU).

Bord – The sharing of a common border by home and host (Brazil, China, India, or South Africa) countries.

Table 2 Variables for the Model

Name	Code	Source	Impact +/-
ln(FDI Inflows)	ln(FDI)	UNCTAD	
ln(GDP of Home)	ln(GDPhome)	World Bank	+
ln(GDP of Host)	ln(GDPhost)	World Bank	+
ln(GDP Growth of Host)	ln(GDPhostgrowth)	World Bank	+
ln(Distance)	ln(Dist)	CEPII	-
ln(Trade Openness)	ln(Open)	World Bank	+
ln(Host Market Size)	ln(Market)	World Bank	+
Common Border	Border	CEPII	+
Regional Trade Agreement1	RTA1	WTO	+
Regional Trade Agreement2	RTA2	WTO	+

*RTA1 refers to both home and host countries being a member of an RTA (ASEAN, MERCOSUR, or SACU).
**RTA2 refers to only the host country being a member of an RTA (ASEAN, MERCOSUR, or SACU)

A separate model is also used to find the results of the benchmark gravity model for this study. The model includes all three of the RTAs that a part of this study and are tested simultaneously to find the impact on the FDI flows.

$$\ln(FDI_{ijt}) = \beta_0 + \beta_1 ln(GDPhome_{it}) + \beta_2 ln(GDPhost_{jt}) + \beta_3 ln(GDPhostgrowth_{jt}) + \beta_4 ln(Dist_{ij}) + \beta_5 ln(Open_{jt}) + \beta_6 ln(Market_{jt}) + \beta_7 \sum_{k=1}^{n} Border + \beta_8 \sum_{k=1}^{n} ASEAN1_{kt} + \beta_9 \sum_{k=1}^{n} ASEAN2_{kt} + \beta_8 \sum_{k=1}^{n} MERCOSUR1_{kt} + \beta_9 \sum_{k=1}^{n} MERCOSUR2_{kt} + \beta_8 \sum_{k=1}^{n} SACU1_{kt} + \beta_9 \sum_{k=1}^{n} SACU2_{kt} + \mu_t$$

This model will be tested for the overall gravity equation in this study and then compared with the preceding model which differs with each RTA. It is also used as the baseline for this study as it analyzes for all of the selected RTAs for this study. Similar approaches have been used in previous studies as well. MacDermott (2007) used a benchmark gravity model to check for the impact of NAFTA on FDI flows and then used a separate model to see the impact on each of NAFTA member countries. Liu (2008) has also used a similar approach to first looking at the overall impact of several RTAs and then adjusting the model for China only. Likewise, this model is applied to look at the overall impact and then to see the impact of each of the RTAs selected for this study, the previous model will be used.

CHAPTER 4

RESULTS

First we will look at the summary statistics of the independent and the dependent variables for the study. The dummy variables are not included because they only inform us if an aspect is part of the model or not in that particular time period.

Table 3 Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
FDI Flows	728	5.69473	1.953925	0	11.16337
GDP Home	852	27.02881	1.979443	17.9916	30.41327
GDP Host	852	27.63735	1.072129	25.47238	29.77818
GDP Growth (Host)	812	1.669691	0.6146467	0.1319113	2.65545
Distance	852	8.813991	0.6330738	6.862392	9.828204
Openness	852	3.728558	0.366379	3.095849	4.288614
Market Size	852	8.096802	0.8721997	6.10259	9.485505

The above table shows the dependent variable (FDI flows) has 728 observations which are much lower than the normal 852 observations of our sample. There are a lower number of observations for FDI flows because some of the data was missing (not reported in the UNCTAD statistics) and there were 0 values for some years. In the case of GDP growth, the missing values are observed when the natural log is taken for the growth values. The missing values appeared for growth values that were negative, hence we see a number of observations missing. The rest of the variables had the same number of observations as the sample size for this study. All variables were first logarithmized and then reported in the above table. The natural log of all the variable is taken to improve the way these variables can be reported and the values become much smaller and the skewness of the data can be well managed through a log-linear approach.

The first step in our data analysis is to run the simple regression on the data. Initially we ran the regression tests on the data without any dummy variables. This simple linear regression has been calculated to show the impact on FDI flows based on the GDP (home country), GDP (host country), GDP growth (host country), distance

(between home and host countries), openness (host country), and market size (host country). The result of the regression without dummy variables is as follows:

R-squared = 0.3069

Adjusted R-squared = 0.3008

Table 4 ANOVA for Model without RTAs

ANOVA					
Model	Sum of Squares	df	Mean Squares	F	Sig.
Regression	829.711445	6	138.285241		
Residual	1874.09019	691	2.71214209	50.99	0.000
Total	2703.80163	697	3.8791989		

Table 5 Regression without RTAs

Coefficients				
FDI Flows	Coefficient	Std. Error	t	Sig.
GDP Home	0.2597806	0.037091	7.00	0.000*
GDP Host	0.971181	0.088263	11.00	0.000*
GDP Host Growth	-0.3985987	0.159766	-2.49	0.013*
Distance	-0.491519	0.12637	-3.89	0.000*
Openness	0.096513	0.209532	0.46	0.645
Market Size	0.1364746	0.082744	1.65	0.100
Constant	-24.6944	2.817899	-8.76	0.000*

*p-value significant under 5%, $p < 0.05$

A significant regression equation was found F (6,691) = 50.99, $p < 0.00$, with an R^2 of 0.3069. The coefficients are significant under 5% for all variables except market size and openness. The GDP of the home and host country have a significant positive impact on the FDI flows, however, surprisingly the GDP growth rate of the host country has a significant negative relation with FDI flows. The GDP growth could have a negative relationship with the FDI flows because a faster growth rate for emerging economies could also mean that the income levels are increasing. An increase in income level means that human resources are become more expensive in that country and could lead to a diversion of FDI to other countries where human resources are cheaper. The distance has a significant negative relation with the FDI flows as has been predicted in earlier studies. Following are the pooled OLS results for the three different RTAs that were a part of this study.

Table 6 Regression for each Model separated by each RTA

Model	R-squared	Adjusted R-squared
ASEAN	0.3463	0.3378
MERCOSUR	0.3321	0.3234
SACU	0.3223	0.3135

	Coefficients					
	ASEAN		MERCOSUR		SACU	
FDI Flows	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
GDP Home	0.2499892	0.000*	0.270822	0.000*	0.2515595	0.000*
GDP Host	1.149047	0.000*	0.8833421	0.000*	0.9692417	0.000*
GDP Host Growth	-0.4440451	0.004*	-0.3256536	0.044*	-0.4111529	0.010*
Distance	-0.9435519	0.000*	-0.9234753	0.000*	-0.8688713	0.000*
Openness	0.4071096	0.064**	0.8994439	0.022*	-0.0562503	0.822
Market Size	0.277426	0.001*	0.0649924	0.512	0.1559503	0.145
Border	-1.396311	0.000*	-1.016076	0.005*	-1.242784	0.000*
RTA1	-1.827057	0.000*	-0.2551416	0.669	-0.1998568	0.844
RTA2	-0.8568847	0.001*	0.9624162	0.007*	0.2558798	0.399
Constant	-27.33673	0.000*	-21.50354	0.000*	-20.60942	0.000*

*p-value significant under 5%, $p < 0.05$, **p-value significant under 10%, $p < 0.10$.

In the case of ASEAN RTA, a significant regression equation was found F (9, 688) = 40.5, $p < 0.00$, with an R^2 of 0.3463. The coefficients are significant under 5% for all variables except openness which is significant under 10%. The simple linear regression shows the initial relationship between the FDI flows (dependent variable) and the rest of the independent variables as well as our dummy variables of border and RTAs. A significant negative relationship is found for both RTAs dummy variables for ASEAN. The negative relationship shows us that in both cases, whether if both home and host countries are a part of the RTA or only the host country is a part of the RTA leads to FDI diversion for the host countries. A small FDI diversion effect in the case of RTAs has also been shown in a previous study by Levy-Yeyati et al. (2003).

In the case of MERCOSUR RTA, a significant regression equation was found F (9, 688) = 38.02, $p < 0.00$, with an R^2 of 0.3321. The coefficients are significant under 5% for all variables except market size and RTA1 (when both home and host countries are member of the RTA). We find negative but insignificant results for MERCOSUR when both the home and host countries are members of the agreement. On the other

hand, there is a significant positive relationship for MERCOSUR when only the host country is the member.

In the case of SACU RTA, a significant regression equation was found F (9, 688) = 36.36, $p < 0.00$, with an R^2 of 0.3223. The coefficients are significant under 5% for all variables except market size, openness, RTA1 (when both home and host countries are members of the RTA), and RTA2 (when only the host country is member of the RTA). SACU shows a positive relationship but it is insignificant which means that we cannot conclude any sort of results from this RTA. It does not seem to show such an impact on the FDI flows for host countries. The robustness check was also applied for the data that is displayed in the following table.

Table 7 Robustness Check for the Model separated by RTA

FDI Flows	ASEAN		MERCOSUR		SACU	
	Coefficient	t	Coefficient	t	Coefficient	t
GDP Home	0.2499892*	6.9	0.270822*	6.37	0.25156*	6.37
GDP Host	1.149047*	11.22	0.883342*	9.95	0.969242*	9.95
GDP Host Growth	-0.4440451*	-2.85	-0.32565*	-2.1	-0.41115*	-2.1
Distance	-0.9435519*	-5.98	-0.92348*	-5.23	-0.86887*	-5.23
Openness	0.4071096**	1.86	0.899444*	2.32	-0.05625	2.32
Market Size	0.277426*	3.31	0.064992	0.66	0.15595	0.66
Border	-1.396311*	-4.21	-1.01608*	-2.05	-1.24278*	-2.05
RTA1	-1.827057*	-4.77	-0.25514	-0.5	-0.19986	-0.5
RTA2	-0.8568847*	-3.2	0.962416*	2.61	0.25588	2.61
Constant	-27.33673	-7.79	-21.5035	-7.21	-20.6094	-7.21

*p-value significant under 5%, $p < 0.05$, **p-value significant under 10%, $p < 0.10$.

Table 8 Test for Heteroscedasticity

	ASEAN	MERCOSUR	SACU
chi2(9)	44.17	54.77	45.67
Prob > chi2	0	0	0

The Breusch-Pagan test for heteroscedasticity (Breusch and Pagan, 1979) was applied to our data. The null hypothesis is rejected which means that there exists heteroscedasticity in our data. In order to overcome this problem the Feasible Generalized Least Squares (FGLS) estimator is utilized (Parks, 1967). FGLS is preferred when the time period (t) is greater than the cross-sections (n) in a study (Reed and Ye, 2011). The FGLS has also been used in previous literature on gravity model,

Medvedev (2012) used it in his study to account for heteroscedasticity and serial correlation.

Table 9 Feasible Generalized Least Squares (FGLS) Results

	Coefficients					
	ASEAN		MERCOSUR		SACU	
FDI Flows	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
GDP Home	0.3710623	0.000*	0.4105378	0.000*	0.3638509	0.000*
GDP Host	1.069843	0.000*	0.7870416	0.000*	0.806946	0.000*
GDP Host Growth	-0.3352996	0.001*	-0.1843424	0.088**	-0.2975893	0.003*
Distance	-0.8379325	0.000*	-0.8110581	0.000*	-0.7256901	0.000*
Openness	0.3423622	0.016*	1.26895	0.000*	0.019657	0.899
Market Size	0.2152076	0.000*	-0.0833094	0.199	0.1856197	0.007*
Border	-0.5575788	0.012*	0.2216297	0.411	-0.4313685	0.065**
RTA1	-1.464102	0.000*	-0.0628528	0.854	-0.1352968	0.574
RTA2	-1.094739	0.000*	1.67412	0.000*	-0.0237748	0.903
Constant	-28.87952	0.000*	-24.37809	0.000*	-21.20944	0.000*

*p-value significant under 5%, $p < 0.05$, **p-value significant under 10%, $p < 0.10$.

The results of the FGLS show that the coefficients have not changed much, there is a very slight change in their values however, and the results should now have been adjusted for the heteroscedasticity problem that was occurring earlier. Now the question arises whether to use the fixed-effects or random-effects to continue with the regression analysis for the data. The fixed-effects model is normally preferred because it is able to provide more accurate results, however it eliminates time-invariant variables (Williams, 2016). In our study we have both dummy variables and time invariant variable such as distance therefore it is not feasible to use the fixed-effects regression model. In addition, the Hausman test was applied to ensure the model that best fits with our data, whether fixed-effects or random-effects.

Table 10 Hausman Test Results

chi2(10)	15.29
Prob>chi2	0.1218

H_0: Random Effect Model is appropriate

H_1: Fixed Effect Model is appropriate

In doing the Hausman test, we get the p-value of 0.12, hence we must accept the null hypothesis that the random effects model is appropriate in this study. In addition, to

ensure that all variables are tested in the regression, the random-effects GLS regression is used because it will also analyze the time-invariant variables.

Table 11 Random Effects GLS Regression Results

	Coefficients					
	ASEAN		MERCOSUR		SACU	
FDI Flows	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
GDP Home	0.3267929	0.000*	0.3384492	0.002*	0.2965571	0.000*
GDP Host	1.073336	0.000*	0.8705166	0.000*	0.9273879	0.000*
GDP Host Growth	-0.345666	0.000*	-0.2191976	0.004*	-0.2548594	0.003*
Distance	-0.738048	0.062**	-0.8418743	0.117	-0.634962	0.000*
Openness	0.7586484	0.000*	1.111707	0.000*	0.8067995	0.899
Market Size	0.0919052	0.545	-0.0943796	0.388	-0.1394411	0.007*
Border	-0.699162	0.269	-0.7812785	0.322	-0.6452999	0.065**
RTA1	-1.252634	0.000*	0.1944377	0.877	-0.1094534	0.574
RTA2	-1.120699	0.000*	1.312164	0.006*	0.5097555	0.903
Constant	-29.26404	0.000*	-23.60408	0.000*	-24.035	0.000*

*p-value significant under 5%, $p < 0.05$, **p-value significant under 10%, $p < 0.10$.

Finally, we will move on to testing the gravity model through the Poisson Pseudo Maximum-likelihood (PPML) estimator. The PPML estimator is used to account for the high number of zeros that we have in the data and it has been tested to provide accurate results for the gravity model. PPML estimator has been used in many different studies to derive the results for the gravity model. Therefore, we have also decided to use the PPML to find the results for our gravity equation.

The results are mixed in terms of the RTAs having an impact on the FDI flows to Brazil, China, India, and South Africa. In terms of the ASEAN RTA (whether if the host country or both the host and source countries are members), it has a significant negative impact on FDI flows to the BRICS countries. This means that it has a FDI diversion effect on these countries, it is possible that due to the ASEAN, home countries divert their FDI from BRICS nations to other countries and possibly into the ASEAN member countries. The FDI diversion effect of the ASEAN is estimated at 0.26% and 0.12% if both the host and home countries are member of ASEAN and if only the host country is a member of ASEAN respectively. It is important to study the ASEAN RTA in greater depth because the ASEAN member countries have been attracting higher FDI however, the results of this study show otherwise. It is possible that the results may change if we were to include the major ASEAN countries as our host countries. In the

current study we only included China, but it only got into an FTA with ASEAN in the year 2005.

Table 12 Benchmark Gravity Model

	Coefficient	Sig.
GDP Home	0.0445051	0.000*
GDP Host	0.2478914	0.000*
GDP Host Growth	-0.0683183	0.011*
Distance	-0.1546907	0.000*
Openness	0.1542129	0.026*
Market Size	-0.0435328	0.241
Border	-0.1750474	0.039*
ASEAN1	-0.2631977	0.000*
ASEAN2	-0.1288487	0.001*
MERCOSUR1	0.0188977	0.864
MERCOSUR2	0.2359311	0.009*
SACU1	-0.1153572	0.416
SACU2	0.2178876	0.040*
R-squared	0.35507469	
N	698	

*p-value significant under 5%, $p < 0.05$, **p-value significant under 10%, $p < 0.10$.

In terms of MERCOSUR and SACU, a positive significant relationship is seen only when the host country is a member of the RTA. If only the host country is a member of MERCOSUR it leads to 0.23% increase in the FDI flows, whereas being a member of SACU leads to a 0.21% increase in FDI flows. A 1% increase in the GDP of host country leads to 0.25% increase in FDI flows. This means that the MERCOSUR and SACU have a very similar impact on FDI flows as to that of the host country's GDP. In the case of some RTAs, being a member of the RTA can actually have a positive impact on the FDI flows of the country.

Other results for both home and host countries being a member of the MERCOSUR and SACU RTAs are insignificant. This gives way to the possibility that higher FDI flows are made to these BRICS countries when they are a member of MERCOSUR or SACU, which would mean higher FDI flows for Brazil and South Africa. This could be a way to invest in those economies and use them as a hub for distribution to other MERCOSUR or SACU member countries. Home and host GDP have a positive relationship with FDI flows, the greater the GDPs the higher the amount of FDI inflows. An interesting finding is that host GDP growth has a negative and

significant relationship with the FDI flows. The host country GDP per capita also shows a negative relationship with FDI flows but it is not significant. An explanation for such findings could be that as economies grow and income increases over time, it leads to FDI moving to other cheaper destinations in terms of resources especially human resources. Furthermore, as expected distance has a negative correlation with FDI flows, the higher the distance the lower the amount of expected FDI flows.

The next step in the analysis is to analyze the impact of all three RTAs separately. This would give us a better understanding of how each RTA impacts the overall FDI flows to the host countries.

Table 13 PPML estimator results for gravity model

	Coefficients					
	ASEAN		MERCOSUR		SACU	
FDI Flows	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
GDP Home	0.0450839	0.000*	0.0486018	0.000*	0.04435	0.000*
GDP Host	0.2160529	0.000*	0.1622203	0.000*	0.1866986	0.000*
GDP Host Growth	-0.0789348	0.003*	-0.0537826	0.045*	-0.0736516	0.006*
Distance	-0.1495128	0.000*	-0.1467227	0.000*	-0.1382459	0.000*
Openness	0.064923	0.103	0.1875688	0.007*	-0.0570091	0.297
Market Size	0.0400795	0.009*	-0.0061871	0.728	0.0045853	0.846
Border	-0.2304843	0.001*	-0.1773029	0.033*	-0.2055146	0.004*
RTA1	-0.3181256	0.000*	0.0063095	0.949	-0.1871547	0.105
RTA2	-0.1809755	0.000*	0.2194188	0.001*	0.1023236	0.200
Constant	-4.555217	0.000*	-3.409255	0.000*	-3.135672	0.000*
R-squared	0.341		0.3264		0.3109	

*p-value significant under 5%, $p < 0.05$, **p-value significant under 10%, $p < 0.10$.

The R-squared estimations are similar to the findings in the benchmark gravity. These figures range in 30% - 35%, the percentage of change in FDI flows explained by these models. In the case of ASEAN, all of the variables have significant coefficients except for openness. However, membership into the ASEAN has a FDI diversion effect. In both cases, whether if both host and home countries are a member of ASEAN or only if the host country is a member of ASEAN, the FDI flows will be diverted away from the host country. There is a greater FDI diversion effect when both host and home countries are a member of ASEAN (0.32%) than when only the host country is a member of ASEAN (0.18%). There is a negative relation found between border and FDI flows in all three RTAs, which means that border countries do not actually invest in

the host countries which seems reasonable as costs of trade would be much lower for these countries hence it is more rational for these countries to produce and trade rather than invest in their bordering countries. An interesting finding that is examined differently from the benchmark gravity results is that the host country market size has a significant positive relation with FDI flows. However, for the majority of the variables the results found here are consistent with the results found for the variables in the benchmark gravity.

CHAPTER 5

CONCLUSION

Regional integration is a natural phenomenon in the current environment and the way the world has been shaping up over the past few decades. Integration has sped up through a means of faster communication and transportation. Governments around the globe are realizing that they can make higher gains through working together with other economies and decreasing barriers for cooperation. All of this has led to a higher number of regional trade agreements especially since the WTO was formed in the mid-1990s. In addition, the newer agreements meant higher trade as well as higher foreign direct investment due to locational advantages such as resources and cheaper factors of production.

While the developed economies have been attracting a high amount of FDI, the developing economies have also had their fair share in the recent past. Since the 1990s, a high amount of FDI has also been attracted by developing and emerging economies. The share of their FDI to total FDI has been increasing as organizations seek to increase their profits and utilize the resources available in developing countries. The increasing number of RIAs and RTAs among South countries prompted the question to see how these RTAs impact the FDI flows into these countries. The current study analyzed FDI flows to Brazil, China, India, and South Africa as a result of three RTAs.

Using the gravity model, this study finds that South-South RTAs do not have a positive impact on FDI flows for selected countries. In fact in terms of ASEAN RTA, a significant negative relationship was found for FDI flows to host countries and being a member of the agreement. It is found that ASEAN leads to a 0.26% and 0.13% FDI diversion effect if the home and host country is a member of the ASEAN RTA and if only the host country is a member of the RTA respectively. However, positive impacts were shown in terms of MERCOSUR and SACU RTAs. In case of MERCOSUR, if only the host country is a member of the RTA then a significant positive impact of 0.24% is found on FDI flows and no significant findings in the case that both the home and host countries are a member of the RTA. In case of SACU, if only the host country is a member of the RTA then a significant positive impact of 0.22% is found on FDI flows and no significant findings in the case that

both the home and host countries are member of the RTA. These findings are contrary to the findings in the past that have shown that RTAs do in fact have a positive impact on FDI flows to the host countries. However, Liu (2008) also found that RTAs do not have any significant impact on FDI flows and only some specific RTAs such as APEC have led to higher FDI for China. In addition, Levy-Yeyati et al. (2003) also found there to be a small FDI diversion effect as a result of regional integration.

The findings of this study are in line with those studies in the past that have found there to a FDI diversion effect of RTAs. In addition to the two studies mentioned above, Paez (2008) found there to be a FDI diversion effect in her study. In the case of ANDEAN countries (Bolivia, Columbia, Ecuador, and Peru), Paez (2008) finds that joining the ACN, NAFTA, and G3 has led to a decrease in their FDI flows. In analyzing south-south agreements and their impact on the Middle East and North African nations, Cherif and Dreger (2015), they find that being a part of an RTA does not increase the attractiveness of the country in terms of FDI. Similar to this study in the case of Brazil, China, India, and South Africa, a significant negative or FDI diversion effect has been found. These results should be interpreted with care due to the small number of data that was available for this study. In terms of developing economies that are a part of an RTA or that might join one in the future, it should be noted that only becoming a part of an RTA cannot lead to higher FDI. The economy size as we have seen in this study and previous literature, it has a significant positive impact on the FDI flows. Furthermore, previous studies have shown that good governance, strong legal framework, good business environment, and investor friendly policies play a large role in attracting FDI. As a result of this study, it is suggested that developing countries do not only join RTAs in hopes of increasing their FDI flows but instead focus on improving their system to attract more foreign investors. Creation of a safe environment for conducting of business is a better policy to attracting higher FDI flows. In terms of future research, more concrete data is required for a longer time period to really understand the impact of South-South RTAs on the FDI flows on developing and emerging economies. Another approach that can be applied is

to analyze both North-South and South-South RTAs and their impact on the FDI flows of South countries.

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APPENDIX

Appendix A: Literature Review Table

Authors	Purpose	Data	Methodology	Findings
Motta & Norman 1996	Relationship between Economic Integration and FDI	Mathematical Model is applied.	Three country, three-firm model	Economic Integration leads to higher FDI from outside firms. Economic integration leads to higher intra-regional export platform FDI. Intra-regional firms will switch to higher intra-regional exports.
Brenton, Di Mauro, & Lucke 1999	To assess the impact of deepening integration in Europe and Central and Eastern European Countries on FDI flows.	7 Central Eastern European Countries as hosts and 35 to 50 source countries for 1982 to 1995.	Gravity Model	The FDI flows to EU and CEEC does not depend on the deepening of the integration but rather on the development of the country, income growth, and improved policies for conducting business.
Levy-Yeyati, Stein, & Daude 2003	Relationship between Regional Integration and the location of FDI.	20 source and 60 host countries from 1982 to 1999.	Gravity Model	Regional integration has an impact on FDI flows. Membership in a FTA with a source country leads to 27% increase in bilateral FDI stocks. FDI is distributed unevenly in RI, FDI attractiveness will decide whether a country will benefit from integration.
Neumayer & Spess (2005)	Impact of Bilateral Investment Treaties on FDI flows.	Panel data from 1970 to 2001 that covers 119 countries.	Random-effects and fixed-effects models.	Higher number of BITs raises the FDI that flows to a developing country. Limited evidence that BITs might function as substitutes for good domestic institutional quality, but this result is not robust to different specifications of institutional quality.
Lesher & Miroudot (2006)	Economic impact of investment provisions in RTAs.	Panel Data over a 15 year period from 1990-2004.	Gravity Model	RTAs lead to higher trade and FDI flows. North-South agreements are highest with substantive investment

				provisions.
				South-South agreements on average have a slightly lower score than North-South agreements on investment provisions index.
				BITs and RTAs have a complementary relationship in terms of imapct on FDI flows.
Te Velde & Bezemer (2006)	Impact of RTAs on FDI flows while analyzing the trade and investment provisions within the RTA.	United States and United Kingdom FDI to developing countries from 1980 to 2001 with a total of 1,561 observations.	FDI model. OLS Estimates and Random Effect Panel data estimates	Real stock of FDI is significantly higher if countries become a member of one the seven regions (ANDEAN, ASEAN, CARICOM, COMESA MERCOSUR, NAFTA, SADC).
				Some investment provisions raise FDI by 41% and further 41% increase is expected with further investment provisions are included.
				Larger countries (larger markets) in regional groupings attract higher FDI.
				Countries further away in distance from the largest economies in a region attract lower FDI.
Hicks (2007)	Impact of RTAs on FDI while examining the variations in RTA economic scopes and independence.	FDI Inflows data from 1970 to 2003 from 105 nations (87 non-OECD, 24 OECD) with a total of 2479 observations.	Generalized Least Squares (GLS) and time series equations.	RTA membership has a significant impact on flows of FDI.
				Non-OECD nations receive much higher benefits from being a part of powerful, independent, and economically strong trade agreements.
				Greater number of members in or across RTAs lead to reduced FDI flows.
				Being a member of GATT/WTO boosts net FDI inflows in less developed countries.
				Positive trends in regime stability, trade openness, and inflation leads to higher FDI flows.
				More autonomous RTAs lead to lower flows of

				FDI.
MacDermott (2007)	Investigate the relationship between NAFTA and FDI	FDI Data from OECD 1980-1997. Distance between countries from CEPR. Rest from World Bank website. Panel data set of 1540 country pairs.	Gravity Model	NAFTA increases FDI Flows into US by 0.96%, in Mexico by 1.73%, and Canada by 1.54%
Baltagi, Egger, & Pfaffermayr (2008)	Impact of RTAs on FDI in an interdependent world.	28 host countries and 24 parent countries over period 1989-2001.	Spatial HAC estimator of the variance-covariance matrix.	RTAs have a positive impact on FDI. FDI moving from West to East European countries as a result of an increase in European agreements. Export-Platform FDI has increased due to RTAs in Europe.
Buthe & Milner (2008)	Impact of preferential trade agreements on developing economies, specifically studying the impact of policies on FDI	122 Developing Countries from 1970 to 2000.	Panel Analysis	Higher institutionalized commitments and protection to investors will increase FDI flows. Being a member of GATT/WTO boosts net FDI inflows. PTAs boost FDI inflows.
Kreinin & Plummer (2008)	Effect of regional integration on FDI, NAFTA and ASEAN	U.S., Japan, Germany, and France as source countries. NAFTA, ASEAN, MERCOSUR, EU host countries.	Gravity Model	Regional integration has a positive and significant impact on FDI flows. FDI acts as a substitute in some cases while in others it complements trade.
Liu (2008)	Impact of RTAs on FDI inflows to China	Dataset covers a period from 1985 to 2003.	Modified Gravity Model	The results indicate that the formation and implementation of RTAs is an important determinant of FDI inflow in some cases. Membership in APEC stimulates China to attract more FDI from non-APEC countries.

Paez 2008	Impact of RTAs on FDI and Trade Flows in the ANDEAN Community	31 FDI source countries and 5 host countries. 155 country pairs, 1550 observations over a 10 year period from 1992-2001.	Gravity Model	Joining FTAs (ACN, NAFTA, and G3) has decreased FDI into the ANDEAN member countries. Integration promotes higher exports to the markets instead of investing in the ANDEAN countries.
Park & Park (2008)	Investment creation and diversion effects of RTAs with a focus on East Asian RTAs.	Data from 24 OECD parent countries and 50 host countries from 1982-1999 and 13 RTAs.	Extended Gravity Model	RTAs lead to higher FDI flows from both RTA member and non-member countries. Market size has a positive impact on FDI flows, a 10% increase in market size leads to 3.5% increase in bilateral FDI. Joining an RTA will increase FDI by 86.1% from member countries. Joining an RTA will increase FDI by 86.8% from non-member countries.
Busse, Koniger, & Nunnenkamp (2010)	The relationship between BITs and FDI.	The data consists of 83 developing host countries, 28 source countries over a period of 1978-2004.	Gravity Model	BITs promote FDI flows to developing countries. FDI flows to larger markets. Improved institutional quality leads to higher FDI flows. Having an RTA or double taxation treaty boosts FDI.
Davis (2011)	Examines the relationship between regional trade institutions and FDI inflows using cross-sectional time series analysis.	Examined 109 states from 1980 - 2005	Cross-sectional time series analysis. Fixed effects model.	The study's findings are that multilateral regional trade institutions are more likely to attract FDI inflows, and the gains in FDI inflows are highest in states with the strongest regional economy.
Jang (2011)	Impact of bilateral FTAs on Bilateral FDI in Developed Countries	30 OECD and 32 non-OECD countries are analyzed from 1982 to 2005.	Knowledge-Capital Model	FTA between developed countries has a negative impact on FDI and economic activity. Bilateral FTA decreases FDI by 1.2% in high-high skill-level country pairs.

Shamugia (2011)	The effect of RTAs and their provisions on FDI flows to transition countries.	Data from 12 FDI host and 50 FDI source countries is used from 1996-2009.	Gravity Model	GDP growth and stable exchange rates are important in attracting FDI flows towards transitioning countries.
				Distance and diaspora also has a significant impact on FDI flows.
				Strong institutions also have a significant impact on FDI flows.
Thangavelu & Findlay (2011)	Impact of FTAs on FDI in Asia-Pacific Region	30 OECD Source countries and 43 host countries (30 OECD & 13 Non-OECD). Data collected from 1986 to 2007	Extended Gravity Model	Positive relationship exists between multilateral trade agreements and FDI flows to Asia-pacific region.
				Common language and colonial links have a positive impact on FDI.
				Home countries are more likely to invest in similar economics.
				Larger combined market is associated with higher FDI
Fakher (2012)	Impact of economic integraion on FDI: A study of ASEAN	Using the top ten sources for FDI investment to ASEAN from 1995-2008.	An econometric model with FDI as dependent variable and independent variables as GDP, openness, gross fixed capital formation, and corruption.	A significant positive relationship exists between regional integration and FDI in ASEAN
				Different level of FDI concentrations exists in ASEAN countries
				In the time period studied, Singapore received 46%, Thailand received 17.6%, and Malaysia received 14.2% of the total FDI.
Medvedev (2012)	Effects of PTAs on net FDI inflows of member countries	Panel data of 153 countries from 1980-2004	Panel Analysis	PTAs associated with significant increase in the net FDI flows
Yu (2012)	Effects of RTAs on FDI in NZ: Case of NZ-China FTA	Previous Literature, New Zeland and China Bilateral FDI data from 2003 to 2010.	Critical Literature Review	Regional integration leads to an increase in intra-regional FDI due to trade and investment liberalization.
				RTAs can improve a country's location advantage to promote FDI flows.

Berger et al. (2013)	Impact of RTAs on FDI while examinig the investment provisions of the agreements.	Dataset covers a period from 1978 to 2004. 28 source and 83 (developing) host countries.	Gravity Model	FDI reacts positively to RTAs only if they offer liberal admission rules. Dispute settlement provisions play a minor role. While RTAs without strong investment provisions may even discourage FDI, the reactions to BITs are less discriminate with foreign investors responding favorably to the mere existence of BITs.
Thangavelu & Narjoko (2014)	The key factors that determine the FDI flows into the region including human capital development and whether membership of a bilateral or regional trade agreement has a differential impact on FDI flows.	Panel data of 30 OECD and 9 ASEAN from 2000 to 2009	Panel fixed effects model	The empirical results indicate that free trade agreements do have positive impact on FDI inflows. However, the returns on FDI inflows depend on the domestic absorptive capacity of the economy and region.
Chala & Lee (2015)	Impact of RTAs on bilateral Greenfield Investment	Bilateral Flow data from 25 organizations, 45 high-income, and 95 non-high income countries from 2003 to 2012.	Poisson Pseudo-Maximum-Likelihood Estimator with Bilateral and country-time fixed effects.	OECD High-income pairs experience a negative impact of RTAs on Greenfield Investments. RTAs promote FDI in OCED non-high-income pairs.
Cherif & Dreger (2015)	Impact of South-South Agreements on FDI	MENA Countries compared with Latina America and Southeast Asia from 1996 to 2012.	Dynamic Panel Models and GMM Estimation Techniques	RTAs don't necessarily improve the attractiveness of a region for FDI. Business friendly institutions and financial deepening is key to attracting FDI. Agglomeration effects are very important but not effective in MENA due to a lack of economic zones and institutions.

Im (2016)	Effects of RTAs on FDI depending on origin and FDI type. Evidence from US MNEs	Sales data are annual and span the 1983-2008 period.	Modified log-linear gravity model	RTAs reduce intra-RTA horizontal FDI but increase extra-RTA export-platform FDI. The overall effects of RTAs are positive only for extra-RTA FDI.
Nguyen & Cao (2016)	Whether signing FTAs generally and individually effect FDI inflows to Vietnam	Panel Data of 20 countries, 14 FTA partners and 6 non-FTA partners	Gravity Model	FTAs have a significant positive impact on FDI inflows to Vietnam