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ASEAN-China Free Trade Area: An Assessment of Tariff Elimination Effect on Welfare

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Abstract:

This study aimed to assess the economic impact of the the establishment of the ACFTA policy by simulating trade barrier removal. In performing this analysis, we evaluated the effects of trade of member of commodities in EHP, NT, and HSL categories separately. We apply the data using a general equilibrium model (GTAP).

Results showed that the elimination of tariff and non-tariff trade barriers to product groups within NT and HSL categories had a positive impact on trade volume, economic growth, and welfare.

In general, the ACTFA is likely to have a beneficial impact on welfare in participating countries. *Singapore and China had the highest welfare increase relative to other members of ASEAN.*

Keywords: *ACFTA, Tariff –Non Tariff barriers; Computable general equilibrium*

JEL classification: *C68; F13*

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1. Introduction

Over the past decade, academics, analysts, and policy makers have viewed the impact of eliminating trade regulatory barriers as a major concern, especially in the aftermath of the agreement on comprehensive economic cooperation of the between Asian countries (ASEAN) and China. This Regional Trade Area is known as the ASEAN–China Free Trade Area (ACFTA) agreement signed on 4 November 2002.

There are several reasons why analyses on tariff barriers across sectors and regions are important. The elimination of tariff barriers on goods could bring benefits to the whole economy and to sectoral development in both parties' economies (Chirathivat, 2002). Winters (2004) asserted that tariff liberalization generally encouraged economic growth, however the source of growth was determined by the characteristics of each country, and these are often different. The liberalization of trade regulations both from domestic and overseas is driven by the belief that the regulation is detrimental to trade (Thalassinos and Politis, 2012; Thalassinos 2007; Allegret *et al.,* 2016).

In the empirical literature, there is a relatively large number of research studies in which researchers examine and assess the impact of the ACFTA on ASEAN's welfare and its trade with China. Chirathivat (2002) used the computable general equilibrium model and aggregate data taken from the Global Trade Analysis Project (GTAP). The simulation results showed that economic integration between ASEAN and China would be like to benefit both ASEAN and China.

In the more recent literature, (Park *et al.,* 2009; Kitwiwattanachaia *et al.,* 2010) yielded a similar result, indicating that ACFTA had a positive effect. However, these results differ from firm-level surveys indicating that China's competitiveness in manufacturing has a negative effect on ASEAN's export (Holst and Weiss, 2004; Tongzon, 2005; Vovchenko and Panasenkova, 2013; Vovchenko *et al.,* 2017; Boldeanu and Tache, 2016).

In the framework of the ACFTA, the implementation of tariff liberalization depend on the readiness of both parties, especially how fast the ACFTA member countries can reduce the tariff rates of globally competitive products including those which are included in the sensitive category. To push forward with the structure agreement, both ASEAN and China consent to an arrangement of conditional time table for end taxes between them into three arrangement of item classifications. The first is the fast-track category, also known as the Early Harvest Program (EHP). The second is the Normal Track (NT) program. The third is the most liberalized product categories are included in the Sensitive Track (HSL).

In view of the conflicting empirical evidence on the trade effects of regional trade agreements, the goal of our study is to provides additional empirical evidence on this issue by re-assessing the impact of the ACFTA on ASEAN's welfare and its trade with China. In performing this analysis, we evaluated the effects of trade of member of commodities in EHP, NT, and HSL categories separately. Table 1 presents liberalized sectors for China and each member country of ASEAN.

Table 1. *List of sectors to liberalize under the ACFTA agreement.*

	Country	**Liberalized Sector Description**	**Liberalization Periods**
NT			
	Indonesia	20,21,26,33,42,31,29,28,27,34,14,35,41,38,40, 39, 30, 37	0%-5% (2005); 0% (2010)
	Malaysia	33,27,28,29,35,41,38	
	Singapore	none	
	Thailand	20,28,27,29,41	
	Philippin	none	
	China	21,25,24,26,30,33,13,28,42,34,37,41,38,40,39,	
HSL			
	Indonesia	1,3,26,32,33,34,29,38,39,42	0% -50% (2005-2015)
	Malaysia	1,10,20,22,4,23,8,26,34,35,40,38,41,39,	
	Singapore	26	
	Thailand	22,4,25,8,3,1,23,21,24,26,27,34,37,38	
	Philippin	10,20,4,1,23,20,24,25,3342,27,34,38,39	
	China	3,1,23,25,21,24,26,33,30,31,27,40,38	

Source: *ASEAN Secretariat, compiled by the author.*

Unlike other studies on tariff liberalization agreements, our selection of trade sectors to be liberalized under the ACFTA did not need to be symmetrical and did not require us to assume reciprocity. As shown in Table 1, Indonesia had 10 economic sectors in the HSL, while China had 13 sectors. Indonesia and China included only five economic sectors (i.e. paddy rice, cereal grain, beverages, and tobacco product, chemical, rubber and plastic) in the HSL.

Meanwhile, both Malaysia and China agreed to liberalize the following sectors: paddy rice, processed rice, beverages, motor and its constituent sectors. Both the Philippines and China aimed to reduce their tariff to zero by end of 2015 for the following sectors: paddy rice, processed rice, food product, and chemical, rubber and plastic. Singapore only included beverage and tobacco sectors in the HSL.

Our results indicated that the elimination of tariff and non-tariff barriers to product groups within the NT and HSL categories can have a positive impact on trade volume, economic growth, and welfare. The results of the simulated elimination of tariff and non-tariff barriers on products included in the EHP, NT, and HSL categories showed an increase in trade volume in almost all countries. Thus, simulation results on the level of welfare. In general, Singapore and China had the highest increase in welfare relative to other members of ASEAN.

We have given this paper the following structure: Section 2 is the literature review. Section 3 presents the data, aggregation, and scenarios we used to estimate the economic impact of tariff exemption and non-tariff barriers. In Section 4, we present our simulation of the long term impact of tariff and non-tariff barrier removal. Section 5 provides the simulation results. Section 6 concludes.

2. Literature Review

There are some previous studies in that analyzed the prospects, opportunities, and challenges of the ASEAN-China Free Trade Area – ACFTA (Chia, 2005; Tongson, 2005). The biggest challenge of the ACFTA according to these studies is the risk of job losses due to increasing competition among the ASEAN countries. If the job losses really happen, then the realization of the ACFTA will only reduce the welfare level of the ASEAN countries.

Nonetheless, the ACTFA can potentially provide benefits since it create access for the ASEAN and Chinese society to enjoy higher variety of products with lower prices. China's rapid economic growth will provide higher opportunities for firms in the ASEAN to grow by utilizing the trade channel, particularly by supplying intermediate goods in each chain of the final goods production in China. Therefore, there is a good opportunity for both parties (ASEAN and China) to cultivate and enhance relations toward the ASEAN Economic Integration (AEC) following the example of the European Union (Thalassinos and Dafnos, 2015; Thalassinos et al., 2014; 2015a; 2015b; Xanthopoulos, 2014; Zaman and Meunier, 2017).

A study by Yeoh (2007) analyzed the impact of the implementation of the ACFTA in Malaysia since 2001. Yeoh reported significant increase in trade volume between Malaysia and China up to tenfold since 2005. Yeoh concluded that the increase in bilateral trade volume between Malaysia and China is the fruit of the trade barriers abolishment in both countries. In brief, Yeoh said that Malaysia enjoyed significant benefits from the ACFTA agreement.

Meanwhile, Shang (2005) use the Gravity Model to measure the impact of tariff liberalizations in the ACFTA. He sought to measure the liberalization impact on each ASEAN countries by incorporating several factors related to the global production sharing and interregional trade along with their components. This study

showed that the ACFTA boosted bilateral trade between the ASEAN countries and China. The increase in bilateral trade volumes was concentrated in the ASEAN, marked by strong industrial linkages with China.

Most quantitative studies on the ACFTA impact on the social welfare use the Computable General Equilibrium (CGE) models. Chirathivat (2002), Lee and Mensbrugghe (2007), Kawai and Wignaraja (2008) and Park *et al.* (2009) have used the applied General Equilibrium model known as the Global Trade Analysis Project (GTAP) and the Global Trade and Economic Analysis (GTEM) to analyze the impact of trade liberalization to analyze the economic and trade impact of the ACFTA on the ASEAN and China. In general, their studies conclude that there are linear patterns shown by trade volume growth in all ASEAN countries, driven by tariff liberalizations both from the demand and the supply sides of their economies (Liapis *et al.*, 2013).

There are only few studies on the impact of ACFTA implementation on the welfare of Indonesian society. Moreover, these studies typically focus on economic sectors. Recent study by Safuan (2012) analyzed the impact of tariff liberalizations in 12 priority sectors set in the ASEAN-5 countries (Indonesia, Singapore, Thailand, the Philippines, and Malaysia) based on the AEC blueprint.

Using the GTAP and the Analytical Hierarchy Process (AHP), Safuan (2012) sought to measure relative costs and benefits from the implementation of tariff liberalizations in the ASEAN-5 countries. One advantage of Safuan study is the use of two methodological approaches in measuring costs and benefits of liberalization. The GTAP approach is used to measure the impact in monetary terms only, while the AHP is to measure both monetary and non-monetary aspects of the impact. Safuan concluded that model that only consider monetary aspect will show lower values of impact compared to the result from model that consider both monetary and non-monetary aspect (Pociovalisteanu, 2015; Rupeika-Apoga and Nedonis-Uraev, 2015).

This study on the ACFTA impact on the welfare of the Indonesian society is a further development on previous study by Safuan (2012) by elaborating more on the substance, method, and the contextual aspects. This study will use combination of quantitative approach (GTAP) and qualitative approve (i.e. through survey to relevant and related stakeholders).

3. Data and their Aggregation

For our analysis, we used a general equilibrium model application database known as Global Trade Analysis Project (GTAP) database Version 8. This version database consisted of 57 sectors across 113 countries. Our study focused on ASEAN and China and the six digits of EHP, NT and HSL categories whose tariffs we expected

would be eliminated in accordance with the schedule and commitments of the government of each country.

Before analyzing the data, we aggregated the 113 countries into seven regions, namely Indonesia, Singapore, Thailand, the Philippines, Malaysia, China, the rest of ASEAN and the world. Then, for each country, we converted the EHP, NT, and HSL sectors into the GTAP database's 57 sectors.

4. Simulation Scenarios

One of the advantages of the CGE model lies in its ability to measure aggregate welfare as well as the impact of policies whose effects may be transmitted through multiple markets or regions. These policies can be price-based (e.g. taxes and subsidies), quantity-based, or mixed between price- and non-price-based.

In the standard GTAP model, the impact of price-based policies is measured using the import tariff. Non-price-based policies were measured using the non-tariff import. In the first scenario, we imposed a zero per cent import tariff on both NT and HSL sectors. For the NT category, we applied tariff shocks to 18 sectors in Indonesia, seven sectors in Malaysia, five sectors in Thailand, and 15 sectors in China.

For the HSL category, we applied tariff shocks to 10 sectors in Indonesia, 15 sectors in Malaysia, one sector in Singapore, 14 sectors in Thailand, 15 sectors in the Philippines, and 13 sectors in China. The main aim of this scenario was to study how removing non-tariff barrier impacted welfare and other domestic macroeconomic performances under the ACFTA agreement.

In the second scenario, we used a non-tariff barrier measure suggested by the Integrated Intelligent Policy. In order to evaluate the impact of non-tariff barrier on welfare, we processed using the same procedure as the price-based approach. The results are the compared the impact trade liberalization on both ASEAN and China economy.

5. Results

We implemented policy shocks in both scenarios to simulate tariff reduction on the economies of ASEAN and China. Table 2 shows the impact of simulated tariff reduction on output level of the different economies as shown by percentage change in the GDP. When the tariff was removed, the simulation showed that Thailand had the highest rate of output growth, followed by Singapore.

But, when we changed to non-tariff, simulation results indicated that Singapore was the country with the highest output growth, followed by Thailand. Overall, all members of ASEAN and China had positive output growth, except Indonesia (Fetai, 2015).

Table 2. *Output change in Liberalized Sector.*

Change In GDP (Percentage)		
Country	Tariff Reduction	Non Tariff Reduction
IDN	0.66	-0.49
MYS	0.52	0.17
SGP	0.76	0.73
PHIL	0.37	0.09
THAI	0.99	0.27
CHN	0.2	0.07
RestofAsean	0.18	0.05
RestofWorld	-0.05	-0.01

5.1 Export–Import Changes

Accompanying the impact on output arising from trade liberalization, there were changes in export and import pattern. Table 3 shows that reducing non-tariff barrier increased export and import for both ASEAN and China. Under the ACFTA, export and import increased by 0.09–2.55% and 0.06–4.34% respectively when compared to the tariff barrier. Results showed that Indonesia had the highest change in export and import growth, followed by Singapore. This did not change when we replaced non-tariff barrier factor with tariff factor.

Table 3. *Export import change.*

The Impact of Tariff Reduction						
	Before Simulation		After Simulation		% Change	
Country	Export ($US Million)	Import ($US Million)	Export ($US Million)	Import ($US Million)	export	import
1 IDN	128,766.9	107,243.2	131,062.8	109,857.7	1.78	2.44
2 MYS	199,290.8	148,298.6	200,827.4	150,276.7	0.77	1.33
3 SGP	234,637.5	184,076.5	236,771.5	186,062.9	0.91	1.08
4 PHIL	73,645.8	66,579.7	74,298.8	67,521.9	0.89	1.42
5 THAI	178,917.0	149,046.1	182,007.1	153,528.1	1.73	3.01

6 CHN	1,259,545.3	989,318.6	1,268,497.9	998,225.5	0.71	0.90
7 RestofAsean	73,828.3	79,817.6	76,544.7	84,152.9	3.68	5.43
8 RestofWorld	13,172,430.0	13,596,681.0	13,165,454.0	13,585,839.0	−0.05	−0.08
The Impact of Non-Tariff Reduction						
1 IDN	129,027.2	106,578.1	132,316.5	111,202.5	2.55	4.34
2 MYS	199,068.4	148,133.6	199,254.4	148,304.6	0.09	0.12
3 SGP	234,043.8	183,640.6	235,413.1	184,830.9	0.59	0.65
4 PHIL	73,575.3	66,516.9	73,608.8	66,558.6	0.05	0.06
5 THAI	178,699.0	148,868.5	179,009.9	149,213.6	0.17	0.23
6 CHN	1,258,889.6	988,805.9	1,260,205.1	989,882.8	0.10	0.11
7 RestofAsean	73,861.1	79,855.7	73,902.0	79,902.9	0.06	0.06
8 RestofWorld	13,168,252.0	13,593,018.0	13,166,169.0	13,589,983.0	−0.02	−0.02

Source: *Results from the study.*

5.2 Welfare Changes and Tariff Liberalization

Table 4 shows the effect of tariff and non-tariff simulation on welfare in participating countries. Results indicated that removal of tariff and non-tariff barrier led to improved levels of welfare in ASEAN and China. Welfare increase among these countries varied. When we removed non-tariff barriers, Indonesia experienced losses. In general, the results of this study seem to support similar previous research (Chirathivat 2002; Park *et al.*, 2009; Kitwiwattanachaia *et al.*, 2010; Duguleana and Duguleana, 2015).

Table 4. *Welfare effect of the Tariff and NTBs under ACFTA agreements*

Welfare Change ($US Million)		
Country	Tariff Reduction	Non-Tariff Reduction
IDN	586.18	462.92
MYS	827.57	140.68
SGP	716.93	718.47
PHIL	172.2	33.14
THAI	1515.53	280.93
CHN	2413.58	595.49
RestofAsean	256.1	9.91

RestofWorld	−4860.23	−1532.21

Source: *Results from the study.*

6. Conclusion

We collected data on the effect of reducing both tariff and non-tariff barriers to product groups within NT and HSL categories. Results showed that China and all members of ASEAN, except for Indonesia, experienced a positive impact on output growth. As a result of reducing tariff and non-tariff barriers, Indonesia had the highest change in export and import growth, followed by Singapore. In general, upon reducing tariff and non-tariff barriers, Singapore and China had the highest increase in welfare relative to other members of ASEAN.

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