

THE EFFECT OF ASEAN FREE TRADE AREA (AFTA) ON INTRA-ASEAN TRADE

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ABSTRACT

The ASEAN Free Trade Area (AFTA) was formed in 1992, the basic feature of the AFTA is the liberalization of trade in the region through the elimination of intra-regional tariffs and non-tariff barriers, AFTA is expected to make manufacturing sectors in ASEAN more efficient and lead to compete in the global market, This agreement continued into the ASEAN Economic Community (AEC) enforced starting January 2016. The aim of this study to investigate the effect of trade creation on intra-ASEAN trade among five ASEAN member countries. To analyze trade creation used modified of gravity model and this model will be estimated using least squares. The data used is panel data from 2000 to 2013 (before and after global crisis in 2008). The results show that there are trade creation (both before and after the economic crisis), it's mean there is a shift in consumption domestic from high-cost imported goods from outside ASEAN countries to imports low cost from ASEAN member countries. Besides that coefficient value shows trade creation after the crisis is smaller than before the crisis reflects that the economic crisis has reduced the value of ASEAN trade

Keywords : *AFTA, Intra-ASEAN trade, Gravity model, Trade creation, Trade Diversion*

INTRODUCTION

Trade agreement between ASEAN countries (AFTA) has been established since 1992 with the five countries (Indonesia, Malaysia, Singapore, Thailand and Philippines), followed by the State of Brunei Darussalam, Vietnam in 1995, Laos and Myanmar in 1997 and the last is Cambodia in 1999, The aim of AFTA improved the competitiveness of ASEAN as a production base in the world market through the elimination of tariff and non-tariff , in other words AFTA with ASEAN countries is an attempt to create the liberalization of trade in taxation, and developed small and medium enterprises. At the beginning the agreement focused on the political, social and security, continued into the ASEAN free trade area was expected to be able to attract more Foreign Direct Investment (FDI) and increase trade among ASEAN member countries

AFTA was meant to be the vehicle to further enhance the competitiveness of ASEAN member countries and facilitate their integration into the global market for trade and investment. The Common Effective Preferential Tariff Scheme, or commonly known as the CEPT Scheme, became the main mechanism to move ASEAN towards the direction of the AFTA. Under this Scheme, member Countries are committed to bring

down intra-regional tariffs to within the 0-5 percent tariff within a specified period of time.

The implementation of the CEPT Scheme was a challenge in itself as the original ASEAN members differed in their levels of economic development. Also intra-ASEAN trade is relatively low as Member Countries produce similar products and compete for the same markets. There were also quite a number of industries in Member Countries, industries which have been used to tariff protection, which pressure governments to relax their commitments to free trade (Pengiran Mashor and Pengiran Ahmad, 2003)

The Agreement has provided a great opportunity for member countries to increase value of trade, increased economic cooperation in a broader scope is expected to assist member countries in conducting economic development, technology transfer and towards a better ability to manage the business

The main mechanism AFTA was open their markets to each other through Common Effective Preferential Tariff (CEPT). The gradual tariff reduction on goods from AFTA members was applied to manufactured goods and processed agricultural products in the first instance, allowing for specific products to be excluded. The original agreement allowed for elimination non-tariff barriers, AFTA countries have extended preferential access to each other in accelerated fashion compared with deadlines set in the original agreement. All goods within the region enter ASEAN-6 countries at a tariff rate of between 0 and 5% since 2003, excluding products specified on exceptions lists. In 2006, goods entered ASEAN-6 from AFTA countries with a tariff of 4.4% on average, compared to 10.9% from countries outside the zone, *i.e.* with a margin of preference of 6.5 percentage points. (Korinek, J. and M. Melatos ,2009)

Through AFTA tariff reductions since 2001 have increased ASEAN trade volume (during a period of 7 years from 2002 to 2008) with an average growth of ASEAN total trade amounted to 15.86%, intra-ASEAN trade amounted to 19.02%, and extra ASEAN trade by 14.9% (ASEAN Statistic Year Book 2008) this suggests that trade cooperation between ASEAN countries has increased intra-ASEAN growth compared with extra-ASEAN.

Table 1 shows the value of ASEAN trade (total trade ASEAN, intra-ASEAN trade, extra-ASEAN trade) from 2006 to 2013

Table 1. Rate of Growth of ASEAN Total Trade, Intra-ASEAN and Extra-ASEAN Trade, 2006-2013

| Year | Intra ASEAN Trade (in US \$ Million) | Growth Intra ASEAN Trade (%) | Extra ASEAN Trade (in US \$ Million) | Growth Extra ASEAN Trade (%) | Total ASEAN Trade (in US \$ Million) | Growth Total ASEAN Trade (%) |
|------|--------------------------------------|------------------------------|--------------------------------------|------------------------------|--------------------------------------|------------------------------|
| 2006 | 352,872.7 | | 1,052,359.7 | | 1,405,232.5 | |
| 2007 | 401,913.6 | 13.90 | 1,208,872.7 | 14.87 | 1,610,786.3 | 14.63 |
| 2008 | 470,230.1 | 17.00 | 1,426,927.0 | 18.04 | 1,897,157.1 | 17.78 |
| 2009 | 376,213.2 | -19.99 | 1,160,663.6 | -18.66 | 1,536,876.8 | -18.99 |
| 2010 | 511,019.9 | 35.83 | 1,498,096.0 | 29.07 | 2,009,115.9 | 30.73 |
| 2011 | 598,377.3 | 17.09 | 1,790,066.7 | 19.49 | 2,388,444.0 | 18.88 |

| | | | | | | |
|------|-----------|------|-------------|------|-------------|------|
| 2012 | 602,048.2 | 0.61 | 1,874,379.2 | 4.71 | 2,476,427.4 | 3.68 |
| 2013 | 608,558.3 | 1.08 | 1,902,958.2 | 1.52 | 2,511,516.5 | 1.42 |

Source : ASEAN Statistic Book Year, July 2015

Based on the data in Table 1. During the period of five years (2009-2013) the average growth of total ASEAN trade was 7.14%, 6.92% of intra-ASEAN trade, and extra ASEAN trade 7.23%, it can be seen that the growth of intra-ASEAN trade was less than extra-ASEAN trade, while the data prior economic crisis 2008 in intra-ASEAN trade growth on average by 19.02% and was higher than the average growth of extra-ASEAN trade.

During the period 2006 to 2013 (before the global crisis in 2008 and after in 2008) indicated that the value of total ASEAN trade, intra-ASEAN trade, and extra-ASEAN trade from year to year has increased, but decreased in the year 2009, this is due to the impact direct from economic global crisis in 2008, when we seen from its growth until 2008 increase in total ASEAN trade by 14.63% in 2007 became 17.78% in 2008 , as well as for intra-ASEAN trade grew by 13.90% in 2007 to 17% in 2008 and for its extra-ASEAN trade grew 14.87% in 2007 became 18.04% in 2008.

After 2008 total ASEAN trade has decreased especially after 2010 from 30.73% to 18.88% and became 1.42% in 2013, as well as intra-ASEAN trade fell from 35.83% in 2010 became 17.09% in 2011 and continue fell became 0.62%. Extra-ASEAN trade decline from 29.07% in 2010 to 7.29% in 2011 and also down to 1.52% in 2013. If counted with an average growth of ASEAN total trade was about 7.14%, intra-ASEAN trade was 6.92 %, and extra ASEAN trade by 7.2% this suggests trade agreement between ASEAN countries after 2008 shown that average intra-ASEAN trade growth less than average extra-ASEAN trade growth

Base on the background of data above can be explained that the growth of intra, extra, or total ASEAN trade after global financial crisis in 2008 has decreased, therefore the identification of issues to be examined in this study is how the effect of AFTA on intra-ASEAN trade

OBJECTIVES RESEARCH

This research aims to determine the effect of AFTA on intra-ASEAN trade

BENEFITS RESEARCH

The benefits of this research are as follows:

1. Theoretical: to develop of application the theory of free trade areas on international trade
2. Practical: if AFTA both before and after the crisis reflect trade diversion for the member countries of ASEAN, the study can be recommended to restore the policies set forth in the agreement so that can develop or improve products between ASEAN countries in order to compete with products outside ASEAN

LITERATURE AND HYPOTHESIS

Adam Smith argued that trade between countries should be based on a division of labor that lead to specialization and production efficiency in producing a product. David Ricardo model (the law of comparative cost) said that a country will focus on producing

the type of product that has the highest comparative advantage. While theorem Heckscher-Ohlin said that a country will tend to export commodities that intensively utilize the factors of production are plentiful, for example, a country with a labor abundant but with a level of capital that is limited will tend to export products that are labor intensive and would tend to import products are capital intensive. Besides that, differences in production functions in a country will determine the direction of the country's trade. A country that can produce relatively more efficiently in a type of product will be an exporter of the product.

Theoretically, international trade will bring several advantages, as follow (Sadono Sukirno, 2005): *First*, to get goods that can not be produced in the country, so the domestic consumers can choose the products they want. *Second*, to take advantage of specialization, a country can focus on a particular type of product so that it can produce a relatively high level of efficiency or specializing. While the product produced inefficiently in own country can buy from other countries. *Third*, expand markets of domestic industries means that a country can produce products exceeds domestic demand, the surplus can be sold in the international market. *Fourth*, using modern technology and increase productivity, it means that international trade opportunities a country to learn a more efficient production techniques or the transfer of technology to countries that still have low productivity so that can increase productivity which will accelerate of production. *Fifth*, the trade will expand products diversification in the domestic market, so that consumers needs can be easily met.

International trade impacts on the country doing these relationships either positive or negative effects, it causes a country needs to make the protection of domestic industry or put obstacles in the trade, some factors that encourage protection as follow : (Sadono Sukirno, 2005): *First*, to solve the problem of unemployment, the increase in imports caused domestic enterprises face the problem of lack of demand, which in turn will reduce the number of workers so unemployment increases. *Second*, to encourage development of infant industries in order to protect their production because of the beginning of sales could not reach the optimum level, so it is not able to compete with imported products. *Third*, to increase revenue and strengthen the economic structure, the development or expansion of the industrial sector is needed so that the domestic industry gained considerable market. *Fourth*, to improve the balance of payments by limiting the import of products reduces. *Fifth*, to increase government revenue, one of the tools used by the government to reduce the import of goods that the enactment taxation of imported goods (tariffs), Determination of the tariffs have influence on the balance of output and prices. That barriers lead to higher prices which resulted in decreased demand for goods from abroad.

The development of economic world since the 1970s has led higher dependence of the country with other countries, it encourages the development of multinational companies, financial investment into the various countries, technology information, so that it was important to encourage free market grow by reducing and eliminating trade barriers.

Regional economic integration is a process where several economies in the region have agreed to remove barriers and free facilitate flow of goods, services, capital and labor. Reduction or elimination of tariffs and non-tariff barriers will accelerate regional economic integration along the smooth traffic of goods, services, capital and labor-power.

According to Kindleberger and Lindert (1986), Paul Krugman & Maurice Obstfeld (2014), Free trade not only increasing prosperity but also increases the quantity and efficiency of world trade. Trade cooperation will also increase competition among members, the benefits that can be learned include increased specialization and increased trade itself. With the comparative advantages of each country, each country can focus on production of goods that have comparative advantages so that there will be a reallocation of factors of production. In the end will create a balance lower prices and more output so provide greater prosperity to the countries involved.

Mutual agreement in trade between the countries (no tariff) can increase welfare because it can replace the production of domestic high cost than low cost imports from member states, but on the other hand free trade can reduce welfare for replacement low cost of imported goods from non-member countries with similar goods from member states (Lee and Shin, 2008)

By eliminating trade barriers among member countries, the free trade area (FTA) removes discrimination between partner countries and domestic firms. As a consequence, relatively inefficient domestic production will decrease in favor of partner country production. This results in trade creation. However, the FTA creates a new discrimination between imports from partner countries and those from non-partner countries. Imports from partner countries therefore may replace more efficient non-partner products in the home market. This is a trade diversion. The net trade effect of a FTA will depend on the degree of trade creation compared to the degree of trade diversion.

Measuring the impact of international trade cooperation is trade diversion and trade creation (Krueger, 1999). Trade diversion occurs when one or more countries feel disadvantaged because lack of action is preferential among certain countries, in other words that trafficking binding intra partner countries, differences in tariffs applied for partner and non-partner trade would change the trajectory of trade causing negative effects which refers to movement of products low cost imports from non-member countries with high cost imported products of partner countries, trade diversion will reduce welfare effects with change in orientation of the supply to the source that is relatively more expensive.

Trade creation is the trade due to the shift of domestic products consumption that are high-cost imported products to member countries that are low-cost. On other words occur declining trade with non-partner countries, the benefits free trade or regional cooperation is determined by one of more dominant effect. The overall effect can be positive, negative or neutral, depending on amount of trade creation and trade diversion. Free Trade Area (FTA) would be very beneficial if the impact on trade creation is greater than the impact on trade diversion.

Introduced the notion of a “natural trading block” based on geographical proximity that could be both efficient and welfare increasing. FTA based on being a member of a political club could induce regional bias to trade patterns that can be welfare reducing if trade diversion is greater than trade creation. This raises the question of whether AFTA has any real economic rationality over its mere political and symbolic meaning (Krugman, 1991)

Results of previous studies related to AFTA as follows:

1. Nurul Qolbi and Akhmad Syakir Kurnia (2015) : Using panel estimation, they found that marginal product of capital, human capital, total factor productivity growth, and

- the quality of institutions appear as determinants for the capital flow from Indonesia, Malaysia, Philippines, and Thailand to Singapore as a host country. On the contrary, the capital flow from Singapore to other ASEAN countries as host countries is encouraged only by the quality of institutions, human capital as well as per capita GDP. The result shows that Lucas variables emerge as determinants for the uphill and downhill capital flow in ASEAN-5. In the meantime, marginal product of capital that represents neoclassical variable appears as the determinant for uphill capital flow from other ASEAN countries to Singapore. This gives significant insight that Lucas variables emerge as companion to the neoclassical variables in explaining intra ASEAN capital flow.
2. Misa OKABE & Shujiro URATA (2014) : they found positive and significant trade creation effects from the tariff elimination for a wide range of products. They also found that the elasticity of tariff reduction on imports tends to be much larger than that on exports. Trade creation effects for the new ASEAN members are relatively small compared to those for the old members. Their results show that AFTA has been successful in promoting intra-AFTA trade.
 3. Normaz Wana Ismail and Collin Wong Koh King (2013) : finding suggests that trade between the selected member countries remains strong even during the 1997 Asian Financial Crisis and the 2008 Global Financial Crisis.
 4. Hiro Lee & Michael G. Plummer (2011) : the estimated welfare gains for the year 2015 range from 1.1% in Indonesia to 9.4% in Thailand. The results suggest that streamlining customs procedures and other reductions in administrative and technical barriers, as well as increased competition and improvements in infrastructure, are significant in enlarging the benefits of the AEC.
 5. Ruzita Mohd., Amin Zarinah Hamid, Norma Md. Saad (2011) : Intra-ASEAN trade with efficient members is found for total exports, mainly contributed by five sectors: beverages & tobacco, minerals & fuels, chemicals & materials, machinery & transport equipment, and miscellaneous manufactures. Thus, this study finds that only „good“, i.e., efficient intra-regional trade is taking place within ASEAN, which is in line with the objective of establishing the ASEAN Economic Community. Income levels, transportation costs as well as level of development are shown to have a significant effect on total trade as well as on most sectors. Based on the findings, the study provides policy recommendations to promote higher trade for ASEAN members.
 6. Chiou, Yi-hung (2010) : Through the construction of a set of hypotheses, this article investigates five AFTA agreements/ protocols and the conditions of ASEAN states during the 1992–2003 period. The findings indicate that political leaders' preferences have played a pivotal role in the development of the AFTA. Economic performance and domestic support in individual states has also affected the AFTA. The close link between AFTA agreements and external impacts reveals that the AFTA's inherent nature is defensive.
 7. Peter A. Petri, Michael G. Plummer and Fan Zhai (2010) : There will be mild trade and investment diversion effects, but the world as a whole will benefit from the AEC. Nevertheless, the AEC poses political challenges: the study finds that the project will imply significant structural adjustment in several ASEAN economies.

8. Kim-Lan Siah , Chee-Keong Choong, Zulkornain Yusop (2009) : The empirical results indicate that the effects of the size of economy on bilateral trade flow in ASEAN are either trade-enhancing or trade-inhibiting dependent on the country-specific. There is evidence that AFTA preferential arrangements are important and prevalent in enhancing intra-ASEAN trade. However, ASEAN countries may not as a whole benefit from the formation of AFTA as the trade deflection might occur in the regional market.
9. Maurice Bun, Franc Klaassen and Randolph Tan (2009) : The estimation results suggest that there has been a positive effect of AFTA. More in particular, intra-AFTA trade has grown on average 9% per year from its introduction in 1992 onwards. This empirical fact is contrary to earlier findings, which are typically not so positive about AFTA. It is our impression that these earlier estimates on AFTA are confounded with the effects of unobserved determinants of trade.
10. David Cheong (2008): in general ASEAN preferential margins had a trade-creating effect at the product level; the majority of ASEAN countries benefited significantly from this trade creation; and there was net trade creation in the HS4 and HS8 product categories. These results suggest that ASEAN trade liberalization in the early 2000's had positive welfare effects.
11. Tajur ariffin masron and zulkornaen yusof (2008) : The results indicate that convergence in ASEAN is conditional upon several control variables taking place, in addition to openness. Additionally, while AFTA has a positive effect on economic growth, its impact on convergence is somewhat ambiguous in the presence of external shocks.
12. Indira M. Hapsari and Carlos Mangunsong (2006) : The reduction of tariff found to have a significant effect in increasing the bilateral exports of ASEAN members. The econometric analysis suggested that AFTA may be causing some trade diversion and shifting trade from countries outside the bloc to possibly less efficient countries inside the bloc, the potential for intra-regional trade is great for ASEAN members.
13. Robert J.R. Elliott & Kengo Ikemoto (2004) : The Trade flows were not significantly affected in years immediately following the signing of AFTA agreement and also that traditional stance of ASEAN countries to outward-oriented economic activity has not been significantly damaged but rather stimulated by the AFTA process and/or the Asian economic crisis, one effect of the Asian economic crisis was to generate a stronger desire to source imports from within the region Tran Van Tho (2002) : Results from a gravity model suggest that the creation of AFTA, COMESA and MERCOSUR have increased trade in agricultural products between their member countries. There is no robust indication of trade diversion with respect to imports from outside the region. The agreements are therefore net trade creating. There is no robust indication however that there has been strong trade creation with non-members in the case of any of the RTAs under study
14. Robert J. R. Elliott and Kengo Ikemoto (2004) : We find that trade flows were not significantly affected in the years immediately following the signing of the AFTA agreement and also that the traditional stance of ASEAN countries to outward oriented economic activity has not been significantly damaged but rather stimulated by the AFTA process and/or the Asian economic crisis. We do find however, that that

one effect of the Asian economic crisis was to generate a stronger desire to source imports from within the region.

15. Ghosh and Yamarik (2004) : conclude that the dummy represents the period AFTA implementation till its effects. a positive value of the estimated coefficient can be interpreted as trade creation.
16. Tran Van Tho (2002) : The effects of AFTA on FDI inflows also has not been recognized so far. While AFTA is contributing to the increasing confidence and stability of ASEAN countries, its effects on the development of these countries are not as important as the dynamic interdependence between ASEAN and other East Asian economies. A stronger cooperation of ASEAN+3 is therefore highly desirable.

SPECIFICATIONS MODEL:

The model will be used to examine the trade creation and trade diversion from the effects of free trade (in this case AFTA) on intra ASEAN trade used the model "The original Basic Gravity Model (BGM)" written by Tinbergen (1962), which further developed by Anderson (1979) and Deardorff (1997) this model is used to analyze the impact of 'economic integration', the form of the model is as follows:

$$X_{ij} = \beta_0 Y_i^{\beta_1} Y_j^{\beta_2} D_{ij}^{\beta_3} \varepsilon_{ij} \dots\dots\dots (1)$$

Or by using the natural logarithm,

$$\ln X_{ij} = \ln \beta_0 + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln D_{ij} + \ln \varepsilon_{ij} \dots\dots\dots (2)$$

To find out the trade creation and trade diversion from the AFTA, the above model is modified by inserting a dummy variable then estimated using least squares (LS), the model becomes:

$$\ln INTR_{it} = \ln \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln POP_{it} + \beta_3 \ln ER_{it} + \beta_4 \ln DIS_{it} + \beta_5 AFTA_{it} + \log \varepsilon_{it} \dots\dots\dots (3)$$

Information:

1. $\ln INTR_{it}$ is the intra ASEAN trade by trading ASEAN countries and partner ASEAN countries in year t (million US \$)
2. $\ln Y_{it}$ converted into $\ln GDP_{it}$ is the nominal value of the country's GDP ASEAN countries and partner ASEAN countries in year t (US\$)
3. $\ln POP_{it}$ is the population of ASEAN countries and partner ASEAN countries in year t
4. $\ln DIS_{it}$ is the distance between Indonesia and ASEAN countries and trading partner ASEAN countries in year t (km)
5. $\ln ER_{it}$ is the exchange rate between ASEAN countries and trading partner ASEAN countries with US\$ currency in year t
6. $AFTA_{it}$ is a dummy variable where 1 if the countries entered into AFTA and 0 others
7. $\log \varepsilon_{it}$ a log normal distribution of the error term

Theoretically the relationship between the dependent variable and the independent variables are as follows:

- GDP_{it} is expected to be positive due to the high-income people will buy imported goods means higher exports of other countries will be high.
- POP_{it} could not be ascertained value means it can be positive or negative, that would be negative for the country's population are many and are considered to have many resources (resource endowment) that has little dependence on the international market and that will lowering trade, on the other hand can be a positive value means more

- inhabitants will have a large domestic market share that will create economies of scale of production and the country could trade more with member states so as to raise its trade.
- ERit is the exchange rate between ASEAN countries and trading partner ASEAN countries with US\$ currency could be a positive or negative. If the ASEAN countries currency has appreciated against the currencies of US \$, the intra-ASEAN trade down, and if the ASEAN countries currency depreciates against the US\$ currencies, the intra ASEAN trade rise.
 - DISit is expected to be negative which means that the distance between Indonesia and other ASEAN countries and trading partner ASEAN countries will increase the cost of transport and communication that relate to the volume of products traded
 - Dummy variables AFTAit reflect the "trade creation" and "trade diversion" Following Ghosh and Yamarik (2004) if a positive value of the estimated coefficient can be interpreted as "trade creation", but if negative shows "trade diversion"

Based on the above, the research hypothesis is

Ho: AFTA had negative effect on intra-ASEAN trade

Ha: AFTA had positive effect on intra-ASEAN trade

RESEARCH METHODS

This research used empirical study hypothesis testing is to test the hypothesis set forth and explain the findings either consistent or inconsistent with the theory and previous empirical research using alternatives to existing theories. The model used in this research is multiple regression by inserting dummy variable , whereas for estimating the coefficients of the independent variables using least squares (LS), the next model to be analyzed is shown in equation (3) as follows:

$$\ln \text{INTRit} = \ln \beta_0 + \beta_1 \ln \text{GDPit} + \beta_2 \ln \text{POPit} + \beta_3 \ln \text{ERit} + \beta_4 \ln \text{DISit} + \beta_5 \text{AFTAit} + \log \epsilon_{it} \dots (3)$$

DATA COLLECTION

This research used secondary data using the panel data from 2000 to 2015, the period was divided into two periods: the period before economic crisis 2008 (2000-2008) and the period after economic crisis (2009-2015). Countries that made the observation are 10 countries consisting of 5 members ASEAN (namely: Indonesia, Singapore, Malaysia, Thailand, Philippines) and 5 non-members (the state as major trading partners ASEAN, namely: China, USA, Japan, Korea, Hong Kong), the data dependent and independent variables derived from several source is World Bank Data, Bank Indonesia, Central Bureau of Statistics, ASEAN book Year 2008 & July 2016, and the Great Circle Distance between Cities.

RESULT AND DISCUSSION

The estimation results of pool least square in equation (3) shown in the table below:

Table 2. The Estimation Result of Equation Intra-ASEAN Trade period 2000-2008

Dependent Variable: LNINTR?

Method: Pooled EGLS (Cross-section weights)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------------|-------------|------------|-------------|--------|
| C | 8.560011 | 0.272942 | 31.36202 | 0.0000 |
| LNGDP? | 0.460632 | 0.053884 | 8.548643 | 0.0000 |
| LNPOP? | -0.188902 | 0.039171 | -4.822485 | 0.0000 |
| LNER? | -0.075738 | 0.008654 | -8.751329 | 0.0000 |
| LNDIS? | -0.032432 | 0.007484 | -4.333543 | 0.0000 |
| AFTA? | 0.292051 | 0.113610 | 2.570650 | 0.0119 |
| R-squared | 0.727770 | | | |
| Prob(F-statistic) | 0.000000 | | | |

Source : Data estimates

Table 3. The Estimation Result of Equation Intra-ASEAN Trade period 2009-2015

Dependent Variable: LNINTR?

Method: Pooled EGLS (Cross-section weights)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------------|-------------|------------|-------------|--------|
| C | 8.481945 | 0.213277 | 39.76968 | 0.0000 |
| LNGDP? | 0.601959 | 0.024960 | 24.11672 | 0.0000 |
| LNPOP? | -0.256181 | 0.014095 | -18.17592 | 0.0000 |
| LNER? | -0.065916 | 0.007387 | -8.923706 | 0.0000 |
| LNDIS? | -0.037557 | 0.011247 | -3.339266 | 0.0014 |
| AFTA? | 0.197930 | 0.048810 | 4.055114 | 0.0001 |
| R-squared | 0.810720 | | | |
| Prob(F-statistic) | 0.000000 | | | |

Source : Data estimates

Analysis of the period 2000 - 2008 (before the crisis) and 2009-2015 (after the crisis) Period 2000 - 2008 the value of determination coefficient is 72.77%, it's means that 72.77% of the variation in total value of intra-ASEAN trade is affected by variations in the independent variables. While the period 2009 - 2015 the value of determination coefficient is 81.07%.

All of independent variables are estimated coefficients were statistically significant at 95% confidence level.

- The Directions of coefficients In GDPit (national product of the countries that are members of the ASEAN-5) as expected is positive and statistically showed significant which means the greater national product of the ASEAN-5 countries it will be the higher value of trade between ASEAN countries or when the value of national product ASEAN countries increased will rise the value of imports from other ASEAN countries so in the other side have increased the value of exports, especially to the ASEAN countries so that the total value of intra-ASEAN trade to be increased.

Because form of regression equation in natural logarithm (ln), so coefficient of independent variables show elasticity; the period 2000 - 2008 coefficient ln GDPit is 0.46 implies when ASEAN-5 countries GDP rose 1%, it will increase intra-ASEAN trade value 0.46%. While the period 2009 - 2015 is 0.60 means that after the economic crisis 1% increase in GDP will rise 0.60% value of intra-ASEAN trade, this increase is higher than before the crisis. That conditions could be explained after the crisis of 2008 exports from trading major partners ASEAN countries (such as the USA, Japan, China) have decreased because their falling economic growth is large enough so that the effect on the demand for import include from ASEAN, as a result of trade between ASEAN countries became the main focus for the member states which will ultimately increase intra-ASEAN trade.

- Both regression equation (before and after crisis), coefficient ln POPit (the population of the ASEAN-5) determined negative directions and statistically significant, it's mean that increasing number of ASEAN-5 population led decrease in value of intra-ASEAN trade, it is estimated that a large population to produce more goods for meet own domestic demand than to be traded abroad (mainly from ASEAN countries). Regression coefficient value before the crisis was -0.18 indicated that if population of ASEAN-5 increased 1% would cause a decrease in intra-ASEAN trade value about 0.18%, while after the economic crisis was -0.25 means if the population of the ASEAN-5 increased 1% would cause impairment of intra-ASEAN trade 0.25%. The coefficient value after crisis has increased due to population growth increases.
- Coefficient directions ln ERit (exchange of ASEAN countries and trading partner ASEAN countries with US \$) is negative and showed significant, coefficient regression is -0.075 for period 2000-2008 and amounted -0.065 for period 2009-2015 which meaning when the currency ASEAN-5 rose (appreciation) of 1% will decrease the value of intra-ASEAN trade amounted to 0.075% (period 2000-2008) and amounted to 0.065% (period 2009-2015) and vice versa when the value of the currency ASEAN-5 decrease (depreciate) it will increase the value of intra-ASEAN trade amounted to 0.075% (period 2000-2008) while the period 2009 to 2015 amounted to 0.065%, this case illustrates when a currency depreciation ASEAN countries has reduced imports but raise export value between ASEAN countries so that the value of intra-ASEAN trade will increased.
- Coefficient directions ln DISit (distance among ASEAN countries and also trading partner ASEAN countries) is negative and showed significant, valuable coefficient - 0.032 period 2000-2008 and -0.037 period 2009-2015, this means every additional distance between intra ASEAN countries and trading partner countries by 1% will increase the cost of transport and communication that will lower the value of intra-ASEAN trade amounted 0.032%.
- Coefficient of variable AFTAit the period 2000 - 2008 is 0.2920 with a probability value of 0.0119 while the period 2009-2015 is 0.1979 with 0.0001 probability showed statistically significant values, this means that the null hypothesis is rejected and accepted alternative hypothesis, in other words AFTA has positive impact on intra-ASEAN trade or give rise to trade creation (positive variable coefficient) and reflects that there is a shift of domestic products consumption that are high-cost imported products to member countries that are low-cost. Free trade (AFTA) has been

encouraged or increased the value of intra-ASEAN trade so that the overall trade between ASEAN members increased. This result is consistent with the results of research by Ghosh and Yamarik (2004), Maurice Bun, Franc Klaassen and Randolph Tan (2009), Normaz Wanna Ismail & Collin Wong Koh King (2013), Misa Okabe & Shujiro Urata (2014), But if was compared the value of trade creation, after the crisis has decreased than before the crisis, it can be explained that the economic crisis had an impact on reducing intra-ASEAN trade.

CONCLUSION AND RECOMMENDATION

Referring to modified gravity model from Tinbergen that was used in this study to look at the effect of AFTA on intra-ASEAN trade with saw direction of dummy variable coefficients which determine whether there is trade creation or trade diversion. Based on estimates of coefficients in independent variables, we concluded that the dummy variable AFTA both pre-crisis period (years 2000-2008) and after crisis (2009 - 2015) is positive and significant which means there is trade creation it shows that there is a shift in consumption domestic from high-cost imported goods from outside ASEAN countries to imports low cost from ASEAN member countries. Free trade area between ASEAN countries has stimulated the improvement of trade between ASEAN countries which turn would increase population ASEAN welfare. Besides that coefficient value shows trade creation after the crisis is smaller than before the crisis reflects that the economic crisis lowers intra-ASEAN trade.

Recommendation could be said that considering after the crisis value of trade creation ASEAN countries lowered than before crisis so the member of ASEAN countries have to improve the quality of goods and should be able to reduce the cost of production so that it can compete with outside ASEAN member countries.

Limitation of this study is using multiple linear regression and determine the effect of free trade area on trade (trade creation) only see the direction of dummy variable regression coefficients. For further research, it is recommended to add other variables suspected to affect intra-ASEAN trade and use other models to determine trade creation and trade diversion. Countries used in this study only five countries, so for next research should used all countries belonging ASEAN.

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