โอกาสและความท้าทายของไทยต่อการจัดตั้งเขตการค้าเสรีระหว่างสหภาพยุโรปและอาเซียน

นางสาวนลินา ไชยะ

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
สาขาวิชายุโรปศึกษา (สหสาขาวิชา)
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2551

THAILAND'S OPPORTUNITIES AND CHALLENGES TOWARD EU-ASEAN FTA

Miss Nalina Chaiya

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Arts Program in European Studies
(Interdisciplinary Program)
Graduate School
Chulalongkorn University
Academic Year 2008

Thesis Title	THAILAND'S OPPORTUNITIES AND CHALLENGES TOWARD EU-ASEAN FTA
By	Miss Nalina Chaiya
Field of Study	European Studies
Advisor	Associate Professor Chayodom Sabhasri, Ph.D.

Accepted by the Graduate School, Chulalongkorn University in Partial Fulfillment of the Requirements for the Master's Degree

..... Dean of the Graduate School
(Associate Professor Pornpote Piumsomboon, Ph.D.)

THESIS COMMITTEE

..... Chairman
(Associate Professor Suthipand Chirathivat, Ph.D.)

..... .Advisor
(Associate Professor Chayodom Sabhasri, Ph.D.)

..... Examiner
(Piti Srisangnam, Ph.D.)

..... External Examiner
(Professor Carlo Filippini, Ph.D.)

นลินา ไชยะ : โอกาสและความท้าทายของไทยต่อการจัดตั้งเขตการค้าเสรีระหว่างสหภาพยุโรปและอาเซียน. (THAILAND'S OPPORTUNITIES AND CHALLENGES TOWARD EU-ASEAN FTA) อ.ที่ปรึกษาวิทยานิพนธ์หลัก : รศ. ดร. ชโยดม สรรพศรี, 108 หน้า.

ตั้งแต่ปี 2550 การเจรจาเพื่อจัดทำความตกลงเขตการค้าเสรีระหว่างสหภาพยุโรป (อียู) และอาเซียนได้เริ่มต้นขึ้น ซึ่งประเทศไทยในฐานะเป็นสมาชิกของอาเซียนและย่อมจะต้องเข้าร่วมเป็นส่วนหนึ่งของความตกลงนี้ อย่างไรก็ตามการจัดทำความตกลงเขตการค้าเสรีนั้นย่อมจะมีทั้งผลดีและผลเสียต่อประเทศ ดังนั้นการวิจัยในครั้งนี้จึงมุ่งเพื่อศึกษาถึงผลกระทบของความตกลงดังกล่าวที่จะมีต่อประเทศไทย

ในการศึกษาครั้งนี้ได้กำหนดแนวทางการศึกษาไว้เป็นสองส่วน ได้แก่ การศึกษาเชิงปริมาณและเชิงคุณภาพ โดยการศึกษาเชิงปริมาณนี้ ศึกษาผลกระทบโดยใช้แบบจำลอง GTAP โดยจำลองเหตุการณ์สองแบบ ได้แก่ ลดภาษีนำเข้าในสินค้าที่มีการค้าขายระหว่างอียูและอาเซียนทุกรายการ และลดภาษีนำเข้าในสินค้าที่มีการค้าขายระหว่างอียูและอาเซียนทุกรายการ ยกเว้นสินค้าเกษตร ส่วนในด้านการศึกษาเชิงคุณภาพนั้นจะใช้การสัมภาษณ์เชิงลึกกับพนักงาน ข้าราชการ นักวิชาการ และผู้ประกอบการในสาขาที่เกี่ยวข้อง

ผลของการศึกษาเชิงปริมาณพบว่า ประเทศไทยจะได้รับผลประโยชน์จากข้อตกลงนี้ โดยพิจารณาจาก ผลิตภัณฑ์มวลรวมภายในประเทศ สวัสดิการทางเศรษฐกิจ อรรถประโยชน์เฉลี่ยต่อคน ปริมาณการส่งออก การนำเข้า การผลิตและปัจจัยการผลิต โดยรวมนั้นมีการเปลี่ยนแปลงในทางบวกภายใต้ทั้งสองเหตุการณ์จำลอง แต่ปริมาณการส่งออกสินค้าเกษตรโดยรวม ซึ่งเป็นหมวดที่สนใจที่สุดในการศึกษาครั้งนั้น มีปริมาณลดลง ซึ่งเป็นผลมาจากการที่ประเทศไทยส่งออกไปยังประเทศคู่ค้าในกลุ่มอาเซียน และประเทศอื่นๆ ลดลง โดยมูลค่าการส่งออกที่เพิ่มขึ้นในตลาดสหภาพยุโรปไม่สามารถชดเชยได้ อย่างไรก็ตามสินค้าเกษตรบางชนิดยังจะถูกแปรรูปไปเป็นสินค้าอุตสาหกรรมเกษตรก่อนที่จะมีการส่งสินค้าออกไป ผลของการสัมภาษณ์เชิงลึก สนับสนุนผลของการวิเคราะห์เชิงปริมาณดังกล่าว ยกเว้นแต่ ผู้ให้สัมภาษณ์คาดว่ามูลค่าการส่งออกสินค้าเกษตรโดยรวมน่าจะเพิ่มขึ้น

สาขาวิชา ยุโรปศึกษา ลายมือชื่อนิสิต นลินา ไชยะ

ปีการศึกษา 2551 ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก ชโยดม

508 75994 20 : MAJOR EUROPEAN STUDIES
KEYWORDS : EU-ASEAN FTA / THAILAND FTA / COSTS AND BENEFITS OF FTA / GTAP

NALINA CHAIYA : THAILAND'S OPPORTUNITIES AND CHALLENGES TOWARD EU-ASEAN FTA. ADVISOR : ASSOC. PROF. CHAYODOM SABHASRI, Ph.D., 108 pp.

The negotiation of the EU and ASEAN FTA has started in year 2007, Thailand as an ASEAN member will certainly be affected by the agreement both positively and negatively. The objective of this study is to analyze its impact on Thailand.

The study is divided into two parts, the quantitative and qualitative analyses. The quantitative analysis employs the GTAP model with two different simulations; the elimination of all tariffs on trades between EU and ASEAN (SIM1) and the elimination of all tariffs on trades between the two regions except agricultural goods (SIM2). In-depth interviews with relevant government officers, experts, and producers provide information for qualitative analysis

The results of quantitative analysis show that Thailand gains in GDP, welfare, per capita utility, terms of trade, exports, imports, outputs and production factors both scenarios. But the total exports of Thai agricultural goods to the world markets have declined except to the EU. Moreover, the processed agricultural goods have increased dramatically, particular in the EU market. The quantitative analysis with the in-depth interview confirms the quantitative results.

Field of Study : European Studies Student's Signature : Nalina Chaiya
Academic Year : 2008 Advisor's Signature : Chayodom Sabhasri

ACKNOWLEDGEMENTS

I am very grateful to Associate Professor Dr. Chayodom Sabhasri, the thesis advisor, Associate Professor Dr. Suthipand Chirathivat, the thesis chairman, as well as Professor Dr. Carlo Filippini and Dr. Piti Srisangnam, the thesis examiners, for their guidance and valuable suggestions.

In particular, I would like to thank Dr. Somprawin Manprasert for the research instrument and Dr. Pawin Talerngsri, Dr. Wuttiya Sarathong, Mr. Supak Prongtura, and Mr. Pichet Tonitiwonge for their insights and fruitful discussions.

Special thanks are also addressed to MAEUS staffs, my colleagues, and my friends for valuable comments and suggestions throughout the development process of the paper.

I also very much appreciate the support and encouragement from my parents, relatives, and Mr. Yutthapol for their kind advice, significant contributions of ideas and cheerfulness, which have materially improved the paper.

CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER I

INTRODUCTION

1. Background and Problem Review

1.1 EU-ASEAN Free Trade Agreements

The relationship between the European Union and ASEAN countries is another longstanding and important one; the Cooperation Agreement between the two regions has existed since 1980 and followed by many others.

The Trans Regional EU-ASEAN Trade Initiative (TREATI), a framework for more economic cooperation between the EU and ASEAN, was made in 2003 in order to expand EU-ASEAN trade and investment relationships as well as provide a framework for dialogue and regulatory co-operation on various issues. The emphasis of the initiative was on health and hygiene standards and the protection of intellectual property rights. That is, the initiative would be maintained on a trade enhancement agreement rather than a free trade agreement. However, it was agreed that the TREATI could pave the way for further trading agreements. In 2005, a *Vision Group* was set up to study the possibility of new initiatives, the Free Trade Agreement, which aims at tightening the economic relations between two regions. The Vision Group has played an important role in establishing an understanding and confidence for the future success of negotiations since the study of large potential benefits gained from an FTA has be shown. In October 2006, the Communication *Global Europe, Competing in the World* was issued and ASEAN appeared as a priority FTA partner. The Communication needs the FTA to be comprehensive and ambitious in its coverage and aiming at the highest possible degree of trade liberalization and sharing benefits. In 2007, the EU-ASEAN FTA negotiation was started and a successful conclusion of multilateral trade negotiation remains a priority. The negotiating process was based on a region-to-region approach but recognizing and taking into account the different levels of development and capacity of each ASEAN countries (European Commission, 2008).

The latest negotiations were held in October 2008 in Hanoi, Vietnam, about the open market of goods, services and investment, rules of origin, trade barriers, healthy standards, trade facilitations, intellectual property rights, and competitions.

The negotiations began with the expectation of both parties to extend their capability and competence along with the cooperation for other issues apart from trade ones.

1.2 EU-ASEAN Trade

The Association of Southeast Asian Nations, ASEAN, was established in 1967 with five fundamental members namely Indonesia, Philippines, Singapore, and Thailand. Then Brunei Darussalam, Vietnam, Lao PDR, and Cambodia joined the association later on. The objectives of this association are to stimulate economic growth, social progress and cultural development and to promote peace and stability within the region through the different levels of the members (ASEAN Secretariat, 2007), particularly economic level as figured in Table 1-1.

Economically, (ASEAN Secretariat, 2007) an intra-ASEAN trade accounts for 352,771 million US Dollars while an extra-ASEAN trade accounts for 1,052,034 million US Dollars in 2006 (Table 1-2). Regarding Foreign Direct Investment (FDI), intra-ASEAN FDI values 6,242 million US Dollars and extra-ASEAN FDI values 46,137 million US Dollars in 2006 (Table 1-3). Though ASEAN countries pay much attention to their intra-trade partners, such as the establishment of ASEAN Free Trade Area which has made significant progress in the lowering of intra-regional tariffs through the Common Effective Preferential Tariff (CEPT) Scheme for AFTA, but with several limitations and different levels of capacity of each of the member countries which remains as an important obstacle to the real integration of ASEAN. The member countries then, as we can see, rely much more on international trade and foreign direct investment. The main trade partners and investors of the association are the United States, Japan, and EU (figured in Table 1-4 and 1-5).

In order to grow and stabilize the economy, opening local market and trade partnerships has become more important, Free Trade Area is one instrument for economic integration. Since FTA is the agreement which aims at the elimination of trade barriers, such as tariffs and quotas, and preferential of most goods within the members' regions.

1.3 EU-Thailand Trade

With regards to the relationships between Thailand and the EU, there is a long establishment of close relations and good cooperation between the two parties. Up to

now the cooperation has widen its scope to cover many aspects such as development cooperation, economic cooperation, trade, investment, humanitarian aid and political matters. To strengthen the joint effort and minimize the key problems and differences would be the path for an ever closer relationship between Thailand and the EU.

Basically, the relationship of the two parties is mainly profound in the area of trade and investment. The EU remains one of the most important trade partners apart from the United States, Japan and China (see Table 1-6). In 2007, Thailand exports to the EU accounted for 13.9 million US Dollars and imports from EU valued 8.8 million US Dollars (World Trade Organization, 2007). With respect to investment, EU is the third most important source of FDI in Thailand followed Japan and the Asian NIEs (Newly Industrializing Economies). However, for Thailand, there is still the great potential for increasing EU's investment in the country and Thailand has massively improved the investment climate and regulations for that.

The most interesting sector that will be concerned in this paper is the agricultural one; it is generally known that these kinds of goods are very sensitive since the production can be affected by the external factors, unsustainable prices, and high level of competitions and so on. Regarding the agricultural sector of the European Union, the Common Agricultural Policy (CAP) was founded as the instrument for the strong and competitive agriculture of the EU. The Policy is a system of agricultural supports which includes a subsidy payment for the sector, minimum price guaranteed, import tariffs, quotas and standard measure for agricultural goods from outside the EU.

There are difficulties for Thai, and ASEAN, firms to enter the EU's agricultural market though Thailand can provide the large amounts of agricultural products. Hence, if such Free Trade Agreements are agreed, and tariff barriers of these goods were changed, there would be great advantages to Thailand.

Table 1-1 Gross Domestic Product in ASEAN, at Current Prices (Nominal), in US Dollars
as of 30 April 2008

in US $ million; at current market prices

Country	2002	2003	2004	2005	2006	2007
Brunei Darussalam	5,847.30	6,540.20	7,864.20	9,527.90	*11,460.20*	12,317.00
Cambodia[1/]	*4,027.80*	*4,633.80*	*5,310.80*	6,250.10	7,256.50	8,662.30
Indonesia	196,303.40	234,996.60	239,134.10	284,790.20	364,400.10	431,717.70
Lao PDR	1,805.10	2,135.40	2,517.90	*2,860.20*	*3,521.80*	4,128.10
Malaysia	95,266.30	103,991.80	124,749.70	137,179.50	156,924.20	186,960.70
Myanmar[2/]	7,095.20	11,747.20	10,584.60	11,168.70	12,030.40	12,632.70
Philippines	76,647.90	79,577.70	86,912.40	98,757.30	118,083.00	146,894.80
Singapore	88,106.50	92,372.30	107,464.00	116,639.50	132,273.40	161,546.60
Thailand	126,880.40	142,863.40	161,385.70	176,406.80	206,951.50	245,701.90
Viet Nam	35,066.10	39,534.80	45,544.10	52,952.90	60,965.20	71,292.10
ASEAN	**637,046.00**	**718,393.20**	**791,467.40**	***896,533.00***	***1,073,866.20***	**1,281,853.90**
ASEAN 5[3/]	583,204.50	653,801.80	719,645.80	813,773.30	978,632.10	1,172,821.60
BCLMV[3/]	53,841.50	64,591.40	71,821.60	*82,759.70*	*95,234.10*	109,032.20

Source: ASEAN Statistics, 2008

Notes:
- not available as of publication time
x not available/not compiled
Data in italics means it has been revised from the previous posting.
Annual GDP in US dollar term figure is derived by converting annual GDP in national currency using the average foreign exchange rate for the given year.
Quarterly GDP in US dollar term is computed by converting quarterly GDP in national currency using the average foreign exchange rate for the particular quarter.
Annual figures therefore may differ from the sum of quarterly figures due to different conversion rates used and rounding-off errors.
1/ Based on revised series per Cambodia submission as of 25 March 2008
2/ GDP is based on fiscal year from April to March of the following year, and derived foreign exchange rate based on IMF WEO data (parallel rate)
3/ ASEAN 5 consists of Indonesia, Malaysia, the Philippines, Singapore and Thailand, while BCLMV is comprised of Brunei Darussalam, Cambodia, Lao PDR, Myanmar, and Viet Nam

Table 1-2 Intra- and Extra-ASEAN Trade, 2006
as of 15 August 2007

value in US$ million; share in percent

Country	Exports				Imports				Total trade			
	Intra-ASEAN		Extra-ASEAN		Intra-ASEAN		Extra-ASEAN		Intra-ASEAN		Extra-ASEAN	
	Value	Share to country total	Value	Share to country total	Value	Share to country total	Value	Share to country total	Value	Share to country total	Value	Share to country total
Brunei Darussalam	1,887.30	24.8	5,732.00	75.2	745.80	50.1	743.10	49.9	2,633.20	28.9	6,475.10	71.1
Cambodia	235.40	6.7	3,279.10	93.3	991.20	33.9	1,931.80	66.1	1,226.50	19.1	5,210.90	80.9
Indonesia	18,483.10	18.3	82,315.50	81.7	19,379.20	31.7	41,686.30	68.3	37,862.30	23.4	124,001.80	76.6
Lao PDR	289.80	72.0	112.80	28.0	500.70	85.2	86.80	14.8	790.50	79.8	199.70	20.2
Malaysia	40,979.60	26.1	116,247.30	73.9	32,290.70	25.2	96,025.50	74.8	73,270.20	25.7	212,272.70	74.3
Myanmar	2,149.70	61.2	1,365.00	38.8	1,174.70	55.5	940.80	44.5	3,324.40	59.0	2,305.90	41.0
Philippines	8,192.20	17.3	39,217.90	82.7	10,218.30	19.7	41,555.30	80.3	18,410.50	18.6	80,773.30	81.4
Singapore	83,801.60	30.9	187,806.30	69.1	62,300.40	26.1	176,181.60	73.9	146,102.00	28.6	363,987.90	71.4
Thailand	26,944.20	22.2	94,635.30	77.8	23,539.80	18.5	103,569.00	81.5	50,484.00	20.3	198,204.30	79.7
Viet Nam	6,214.00	16.8	30,819.70	83.2	12,453.70	31.0	27,783.10	69.0	18,667.70	24.2	58,602.80	75.8
ASEAN	**189,176.80**	**25.2**	**561,531.00**	**74.8**	**163,594.50**	**25.0**	**490,503.30**	**75.0**	**352,771.40**	**25.1**	**1,052,034.30**	**74.9**

Source: ASEAN Statistics, 2007

Notes:

- \- not available as of publication time
- x not available/not complied

Some figures may not sum up to totals due to rounding off errors.

Table 1-3 Foreign Direct Investments Net Inflow, Intra- and Extra-ASEAN, 2004-2006
as of 13 August 2007

value in US$ million

Country	2004			2005			2006		
	Intra-ASEAN	Extra-ASEAN	Total net inflow	Intra-ASEAN	Extra-ASEAN	Total net inflow	Intra-ASEAN	Extra-ASEAN	Total net inflow
Brunei Darussalam	19.70	192.40	212.00	19.40	269.10	288.50	9.70	423.80	433.50
Cambodia	31.90	99.50	131.40	129.20	252.00	381.20	155.50	327.70	483.20
Indonesia	204.20	1,690.30	1,894.50	*883.30*	*7,452.70*	*8,336.00*	1,524.50	4,031.70	5,556.20
Lao PDR	7.80	9.20	16.90	6.70	21.00	27.70	10.60	176.80	187.40
Malaysia	980.20	3,643.70	4,623.90	572.90	3,391.90	3,964.80	467.80	5,591.90	6,059.70
Myanmar	9.30	241.80	251.10	*38.40*	*197.50*	*235.90*	27.80	115.20	143.00
Philippines	71.10	616.70	687.80	*12.70*	*1,841.30*	*1,854.00*	-95.60	2,440.60	2,345.00
Singapore	*548.00*	*19,279.50*	*19,827.50*	*1,175.60*	*13,826.30*	*15,001.90*	1,137.70	22,917.70	24,055.40
Thailand	*688.70*	*5,173.30*	*5,862.00*	*762.20*	*8,194.80*	*8,957.00*	2,822.10	7,933.90	10,756.10
Viet Nam	242.90	1,367.20	1,610.10	164.70	1,856.10	2,020.80	181.90	2,178.10	2,360.00
ASEAN	***2,803.70***	***32,313.50***	***35,117.20***	***3,765.10***	***37,302.70***	***41,067.80***	**6,242.10**	**46,137.40**	**52,379.50**
ASEAN 5[1/]	***2,492.20***	***30,403.40***	***32,895.70***	***3,406.80***	***34,706.90***	***38,113.70***	**5,856.60**	**42,915.80**	**48,772.40**
BLCMV[1/]	**311.50**	**1,910.00**	**2,221.50**	***358.40***	***2,595.80***	***2,954.20***	**385.50**	**3,221.60**	**3,607.10**

Source: ASEAN Statistics, 2007

Notes:
- \- not available as of publication time
- x not available/not complied
- p preliminary as of publication time
- 1/ ASEAN 5 consists of Indonesia, Malaysia, the Philippines, Singapore and Thailand, while BCLMV is comprised of Brunei Darussalam, Cambodia, Lao PDR, Myanmar, and Viet Nam

Table 1-4 Top Ten ASEAN Trade Partner Countries/Regions, 2006
as of 14 September 2007

value in US$ million; share in percent

Trade partner country/region[1/]	Value			Share to total ASEAN trade		
	Exports	Imports	Total trade	Exports	Imports	Total trade
ASEAN	189,176.80	163,594.50	352,771.40	25.2	25.0	25.1
Japan	81,284.90	80,495.60	161,780.50	10.8	12.3	11.5
USA	96,943.50	64,252.50	161,196.00	12.9	9.8	11.5
European Union-25	94,471.80	66,118.10	160,589.90	12.6	10.1	11.4
China	65,010.30	74,950.90	139,961.20	8.7	11.5	10.0
Republic of Korea	25,670.00	26,849.70	52,519.60	3.4	4.1	3.7
Australia	23,148.50	13,262.80	36,411.40	3.1	2.0	2.6
India	18,928.10	9,774.60	28,702.70	2.5	1.5	2.0
Taiwan	9,032.00	12,876.90	21,908.90	1.2	2.0	1.6
Hong Kong, SAR	13,784.00	6,409.00	20,193.00	1.8	1.0	1.4
Total top ten trade partner countries	**617,449.90**	**518,584.60**	**1,136,034.60**	**82.2**	**79.3**	**80.9**
Others[2/]	**133,257.90**	**135,513.20**	**268,771.10**	**17.8**	**20.7**	**19.1**
Total	**750,707.80**	**654,097.80**	**1,404,805.70**	**100.0**	**100.0**	**100.0**

Source: ASEAN Statistics, 2007

Notes:
- \- not available as of publication time
- x not available/not complied
- 1/ identified/ranked based on share of total trade in 2006
- 2/ includes trade of all other countries and those that could not be attributed to specific countries

Some figures may not sum up to totals due to rounding off errors.

Table 1-5 Top Ten Sources of ASEAN Foreign Direct Investments Inflow
as of 13 August 2007

value in US$ million; share in percent

Country[1/]	Value				Share to total inflow			
	2004	2005	2006	2002-2006	2004	2005	2006	2002-2006
European Union (EU)-25	10,046.10	11,139.60	13,361.90	44,955.60	28.6	27.10	25.50	26.30
Japan	5,732.10	7,234.80	10,803.30	30,813.70	16.3	17.60	20.60	18.00
ASEAN	2,803.70	3,765.10	6,242.10	19,377.70	8.00	9.20	11.90	11.30
USA	5,232.40	3,010.60	3,864.90	13,736.10	14.90	7.30	7.40	8.00
Other Central & South America[2/]	*-60.50*	919.40	1,035.10	3,958.30	*-0.20*	2.20	2.00	2.30
Hong Kong	529.60	773.00	1,353.40	3,430.70	1.50	1.90	2.60	2.00
Republic of Korea	806.40	577.70	1,099.10	3,347.30	2.30	1.40	2.10	2.00
Cayman Island	2,029.10	*-19.90*	476.40	3,003.70	5.80	0.00	0.90	1.80
Taiwan, Province of Taiwan	366.80	*-66.80*	668.10	2,417.40	1.00	*-0.20*	1.30	1.40
China	731.50	502.10	936.90	2,302.90	2.10	1.20	1.80	1.30
Total top ten sources	**28,217.10**	**27,835.40**	**39,841.20**	**127,343.30**	**80.40**	**67.80**	**76.10**	**74.50**
Others[3/]	**6,900.10**	**13,232.40**	**12,538.30**	**43,478.50**	**19.60**	**32.20**	**23.90**	**25.50**
Total	**35,117.20**	**41,067.80**	**52,379.50**	**170,821.90**	**100.00**	**100.00**	**100.00**	**100.00**

Source: ASEAN Statistics, 2007

Notes:
- \- not available as of publication time
- x not available/not complied
- n.a. not applicable
- 1/ identified based on cumulative FDI inflow from 2001-2005
- 2/ includes countries in Central and South America, other than Argentina, Brazil, Mexico and Panama
- 3/ includes inflow from all other countries, as well as total reinvested earnings in the Philippines (local banks only) for 2001-2005 and intercompany loans in Singapore for 2005 Ranking is based only on countries where data is available.

Table 1-6 Thailand's Exports Structure to EU-27

Description	Value (million USD)				Growth rate (%)				Share (%)			
	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007
Agricultural products	1,231.9	1,234.8	1,558.4	2,064.0	7.79	0.23	26.21	32.45	8.53	8.18	8.65	9.69
Agro-industry products	758.2	911.4	1,124.3	1,353.6	9.15	20.21	23.36	20.39	5.25	6.04	6.24	6.35
Manufacturing products	12,157.2	12,562.1	14,942.4	17,606.1	20.75	3.33	18.95	17.83	84.16	83.19	82.98	82.65
Mineral products and fuel	81.9	160.2	100.9	73.2	299.48	95.56	-37.04	-27.44	0.57	1.06	0.56	0.34
Other	216.5	231.6	280.2	205.1	-25.63	6.96	21.00	-26.80	1.50	1.53	1.56	0.96
Total	**14,445.8**	**15,100.1**	**18,006.2**	**21,302.1**	**18.24**	**4.53**	**19.25**	**18.30**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Information and Communication Technology Center with Cooperation of the Customs Department, 2007

Note: 27 member countries since January 2007

Table 1-7 EU-27's Tariffs and Imports by Product Groups

Product groups	Final bound duties			MFN applied duties			Imports		
	AVG	Duty-free in %	Max	Binding in %	AVG	Duty-free in %	Max	Share in %	Duty-free in %
Animal products	26.8	20.6	215	100	25.9	23.6	215	0.4	15.2
Dairy products	66.8	0	237	100	62.4	0	215	0.1	0
Fruit, vegetables, plants	10.7	22.8	231	100	11.6	18.5	231	1.6	11.4
Coffee, tea	6.9	27.1	88	100	6.9	27.1	88	0.7	80.4
Cereals & preparations	24.3	6.3	116	100	19.8	10.7	116	0.4	26.7
Oilseeds, fats & oils	5.6	48.2	113	100	6.0	43.1	113	1.2	69.1
Sugars and confectionery	29.5	0	133	100	29.8	0	133	0.2	0
Beverages & tobacco	23.2	23.0	210	100	20.0	19.8	191	0.6	15.3
Cotton	0.0	100.0	0	100	0.0	100.0	0	0.0	100.0
Other agricultural products	5.1	67.1	120	100	5.6	65.1	119	0.5	68.3
Fish & fish products	11.2	10.7	26	100	10.6	14.1	26	1.1	6.9
Minerals & metals	2.0	49.6	12	100	2.0	50.7	12	17.4	70.8
Petroleum	2.0	50.0	5	100	2.3	41.1	5	21.7	96.4
Chemicals	4.6	20.0	7	100	3.8	34.4	13	9.6	60.5
Wood, paper, etc.	0.9	84.1	10	100	0.9	81.3	10	3.1	90.3
Textiles	6.5	3.4	12	100	6.6	2.1	12	2.4	1.9
Clothing	11.5	0	12	100	11.5	0	12	4.8	0
Leather, footwear, etc.	4.2	27.8	17	100	4.1	26.1	17	2.5	19.6

Table 1-7 EU-27's Tariffs and Imports by Product Groups (Cont.)

Product groups	Final bound duties			MFN applied duties			Imports		
	AVG	Duty-free in %	Max	Binding in %	AVG	Duty-free in %	Max	Share in %	Duty-free in %
Non-electrical machinery	1.7	26.5	10	100	1.7	27.3	10	13.1	67.6
Electrical machinery	2.4	31.5	14	100	2.6	28.3	14	6.3	39.5
Transport equipment	4.1	15.7	22	100	4.1	17.0	22	6.1	22.9
Manufactures, n.e.s.	2.5	25.9	14	100	2.5	24.2	14	6.3	56.8

Source: World Tariff Profiles, 2008

Notes:

- Not applicable
0 = 0 (not rounded)
0.0 > 0 and < 0.05

Table 1-8 Thailand's Tariffs and Imports by Product Groups

Product groups	Final bound duties			MFN applied duties			Imports		
	AVG	Duty-free in %	Max	Binding in %	AVG	Duty-free in %	Max	Share in %	Duty-free in %
Animal products	30.5	11.3	50	100	28.1	13.8	50	0.0	43.0
Dairy products	33.0	0	216	100	15.8	0	30	0.2	0
Fruit, vegetables, plants	53.2	0	*252*	100	27.6	1.1	*123*	0.4	0.7
Coffee, tea	55.5	0	90	100	23.1	0	40	0.1	0
Cereals & preparations	32.6	0	73	100	19.4	0.6	*62*	0.6	0.0
Oilseeds, fats & oils	38.3	0	146	100	19.1	0	*40*	1.0	0
Sugars and confectionery	47.8	0	94	100	32.3	0	*65*	0.0	0
Beverages & tobacco	60.4	2.5	*215*	100	33.4	2.2	*215*	0.3	0.0
Cotton	4.5	0	5	100	0.0	100.0	0	0.5	100.0
Other agricultural products	28.1	0	226	100	10.3	3.2	30	0.4	0.6
Fish & fish products	13.8	0	*197*	93.5	14.5	0	*154*	1.3	0
Minerals & metals	24.8	0.1	*49*	50.5	5.9	28.9	30	23.1	38.4
Petroleum	-	-	-	0	9.4	24.0	20	19.5	96.0
Chemicals	29.7	0.2	*60*	57.7	3.8	43.4	30	8.9	37.3
Wood, paper, etc.	24.4	0	*71*	85.1	6.8	23.4	*138*	2.1	34.5
Textiles	28.3	0	*31*	93.3	8.1	0	30	2.1	0
Clothing	30.0	0	*30*	99.6	24.5	0	60	0.2	0
Leather, footwear, etc.	30.3	0	*109*	58.9	12.7	9.7	30	1.3	21.1

Table 1-8 Thailand's Tariffs and Imports by Product Groups (Cont.)

Product groups	Final bound duties			MFN applied duties			Imports		
	AVG	Duty-free in %	Max	Binding in %	AVG	Duty-free in %	Max	Share in %	Duty-free in %
Non-electrical machinery	20.2	7.1	30	89.1	4.7	15.5	30	13.5	47.4
Electrical machinery	18.7	32.4	30	73.2	8.3	23.2	30	17.9	74.7
Transport equipment	48.3	0	80	24.6	20.7	5.7	80	2.2	1.0
Manufactures, n.e.s.	25.1	11.8	*31*	73.8	11.0	14.2	*141*	4.3	52.6

Source: World Tariff Profiles, 2008

Notes:

- Not applicable
0 = 0 (not rounded)
0.0 > 0 and < 0.05
Italics *Maxima, based on AVE estimates are printed in italics; this also applies in cases when the ad valorem part of a compound or mixed duty as ceiling or floor*

2. Research Questions

Since there are still some obstacles to trades between the two regions, and both the EU and ASEAN want to strengthen the trade relationships. The Agreements can provide better solutions for more EU and ASEN countries' trades and investments. On the other hand, the Agreements can affect the economies negatively such as floods of goods and waste of resources. Will FTA be a good answer for the EU and ASEAN, especially for Thailand? Since there are positive and negative results from the FTAs, the analysis of the Agreements' effects should be done to show how they affect, in which sector, and assess how much affect they have.

3. Objectives

3.1 To quantitatively assess the impacts of tariffs change, due to the EU-ASEAN Free Trade Agreements, to Thailand; comprehensively explored in agricultural, natural resources and industrial sectors, by using the GTAP models

3.2 To qualitatively analyze the impacts of a tariffs change, due to the EU-ASEAN Free Trade Agreements, by an in-depth interview with the officers, experts or businessmen especially in the agricultural sector

3.3 To analyze both quantitative and qualitative results of this study as the policy recommendation for Thailand

4. Scope of the Study

4.1 Will examine the effects of the EU-ASEAN FTA on Thailand with the following preferential variables

4.1.1 Gross Domestic Product (GDP)

4.1.2 Welfare

4.1.3 Utility per capita

4.1.4 Term of trade

4.1.5 Value of regional exports

4.1.6 Value of regional imports

4.1.7 Industry output

4.1.8 Value of production factors

4.2 Will quantitatively assess opportunities and challenges of the EU-ASEAN FTA by using the GTAP models, multi-regional Computable General Equilibrium (CGE) models, which the commodities are categorized into 57 different industries

4.3 Only agricultural, natural resources, agro-industry and manufacturing sectors of Thailand (commodities number 01-42, according to GTAP Aggregated Classification) will be considered

4.4 Will assume that

4.4.1 perfect competition market: each producer is the price taker

4.4.2 demand for input is constant elasticity of substitution

4.4.3 regional income is consumed by private household expenditures, government expenditures and savings

4.4.4 labors can freely move to other sectors within the country

4.5 Will perform 2 scenarios

4.5.1 SIM1: eliminate all duties on trade between ASEAN countries and the EU (full trade liberalization)

4.5.2 SIM2: eliminate duties on all trade except agricultural sector (commodities number 01-12, according to GTAP Aggregated Classification) since agricultural products are sensitive products which tend to necessitate tariff measures

4.6 Will qualitatively anticipate the impacts of the EU-ASEAN FTA, especially in the agricultural sector, with the personal interview with the government officers, experts or businessmen, and the SWOT analysis

5. Limitations

5.1 The sector composition in the GTAP model may not be comprehensive for specific analysis of some narrowly defined industry sectors that may be important to Thailand

5.2 The data in such models are generally 4-to-6 years out of date

5.3 The computation of non-tariff barriers: in this paper, non-tariff barriers such as quantity control, standard control, and enterprise-specific restriction, would not be computed quantitatively due to the limitations of the models

6. Expected Outcomes

6.1 Know the economic effects of the EU-ASEAN FTA to Thailand's economy, trades, consumers, natural resources, and producers

6.2 Know how to prepare for the envisioned FTA between the EU and ASEAN that would affect the Thai economy

7. Terms and Definitions

In this paper

7.1 Agreements means Free Trade Agreements between the European Union and ASEAN member countries

7.2 FTA means the Free Trade Agreements between the European Union and ASEAN member countries

7.3 EU means the European Union of 27 member countries; Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Republic of Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom

7.4 ASEAN means the Association of Southeast Asian Nations of 10 member countries; Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam

7.5 Opportunity means benefit or any positive effect of the envisioned FTA between the European Union and ASEAN

7.6 Challenge means cost or threat or any negative effect of the envisioned FTA between the European Union and ASEAN

7.7 Industry means agro-industry, labor intensive, capital intensive, and technology intensive manufacturing industry referred to GTAP database

7.8 GTAP means the Global Trade Analysis Project version 6 coordinated by the Department of Agricultural Economics, Purdue University

CHAPTER II

THE RELATIONS BETWEEN THE EU AND THAILAND

Relations between the two regions were established in 1980 thanks to the EC-ASEAN Agreement that constitutes a legal framework for relations between the EU and Thailand. At the bilateral level, the dialogue takes place through the European Commission and Thailand's Senior Official's Meeting (SOM), which is held on a regular basis. The latest meeting was on the 16-17 December 2004 in Bangkok (Delegation of the European Commission to Thailand, n.d).

Thailand also appreciates the support and co- operation provided by EU in the development, economic, and humanitarian fields. The co-operation agreements between the EU and Thailand which have been agreed or are being negotiated will involve a solid foundation for the expansion of co- operations as well as a stronger and deeper relationship.

The depth of Thai-EU relationship is mainly found in the areas of trade and investment where the EU is a major trade partner of Thailand, along with ASEAN, Japan, and the United States (Ministry of Foreign Affairs, 2006). Table 2-1 shows the major export destinations of Thailand, the EU is, certainly, in the list and imported from Thailand 21,269.40 million US Dollars or 11.96 percent share of total exports in 2008. Likewise, the EU is also the major supplier of Thailand, with 13,835.80 million US Dollars of import value or 7.74 percent share of total import in 2008 (Table 2-2).

With regarding to investment, the EU is the one of most important sources of foreign direct investment in Thailand, FDI from the EU in Thailand accounted for 65,344 million US Dollars from the total FDI of 297,461 million US Dollars in 2008 (Table 2-3). Although the EU's investment in Thailand still exists there is still great potential for increasing the EU's investment and Thailand has massively improved the investment climate and regulations for that.

Table 2-1 Thailand's Exports, by Major Destinations

Country	2004		2005		2006		2007		2008	
	Value (million USD)	Share (%)	Value (million USD)	Share (%)	Value (million USD)	Share (%)	Value (million USD)	Share (%)	Value (million USD)	Share (%)
World	96,502.80	100.00	110,937.70	100.00	129,720.40	100.00	153,865.00	100.00	177,841.30	100.00
ASEAN (9)	21,238.40	22.01	24,390.40	21.99	27,021.70	20.83	32,791.10	21.31	40,159.40	22.58
Japan	13,491.60	13.98	15,089.90	13.60	16,385.90	12.63	18,119.10	11.78	20,090.30	11.30
USA	15,502.90	16.06	16,996.60	15.32	19,449.60	14.99	19,415.60	12.62	20,274.50	11.40
EU	13,810.60	14.31	14,293.80	12.88	16,874.60	13.01	19,848.10	12.90	21,269.40	11.96
Growth rate (%)										
World		20.57		14.96		16.93		18.61		15.58
ASEAN (9)		28.83		14.84		10.79		21.35		22.47
Japan		18.80		11.85		8.59		10.58		10.88
USA		14.02		9.64		14.43		-0.17		4.42
EU		17.56		3.50		18.06		17.62		7.16

Source: Information and Communication Technology Center with Cooperation of the Customs Department, 2009

Table 2-2 Thailand's Imports, by Major Suppliers

Country	2004		2005		2006		2007		2008	
	Value (million USD)	Share (%)	Value (million USD)	Share (%)	Value (million USD)	Share (%)	Value (million USD)	Share (%)	Value (million USD)	Share (%)
World	94,034.50	100.00	118,175.20	100.00	128,772.30	100.00	139,958.90	100.00	178,653.10	100.00
ASEAN (9)	15,834.10	16.84	21,623.70	18.30	23,598.80	18.33	25,066.90	17.91	30,051.30	16.82
Japan	22,293.80	23.71	26,032.80	22.03	25,667.60	19.93	28,381.50	20.28	33,401.90	18.70
USA	7,206.10	7.66	8,683.20	7.35	9,587.90	7.45	9,494.40	6.78	11,391.00	6.38
EU	9,073.90	9.65	10,464.90	8.86	10,742.70	8.34	11,584.60	8.28	13,835.80	7.74
Growth rate (%)										
World		25.32		25.67		8.97		8.69		27.65
ASEAN (9)		26.78		36.56		9.13		6.22		19.88
Japan		23.34		16.77		-1.40		10.57		17.69
USA		1.60		20.50		10.42		-0.98		19.98
EU		20.93		15.33		2.65		7.84		19.43

Source: Information and Communication Technology Center with Cooperation of the Customs Department, 2009

Table 2-3 Foreign Investment, by Major Countries
as of January 7, 2009

Country	2005	2006	2007	2008
Total Foreign Investment	**498,860**	**307,668**	**502,432**	**297,461**
100% Foreign Investment	**131,254**	**129,238**	**243,030**	**139,303**
Japan	175,313	110,476	149,071	102,994
ANIEs				
- Taiwan	11,443	12,303	5,911	7,394
- Hong Kong	11,200	3,931	5,861	4,768
- Korea, South	2,332	5,230	11,568	4,308
ASEAN	**36,295**	**41,169**	**44,704**	**44,635**
- Singapore	14,129	28,921	34,126	36,606
- Malaysia	20,506	13,468	5,542	8,578
- Indonesia	343	482	4,486	595
- Philippines	209	67	204	-
- Myanmar	120	-	576	8
PRC	121,959	12,306	17,175	1,505
India	856	2,705	2,699	1,588
North America				
- USA	7,883	37,059	85,752	7,471
- Canada	539	45	1,212	150
Australia				
- Australia	908	3,288	3,234	3,330
- New Zealand	66	38	588	343
European Union	**35,710**	**30,532**	**74,145**	**65,344**
All Europe	**51,947**	**35,283**	**75,931**	**67,349**

Source: Adapted from Board of Investment, 2009

Notes:

i. do not include those applications that are returned to applicants
ii. "total foreign investment" statistics, FDI value is derived from total investment of all projects which have foreign equity participation (shown by registered capital amount) of one particular nation or the sum of all foreign registered capital from more than two nations of at least 10%
iii. "foreign investment of each country", FDI value is derived from total investment of projects which have foreign equity participation of that particular nation of at least 10%

1. Products and Trends of Trade

In the past decade, the products which were exported to the EU were mostly in the agro-industry, labor intensive and technology intensive manufacturing sectors; particularly in automatic data processing machines, motor cars and parts, precious stones and jewelry, electronic integrated circuits, prepared poultry, and garments. The details are in Table 2-4, with trends to increase in these sectors henceforth.

Table 2-4 Thailand's 20 Major Exports to EU

No	2002	2004	2006	2008
1	Automatic data processing machines and parts thereof	Automatic data processing machines and parts thereof	Automatic data processing machines and parts thereof	Automatic data processing machines and parts thereof
2	Motor cars, parts and accessories	Motor cars, parts and accessories	Motor cars, parts and accessories	Precious stones and jewelry
3	Electronic integrated circuits	Air conditioning machine and parts thereof	Precious stones and jewelry	Motor cars, parts and accessories
4	Garments	Precious stones and jewelry	Garments	Air conditioning machine and parts thereof
5	Precious stones and jewelry	Electronic integrated circuits	Electronic integrated circuits	Garments
6	Radio-broadcast receivers, television receiver and parts thereof	Garments	Air conditioning machine and parts thereof	Other electrical equipment and parts thereof
7	Air conditioning machine and parts thereof	Radio-broadcast receivers, television receiver and parts thereof	Other electrical equipment and parts thereof	Prepared poultry
8	Footwear and parts thereof	Other electrical equipment and parts thereof	Radio-broadcast receivers, television receiver and parts thereof	Rubber products
9	Telephone sets	Rubber	Rubber	Electronic integrated circuits
10	Rubber products	Rubber products	Rubber products	Rubber

Table 2-4 Thailand's 20 Major Exports to EU (Cont.)

No	2002	2004	2006	2008
11	Prepared or preserved fish, crustaceans, mollusks in airtight containers	Footwear and parts thereof	Prepared or preserved fish, crustaceans, mollusks in airtight containers	Machinery and parts thereof
12	Rubber	Prepared or preserved fruits	Prepared poultry	Prepared or preserved fish, crustaceans, mollusks in airtight containers
13	Prepared or preserved fruits	Furniture and parts thereof	Iron and steel and their products	Radio-broadcast receivers, television receiver and parts thereof
14	Prepared poultry	Prepared or preserved fish, crustaceans, mollusks in airtight containers	Footwear and parts thereof	Chemical products
15	Video recording and parts thereof	Iron and steel and their products	Prepared or preserved fruits	Prepared or preserved fruits
16	Woven fabrics	Telephone sets	Furniture and parts thereof	Lenses
17	Furniture and parts thereof	Prepared poultry	Machinery and parts thereof	Footwear and parts thereof
18	Other electrical equipment and parts thereof	Boards, panels of electric control	Plastic products	Rice
19	Chilled or frozen poultry cuts	Tapioca product	Lenses	Iron and steel and their products
20	Household table kitchenware	Plastic products	Printed circuits	Furniture and parts thereof

Source: Adapted from Information and Communication Technology Center with Cooperation of the Customs Department, 2009

With respect to imports, the principal products that Thailand imports from the EU are in the technology intensive and labor intensive manufacturing sectors; especially in machinery and parts, chemicals, electrical machinery and parts, iron, steel and products, and medicinal and pharmaceutical products as provided in Table 2-5.

Table 2-5 Thailand's 20 Major Imports from EU

No	2002	2004	2006	2008
1	Machinery and parts	Machinery and parts	Machinery and parts	Machinery and parts
2	Electrical machinery and parts	Chemicals	Chemicals	Chemicals
3	Chemicals	Electrical machinery and parts	Electrical machinery and parts	Electrical machinery and parts
4	Electrical circuit panels	Iron, steel and products	Metal manufactures	Medicinal and pharmaceutical products
5	Jewelry including silver bars and gold	Electrical circuit panels	Airplanes, gliders, instruments and parts	Iron, steel and products
6	Parts and accessories of vehicles	Medicinal and pharmaceutical products	Electrical circuit panels	Jewelry including silver bars and gold
7	Medicinal and pharmaceutical products	Parts and accessories of vehicles	Medicinal and pharmaceutical products	Electrical circuit panels
8	Computers; accessories and parts	Jewelry including silver bars and gold	Scientific, medical, testing appliances and instruments	Scientific, medical, testing appliances and instruments
9	Iron, steel and products	Airplanes, gliders, instruments and parts	Other metal ores, metal waste scrap, and products	Metal manufactures
10	Vegetables and vegetable products	Scientific, medical, testing appliances and instruments	Jewelry including silver bars and gold	Vegetables and vegetable products

Table 2-5 Thailand's 20 Major Imports from EU (Cont.)

No	2002	2004	2006	2008
11	Scientific, medical, testing appliances and instruments	Vegetables and vegetable products	Iron, steel and products	Miscellaneous manufactured articles
12	Plastic products	Plastic products	Vegetables and vegetable products	Parts and accessories of vehicles
13	Paper and paper products	Other metal ores, metal waste scrap, and products	Plastic products	Plastic products
14	Fertilizer and pesticide	Paper and paper products	Miscellaneous manufactured articles	Airplanes, gliders, instruments and parts
15	Metal manufactures	Metal manufactures	Parts and accessories of vehicles	Other metal ores, metal waste scrap, and products
16	Other metal ores, metal waste scrap, and products	Miscellaneous manufactured articles	Paper and paper products	Paper and paper products
17	Fabrics	Fabrics	Computers; accessories and parts	Computers; accessories and parts
18	Beverages, mineral water, aerated water	Milk and dairy products	Other capital goods	Fertilizer and pesticide
19	Miscellaneous manufactured articles	Beverages, mineral water, aerated water	Fabrics	Other capital goods
20	Electrical household appliances	Fertilizer and pesticide	Printed circuits	Beverages, mineral water, aerated water

Source: Adapted from Information and Communication Technology Center with Cooperation of the Customs Department, 2009

Table 2-6 Thailand's Principal Exports to EU, 2001-2004

Description	Value (million US$)				Growth rate (%)				Share (%)			
	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004
Automatic data processing machines and parts thereof	-	1,395.9	1,488.3	1,670.4	-	-	6.62	12.24	-	13.18	12.18	11.56
Motor cars, parts and accessories	-	1,024.2	925.5	1,012.4	-	-	-9.64	9.39	-	9.67	7.58	7.01
Air conditioning machine and parts thereof	-	329.1	524.7	887.3	-	-	59.44	69.11	-	3.11	4.29	6.14
Precious stones and jewelry	-	563.1	656.0	798.8	-	-	16.50	21.77	-	5.32	5.37	5.53
Electronic integrated circuits	-	705.1	912.0	789.9	-	-	29.34	-13.38	-	6.66	7.46	5.47
Garments	-	602.6	660.0	783.7	-	-	9.52	18.74	-	5.69	5.40	5.42
Radio-broadcast receivers, television receiver and parts thereof	-	331.4	414.2	566.6	-	-	24.98	36.80	-	3.13	3.39	3.92
Other electrical equipment and parts thereof	-	145.8	143.5	415.2	-	-	-1.53	189.28	-	1.38	1.17	2.87
Rubber	-	187.0	287.9	387.4	-	-	53.92	34.57	-	1.77	2.36	2.68
Rubber products	-	234.7	282.9	335.5	-	-	20.49	18.60	-	2.22	2.32	2.32
Footwear and parts thereof	-	290.6	282.7	286.0	-	-	-2.73	1.17	-	2.74	2.31	1.98
Prepared or preserved fruits	-	182.9	245.1	254.5	-	-	34.03	3.82	-	1.73	2.01	1.76

Table 2-6 Thailand's Principal Exports to EU, 2001-2004 (Cont.)

Description	Value (million US$)				Growth rate (%)				Share (%)			
	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004
Furniture and parts thereof	-	153.0	189.1	241.2	-	-	23.63	27.51	-	1.44	1.55	1.67
Prepared or preserved fish, crustaceans, mollusks in airtight containers	-	206.4	235.9	240.6	-	-	14.28	2.00	-	1.95	1.93	1.67
Iron and steel and their products	-	64.5	86.3	234.4	-	-	33.67	171.72	-	0.61	0.71	1.62
Teleprinters, telephone sets	-	246.8	192.1	233.6	-	-	-22.14	21.56	-	2.33	1.57	1.62
Prepared poultry	-	173.8	198.6	228.9	-	-	14.26	15.26	-	1.64	1.63	1.58
Boards, panels of electric control	-	55.5	157.4	198.9	-	-	183.53	26.38	-	0.52	1.29	1.38
Tapioca products	-	101.6	145.9	197.5	-	-	43.51	35.39	-	0.96	1.19	1.37
Plastic products	-	129.0	149.6	184.5	-	-	16.02	23.31	-	1.22	1.22	1.28
Total 20 records	**0.0**	**7,123.0**	**8,177.5**	**9,947.1**	**0.00**	**0.00**	**14.80**	**21.64**	**0.00**	**67.26**	**66.93**	**68.86**
Other	0.0	3,467.1	4,039.7	4,498.8	0.00	0.00	16.52	11.36	0.00	32.74	33.07	31.14
Total	-	**10,590.0**	**12,217.2**	**14,445.8**	-	-	**15.37**	**18.24**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Information and Communication Technology Center with Cooperation of the Customs Department, 2009

Table 2-7 Thailand's Principal Exports to EU, 2005-2008

Description	Value (million US$)				Growth rate (%)				Share (%)			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Automatic data processing machines and parts thereof	2,117.49	2,753.86	3,219.64	3,307.98	26.76	30.05	16.91	2.74	14.02	15.29	14.85	14.14
Precious stones and jewelry	839.97	965.57	1,150.74	1,500.49	5.16	14.95	19.18	30.39	5.56	5.36	5.31	6.41
Motor cars, parts and accessories	1,055.55	1,587.13	1,594.93	1,325.77	4.26	50.36	0.49	-16.88	6.99	8.81	7.35	5.67
Air conditioning machine and parts thereof	716.68	632.23	1,107.77	974.31	-19.23	-11.78	75.22	-12.05	4.75	3.51	5.11	4.17
Garments	774.31	859.21	838.71	941.54	-1.19	10.96	-2.38	12.26	5.13	4.77	3.87	4.03
Other electrical equipment and parts thereof	454.97	601.59	786.66	810.28	9.58	32.22	30.76	3.00	3.01	3.34	3.63	3.46
Prepared poultry	319.46	381.91	492.24	759.09	39.55	19.55	28.89	54.21	2.12	2.12	2.27	3.25
Rubber products	378.43	463.57	631.27	757.43	12.81	22.50	36.18	19.98	2.51	2.57	2.91	3.24
Electronic integrated circuits	759.33	802.01	926.21	756.12	-3.87	5.62	15.49	-18.36	5.03	4.45	4.27	3.23
Rubber	405.85	545.93	572.35	663.35	4.76	34.51	4.84	15.90	2.69	3.03	2.64	2.84
Machinery and parts thereof	231.32	265.83	430.39	608.81	50.01	14.92	61.90	41.46	1.53	1.48	1.98	2.60
Prepared or preserved fish, crustaceans, mollusks in airtight containers	326.38	418.08	488.45	596.60	35.67	28.10	16.83	22.14	2.16	2.32	2.25	2.55

Table 2-7 Thailand's Principal Exports to EU, 2005-2008 (Cont.)

Description	Value (million US$)				Growth rate (%)				Share (%)			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Radio-broadcast receivers, television receiver and parts thereof	493.40	551.72	582.14	537.88	-12.92	11.82	5.51	-7.60	3.27	3.06	2.68	2.30
Chemical products	84.66	113.29	255.78	469.60	36.33	33.82	125.78	83.59	0.56	0.63	1.18	2.01
Prepared or preserved fruits	244.03	304.35	308.92	412.91	-4.11	24.72	1.50	33.66	1.62	1.69	1.42	1.77
Lenses	173.42	215.90	291.75	380.58	4.73	24.50	35.13	30.45	1.15	1.20	1.35	1.63
Footwear and parts thereof	303.07	350.86	396.73	377.79	5.98	15.77	13.07	-4.77	2.01	1.95	1.83	1.62
Rice	103.26	134.22	211.38	375.52	-10.25	29.99	57.49	77.65	0.68	0.75	0.97	1.61
Iron and steel and their products	232.90	367.35	472.30	348.91	-0.63	57.73	28.57	-26.13	1.54	2.04	2.18	1.49
Furniture and parts thereof	274.51	275.32	319.43	309.85	13.82	0.29	16.02	-3.00	1.82	1.53	1.47	1.32
Total 20 records	**10,289.0**	**12,589.9**	**15,077.8**	**16,214.8**	**6.85**	**22.36**	**19.76**	**7.54**	**68.14**	**69.92**	**69.52**	**69.32**
Other	4,811.1	5,416.3	6,610.4	7,177.3	-0.11	12.58	22.05	8.58	31.86	30.08	30.48	30.68
Total	**15,100.1**	**18,006.2**	**21,688.2**	**23,392.1**	**4.53**	**19.25**	**20.45**	**7.86**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Information and Communication Technology Center with Cooperation of the Customs Department, 2009

Table 2-8 Thailand's Principal Imports from EU, 2001-2004

Description	Value (million US$)				Growth rate (%)				Share (%)			
	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004
Machinery and parts	-	1,432.0	1,554.5	1,808.6	-	-	8.56	16.35	-	19.74	20.04	19.22
Chemicals	-	749.4	844.1	985.8	-	-	12.65	16.78	-	10.33	10.88	10.47
Electrical machinery and parts	-	813.6	549.8	680.4	-	-	-32.43	23.76	-	11.21	7.09	7.23
Iron, steel and products	-	242.7	397.0	599.3	-	-	63.60	50.96	-	3.34	5.12	6.37
Electrical circuit panels	-	307.4	414.2	487.8	-	-	34.78	17.75	-	4.24	5.34	5.18
Medicinal and pharmaceutical products	-	299.1	375.3	414.8	-	-	25.45	10.53	-	4.12	4.84	4.41
Parts and accessories of vehicles	-	300.8	277.0	346.3	-	-	-7.89	25.00	-	4.15	3.57	3.68
Jewelry including silver bars and gold	-	304.8	244.8	326.0	-	-	-19.70	33.19	-	4.20	3.16	3.46
Airplanes, gliders, instruments and parts	-	55.1	74.7	254.2	-	-	35.72	240.08	-	0.76	0.96	2.70
Scientific, medical, testing appliances and instruments	-	161.8	201.3	248.4	-	-	24.47	23.37	-	2.23	2.60	2.64
Vegetables and vegetable products	-	187.0	233.5	225.7	-	-	24.88	-3.34	-	2.58	3.01	2.40
Plastic products	-	137.9	162.6	204.0	-	-	17.90	25.46	-	1.90	2.10	2.17
Other metal ores, metal waste scrap, and products	-	119.2	119.0	196.3	-	-	-0.17	64.90	-	1.64	1.53	2.09
Paper and paper products	-	125.7	142.5	181.3	-	-	13.31	27.23	-	1.73	1.84	1.93

Table 2-8 Thailand's Principal Imports from EU, 2001-2004 (Cont.)

Description	Value (million US$)				Growth rate (%)				Share (%)			
	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004
Metal manufactures	-	120.5	138.2	170.9	-	-	14.67	23.72	-	1.66	1.78	1.82
Miscellaneous manufactured articles	-	96.0	115.9	135.3	-	-	20.65	16.72	-	1.32	1.49	1.44
Fabrics	-	100.1	107.0	131.4	-	-	6.83	22.85	-	1.38	1.38	1.40
Milk and dairy products	-	76.6	92.9	114.2	-	-	21.31	22.85	-	1.06	1.20	1.21
Beverages, mineral water, aerated water	-	96.5	111.6	109.7	-	-	15.59	-1.68	-	1.33	1.44	1.17
Fertilizer and pesticide	-	124.6	105.4	107.5	-	-	-15.36	1.97	-	1.72	1.36	1.14
Total 20 records	**0.0**	**5,850.7**	**6,261.3**	**7,727.7**	**0.00**	**0.00**	**7.02**	**23.42**	**0.00**	**80.64**	**80.72**	**82.11**
Other	0.0	1,404.6	1,495.1	1,683.6	0.00	0.00	6.44	12.61	0.00	19.36	19.28	17.89
Total	-	**7,255.3**	**7,756.4**	**9,411.3**	-	-	**6.91**	**21.34**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Information and Communication Technology Center with Cooperation of the Customs Department, 2009

Table 2-9 Thailand's Principal Imports from EU, 2005-2008

Description	Value (million US$)				Growth rate (%)				Share (%)			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Machinery and parts	2,044.81	1,910.13	2,004.03	2,445.6	13.06	-6.59	4.92	22.03	18.93	16.99	16.77	17.14
Chemicals	1,086.60	1,151.87	1,273.44	1,630.1	10.23	6.01	10.55	28.01	10.06	10.25	10.65	11.43
Electrical machinery and parts	761.65	793.39	1,023.95	1,055.5	11.94	4.17	29.06	3.08	7.05	7.06	8.57	7.40
Medicinal and pharmaceutical products	487.91	538.42	638.81	771.3	17.63	10.35	18.65	20.74	4.52	4.79	5.34	5.41
Iron, steel and products	382.22	329.22	393.73	638.4	-36.22	-13.87	19.59	62.15	3.54	2.93	3.29	4.48
Jewelry including silver bars and gold	341.52	342.09	416.53	628.7	4.75	0.17	21.76	50.93	3.16	3.04	3.48	4.41
Electrical circuit panels	552.38	540.07	665.35	579.3	13.24	-2.23	23.20	-12.93	5.11	4.80	5.57	4.06
Scientific, medical, testing appliances and instruments	345.56	368.38	430.21	528.1	39.13	6.60	16.78	22.75	3.20	3.28	3.60	3.70
Metal manufactures	300.50	645.31	447.27	449.4	75.81	114.75	-30.69	0.49	2.78	5.74	3.74	3.15
Vegetables and vegetable products	224.97	246.35	264.37	337.8	-0.33	9.50	7.32	27.78	2.08	2.19	2.21	2.37
Miscellaneous manufactured articles	183.23	235.97	285.15	313.0	35.48	28.78	20.84	9.78	1.70	2.10	2.39	2.19
Parts and accessories of vehicles	292.00	207.98	217.50	303.2	-15.68	-28.77	4.58	39.41	2.70	1.85	1.82	2.13
Plastic products	225.24	240.37	265.20	302.8	10.43	6.72	10.33	14.19	2.09	2.14	2.22	2.12
Airplanes, gliders, instruments and parts	740.63	623.23	368.79	301.2	191.37	-15.85	-40.83	-18.34	6.86	5.54	3.09	2.11

Table 2-9 Thailand's Principal Imports from EU, 2005-2008 (Cont.)

Description	Value (million US$)				Growth rate (%)				Share (%)			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Other metal ores, metal waste scrap, and products	186.91	349.77	242.60	292.6	-4.77	87.14	-30.64	20.60	1.73	3.11	2.03	2.05
Paper and paper products	197.65	181.75	205.12	255.5	9.04	-8.04	12.86	24.58	1.83	1.62	1.72	1.79
Computers; accessories and parts	128.70	164.60	112.30	229.60	28.84	27.92	-31.78	104.47	1.19	1.46	0.94	1.61
Fertilizer and pesticide	124.88	131.77	139.60	219.00	16.17	5.52	5.94	56.86	1.16	1.17	1.17	1.54
Other capital goods	141.68	155.03	163.04	217.6	43.47	9.42	5.17	33.48	1.31	1.38	1.36	1.53
Beverages, mineral water, aerated water	123.40	139.10	137.90	187.10	12.47	12.71	-0.83	35.69	1.14	1.24	1.15	1.31
Total 20 records	**8,872.40**	**9,294.80**	**9,694.90**	**11,685.90**	**15.51**	**4.76**	**4.30**	**20.54**	**82.13**	**82.67**	**81.11**	**81.92**
Other	1,930.40	1,947.80	2,257.30	2,578.80	11.55	0.90	15.89	14.24	17.87	17.33	18.89	18.08
Total	**10,802.80**	**11,242.60**	**11,952.20**	**14,264.70**	**14.79**	**4.07**	**6.31**	**19.35**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Information and Communication Technology Center with Cooperation of the Customs Department, 2009

2. Obstacles to Trade

Although there are the strong relations between the EU and Thailand, there are several issues which occur and require the joint efforts to find solutions. With respect to trade between the two parties, the overall trade volumes have been improved satisfactorily, but some EU's trade barriers, either tariffs or non-tariff measures, have to be a serious concern.

In 2007, Thailand exported vegetables and fruits to the EU which accounted for 204 and 34 million Euros respectively. But some exporters face the problems of residual pesticides which exceed the limitation of the EU. About 640 pesticides which were permitted will be cut of as well as the Maximum Residue Limits (MRLs) that will be reduced in the near future (Office of Agricultural Affairs, 2009).

Sea food producers will encounter the regulation of Illegal, Unreported and Unregulated Finishing (IUU). From 1st January 2010, the fishery products must have a catch certificate in order to show that the products are legal and reported (Office of Agricultural Affairs, 2009).

Besides, the Sanitary and Phytosanitary Standard (SPS) which are applied to protect human, animal or plant health or to ensure that the imported goods cannot undermine health and safety of the people but can be abused disguised as protection measures (Rudloff, B and Simons, J, 2004).

The Waste Electrical and Electronic Equipment Directive (WEEE) is the directive, which together with the Restriction of Hazardous Substances Directive (RoHS), imposes the responsibility on the manufacturers of waste electrical and electronic equipment the disposal of such equipment. The producers should establish the infrastructure to collect WEEE which must be used in an ecologically-friendly manner, either by ecological disposal or by reuse/refurbishment of the collected WEEE (European Commission, 2009).

Besides the non-tariff measures, the tariffs ones are also the obstacles to Thai exports, especially on some agricultural and labor intensive manufacturing products.

Table 2-10 EU-27's Tariffs and Imports, Classified by Product Groups

Product groups	Final bound duties			MFN applied duties			Imports		
	AVG	Duty-free in %	Max	Binding in %	AVG	Duty-free in %	Max	Share in %	Duty-free in %
Animal products	26.8	20.6	215	100	25.9	23.6	215	0.4	15.2
Dairy products	66.8	0	237	100	62.4	0	215	0.1	0
Fruit, vegetables, plants	10.7	22.8	231	100	11.6	18.5	231	1.6	11.4
Coffee, tea	6.9	27.1	88	100	6.9	27.1	88	0.7	80.4
Cereals & preparations	24.3	6.3	116	100	19.8	10.7	116	0.4	26.7
Oilseeds, fats & oils	5.6	48.2	113	100	6.0	43.1	113	1.2	69.1
Sugars and confectionery	29.5	0	133	100	29.8	0	133	0.2	0
Beverages & tobacco	23.2	23.0	210	100	20.0	19.8	191	0.6	15.3
Cotton	0.0	100.0	0	100	0.0	100.0	0	0.0	100.0
Other agricultural products	5.1	67.1	120	100	5.6	65.1	119	0.5	68.3
Fish & fish products	11.2	10.7	26	100	10.6	14.1	26	1.1	6.9
Minerals & metals	2.0	49.6	12	100	2.0	50.7	12	17.4	70.8
Petroleum	2.0	50.0	5	100	2.3	41.1	5	21.7	96.4
Chemicals	4.6	20.0	7	100	3.8	34.4	13	9.6	60.5
Wood, paper, etc.	0.9	84.1	10	100	0.9	81.3	10	3.1	90.3
Textiles	6.5	3.4	12	100	6.6	2.1	12	2.4	1.9
Clothing	11.5	0	12	100	11.5	0	12	4.8	0
Leather, footwear, etc.	4.2	27.8	17	100	4.1	26.1	17	2.5	19.6
Non-electrical machinery	1.7	26.5	10	100	1.7	27.3	10	13.1	67.6
Electrical machinery	2.4	31.5	14	100	2.6	28.3	14	6.3	39.5
Transport equipment	4.1	15.7	22	100	4.1	17.0	22	6.1	22.9
Manufactures, n.e.s.	2.5	25.9	14	100	2.5	24.2	14	6.3	56.8

Source: World Tariff Profiles, 2008

Notes:

-	Not applicable
0	= 0 (not rounded)
0.0	> 0 and < 0.05

These are some of trade obstacles that Thai producers face, if these trade barriers were eliminated , especially in agricultural and other areas that Thailand is efficient in , through Free Trade Agreements or any co-operation, Thailand will gain

more benefits from the improvement in exports and, as well, welfare. However, Thailand levies import taxes as well, in almost every sector.

Table 2-11 Thailand's Tariffs and Imports, Classified by Product Groups

Product groups	Final bound duties			MFN applied duties			Imports		
	AVG	Duty-free in %	Max	Binding in %	AVG	Duty-free in %	Max	Share in %	Duty-free in %
Animal products	30.5	11.3	50	100	28.1	13.8	50	0.0	43.0
Dairy products	33.0	0	216	100	15.8	0	30	0.2	0
Fruit, vegetables, plants	53.2	0	252	100	27.6	1.1	123	0.4	0.7
Coffee, tea	55.5	0	90	100	23.1	0	40	0.1	0
Cereals & preparations	32.6	0	73	100	19.4	0.6	62	0.6	0.0
Oilseeds, fats & oils	38.3	0	146	100	19.1	0	40	1.0	0
Sugars and confectionery	47.8	0	94	100	32.3	0	65	0.0	0
Beverages & tobacco	60.4	2.5	215	100	33.4	2.2	215	0.3	0.0
Cotton	4.5	0	5	100	0.0	100.0	0	0.5	100.0
Other agricultural products	28.1	0	226	100	10.3	3.2	30	0.4	0.6
Fish & fish products	13.8	0	197	93.5	14.5	0	154	1.3	0
Minerals & metals	24.8	0.1	49	50.5	5.9	28.9	30	23.1	38.4
Petroleum	-	-	-	0	9.4	24.0	20	19.5	96.0
Chemicals	29.7	0.2	60	57.7	3.8	43.4	30	8.9	37.3
Wood, paper, etc.	24.4	0	71	85.1	6.8	23.4	138	2.1	34.5
Textiles	28.3	0	31	93.3	8.1	0	30	2.1	0
Clothing	30.0	0	30	99.6	24.5	0	60	0.2	0
Leather, footwear, etc.	30.3	0	109	58.9	12.7	9.7	30	1.3	21.1
Non-electrical machinery	20.2	7.1	30	89.1	4.7	15.5	30	13.5	47.4
Electrical machinery	18.7	32.4	30	73.2	8.3	23.2	30	17.9	74.7
Transport equipment	48.3	0	80	24.6	20.7	5.7	80	2.2	1.0
Manufactures, n.e.s.	25.1	11.8	31	73.8	11.0	14.2	141	4.3	52.6

Source: World Tariff Profiles, 2008

Notes:

-	Not applicable
0	= 0 (not rounded)
0.0	> 0 and < 0.05
Italics	*Maxima, based on AVE estimates are printed in italics; this also applies in cases when the ad valorem part of a compound or mixed duty as ceiling or floor.*

3. Generalised System of Preferences (GSP)

There are no preferential trade agreements between the EU and Thailand, at the moment. Bilateral trade relations are governed by the EU's General System of Preferences (GSP), which provides tariff preferences to a number of developing countries for their goods when entering the EU market (Delegation of the European Commission to Thailand, n.d).

The first GSP was introduced after World War II in order to promote exports, improve productions and economic growth of those developing countries, under the three principal bases of generalized, non-reciprocal, and non-discrimination.

The EU has provided GSP for developing countries since July 1971 in terms of tariff reduction or tariff elimination (ThaiEurope.net, 2005). GSP covers three separate preference regimes; General Arrangement of GSP (Standard GSP), duty-free and quota-free on Everything But Arms (EBA) for Least Developed Countries, and Special Incentive Arrangement for Sustainable Development and Good Governance or GSP Plus (GSP+).

Table 2-12 Trade Volumes under GSP and Value of Preferences

2007	GSP Preferential Imports (million Euro)	Nominal Duty Loss (million Euro)
Standard GSP	49.39	1.542
EBA	4.321	0.505
GSP+	4.927	0.501
Total	58.637	2.548

Source: European Commission, 2009

The EU will cut off the GSP privileges of countries that have a market share under GSP which exceeds 15 percent of the total import values from other GSP beneficiary countries, except some goods of textiles and appearance industry that have 12.5 percent maximum, which is reviewed every three years.

In 2008, Thai producers gained privileges from the EU-GSP valued at 7,612.62 million US Dollars (10.1 percent of growth rate). The GSP beneficiary

products are air conditioning machines, lenses, processed pineapple, frozen and prepared shrimp, rubber products, etc.

There is no doubt that Thailand has enjoyed privileges under the EU's GSP scheme. However, the regime is well aware that it is a unilateral concession of the EU. Nevertheless, it is evident that the EU's GSP cut has produced serious negative effects on the exports of certain groups of Thai products to the EU market, such as frozen shrimp which exported to the EU 35,000 tons valued at 191.65 million Euros in 1998 but when the GSP was cut off, the exports decreased to 19.44 and 5.10 million Euros in 2002 and 2003 respectively.

CHAPTER III

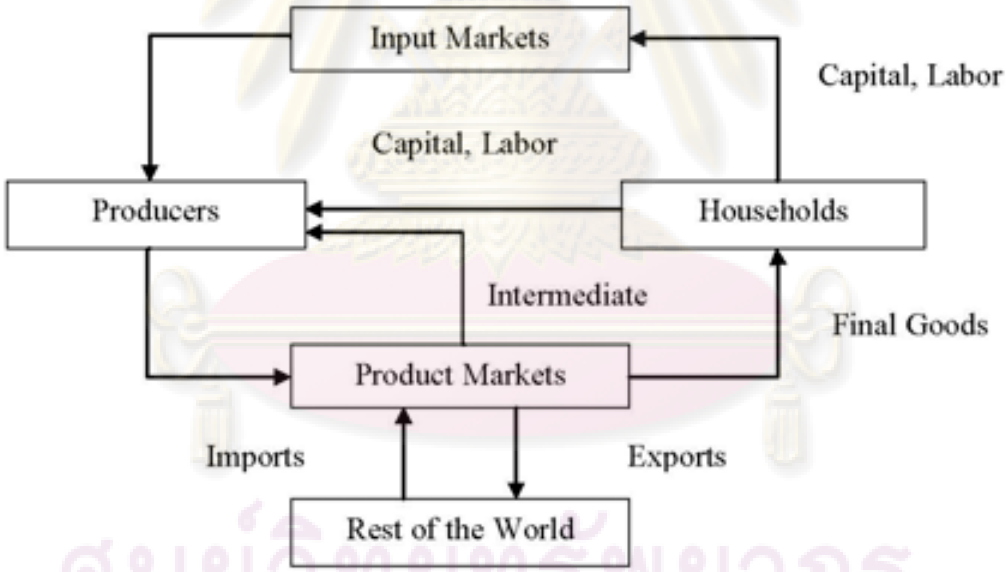
THEORY AND LITERATURE REVIEW

1. Concept and Theory

1.1 Computable General Equilibrium (CGE) Models

CGE models are economic models that use actual economic data to estimate how an economy might react to changes in policy, technology or other external factors. The models are based on the assumptions of the optimizing behavior of consumers and producers. That is, the consumers maximize their utility while the producers maximize profits and minimize costs.

Figure 3-1 Economy-Wide Circular Flow of Goods and Services



Source: Economic and Social Commission for Asia and the Pacific (ESCAP), 2003

In the figure, producers purchase inputs from input markets and intermediate goods from product markets in order to produce goods for product markets. Consumers purchase final goods from product markets and their labors go to input markets and producers in return of wages. The exceed goods will be sold to the rest of the world; vice versa the country will import goods from the rest of the world as well.

1.2 Global Trade Analysis Project (GTAP)

The model captures world economic activity and presents the accounting relationships as follows. Firstly, one closed economy region without government intervention which is the generation and distribution of income as well as domestic demand and supply are discussed. Secondly, one closed economy region with policy intervention in which taxes and subsidies are introduced. Thirdly, multi-region open economy which includes a trading sector. Lastly, the most similar to the real world, the accounting relationships in an open economy which taxes and subsidies are included (Brockmeier, 2001).

- Multi region open economy

In figure 3-2, according to the Computational General Equilibrium (CGE) Model which based on Neo-Classical Economics Theory, GTAP Model then assumes that there is a Representative Agent (Regional Household) which is formed in each country to collect all income that is distributed in the economy. In Cobb Douglas' work, regional income is consumed by private household expenditures (PRIVEXP), government expenditures (GOVEXP) and savings (SAVE). (Brockmeier, 2001: 5).

The available regional income includes the Value of Output at Agent's price (VOA) paid by the producers for the use of endowment commodities to the regional household. Nevertheless, there are corresponding flows across markets in the opposite direction, that is, the value flow VOA has a corresponding flow of endowment commodities going from the regional household back to the producers as well. In addition, TAXES are included as regional income, in which their transactions are transfered across the market in the opposite direction from flows of goods and services. The value flows consist of taxes and subsidies (flow from the private household, government and producer), know as net tax revenues. That is, the regional income includes VOA and net taxes.

Considering the production side, the producers are paid for consumption goods from private households (VDPA) and the government (VDGA), intermediate inputs to other producers (Value of Domestic Firm Purchase, evaluated at Agents' prices, VDFA), investment goods to the savings sector (NETINV) and the extra revenues for selling commodities to the Rest of the World (Value of Exports at Market price by Destination, VXMD). These revenues must be exhausted on

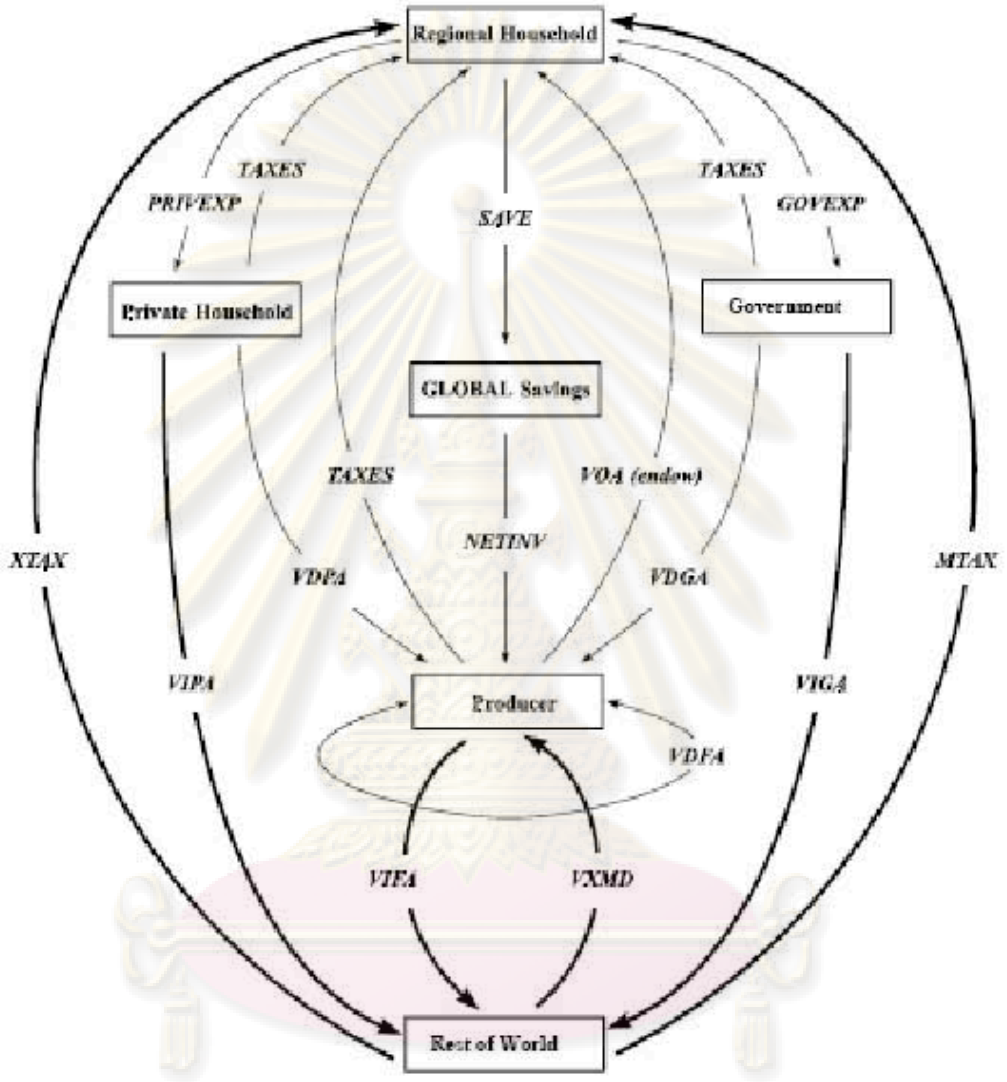
expenditures for intermediate inputs (VDFA), primary factors (VOA) and also imported intermediate inputs (Value of Import purchases by Firms at Agents' prices, VIFA) and an additional tax on imported inputs to the regional household as well. However, this tax is included in the TAXES flowing from the firms to regional household therefore this change does not show in the graph.

The distribution of regional income consists of government expenditures, private expenditures and savings. Government expenditures means the Value of Domestic Government purchase, evaluated at Agents' prices (VDGA) which expenditure shares are constant over all commodities. Private expenditures or Value of Domestic Private household purchases, evaluated at Agents' prices (VDPA). And the last component of final demand, savings, is consumed by investment (NETINV). But these agents do not only spend their income on domestic products but also imported commodities from the Rest of the world (Value of Import purchases by Private households at Agents' prices - VIPA and Value of Import purchases by Government at Agents' prices - VIGA, respectively). Both government and private households have to pay taxes for imported commodities.

The savings in figure 3-2 are denoted as GLOBAL Savings since savings and investment are computed on a global basis. And finally, the accounting relationships of the rest of the world, according to the graph, this agent is paid for selling their goods for private consumption, government and producers. These revenues will be spent on commodities imported to the Rest of the World, or commodities exported from the single region to this agent (denoted as VXMD) and on import taxes (MTAX) and export taxes (XTAX) to the regional household.

Notice that if there is an import tax, the market price will be higher and if there is an import subsidy, the market price will be lower than the world price. On the other hands, if there is an export tax, the market price lies below and if there is an export subsidy, the market price lies above the world price.

Figure 3-2 Multi Region Open Economy



Source : Brookmeier, 2001

2. Literature Review

Table 3-1 Literature Review Summary

Title	Instrument	Conclusion	Author
China's Membership in the World Trade Organization and Its Implication for ASEAN	GTAP	Indonesia, Malaysia, Thailand and Vietnam will gain more from international trade while Philippines and Singapore will lose some of their trade amounts. GDP of Indonesia, Philippines, Thailand and Vietnam would be decreased while Malaysia and Singapore would be increased	ASEAN Secretariat
Long-Run Simulations with GTAP: Illustrative results from APEC Trade Liberalization	GTAP	The abolishment of tariffs within the member countries would increase demand for goods in general. The more demand for goods, the more demand for input, and increment in demand for input. In the long-run, the increment of general demand will provide more capital supply leads to the increment of GDP	Terrie L Walmsley
ASEAN-China FTA Studies	GTAP	FDI will increase due to decreasing tariffs which will gain more returns to inputs; wages, shares, and income. Besides, Thailand's imports of capital and primary goods will increase than the increased exports, and leads to the more deficit in the BOP	Somprawin Manprasert
The Australia – Thailand Free Trade Agreement: economic effects	APG-Cubed Model and GTAP version 5 database	GDP, economic welfare, productivity, investments, and exports of both parties will be increased. Furthermore, the industries would enlarge due to the increment of demand for goods, exports and investments	Centre for International Economics, Australia

Title	Instrument	Conclusion	Author
An effect of Thailand-USA FTA	GTAP	The abolishment of tariff barriers would affect both Thailand and USA positively. Two countries' GDP, household income, social welfare and international trade value would rise to higher levels	Thailand - US FTA Task Force, Ministry of Foreign Affairs
Chance & Challenge of Industrial Sector towards ASEAN-EU FTA	Qualitative analysis by using statistic data	Thai industries will have the opportunity to enter into the EU market, to maintain the capability of competition and the more increment of investments in the industrial sector	Thai Chamber of Commerce and Board of Trade of Thailand
Study on ASEAN-EU FTA Impact on Thailand and Thailand's Strategy: Costs and Benefits of an FTA to Thailand	Comparative Analysis of EU FTAs, GTAP	• the major benefits of an FTA would be an increment of Thailand's economic welfare and GDP in the long run, • export amount rise to EU and overall, • import prices decrease therefore benefits for consumers and Thai businesses that purchase imported commodities, • wages rise then benefits to workers, • labor and capital resources shift into sectors where export demand increase, • internal negotiations within ASEAN countries are less important than the negotiations with the EU	Hunton & Williams and Capital Trade Incorporated

Due to globalization, most countries and regions have to compete and cooperate more with others, with various economic and trade agreements, partnership, and cooperation that have been made in these decades. Likewise, there are many studies about those agreements' impact between various regions, especially those which employed GTAP models, and, as well, the studies which we are concerning, the envisioned FTA between the EU and ASEAN countries.

The ASEAN Secretariat (2000) demonstrated the impact of China's membership in the WTO for ASEAN countries, by employing a GTAP model, in which Indonesia, Malaysia, Thailand and Vietnam will gain more from international trade while the Philippines and Singapore will lose some of their trade amounts. With respect to GDP, Indonesia, Philippines, Thailand and Vietnam would be negatively affected while Malaysia and Singapore would be positively affected from China entering into the WTO.

Another work about the impact of economic cooperation is the work of Terrie L Walmsley (1998). He had studied the effects of trade liberalization within the APEC framework, assessed it by using a GTAP model and comprehended 8 different products of 11 regions in the long and short term. The results of the study show that the abolition of tariffs within the member countries would increase demand for goods in general. The more demand for goods, the more demand for input, and increase in demand for input or endowment commodities leading to reallocation of resources where countries have a comparative advantage. In the long-run, the increment of general demand will provide more capital supply leads to the increment of GDP.

The study of Somprawin Manprasert (2008) which quantitatively evaluated the trends of an impact of an ASEAN-China FTA on Thailand's international trade via a GTAP Model with the simulations that Normal goods: tariffs will be abolished within 5 years (2005-2010), Sensitive goods: tariffs will be reduced to 20 percent in the year 2012 and 0-5 percent in year 2018, and Highly sensitive goods: tariffs will be reduced to 50 percent in year 2015. He concluded in the study that, FDI will increase due to decreasing of tariffs which will gain more returns to inputs; wages, shares, and income. Thailand's imports of capital and primary goods will increase then exports will increase leading to more deficit in the Balance of Payments.

Similarly, the study of Australia-Thailand FTAs' effects has been reached by the Centre for International Economics (2004), Australia, via an APG-Cubed Model

and GTAP database. The results of the study show that GDP, economic welfare, productivity, investments, and exports of both parties will be increased. Furthermore, the industries would enlarge due to the increment of demand for goods, exports and investments. Nevertheless, there are low levels of positive outcomes for Australia-Thailand referring to both countries trade amounts.

In addition, there is the study on Thailand-USA FTAs' effects on Thailand - US FTA Task Force, Ministry of Foreign Affairs of Thailand, which employed GTAP models to evaluate the effects of the agreements with the condition of full trade liberalization and zero taxes. The results of the studies reflect that the abolishment of tariff barriers would affect both Thailand and USA positively. The two countries' GDP, household income, social welfare and international trade value would rise to higher levels. Particularly, Thailand would gain more benefits from exporting agricultural products, textiles, clothes and leather, while the USA would gain comprehensively in agricultural and industrial products.

The Thai Chamber of Commerce and Board of Trade of Thailand (2007) have studied the opportunities of an ASEAN-EU FTA for the Thai industrial sector, the expectation from the agreement and the recommendations for Thai industries in the future. The opportunities from an EU-ASEAN FTA that this study has described are the opportunity to enter to EU market, maintain the capability of competition and more investments in industrial sector of Thailand. As regarding the expectations of Thailand from the agreements, there should be the lower tariffs for the gain of more capability of competition and share of the local producers. The Thai Chamber of Commerce and Board of Trade of Thailand also recommend to Thai industries that, if there are such agreements, the producers have to standardize their goods and make different to goods in order to compete with other competitors.

Likewise, Hunton & Williams and Capital Trade Incorporated (2008) has assessed the costs and benefits of the envisioned FTA between ASEAN and the EU for Thailand by employed GTAP model with 2 simulations; the first simulation is a medium-run scenario that simulates the impact of the tariff elimination in one-to-three years, the second one is a long-run scenario which reviewed the impact of the tariff abolishment in five-to-ten years. There are comparative analysis of EU FTAs with other countries like Switzerland, Chile, Mexico, and South Africa. With the assumption that customs duties are eliminated on all trade between ASEAN countries

and the EU, the Hunton & Williams and Capital Trade Incorporated have studied the outcomes which cover economic indicator like GDP, export, import amount, fundamental production factors and trends of international trade. The summations of their study are; the major benefits of an FTA would be an increase of Thailand's economic welfare and GDP in the long run, exports rise by a significant amount to the EU and overall, import prices decline therefore benefits for consumers and Thai businesses that purchase imported commodities, wages rise that benefits to both skilled and unskilled workers, labor and capital resources shift into sectors where export demand increase leads to output and revenue declines in other sectors. With respect to trade diversion among ASEAN countries, it is expected to affect only a few Thai industries and internal negotiations within ASEAN countries are less important than the negotiations with the EU.

From the literature reviews, the instrument for the EU-ASEAN FTA's impacts finding is the GTAP model, which is commonly accepted in international trade analysis and allows us to assess the benefits and costs from a given agreement. The scenarios simulated in this paper should reflect the different impacts of the singular given conditions in the same period.

In addition, the qualitative analysis, which will employ the in-depth interview as an instrument, will be introduced in this paper in order to assess the effects of the potential FTA qualitatively and to compare these results with the quantitative ones.

CHAPTER IV

METHODOLOGY

1. Quantitative Analysis

1.1 Global Trade Analysis Project

The quantitative analysis of EU-ASEAN FTA effects will be the result of a Global Trade Analysis Project (GTAP) model, which is coordinated by the Department of Agricultural Economics, Purdue University, United States of America.

The GTAP Model is base on and developed from the Computational General Equilibrium (CGE) Model and conducts quantitative analysis of international policy issues. Its core support and advice comes from a consortium of international and national agencies from around the world. The GTAP Data Base is the global data base representing the world economy and comprises several types of files and data which are sets of files, parameter files, main data files, energy volume, data and time series trade data. The sets filed enumerated the 87 regions and 57 commodities (Purdue University, 2002).

The model captures world economic activity and presents the accounting relationships as follows; firstly, one closed economy region without government intervention which is the generation and distribution of income as well as domestic demand and supply are discussed. Secondly, one closed economy region with policy intervention, which taxes and subsidies are introduced. Thirdly, a multi-region open economy, which includes a trading sector. Lastly, the accounting relationships in an open economy which taxes and subsidies are included (Brockmeier, 2001).

Table 4-1 57 Different Sectors in GTAP Model

Agriculture	01	pdr	Paddy Rice	rice, husked and unhusked
	02	wht	Wheat	wheat and meslin
	03	gro	Other Grains	maize (corn), barley, rye, oats, other cereals
	04	v_f	Veg & Fruit	vegetables, fruitvegetables, fruit and nuts, potatoes, cassava, truffles,
	05	osd	Oil Seeds	oil seeds and oleaginous fruit; soy beans, copra
	06	c_b	Cane & Beet	sugar cane and sugar beet
	07	pfb	Plant Fibers	cotton, flax, hemp, sisal and other raw vegetable materials used in textiles
	08	ocr	Other Crops	live plants; cut flowers and flower buds; flower seeds and fruit seeds; vegetable seeds, beverage and spice crops, unmanufactured tobacco, cereal straw and husks, unprepared, whether or not chopped, ground, pressed or in the form of pellets; swedes, mangolds, fodder roots, hay, lucerne (alfalfa), clover, sainfoin, forage kale, lupines, vetches and similar forage products, whether or not in the form of pellets, plants and parts of plants used primarily in perfumery, in pharmacy, or for insecticidal, fungicidal or similar purposes, sugar beet seed and seeds of forage plants, other raw vegetable materials
	09	ctl	Cattle	cattle, sheep, goats, horses, asses, mules, and hinnies; and semen thereof
	10	oap	Other Animal Products	swine, poultry and other live animals; eggs, in shell (fresh or cooked), natural honey, snails (fresh or preserved) except sea snails; frogs' legs, edible products of animal origin n.e.c., hides, skins and fur skins, raw , insect waxes and spermaceti, whether or not refined or colored
	11	rmk	Raw Milk	
	12	wol	Wool	wool, silk, and other raw animal materials used in textile
Natural Resources	13	for	Forestry	forestry, logging and related service activities
	14	fsh	Fishing	hunting, trapping and game propagation including related service activities, fishing, fish farms; service activities incidental to fishing
	15	col	Coal	mining and agglomeration of hard coal, lignite and peat

Natural Resources (Con.)	16	oil	Oil	extraction of crude petroleum and natural gas (part), service activities incidental to oil and gas extraction excluding surveying (part)
	17	gas	Gas	extraction of crude petroleum and natural gas (part), service activities incidental to oil and gas extraction excluding surveying (part)
	18	omn	Other Mining	mining of metal ores, uranium, gems. other mining and quarrying
Agro-industry	19	cmt	Cattle Meat	fresh or chilled meat and edible offal of cattle, sheep, goats, horses, asses, mules, and hinnies. raw fats or grease from any animal or bird.
	20	omt	Other Meat	pig meat and offal. preserves and preparations of meat, meat offal or blood, flours, meals and pellets of meat or inedible meat offal; greaves
	21	vol	Vegetable Oils	crude and refined oils of soya-bean, maize (corn),olive, sesame, ground-nut, olive, sunflower-seed, safflower, cotton-seed, rape, colza and canola, mustard, coconut palm, palm kernel, castor, tung jojoba, babassu and linseed, perhaps partly or wholly hydrogenated,inter-esterified, re-esterified or elaidinised. Also margarine and similar preparations, animal or vegetable waxes, fats and oils and their fractions, cotton linters, oil-cake and other solid residues resulting from the extraction of vegetable fats or oils; flours and meals of oil seeds or oleaginous fruits, except those of mustard; degras and other residues resulting from the treatment of fatty substances or animal or vegetable waxes
	22	mil	Milk	dairy products
	23	pcr	Processed Rice	rice, semi- or wholly milled
	24	sgr	Sugar	
	25	ofd	Other Food	prepared and preserved fish or vegetables, fruit juices and vegetable juices, prepared and preserved fruit and nuts, all cereal flours, groats, meal and pellets of wheat, cereal groats, meal and pellets n.e.c., other cereal grain products (including corn flakes), other vegetable flours and meals, mixes and doughs for the preparation of bakers' wares, starches and starch products; sugars and sugar syrups n.e.c., preparations used in animal feeding, bakery products, cocoa, chocolate and sugar confectionery, macaroni, noodles, couscous and similar farinaceous products, food products n.e.c.

Manufacturing	Labor Intensive	26	b_t	Beverages & Tobacco	
		27	tex	Textiles	textiles and man-made fibers
		28	wap	Wearing Apparel	Clothing, dressing and dyeing of fur
		29	lea	Leather	tanning and dressing of leather; luggage, handbags, saddlery, harness and footwear
		30	lum	Lumber	wood and products of wood and cork, except furniture; articles of straw and plaiting materials
	Capital Intensive	31	ppp	Paper & Paper Products	includes publishing, printing and reproduction of recorded media
		32	p_c	Petroleum & Coke	coke oven products, refined petroleum products, processing of nuclear fuel
		33	crp	Chemical Rubber Products	basic chemicals, other chemical products, rubber and plastics products
		34	nmm	Non-Metallic Minerals	cement, plaster, lime, gravel, concrete
		35	i_s	Iron & Steel	basic production and casting
		36	nfm	Non-Ferrous Metals	production and casting of copper, aluminum, zinc, lead, gold, and silver
		37	fmp	Fabricated Metal Products	Sheet metal products, but not machinery and equipment
	Technology Intensive	38	mvh	Motor Vehicles	cars, lorries, trailers and semi-trailers
		39	otn	Other Transport Equipment	
		40	ele	Electronic Equipment	office, accounting and computing machinery, radio, television and communication equipment and apparatus
		41	ome	Other Machinery & Equipment	electrical machinery and apparatus n.e.c., medical, precision and optical instruments, watches and clocks
		42	omf	Other Manufacturing	includes recycling

Services	43	ely	Electricity	production, collection and distribution
	44	gdt	Gas Distribution	distribution of gaseous fuels through mains; steam and hot water supply
	45	wtr	Water	collection, purification and distribution
	46	cns	Construction	building houses factories offices and roads
	47	trd	Trade	all retail sales; wholesale trade and commission trade; hotels and restaurants; repairs of motor vehicles and personal and household goods
	48	otp	Other Transport	road, rail ; pipelines, auxiliary transport activities; travel agencies
	49	wtp	Water Transport	
	50	atp	Air Transport	
	51	cmn	Communications	post and telecommunications
	52	ofi	Other Financial Intermediation	includes auxiliary activities but not insurance and pension funding (see next)
	53	isr	Insurance	includes pension funding, except compulsory social security
	54	obs	Other Business Services	real estate, renting and business activities
	55	ros	Recreation & Other Services	recreational, cultural and sporting activities, other service activities; private households with employed persons (servants)
	56	osg	Other Services (Government)	public administration and defense; compulsory social security, education, health and social work, sewage and refuse disposal, sanitation and similar activities, activities of membership organizations n.e.c., extra-territorial organizations and bodies
	57	dwe	Dwellings	ownership of dwellings (imputed rents of houses occupied by owners)

Source: GTAP Software

1.2 Aggregate Scheme

The GTAP model and data package used in this paper is Version 6, which consists of the economic data of 87 regions and 57 production sectors. In this thesis, production sectors are aggregated into 8 sectors; agricultural goods, natural resources, agro-industry goods, labor intensive manufacturing goods, capital intensive manufacturing goods, technology intensive manufacturing goods, other manufacturing goods, and services (but only goods are interested in the paper).

On the region side, the GTAP regional database is aggregated into 4 regions which are

a) EU : the European Union of 27 member countries; Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Republic of Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom

b) ASEAN : the Association of Southeast Asian Nations of 10 member countries; Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, and Vietnam

c) Thailand

d) Rest of the World

Lastly, the aggregation of factor, in this paper, the factors of production are aggregated into 5 factors as follows; land, unskilled labor, skilled labor, capital, and natural resources.

1.3 Simulation

In order to assess the effects of the EU-ASEAN FTA quantitatively, GTAP database will provide the information we need and will compute the international trade results with the conditions we simulate. In this paper, there will be two scenarios to show the different results of different agreement conditions.

1.3.1 SIM1: eliminate all duties on trade between ASEAN countries and the EU (full trade liberalization)

1.3.2 SIM2: eliminate duties on all trade except agricultural sector (commodities number 01-12, according to GTAP) since agricultural products are sensitive products which, still, necessitate protection. And it is quite similarly to the

real world in which most regions have highly protected their agricultural goods, with both tariff and non tariff measures.

The two scenarios will show the different results and reflect the best way of this envisioned cooperation.

The interested dependent variables in this study are GDP, welfare (EVs), per capita utility level, and terms of trade, values of export, values of import, value of production factors, and the value of sectoral output.

1.4 Solution Method

GTAP provides several solution methods to simulate as well as an accurate summary chart. The solution method that was chosen in this paper is "Gragg: 2-4-6 steps extrapolation with the automatic accuracy function" because of its highest and acceptable accuracy score. The overall accuracy score of this solution method for SIM1 and SIM2 is 8 while the acceptable accuracy score is equal or higher than 6.

The results of these two simulations, with the given conditions, will show the effects of the EU-ASEAN FTA and will be analyzed and systematized with those of the qualitative analysis which will be the strategies of Thailand in order to prepare for the foreseeable agreements.

2. Qualitative Analysis

As regarding the interview structure which is mentioned as the instrument for qualitative analysis, this paper will underline on agricultural sector since it is the most sensitive one and there would be the huge consequences on the agricultural sector of Thailand from this foreseeable agreements.

The interview will go to Thai officers, experts and businessmen or firms in the related fields, and will cover the opinions about the EU-ASEAN FTA in general as well as its effects on the agricultural sector of Thailand.

2.1.1 Qualification

2.1.1.1 Must be a government officer, or experts or businessmen or firms in the related fields

2.1.1.2 Must have a bachelor degree or at least 1 year of experience

2.1.1.3 Age over 20 years

2.1.2 Structure of Personal Interview

2.1.2.1 Personal information

(a) Age

(b) Gender

(c) Education

(d) Occupation

(e) Type of company/ organization

(f) Length of employment

2.1.2.2 Opinion on the EU-ASEAN FTA

(a) The effects of tariffs change, due to EU-ASEAN FTA, on Thai economy, producers and consumers

(b) Strategy to deal with the FTA (for firm or producer)

(c) Suggestions for the Thai government, producers and consumers

CHAPTER V

RESULTS AND ANALYSES

1. Results of the Quantitative Analysis

The results of the quantitative EU-ASEAN FTA effects on Thailand analysis, which employed GTAP as an instrument and simulated two different scenarios with the aggregated data package of 8 sectors and 4 regions, are shown in this chapter.

1.1 GDP: the value of real GDP of Thailand increased for 2,155.54 and 2,107.21 million US Dollars or 1.88 percent and 1.84 percent in SIM1 and SIM2 respectively, as shown in Table 5-1.

The table shows the compositions of GDP from the expenditure side, which compose of private consumption, investment, government expenditure, exports, and imports (C+I+G+X-M). The most positive effected components are investments and exports, which increased by 6.11 percent and 3.36 percent in the first simulation and increased by 6.19 percent and 3.27 percent in the second simulation.

However, apart from the positive impacts of the preferential FTA, there is the negative one, imports. The value of imports increased for 5.56 percent and 5.50 percent in SIM1 and SIM2 respectively.

Table 5-1 GDP Decomposition from the Expenditure Side

GDPEXP	Base Data (US$ million)	After EU-ASEAN FTA (US$ million)		Change (Million US$)		Change (%)	
		SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
Private Consumption	62,567.52	63,883.75	63,851.10	1,316.23	1,283.58	2.10	2.05
Investment	23,146.26	24,561.12	24,580.17	1,414.86	1,433.91	6.11	6.19
Government Expenditure	11,593.88	11,841.25	11,835.89	247.37	242.01	2.13	2.09
Export at World Price	81,250.86	83,980.73	83,911.44	2,729.87	2,660.58	3.36	3.27
Import at World Price	-63,877.36	-67,430.14	-67,390.23	-3,552.78	-3,512.87	5.56	5.50
Total	**114,681.16**	**116,836.70**	**116,788.37**	**2,155.54**	**2,107.21**	**1.88**	**1.84**

Source: GTAP 6 Simulation Results

The value of the GDP compositions from the source of income side, which composes of factor income, tax revenues, and value of capital depreciation, is available in Table 5-2.

Table 5-2 GDP Decomposition from the Source of Income Side

GDPSRC	Base Data (US$ million)	After EU-ASEAN FTA (US$ million)		Change (Million US$)		Change (%)	
		SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
Factor Income	76,882.45	79,958.16	79,896.09	3,075.71	3,013.64	4.00	3.92
Net Tax Revenues	22,508.52	21,534.73	21,547.12	-973.79	-961.40	-4.33	-4.27
Value of Capital Depreciation	15,290.20	15,343.82	15,345.15	53.62	54.95	0.35	0.36
Total	**114,681.16**	**116,836.70**	**116,788.37**	**2,155.54**	**2,107.21**	**1.88**	**1.84**

Source: GTAP 6 Simulation Results

1.2 Welfare: in order to evaluate the effects of the envisioned agreements, another interesting variable is economic welfare, which GTAP has provided two main methods to study the effects of the preferential agreements on this indicator. One is the calculated equivalent variations (EVs) and another one is the change in per capita utility (Piti Srisangnam, 2007: 155).

The available data in Table 5-3 represent the components of welfare gain, which are allocative efficiency effect, terms of trade effect, and saving-investment effect.

There is a change in the production or consumption of final products from a less efficient to a more efficient allocation when the tariff barriers to trade are eliminated, and this is the allocative efficiency effect which increased for 61.48 million US Dollars in the first scenario and 58.75 million US Dollars in the second.

The second source of welfare change is the terms of trade effect, which increases for 937.33 million US Dollars under the simulation of no tariff barriers at all and increases for 899.23 million US Dollars under the simulation of frozen tariff barriers on agricultural goods. The raise of the terms of trade arises from the increase in exports and decrease in imports as show in Table 5-1 above.

Lastly, the final source of the change in economic welfare is the saving-investment effect, which reduces for 54.51 million US Dollars and 55.95 million US Dollars in SIM1 and SIM2 respectively.

Table 5-3 Welfare Decomposition

WELFARE	SIM1	SIM2
Allocative Efficiency Effect	61.48	58.75
Terms of Trade Effect	937.33	899.23
Saving-Investment Effect	-54.51	-55.95
Total	**944.30**	**902.03**

Source: GTAP 6 Simulation Results

1.3 Per Capita Utility: according to Table 5-4, the per capita utility level of Thailand under the assumption of full trade liberalization has improved for 0.95 percent and 0.91 percent under SIM1 and SIM2. Utility is the satisfaction that one derives from consuming particular goods, and the per capita utility is the aggregate household expenditure for satisfaction or benefit that gains from consuming a given amount of goods or services, by head. This means that each individual gain more satisfaction, by 0.95 or 0.91 percent, when consuming any particular goods, after the implication of the preferential trade agreements

Table 5-4 Percentage Change in Per Capita Utility Level

EVs	SIM1	SIM2
Thailand	0.95%	0.91%

Source: GTAP 6 Simulation Results

1.4 Terms of Trade: as regarding to the terms of trade, Table 5-5 shows that Thailand faces an improvement of 1.36 percent in the first and 1.10 percent in the second simulation. As the prices of export increase (1.40 and 1.09 percent) more than the prices of import (-0.05 and -0.01 percent), thus the terms of trade improved and that is a sign of the positive direction of trade affected by the Agreements.

Table 5-5 Percentage Change in Terms of Trade, Price of Export (F.O.B.) and Price of Import (C.I.F.)

TOT	Price of Export (%)		Price of Import (%)		Total (%)	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
Agriculture	0.18	0.14	0.00	0.00	0.17	0.14
Natural resources	0.01	0.00	0.00	0.00	0.01	0.00
Agro-industry	0.37	0.33	-0.01	0.00	0.37	0.34
Labor intensive manufacture	0.16	0.12	0.00	0.00	0.15	0.12
Capital intensive manufacture	0.20	0.16	-0.02	0.00	0.18	0.16
Technology intensive manufacture	0.06	-0.01	-0.01	-0.01	0.04	-0.01
Other manufacture	0.04	0.04	0.00	0.00	0.04	0.04
Services	0.39	0.30	0.00	0.00	0.39	0.30
Total	**1.40**	**1.09**	**-0.05**	**-0.01**	**1.36**	**1.10**

Source: GTAP 6 Simulation Results

1.5 Exports and Imports

1.5.1 Exports: the total exports of Thailand in SIM1 and SIM2 have increased 3.40 percent and 3.31 percent respectively (Table 5-6). Particularly in the agro-industry sector, that has increased 28.69 and 29.92 percent. Mostly, these exports go to the EU, the agro-industry exports to EU increased 300.72 percent and 304.64 percent but exports to ASEAN and the rest of the world negatively decreased.

While the most interesting sector in this paper, agriculture, faces a negative effect from the given trade conditions of 8.96 and 14.58 percent decrease. The explanations for the first scenario could be; firstly, the decrease in agriculture exports derived from the change in major export destinations that shift from ASEAN member countries and others to the EU, and the decreased amounts that are exported to ASEAN and other countries are greater than the increased amounts that are exported to the EU. So, the total export of agricultural goods is decreased. Secondly, some agricultural goods are used as intermediate. Generally speaking, some of those agricultural goods will not be distributed an immediately but will be processed as

processed agricultural or agro-industry goods in order to preserve or add value to the original ones before distribution. We can see from the values of agro-industry export that have greatly increased. As well as the decrement in agricultural exports of SIM2, this can be explained with this reason.

However, the sector that exports to the EU the most is, still, the technology intensive manufacturing sector, of which the overall exports of this sector accounts for 31,488.82 million US Dollars while the exports to EU accounts for 5,242.23 million US Dollars or 10.82 percent share of total exports. The sector faces little impact from the given trade conditions. The total exports in this sector increase only 1.65 percent in SIM1 and 1.60 percent in SIM2, whereas the exports of this sector to EU increase 12.78 and 12.73 percent in SIM1 and SIM2 respectively. This is because of the current import tariffs of the EU on the technology intensive manufacturing sector is, already, low. Hence, there is a minor change in this sector.

Besides, the changes in exports of almost every sector as shown in Table 5-6 which also show the trends of exports that shift from Thailand's ex-major trade partners like ASEAN and the rest of the world to the EU instead. And this is the effect of the preferential trade agreements' privileges provided by the EU.

Table 5-6 Change in the Exports of Thailand at World Price, Classified by Destination

VXWD	Destination			
	EU	ASEAN	Rest of the World	Total
Base Data (million US$)				
Agriculture	301.77	270.06	2,057.26	2,629.10
Natural resources	27.63	81.70	102.35	211.67
Agro-industry	1,147.70	1,027.92	6,762.41	8,938.03
Labor intensive manufacture	2,322.02	770.72	7,152.34	10,245.08
Capital intensive manufacture	1,395.36	3,412.76	8,086.98	12,895.10
Technology intensive manufacture	5,343.23	6,454.66	19,690.94	31,488.82
Other manufacture	995.84	85.23	2,352.96	3,434.03
Services	4,547.86	394.43	5,482.65	10,424.94
Total	**16,081.41**	**12,497.47**	**51,687.88**	**80,266.77**
After EU-ASEAN FTA (million US$)				
	SIM1	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**
Agriculture	450.37	256.04	232.88	239.23	1,710.23	1,750.41	2,393.48	2,245.68
Natural resources	29.76	29.40	67.63	66.95	84.58	83.68	181.96	180.03
Agro-industry	4,599.07	4,644.03	916.28	923.37	5,987.26	6,045.03	11,502.61	11,612.42
Labor intensive manufacture	3,884.74	3,876.60	727.74	726.25	6,796.53	6,782.10	11,409.01	11,384.95
Capital intensive manufacture	1,477.80	1,479.44	3,183.53	3,186.84	7,661.26	7,669.67	12,322.59	12,335.95
Technology intensive manufacture	6,025.99	6,023.17	6,290.08	6,287.53	19,691.62	19,682.79	32,007.68	31,993.49
Other manufacture	1,096.48	1,096.00	77.69	77.65	2,222.97	2,222.04	3,397.14	3,395.70
Services	4,268.39	4,267.07	374.24	374.13	5,136.87	5,135.33	9,779.50	9,776.54
Total	**21,832.59**	**21,671.76**	**11,870.06**	**11,881.95**	**49,291.32**	**49,371.04**	**82,993.97**	**82,924.75**

Table 5-6 Change in the Exports of Thailand at World Price, Classified by Destination (Cont.)

VXWD	Destination							
	EU		ASEAN		Rest of the World		Total	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
Change (million US$)								
Agriculture	148.60	-45.73	-37.18	-30.83	-347.03	-306.85	-235.62	-383.42
Natural resources	2.13	1.77	-14.07	-14.75	-17.77	-18.67	-29.71	-31.64
Agro-industry	3,451.37	3,496.33	-111.64	-104.55	-775.15	-717.38	2,564.58	2,674.39
Labor intensive manufacture	1,562.72	1,554.58	-42.98	-44.47	-355.81	-370.24	1,163.93	1,139.87
Capital intensive manufacture	82.44	84.08	-229.23	-225.92	-425.72	-417.31	-572.51	-559.15
Technology intensive manufacture	682.76	679.94	-164.58	-167.13	0.68	-8.15	518.86	504.67
Other manufacture	100.64	100.16	-7.54	-7.58	-129.99	-130.92	-36.89	-38.33
Services	-279.47	-280.79	-20.19	-20.30	-345.78	-347.32	-645.44	-648.40
Total	**5,751.18**	**5,590.35**	**-627.41**	**-615.52**	**-2,396.56**	**-2,316.84**	**2,727.20**	**2,657.98**
Change (%)								
Agriculture	49.24%	-15.15%	-13.77%	-11.42%	-16.87%	-14.92%	-8.96%	-14.58%
Natural resources	7.71%	6.41%	-17.22%	-18.05%	-17.36%	-18.24%	-14.04%	-14.95%
Agro-industry	300.72%	304.64%	-10.86%	-10.17%	-11.46%	-10.61%	28.69%	29.92%
Labor intensive manufacture	67.30%	66.95%	-5.58%	-5.77%	-4.97%	-5.18%	11.36%	11.13%
Capital intensive manufacture	5.91%	6.03%	-6.72%	-6.62%	-5.26%	-5.16%	-4.44%	-4.34%
Technology intensive manufacture	12.78%	12.73%	-2.55%	-2.59%	0.00%	-0.04%	1.65%	1.60%
Other manufacture	10.11%	10.06%	-8.85%	-8.89%	-5.52%	-5.56%	-1.07%	-1.12%
Services	-6.15%	-6.17%	-5.12%	-5.15%	-6.31%	-6.33%	-6.19%	-6.22%
Total	**35.76%**	**34.76%**	**-5.02%**	**-4.93%**	**-4.64%**	**-4.48%**	**3.40%**	**3.31%**

Source: GTAP 6 Simulation Results

1.5.2 Imports: the imports of Thailand totally increase 3.13 percent under simulation one and 3.09 percent under simulation two (Table 5-7). The sector whose imports change the most is the labor intensive manufacturing sector which improve from 3,213.92 million US Dollars to 3,750.12 million US Dollars or by 16.68 percent in the first scenario. As well as the results of scenario two, the labor intensive manufacturing sector is the one that changes most, with improvements of 536.33 million US Dollars or by 16.69 percent. These changes are derived from the imports from the EU, which increase 223.60 percent in both scenarios, while the imports of these goods from ASEAN and the rest of the world are decrease negatively.

With respect to this research's most interesting sector, agriculture, the table shows that Thailand imports much more agricultural goods from EU in the first scenario, which improves by132.03 percent. It is definitely result of the given trade conditions, zero tariffs, because another simulation which still has tariffs on agricultural goods did not change so dramatically.

Whereas, the most imported goods in Thailand are still technology intensive manufacturing ones. The imports account for 30,095.97 million US Dollars in SIM1 and 30,096.55 million US Dollars in SIM2 which have improved from the base data, of 29,534.19 million US Dollars, about 1.9 percent in both two scenarios. And the imports of these goods from the EU are raised about 77.8 percent in both simulations, while the imports from ASEAN and other non-participant countries change negatively. It is unlikely to the EU that the tariffs on this sector are quite low, but the tariffs of Thailand on technology intensive manufacturing goods are on the contrary. Thus, there are the perceptible changes as shown in Table 5-7.

Some of products imported from the EU that changed extremely, such as the agricultural sector in SIM1, agro-industry and labor intensive manufacturing sector in both simulations, because the tariffs on some products in these sectors were high, when these tariffs are wiped out by the given trade conditions, the imports of these goods change so extremely.

From the outcomes of the simulated potential trade agreements' effects on exports and imports of Thailand, one notable thing, which is similarly in both scenarios, is the direction of trades that tends to shift from the previous major trade partner like ASEAN to the EU instead.

Table 5-7 Change in the Imports of Thailand at Market Price, Classified by Supplier

VIMS	Supplier			
	EU	ASEAN	Rest of the World	Total
Base Data (million US$)				
Agriculture	60.54	149.95	1,507.14	1,717.63
Natural resources	58.20	1,483.32	4,256.16	5,797.69
Agro-industry	382.12	473.53	2,216.28	3,071.93
Labor intensive manufacture	584.18	599.36	2,030.38	3,213.92
Capital intensive manufacture	2,506.51	2,556.64	11,338.21	16,401.36
Technology intensive manufacture	4,460.19	6,955.11	18,118.89	29,534.19
Other manufacture	385.56	101.99	1,273.88	1,761.43
Services	3,433.64	409.48	4,167.57	8,010.69
Total	**11,870.94**	**12,729.39**	**44,908.50**	**69,508.83**
After EU-ASEAN FTA (million US$)				
	SIM1	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**
Agriculture	140.47	66.48	153.70	158.92	1,604.21	1,649.99	1,898.38	1,875.38
Natural resources	72.53	72.65	1,420.34	1,422.31	4,140.24	4,146.77	5,633.11	5,641.74
Agro-industry	878.62	877.20	452.04	452.39	2,191.27	2,188.26	3,521.93	3,517.85
Labor intensive manufacture	1,890.42	1,890.41	415.48	415.51	1,444.22	1,444.33	3,750.12	3,750.25
Capital intensive manufacture	4,023.19	4,021.98	2,277.75	2,277.25	10,301.68	10,298.40	16,602.63	16,597.63
Technology intensive manufacture	7,928.95	7,929.27	6,093.47	6,093.51	16,073.55	16,073.76	30,095.97	30,096.55
Other manufacture	492.03	491.90	96.64	96.61	1,234.65	1,234.29	1,823.33	1,822.81
Services	3,580.71	3,580.71	419.31	419.31	4,356.34	4,356.28	8,356.36	8,356.30
Total	**19,006.93**	**18,930.60**	**11,328.72**	**11,335.82**	**41,346.15**	**41,392.08**	**71,681.80**	**71,658.50**

Table 5-7 Change in the Imports of Thailand at Market Price, Classified by Supplier (Cont.)

VIMS	Supplier							
	EU		ASEAN		Rest of the World		Total	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
Change (million US$)								
Agriculture	79.93	5.94	3.75	8.97	97.07	142.85	180.75	157.75
Natural resources	14.33	14.45	-62.98	-61.01	-115.92	-109.39	-164.58	-155.95
Agro-industry	496.50	495.08	-21.49	-21.14	-25.01	-28.02	450.00	445.92
Labor intensive manufacture	1,306.24	1,306.23	-183.88	-183.85	-586.16	-586.05	536.20	536.33
Capital intensive manufacture	1,516.68	1,515.47	-278.89	-279.39	-1,036.53	-1,039.81	201.27	196.27
Technology intensive manufacture	3,468.76	3,469.08	-861.64	-861.60	-2,045.34	-2,045.13	561.78	562.36
Other manufacture	106.47	106.34	-5.35	-5.38	-39.23	-39.59	61.90	61.38
Services	147.07	147.07	9.83	9.83	188.77	188.71	345.67	345.61
Total	**7,135.99**	**7,059.66**	**-1,400.67**	**-1,393.57**	**-3,562.35**	**-3,516.42**	**2,172.97**	**2,149.67**
Change (%)								
Agriculture	132.03%	9.81%	2.50%	5.98%	6.44%	9.48%	10.52%	9.18%
Natural resources	24.62%	24.83%	-4.25%	-4.11%	-2.72%	-2.57%	-2.84%	-2.69%
Agro-industry	129.93%	129.56%	-4.54%	-4.46%	-1.13%	-1.26%	14.65%	14.52%
Labor intensive manufacture	223.60%	223.60%	-30.68%	-30.67%	-28.87%	-28.86%	16.68%	16.69%
Capital intensive manufacture	60.51%	60.46%	-10.91%	-10.93%	-9.14%	-9.17%	1.23%	1.20%
Technology intensive manufacture	77.77%	77.78%	-12.39%	-12.39%	-11.29%	-11.29%	1.90%	1.90%
Other manufacture	27.61%	27.58%	-5.25%	-5.28%	-3.08%	-3.11%	3.51%	3.48%
Services	4.28%	4.28%	2.40%	2.40%	4.53%	4.53%	4.32%	4.31%
Total	**60.11%**	**59.47%**	**-11.00%**	**-10.95%**	**-7.93%**	**-7.83%**	**3.13%**	**3.09%**

Source: GTAP 6 Simulation Results

1.5.3 Trade Balance: the balances of trade with a more important trade partner like the EU are changed negatively by the amounts 1,384.81 million US Dollars and 1,469.31 million US Dollars in SIM1 and SIM2 respectively (Table 5-8). Thought Thailand exports more to the EU thanks to the privileges provided by the Agreements, on the other hand, the EU exports more, or even greater, to Thailand as well. The occurrence of the Free Trade Agreements between these two regions does not mean that we will gain from this solely but we have to consider the losses that we will face as well.

Table 5-8 Change in Trade Balance of Thailand, Classified by Trade Partner

TB	Partner			
	EU	ASEAN	Rest of the World	Total
Base Data (million US$)				
Agriculture	241.23	120.11	550.12	911.47
Natural resources	-30.57	-1,401.62	-4,153.81	-5,586.02
Agro-industry	765.58	554.39	4,546.13	5,866.10
Labor intensive manufacture	1,737.84	171.36	5,121.96	7,031.16
Capital intensive manufacture	-1,111.15	856.12	-3,251.23	-3,506.26
Technology intensive manufacture	883.04	-500.45	1,572.05	1,954.63
Other manufacture	610.28	-16.76	1,079.08	1,672.60
Services	1,114.22	-15.05	1,315.08	2,414.25
Total	**4,210.47**	**-231.92**	**6,779.38**	**10,757.94**
After EU-ASEAN FTA (million US$)				
	SIM1	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**
Agriculture	309.90	189.56	79.18	80.31	106.02	100.42	495.10	370.30
Natural resources	-42.77	-43.25	-1,352.71	-1,355.36	-4,055.66	-4,063.09	-5,451.15	-5,461.71
Agro-industry	3,720.45	3,766.83	464.24	470.98	3,795.99	3,856.77	7,980.68	8,094.57

Table 5-8 Change in Trade Balance of Thailand, Classified by Trade Partner (Cont.)

TB	Partner							
	EU		ASEAN		Rest of the World		Total	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
After EU-ASEAN FTA (million US$)								
Labor intensive manufacture	1,994.32	1,986.19	312.26	310.74	5,352.31	5,337.77	7,658.89	7,634.70
Capital intensive manufacture	-2,545.39	-2,542.54	905.78	909.59	-2,640.42	-2,628.73	-4,280.04	-4,261.68
Technology intensive manufacture	-1,902.96	-1,906.10	196.61	194.02	3,618.07	3,609.03	1,911.71	1,896.94
Other manufacture	604.45	604.10	-18.95	-18.96	988.32	987.75	1,573.81	1,572.89
Services	687.68	686.36	-45.07	-45.18	780.53	779.05	1,423.14	1,420.24
Total	**2,825.66**	**2,741.16**	**541.34**	**546.13**	**7,945.17**	**7,978.96**	**11,312.17**	**11,266.25**
Change (million US$)								
Agriculture	68.67	-51.67	-40.93	-39.80	-444.10	-449.70	-416.37	-541.17
Natural resources	-12.20	-12.68	48.91	46.26	98.15	90.72	134.87	124.31
Agro-industry	2,954.87	3,001.25	-90.15	-83.41	-750.14	-689.36	2,114.58	2,228.47
Labor intensive manufacture	256.48	248.35	140.90	139.38	230.35	215.81	627.73	603.54
Capital intensive manufacture	-1,434.24	-1,431.39	49.66	53.47	610.81	622.50	-773.78	-755.42
Technology intensive manufacture	-2,786.00	-2,789.14	697.06	694.47	2,046.02	2,036.98	-42.92	-57.69
Other manufacture	-5.83	-6.18	-2.19	-2.20	-90.76	-91.33	-98.79	-99.71
Services	-426.54	-427.86	-30.02	-30.13	-534.55	-536.03	-991.11	-994.01
Total	**-1,384.81**	**-1,469.31**	**773.26**	**778.05**	**1,165.79**	**1,199.58**	**554.23**	**508.31**

Source: GTAP 6 Simulation Results

1.6 Sectoral Output: the changes in value of output of Thailand are presented in Table 5-9. In this table, the outputs totally increase by 1.94 and 1.93 percent. After the elimination of tariff barriers, the highest growth of production is agro-industry sector, which has been increased by 14.30 percent and 14.91 percent in simulations one and two. It is consistent to the values of agro-industry exports which have been increasing as mentioned above. Vice versa, the most decrease in output is the capital intensive manufacturing sector, which values of output falls 3.55 and 3.50 percent. The absence of these outputs is referrers to less exports and also some compensation of those from imports.

Table 5-9 Change in Output, Classified by Sector

OUTDISP	Base Data (US$ million)	After EU-ASEAN FTA (US$ million)		Change (Million US$)		Change (%)	
		SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
Agriculture	13,644.36	14,558.06	14,429.20	913.70	784.84	6.70	5.75
Natural resources	5,628.47	5,723.57	5,733.99	95.10	105.52	1.69	1.87
Agro-industry	18,547.63	21,200.40	21,313.97	2,652.77	2,766.34	14.30	14.91
Labor intensive manufacture	28,517.37	29,043.05	29,009.61	525.68	492.24	1.84	1.73
Capital intensive manufacture	33,422.91	32,236.35	32,252.36	-1,186.56	-1,170.55	-3.55	-3.50
Technology intensive manufacture	47,592.80	47,692.60	47,676.64	99.80	83.84	0.21	0.18
Other manufacture	6,755.97	6,689.93	6,687.47	-66.04	-68.50	-0.98	-1.01
Services	100,682.08	102,598.63	102,606.80	1,916.55	1,924.72	1.90	1.91
Total	**254,791.59**	**259,742.59**	**259,710.03**	**4,951.00**	**4,918.44**	**1.94**	**1.93**

Source: GTAP 6 Simulation Results

The compositions of output distribution are shown in Table 5-10. The domestic sales and exports before the trade liberalization valued at 173,801.52 million US Dollars and 80,005.98 million US Dollars respectively. After the occurrence of the preferential trade agreements as simulated in scenario one and two, the domestic

sales decrease by 1.35 percent and 1.37 percent while export values increase by 3.25 percent and 3.16 percent respectively.

With regard to the most interesting sector in this paper, agriculture, most of these outputs are distributed locally (80 percent approximately). When the free trade conditions are applied, the outputs of this sector are increased 6.70 and 5.75 percent in SIM1 and SIM2. And the major distribution of agricultural goods is still on domestic sales, which also increases while the minor distribution like exports decrease (the reasons are mentioned in article 1.5.3—exports).

Table 5-10 Output Decomposition, Classified by Sector

OUTDISP	Domestic Sales	Transport	Exports at Market Prices	total
Base Data				
Agriculture	11,015.26	0.00	2,629.10	13,644.36
Natural resources	5,416.42	0.00	212.06	5,628.47
Agro-industry	9,609.59	0.00	8,938.03	18,547.63
Labor intensive manufacture	18,533.47	0.00	9,983.90	28,517.37
Capital intensive manufacture	20,527.81	0.00	12,895.10	33,422.91
Technology intensive manufacture	16,103.98	0.00	31,488.82	47,592.80
Other manufacture	3,321.94	0.00	3,434.03	6,755.97
Services	89,273.05	984.09	10,424.94	100,682.07
Total	**173,801.52**	**984.09**	**80,005.98**	**254,791.59**

Table 5-10 Output Decomposition, Classified by Sector (Cont.)

OUTDISP	Domestic Sales		Transport		Exports at Market Price		total	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
After EU-ASEAN FTA (million US$)								
Agriculture	12,164.60	12,183.50	0.00	0.00	2,393.50	2,245.70	14,558.10	14,429.20
Natural resources	5,541.30	5,553.60	0.00	0.00	182.30	180.40	5,723.60	5,734.00
Agro-industry	9,697.80	9,701.50	0.00	0.00	11,502.60	11,612.40	21,200.40	21,314.00
Labor intensive manufacture	18,022.20	18,012.00	0.00	0.00	11,020.80	10,997.60	29,043.10	29,009.60
Capital intensive manufacture	19,913.80	19,916.40	0.00	0.00	12,322.60	12,336.00	32,236.40	32,252.40
Technology intensive manufacture	15,684.90	15,683.20	0.00	0.00	32,007.70	31,993.50	47,692.60	47,676.60
Other manufacture	3,292.80	3,291.80	0.00	0.00	3,397.10	3,395.70	6,689.90	6,687.50
Services	91,832.40	91,843.60	986.80	986.70	9,779.50	9,776.50	102,598.60	102,606.80
Total	**176,149.70**	**176,185.60**	**986.80**	**986.70**	**82,606.10**	**82,537.70**	**259,742.60**	**259,710.00**
Change (million US$)								
Agriculture	1,149.34	1,168.24	0.00	0.00	-235.60	-383.40	913.74	784.84
Natural resources	124.88	137.18	0.00	0.00	-29.76	-31.66	95.13	105.53
Agro-industry	88.21	91.91	0.00	0.00	2,564.57	2,674.37	2,652.77	2,766.37
Labor intensive manufacture	-511.27	-521.47	0.00	0.00	1,036.90	1,013.70	525.73	492.23
Capital intensive manufacture	-614.01	-611.41	0.00	0.00	-572.50	-559.10	-1,186.51	-1,170.51
Technology intensive manufacture	-419.08	-420.78	0.00	0.00	518.88	504.68	99.80	83.80
Other manufacture	-29.14	-30.14	0.00	0.00	-36.93	-38.33	-66.07	-68.47
Services	2,559.35	2,570.55	2.71	2.61	-645.44	-648.44	1,916.53	1,924.73
Total	**2,348.18**	**2,384.08**	**2.71**	**2.61**	**2,600.12**	**2,531.72**	**4,951.01**	**4,918.41**

Table 5-10 Output Decomposition, Classified by Sector (Cont.)

OUTDISP	Domestic Sales		Transport		Exports at Market Price		total	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
	Change (%)							
Agriculture	10.43%	10.61%	-	-	-8.96%	-14.58%	6.70%	5.75%
Natural resources	2.31%	2.53%	-	-	-14.03%	-14.93%	1.69%	1.87%
Agro-industry	0.92%	0.96%	-	-	28.69%	29.92%	14.30%	14.91%
Labor intensive manufacture	-2.76%	-2.81%	-	-	10.39%	10.15%	1.84%	1.73%
Capital intensive manufacture	-2.99%	-2.98%	-	-	-4.44%	-4.34%	-3.55%	-3.50%
Technology intensive manufacture	-2.60%	-2.61%	-	-	1.65%	1.60%	0.21%	0.18%
Other manufacture	-0.88%	-0.91%	-	-	-1.08%	-1.12%	-0.98%	-1.01%
Services	2.87%	2.88%	0.28%	0.27%	-6.19%	-6.22%	1.90%	1.91%
Total	**1.35%**	**1.37%**	**0.28%**	**0.27%**	**3.25%**	**3.16%**	**1.94%**	**1.93%**

Source: GTAP 6 Simulation Results

1.7 Production Factors: the factors of production in Thailand have totally increased after the occurrence of the given trade conditions 3.39 percent in the first scenario and 3.33 percent in the second one (Table 5-11). The biggest change in production factors is the agro-industry sector, which the total factors that are used in this sector increased 14.22 and 15.13 percent and increased similarly in every factor (capital, unskilled, and skilled labor) about 15 percent under the two simulations. This is harmonious to the agro-industry's exports and outputs that also increased.

The most changed factor is land, which is mostly used in the production of agricultural goods; it has increased 11.88 percent in SIM1 and 9.90 percent in SIM2. As mentioned above, the agricultural outputs have increased hence it is normal that the inputs increased as well. Though this increased production is not for export but domestic use.

Table 5-11 Change in Factors of Production

VFM	Land		Unskilled Labor		Skilled Labor		Capital		Natural Resources		Total	
Base Data (million US$)												
Agriculture	4,661.36		3,759.09		3.76		639.79		0.00		9,064.00	
Natural resources	0.00		506.35		32.48		1,748.37		1,100.39		3,387.59	
Agro-industry	0.00		775.70		155.62		2,703.74		0.00		3,635.07	
Labor intensive manufacture	0.00		2,274.56		340.07		5,542.98		0.00		8,157.61	
Capital intensive manufacture	0.00		1,500.46		310.08		5,155.25		0.00		6,965.80	
Technology intensive manufacture	0.00		1,974.75		466.99		7,516.93		0.00		9,958.66	
Other manufacture	0.00		579.34		76.76		1,390.14		0.00		2,046.25	
Services	0.00		10,386.55		6,881.37		37,365.50		0.00		54,633.42	
Total	**4,661.36**		**21,756.80**		**8,267.14**		**62,062.71**		**1,100.39**		**97,848.41**	
After EU-ASEAN FTA (million US$)												
	SIM1	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**	**SIM1**	**SIM2**
Agriculture	5,214.97	5,122.71	3,956.58	3,938.83	3.95	3.93	671.80	669.15	0.00	0.00	9,847.31	9,734.62
Natural resources	0.00	0.00	520.38	520.83	33.26	33.31	1,792.31	1,794.87	1,109.83	1,115.94	3,455.79	3,464.94

Table 5-11 Change in Factors of Production (Cont.)

VFM	Land		Unskilled Labor		Skilled Labor		Capital		Natural Resources		Total	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
After EU-ASEAN FTA (million US$)												
Agro-industry	0.00	0.00	885.75	892.89	177.80	179.22	3,088.46	3,113.12	0.00	0.00	4,152.00	4,185.23
Labor intensive manufacture	0.00	0.00	2,363.63	2,360.72	353.75	353.27	5,764.11	5,756.10	0.00	0.00	8,481.49	8,470.09
Capital intensive manufacture	0.00	0.00	1,473.16	1,474.80	304.80	305.10	5,065.57	5,070.29	0.00	0.00	6,843.53	6,850.19
Technology intensive manufacture	0.00	0.00	2,037.35	2,037.35	482.37	482.29	7,761.55	7,760.13	0.00	0.00	10,281.27	10,279.78
Other manufacture	0.00	0.00	585.40	585.33	77.66	77.64	1,405.83	1,405.42	0.00	0.00	2,068.88	2,068.39
Services	0.00	0.00	10,642.66	10,647.38	7,063.37	7,064.86	38,332.37	38,339.07	0.00	0.00	56,038.39	56,051.31
Total	**5,214.97**	**5,122.71**	**22,464.90**	**22,458.14**	**8,496.96**	**8,499.62**	**63,881.99**	**63,908.13**	**1,109.83**	**1,115.94**	**101,168.66**	**101,104.54**
Change (million US$)												
Agriculture	553.61	461.35	197.49	179.74	0.19	0.17	32.01	29.36	0.00	0.00	783.31	670.62
Natural resources	0.00	0.00	14.03	14.48	0.78	0.83	43.94	46.50	9.44	15.55	68.20	77.35
Agro-industry	0.00	0.00	110.05	117.19	22.18	23.60	384.72	409.38	0.00	0.00	516.93	550.16
Labor intensive manufacture	0.00	0.00	89.07	86.16	13.68	13.20	221.13	213.12	0.00	0.00	323.88	312.48

Table 5-11 Change in Factors of Production (Cont.)

VFM	Land		Unskilled Labor		Skilled Labor		Capital		Natural Resources		Total	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
Change (million US$)												
Capital intensive manufacture	0.00	0.00	-27.30	-25.66	-5.28	-4.98	-89.68	-84.96	0.00	0.00	-122.27	-115.61
Technology intensive manufacture	0.00	0.00	62.60	62.60	15.38	15.30	244.62	243.20	0.00	0.00	322.61	321.12
Other manufacture	0.00	0.00	6.06	5.99	0.90	0.88	15.69	15.28	0.00	0.00	22.63	22.14
Services	0.00	0.00	256.11	260.83	182.00	183.49	966.87	973.57	0.00	0.00	1,404.97	1,417.89
Total	**553.61**	**461.35**	**708.10**	**701.34**	**229.82**	**232.48**	**1,819.28**	**1,845.42**	**9.44**	**15.55**	**3,320.25**	**3,256.13**
Change (%)												
Agriculture	11.88%	9.90%	5.25%	4.78%	5.05%	4.52%	5.00%	4.59%	-	-	8.64%	7.40%
Natural resources	-	-	2.77%	2.86%	2.40%	2.56%	2.51%	2.66%	0.86%	1.41%	2.01%	2.28%
Agro-industry	-	-	14.19%	15.11%	14.25%	15.17%	14.23%	15.14%	-	-	14.22%	15.13%
Labor intensive manufacture	-	-	3.92%	3.79%	4.02%	3.88%	3.99%	3.84%	-	-	3.97%	3.83%
Capital intensive manufacture	-	-	-1.82%	-1.71%	-1.70%	-1.61%	-1.74%	-1.65%	-	-	-1.76%	-1.66%
Technology intensive manufacture	-	-	3.17%	3.17%	3.29%	3.28%	3.25%	3.24%	-	-	3.24%	3.22%

Table 5-11 Change in Factors of Production (Cont.)

VFM	Land		Unskilled Labor		Skilled Labor		Capital		Natural Resources		Total	
	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2	SIM1	SIM2
	Change (%)											
Other manufacture	-	-	1.05%	1.03%	1.17%	1.15%	1.13%	1.10%	-	-	1.11%	1.08%
Services	-	-	2.47%	2.51%	2.64%	2.67%	2.59%	2.61%	-	-	2.57%	2.60%
Total	**11.88%**	**9.90%**	**3.25%**	**3.22%**	**2.78%**	**2.81%**	**2.93%**	**2.97%**	**0.86%**	**1.41%**	**3.39%**	**3.33%**

Source: GTAP 6 Simulation Results

1.8 Conclusions: the outcomes of the two scenarios simulated with GTAP mentioned above are not much difference to each another. Because the conditions provided in this study are different only in the agricultural sector.

The first interesting variable in this research, GDP, has increased in both scenarios, especially in the components "investment" and "export", as well as welfare and per capita utility levels that increased in all experiments. The welfare gain derived from three sources; allocative efficiency effect, terms of trade effect, and saving-investment effect. The allocative efficiency effect can be perceived with the changes in factors of production, Table 5-11. The factors change mostly to the agro-industry sector which has efficiency in export. Vice versa, in the capital intensive manufacturing sector, factors change negatively because of less exports and domestic sales of this sector.

Another source of welfare change is terms of trade effect, in the Table 5-5, the results of this source has increased and it is also the main source that stimulates the positive change in welfare.

With regards to the exports of Thailand, the total exports increase and especially in the agro-industry sector, that increased the most compared to others. According to the data of the Custom Department, Ministry of Commerce of Thailand (Table 5-12), the top five agro-industry products of Thailand that export to the EU in 2008 are

i. prepared or preserved fish, crustaceans, mollusks in airtight containers
ii. prepared or preserved fruits
iii. meat and preparations of meat
iv. preparation of a kind used in animal feeding
v. animal or vegetable fats and oils

More than that, the outcomes of these simulations show that the production factors and outputs of agro-industry sector also increase. The more sales of these goods lead to more productions and the distributions of agro-industry goods to go abroad rather than the domestic market.

This obvious change of agro-industry exports might be the result of the sector's efficiency or the agricultural goods' lifetime, that need to be reserved to extend their lives, or some obstacles to agricultural trade. As mentioned in the exports part above (article 1.5.1), the exports of agricultural goods increased when tariff

barriers were eliminated but decreased when there were barriers. Vice versa, the exports of agro-industry goods to the EU increased and even more when there are tariff barriers on agricultural goods.

With respect to the related sector, agriculture, even the value of exports decreased but the value of production factors and outputs increased. That is because the outputs were distributed domestically rather than abroad.

And the reasons why agricultural exports fall are also; some of the agricultural goods are used as intermediate, which will be processed as processed agricultural or agro-industry goods in order to preserve or add value to those original ones, hence the values of the agro-industry output and export increased while the value of agricultural exports decreased. And because of the, still, high tariffs on agricultural goods of EU in SIM2, the productions change to agro-industry one as it faces lower tariffs.

Besides, the drops of agricultural exports derived from the change in the major export destination that shifts from ASEAN member countries and others to the EU due to the privileges provided by FTA, and this decreased amounts that are exported to ASEAN and other countries are greater than the increased amounts that are exported to EU. Hence, the total export of agricultural goods decreased. However, these decrements are less when there are the tariff barriers on EU's boarder (Table 5-6). Generally speaking, if there are the barriers to enter the EU's markets, the direction of exports will change to other destinations.

Table 5-12 Major Exports of the Agro-industry Sector to the EU, 2005-2008

No.	Product	Value (million US$)				Share (%)			
		2005	2006	2007	2008	2005	2006	2007	2008
1	Prepared or preserved fish, crustaceans, mollusks in airtight containers	326.4	418.1	488.4	596.6	2.16	2.32	2.25	2.55
2	Prepared or preserved fruits	244.0	304.3	308.9	412.9	1.62	1.69	1.42	1.77
3	Meat and preparations of meat	38.6	53.9	101.5	111.8	0.26	0.30	0.47	0.48
4	Preparation of a kind used in animal feeding	51.3	69.6	80.2	96.7	0.34	0.39	0.37	0.41
5	Animal or vegetable fats and oils	3.0	6.2	38.7	90.4	0.02	0.03	0.18	0.39
6	Vegetable canned, prepared or preserved	63.4	69.8	71.6	79.5	0.42	0.39	0.33	0.34
7	Wheat products and other food preparations	51.3	59.7	63.3	77.3	0.34	0.33	0.29	0.33
8	Sauces and preparations therefor	37.4	43.1	51.5	60.1	0.25	0.24	0.24	0.26
9	Cocoa and cocoa preparations	18.3	17.8	20.2	22.7	0.12	0.10	0.09	0.10
10	Rice products	17.6	18.5	16.0	19.2	0.12	0.10	0.07	0.08

Source: Information and Communication Technology Center with Cooperation of the Customs Department

With respect to the biggest export sector, technology intensive manufacturing, the main products of this sector that export to EU in 2008 according to the data of the Custom Department, Ministry of Commerce of Thailand (Table 5-13) are

i. automatic data processing machines and parts thereof
ii. motor cars, parts and accessories
iii. air conditioning machine and parts thereof
iv. other electrical equipment and parts thereof
v. electronic integrated circuits

And this sector is still the biggest export sector after the experiments of tariff eliminations. However, its change does not increase as much as the agro-industry, because the starting tariffs are already low (Ministry of Commerce, 2009), therefore, there is a little change when applying free trade conditions. Moreover, the factors of production and outputs of this sector are the largest ones (apart from services, which is not considered in this study), which are concurrent to the values of export.

Table 5-13 Major Exports of the Technology Intensive Manufacturing Sector to the EU, 2005-2008

No.	Product	Value (million US$)				Share (%)			
		2005	2006	2007	2008	2005	2006	2007	2008
1	Automatic data processing machines and parts thereof	2,117.5	2,753.9	3,219.6	3,308.0	14.02	15.29	14.85	14.14
2	Motor cars, parts and accessories	1,055.6	1,587.1	1,594.9	1,325.8	6.99	8.81	7.35	5.67
3	Air conditioning machine and parts thereof	716.7	632.2	1,107.8	974.3	4.75	3.51	5.11	4.17
4	Other electrical equipment and parts thereof	455.0	601.6	786.7	810.3	3.01	3.34	3.63	3.46
5	Electronic integrated circuits	759.3	802.0	926.2	756.1	5.03	4.45	4.27	3.23
6	Machinery and parts thereof	231.3	265.8	430.4	608.8	1.53	1.48	1.98	2.60
7	Radio-broadcast receivers, television receiver and parts thereof	493.4	551.7	582.1	537.9	3.27	3.06	2.68	2.30
8	Motorcycles, parts and accessories	80.2	76.4	147.2	254.8	0.53	0.42	0.68	1.09
9	Printed circuits	147.4	204.0	275.7	224.7	0.98	1.13	1.27	0.96
10	Teleprinters, telephone sets	158.9	162.8	114.9	188.2	1.05	0.90	0.53	0.80

Source: Information and Communication Technology Center with Cooperation of the Customs Department

With regards to imports, the total imports change positively and mostly in the labor intensive manufacturing sector. And the products in this sector that imported into Thailand the most in 2008 according to data from the Custom Department, Ministry of Commerce of Thailand (Table 5-14) are

i. medicinal and pharmaceutical products
ii. beverages, mineral water, aerated water
iii. soap, detergent and cosmetic
iv. jewelry
v. textile products
vi. garments
vii. footwear

Table 5-14 Major Imports of the Labor Intensive Manufacturing Sector from the EU, 2005-2008

No.	Product	Value (million US$)				Share (%)			
		2005	2006	2007	2008	2005	2006	2007	2008
1	Medicinal and pharmaceutical products	487.9	538.4	638.8	771.3	4.52	4.79	5.34	5.41
2	Beverages, mineral water, aerated water	123.4	139.1	137.9	187.1	1.14	1.24	1.15	1.31
3	Soap, detergent and cosmetic	89.0	86.0	99.5	129.4	0.82	0.76	0.83	0.91
4	Jewelry	35.2	44.0	58.5	89.5	0.33	0.39	0.49	0.63
5	Other textile products	20.8	18.4	30.3	38.7	0.19	0.16	0.25	0.27
6	Garments	17.8	34.6	40.3	35.4	0.16	0.31	0.34	0.25
7	Footwear	8.2	10.3	11.7	15.7	0.08	0.09	0.10	0.11

Source: Information and Communication Technology Center with Cooperation of the Customs Department

However, the sector that imports from the EU the most is technology intensive manufacturing. And the products that are imported the most in this sector according to the data of the Custom Department, Ministry of Commerce of Thailand in 2008 (Table 5-15) are

i. machinery and parts
ii. electrical machinery and parts
iii. parts and accessories of vehicles
iv. airplanes, gliders, instruments and parts
v. computers; accessories and parts

Even though both of the largest exports and imports are in the same sector, technology intensive manufacturing, but the particular products are different. So the increased in production factors and outputs of this sector is on the products that are produced for export.

Table 5-15 Major Imports of the Technology Intensive Manufacturing Sector from the EU, 2005-2008

No.	Product	Value (million US$)				Share (%)			
		2005	2006	2007	2008	2005	2006	2007	2008
1	Machinery and parts	2,044.8	1,910.1	2,004.0	2,445.6	18.93	16.99	16.77	17.14
2	Electrical machinery and parts	761.7	793.4	1,023.9	1,055.5	7.05	7.06	8.57	7.40
3	Parts and accessories of vehicles	292.0	208.0	217.5	303.2	2.70	1.85	1.82	2.13
4	Airplanes, gliders, instruments and parts	740.6	623.2	368.8	301.2	6.86	5.54	3.09	2.11
5	Computers; accessories and parts	128.7	164.6	112.3	229.6	1.19	1.46	0.94	1.61
6	Railway, equipment and parts	7.7	6.0	42.4	122.9	0.07	0.05	0.35	0.86
7	Passenger motorcars	69.8	54.4	66.0	77.6	0.65	0.48	0.55	0.54
8	Ships, boats and floating structures	63.5	43.2	23.3	50.6	0.59	0.38	0.19	0.35
9	Buses and trucks	47.4	20.4	27.4	46.2	0.44	0.18	0.23	0.32
10	Parts and accessories of motorcycles and bicycles	5.7	16.6	30.8	34.8	0.05	0.15	0.26	0.24

Source: Information and Communication Technology Center with Cooperation of the Customs Department

As far as the agricultural sector is concerned, the imports of this sector from the EU have significantly increased. From the Table 5-7, the change of agricultural imports in simulation one, which is if the tariffs were eliminated, has shown the great amounts, while the agricultural imports in simulation two, which is where the tariffs were kept, has only a little change. This is due to the original tariffs on agricultural goods being high, thus when they are abolished, the goods flood into the market.

2. Results of the Qualitative Analysis

The qualitative analysis part in this paper was arranged by in-depth interviews with government officers, expertise and producer. The main points of the interview are about the effects of tariff changes due to the envisioned EU-ASEAN FTA to Thai economy, producers and consumers, and about the strategies of Thailand to prepare for the Agreements as mentioned in Chapter III.

It is generally accepted that there will be both advantages and disadvantages from the Free Trade Agreements, the advantages such as more market shares, more exports, higher level of economic welfare and more standardized products, and the disadvantages like the negative effects on domestic producers and some sensitive domestic goods, cost of adjustment, and administration. But the question is how to judge that these agreements are good or bad for Thailand? The answer must be weighed between the advantages and disadvantages of these agreements.

The obvious results of the agreements when tariff barriers were eliminated are the changes in trade among the participating regions. The less or null tariff barriers conduct to the more market access and market share to Thai products. For Thailand, the increase in exports will come from agricultural goods, textiles, and motor vehicles. Some interviewees have opinions on the values of exports of Thailand that the exports will increase, especially in frozen seafood, chicken, rice, textiles and cars. While dairy products and beverages from the EU such as wine, whiskey, and milk, as well as medical products will flood into the Thai market. Though Thailand will gain from the higher economic welfare level from the variety of goods and the higher standard of living, but this will effect Thailand negatively in one way or another such as the social point of view of those liquors which have been perceived as sin goods or the loss of market share of small and medium enterprises.

However, the more competitions lead to the more adjustments of those producers who have less efficiency. That is, there will be more goods of high standards available in the market and the consumers have more choices to choose the most suitable products and lowest price. But for the producers, they will face the higher costs such as the costs of adjustment and administration, the inefficient producers or small and medium enterprises who cannot afford this, will leave the market.

Moreover, there will be a reallocation of production factors. Generally speaking, the production factors will shift from the less competitive sectors to the more competitive ones.

But also notice that even both EU and ASEAN protect their sensitive sectors, as the second scenario (SIM2) in which the agricultural sector is protected, but the more exports in other efficient goods can compensate for this gap.

Furthermore, about Foreign Direct Investment (FDI) that some kind of investment, like hotels, usually hire foreign employees. So the suggestion is to promote the joint ventures in order to encourage the employment of local employees.

Regarding the suggestions for Thai producers, they should standardize and make different or add value to their products. On the other hands, the government should have policies to assist the negative effected industries and those small and medium ones which lack of the capital to develop their productions as well as the marketing and promotions.

Apart from the tariff barriers, the non-tariff ones have greatly affected Thai exporters as well, especially the standard measures of the EU. Particularly when the tariff barriers are abolished after the Agreements, the non-tariff ones will come to the front in order to protect the domestic producers. The suggestion for this issue is that there should be common measures or common standards among the participant countries.

3. Conclusions

From the assessments above, we can see that the results of the quantitative study are quite in line with those of the qualitative one; such as the raise of exports, the welfare and utility gain, the floods of imported goods, and the change of production factors.

Nevertheless, the trades of this study's main interested sector, agricultural, do not get results as expected. In SIM1 the agricultural exports decreased because Thailand sells much less to ASEAN member and other countries, though the sales to the EU increase but these amounts cannot compensate those exports that declined dramatically. In SIM2, the agricultural exports to all market decreased, since there are the high tariffs on this sector, the products then become the intermediate in order to preserve and sell for the higher prices. Also these agricultural products are distributed domestically rather than exported.

CHAPTER VI

CONCLUSIONS

1. Conclusions of the Study

According to the preferential trade agreements, the EU-ASEAN FTA, which has been negotiating for a while, the major concentrations are driven to the benefits and costs which these envisioned agreements will bring. This study's main objective is to find out the benefits and costs of EU-ASEAN FTA for Thailand through the quantitative and qualitative methods. The quantitative analysis is measured with Global Trade Analysis Project (GTAP) models, a multi-region and multi-sector applied general equilibrium model, which is generally accepted in the international stage. While the in-depth interview is employed in order to find the answers for the qualitative analysis. Besides, the SWOT analysis is included in this study in order to analyze qualitatively the strengths, weaknesses, opportunities, and threats of Thailand under the condition of EU-ASEAN Free Trade Agreements.

Chapter I provided the background information about the relationships of the European Union, ASEAN, and Thailand. While Thailand and other ASEAN member countries rely much more on international trade, EU is becoming the more important trade partner at a time. Then the Free Trade Agreements are being concerned by these two favored regions. As well, the research questions, objectives, expected outcomes, scope, limitations and definitions of terms of this study are presented in this chapter.

The more detailed of the relations between EU and Thailand are provided in Chapter II. Especially, the past investments and trades between Thailand and the EU. Moreover, the obstacles to trade, both tariffs and non-tariffs, and General System of Preferences (GSP) are presented in the chapter.

The concept and theory related to this research is described in Chapter III. As well as the relevant literatures, which had studied about the Free Trade Agreements between the varied regions, even the FTA between EU and ASEAN, and other trade co-operations that employed GTAP models, are shown in this chapter.

In Chapter IV, the methods of both quantitative and qualitative experiments are presented. The empirical method of the quantitative analysis is the employment of GTAP models, with the new aggregated data of four regions (the European Union, ASEAN, Thailand, and rest of the world) and eight sectors (agriculture, natural resources, agro-industry, labor intensive manufacture, capital intensive manufacture, technology intensive manufacture, other manufacture, and services).

Under these two experimental scenarios; all tariffs on goods between EU and ASEAN were eliminated (SIM1) and all tariffs on goods between these two regions except the tariffs on agricultural goods were eliminated (SIM2), GTAP will assess the costs and benefits from the given agreements in a theoretically consistent way with real data.

The variables which have been selected to reflect the consequences of the EU-ASEAN FTA on Thailand are GDP, welfare level, per capita utility, term of trade, exports, imports, output, and production factors.

With respect to the qualitative part, the in-depth interview was necessary to collect the information. The interview goes to the officers of the Ministry of Commerce and the Ministry of Foreign Affairs of Thailand, the professor of The Faculty of Economics, and Thai rice exporter. The points of the interview are about the EU-ASEAN FTA and the opinion on the preferential FTA's effects.

The results of both quantitative and qualitative analysis under the given scenario are shown in Chapter V.

In terms of the economic welfare level of Thailand, the sources of welfare level are allocative efficiency effect, term of trade effect, and saving-investment effect. Under SIM1, the first two sources of economic welfare have increased for 61.48 and 937.33 million US Dollars respectively, while the last one has decreased for 54.51 million US Dollars. And the total change in economic welfare is 944.30 million US Dollars. Under SIM2, the three sources of economic welfare are 58.75, 899.23 and -55.95 million US Dollars respectively, and the total change is 902.04 million US Dollars. Besides, the changes in per capita utility level under the first and the second scenario are 0.95 percent and 0.91 percent respectively. Both welfare and per capita utility level that totally increased means that Thailand will gain more in economic welfare if the considerate agreements were agreed in any scenario, even the value of the second one is less than another.

In terms of the effect of EU-ASEAN FTA on Thailand's nation income, the real GDP increases 1.88 percent (SIM1) and 1.84 percent (SIM2). This improvement of GDP has been greatly driven from the two main components, investments and trades. As regarding to the terms of trade, it increases 1.14 percent under the first scenario and 1.10 percent under the second scenario.

As regarding to the exports of Thailand, the total export increased especially in the agro-industry sector, which increased the most in exports to EU compare to others. More than that, the outcomes of these simulations show that the production factors and outputs of agro-industry sector also increase. The more sales of these goods lead to the more productions, and the distributions of agro-industry goods go to abroad than domestic.

With respect to the related sector, agriculture, even the value of export decreased but the value of production factors and outputs increased. That is because the outputs distributed domestically than abroad.

And the reasons why agricultural exports fall are also; some of agricultural goods are used as intermediate, which will be processed as the processed agricultural or agro-industry goods in order to preserve or add value to those original ones, hence the values of agro-industry output and export increased while the value of agricultural exports decreased. And because of the, still, high tariff on agricultural goods of EU in SIM2, the productions change to agro-industry one as it faces the lower tariffs.

Besides, the drops of agricultural exports derived from the change in major export destination that shift from ASEAN member countries and others to EU due to the privileges provided by FTA, and this decreased amounts that export to ASEAN and other countries are greatly than the increased amounts that export to EU. So, the total exports of agricultural goods decreased. However, these decrements are less when there are the tariff barriers on EU's boarder. Generally speaking, if there are the barriers to enter the EU's markets, the direction of exports will change to other destinations.

And the most export sector is technology intensive manufacture and this sector is still the most export sector after the experiments of tariff eliminations. However, its change does not increase as much as agro-industry one, because the starting tariffs already low (Ministry of Commerce, 2009), therefore, there is a little

change when applied the free trade conditions. Moreover, the factors of production and outputs of this sector are the most ones (apart from services, which is not considered in this study), which are concurrently to the values of export.

With regards to imports, the total imports change positively and mostly in labor intensive manufacturing sector. However, the sector that imports from EU the most is technology intensive manufacturing one.

Even both of the most export and import is the same sector, technology intensive manufacturing one, but the particular products are different. So the increased in production factors and outputs of this sector is on the products that produced for export.

As far as the agricultural sector is being concerned, the import of this sector from the EU has significantly increased. The change of agricultural imports in simulation one, which the tariffs were eliminated, has shown the great amounts, while the agricultural imports in simulation two, which the tariffs were kept, has only a little change. Due to the original tariffs on agricultural goods that are too high, thus when they are abolished, the goods flood into the market.

With respect to the output of Thailand, the values increase from 154,109.51 million US Dollars to 157,143.96 million US Dollars (1.97 percent) in the first trade condition and to 157,103.24 million US Dollars (1.94 percent) in the second one. The increments of the value of output, which composed of domestic sales and exports, can be explained by increment of the export values.

It is commonly that if the outputs increase, the inputs must increase as well. The total production factors increased 3.39 and 3.33 percent in simulation one and two respectively. The most increased in productions is agro-industry sector, which is in line with those outputs of this sector that increased the most.

From the experimental results under these two different trade conditions, most of the interesting dependent variables have changed positively. Though the consequences derived from the Free Trade Agreements of EU and ASEAN signify the good conditions, but these empirical results are reflected only from the elimination of one barrier, tariff.

As regarding to the non-tariff barriers (NTB) strategies of the European Union, they are other important obstacles to Thailand's trades in terms of the increasing in costs of product standardization or the decreasing in amounts of

exports; such as Pets and Animal Welfare, Sanitary and Phytosanitary Measures, Food Safety Policy, Labeling, and Directive on Waste Electrical and Electronic Equipment. Thailand has to pay much more attentions to these difficulties as well since these non-tariff barriers are becoming the most essential strategies instead of the tariff ones.

The results of the quantitative study are quite in line with those of the qualitative one. Such as the raise of exports, the welfare and utility gain, the floods of imported goods, and the change of production factors.

Nevertheless, the trades of this study's main interested sector, agricultural, do not result as expected. The agricultural exports decreased because Thailand sales much less to ASEAN member and other countries, also these agricultural products are distributed domestically than exported. And most of all, these agricultural goods are transferred to the processed ones (agro-industry goods).

However, these studies might not be that exact, due to the current global economics situation and trade levels which are seriously falling, also the negotiations of the potential EU and ASEAN Free Trade Agreements which is currently being concerned to suspend or change the form of the co operations (updated in March, 2009).

2. The Comparisons of Other Studies

As mentioned in the literature review in Chapter III, there are several FTA studies, particularly the studies of EU-ASEAN FTA. These studies of EU-ASEAN FTA are "Chance & Challenge of Industrial Sector towards ASEAN-EU FTA" which composed by Thai Chamber of Commerce and Board of Trade of Thailand (2007) and "Study on ASEAN-EU FTA Impact on Thailand and Thailand's Strategy: Costs and Benefits of an FTA to Thailand" by Hunton & Williams and Capital Trade Incorporated (2008).

The first study has analyzed qualitatively the chances and challenges of EU-ASEAN FTA via the statistic data. The opportunities from EU-ASEAN FTA that this study has described are the opportunity to enter to EU market, the maintenance of the competition capability since there are the competitors of other EU FTA's partners and other countries that are provided the privileges of GSP, and more investments in industrial sector of Thailand. This study also provided the recommendations for Thai industries that the producers should standardize and make different to their goods.

This study's qualitative part and the study of Thai Chamber of Commerce and Board of Trade of Thailand are quite similar in terms of the expectations to penetrate the EU market, the more expected investments and exports particularly in industrial sector.

And another work of Hunton & Williams and Capital Trade Incorporated which analyzed qualitatively with the comparative data of various FTAs between the EU and other partners; Switzerland, Chile, Mexico, and South Africa. And the quantitative analysis part which employed GTAP models of two simulations; in the medium-run (1-3 years) and long-run (5-10 years), as an instrument and aggregated 22 sectors and 5 factors of production.

The variables interested in the paper are GDP, export and import amounts, fundamental production factors and trends of international trade. As regarding to the trades of Thailand, exports will increase especially in rice, meat, textile, footwear, processed food, and vehicle. And the prices of import goods will decrease but in the long-run, these agreements will lead to the higher price. As well, the welfare of Thailand will increase; in simulation one, welfare gain is driven by terms of trade effect and in simulation two, welfare gain is derived from investment and reallocation

of factors. With regards to GDP, the GDP of Thailand will increase in both scenario but increase the most in the long-run.

This paper and the study of Hunton & Williams and Capital Trade Incorporated are different in terms of the scenarios simulated via GTAP; this study provided the conditions of the tariff eliminations on the different sectors in the certain time, while the study of Hunton & Williams and Capital Trade Incorporated provided the same conditions of tariff eliminations in the different periods.

But these studies are quite similar in terms of some important indicators analyzed via GTAP models. Such as the increment of GDP, the raises of exports and import, welfare gain, the reallocation of production factors, and the increased output overall. But some particularly results and amounts are different. Such as the outputs and sales of technology intensive manufacturing goods, especially electronics goods, in Hunton & Williams and Capital Trade Incorporated's study that decreased from the reallocation of factors that moved to the increased in export sectors like rice, meat, textile and footwear, but the outputs and sales of this sector are increased in this study.

3. Policy Recommendations

With respect to the policy implications according to this study, Thailand and other ASEAN member countries have to propose the framework of EU-ASEAN FTA with the Common Standards of Non-Tariff Barriers, in order to make the right understanding between the European Union, ASEAN, and people of the nations about the standard of the measures, as well as the details of those measures which should be fair for both parties.

Moreover, this favored trade agreements will give advantages to our neighbors, the ASEAN member countries, as well. Generally speaking, these advantages from EU, the elimination of tariffs, could make the more competitiveness to other ASEAN member countries too and these countries have the most of export goods likely or similarly to Thailand's, and also cheaper in some products. Hence, they will be the more efficient and important competitors of Thailand. Thai government should persuade the local producers to standardize and make different to their products with the technical supports in order to

compete with other competitors, the other ASEAN member countries or the EU themselves.

Besides, the government needs to have the policies to assist those local producers who lose the sales from the potential agreements and who cannot afford the altered costs from the improvement and development of their products with the technical assistants or the provided information about the important markets, particularly the EU's.

And from the study, the most increased in exports sector is agro-industry one, hence the government should pay much more attentions to this sector as well. Such as, encourages the producers to improve their products by provide the important information of the preferential trade partner's, the EU, markets, and the barriers to trade.

More than that, the marketing is also important. Even the products of Thailand are as standard as the EU's ones, but they might not be competitive if there are no information or advertisements provide to the customers. The government should help them out to find the best solutions for the products marketing.

Conclusively, the first priority of the policy implication is the assistances for the inefficient producers, such as the technical assistant and information support from the relevant units of the Ministry of Commerce or the Ministry of Foreign Affairs. Then, the assistances for trade promotions such as the road shows of local efficient products or the information of Thai products provide for the foreign customers.

However, the government should also follow the results of the preferential FTA and the policy implications in the long-run, in order to assess the effectiveness of the applied policy and to provide the more effective and suitable policies to pursue the best consequences of the Free Trade Agreements for the country.

4. Limitations and Suggestions for Future Research

The very important limitation in this study is the limitation of GTAP to assess the effects of NTB. Since the models can predict only on the quantitative side, while those non-tariff measures are getting more important and affecting widely on Thai products. And this study did not cover or detail in the particular measures, so it would be more complete if such barriers are concerned certainly in the future studies.

Moreover, the category of products that were classified in this thesis are too wide, the more in-depth product classification would signify and reflect the more accurate results. As well as the up-to-date economics and surrounding situation, such as the world crisis or the country's condition which are relevant to or can affect the international trades or important economic indicators, which should be added in the studies in order to assess properly the impacts of the FTA.

References

ASEAN Secretariat. China's Membership in the World Trade Organization and Its Implication for ASEAN, 2000.

ASEAN Secretariat. Overview: Association of Southeast Asian Nations [online], 2007. Available from: http://www.aseansec.org/64.htm [28 May 2008]

Brockmeier, Martina. A Graphic Exposition of the GTAP Model [Online], 2001, Available from: https://www.gtap.agecon.purdue.edu/resources/download-/181.pdf [21 June 2008]

Centre for International Economics. The Australia – Thailand Free Trade Agreement: economic effects, Canberra, 2004.

European Commission. Bilateral Trade Relations [online], 2008. Available from: http://ec.europa.eu/trade/issues/bilateral/regions/asem/index_en.htm [28 May 2008]

European Commission. Waste Electrical and Electronic Equipment [online], 2009. Available from: http://ec.europa.eu/environment/waste/weee/index_en.htm [28 May 2008]

Hunton & Williams and Capital Trade Incorporated. Study on ASEAN-EU FTA Impact on Thailand and Thailand's Strategy: Costs and Benefits of an FTA to Thailand, 2008.

Ministry of Foreign Affairs, Thailand -US FTA Task Force. An effect of Thailand-USA FTA [online], n.d, Available from: http://www.mfa.go.th-/tusfta/article/1_gtap-thai-us_overall.pdf [22 June 2008]

Office of Agricultural Affairs, European Union. The Exports of Agricultural and Food Products to the EU Report [online], 2009. Available from: http://news.thaieurope.net/content/view/3257/211/ [1 April 2009]

Pawin Talerngsri. Officer of the Ministry of Commerce of Thailand. Interview, 20 March 2009.

Pichet Tonitiwonge. Managing Director of Manus Rice Trading Co, Ltd. Interview, 28 March 2009.

Piti Srisangnam. The Effect of ASEAN Economic Integration with the Special Reference to the Thai Economy, Doctoral Dissertation, Department of Economics, University of Melbourne, 2007.

Rudloff, B and Simons, J. Comparing EU free trade agreements: Sanitary and Phytosanitary Standards [online], 2004. Available from: http://www.bilaterals.org/article.php3?id_article=108 [2 April 2009]

Somprawin Manprasert. ASEAN-China FTA Studies, Bangkok: Chulalongkorn University, 2008.

Supak Prongtura. Officer of the Ministry of Foreign Affairs of Thailand. Interview, 27 March 2009.

Thai Chamber of Commerce and Board of Trade of Thailand. Chance & Challenge of Industrial Sector towards ASEAN-EU FTA, Bangkok, 2007.

Thai Ministry of Commerce. ASEAN-EU Negotiating Framework, Bangkok, 2007.

Walmsley, Terrie L. Long-Run Simulations with GTAP: Illustrative results from APEC Trade Liberalization, Victoria: Monash University, 1998.

World Trade Organization. Thailand and the WTO: Member Information [online], 2007. Available from: http://www.wto.org/english/theWTO_e/countries_e/thailand_e.htm [15 June 2008]

Wuttiya Saraithong. Professor of the Faculty of Economics, Kasetsart University, Interview, 23 March 2009.

Bibliography

Appleyard, Dennis R et al. International Economics: Fifth edition, New York: McGraw-Hill, 2006.

Breslin, Shaun et al. New Regionalisms in the Global Political Economy: Theories and Cases, Warwick Studies in Globalisation, New York: Routledge, 2002.

Davidson, Pual J. The Legal Framework for International Economic Relations: ASEAN and Canada, Singapore: Stamford Press Pte Ltd, 1997.

Dent, Christopher M. The European Union and East Asia: An Economic Relationship, London: Routledge, 1999.

Dent, Christopher M. New Free Trade Agreement in the Asia-Pacific, New York: Palgrave Macmillan, 2006.

HWL (Thailand) Ltd. Study of Consequences from Entering into an FTA with EFTA, Bangkok, 2004.

Kumar, Nagesh. Towards an Asian Economic Community: Vision of a New Asia. New Delhi: RIS and Institute of Southeast Asian Studies Singapore, 2004.

Lahin, Sajal. Regionalism and Globalisation: Theory and Practices, Routledge Contemporary Economic Policy Issues, New York: Routledge, 2001.

McDougall, R. A New Regional Household Demand System for GTAP, GTAP Working Paper, vol.14, 2000.

Supaporn Rungruang. Economic Determinants of Success of Free Trade Agreements Formation, Bangkok, 2005.

Biography

Miss Nalina Chaiya, was born on 8 September, 1984, in Bangkok. She earned a bachelor's degree in Economics from the Faculty of Economics, Kasetsart University, in 2007. She has pursued her Master's Degree in Master of Arts in European Studies, Interdisciplinary Department of European Studies, Chulalongkorn University in the same year.

In 2001, she had experience abroad with American Funds Service (AFS) exchange program to Italy for a year. She was undertaken two months of experience at Research and Academics Section, Tourism Authority of Thailand (TAT) in 2005.