## **Prospects for an East Asia Free Trade Area**

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#### **Abstract**

This paper examines the anticipated effects of the formation of an East Asia Free Trade Area (EAFTA). Employing a multi-region and multi-sector computable general equilibrium model, GTAP, we find that most East Asian countries will benefit from the EAFTA while EU and NAFTA will suffer from it in terms of their real GDP and social welfare. However, many difficulties need to be tackled by East Asia countries to establish the EAFTA. Policy implications of our empirical results for East Asian countries, EU and NAFTA discussed. Possible interactions between major regional trade organizations and the prospects for world trade system are also investigated.

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#### 1. Introduction

In recent years, economic globalization has been a main stream around the world. However, multilateral negotiation under the World Trade Organization (WTO) is complex and slow in contrast to the development of regional cooperation and bilateral free trade agreements. Because of effectiveness of regional negotiation, many countries shift from multilateralism to regionalism. There are more than 462 regional trade agreements (RTAs) on earth today.

East Asia includes some of the world's most export dependent economies. They are deeply dependent on the EU and United States markets. In contrast to Europe and the Americas, however, there had been no FTAs in East Asia before 1990s. First FTA in East Asia is established by ASEAN (i.e., Association of South East Asian [ASEAN]), and came into force in January 1993. The driving forces behind recent regionalism in East Asia are the 1997–1998 Asian financial crisis, the dismal outlook for the Doha Development Round, the economic rise of the People's Republic of China and India, and the global financial crisis. ASEAN-China FTA has been implemented in 2010, and it is expected that ASEAN+6 or even EAFTA (i.e., East Asia Free Trade Area [EAFTA]) will come true in the

future. If the EAFTA is established, it will become one of the major regional trade organizations in the world.

The purpose of this paper is to examine the effects of the formation of the EAFTA with a multi-regional computable general equilibrium model. Specifically, the following issues will be addressed in this paper:

- What are the effects of the EAFTA on East Asian countries?
- What are the effects of the EAFTA on other trade blocks in the world,
   such as EU and NAFTA?
- What are the policy implications of these empirical results for East
   Asian countries, or EU and NAFTA as well?
- What would be the difficulties for the EAFTA to be established?
- What would be interactions between East Asian countries, or EU and NAFTA in the future?

The remainder of this paper is organized as follows. The recent trade relationship and the development of FTAs in East Asia are reviewed in the next section. In the third section, we present the structure of our empirical model. The penultimate section discusses simulation results, policy analysis and difficulties. Conclusions are given in the final section.

## 2. Recent trend of trade relationship and FTA movements in East Asia

## 2.1 Trade relationship in East Asia

According to Chu's research (2004), most economies in East Asia have become more dependent on external trade since the 1990s. Table I presents the trade dependence of East Asian countries, which is measured by dividing the sum of import and export by GDP. Singapore has the highest trade dependence in 2003 among East Asian countries and Japan has the lowest trade dependence. It also reveals that the trade dependence of China and ASEAN have increased over time since 1993.

Table I East Asia's Trade Dependence: 1993-2003

										Ur	nits: %
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Taiwan	72.13	72.98	81.11	78.04	81.14	80.51	80.67	92.98	81.6	86.3	94.81
China	32.2	43.12	39.79	35.21	35.86	33.91	35.96	43.22	42.61	47.85	58.60
Japan	13.64	13.77	14.47	15.9	17.28	16.57	15.91	17.62	17.54	18.36	19.18
Korea	44.44	46.6	50.29	49.46	53.46	64.17	57.96	64.48	64.41	56.97	63.87
Brunei	140.27	140.08	125.76	175.69	139.64	163.69	110.49	123.13	132.32	135.27	143.93
Cambodia	30.98	46.09	61.68	50.66	58.87	64.57	79.54	83.89	79.96	111.13	124.19
Indonesia	45.56	43.49	45.61	46.98	51.51	107.13	70.44	70.97	78.75	56.46	59.60
Laos	50.63	28.09	50.25	54.2	34.16	78.96	86.31	62.17	65.57	66.35	-
Malaysia	147.29	168.15	159.7	165.36	168.86	202.17	201.64	213.29	195.29	192.5	226.02
Myanmar	67.85	58.24	66.38	76.25	84.54	52.17	40.17	41.73	68.42	63.02	66.22
Philippines	56.39	58.78	63.47	65.36	96.25	115.6	94.16	126.32	107.74	99.41	119.58
Singapore	282.37	289.97	298.01	286.51	278.81	265.73	283.07	302.09	285.34	282.9	307.85
Thailand	70.74	68.77	80.43	73.39	82.74	97.81	97.44	103.79	113.78	108.77	112.64
Vietnam	57.41	66.61	71.8	80.7	83.85	82.73	87.84	106.41	107.79	114.88	130.52

Figure I illustrates Taiwan's trade relationship with its major trade partners. It is obvious that it has the highest trade dependence on China which accounts for about 21.1% of Taiwan's total trade. In addition, its trade with ASEAN has also increased since 2000. East Asia has accounted for more than 50% after 2002.

Figure I Taiwan's trade dependence with East Asia



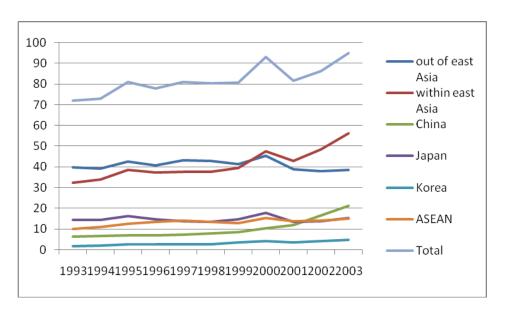


Figure II illustrates China's relationship with its major trade partners. It still has the higher trade dependence with countries out of East Asia than those within East Asia. Within East Asia, China has the highest trade dependence on Japan, which accounts for about 9.47% of its total trade.

Figure II China's trade dependence with East Asia

Units: %

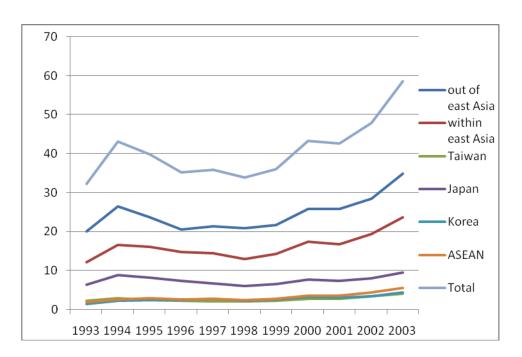
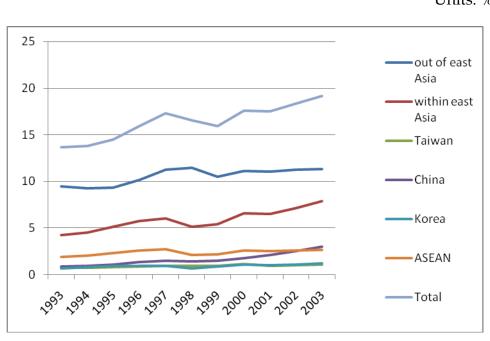


Figure III shows Japan's relationship with its major trade partners in East Asia. Japan still has higher trade dependence on counties out of East Asia than those within East Asia. However, the importance of East Asia has been increasing over time. Within East Asia, China instead of ASEAN has become Japan's largest trade partner after 2002.

Figure III Japan's trade dependence with East Asia

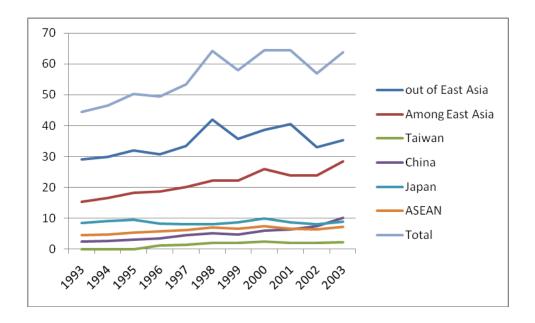


Units: %

Figure IV presents Korea's trade relationship with its major trade partners. China has become Korea's largest trade partner, which accounts for 10.13% of its total trade since 2003. Before 2003, Korea had a closer trade relationship with Japan.

Figure IV Korea's trade dependence with East Asia

Units: %



Data Source: Chu, 2004

To sum up, trade interdependence in East Asia has grown during the period 1993-2003. China replaces Japan and becomes the biggest trade partner of other Asian countries. But the trade interdependence among East Asia is still too low. Trade interdependence among ASEAN is 21.91%. In contrast, trade interdependence among EU is 50% and trade interdependence among NAFTA is 40%.

## 2.2 The history of regional integration in East Asia

Currently, the world has set up several regional cooperative organizations, among which EU and NAFTA are representative organizations. East Asia countries are also gradually developing their cooperative organization. Since 1967, East Asia has organized ASEAN, it composed of Indonesia, Thailand, and Singapore and so on, total five countries have joined in to promote regional economic and trade exchanges. Tables II and III present the history of regional integration in East Asia:

Table II Overview on regional integration in East Asia

Year	Important development
1967	ASEAN formally established.
1971	ASEAN issued a peaceful, free and neutral zone (ZOPFAN)
	Declaration.
1976	"ASEAN Declaration on Friendship and Alliance" and
	"Treaty of Amity and Cooperation" are declared by first East Asia
	summit(EAS)
1977	Agreement on "preferential trade arrangements for the Agreement"
	(ASEAN-PTA)

1992	ASEAN summit set up an "ASEAN Free Trade Area" (AFTA) concept
	and start the process in the following year.
1994	Established the "ASEAN Regional Forum" (ARF)
1995	ASEAN Leaders signed the "Convention on nuclear-free zone in
	Southeast Asia" (SAENWFZ).
1998	Signing the "Framework Agreement on ASEAN Investment Area" is
	expected to formally established in 2010.
2002	"ASEAN Economic Community" (AEC) concept proposed by Goh
	Chok Tong.
	"ASEAN Free Trade Area"(AFTA) established.
2004	ASEAN decided to follow the EU to establish "ASEAN Community"
	in 2020.

Table III Time ASEAN countries to join in

Year	Content
1967/8	Indonesia, Malaysia, Singapore, Philippines and Thailand five
	foreign ministers met in Bangkok, was released on August 8,
	"Bangkok Declaration" formally announced the establishment of
	ASEAN.
1984/1	Brunei joined ASEAN after independence, thus, ASEAN had six
	members. Since then four other Southeast Asian countries to join
	ASEAN, the six original ASEAN members as members or old
	members of ASEAN.
1995/7	Vietnam joined ASEAN.
1997/7	Myanmar joined ASEAN.
1997/7	Laos joined ASEAN.
1999/4	Cambodia joined ASEAN.
2006/7	East Timor applies to join ASEAN.
	Papua New Guinea is another observer of ASEAN.

Data Source: Tsai, 2009

Table IV shows the FTA status in East Asia. Due to the economic globalization wave around the world, the number of FTAs in this region has increased considerably. This means that the relationships between East Asian countries become much closer than before. It seems that this region will move towards further economic integration in the near future.

Figure V illustrates the location of ASEAN members on the map (the yellow one). And the observer (Papua New Guinea) and the candidate (East Timor) are mark as dark color.

Table IV Matrix of bilateral FTAs in East Asia

a.

	Brunei Darussalam	Indonesia	Malaysia	Philippines	Singapore	Thailand	Cambodia	Lao People's Democratic Republic	Myanmar	Viet Nam
			8					//		ξ.\.
Brunei Darussalam			0		0	8 3		1		C.
Indonesia								\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		(V
Malaysia					:					
Philippines						1				30
Singapore								1		0.
Thailand								1		
Cambodia										
Lao People's Democratic Republic						I.				
Myanmar			9					1		
Viet Nam					1					
People's Republic of China					S	П				
Japan		1	E	1	1	T.				S
Republic of Korea			P	80	. 1	Р		,		(A) (A) (A)
Australia		Р	N		1					0.
New Zealand			a a		. 1			8		Te.
India		Р	N		i i	N				

b.

	People's Republic of China	Japan	Republic of Korea	Australia	New Zealand	India	I+S+N Total
Brunei Darussalam		1					1
Indonesia		1		Р		Р	1
Malaysia		1	Р	N	N	N	4
Philippines		1					1
Singapore	S	J	. 1	. 1	. 1	1	5
Thailand	Ī	1	Р	1		N	5
Cambodia							0
Lao People's Democratic Republic							1
Myanmar					17		0
Viet Nam		- 1			3 3		1
People's Republic of China			Р	N		Р	4
Japan			N			N	7
Republic of Korea	Р		<u> </u>		Р	N	2
Australia	N	N	N		1	Р	7
New Zealand	1		N			Р	4
India	Р	N	N	Р	N		6

I = implemented, S = signed/concluded, N = under negotiation, P = proposed/under study/consultation.

Data Source: Chia, 2010

Figure V Location of ASEAN members



# 2.3 The possibilities of East Asian economic integration

As Lee (2004) indicates, good economic basis, good relationships of trade between countries, growing trade dependence ratio and active

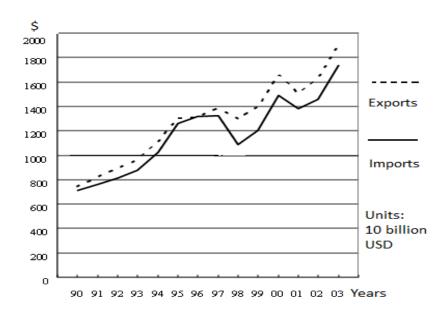
attitude to economic integration are the advantages of economic integration in East Asia.

Table V GDP Growth Rate in East Asia

	2006	2007	2008	2009	2010 projected				
	Annual GDP Growth								
Indonesia	5.5	6.3	6.1	3.6	5.0				
Malaysia	5.8	6.3	4.6	(0.2)	4.4				
Philippines	5.4	7.2	4.6	2.5	3.5				
Singapore	8.4	7.8	1.1	(5.0)	3.0				
Thailand	5.2	4.9	2.6	(2.0)	3.0				
Viet Nam	8.2	8.5	6.2	4.5	6.2				
Southeast Asia	6.0	6.4	4.3	0.7	4.2				
People's Republic of China	11.6	13.0	9.0	7.0	8.0				
Hong Kong, China	7.0	6.4	2.5	(2.0)	3.0				
Republic of Korea	5.1	5.0	2.5	(3.0)	4.0				
India	9.7	9.0	7.1	5.0	6.5				

Data Source: ADBI No.191

Table VI Intra- Regional Trade in East Asia (1990-2003)



Data Source: WTO

JETRO (2009) stated that the intra-regional trade in ASIA, EU and NAFTA become much closer than before separately, and it is still growing.

Hence, we can infer that the world will be divided into three main groups, which are EU, NAFTA and EAFTA.

Table VII Intra- regional trade within major regions of the world

									(%
		1980	1990	1995	2000	2005	2006	2007	2008
Asia	ASEAN+6 (adjusted for re- exports)	=	-	-	41.9	44.1	43.2	43.1	44.2
	ASEAN+6	33.2	33.0	40.3	40.6	43.1	42.4	42.3	43.5
	ASEAN+3	28.9	28.6	36.9	37.4	39.1	38.2	37.8	38.5
	ASEAN	15.9	17.0	21.0	22.7	24.9	24.9	25.0	26.7
	ASEAN+China	14.9	15.8	19.1	20.1	20.7	20.7	20.6	21.7
	ASEAN+India	15.1	16.5	20.7	22.3	23.9	23.9	23.9	25.4
	ASEAN+Japan	23.4	21.7	27.4	26.4	26.0	25.4	25.6	27.2
	ASEAN+6+Taiwan	35.1	36.2	43.7	44.9	47.7	46.9	46.6	47.3
	ASEAN+3+Taiwan	30.9	32.0	40.4	41.9	44.1	43.1	42.5	42.5
	ASEAN+Taiwan	15.8	17.3	21.7	23.8	25.0	25.1	25.2	26.6
Americas	NAFTA	33.2	37.2	42.0	46.8	43.0	42.0	41.1	39.9
Europe	EU27	57.3	65.4	65.1	64.6	64.2	64.6	65.1	63.9
APEC (ad	ljusted for re-exports)	-	-	-	71.4	68.2	67.1	65.8	64.1
APEC		57.5	67.5	71.6	72.3	69.3	68.3	67.0	65.2
TPP		7.6	8.5	8.9	7.2	6.9	7.1	7.0	7.1

Data Sources: JETRO, 2009

## 2.4 The characters of East Asian economic integration

Chen (2007) indicates that there are three main characters of East Asian economic integration, namely, division of labors, China's domino effect and political factors. Owing to the degree of economic development, countries can exchange different production factors through commodity trade with each other. For example, labor in China is exchanged for capital in Japan. Besides, the rise of China also prompts many countries to follow

China's step to become more active in negotiating FTAs than before. Last, many of East Asian countries use FTA as a tool for political purposes such as getting controlling power or diplomatic considerations.

## 2.5 ASEAN+ 3 Agreements

As Chia (2010) indicated, in Northeast Asia, considering the high concentration of intra-regional trade among China, Japan, and South Korea, and the complementarities of their industrial structure and geographic factor, the ASEAN+3 agreements may cause Asia area become a strong economic integrated power and the world will be composed with three economic regions- EAFTA, EU, NAFTA.

However, there are some problems should be solved. One is that Japan and Korea are still afraid that products imported from China will cause too much damage to their domestic industries. The other is that they do not want to rely on China's economy too much.

### 3. Empirical Model

### 3.1 Model Specification

GTAP (i.e., Global Trade Analysis Project [GTAP]) model is used to examine the effects of the EAFTA. As a global quantitative analysis of international policy issues, this model builds up one or more country's (region) sub-model, describing their output, consumption and government's expenditures (see Hertel, 1999). With the relationship between international trades, each sub-model will be linked into a multi-country multi-sector general equilibrium model. Employing this model, you can also find out the effects of a trade policy on national production, import and export, commodity prices, supply and demand factors, factor remuneration, GDP and the level of change in social welfare. Since the formation of FTA will have complex effects on different countries, different sectors and different agents, this model is a good economic tool to deal with this issue.

#### Scenarios

Two types of simulations are discussed in the following.

- Type 1: Effects of EAFTA on East Asia member countries
- Type 2: Effects of EAFTA on EU and NAFTA

For Type 1 simulation, the countries are grouped into the following nine regions: Australia (aus), New Zealand (nzl), China, Hong Kong (hk), Japan (jpn), Korea (kor), Taiwan (twn), ASEAN and the rest of world (ROW). And for Type 2 simulation, the countries are grouped into foure regions, namely, EAFTA, EU, NAFTA and the rest of world (ROW). From

these two types we can easily find that whether the formation of EAFTA will benefit Asian countries and other countries or not.

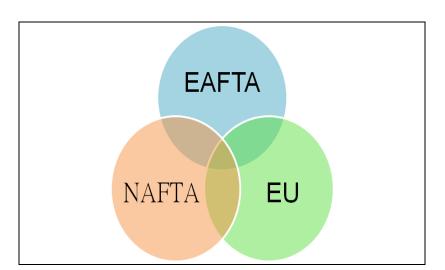


Figure VI Three main economic organizations

## 4. Simulation Results and Policy Analysis

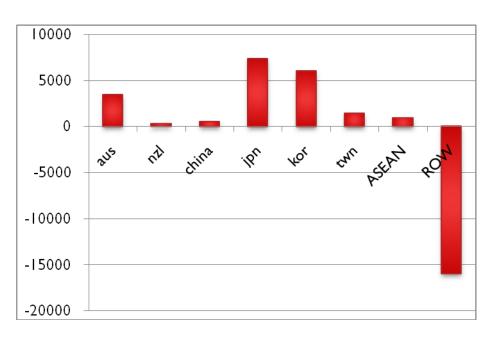
### 4.1 Internal effects

#### **Simulation Results**

Figure VII shows the changes in social welfare resulting from the formation of the EAFTA in which all tariffs among member countries are reduced to be zero. Japan may get the highest gains in social welfare which amount to 7,347 million dollars. Korea may get the second high gains which are 5,962 million dollars. For the area in the rest of the world, i.e., non-member countries, there is a strong negative growth.

Figure VIII presents the changes in real GDP after the formation of the EAFTA. It is obvious that Korea enjoys the largest increase 1.089%, which might be attributed to fact that Korea's relative high tariffs enable it to benefit more from better resource reallocation after tariff reduction. For Japan, maybe because Japan's GDP was relatively high before the formation of the EAFTA, the extent for its real GDP to change is limited.

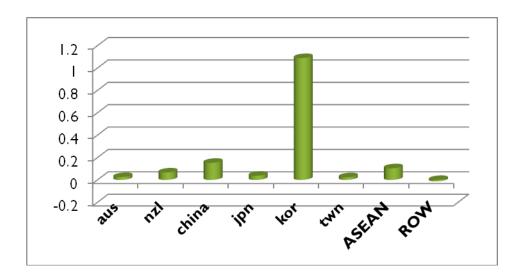
Figure VIII Change of social welfare in East Asia



Units: million dollars

Figure IX Change in real GDP in East Asia

Units: %



## **Policy Analysis**

Empirical results mentioned above reveal that the formation of the EAFTA is good for East Asian countries. Next, we are going to analyze political feasibility East Asian major economies, such as China, Japan, South Korea and ASEAN, to support the formation of the FTA.

### China

After reform and opening in 1978, the economy in China has grown rapidly, including GDP, the gross value of trade, and attracting plenty of FDI (Foreign Direct Investment). In addition, China has active attitude in signing FTA and developing the regional cooperation to deepen the relationship with other countries in East Asia. With rapid

and influential growth, China also wants to play a leading role in East Asia.

## Japan

The attitude of Japan was passive before, after the sharp rise of china, the situation has been changed. Fearing of the rise of china will harm the domestic economy and cause crowding- out effect, Japan has begun to sign the FTA actively. However, one of the huge problems is agriculture industry. Protecting the domestic agriculture industry let Japan face difficulties when negotiating the FTA. Furthermore, because the rise of China is abrupt and evident, to cooperate or to compete with China is an important issue that Japan has to consider it carefully.

### **South Korea**

South Korea also has active attitude in signing the FTA, and it also devoted to consolidate the domestic economic structure and attract FDI. However, South Korea also faces some pressure from domestic market when negotiating the FTA, such as the food processing industry. Another important issue waiting to solve is political security. Uncertain and tight situation with North Korea will obstruct the economic development more or less.

#### **ASEAN**

The purpose of ASEAN is to establish an influential regional economy to rival EU and NAFTA. In recent years, ASEAN negotiates and purposes the FTA with other East Asian countries actively. In 2010, the FTA of ASEAN+ China has been implemented. It is truly a breakthrough of East Asian economic integration.

#### Difficulties

After analyzing the policies of East Asia economies, we know the countries are moving towards to economic integration. However, there are a lot of difficulties hinder the progress of the integration. First, the pressure from domestic industries may preclude countries signing the FTA. Protectionism still exists in many countries, and it usually becomes an obstacle when negotiating. Second, there are still many trade barriers have not been eliminated, including tariff and non-tariff barriers. East Asian countries will use this way to revenge on each other sometimes. The last but not the least, political problems and historical complex are always the toughest difficulty waiting to solve. Although EU has the same problem, most of levels of their economic development are pretty high; unlike EU, the high difference in economic development is also a

significant problem. Nevertheless, we believe that the huge benefit can obtain from economic integration will motivate East Asian countries to across these barriers and difficulties.

#### 4.2 External effects

We use GTAP model to examine the external effect if the EAFTA is formed. In other words, we are going to analyze that whether EU and NAFTA will suffer from the economic integration or not. Besides, we also analyze the policy of EU and NAFTA and the difficulties.

#### **Simulation Results**

The following diagram shows the impact on the world's economic groups. The first diagram is the change of social welfare among the world's economic groups in million dollars. EAFTA represents East Asia Free Trade Area. It's no doubt that if all the tariffs equal to zero, EAFTA will get the highest benefit. For NAFTA, there is a strong negative growth which is 6906 million dollars. Maybe is because NAFTA has a higher trade dependence with Asia compared to EU.

Figure X Change of social welfare among world

Units: million dollars

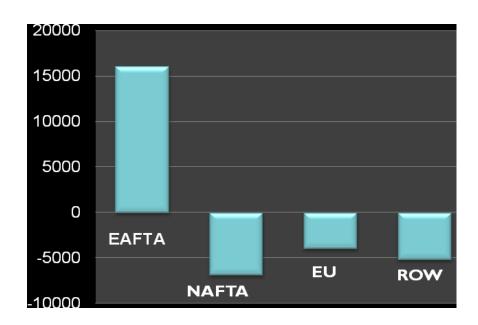
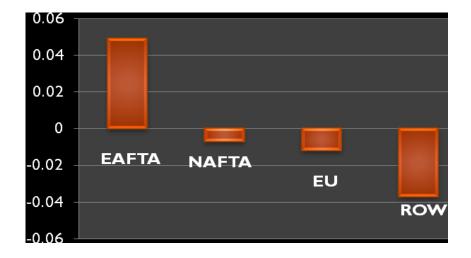


Figure XI Change of quarter GDP among world

Units: %



The EAFTA still gets better after integration. NAFTA's GDP is higher than EU. So maybe that is one of the reasons that the change in percentage won't be so big on NAFTA compared to EU.

### **Policy Analysis**

### **Current situation of EU and NAFTA**

Attitude of EU and NAFTA to Asia economy has changed to be more active recently. Following are some main reasons. First, FTAs grows in Asia countries. Second, trade diversion effect .Third, Doha round has come to a standstill.

EU announced to re-negotiate with specific ASEAN countries on December 22 2009 and expected to sign a completed FTA with ASEAN. Except ASEAN, EU also negotiated with Korea and India in order to reach the goal, Global Europe, set in EU Trade Policy White Paper. The purpose of the Global Europe strategy is to reinforce the EU's competitiveness by opening up more markets, creating opportunities for European business, ensuring that the EU gets a "fair share" of the growth of emerging markets.

## Trade relation of EU and ASEAN

Now ASEAN is the EU's third largest trading partner organization, after the United States and China, in 2008 bilateral trade volume in goods and services is 1,750 billion Euros. Among them, Singapore is the most important trading partner of the EU, the bilateral trade volume between them has reached about 550 billion Euros. However, EU is not so interested in ASEAN before. One of reasons EU change its attitude is the China-ASEAN FTA. The total population of free trade area (about 19 million) accounted for about one-third of the world, GDP (about 6 trillion dollars) is about ninth of the world, the trade totaling 4.5 trillion dollars, the world's third largest free trade area, second only to the EU and NAFTA. Now EU Commission takes the measures of case-by-case for building blocks in order to reach their final goal, which is signing a completed FTA with ASEAN.

#### Trade relation of the U.S. and ASEAN

For America, because China, Japan and South Korea are its three largest foreign trade partners if EAFTA comes to realize, it will get much harm. Compare with the EU's movement, the US signs FTAs with individual countries and acts through WTO multilateral negotiations together. Its goal is using APEC and NAFTA to hold up EU.

The U.S. led NAFTA to be set up in 1993, at that time, the U.S. emphasized on Japan's leading role in Asia, which is called "flying geese theory" and the potential of East Asia to rival EU, so the U.S. actively promoted the NAFTA

and APEC. However, with the weaken of Japan's economic power, East Asia, Europe Union, and East Asia gradually replace America, Europe, and Japan. Because of China-ASEAN FTA and the improvement of EU and Asia, China become much powerful in Asian economy now, the influence of U.S.in Asia may be lowered.

## 4.3 Policy implications for Taiwan

There are only five diplomatic allies sign the FTAs with Taiwan, which are Panama, Guatemala, Nicaragua, El Salvador, and Honduras. These countries account for Taiwan's total foreign trade volume 0.167% in 2008. Taiwan authorities should take the measures of trade enhancement with other powerful countries, such as Japan, EU as soon as possible.

## 4.4 Prospects for the future

If these countries in East Asia can solve the difficulties we mention above, we expect that it will become a free trade area owing to the benefit it may get and also become an influential group to rival EU and NAFTA.

#### 4.5 Difficulties

The main reason is that the domestic agricultural and industrial interest groups may oppose. Without doubt, agriculture is the toughest issue. If the government does not help them or not enough, they will face the obstacles

directly, part of industries get much harm than others. Beside, for EU, it is hard that 27 member countries reach consensus. Each country just thinks about itself so the barrier will not be eliminated easily. Human rights and environmental protection problems about China commodity also cannot be ignored. The last reason is the pressure of domestic politics; politics problem cannot be solved in a short time.

#### 5. Conclusion

Economic integration is an irresistible trend. Signing FTA has become more and more prevailing around the world. This paper applies a computable general equilibrium model to investigate the effects of the formation of the EAFTA. We found that the EAFTA will benefit the countries in this region whereas it will bring about negative impacts on other regions.

The world trade may be composed of three large economic regional organizations in the future. There will be no trade barriers between member countries, but relatively high trade barriers between different regions. In the end, it is possible that all countries shift back to multilateral negotiation under the WTO and hopefully the WTO's function will be more effective than now.

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