The Effect of Joining Free Trade Union on Export and Import in ASEAN Countries

Rinando Aidil Fitrio ^{a*}

^a Ministry Foreign Affairs of The Republic of Indonesia, Jakarta, Indonesia

INFORMASI ARTIKEL

Article history:

Date Submission: 04 August 2019

First revision: 14 August 2019

Accepted: 17 August 2019

Available online: 30 August 2019

Keywords: ASEAN free trade area, international trade, ASEAN member states

ABSTRACT

Free Trade is important stage in increasing country's exports and imports. One form of free trade is ASEAN Free Trade Area (AFTA) which established in 1992 and has 10 member countries. In contrast, there are previous studies that state free trade can also have negative impacts on trade between countries. This study tries to analyze the relationship of AFTA on exports and imports of its member countries using data from World Bank period 1985 to 2015. The analysis uses random effect and dynamic panel model. Dynamic panel models are used to determine the short-run and long-run relationship of AFTA on export and import. The result shows that there are positive and significant effects of AFTA to exports and imports of ASEAN Member States (AMS). The result obtained on the long-run show a greater influence between AFTA and AMS international trade.

INTISARI

Perdagangan Bebas adalah tahap penting dalam meningkatkan ekspor dan impor negara. Salah satu bentuk perdagangan bebas adalah kawasan perdagangan bebas ASEAN yang didirikan pada tahun 1992 dan memiliki 10 negara anggota. Sebaliknya, ada penelitian sebelumnya yang menyatakan perdagangan bebas juga dapat berdampak negatif pada perdagangan antar negara. Studi ini mencoba menganalisis hubungan AFTA terhadap ekspor dan impor negara-negara anggotanya menggunakan data dari Bank Dunia periode 1985 hingga 2015. Analisis ini menggunakan efek acak dan model panel dinamis. Model panel dinamis digunakan untuk menentukan hubungan jangka pendek dan jangka panjang AFTA pada ekspor dan impor. Hasil penelitian menunjukkan bahwa terdapat efek positif dan signifikan AFTA terhadap ekspor dan impor negara-negara anggota ASEAN. Hasil yang diperoleh pada efek jangka panjang menunjukkan pengaruh yang lebih besar antara AFTA dengan ekspor dan impor negara-negara anggota ASEAN.

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1. Introduction

Free trade is an important to study while the effects of free trade on exports and imports are diverse. Some studies indicate that free trade can have negative effects on exports and imports growth. In contrast, other studies conclude that free trade increases international trade.

The negative effects of free trade are likely to occur if there are trade diversion (P. R. Krugman, Obstfeld, & Melitz, 2012), beggar-thy-neighbor effects, trade warfare (P. Krugman, 1991), and a large gap of economic growth among exporting and importing countries (Huijskens, 2017). In contrast, the positive effects will happen when there are reduced trade barriers (Dava, 2012), economies

* Corresponding author. Tel.: +62-812-8429-8937; e-mail: rinando.af@gmail.com

of scale and innovation by entrepreneurs (P. R. Krugman et al., 2012).

As previous studies have shown, free trade can be driven by the existence of political economy rather than purely economic factors (P. Krugman, 1991). In other words, the political economy of free trade happens when many countries prefer to established free trade areas than international free trade agreements. ASEAN Free Trade Area (AFTA) is an example of free trade zones that possibly have a political and economic background when it was established, for examples: the end of cold war and anticipating other trading zones (Yue, 1998). According to Akrasanee and Stifel (1992), ASEAN leaders believed that political stability and peace in southeast region had positive effect on ASEAN Member States' (AMS) economy; therefore, ASEAN began focusing on regional economic cooperation.

On the one hand, not too much research analyzes how free trade becomes an exogenous variable that will affect trade directly. These study objectives to examine how the effects of before and after the formation of AFTA on AMS international trade. Given that not all AMS join ASEAN at the same time, the cut off for AFTA periods are made when the AMS joined the AFTA and when the countries joined the ASEAN. The countries, which entered ASEAN after the establishment of AFTA, also joined the AFTA at the time they became the AMS (ASEAN Secretariat, 2015).

The study uses a dynamic panel model, which is based on the Arellano-Bond model, to see how previous trades affect trades in the current year. The model involves the short-run result using initial condition in first dependent variables lag (Blundell & Bond, 1998). Furthermore, the dynamic panel model was employed to estimate the long-run effect of independent variables to dependent variables. The results can provide more comprehensive information about the relationship of AFTA to international trade of the AMS.

2. Theory

2.1 Free Trade and Exports and Imports

Free trade has either negative or positive effects on country's international trade. The negative effects happen when the implementation of free trade form a trade diversion instead of trade creation (P. R. Krugman et al., 2012). This trade diversion is a condition where imported products at low prices are substituted by imported products at expensive prices; on the other hand, trade creation is a condition where high-cost domestic goods are substituted by imported goods at lower prices.

The other undesirable effect of free trade is trade welfare that is a free trade region can disrupt other inter-regional trade if the free trade region has larger market power than others (P. Krugman, 1991). In other words, a

trade block with large market power enables creating higher external tariff and trade diversion. Another negative effect is beggar-thy-neighbor effect which member states is overprotective in internal tariff barriers that possibly hurt trade to other countries outside the free trade zone. This beggar-thy-neighbor may be driven by political economy where the member countries in a free trade blocks focus on reducing internal tariff and increasing external tariff to non-member countries. Another research by Huijskens (2017) indicates that free trade may have a negative relationship with trade growth when the exporting countries has comparatively smaller economic growth rates than importing countries; however, if the difference in economic growth rates is small, free trade will have positive result to international trade growth.

On the one hand, free trade may have a positive effect on exports and imports. In fact, free trade can provide growth that is continuously being phased out on exports and imports by removing the trade barriers. The exports and imports performance positively increase due to reduced trade barriers because trade liberalization policies are carried out in a country (Dava, 2012). However, trade liberalization has negative impact on trade openness, which is export plus imports, because the countries have large difference ratio of importing consumer goods and exporting goods (Dava, 2012).

Baier and Bergstrand (2007) argued that free trade agreements have a positive relationship, making it's the members' international trade increase; and there is no causality effect about the change of trade affect free trade. Besides, this positive relationship is related to the existence of economies of scale that occur in countries and the innovation by entrepreneurs so that goods or service produced can compete in domestic and international markets (P. R. Krugman et al., 2012). In other words, this economies of scale is a situation where industry provides the opportunities for small corporates to be able to access more efficient equipment and facilities in order to make them more competitive. Another finding by Kien and Hashimoto (2005) show that trade creation can be established among countries inside the free trade area; however, inter-regional trade generates different results which are possibly trade creation or trade diversion.

Gross Domestic Product (GDP) is the value of goods and services consumed by the end user in a country within a period (Callen, 2008). In order to find out whether the goods and services produced are increasing or decreasing, GDP must be adjusted to eliminate inflation that occurs. This is called real GDP.

Many studies have shown that there is a positive effect of export and import on GDP; however, there are studies suggesting that GDP growth affects export and import growth as two directional causalities. Menyah,

Nazlioglu, and Wolde-Rufael (2014) mention that the effect of economic growth to trade openness rarely happens, but the effect of trade openness on economic growth often happens. Those are two results of the effect of economic growth to exports and imports growth: GDP has affected positively to exports and imports; and imports will respond positively when there is a GDP growth, but exports will respond negatively to GDP growth (Awokuse, 2008). In contrast, there are two direct effects between economic growth and exports; however, these causality effects for imports is weak (Liu, Burridge, & Sinclair, 2002). If using the trade partner country's GDP, the resulting effect can be different. Josic (2008) mention that changes of partner country's GDP possibly have a positive influence on trade to the country. Additionally, this is related to the increase of export value that have relations with world's GDP.

2.2 Establishment of ASEAN Free Trade Area

The ASEAN Declaration stated the aims and purposes of ASEAN such as accelerating economic growth and promoting mutual assistance in AMS' economic (ASEAN Secretariat, 1967). In order to achieve those economic purposes, 10 years after the declaration, ASEAN established its economic integration. This economic integration is to unite tariffs so that bilateral trade tariffs are common among AMS. This free trade union began by introducing ASEAN Preferred Trade Agreement. The focus areas of the agreement were collaboration in economic, finance and transportation of ASEAN member states such as trade, mineral and energy, banking, food and communications sectors (NHCP, 2019).

Economic integration in ASEAN has both political and economic purposes. Geopolitical aspects in the Southeast Asia area inspired ASEAN leaders to work together in maintaining security and peace in the area. Reducing some regional economic disagreements between nations is also one objective to be achieved by establishing economic integration among AMSs. In addition, economic integration in ASEAN is also aimed at establishing bilateral trade treaties between non-member countries and AMS. Those treaties would be expanded to an agreement between ASEAN and other trading nations (Ariyasajjakorn, Gander, Ratanakomut, & Reynolds, 2009).

On the other hand, it was difficult to claim that the economic integration of ASEAN after the establishment of the ASEAN Preferred Trade Agreement in 1977 was implemented successfully. The implementation of the agreement was affected by the law and regulation of each member state to their internal and external activities which brought ASEAN activities must be agreed by consensus before it was applied (Thanadsillapakul, 2000). However, the economic growth in ASEAN had

better improvement in the 1980s and Southeast Asia became one of the regions that experienced rapid economic growth (Yuan, 1994).

ASEAN moved toward deeper economic integration with forming ASEAN Free Trade Area (AFTA) in 1992 which was agreed by Thailand, Singapore, Philippines, Malaysia, Indonesia, and Brunei Darussalam representatives. The scheme of AFTA was Common Effective Preferential Tariff (CEPT) which decreased to 0-5% tariff range in CEPT inclusion list products (ASEAN Secretariat, 2015). The CEPT scheme was planned to be fully completed within 15 years and divided into two categories: normal and fast plans (Yuan, 1994). Normal program was sequence activities for the reduction of tariff above 20% to 20% until the beginning of 2001 then continuing the reduction from 20% tariff barriers to 0-5% tariff range before the beginning of 2008; in addition, fast program was simultaneously activities for the reduction of tariff above 20% within 10 years and tariff below 20% within seven years became 0-5% tariff range. The fast plan only covers 15 types of products such as glass, plastic, paper, fertilizer, and chemicals.

2.3 The Backgrounds of AMS in Joining AFTA

ASEAN formed free trade area in 1992 due to some international events that happened in the 1990s, affecting the ASEAN Member States and making their economic integration better. Yue (1998) proposed that geopolitical aspect and competition with other trading blocs were several factors which encourage ASEAN to improve their economic integration. Geopolitical aspect was the foundation of creating ASEAN; in which, ASEAN's political foundation was weakening since the end of the cold war. In other words, the ASEAN member states had a strategic interest during the cold war in order to keep southeast Asia stable (Yue, 1998). Therefore, ASEAN began to focus more on the economic prospect. Additionally, this condition brought AMS to new strategies which started to reduce the investment and imports barrier. A lot of capital flow from multinational companies into ASEAN resulting in the growth of domestic products and inter-regional trade inside ASEAN. Another background was there would be other international trading blocs such as the European Economic Community and the North American Free Trade Area (NAFTA) which would increase competition and trading of emerging markets shifted. NAFTA was established in 1994 and the European Union set up the European Economic Community in 1992.

On the other hand, the long term period of completing AFTA scheme was criticized since there were other trade liberalization timetables of NAFTA, Asia Pacific Economic Cooperation (APEC), and Uruguay round whose schemes were shorter than AFTA (Yue, 1996); furthermore, the exclusion of unprocessed

agriculture product from the list had no strong economic reason (Yue, 1998). As result, in order to strengthen the AFTA scheme, ASEAN accelerated the completion to become 10 years and included unprocessed agriculture product into the list. Moreover, AMS started to develop their knowledge about the importance of AFTA in short term and long term, as well as capital inflow to develop domestic industries (Yuan, 1994).

Vietnam, Lao PDR, Myanmar, and Cambodia directly joined AFTA when they became AMS. Those countries could draw near the implementation of AFTA because most of their products had been prepared to follow the CEPT inclusive list in which 66% of the products had 0 – 5% tariffs bands (ASEAN Secretariat, 2015).

Vietnam joined ASEAN in July 1995 and became the seventh member of ASEAN. Vietnam path to become an ASEAN Member State was motivated by the end of cold war and resolution of Cambodian conflict sponsored by the United Nations (UN) (IISS, 1995). Additionally, there was an ambition of China to take over Spratly Island which is part of Vietnam in January 1995; thus, joining ASEAN will give diplomatic advantage on Vietnam which is ASEAN negotiating with China exclusively. Besides improving diplomatic relations with other countries, Vietnam began to develop its economy as part of emerging markets in Southeast Asia that attracted investors to make investment in domestic industries (Goodman, 1996).

Lao PDR joined ASEAN in July 1997 together with Myanmar. Joining ASEAN was an important turning point for Lao PDR (Stuart-fox, 2019). Lao PDR entered ASEAN when the war involving Lao PDR had ended and Lao PDR tried to improve its relationships with their neighbor countries, such as Thailand, Vietnam, and China. This relationship had an impact of investment in Lao PDR because there were road and bridge works that passed through Lao PDR from Thailand, Vietnam, and China (Stuart-fox, 2019). Moreover, there were dam projects that produce electricity, which was planned to be sold to other countries such as Thailand and Vietnam, in order to reduce trade balance deficit.

The history of Myanmar entry into ASEAN was followed by criticisms from some AMS regarding the political situation in Myanmar in the early 1990s, such as Muslim refugees movement into Bangladesh and concerning over Chinese influence in Myanmar (Haacke, 2006). In order to overcome the situations, ASEAN issued a policy related to “constructive engagement” to Myanmar. This constructive engagement directed the bond between Myanmar and ASEAN to be closer and reduced Myanmar’s dependence on China regarding its economic situation. Furthermore, Myanmar agriculture sector production also had a role in joining ASEAN. The high amount of rice export in the middle of the 1990s has

dramatically decreased in the following years; thus, AFTA was expected to increase trade (Guyot, 1998).

In 1999, Cambodian became the tenth member of ASEAN. The political background underlies why Cambodia joined ASEAN. In the beginning, Cambodia was scheduled to join ASEAN in 1997 together with Lao PDR and Myanmar. The situation that Cambodia joined ASEAN two years later was due to domestic political condition which occurred the feud between Cambodia Prime Ministers (Emmers, 2005). ASEAN had several conditions regarding the political situation in Cambodia in the 1990s, such as the complying Paris treaty and conducting the fair and free election in July 1998 (IISS, 1997). The election was one of turning points for Cambodia before joining ASEAN.

3. Research Method

This study uses the gross domestic product (GDP) per capita, exports and imports data in U.S dollar obtained from World Bank within the period of 1985 – 2015. The exports include varieties of goods and services provided by private and government organizations, except employees’ compensation, transfer payment, and income from investment. The imports comprise all varieties of goods and services received from other countries’ private and government organizations, except employees’ compensation, transfer payment, and income from investment.

The research employed the data of ASEAN member states (AMS): Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. There are no GDP per capita, exports and imports data from Myanmar before the country joined ASEAN in 1997. Thus, the study excluded Myanmar from the data. On the other hand, there are several differences in data periods between countries as shown below:

Table 1 Period of Data

Country	Year		
	Exports	Imports	GDP
Brunei	1989-2015	1989-2015	1985-2015
Cambodia	1993-2015	1993-2015	1993-2015
Indonesia	1985-2015	1985-2015	1985-2015
Lao PDR	1985-2015	1985-2015	1985-2015
Malaysia	1985-2015	1985-2015	1985-2015
Philippines	1985-2015	1985-2015	1985-2015
Singapore	1985-2015	1985-2015	1985-2015
Thailand	1985-2015	1985-2015	1985-2015
Vietnam	1986-2015	1986-2015	1985-2015

Source: Analytical result, 2019

All data from the World Bank are in current values. Therefore, this study uses GDP deflator obtained from the World Bank to get all data used as real values. In other words, the GDP deflator is used to eliminate the inflation

of price change over time in measuring economic performance (Kohli, 2004). The base year of the GDP deflator is 2010. So, the value of the deflator is 100 in that year.

Table 2 Summary Statistics

Variables	Overall (USD)			
	Mean	Std Dev	Min	Max
Exports	108 bill	151 bill	773,151	1 trill
Imports	109 bill	232 bill	1,673,159	3 trill
GDP	13,746	56,375	2.62	856,564

Source: Analytical result, 2019

Note: bill=billion; trill=trillion

The summary statistics displays observation numbers of GDP per capita, exports and imports variables which are 271, 266 and 266 respectively. All the minimum values are obtained from Lao PDR data, and maximum value are obtained from Vietnam data.

This study measures the effect of joining ASEAN Free Trade Area (AFTA) on exports and imports using the panel data approach. The approach is used to analyze the progression of AMS exports and imports before and after AFTA in 1992 for Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Furthermore, for other AMS which had not joined ASEAN in 1992, the regression will be used to analyze the trade before and after they joined ASEAN: 1995 for Vietnam, 1997 for Lao PDR, and 1999 for Cambodia.

The panel data model used in this study employed logarithm data in order to compare the growth before and after the countries joining the ASEAN free trade area or ASEAN as shown below.

$$\log Y_{it} = \alpha_i + \beta_1 AFTA_{it} + \beta_2 \log GDP_{it} + \gamma_t + \varepsilon_{it} \quad (1)$$

$$\log Y_{it} = \alpha_i + \delta Y_{it-1} + \beta_1 AFTA_{it} + \beta_2 \log GDP_{it} + \gamma_t + \varepsilon_{it} \quad (2)$$

The equations are used to analyze the effect of joining AFTA or ASEAN on trade growth of AMS. $\log Y_{it}$ is the logarithm of exports or imports for county i and year t. $\beta_1 AFTA_{it}$ is independent variable which consist of dummy variable of Free Trade Area when AFTA occurred or when other three AMS joined ASEAN for country i and year t. This dummy variable consists of binary numbers where 0 is used for years before the AMS joined AFTA or ASEAN, and 1 for the years after the AMS joined AFTA or ASEAN. $\beta_2 \log GDP_{it}$ is the logarithm of GDP per capita growth for country i and year t. γ_t is year effect. δY_{it-1} is logarithm of exports or imports for county i and year t-1. ε_{it} is error term.

AFTA is this study variable of interest. The establishment of AFTA was not fully influenced by the desire to increase trade growth but also due to political background. ASEAN's political foundation was weakening since the end of the cold war because ASEAN had a strategic interest during the cold war in order to

keep southeast Asia stable; therefore, ASEAN began to focus more on the economic prospect (Yue, 1998). Moreover, Vietnam, Lao PDR, Myanmar, and Cambodia which joined ASEAN and AFTA after stable domestic political conditions then their need to increase welfare and economic growth (Haacke, 2006; IISS, 1995, 1997; Stuart-fox, 2019).

In equation, there are three estimations to be derived: fixed effect (FE), random effect (RE), and pooled least square (PLS) models in panel data approach. In order to identify which model is appropriate to be used, the regression has to be applied in the Hausman test and Lagrange multiplier test (Baltagi, 2005). Hausman test is a statistical check to determine whether a fixed effect or random effect model is fit to be applied. On the one hand, the Lagrange multiplier test is a statistical test to determine whether a random effect is more satisfactory than a pooled least square estimation.

Besides the result of the Hausman test, this study uses a dynamic model of panel data analysis. Urusiyah (2013) states that the use of a lag variable in static panel data causes the bias of estimation result. Therefore, the dynamic panel data are used to overcome the endogeneity problem related to the use of lag of dependent variable. In addition, the response of dependent variables to the independent variable is rarely immediate, but usually the response is related to time lapse (Gujarati, 2004).

The study uses model which is based on the Arellano-Bond dynamic panel model to analyze the current Exports or Imports outcomes which are affected by previous exports or imports and previous unobserved country level effect. Besides, the error in serial correlation on the equation which consists of lagged dependent variables and individual effect does not exist (Arellano & Bond, 1991).

The dynamic model of panel data estimates not only the short-run but also the long-run effects between dependent and independent variables. This short-run outcome is lagged short-run effect which estimates the result using the previous time period of dependent variables. The long-run outcome is related to the long-term result of a policy possibly whether the existing value increases or decrease (Alexis, 2018).

Additional tests will be conducted on the model, which are multicollinearity and heteroscedasticity test after the appropriate model has been established. There is a correlation between independent variables if multicollinearity occurs (Gujarati, 2004); therefore, the value of R^2 is high but most independent variables insignificantly affect the dependent variable. The estimation model will indicate inconsistent regression variance if there is heteroscedasticity (Gujarati, 2004); then, each observation has a different reliability due

to a background condition which is not summarized in the model.

4. Results and Discussion

The regression starts with Hausman (HT) and Lagrange multiplier tests (LMT) in order to know which estimation model is more appropriate to be used.

Table 3 Hausman and Lagrange Multiplier

Variables		P value	
Dependent	Independent	HT	LMT
Exports	AFTA, GDP	0.9717	0.0000
Imports	AFTA, GDP	0.9176	0.0000

Source: Analytical result, 2019

Note: bill=billion; trill=trillion

The null hypothesis of Hausman test suggest that random effect (RE) estimators are more efficient than fixed effect (FE) estimators; thus, it is better to choose a random effect (Gujarati, 2004). In order to reject or accept null hypothesis, the output of Hausman test in Table 3 provides P value. The result of P value, when the dependent variables are exports and imports, are 0.9717 and 0.9176 which is higher than 0.05. So, the result does not reject null hypothesis (Cameron & Trivedi, 2010). The result of regression is better to be regressed with random effect model than fixed effect model.

The study conducts Lagrange multiplier test as shown in Table 3. The null hypothesis is the distribution of chi-square with one degree of freedom (Greene, 2012). If P value < 0.05, it is better to choose random effect than pooled least square (PLS). The P value of Lagrange multiplier test results are 0.0000 and 0.0000 respectively; therefore, the results show that the equation is better to be regressed with random effect model than PLS model. On the one hand, multicollinearity and heteroscedasticity tests show that the model is not identified high multicollinearity and heteroscedasticity.

This study employs a random effect model to analyze the panel data and dynamic panel model to analyze the lag of time in panel data as shown below.

Table 4 Random Effect Result

	Exports		Imports	
	(a)	(b)	(a)	(b)
AFTA	1.4799***	0.2388*	1.5341***	0.2482**
GDP	-	0.9926***	-	1.0219***
Year Effect	yes	Yes	yes	yes
Num of Obs	266	266	266	266

Source: Analytical result, 2019

Note: ***p<0.001; ** p<0.01; and * p<0.05

Table 4 shows three outputs of different regressions: random effect with ASEAN Free Trade (AFTA) as independent variable; random effect with AFTA and GDP per capita as independent variables; dynamic panel

data with AFTA as independent variables; and dynamic panel data with AFTA and GDP per capita as independent variables.

The results of random effect using one free trade variable, since the ASEAN Member States (AMS) joined AFTA, has a significant effect, which is at 0.1% level, to increase of exports and imports by 1.47% and 1.53% respectively, compared to before the AMS join AFTA. On the other hand, the effect of AFTA on exports and imports decreases and is less significant when GDP is added to the estimation model. The time after AMS joined AFTA has affected exports, increasing 0.23% at 5% significance level and imports rising 0.24% at 1% significance level, compare the time before joining AFTA. Additionally, GDP per capita affects exports and imports at 0.1% significant level; therefore, the percentage of change in GDP per capita is related to 0.99% increase of exports and 1.02% increase of imports.

The results obtained are in line with the conclusions of some previous studies. Tang (2005) proposes that regional trading agreements significantly affect international trade of member countries, such as the North American Free Trade Agreement (NAFTA), the Australia-New Zealand Closer Economic Relations (ANZCER), and ASEAN. Specifically, ASEAN depicts positive results for entry into force of AFTA, not only increasing trade among members but also triggering trades of non-member countries. These conditions are possibly the underlying reason why ASEAN trading was not so affected by the economic crisis in 1997 – 1998. Moreover, international trade between AMS with non-member countries, such as China is expected to be able to make ASEAN more attractive and develop ASEAN competence; however, there are some AMS which not fully establish free trade with China because of the fear that Chinese products can enter domestic markets and disadvantages local companies (Chirathivat, 2002).

While the effect is generally consistent with the literature, the big jump of coefficient between the specification with one AFTA variable and the one with both AFTA and GDP shed doubt on the validity of the estimated equation. Indeed, current exports and imports may be affected by the amount of exports and imports in previous year. Therefore, this study employs the dynamic panel model.

Table 5 Dynamic Panel Model Result

	Exports		Imports	
	(a)	(b)	(a)	(b)
AFTA	0.1258*	0.1256*	0.1486**	0.1691***
GDP	-	- 0.0077	-	0.4030***
Year Effect	yes	Yes	yes	yes
Num of Obs	248	248	248	248

Source: Analytical result, 2019

Note: ***p<0.001; ** p<0.01; and * p<0.05

In a dynamic panel model, the results depict the short-run effect of independent variables to dependent variables. The results of dynamic panel data using one free trade variable show the export going up 0.12% at level 5% significance level and imports going up 0.14% at 1% significance level after AMS entered AFTA. Furthermore, the result between AFTA and exports slightly decreases, and the result between AFTA and imports increases when GDP is added to the estimation model. The period when AMS join AFTA trade has a significant influence, which is at 5% significance level, raising exports by 0.12% and at 0.1% significance level, raising imports by 0.16%; compare to the period before the AFTA established. In addition, the GDP per capita has 0.007% insignificant negative effect on exports and 0.40% positive effect on imports at 0.1% significance level.

Research by Sabyasachi and Leitão (2013) mentions that there is a positive effect of GDP and the lag of trade using a dynamic model. The growth of economy will increase the market value in the country; thus, encouraging international trade to be further improved. However, the negative sign of the effect on GDP to exports is in line with the research by (Awokuse, 2008). Regarding that, the negative effect is insignificant; so, it could be concluded that the AFTA and GDP still play a key role in increasing exports and imports.

Using a dynamic model of panel data, the study calculates the effect of independent variables on dependent variables in the long-run period, as shown below. This estimation model also uses one and two independent variables that influenced trade in AMS.

Table 6 Long Run Effect Result

	Exports		Imports	
	(a)	(b)	(a)	(b)
AFTA	1.3797*	1.4817*	1.4943**	0.3831***
GDP	-	- 0.0915	-	0.9130***
Year Effect	yes	Yes	yes	yes
Num of Obs	248	248	248	248

Source: Analytical result, 2019

Note: *** $p < 0.001$; ** $p < 0.01$; and * $p < 0.05$

Most of the results show the independent variables have larger positive influence on dependent variables than in the short run result. Free trade variable, since the ASEAN Member States (AMS) joined AFTA, has significant effects, which are at 5% and 1% significance level, to increase exports and imports by 1.37% and 1.49% correspondingly; thus, the increases are higher than short-run results which are 0.12% (exports) and 0.14% (imports). With regard to the correlation of AFTA and GDP to exports and imports in the long run effect estimation model, the year after AMS joined AFTA has affected exports, increasing 1.48% significantly and

imports rising 0.38% at 0.1% significance level, compare the year before joining AFTA. Although there are significant level differences between long run and short run effects, the free trade area has larger positive effects on exports and imports (1.48 and 0.38) than in the short run (0.12 and 0.16). In addition, a percentage change of GDP per capita has a greater insignificant negative effect on exports, which is 0.09%, in long run than short run; and a greater positive effect on imports 0.91% at 0.1% significance level.

The addition of the long-run effect is in line with the result of research conducted by (Egger, 2004). That research shows that the effect of joining free trade blocks on the short-run term has low significance levels; nevertheless, after going through the long-run period, the effect of joining free trade block looks more significant and creates a trade creation. This trade creation is related to reducing and removing trade tariff barriers; thus, the trade volume is getting larger (Yang & Martinez-Zarzoso, 2014). That study mentions that elimination of trade barriers, in trading among inter-regional free trade blocks, also triggers greater number of trade volume. Nevertheless, the free trade agreements between ASEAN and partner countries do not fully apply because there are still tariff barriers for some sensitive products, such as agriculture products, and the lack of convenience procedures for customs clearance.

5. Conclusion

The research results of the regression indicate that there are significant and positive effect between ASEAN Free Trade Area (AFTA) and increasing of export and imports of ASEAN Member States (AMS). The random effect model shows that with only one independent variable, AFTA, the outcome effect has bigger values and a more significant level, compared to the model that adds one more control variable, Gross Domestic Product (GDP) per capita. In other words, the existence of AFTA raise up exports and imports value.

On the other hand, the results of the dynamic panel model indicate that the presence of AFTA has a positive effect on export; however, by adding GDP per capita as control variable, the influence value of AFTA on exports slightly increases and there is a negative effect of GDP on exports. The influence of AFTA is also influenced by the level of exports that have been carried out in the previous year. Additionally, the negative effect of GDP to exports is insignificant; thus, this can possibly be ignored to determine policies related to GDP growth. Especially, the results of previous results focus more on the effects of international trade or trade liberalization on economic growth.

With regard to the relationship between AFTA and imports in a dynamic panel model, AFTA has positive and significant effects on imports. The value of this effect

will slightly increase to the addition of GDP to the independent variable. The effect of GDP on imports is significant and positive; in other words, if the GDP increases, imports will also increase.

In terms of the long-run effects, the results obtained depict the influence of all independent variables increasing exports and imports, except the influence of GDP to exports. The positive effects of AFTA to exports and imports are significant; furthermore, when there are two independent variables, the influence of AFTA to exports is slightly higher and the influence of AFTA to imports is getting lower. The influence of GDP to imports is positive and significant; in contrast, the outcome of GDP to export is negative and insignificant which would be excluded from the policy implication.

Based on the result, it can be summarized that the policy of the established AFTA has a positive effect on the progress of international trade of AMS. In short-run term, AFTA increased exports and imports, especially when trade in the previous year gradually increased. In the long term, the effects are getting greater compared to that in short term; thus, the longer AMS join the free trade, there is a possibility of a better increase in exports and imports.

GDP could give a rise in imports. In growing economy situation, the needs of raw and intermediate goods increase to meet domestic production and the product to be exported. Moreover, developing countries mostly import new science and technology to complement export products (Segerstrom, 1991).

Based on previous research on economic integration, free trade is one of the initial stages. Therefore, ASEAN should be able to move their economic cooperation to the next stage such as customs union. This union is expected to be in line with some economic cooperation of ASEAN with partner countries such as Regional Comprehensive Economic Partnership (RCEP). RCEP which members are AMS and six non-member countries provides good trade results and maintains harmonious political relation for RCEP member countries such as China and Japan (Wardani & Cooray, 2019). Considering that this study does not focus on issues related to the formation of customs union and ASEAN cooperation with partner countries, these issues can be addressed by future research.

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