

# **A Gravity Model Approach of ASEAN+3 Free Trade Agreements on ASEAN's Trade Flows: Trade Creation or Trade Diversion?**



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## CERTIFICATE OF ORIGINALITY



I, Ratna Hartiningtyas, hereby certify that this assignment is true and accurate to be my own work specially written for partial requirement to complete Undergraduate Program of Economics and Development Studies and has not initially been presented in any other occasion. I bear full responsibility for my bachelor thesis.

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**GAUDEAMUS IGITUR  
JUVENES DUM SUMUS**

**VIVAT ACADEMIA  
VIVANT PROFESORES**

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## ABSTRACT

ASEAN has extensively cooperated with East Asian countries such as Japan, Korea, and China (hereafter called Plus Three Countries); then consecutively formed AJCEP, AKFTA, and ACFTA. Currently, ASEAN+3 (ASEAN and Plus Three Countries) is proposed in order to extend the socio-economic cooperation, most of all trade. Nevertheless, trade does not necessarily improve the welfare of all parties as the consequences of trade-creation and trade-diversion effect. The aim of this research was to analyze: (1) whether trade ASEAN+3 free trade agreement improve or worsen trade of ASEAN; (2) whether the change occurs through trade-creation or trade-diversion channel. A gravity model approach using panel data is employed to analyze the impact of ASEAN+3 free trade agreements on ASEAN's trade flows during the years of 2000—2014. The results revealed that GDP, GDP per capita, distance, common language, and contiguity have a significant role in determining trade within ASEAN+3. Additionally, this study designated that there has been trade creation within ASEAN+3 subsequent to AJCEP, AKFTA, and ACFTA. In spite of vigorous result of creation effect, all the models are likely to failed in negating trade diversion. To sum up, the ensuing agreements of ASEAN+3 have been positively promoting trade in southeast and east Asia.

Keywords: ASEAN, ASEAN+3, gravity model, trade creation, trade diversion

JEL Classification: F150, F130, O190

## ABSTRAK

*ASEAN telah lama melakukan kerja sama dengan negara-negara Asia Timur seperti Jepang, Korea, dan Tiongkok (selanjutnya disebut Plus Three Countries); masing-masing dengan membentuk AJCEP, AKFTA, dan ACFTA. Saat ini, ASEAN+3 (ASEAN dan Plus Three Countries) tengah diajukan pembentukannya dalam rangka memperluas kerja sama dalam bidang ekonomi-sosial, terutama perdagangan. Namun demikian, perdagangan tidak selalu meningkatkan kesejahteraan hajat hidup semua pihak dikarenakan oleh adanya efek trade-creation dan trade-diversion. Penelitian ini bertujuan untuk menganalisa: (1) Meningkatkan-kah atau memburukkan-kah perjanjian perdangan bebas ASEAN+3 bagi perdagangan ASEAN; (2) melalui kanal trade-creation atau trade-diversion-kah perubahan tersebut terjadi. Pendekatan Gravity Model dengan panel data digunakan untuk menganalisa akibat dari perjanjian perdagangan bebas ASEAN+3 pada arus perdagangan ASEAN selama kurun waktu 2000--2014. Hasil penelitian membuktikan bahwa GDP, GDP per kapita, jarak, kesamaan bahasa, dan kedekatan wilayah memiliki peranan penting dalam menentukan perdangan di dalam wilayah ASEAN+3. Lebih lanjut, penelitian ini juga membuktikan bahwa terdapat efek trade-creation setelah berlakukannya AJCEP, AKFTA, and ACFTA dalam ASEAN+3. Adapun demikian, meskipun telah terdapat hasil yang jelas mengenai trade-creation, model yang digunakan dalam penelitian ini belum dapat menegaskan efek trade-diversion secara tegas. Dapat disimpulkan, perjanjian dalam ASEAN+3 telah turut mendorong perdagangan di negara Asia Timur dan Tenggara.*

*Kata kunci:* ASEAN, ASEAN+3, gravity model, trade creation, trade diversion

Klasifikasi JEL: F150, F130, O190

## TABLE OF CONTENTS

THESIS APPROVAL.....	ii
SUBMISSION .....	iii
CERTIFICATE OF ORIGINALITY .....	iv
ACKNOWLEDGEMENT .....	vi
ABSTRACT.....	viii
ABSTRAK.....	ix
TABLE OF CONTENTS .....	x
LIST OF TABLES.....	xii
LIST OF EXHIBITS .....	xiii
LIST OF ABBREVIATION .....	xiv
CHAPTER I.....	1
INTRODUCTION .....	1
1.1 Background.....	1
1.1.1 ASEAN+1 to ASEAN+3.....	4
1.1.2 Trade Creation and Trade Diversion .....	8
1.2 Research Questions .....	10
1.3 Purpose and Usefulness .....	11
1.4 Structure of Writing.....	11
CHAPTER II.....	14
LITERATURE REVIEW .....	14
2.1 Economic Integration.....	14
2.2 Viner Model: Trade Creation and Trade Diversion.....	15
2.1.1 Trade Creation.....	16
2.1.2 Trade Diversion.....	17
2.2.2 The extension of Viner Model.....	19
2.3 Standard Gravity Model.....	20
2.4 Hypothesis.....	22
2.5 Literature Review.....	23
2.6 Theoretical Framework .....	31
RESEARCH METODOLOGY.....	34

3.1 Variable and its Operational Definition.....	34
3.1.1 Trade Value.....	35
3.1.2 Gross Domestic Product (GDP).....	35
3.1.3 Gross Domestic Product per Capita (GDPC).....	36
3.1.4 Distance.....	36
3.1.5 Contiguity.....	37
3.1.6 Common language .....	37
3.1.7 Preferential Trade Agreement C (PTAC) .....	38
3.1.8 Preferential Trade Agreement D (PTAD).....	39
3.1.9 Dummies of Japan, Korea, China .....	39
3.2 Sample and Population.....	42
3.3 Data Collection.....	42
3.4 Analysis Method .....	43
3.4.1 Empirical Model.....	44
3.4.2 Handling The Zero Trade .....	49
RESULTS & DISCUSSIONS .....	54
4.1 Descriptive Analysis.....	54
4.1.1 The Trade of ASEAN and ASEAN+3 Table 3 .....	54
4.1.2 Partnership Pattern of Trade.....	59
4.1.3 Commodities .....	62
4.2 Estimation Result .....	64
4.3 Discussion .....	68
CONCLUSION .....	72
5.1 Conclusion .....	72
5.2 Limitation.....	73
5.3 Suggestion.....	73
BIBLIOGRAPHY .....	xv
Appendix A .....	xv
Appendix B .....	xvii
Appendix C .....	xv
Appendix D.....	xv
Appendix E .....	xvi
Appendix F.....	xv

**LIST OF TABLES**

Table 2.1	Literature Review .....	27
Table 3.1	Description of Variables .....	41
Table 4.1	Value of GDP and Trade of ASEAN and ASEAN+3 over the World's in 2000—2014 (Million USD) .....	56
Table 4.3	Trade Commodity of ASEAN under HS Classification in 2001 and 2014 (Share %) .....	62
Table 4.4	Trade Commodity between ASEAN and Plus Three Countries under BEC Classification (2013).....	63
Table 4.5	Estimation Results of Gravity Model of ASEAN+3 Free Trade Agreements .....	65

## LIST OF EXHIBITS

Exhibit 2.1 Viner Model of Trade Creation as an Effect of Economic Integration.....	17
Exhibit 2.2 Viner Model of Trade Diversion as an Effect of Economic Integration .....	18
Exhibit 2.3 Theoretical Framework .....	33
Exhibit 4.1 Portion of Trade of ASEAN (+3) Trade .....	57
Exhibit 4.2 10 Major Trading Partners of Korea, Japan, China (+3) in 2011-2014 .....	58

## LIST OF ABBREVIATION

<b>ACFTA</b>	ASEAN-China Free Trade Area
<b>AFTA</b>	ASEAN Free Trade Area
<b>AJCEP</b>	ASEAN–Japan Comprehensive Economic Partnership
<b>AKFTA</b>	ASEAN-Korea Free Trade Area
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>ASEAN+1</b>	Association of Southeast Asian Nations + 1
<b>ASEAN+3</b>	Association of Southeast Asian Nations + 3 (Korea, China, Japan)
<b>FTA</b>	Free Trade Area
<b>GDP</b>	Gross domestic product
<b>GDPC</b>	Gross domestic <i>product</i> per capita
<b>PTC</b>	Plus Three Countries
<b>ROW</b>	Rest of the World
<b>RTA</b>	Regional Trade Agreement
<b>UNCOMTRADE</b>	United Nations Statistical Division

# **CHAPTER I**

## **INTRODUCTION**

Chapter I consists of background, problem statement, purposes, usefulness, and structure of thesis. The reasons why trade between ASEAN and ASEAN+3 countries is important to be observed will be stated, then the objectives of this empirical study will be asserted. The functions of this research will be explained in the section “purposes and usefulness of the research”. Finally, in the “structure of thesis” section, each of chapter will be described in brief.

### **1.1 Background**

Economic integration is largely believed to be a way for countries to enhance their welfare. Among a number of economic integrations, the most common integration established is based on physical latitude and institutional framework, for instance Central European Free Trade Agreement, North American Free Trade Agreement, Cooperation Council for the Arab States of the Gulf, and so forth. These sort of agreements are called as Regional Trade Agreements (RTAs) and have been increasingly prevalent since 1990s. As of 1st July 2016, 635 notifications of RTAs had been received by the GATT/WTO—not to mention 423 notifications in force (WTOa, 2016). These integrations include North and

South countries.<sup>1</sup> One of economic integrations among the South countries is ASEAN Free Trade Area (AFTA).

The establishment of AFTA in 1992 complements the vision of Association of Southeast Asian Nations (ASEAN). Halwani (2005) asserted that AFTA is designed with vision of economic development as well as multi-facets development such as social, culture, techniques, education, peace, and regional stability; whereas, the vision of ASEAN is “... *concert of Southeast Asian nations, outward looking, living in peace, stability and prosperity, bonded together in partnership in dynamic development and in a community of caring societies*” (ASEAN 1997). Kawai et al. (2015) argued that cooperation initiatives, combined with the market forces help ASEAN economy to create production networks and supply chain across the region, therefore contribute to ASEAN countries’ growth and prosperity. The integration is imperative because trade has become an alternative for South countries to fulfill their inadequacies in running an economy, especially in a situation of import-based economy. Higher trade is expected to improve welfare and consumption level of the populace at large.

An attempt to form the international trade cooperation has been more extensive and surging from time to time. ASEAN was inaugurated by Indonesia, Malaysia, Philippines, Singapore, and Thailand in 1967. The establishment was followed by five new-comer countries which comprise of Brunei Darussalam,

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<sup>1</sup> The North–South terminology is coined in International Economics to refer political and socio-economic divide. The North countries incorporate the United States, Canada, Western Europe, and some developed portions of Asia; joined by Australia and New Zealand, which are not actually positioned in the north hemisphere but share comparable economic and cultural features as the other northern countries. Meanwhile, Africa, Latin America, and developing Asia including the Middle East compose the South countries.

Vietnam, Lao, Myanmar, Cambodia; consecutively joined in 1984, 1995, 1997, 1997, and 1999. Subsequently, the corporation was strengthened by a resolution to form ASEAN Economic Community (AEC) in 2013<sup>2</sup>.

Economy of ASEAN solely has made up a notable record among economies of its vicinity. In 2010, ASEAN already represented a major economic bloc in Asia. ASEAN counted a total land area of more than 4,300 square kilometers (around 1.5 times that of India or 0.5 times that of the PRC) and had become a home to around 620 million people (nearly 9% of the world total) (ADB, 2010). ASEAN trade value also recorded a notable improvement. The amount reached out 785 billion USD to 2479 billion USD, respectively from 2000 to 2013. It was accounted for 10.10% average growth over the last decade. Furthermore, a sort of agreements with non-ASEAN member countries could highly boost ASEAN's centrality in expanding Asian regionalism. ASEAN countries had signed 40 FTAs, including five ASEAN+1 agreements and interregional agreements; Trans-Pacific Partnership (TPP) and Regional Comprehensive Economic Partnership (RCEP) are two of the 29 FTAs which are currently under negotiation (ADB, 2014).

Despite its exuberant number of value, trade of ASEAN must be concerned in the standpoint of pattern. One evidence indicates that ASEAN trade was rather with across non-member countries than within the member countries. In spite of intra-ASEAN trade volume raised progressively from 177 billion USD in 2000 to 592 billion USD in 2013, its percentage in total ASEAN's trade value

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<sup>2</sup> ASEAN Economic Community was initially planned to be launched in 2020; however, the implementation was advanced to 2015

was rather limited and could not surpass 25% (WTO, 2014).

### **1.1.1 ASEAN+1 to ASEAN+3**

Among many of agreements with ASEAN, East Asia appears as notable partner<sup>3</sup>. These three countries take close geographical location with ASEAN and share similar values of culture. It seems very likely that ASEAN and East Asia have a favorable institutional framework, which might be thought to offer a low-cost trade within the countries.

The effort to strengthen ASEAN-East Asia trade has begun in 1997--along with an occurrence of Asian crisis which badly hampered economies of both blocs. Since that historic moment; Japan, Korea, and China started to solidify their relations with ASEAN members through an array of agreements. The agreements came in the form of ten-to-one (ASEAN+1), as well as one-to-one. Each of the agreement was administered during particular term and arrangements. ASEAN+1 type of agreement, especially, showed a more vast impact for ASEAN as a whole.

Those ASEAN+1 agreements comprise of:

#### **1. ASEAN–China Free Trade Agreement (ACFTA)**

ACFTA founding noted an end of numerous negotiations that began in 2002. China and ASEAN leaders approved the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and China. Referring to the agreement on Trade in Goods that was confirmed in 2004, member countries committed

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<sup>3</sup> The terms “East Asia” in this study embodies People's Republic of China (China), Republic of Korea (Korea), and Japan.

to eliminate tariff barriers following several schedules. The products in ACFTA are organized into different lists including (1) Early Harvest Program, (2) Normal track (Normal track 1 & Normal track 2), (3) Sensitive track (containing Sensitive List & Highly Sensitive List). Early Harvest Program allowed to steadily reducing tariffs on several agricultural products from HS 01 to HS 08 before the implementation of ACFTA. These products are reduced tariffs over 3 years: to 10% by 2004, to 5% by 2005 and 0% by 2006. Following to the Agreement on Trade in Goods, ASEAN-6 countries and China had to eliminate tariffs on 90% of their products by 2010. It is not until 2010 that CLMV (Cambodia, Laos, Myanmar, and Vietnam) countries have to do this. The remaining 10% of tariff line items are considered as sensitive ones and will be diminished under a slower schedule.

Through this agreement, the valuation of export from ASEAN to China rised continually, counting the amount of 16.4 billion USD to 113.6 billion USD (in 2000 to 2010). Mutually, import from China to ASEAN rised amounted 18.7 billion USD to 129.9 billion USD (in 2000 to 2010).

## 2. ASEAN–Korea Free Trade Agreement (AKFTA)

AKFTA is formed within three layers of liberalization of which The Agreement on Trade in Goods is regarded as the most essential

element of ACFTA. Agreement on Trade in Goods started in June 2007. The merchandises in AKFTA are classified into (1) Normal track, (2) Sensitive List and (3) Highly Sensitive List. The schedule for tariff rebates by ASEAN-6 and Korea in the framework of AKFTA is different from that by CLMV countries. The member countries agreed that ASEAN-6 and Korea would drop tariffs on commodities in Normal track that accounted for nearly 90% of all goods by 2010. Aside from that, products classified on the Sensitive List, were bound to reduce the tariff to not more than 20 % by Jan 2012 and afterward reduce from 0% to 5% by Jan 2016. At last, products in the Highly Sensitive List were subdivided into 5 groups with diverse tariff elimination schedules and arrangement.

Through this agreement, the valuation of export from ASEAN to Korea rised continually, counting the amount of 15.7 billion USD to 45 billion USD (in 2000 to 2010). Mutually, import from Korea to ASEAN rised amounted 17.7 billion USD to 57.4 billion USD (in 2000 to 2010).

### 3. ASEAN–Japan Comprehensive Economic Partnership (AJCEP)

AJCEP is recognized as a comprehensive FTA that gave a fairly profound level of commitments in economic statutes (MUTRAP III, 2010). AJCEP that applies starting December 2008 covered multiple critical issues regarding economic integration, such as

tariff reduction, trade in goods, rules of origin, sanitary and phytosanitary measures, technical barriers to trade, dispute settlement, trade in services, investment and intellectual property rights. Member countries had committed that tariff levied on 93% of imports from ASEAN into Japan will be dropped within 10 years, while tariff imposed on 50% of imports from Japan into ASEAN will be abolished within 10 years<sup>4</sup>.

Through this agreement, the valuation of export from ASEAN to rised continually, counting the amout of 57.4 billion USD to 103.2 billion USD (in 2000 to 2010). Mutually, import from Japan to ASEAN rised amounted 70.4 billion USD to 116.9 billion USD (in 2000 to 2010).

Along with the intense experiences of ACFTA, AKFTA, and AJCEP formations; an array of conventions of Finance Ministers and their Deputies of ASEAN and Plus Three Countries led to the ratification of Economic Review and Policy Dialogue. These events had vigorously constructed the idea of ASEAN+3—where the terms “+3” embodies Japan, Korea, and China. This meeting was later formalized and strengthened with the Joint Statement on East Asia Cooperation at the 1999 Manila Summit; followed up by Chiang Mai Initiative (CMI) in 2002 and the Asian Bond Markets Initiative (ABMI) in 2003 (ADBI, 2010).

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<sup>4</sup> Only includes ASEAN-6

ASEAN+3 formation has signified the volume of trade. Around half of ASEAN+3 merchandise exports and 56% of its merchandise imports were traded intraregionally in 2010 (ADBI, 2010). This share has steadily been leading<sup>5</sup> from time to time. In the contrary, ASEAN–EU trade volume could not reached up even 15% of trade. The value remain the same with USA and India.

With higher level of economic integration, comes higher risk of contagion due to shocks or crises. Prices may adjust one step closer to real time, then shocks may be transmitted rapidly as the advance of information technology. Integrated economy with neighbouring countries helps to tailor macroeconomic and financial stability. Furthermore, it ensures long-term economic growth to be both rapid and sustainable. As the matter of fact, cooperation -as ASEAN+3- becomes even more crucial than in the past.

### **1.1.2 Trade Creation and Trade Diversion**

All ASEAN+1 agreements refer to a commercial policy or trade policy by discriminatively lower barrier of trade solely among member countries. All sort of barriers both tariff and non-tariff are diminished in a certain kind of degree according to its level of integration. The higher the level, the more policies of country members are harmonized (Salvatore, 2010). It is proved that economic integration had successfully induced production rate, production efficiency, vacancy, lower production cost; hence increase product's competition (Kasan, 2011). The conventional wisdom included was that regional trading agreements

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<sup>5</sup> compared to remaining major trading partners: Australia, Hong Kong, India, EU, and USA.

would tend to improve welfare because they employ some degree of trade liberalization.

Despite its exceptional history of welfare enhancement, there are a number of negative economic consequences that must be taken into account. Trade does not necessarily improve welfare of mutual economies. Viner (1950) asserted that there are two effects caused by regional integration in the economy: trade creation and trade diversion. **Trade creation** can be defined as a condition when a regional integration creates a trade that would not have existed otherwise. As a result, a more-efficient country may provide higher supply. In all cases, trade creation will raise a country's national welfare. On the flip side, **trade diversion** occurs when regional integration diverts trade apart from a more-efficient supplier outside nonmember countries and toward a less-efficient supplier within. Its effect towards welfare may differ slightly from trade creation. In some circumstances, trade diversion will reduce a country's national welfare; notwithstanding in unusual cases, national welfare could improve. The evidences of trade diversion which hampered a country's welfare have been apparent in diverse hemisphere—for instance, the trade diversion which have been experienced by ASEAN-5 country (Mangunsong, 2006); EU and EFTA (Soloaga & Winters, 1999); Mexico under NAFTA (Fukao, Okubo, & Stern, 2002).

A study of the effects of economic integration, especially trade creation and trade creation, are crucial for several reasons. Pattern represents distribution of beneficiaries. By studying trade creation and trade diversion effect, trade patterns (which depicts the distribution) of trade can be visibly identified. In case

of the pattern cause a country suffer from loss, government of that particular country might give a response.

A number of studies regarding trade creation and trade diversion effect on RTA has been extensive. Some researches which included ASEAN+3, employed econometric methodology, and constitutes AFTA as the sample of research were by Elliot and Ikemoto (2004), Cabalu and Alfonso (2007), and Urata (2013). Some others presented a study which focused on effect of ASEAN+3 agreement on East Asian countries emphasizing on individual effect. ACFTA were conducted by Yue (2004), Tongzon (2005), (2014); papers on AKFTA (Park and Estrada, 2008). Noticeably, Guilhot (2010) conduct a research constituting AFTA, AKFTA and ACFTA on East Asian trade flows, nevertheless failed to include AJCEP. Those studies did not examine AFTA, ACFTA, AKFTA and AJCEP altogether. Noticably Thu (2015) tried to cover all the agreement; nevertheless, he solely put main gravity variables. This work discerns to analyze the effect of ASEAN+3 free trade agreement on ASEAN's trade flow which constitutes AFTA, ACFTA, AKFTA and AJCEP: creation effect or diversion effect?

## **1.2 Research Questions**

Through this point, there are two possibilities with distinct implications: trade diversion and trade creation. The aim of this research was to analyze the two effects of regional integration:

1. *Has ASEAN+3 led to increased bilateral merchandise trade between ASEAN and East Asia countries?*

2. *Was any of the increase in trade between ASEAN and East Asia is at the expense of other trading partners, that is, a result of trade diversion or trade creation?*

### **1.3 Purpose and Usefulness**

The purpose of this research are:

1. To assess effect on trade value of trade integration between ASEAN and its constellation with East Asia Countries
2. To do an ex-post analysis of trade integration between ASEAN and its constellation with East Asia Countries; whether resulted in trade creation or trade diversion.

The usefulness of this research toward academic and practice level are:

1. The result of this research is hoped to give academic contribution on empirical evidence which is related with Trade Policy, Economic Integration, and International Linkages to Development.
2. The result of this research is hoped to give broader insight for policy-makers to design better-informed inferences regarding the effects of FTAs. In addition, the ex-post analysis of this research might be a scientific ground to evaluate trade agreement of ASEAN+1 and the proposed ASEAN+3.

### **1.4 Structure of Writing**

This structure of this thesis is divided into five chapters as follows:

## CHAPTER I: INTRODUCTION

Chapter I consists of background, problem statement, purposes, usefulness, and structure of thesis. The reasons why trade between ASEAN dan ASEAN+3 countries is important to be observed will be stated, then the objectives of this empirical study will be asserted. The functions of this research will be explained in the section “purposes and usefulness of the research”. Finally, in the “structure of thesis” section, each of chapter will be described in brief.

## CHAPTER II: LITERATURE REVIEW

Chapter II explains the theory of economic integration, trade creation, and trade diversion which underpinning the research on economic integration. Previous researches regarding economic integration will be presented afterwards. Finally, this chapter will present the research framework and explain the hypothesis of this thesis.

## CHAPTER III: RESEARCH METHOD

Chapter III explains the variables and operational definition, population and sample, data collection, and analysis method. Analysis method comprises of empirical model where every single model is explicated to answer each research question.

## CHAPTER IV: RESULTS AND DISCUSSIONS

Chapter IV explains and describes the research objects. This chapter consists of

descriptive analysis with sample overview over data gathered; econometric analysis with the results of data processing, and implications of the study.

## CHAPTER V: CONCLUSIONS AND SUGGESTIONS

Chapter V concludes and resolves the conclusions of the research, limitations during the research process and give remarkable suggestions for the next researchers.