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Regional Integration and Intra-Regional FDI

The case of ASEAN

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Abstract

During the past decades the interest of what effect Regional Integration Agreements (RIA's) have on Foreign Direct Investment (FDI) flow have been increasing. Previous studies have mainly focused on trade effects of RIA's, which has left scope of studies for FDI effect. The aim of this paper is to examine whether the ASEAN Investment Area (AIA) Agreement, which was concluded in 1999, have affected the increased intra regional Foreign Direct Investment (FDI) flow among ASEAN countries. The gravity model is used in order to perform a panel data analysis and examine the effect of intra regional FDI in ASEAN, covering the period from 1990 to 2012. Only six of ten countries are included in the dataset due to data limitation problem. The result indicates that the completion of AIA have not had any significant effect on intra-FDI flows among the ASEAN countries that are included in the sample. This result may indicate that the included countries in the sample already had a maintained investment flow between each other before the time of the implementation of AIA.

Table of contents

1. Introduction

Most of the countries worldwide are members of one or more Regional Integration Agreements (RIA), forming regional blocs. During recent years it has had a major impact on the development of international relations. The structure of the RIAs differs but has one thing in common, which is to reduce trade barriers between member countries, with other words, to create an open market with free flow of goods, services and investments between the member countries.

In the end of 2011, regional trade agreements were notified to be 221 by World Trade Organization. Many of these agreements have shown to encourage trade and Foreign Direct Investment (FDI) flows in regions. For a long time, the study of Regional Economic Integration (REI) effect on trade has mainly been in focus. Since there have been scope of study regarding impact on FDI through REI, the studies have increased during recent years. The reason behind the enlarged interest is also because RIA's that encourage FDI have increased. RIA's have shown to increase both intra-regional and extra-regional FDI. The first mentioned is affected by the liberalizing of investment restrictions and reducing transactions costs. The latter mentioned is affected by an enlarged market size, which especially becomes very important for a region with small economies and because of the reduced transaction costs within the region that allows for import-substitution effect. (UNCTAD, 2013)

Even though regional integration processes have shown to enhance FDI activities in the regional integration areas, it is uncertain what kind of regions attracts more FDI's and how a regional trade agreement should be formed for the best possible outcome for FDI. However, a region with already good and maintained investment flows that joins a RIA may not make a large difference of generating new investment or better investment climate than before the formation of the RIA. But a written agreement of improving the regional integration between the member-countries may enhance long-run security for investors (Velde & Bezemer, 2004).

This phenomenon is mostly seen in a North-North cooperation situation[1]. FDI has increased a lot during the past decades within the South-South cooperation, including the Association of South East Asian Nations (ASEAN) (Hattari, et al., 2013). Since FDI brings investments and technological improvement it may contribute to the economic growth of member countries, which is essential for less developed countries (LDC) (UNCTAD, 2013).

During recent years, ASEAN have applied a number of regional measures in order to increase both trade and FDI flows in the region. Therefore the purpose of this paper is to examine whether the deepening integration of ASEAN has increased intra-FDI flows. I try to answer the following *research question:* Have intra-FDI flows increased within ASEAN over the years as its regional economic integration (REI) has been promoted? In order to assess the relationship between REI and intra-FDI in ASEAN, I will perform a panel data analysis based on gravity model and consider the effect of ASEAN Investment Areas (AIA's) Agreement completion in 1999 as the RIA effecting investment in this paper. The time period will be covered from 1990 to 2012 and include a sample of 3119 observations.

Studying the relationship between investments and RIA's is important since they have increased alongside with each other. It is therefore interesting to evaluate the relationship between them and assess whether a formation of a regional agreement is significant. Also, because the study of the relationship between FDI and RIA is not fully explored, it is intriguing to conduct research regarding the subject.

The next section of this paper will present the background of ASEAN and some of the regional agreements enhancing trade and investment in the region. This will be followed by the third section, which will provide a review of previous literature on the effect of regional integration on FDI flows. The fourth section will introduce the theoretical framework of Gravity Model that will be used in empirical analysis. In the fifth section, the data and method used in this paper

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[1] See example Blomström & Kokko (1997)

will be shown, which is followed by a section presenting results and analysis. Lastly, the seventh section will summarize the paper.

## 2. Regional Economic Integration in ASEAN

The Association of Southeast Asian Nations (ASEAN) was an initiative by Indonesia, Malaysia, Philippines, Thailand and Singapore in 1967. Later on, Brunei joined in the 1980s followed by Cambodia, Laos, Myanmar and Vietnam (CLMV) in the 1990s. Trade within intra-ASEAN was insignificant under the time of its establishment, it was estimated to be between 12-15 percent of total trade of the member countries between 1967-1970s. In order to encourage economic cooperation between the member countries, ASEAN Free Trade Agreement (AFTA) was established through the Common Effective Preferential Tariff (CEPT) in 1992. The aim was to eliminate tariff barriers and create a regional market of 500 million people by creating a zero tariff zone for all products including at least 40% of ASEAN content (Hapsari & Mangunsong, 2006), within ASEAN-6 until 2010 and the CLMV countries by 2015 and initiating an intra-ASEAN economic integration process (Kraichitti, 2009). The ASEAN-6 countries have brought down 99.65 percent of the products in the CEPT Inclusion List (IL). The expected average tariff rate was brought down to 0.05 percent in 2010 from 0.79 percent in 2009 within ASEAN-6. While CLMV countries have managed to cover 98.96 percent of total tariff within the range of 0-5 percent import duties (Le & Ramesh, 2010).

In 1999, the Framework Agreement on ASEAN Investment Area (AIA) was concluded. The initiative was for the ASEAN countries to liberalize investment regimes in non-service sectors such as manufacturing, agriculture, forestry, fisheries and mining sectors. The agreement indulged the ASEAN countries to provide unconditional national treatment to investors and investments for all member countries in all sectors. The aim is to increase intra-ASEAN investments and to enhance ASEAN's competitiveness in attracting inward investments to the region. The timeframe for ASEAN-6 was 2010 and for the CLMV countries 2020 (Kraichitti,

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2009). During recent years even other RIA have been formed in order to enhance the integration through consolidating, improving and developing already existing goals and setting new goals.

As shown in the graph below, investment flows in the ASEAN region have overall increased during the past years, although facing some setbacks. It follows similar pattern as NAFTA since around year 2000, which can be seen in the graph.

Graph 1: Foreign direct investment flows
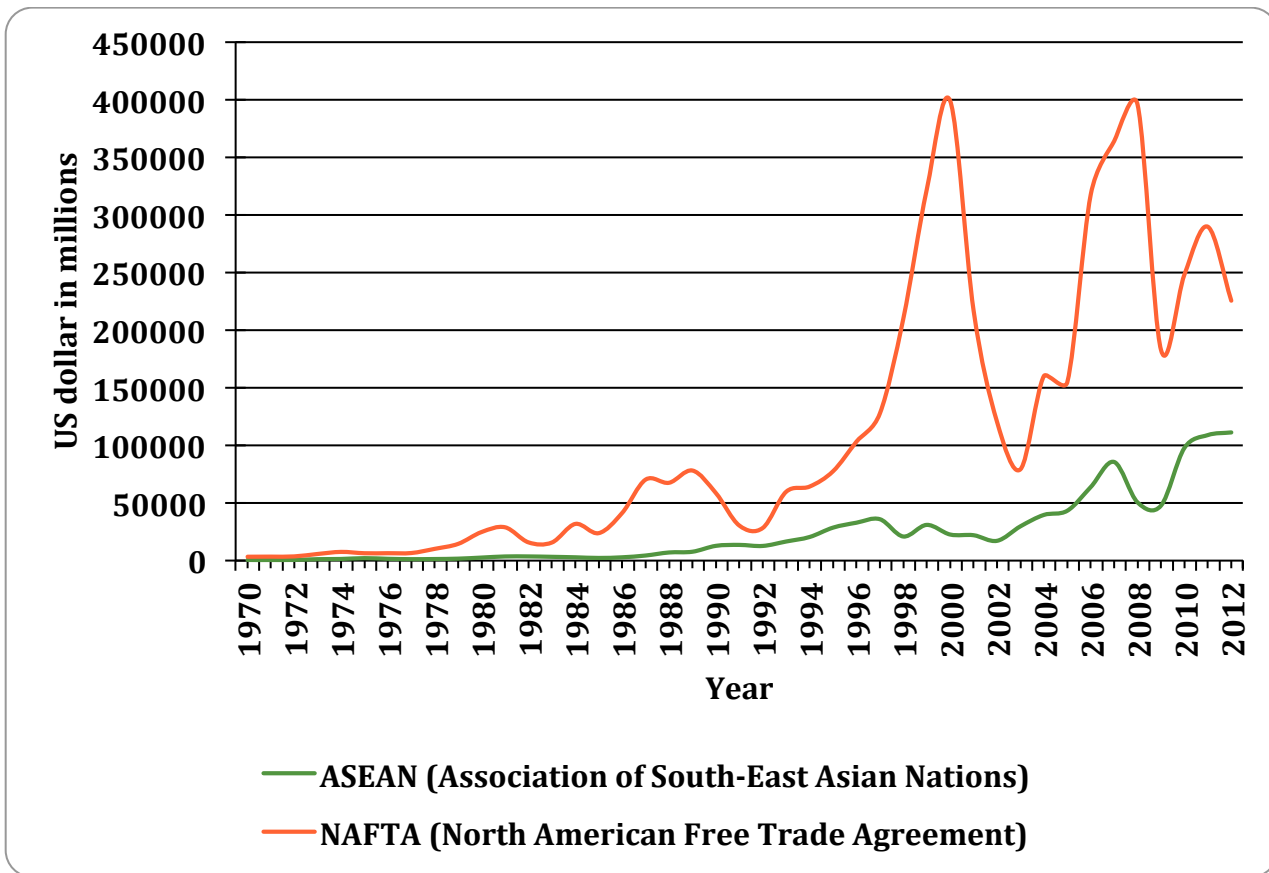
The graph is acquired from http://knoema.com

Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam are the main attractors of international investment into the region. This is said to be a result of liberalized economies, investment in infrastructure and tackle towards corruption and inflation. Also, the increasing wages and production in the two big neighboring economies, China and India, seems to have redirected investors to ASEAN. (cogitASIA, 2013)

During 2011, the intra-ASEAN Investment increased by 83% and accounted for 23% of the region's total FDI inflows[2]. Among the ASEAN member countries, Singapore, Malaysia and Thailand are the largest regional investors in manufacturing, finance, real estate and telecommunications. While Cambodia, Laos, Myanmar and Vietnam (CLMV) attracted most of the investments from ASEAN countries, as an effort to narrow the development gap between ASEAN countries. (ASEAN & UNCTAD, 2013)

3. Earlier studies on the effect of Economic Integration on Foreign Direct Investment

Economic Integration is a process that has been studied for many decenniums. Before the Second World War, there had been attempts to integrate the economies of different European countries, without major success. But during the post-second World War period, the interest of economic integration increased. The essential factors for economic integration process are trade and investment (Balassa, 1961). Previous studies of the REI on trade have been more prominent than the studies of investment. But lately the interest of investment has increased (Ethier, 1998).

There are several empirical studies that examine the relationship between regional integration and FDI. These vary between different regional groups, countries and industries. Blomström &

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[2] The intra-ASEAN investments of total foreign direct investment inflows accounted for 10% between 2000-2005 and 14% between 2006-2009 annually.

Kokko (1997) examined the investment of RIA on three different kinds of regional integration in America, including North-North (Canada joining CUSTFA), North-South (Mexico's accession to NAFTA) and South-South (MERCOSUR) integration. The study mainly reveals that FDI flows tend to increase as a result of how a RIA have corresponded with domestic liberalization and macroeconomic stabilization in the participating countries. Although, in the case of CUSTFA, there were not any radical changes in the inflows of FDI to Canada. The reason can be the already established relationship between Canada and the US former to the formal integration agreement. (Blomström & Kokko, 1997)

Researches of intra-regional investment are rare and have not been explored fully because of the data constraint. However, studies of intra-regional studies have gained a lot of interest, and shown significant but varying outcomes[3]. There are findings that suggest intra-regional trade and intra-regional investment to be complementary to each other, but only if trade intensity rises above a certain level. (Molle & Morsink, 1991)

The factors that effect increased FDI from a RTA where found to be trade openness, similar capital/worker, larger market and improved investment environment which was caused by improved market oriented economic policies, geographical proximity, locational advantages and cheap labor (Yeyati, et al. 2002 and Blomström & Kokko, 1997). On the other hand, some argued that these characteristics may overlap with economic integration but it may not be the direct effect of a REI, therefore the relationship between a REI and FDI is insignificant in certain regions in some studies (Balasubramanyam, 2001 and Blomström & Kokko, 1997).

To conclude this chapter, Table 1 shows a summary of selected previous empirical studies regarding the relationship between RIA's and FDI.

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[3] Some examples of such studies are Ismail, et al. (2009) and Hattari, et al. (2013).

Table 1: Selected empirical studies of RIA's and FDI

Study by	Methodology	Findings
Blomström and Kokko (1997)	Mainly reviews the empirical evidence on the investment effects of three different regional integrations in America.	North-North integration, no radical changes on FDI inflows to the country of question. North-South integration found significant and positive environmental changes. South-South integration shows strong investment expansion.
Yeyati, Stein and Daude (2002)	How do Regional Trade Agreements (RTAs) affect the location of FDI? Uses FDI from 20 OECD countries to 60 OECD/non-OECD countries, 1982-98.	The results shown are significant and positive, which indicates that FDI stock has increased by joining a RTA.
Ismail, Smith and Kugler (2009)	The primary concern of this study is to highlight what role ASEAN Free Trade Agreement (AFTA) has had in increasing investment by using a time period from 1995 to 2003.	FDI inflows in ASEAN-5 are insignificant but FDI inflows between ASEAN-5 and the new-ASEAN countries are significant and positive.
Hattari, Rajan and Thangavelu (2013)	This paper investigates intra-ASEAN FDI flows during 1990 to 2004	The intra-ASEAN dummy is positive but insignificant.

4. Gravity of FDI

In order to assess the relationship between FDI and a RIA, most of the empirical studies have used the Gravity model[4]. Due to its efficiency and recognized reputation, the Gravity model will also be used for this paper.

Gravity model has been used in many empirical researches to examine spatial interaction patterns, when studying variables such as migration flows and FDI flows but is mostly applied in studies of international trade. There are plenty of studies with gravity model covering different regions, time periods and sectors and seems to work well with both developing and developed countries. The model provides convenience in assessing effect of trade on different policies. Therefore, the use and interest of this model has arisen throughout the years. The model was formed as an intuitive way of understanding trade flows. The name Gravity model is derived from Newton's law of Gravity. According to the gravity law, larger countries are expected to trade more, and those further apart are expected to trade less, as a consequent of higher transport costs between the two countries further apart from each other.

Different attempts have been made in order to create a model for capturing the effect of trade occurring by a formation of RTA (Shepherd, 2013). One solution was to include a binary dummy variable in the basic Gravity Model in order to assess the impact of a trade agreement. It has been found that studies that include a dummy variable into the gravity model can be tracked back to 1970s[5]. Over the years, a number of other explanatory variables have been added to the gravity model in order to analyze different bilateral trade policy issues. The augmented gravity model has implied that trade between two countries is determined by supply conditions at the origin, demand conditions at the destination and different stimulating and restraining forces (Dee & Gali, 2005).

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[4] Some examples of studies using the model are Ismail, et al. (2009), Hattari & Rajan (2008), Aminian, et al. (2007), Yeyati, et al. (2002) and Hattari, et al. (2013)
[5] Aitken (1973) included the intra-bloc effect of a PTA in his study

There are several theoretically grounded models[6]. One of them is found in Anderson & Van Wincoop (2003), which is based on the monopolistic competition model in Krugman (1979). The model assumes that each country is specialized in producing only one good and the preferences are identical, homothetic and approximated by a constant elasticity of substitution function. This fits well when evaluating countries, which do not have similar endowments and demands but are not too heterogeneous. The model shows that a country that is distant may expand its production, but may specialize if it is close to other countries and trade flows will thus be more frequent (Herrera & Baleix, 2009). Anderson and Van Wincoop (2003) introduced that trade between two countries is not only affected by bilateral trade costs, it is also affected by trade costs of each country with all others. This identifies three components of trade resistance, which are bilateral trade barriers between region i and j (t_{ij}), i's resistance to trade with other countries (P_i) and j's resistance to trade with other countries (P_j), as shown below:

$$P_i = \sum_{j=1}^{C} \left\{\frac{t_{ij}}{P_j}\right\}^{1-\sigma} \frac{y_i}{y} \qquad (1)$$

$$P_j = \sum_{i=1}^{C} \left\{\frac{t_{ij}}{P_i}\right\}^{1-\sigma} \frac{y_j}{y} \qquad (2)$$

y_i is the nominal income of importer i, y_j is the nominal income of importer j and y is the world income. Equation (1) and (2) shows an outward multilateral resistance and inward multilateral resistance respectively, that captures an average price level that is influenced by trade costs for a particular region i or j with its trading partners. It is important to include this in order to control for the trade policy variables to not correlate with the error term in a gravity model regression. This implies that trade flows are influenced by the relative trade costs.

The following form of the gravity model shows an implicit solution to the price indices, which can be obtained as a function of all bilateral trade barriers and income shares:

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[6] See example Chaney (2008), Helpman, et al. (2008) and Eaton & Kortum (2002)

$$x_{ij} = \frac{y_i y_j}{y} \left(\frac{t_{ij}}{P_i P_j}\right)^{1-\sigma} \tag{3}$$

where x_{ij} is the nominal value of exports from i to j and as y is the world income it will be the intercept since it is picked up by the time dummies in a panel estimation. This specification shows the bilateral trade cost relative to an overall index of trade costs, in other words the bilateral trade resistance compared to multilateral trade resistance. Considering the relative prices implies that trade barriers reduce trade between and within large countries more than between and within small countries.

Since the trade cost factor t_{ij} is not observed, it is defined as a loglinear function of observables:

$$logt_{ij} = b_1 \, logdistance_{ij} + b_2 comlang_{off} + b_3 colony + b_4 comcol + b_5 regionaleffect + b_6 RIAeffect \tag{4}$$

These are some variables that are believed to affect trade costs, *distance* is the geographical distance between countries i and j, *comlang*$_{off}$ is a dummy variable of country pairs that share common official language, *colony* is a dummy that show if countries i and j were in the same colonial relation and *comcol* shows whether country pairs were colonized by the same power (Shepherd, 2013) The *regionaleffect* is included as a dummy variable that takes the value of one when it is a country within the specific region. The *RIAeffect* is a dummy variable that incorporates the time when the RIA was initiated in the specific region. As these variables do not change over time, they are picked up when using a fixed effects model. However, the *RIAeffect* is not picked up in the fixed effect since it includes a breakpoint when the specific regional agreement was initiated.

Computing the initial equation with the term above, the following equation is formed:

$$lnx_{ij} = k + lny_i + lny_j + (1-\sigma)\big[lnt_{ij} - lnP_i - lnP_j\big] + \varepsilon_{ij} \tag{5}$$

where k is a constant, ε_{ij} is an error term, σ is the intra-sectorial elasticity of substitution.

The Gravity model is very convenient to use since it is justifiable and researchers can choose from many theoretical gravity models when developing an empirical model for the specific purpose. There have been argued that trade and FDI are seen like substitutes[7], which would allow trade to be replaced by FDI. Since higher distance means higher transport costs, trade would diminish as the distance would increase, and thereby the effect of distance on trade would be negative. But according to the theory on FDI, there is a positive relation between FDI and distance (Markusen, 2004). However, the empirical literature shows the contrary and implies that the relation between FDI and distance is negative.

There are various explanations to the different theoretical and empirical results. The work of Dunning (1995 and 1998) and Graham & Krugman (1995) showing FDI to be substitutes of trade may not be justifiable enough or the proxies used in the econometric models for trade and FDI are different than those in the theory. Another explanation can be seen in the FDI model of Helpman et al (2004) and Helpman (2006), where the Multinational Enterprise (MNE) in the host country have to import all the goods needed for the MNE activity, which turns into a negative effect for distant due to transport costs.

Consequently, the studies have indicated that the gravity model that has been used to explain bilateral trade can be transposed to bilateral FDI. The model has been applied to different researches on the relationship between REI and FDI and the determinants of FDI across countries and regions. In this study, I will use an augmented Gravity Model by including both host and source country factors in the estimates.[8] Other well-known variables are added to the augmented gravity model that has been used in empirical researches on the topic.[9] In order to

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[7] See example Paniagua (2011) and Eaton & Tamura (1996)
[8] See example Yeyati, et al. (2002) empirical method
[9] Such as Velde & Bezemer (2004), Yeyati, et al. (2002), Ismail, et al. (2009) and Hattari & Rajan (2008)

capture all time-invariant effects on bilateral FDI flow such as the variables in equation (4) we use a fixed effect model.

The dependent variable is bilateral FDI inflows between an ASEAN country to another ASEAN country, for the intra-regional FDI, and between ASEAN countries and some OECD countries[10] to control for FDI from outside the region. To insure from losing observations with value zero, we use log (1+ FDI) as the dependent variable.[11] The following variables we use as independent variables. They are log of GDP for source and host countries, log for GDP per capita for source and host countries, log of trade openness in host country. A dummy variable is included in order to assess the change of intra-regional FDI after the completion of AIA in 1999.

The specification is seen in equation (6):

$\ln(1+FDI)_{ijt} = \alpha + ln\beta_1 GDP_{it} + ln\beta_2 GDP_{jt} + ln\beta_3 PGDP_{it} + ln\beta_4 PGDP_{jt} + ln\beta_5 OPEN_{jt} + \beta_6 Intraregion + \varepsilon_{ijt}$

(6)

where

$\alpha = \delta_0 + \mu_{ij} + \lambda_t$ (7)

Table 2

$\ln(1+FDI)_{ijt}$	the log of FDI inflows from source country (i) to host country (j) with respect to year (t)
$\ln GDP_{it}$ $\ln GDP_{jt}$	gross domestic product, proxy for market size (+)
$\ln PGDP_{it}$ $\ln PGDP_{jt}$	gross domestic product per capita, proxy for the level of development (+)
$\ln OPEN_{jt}$	trade percentage of GDP of the host country (+)
ASEAN effect	Dummy variable, takes value one for intra-regional FDI after policy change, otherwise zero (+)
δ_0	Constant term, common to all years and country pairs

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[10] Austria, Australia, United States, Netherlands, Denmark, Italy, Germany, France, Japan, Korea and Sweden
[11] See example Yeyati, et al. (2002), Ismail, et al. (2009) and Eichengreen & Irwin (1995, 1997)

μ_{ij}	Fixed bilateral effects between country i and country j, control for country characteristics
λ_t	Time effects for year t, captures business cycle
ε_{ijt}	Error term for country i and country j in year t, assumed to be normally distributed with zero mean and constant variance for all observations and capture any other external shocks that can affect bilateral FDI between countries.

i = source country = OECD, j = host country = ASEAN, t = year, (+) = the expected outcome is positive

5. Data and Methodology

The data for distance, common language and common border were retrieved from Centre D´etudes Prospective Et D´informations Internationals (CEPII). The data for GDP, GDP per capita and trade percentage of GDP are from the World Bank Indicators. The dependent variable, bilateral FDI flow, between ASEAN and OECD countries is taken from OECD International Direct Investment Statistics Database (see Appendix A) and the bilateral FDI flow between the ASEAN countries is retrieved from UNCTAD. Due to data limitation on bilateral FDI flow in ASEAN, I include six member countries, which are Cambodia, Lao PDR, Malaysia, Philippines Singapore and Thailand. This may have an effect in the evaluation, since four of these countries are included in ASEAN-5[12], which may already have a stronger FDI flow in-between the countries compared to the new-ASEAN[13] countries before AIA was initiated. But due to limited data, I chose to carry on with the available countries to evaluate their effect on FDI flows.

As we have learnt, the gravity model has gained popularity in studying FDI flows and seems to be the most frequently used in FDI empirical literature. In this study we use an augmented

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[12] ASEAN-5 countries are Indonesia, Malaysia, Philippines, Thailand and Singapore. Indonesia is not included.
[13] Brunei, Cambodia, Lao PDR, Myanmar and Vietnam

version of the standard gravity model. A panel data analysis is used in order to separate the time invariant country-specific effects and to capture the relationships between the relevant variables over time. The fixed effect model is used to evaluate a change in policy, which controls for mild violation of underlying assumptions. I chose a fixed effect model since it is argued to perform consistently well and solve the set of equilibrium constraints imposed on the multilateral resistance indexes (as in Anderson and Van Wincoop 2003). Therefore, by using fixed effects makes the gravity equation easy to estimate. It is also convenient to use a fixed effect model since this paper does not specifically want to analyze the trade effect of any constant parameter, but only control for them. By including a control group of countries that are not included in the region I am able to capture the FDI flows from non-ASEAN countries. In order to control for any general serial correlation and heterogeneity, the regression is estimated with robust standard errors.

6. Empirical Results and Analysis

Table 2 shows the results of the regression. The GDP and GDP per capita for both host and source countries are significant. The result reveals positive effect for GDP but the contrary for GDP per capita. The GDP increase indicates that FDI flows expands as the market size increases and the result of GDP per capita indicates that FDI flows increases as the income per capita for both countries is lowered. This may be the case, since when the market size expands, there is increased availability of labor, decreasing the wages and lowering the development, thus standard of living. On the other hand it would increase FDI since cheaper production costs would attract investments. The countries development varies a lot within ASEAN, therefore the result may indicate that FDI is directed to the countries where the development is low, since that would mean cheaper labor and production costs.

Trade openness variable is insignificant, which may imply that it does not notably affect FDI flows between two countries. Also, the dummy variable for whether intra-FDI flows has

increased since the implementation of AIA in 1999 is insignificant. This implies that the implementation of the AIA has not had a significant effect on intra-FDI flows within ASEAN.

Table 3

lnGDP source	3.049356***	(3.57)
lnGDP host	3.161806***	(3.74)
lnPGDP source	-3.205089***	(-3.24)
lnPGDP host	-2.836427***	(-2.81)
lnOPEN host	.0829283	(0.33)
aseaneffect	-.4956245	(-1.43)
R^2	0.1898	---------
Number of observations	3119	---------

Significant at 1% level ***, t-values in brackets

However, this can be explained by some possible reasons that may have affected the outcome. To start of with, one explanation might be the data limitation problem, where four countries were excluded, Brunei, Myanmar, Vietnam and Indonesia, whereas three of them are the new ASEAN-countries. The ASEAN Investment Area (AIA) has been beneficial to the new-ASEAN countries because this has triggered domestic reforms in the new-ASEAN countries, which has increased FDI inflows from other ASEAN countries. Since the ASEAN-5 countries are more similar in their development[14] than the new-ASEAN countries it could explain why the intra-FDI flows were insignificant for the included countries in this paper and may be of significance to the less developed countries in the region, as a result of achieving cheaper production costs. Another reason can be that four out of the ASEAN-5 countries included in this empirical analysis already have a good bilateral investment flow since they were the first to join ASEAN. Therefore they have had many years to establish an investment flow before the implementation of AIA.[15]

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[14] As discussed by Ethier (1998), the effect of intra-regional FDI flows depends on member countries complementary economic structures, which gives scope for intra-industry specialization. If the members of the RTA are very similar in factor endowments, then the relocation of production processes among countries will not be as appealing.

[15] Such result has also been seen in Blomström and Kokko (1997)

Additionally, the new-ASEAN countries have during recent years opened up more to trade and attracted more investments. As the ASEAN Investment Report (ASEAN & UNCTAD, 2012) pointed out, the CLMV countries have been the main targets for investments within ASEAN-countries, in order to decrease the development gap between the member states. Therefore, the obtained result in this paper is not surprising and might be due to the changing structure of intra-regional FDI in ASEAN. Thus, in this paper we conclude that the completion of AIA has not had any significant effect on the ASEAN-countries included in this study.

Lastly, a test was conducted to capture whether the size of a country have an effect on investment.[16] This was done by including a variable that incorporates GDP and the breakpoint (1999) when AIA was initiated among the ASEAN countries. The variable was found to be negative, but insignificant[17], revealing that it does not matter whether the country has a large or small economy in order to attract investments. However, since Indonesia, the largest country in the region (see Appendix B) was not included, which might have affected the results.

7. Summary

This paper has analyzed whether Foreign Direct Investment (FDI) inflows have increased within the ASEAN countries on the completion of regional integration agreements. The study particularly focused on the implementation of ASEAN Investment Area's (AIA's) effect on FDI inflows. The gravity estimators show that factors such as market size and level of development are significantly positive and negative respectively to FDI. Regarding the main effect to check whether intra-FDI flows have been affected by the implementation of AIA in 1999, which is captured by a dummy variable, shows insignificant impact. However, this may be a result of not being able to include all the ASEAN member-countries, where three out of four excluded

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[16] According to the Gravity Law, larger countries are expected to trade more.
[17] t-value = -1.29

countries were new-ASEAN countries. The increased interest and availability to invest in the new-ASEAN country is argued to be one of the reasons for the insignificant result. Another is discussed to be the already established investment flow between the ASEAN-countries that were included in this study. This paper may not have achieved the result that is expected when a Regional Integration Area (RIA) is formed. However, it contributes in defining the importance of understanding and including the different nature of the member states in a region. As member countries have different investment climates where some countries in a region may be larger investors while others may be the receivers of investments. Forming a regional integration area benefits the whole region since it increases the economic activities within the region, but the countries play different roles. Therefore further research could focus on analyzing the different effect ASEAN-5 countries and the new-ASEAN countries have on intra-FDI inflows in the region, as these two groups have different nature of FDI flows.

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Appendix

Appendix A: List of the OECD countries included in the regression of this paper

See description below	FDI (million of US dollars)	GDP (million of US dollars)	GDP per capita	TRADE OPENESS (%)
	μ/σ	μ/σ	μ/σ	μ/σ
Australia	93/312	616052/355598	30312/14664	38.9/3.3
Austria	10/46	267825/85344,4	32852/9609	89.7/15.8
Denmark	47/387	217927/71170	40414/12248	84.5/12.9
France	94/325	1841340/559507	29567/7879	50.3/5.2
Germany	124/388	2534490/609944	30963/7358	67.1/17.2
Italy	14/113	1516560/430570	25983/6710	48.8/7.1
Japan	681/940	4557480/677977	35997/5182	24.3/8.3
Korea	97/219	648662/273434	13628/5240	74.9/18.3
Netherlands	264/841	529187/192059	32861/10954	126.7/16.2
Sweden	14/85	327829/104537	36278/10513	80.1/13.1
United States	1053/2497	10416100/3176750	36131/8754	24.8/3.1

Cambodia	5/19	6268/3580	473/222	105.1/27.8
Lao PDR	0.5/7	3046/2406	522/346	68.6/14.3
Malaysia	71/250	126380/70123	5247/2290	184.7/21.5
Philippines	7/43	106958/57336	1289/521	84.3/16.0
Singapore	287/1005	119166/63393	27518/10298	365.6/39.3
Thailand	56/270	181133/80240	2854/1136	115.0/26.5

Data: The World Bank Indicator

- μ = The mean value shows the average of each of the above mentioned factors during 1990-2012
- σ = The standard deviation value shows the variation from the average value during 1990-2012
- The FDI factor is the FDI flow from the specific country to all others that are included in the sample, from 1990-2012
- The GDP factor is GDP in each country from 1990-2012
- The GDP per capita factor is GDP per capita in each country from 1990-2012
- The Trade Openness factor is percentage of Trade/GDP in each country from 1990-2012

Appendix B: GDP in 2013

Rank. Country	GDP
1. Indonesia	1.285 trillion
2. Thailand	**674.3 billion**
3. Malaysia	**525 billion**
4. Philippines	**454.3 billion**
5. Vietnam	358.9 billion
6. Singapore	**339 billion**
7. Myanmar/Burma	111.1 billion
8. Cambodia	**39.64 billion**
9. Brunei	22.25 billion
10. Lao PDR	**20.78 billion**

Data: Central Intelligence Agency (CIA)