

**THE IMPACTS OF AFTA-COMMON EFFECTIVE PREFERENTIAL TARIFFS ON THE TRADE DIVERSION AND TRADE CREATION OF SYNTHETIC RUBBER AND FACTICE FROM OIL IN INDONESIA****Faizal Amir and Idah Zuhroh**

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**Abstract**

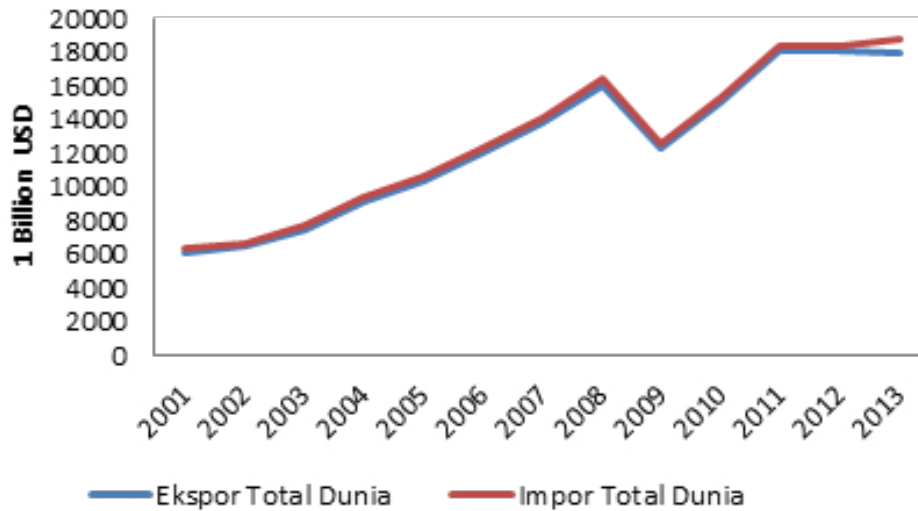
Rubber and its products are one of the exported commodities listed in Indonesia's ten primary exported commodities (Ministry of Trade 2015). Different from other rubber products, the import of synthetic rubber and factice from oil have increased significantly since the establishment of the AFTA-CEPT with approximately 7 thousand registered products in the Inclusion List (IL) in 2002. This study aimed to analyze the competitiveness of synthetic rubber and factice from oil among the members of AFTA countries and analyze the impacts of trade creation and trade diversion on the implementation of the CEPT-AFTA on synthetic rubber and factice oil from Indonesia, particularly in the 11 countries of origin of imports during the period from 2001 to 2013 by using a gravity model, which was analyzed using static data panel. Based on the results of RCA (Revealed Comparative Advantage), the competitiveness of synthetic rubber and factice oil from Indonesia is very low among four ASEAN countries, while Thailand is the top exporting countries in ASEAN region. The results of the panel data analysis showing variables which have positive influence are Indonesia's real GDP and real GDP of the country of origin of imports, while variables with negative effect are economic distance and Indonesia's real exchange rate compared to the country of origin of imports. The implementation of AFTA-CEPT brought against trade diversion and creation of synthetic rubber and factice oil from Indonesia will have impacts on the existence of trade creation because part of the domestic production of synthetic rubber and factice oil from Indonesia will be replaced with imports from member countries and there is no trade diversion.

Keywords: AFTA, *gravity model*, *synthetic rubber and factice from oil*, *trade creation*, *trade diversion*

**Introduction**

The flow of goods and services between countries in the last decade had increased significantly. This was proven by the increase of the export and import value index around the world between 2001 and 2013, which is shown in

Figure 1, even though there was a slight decrease in 2008 due to the global economy crisis. The world import value index tends to be higher than the export value because import value has additional component in the cost of trade transportation.



Source: International Trade Centre (2015)

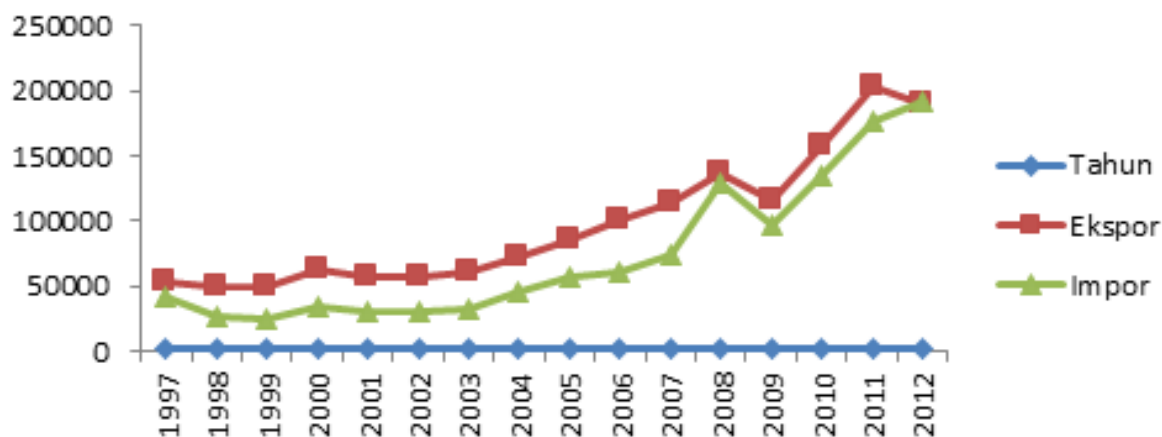
Figure 1 The export and import value index of the world (in billion USD) in 2001-2013

Goods and services produced by a country are vastly marketed with its neighboring countries and countries from other continents. Therefore, some countries create special protections to protect their national products from the threat of import of similar products and undeniably could come from around the world. Based on the data from WTO in 2011, there are more than 500 applicable regional trade agreements. The agreements stimulate the rise of mobility of goods and services due to certain policies facilitating the trade process are implemented and made the official trade procedure that should be obeyed by its relevant countries in a certain region. The integration of regional economy realized through regional trade agreement could strengthen the relationship between countries in the world economy and politics.

In South East Asia, the country members of ASEAN (*Association of South East Asian Nation*) founded a regional trade agreement in 1992, which was called AFTA (*ASEAN Free Trade Area*). The foundation of free trade area was expected to increase regional economic competitiveness of ASEAN countries and to improve the lives of

its 500 million people. After the creation of trade agreement among ASEAN countries through *Common Effective Preferential Tariffs* scheme or CEPT-AFTA scheme, the flow of goods and services increased massively within ASEAN region. This was because AFTA only impose trade barriers at a rate of 0 to 5 percent, without any quantitative restrictions, and without non-tariff barriers.

Figure 2 shows that the export and import value index of Indonesia significantly increased, even though there were indeed some fluctuations. This was due to the signing of several trade agreements done by Indonesia with some groups of countries in the world such as AFTA, APEC, and so on in the 80s-90s. Based on the data in Figure 2, a substantial decrease of export and import value index occurred in 2009, which was caused by the global economy crisis in 2008 and it affected almost every country around the globe. Indonesia had the highest export value in 2011, which reached USD 203,496.6 million. Meanwhile, Indonesia's export value slightly decreased 6.62% in 2012 due to a crisis in Europe.

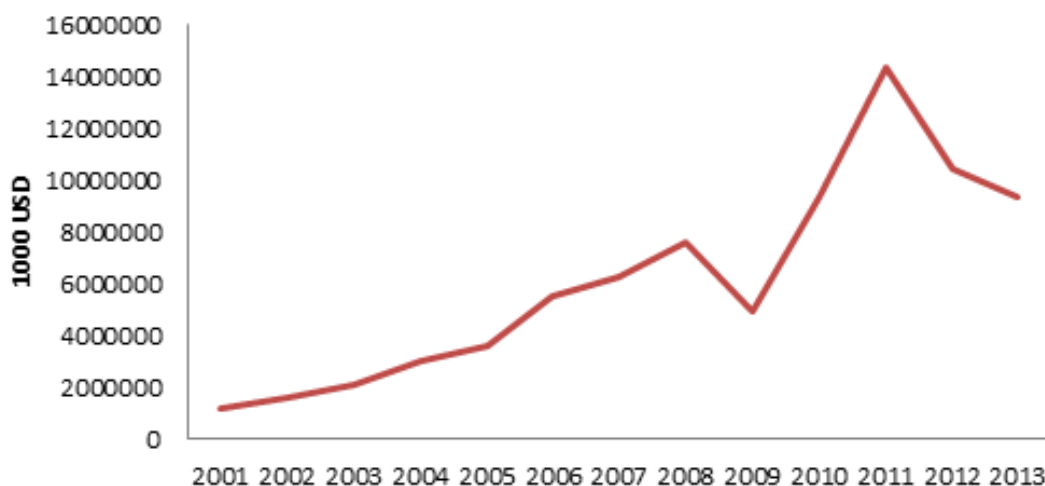


Source: Directorate General of Customs and Excise (2015)

Figure 2 Export and import value index of Indonesia to the world (in million USD)

Several products that become Indonesia's top exported commodities in ASEAN region and around the world include textile, rubber and its products, also the world, includes including the

world, processed metals, palm oil, and electronics. As seen in Figure 3, the rise export of rubber and its product in Indonesia has positive trend since 2002.



Source: International Trade Centre (2015)

Figure 3 Indonesia export value index of rubber and its products to the world (1000 USD) in 2001-2013

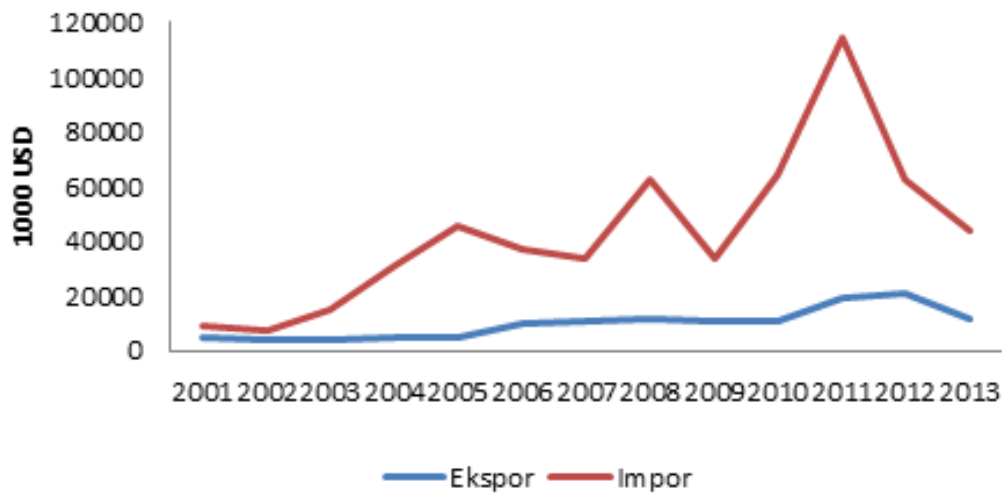
After the implementation of regional trade agreement in ASEAN through CEPT-AFTA scheme, the export and import trend of Indonesia increased significantly in 2002, which is as seen in Figure 2. The increasing import index remains a threat for Indonesia because this will require domestic products to closely compete with foreign products, especially those of AFTA (ASEAN Free Trade Area) country members. The competition in this case means the competitiveness of national products in terms of price, quality, quantity, and other aspects. If national products from Indonesia

could not meet the demand and consumer standard in terms of price, quality, and quantity, the demand for import of similar products will rise and it will decrease the export index of Indonesia.

The study aims to evaluate the existence of trade diversion and trade creation of *synthetic rubber and factice from oil* products in Indonesia. According to *International Trade Centre* in 2015, the data show that after the full implementation of CEPT-AFTA in 2002, the export of rubber and its products from Indonesia has stable increase. It is mentioned as full implementation in 2002 because

the product is included within the *Inclusion List* of CEPT-AFTA or product with 0 to 5 percent tariff and was registered annually from 1992 and was finally completed in 2002. The export of rubber and its products is one of Indonesia's top exported commodity which has steady increase since 2002. This is mainly caused by the data from Figure 3, even though it slightly decreased in 2008 and 2011 after the global economy crisis. On the other hand, the import of rubber products

such as *synthetic rubber and factice from oil* in Indonesia from other ASEAN countries keeps increasing after the implementation of CEPT-AFTA. Recently, a question is raised about the competitiveness of Indonesia's rubber products, especially of the *synthetic rubber and factice from oil* commodities. The following graphic figure shows the development of export and import of *synthetic rubber and factice from oil* of Indonesia in ASEAN region.



Source: International Trade Centre (2015)

Figure 4 Export and Import value of *synthetic rubber and factice from oil* from Indonesia (1000 USD) within ASEAN

Based on the above explanation, the research questions could be formulated as follows:

1. How is the trade performance of *synthetic rubber and factice from oil* products from Indonesia with other AFTA country members?
2. How is the competitiveness of *synthetic rubber and factice from oil* products of other AFTA country members in ASEAN region?
3. How are the impacts towards trade diversion and creation after the implementation of CEPT-AFTA for *synthetic rubber and factice from oil* products from Indonesia?

Based on the research questions above, the study aims to:

1. Describe the trade performance of *synthetic rubber and factice from oil* from Indonesia towards other AFTA countries.
2. Analyze the competitiveness of *synthetic rubber and factice from oil* products of AFTA country members in ASEAN region.

3. Analyze the impacts toward trade diversion and creation after the implementation of CEPT-AFTA towards *synthetic rubber and factice from oil* products from Indonesia.

A study conducted by Zidi and Dhifallah (2013) mentioned that since the mid-nineties, there had been massive increase in free trade agreements (FTA) between countries in the north and the south. They aimed to understand whether or not the agreement between developed countries in Europe and developing country, especially Tunisia, could improve the trade between countries. In order to answer this question, they evaluated two effects of regional integration, which were trade creation and trade diversion. They acquired two main results: the first finding showed that there was trade creation after five year of trade agreement between Tunisia and Europe; the second finding showed that preferential agreement between two partners

could not generate import trade diversion. However, there was export trade diversion.

The principle difference between this study and the previous study is on the implementation of free tariff, which appeared to be a significant decision between AFTA country members in 2002. The import tariff for approximately 8000 products is 0 percent, which could possibly generate trade creation and diversion for Indonesia in general, and for certain product classification. Meanwhile, the basic theory for constructing this research still implements *Gravity Model* like its previous research.

## Research Methodology

### Data and Source of Data

The data used in this research are secondary data. The data observed are combination of *time series* and *cross section* or panel data (*pooled data*). The observed year are thirteen years, starting from 2001 to 2013, with cross-sectional data that include four countries or ASEAN-4, which include Malaysia, Singapore, Philippines, and Thailand. Furthermore, there are seven other countries that were not AFTA members, including China, South Korea, Japan, Hong Kong, United Kingdom, Mexico, and United States.

The source of data for this research is *International Trade Centre (Trademap)* to acquire complete data for the export and import value index of *synthetic rubber and factice from oil* products from Indonesia. On the other hand, the data on real GDP, GDP per capita, population, currency exchange rate, and geographic distance, which are then measured by its economic distance are acquired from *World Bank*, *World Development Indicators*, UNCTAD, and CEPII, including through internet browsing and relevant literatures.

### Methods of Data Analysis and Processing

The method of analysis used in this research is descriptive quantitative method. The descriptive method is used to elaborately explain the information found in the data analysis result. Quantitative method is used to analyze the impacts of the implementation of free trade area scheme for Indonesia especially CEPT-AFTA, whether or not it generates trade creation and/or trade diversion. The quantitative method used to analyze the acquired data is by using *Gravity Model*. Some of the AFTA country members included in this

research are Malaysia, Singapore, Philippines, and Thailand, which results in limited observed data due to lack of data available. Therefore, the quality of fit model could be considered as low. In order to resolve this problem, the study uses estimation of pool data. On the other hand, in order to acquire the data on the competitiveness of *synthetic rubber and factice from oil* between AFTA country members, the study uses RCA method.

### Panel Data

Panel data is one of data types that could be used in panel data regression analysis model, or it could also be called pooled data (pooling from times series and cross-section observation process) from the combination of time series and cross-section data. *Cross section* data are data collected at a certain time from many individuals, companies, countries, and so on. Time series data are data collected from time to time of a certain individual.

On the panel data analysis model, there are three methods of estimation approach; they are Pooled Least Square, Fixed Effect method, and Random Effect method. The use of Fixed Effect method will need to add dummy variable to allow changes in the intercept. *Random Effect* method is a variation of *Generalized Least Squares* (GLS) estimation approach.

Almost every prior study employed Fixed Effect method to estimate their Gravity equation. When one estimates a panel data for different countries, there should be something to tolerate a separate intercept for different observation, which makes this method interesting. On this context, one should also econometrically determine the best method to be used to estimate the data. First, one should decide whether Fixed or Random Effects would be best for the study. One of the systems to resolve this problem is by using Hausman test, which will generate two equations (one is for Fixed Effects and the other is Random Effects), and then it is followed by the next test such as Chow Test.

*Gravity Model* is determined based on the assumption of import value of  $i$  country from  $j$  country, according to gravity variables such as Gross Domestic Product between countries and economic distance. The basic specification of basic Gravity equation includes factors from the importer country (sometimes real GDP value or GDP per capita), *supply Factors* from the exporter country (real GDP value or GDP per capita), and

the economic distance as proxy for transportation cost. This equation will be used to explain the flow difference such as in immigration, *foreign direct investment*, and is widely used in the context of international trade.

### RCA

*Revealed Comparative Advantage (RCA)* analysis is used to measure the competitiveness of a commodity. Therefore, this method is implemented in this research to understand the competitiveness of *synthetic rubber and factice from oil* from Indonesia in international market. The concept in RCA considers that a country's comparative advantage is reflected or revealed through its exporting ability. RCA could be formulated as follows:

$$RCA = \frac{E_{it} \div E_{jt}}{W_{it} \div W_{jt}}$$

where:

$E_{it}$  : Export of *synthetic rubber and factice from oil* from Indonesia to destination country

$E_{jt}$  : Total export of Indonesia to destination country

$W_{it}$  : World export of *synthetic rubber and factice from oil* to destination country

$W_{jt}$  : World total export to destination country every independent variable is in 1000 USD unit

Destination country within AFTA: Malaysia, Singapore, Thailand, and Philippines

Based on the RCA value, the competitiveness of a product could be discovered. The higher RCA value, the competitiveness is considered as strong, and vice versa. The limit value of competitiveness is as follow:

$RCA > 1$  = strong competitiveness

$RCA < 1$  = low competitiveness

The variables used to analyze the comprehensive implementation of CEPT-AFTA scheme on *synthetic rubber and factice from oil* from Indonesia are: Real GDP vale of Indonesia and other exporters of *synthetic rubber and factice from oil* to Indonesia, real currency exchange between Indonesia and exporter countries, economic distance from Indonesia and other

countries exporting *synthetic rubber and factice from oil*, and dummy variables of countries that agreed for the comprehensive implementation of CEPT-AFTA in 2002, dummy variable of Indonesia as importer country from AFTA, and dummy variable of Indonesia as importer country from other countries outside AFTA.

Based on the above explanation, the equation could be formulated as follows:

$$\ln Mijt = \alpha_0 + \alpha_1 \ln GDPit + \alpha_2 \ln GDPjt + \alpha_3 \ln Distij + \alpha_4 \ln RERijt + \alpha_5 CEPT + \alpha_6 MAFT + \alpha_7 MOC + Uijt \quad (2)$$

note:

$\alpha_0$  = Intercept

$Mijt$  = Real bilateral import value index of Indonesia from country  $j$  on year  $t$  (in 1000 USD);

$GDPit$  = Real GDP value of Indonesia on year  $t$  (in USD);

$GDPjt$  = Real GDP value of country  $j$  on year  $t$  (in USD);

$Distij$  = Economic distance between Indonesia to country  $j$  (in km);

$RERijt$  = Real exchange rate of Indonesia and country  $j$  on year  $t$  (IDR/LCU)

$CEPT$  = Dummy variable with value of 1 if the partner agrees on Inclusion List of CEPT-AFTA since 2002, and 0 for other option;

$MAFT$  = Dummy variable with value of 1 if the importer country is Indonesia and exporter country  $j$  is a part of AFTA and 0 for other option;

$MOC$  = Dummy variable with value of 1 if the importer country is Indonesia and exporter country  $j$  is a part of the world and 0 for other option;

$Uijt$  = *error term*.

$t$  = 2001 to 2013

In order to understand the impact of free trade agreement in Indonesia since the implementation of AFTA, this study uses dummy variable to acquire the effect of agreement between Indonesia and ASEAN-4, and between Indonesia and the rest of the world. In the end, dummy variable indicates the evolution of import in Indonesia. It should be noted that:

- *Net trade creation* effect if  $MAFT > 0$  and  $MOC = 0$

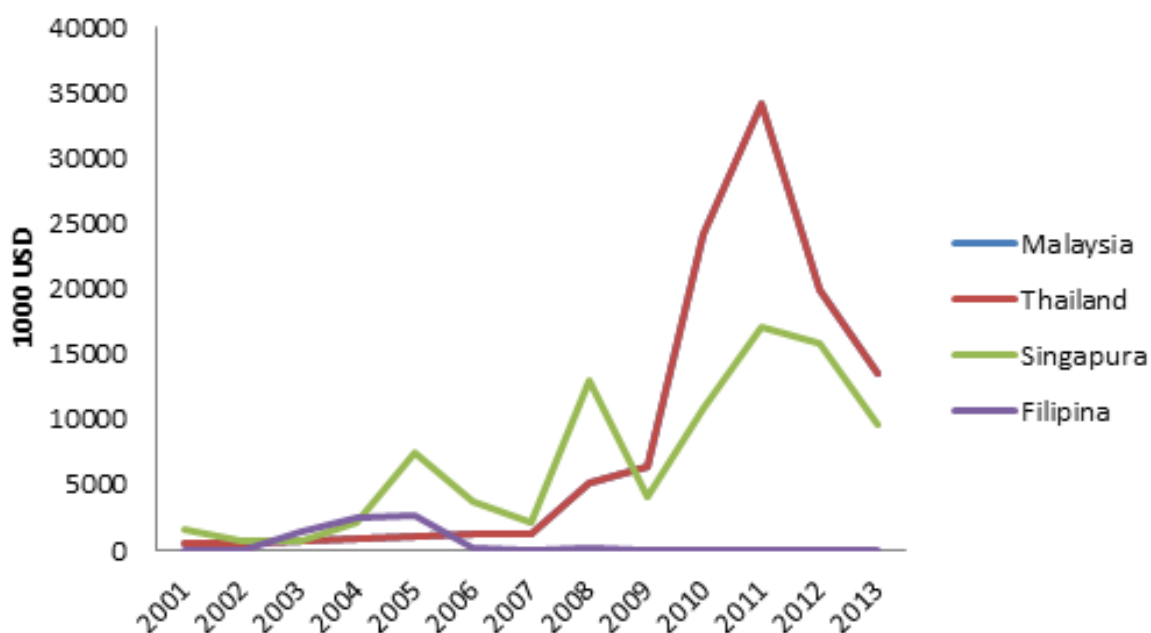
- Trade diversion effect if  $MAFT > 0$  and  $MOC < 0$ ;
- Trade creation effect if  $CEPT > 0$  and  $MAFT > 0$

## Findings And Discussion

### Trade Performance of *Synthetic Rubber and Factice from Oil* of Indonesia with AFTA Country Members

Indonesia is one of the five biggest exporter for rubber and its products in the world (Ministry of Internal Affairs 2015). Even though Indonesia is able to fulfil its domestic demand for natural rubber, Indonesia still imports *synthetic rubber and factice from oil* as complementary material to produce rubber derivative products. The

increase in import as shown in Figure 5 is because the production number of synthetic rubber in Indonesia is still considered as low if compared to other ASEAN countries such as Singapore, Malaysia, and Thailand. On the other hand, among other four AFTA country members, Philippines has the lowest export value index to Indonesia. This condition could be seen in Figure 5 that in 2011, the import value index for *synthetic rubber and factice from oil* from Philippines to Indonesia was only 1,000 USD. On the contrary, Thailand is ASEAN country with the highest export value for *synthetic rubber and factice from oil* for Indonesia. Thailand's export value index reached its pinnacle in 2011, with 34,192,000 USD.

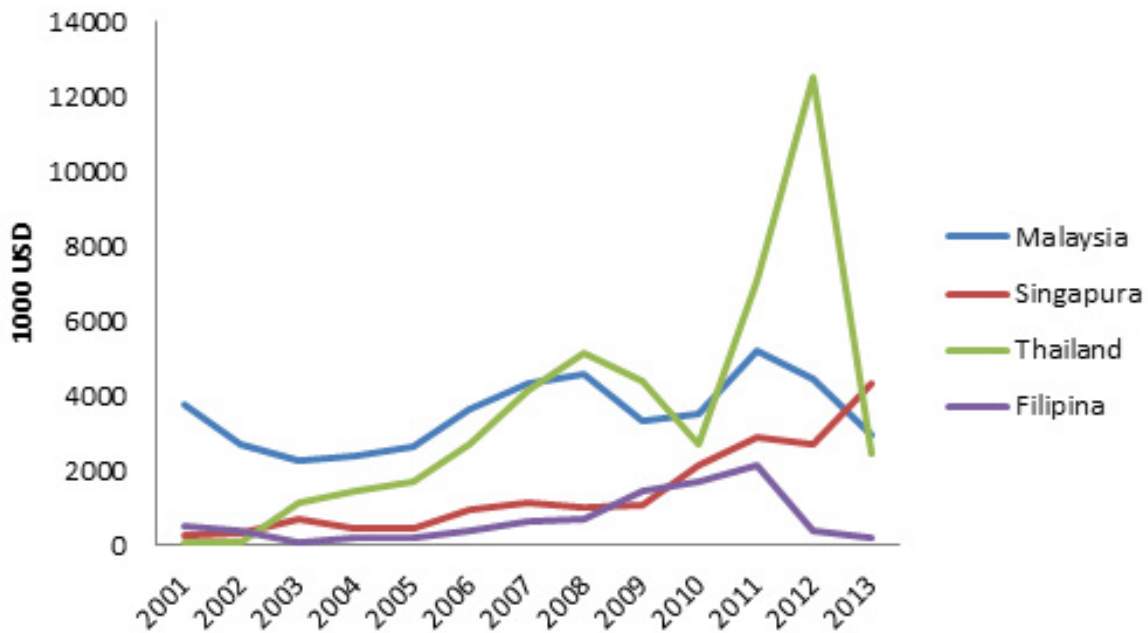


Source: International Trade Centre (2015)

**Figure 5** Import value index of *synthetic rubber and factice from oil* to Indonesia from AFTA country members (in 1000 USD) of 2001-2013

Figure 6 shows that the export value index for *synthetic rubber and factice from oil* of Indonesia towards other AFTA country members fluctuates. Indonesia's highest average export value index is towards Malaysia, which is 3,512,000 USD, in which 2011 has the highest export value index with 5,197,000 USD. Indonesia had scored the biggest

export in ASEAN region, which was towards Thailand in 2001 with export value that reached 12,493,000 USD. Among other four AFTA country members that become the export destination country for *synthetic rubber and factice from oil*, Philippines had the lowest average of export value index, with 688,000 USD.



Source: *International Trade Centre* (2015)

**Figure 6** The export value index of *synthetic rubber and factice from oil* from Indonesia towards other AFTA country members (in 1000 USD) of 2001-2013 The Competitiveness of *Synthetic Rubber and Factice from Oil* from Indonesia

**Table 1** Competitiveness calculation result of *synthetic rubber and factice from oil* from Indonesia in 2001-2013

Year	MYS	SGP	TND	PHL
2001	1.387106	0.11516	0.020472	0.800101
2002	0.851679	0.123936	0.020837	0.796115
2003	0.600528	0.388366	0.302111	0.145901
2004	0.468307	0.254364	0.261873	0.187057
2005	0.404608	0.22615	0.254102	0.165589
2006	0.391612	0.383254	0.305168	0.277217
2007	0.341052	0.371326	0.416134	0.311368
2008	0.245519	0.248547	0.376323	0.252439
2009	0.165968	0.377374	0.373752	0.936008
2010	0.105688	0.383475	0.132365	1.425548
2011	0.099494	0.258155	0.233732	1.155408
2012	0.088692	0.287282	0.345104	0.220397
2013	0.074292	0.462825	0.087444	0.105576

Source: Processed from *International Trade Centre* (2015)

Based on RCA calculation conducted to determine the competitiveness of a product from other countries especially *synthetic rubber and factice from oil* of Indonesia in some AFTA country members, it is known that the overall value for Indonesia's *synthetic rubber and factice from oil* has low competitiveness. This could be seen from RCA calculation of other four AFTA country members that become the main export destination of Indonesia, and the RCA average value scores

under 1. Indonesia's destination country for export of this product with the highest RCA average value is Philippines with 0.52144. The RCA value for *synthetic rubber and factice from oil* of Indonesia in Philippines is less than one, but in 2010 and 2011, the product had high competitiveness level because the RCA reached more than one. Indonesia's lowest RCA value of this product is in Thailand with average RCA value of 0.24. After the implementation of CEPT-AFTA, Indonesia's



RCA value for *synthetic rubber and factice from oil* remains fluctuating, there was no significant improvement of competitiveness. The low average value of competitiveness of *synthetic rubber and factice from oil* in Indonesia is mainly caused by limited number of synthetic rubber processing industry in Indonesia. Furthermore, crude oil as the main material for synthetic rubber are preferred to be distilled for consumptive products such as gasoline and so on. RCA data on *synthetic rubber and factice from oil* of Indonesia towards other

export destination countries in ASEAN could be seen in Table 1.

On the other hand, if we look at the calculation for the competitiveness of *synthetic rubber and factice from oil* between ASEAN countries, Thailand has the highest competitiveness if compared to other ASEAN countries that also trade *synthetic rubber and factice from oil*. Therefore, it could be said that in 2013, Thailand is the biggest exporter for *synthetic rubber and factice from oil* in ASEAN.

**Table 2 Competitiveness calculation result of *synthetic rubber and factice from oil* among ASEAN countries**

Export Destination Country	RCA value* of Exporting Country					Highest RCA*
	Indonesia	Malaysia	Thailand	Singapore	Philip-pines	
Indonesia	-	0.249	1.465	0.004	0.182	Thailand
Malaysia	0.401	-	0.934	0.073	0.059	Thailand
Thailand	0.240	1.247	-	0.077	0.003	Malaysia
Singapore	0.298	0.357	0.566	-	0.010	Thailand
Philippines	0.521	0.311	4.373	0.326	-	Thailand

\*: Average RCA value from 2001 to 2013

Source: Processed from *International Trade Centre* (2015)

Moreover, Thailand becomes the only ASEAN country that is included in the biggest 20 exporting country for *synthetic rubber and factice from oil* in the world. One of big Thailand companies producing *synthetic rubber and factice from oil* is BST Elastomer. Various certifications of standardization process are owned by this company, which in turn enable the products of *synthetic rubber and factice from oil* of Thailand to compete in international market.

### The Impacts of CEPT-AFTA Implementation

Based on the model selection, the best estimation model to discover the impact of CEPT-AFTA implementation on the trade creation and diversion of synthetic rubber and factice from oil trade in Indonesia is by using fixed effect model. Based on Table 3, the estimated result of coefficient determination (R-Squared) obtained is 99.7 percent. This indicates that 99.7 percent of the diversity of synthetic rubber and factice from oil imports from Indonesia can be explained by its independent variables, while the remaining 0.3 per cent is explained by other factors outside the model.

After the election of the FEM model as the best model, then the classical assumption test is

conducted to acquire equation model, which is free from violation of assumption in regression analysis such as normality, multicollinearity, heteroscedasticity, and autocorrelation. Out of seven independent variables analyzed, only one variable has no significant effect on the real GDP value of Indonesia; however, the other independent variables have significant effect because it has a probability value below 1 percent (<0.01), and this model has high coefficient of determination value at 99.7 percent. This indicates that there is no multicollinearity in the model. Furthermore, the heteroscedasticity test is conducted by looking at the sum of squared residue weighted (138.4765), which is smaller than the sum of squared residue unweighted (147.9728); this means that the model does not violate the assumption of heteroscedasticity. In addition, heteroscedasticity test can also be seen from the value of kurtosis in normality test; when the value is below 3, it can be said that the model is free from violation of heteroscedasticity assumption (Firdaus 2011). In this model, the acquired kurtosis value is 2.855, which also means that the model is free from violation of heteroscedasticity assumptions. Also, the model does not violate the autocorrelation assumption because the Durbin-Watson statistic

value after weighing is 2.12, which is in the non-autocorrelation area. The last test is normality test, Jarque Bera probability is 0.49, which is bigger than 5 percent ( $> 0.05$ ), then it can be said that the residual in this model spreads normally.

On Table 3, the variable of Indonesia' real GDP value (GDPi) has positive correlation with coefficient value 0.013983, which corresponds the initial hypothesis. The variable of Indonesia' real GDP value does not have significant impact

on the import of *synthetic rubber and factice from oil* because it has probability value of 0.8827, which is higher than real level of 10 percent. Positive correlation with coefficient value shows that 1 percent of increase in Indonesia's real GDP affected 0.013983 percent increase of *synthetic rubber and factice from oil* import in Indonesia. This is because when Indonesia's real GDP value increases, it shows the improvement in people's purchasing power.

**Table 3 The impacts of CEPT-AFTA implementation of trade diversion and creation of *synthetic rubber and factice from oil from Indonesia***

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Indonesia's Real GDP Value	0.013983	0.094595	0.147814	0.8827
Real GDP Value of Country of Origin Import	2.276916	0.140571	16.19765	0.0000*
Economic Distance	-14.65808	0.386634	-37.9120	0.0000*
Real Currency Exchange	-1.580296	0.058667	-26.9367	0.0000*
CEPT	0.697725	0.087462	7.977435	0.0000*
MAFT	4.841902	0.626708	7.725935	0.0000*
MOC	5.503475	0.097643	56.36308	0.0000*
C	64.43596	4.654185	13.84473	0.0000*
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.997188	Mean dependent var		77.47721
Adjusted R-squared	0.996806	S.D. dependent var		156.9033
S.E. of regression	1.052526	Sum squared resid		138.4765
F-statistic	2607.753	Durbin-Watson stat		2.122955
Prob(F-statistic)	0.0000			
Unweighted Statistics				
R-squared	0.879337	Mean dependent var		8.05197
Sum squared resid	147.9728	Durbin-Watson stat		1.245019

Source: Processed data

Note: \*) significant at the real level of 1%

The variable of real GDP of Origin Imported Country (GDPj) has positive correlation and has coefficient value of 2.276916. It is in accordance with the initial hypothesis and theory. The positive relationship with the coefficient value indicates that the 1% increase of real GDP of imported country of origin causes an increase of Indonesian synthetic rubber and factice from oil import of 2.276916 percent. GDPj variable is significant with probability of 0.0000 which means smaller

than 1 percent real level; therefore, the real GDP of Imported Country has real effect to the import of synthetic rubber and fact from oil from Indonesia.

In accordance with the research conducted by Zidi and Dhifallah (2013), the economic distance (DIST) variable is a reflection of the transportation costs that must be incurred. Economic distance variable has negative effect and has coefficient value of -14.65808. This is in accordance to the initial hypothesis that if there is an increase of 1

percent of economic distance with the country of origin of imports, it will reduce the import of synthetic rubber and factice from oil from Indonesia by 14.65808 percent. DIST variable is significant because it has a smaller probability than 1 percent real level, then the economic distance significantly affects the import of synthetic rubber and factice from oil in Indonesia. This indicates that the import of synthetic rubber and factice from oil in Indonesia oil has higher percentage from countries with shorter distance.

CEPT variable dummy or full implementation of Common Effective Preferential Tariffs by AFTA member countries since 2002 variable is positive with coefficient value 0.697725. This variable has a probability of 0.0000 which is smaller than 1 percent real level; then the full implementation of CEPT-AFTA since 2002 has a significant effect on the import of synthetic rubber and factice from oil in Indonesia. This means that if there is an acceleration of registration of AFTA member countries' products on the CEPT-AFTA Inclusion List (IL), there will be a significant difference of import for synthetic rubber and factice from oil in Indonesia by 0.697725 percent, because the faster the product is registered in CEPT-AFTA IL, the import barriers will decline faster. In addition, CEPT-AFTA could also generate trade creation because the coefficient values of the CEPT and MAFT dummy variable are positive, meaning that the average difference between Indonesian synthetic rubber and factice from oil imports after CEPT-AFTA is positive. This indicates that some domestic production of synthetic rubber and factice from oil production in Indonesia is replaced with imports from AFTA member countries.

In the two institutional variables used as the indicators to see the impact of CEPT-AFTA application on trade diversion of synthetic rubber and factice from oil trading in Indonesia indicates that MAFT has positive coefficient value of 4.841902 and MOC has a positive coefficient value of 5.503475. Furthermore, the two institutional variables have significant probability, because MAFT and MOC variables have a smaller probability value of 1 percent real level. This condition indicates that these variables significantly influence the import of synthetic rubber and factice from oil Indonesia. In conclusion, if MAFT and MOC values have positive coefficient values, then it can be said that the implementation of CEPT-AFTA does not

cause trade diversion effect. This is due to the fact that Indonesian's import synthetic rubber and factice' from oil from non-member countries are not displaced by imports from member countries due to the existing CEPT scheme. Another factor is that the production of synthetic rubber and factice from oil in Indonesia is unable to meet its domestic demand. Therefore, Indonesia imports these products from abroad; however, the imports from AFTA member countries also cannot meet domestic demand. As the result, the imports from non-AFTA member countries are not displaced even after the implementation of CEPT-AFTA scheme.

### Conclusion

On the trade of *synthetic rubber and factice from oil* between AFTA country members, Thailand is the biggest exporter in ASEAN region.

Overall, the competitiveness of Indonesia for *synthetic rubber and factice from oil* has weak competitiveness in ASEAN region. Meanwhile, Philippines has the weakest competitiveness for *synthetic rubber and factice from oil* among ASEAN-5 countries. The competitiveness of Indonesia for *synthetic rubber and factice from oil* is higher than Philippines.

The implementation of CEPT-AFTA towards product of *synthetic rubber and factice from oil* in Indonesia affects trade creation. This indicates that several domestic products of *synthetic rubber and factice from oil* in Indonesia are replaced by import from AFTA country members. On the analysis of trade diversion, CEPT-AFTA does not have trade diversion effect. This is mainly caused by the fact that the import of *synthetic rubber and factice from oil* to Indonesia from non-country members is not shifted by import from country members from the applicable CEPT scheme.

The trade of *synthetic rubber and factice from oil* in Indonesia should be enhanced, especially in its export sector. This could be done by augmenting the production of products derived from factice from oil to synthetic rubber in order to increase its value. The increase production of products of factice from oil will be better if it is followed by the improvement of product quality (i.e., certification of several standardizations needed for synthetic rubber products), which in turn will amplify the selling point of *synthetic rubber and factice from oil* around the world. This will augment the competitiveness and export

volume of *synthetic rubber and factice from oil* from Indonesia. Moreover, it is suggested that the government from AFTA country members to conduct special transposition to talk about CEPT scheme in order to keep implementing it according to the applicable requirements. For example, by anticipating non-tariff trade barriers of *synthetic rubber and factice from oil* outside the CEPT-AFTA scheme. Furthermore, the role of Indonesian government through Bank of Indonesia to protect the stability of currency exchange rate towards foreign currency especially for the trade of *synthetic rubber and factice from oil* will influence export and import at a competitive price.

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