IMPACT OF TRADE CREATION AND TRADE DIVERSION IN ASEAN-JAPAN COMPREHENSIVE ECONOMIC PARTNERSHIP (AJCEP)

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Abstract: This study uses a gravity model to analyze the impact of the ASEAN-JAPAN COMPREHENSIVE ECONOMIC PARTNERSHIP (AJCEP) agreement on total Indonesian exports and to analyze the occurrence of trade creation or trade diversion. The data used in this study is panel data, the time used in this study from 2000 to 2015 consisting of 16 countries. This result finds the coefficient value of the FTA dummy of 0.207. This positive relationship indicates that there is a trade creation in AJCEP member countries and non AJCEP members. So it indicates that the welfare of member states and non AJCEP members. Total GDP, real exchange rate is positively correlated and GDP per capita difference and distance are negatively related to total Indonesian exports.

Keywords: ASEAN-Japan Comprehensive Economic Partnership, Gravity Model, Trade Creation and Trade Diversion.

Introduction

The development of international trade leads to more free trade accompanied by forms of cooperation namely bilateral, regional and multilateral cooperation. The aim of international trade agreements is an effort to reduce or eliminate trade barriers. Trade liberalization in a country with a pattern of international cooperation has a positive impact on economic growth in a country. The value of world trade will grow larger than the real world gross domestic product (GDP) growth (Krueger, 1999).

One of the indicators to measure the impact of international trade cooperation is trade creation and trade diversion. Trade creation occurs when some products that are produced

domestically are replaced by imported products with relatively cheaper production costs where the products come from other member countries, so this activity will improve the welfare of member countries because it encourages greater production specialization based on comparative advantage (Salvatore, 2014: 312). Diversion trade occurs when imported goods at a lower cost than outside the union or non-member are replaced by imported goods at a higher cost than the member countries, thus this will reduce welfare (Salvatore, 2014: 314). This transfer will result in additional costs and can reduce a country's income.

Forming of an FTA will increase trade in goods and services between member countries and increase employment opportunities in these countries. Besides improving welfare, Lindert and Kindleberger (1986) argue that free trade will increase the quantity of world trade and efficiency. Urata and Kiyota (2003), point out that FTA in East Asia will have a positive influence on economic growth. On the other hand according to Haryadi et.all (2008) shows that trade liberalization by removing all trade barriers has an impact on the decline of Indonesia's Gross Domestic Product (GDP) and Australia-New Zealand

Based on Newton's Gravity Law, the gravity model equation is able to explain the trade volume between two countries positively related to real GDP (market share production) and negatively related to the distance between countries caused by high transportation costs thus increasing production costs. Various studies from Beers (2000) Kien (2009), Yang and Martinez (2014), have proven that the gravity model is able to explain the flow of trade between two countries by showing the law of gravity. The gravity model is able to explain the flow of trade which is influenced by GDP and the distance between the two countries, and distance is a trade barrier that affects trading volume. The farther distance between the two countries that trade, the greater the transportation costs incurred. Conversely, if the closer the distance between the two countries that trade, the smaller the transportation costs incurred.

Based on the background above, the research gap from this study is a trade agreement in the form of trade creation or trade diversion on the Indonesian export side in the AJCEP agreement and differences in export performance in AJCEP member countries and non-AJCEP members. The benefit of this research is to observe the profit or loss in the participation of AJCEP member countries on the export side. Therefore, this study tries to estimate the impact of trade creation or trade diversion on Indonesia with Japan and ASEAN on the export side. The results of this study are expected to find out whether there is an effect of trade creation or the effect of trade diversion from the collaboration of AJCEP.

Literature Review

International Trade Theory

The theory underlying international trade is the theory introduced by Adam Smith through the theory of absolute excellence. This theory states that a country will specialize in certain types of goods where the country has absolute advantages. (Salvatore, 2014: 32). The special advantages of each country are used as a basis for increasing mutually beneficial trade. The theory of comparative advantage develops as the basis of international trade which underlies this research, namely using the theory of comparative advantage and the theory of Hecksher-Ohlin.

Trade Barriers

In international trade activities (between countries) often a country experiences obstacle. Trade barriers are government regulations or regulations that limit free trade. The forms of trade barriers include; there is a tariff or import duty (tariff protection), a quota limitation road (non-tariff protection), a tariff increase system, and various efforts to emphasize imports and even import restrictions. The aim is to eliminate threats to local products and to other national interests (Salvatore, 2014).

Exchange Rates Against Trade

Currency exchange rate is a comparison of the value of two different currencies or known as exchange rates (Halwani, 2005: 186). The trade exchange rate is the ratio of export commodity prices to imported commodity prices. Where commodities are traded in large quantities, the country's trade exchange rate is given the ratio of the export price index to the import price index. The ratio is usually multiplied by 100 for the trade exchange rate in the form of percentages (Salvatore, 2014: 96).

The exchange rate is divided into two, namely, nominal exchange rate and real exchange rate. The nominal exchange rate (nominal exchange rate) is the value used when exchanging a country's currency with another country's currency. Real exchange rate (real exchange rate) is the value used when exchanging goods and services from a country with goods and services from other countries (Mankiw, 2007).

Trade Creation dan Trade diversion

Forming of FTAs is done to reduce trade barriers in the form of reducing or eliminating tariffs and non-tariffs. This effort will increase the value of a country's trade by looking at the increase in trade. The impact of FTA formation is in the form of trade creation and trade diversion. Viner (1950) was the first party to spark the concept of trade creation and trade diversion. In trade creation, when some commodities produced domestically or imported from non-member countries with high costs are replaced by commodities produced from fellow members of the agreement at a lower cost, this will increase welfare (Salvatore, 1996).

Trade diversion occurs when a free trade agreement causes an increase in product imports from member countries to replace imported products from countries other than members whose prices are lower (Krugman, 2012: 277). This occurs because of the enactment of agreements for fellow member states (tariffs are abolished) so that products from non-member countries that were previously cheaper were more expensive because they had to bear tariffs. While products from member countries that are less efficient, become relatively cheap because they no longer pay tariffs. This trade diversion tends to reduce welfare, because it shifts production activities from more efficient producers from non-member countries to non-efficient producers from fellow members. Thus, the existence of trade diversion (Trade Diversion) will exacerbate the allocation of international resources and distance production activities from the pattern of comparative advantage (Salvatore, 1996: 387).

Trade Creation and trade diversion come from members of an agreement both change the pattern and volume of trade that is taking place so that it will increase or vice versa. The welfare of foreign countries that are non-members in the short term will most likely reduce the utilization of factors of production in the non-member economy will be reduced because the export market is reduced so that overall becomes less efficient. If more members in the agreement bring about the creation of trade (Trade Creation), then those who will benefit in the form of increased welfare are

not only member states but also non-member countries. Conversely, if what happens is the transfer of trade (Trade Diversion) then the member countries will get a loss, but non-member countries will certainly get a loss (Salvatore, 1996: 387).

Theory of Economic Integration

Economic integration is regional economic integration that occurs when several countries form a fact that free trade aims to open access to trade as widely as possible with other countries. The meaning of regional integration into an in-depth understanding of international trade is more than just the elimination of import tariffs and quotas to eliminate market segmentation by heading towards a higher totality of integration (Venables and Anthony, 2000). Economic integration is defined as the elimination of economic barriers between two economies of the country or more (Pelksman, 2006).

The growth of economic integration in an area is driven by three factors. First, the existence of economic potential is maximized so that it has better competitiveness. Second, political potential, especially for small but rich countries. Third, conflict resolution. The establishment of an FTA is an attempt by several countries to carry out economic integration in the world of international trade. Economic integration theory refers to a commercial policy or discriminatory trade policy to reduce or eliminate trade barriers only among countries that mutually agree to form a limited economic integration (Salvatore, 1996).

Gravity Model

The gravity model is a bilateral trade between two countries that has a positive correlation with GDP (Gross Domestic Product) of the two countries and will be smaller as the distance separates the two countries. The bigger and closer the two countries are, the greater the volume of trade between the two countries. (Salvatore, 2014: 7). The gravity model is used to analyze the pattern of bilateral trade flows between countries in a particular region as a function of the economic period of each country, distance between countries, and other factors. Gravity models are now often used as a method that is able to evaluate the trading potential of a product or service between countries and be able to see how large an area is. The background to the formation of this model is that richer countries will trade more abroad when compared to poorer countries where the distance that is farther away is considered not as an obstacle. The basic equation used to estimate the gravity-based model (Starck CS, 2012) is as follows:

$$T_{ij} = A \times Y_i \times \frac{Y_j}{D_{ij}} \quad \text{...} (2.1)$$

Which:

T_{ij} = Value of trade between country i and country j
Y_i = GDP of country i
Y_j = GDP of country j
A = Constant
D_{ij} = Distance between two countries

This model has been proven empirically strong by econometric analysis and is known to be very consistent in explaining various phenomena such as migration, tourism, and trade flows of goods (Bergstand, 1985) other factors such as income levels, diplomatic relations, and trade policies are also included in this model. Kien (2009), Caporale et al (2011) and Yang & Inmaculada

(2014) agree that the effect of a free trade agreement on trade flow can be estimated using the gravity model.

Prior Research

The development of increased regionalization will cause many researchers to study on the impacts caused to member countries and non-members. Previous research will provide an overview of the related topics in this study.

Kien's research (2009) examines the impact of trade creation and trade diversion which uses the gravity model to estimate trade from 39 countries with 26 members from 4 kinds of agreements, namely, Europan Union (EU), ASEAN Free Trade Area (AFTA), North American Free Trade Agreement (NAFTA) and MERCOSUR or the Common Market of the South in the period 1988-2002 based on the form of a two-way error component of the gravity model. The estimate shows that export flows are increasing proportionally to GDP and the formation of AFTA has resulted in significant trade creation among its members.

The method used is Hausman-Taylor (HT), in this method shows that distance is a more important obstacle in export flows. In general, free trade areas do not have the same impact on each regional trade grouping. The securities that are against the AFTA and the EU which in fact trade creations appear in all areas of free trade but differ in the EU agreement. In the EU agreement shows the trade diversion results on the import side while AFTA shows the effect of trade creation on the export side. Distance has a negative impact on export flows and the formation of free trade areas. The impact proved that transportation costs were greater than tariffs and this was a major obstacle to trade flows. Trade facility policy is an important role in establishing the AFTA transition stage in free trade areas.

Yang and Inmaculda (2014) study, in their research using aggregate data and disaggregated data in four categories: raw agricultural products, manufactured products, chemical products and machinery and transportation equipment traded by 31 countries and covering the period from 1995- 2010. According to the estimation results of using aggregate data, the agreement between ASEAN and China produces a positive trading effect. These results are positive and significant by reducing and eliminating barriers to tariffs at ACFTA will increase the total trading volume in intra-block member countries but also between extra-blocks. The ACFTA effect is estimated for the export of manufactured goods and the chemical products of significant trade creation and trade diversion effects for agricultural raw materials, as well as machinery and transportation equipment.

Model Analysis

$$logX_{ijt} = \beta_0 + \beta_1 logGDP_{ijt} + \beta_2 logDGDPC_{ijt} + \beta_3 logDist_{jt} + \beta_4 logER_{jt} + \beta_5 DFTA_{ijt} + \varepsilon_{ijt}$$

Data and Research Methods

Research Approach

The approach used in this research is the quantitative descriptive approach. The quantitative approach is done by using the gravity model with panel data regression method. This aims to determine the significance of the relationship between variables and parameter estimation through panel data regression analysis techniques which are a combination of time series data and cross-section data in the annual observation period, i.e. in 2000 to 2015.

Definition of Operational Variables

1. Total Ekspor (X_{ijt})

The gravity model in general is to use total exports as the dependent variable. In this research, aggregate trade data will be used. The value of Indonesia's total trade with ASEAN countries, Japan and some trading partners is calculated entirely in United States Dollar (US $) units. This data is then converted into natural logarithms.

2. Total Gross Domestic Product (GDP_{ijt})

GDP is used as a proxy for the size of the economy in a country. Countries with large GDP tend to have high domestic production, so that it becomes the right measure to assess export performance in a country. In this study, the GDP used is the GDP constant with the 2010 base year in US $ units. The total GDP consists of exporting countries and importing countries. This GDP data is then converted into natural logarithms.

3. Gross Domestic Product Per Capita Difference or Difference ($DGDPC_{ijt}$)

Difference or difference in per capita income between Indonesia and its trading partner countries. On the demand side, differences in per capita income are used to see consumption patterns. The DGCA variable is calculated from the difference in total GDP per capita between Indonesia and one of its trading partner countries, then converted into logarithmic form. The data in this study uses GDP per capita constant with the 2010 base year. The difference or difference in GDP per capita data is then converted into natural logarithms.

4. Distance between countries ($Dist_{ij}$)

The distance between countries used in this study is the distance between the capital (economic center) of the country of Indonesia and members and non-members of AJCEP. Geographic distance is used as a proxy for transportation and communication costs. The distance used is to use kilometer units, the greater the distance between countries, the more expensive the transportation costs incurred. The distance data between countries is then converted into natural logarithms.

5. Exchange Rate (ER_j)

The exchange rate is the relative price of goods between two countries. Real exchange rates state the level at which a country can trade goods for goods from other countries (Mankiw, 2007). Exchange rates play a role in spending decisions because they allow changing the price of different countries into the same terms. Depreciation of the country's currency against foreign currencies makes exports cheaper and imports more expensive. Conversely, when appreciating the currency makes exports more expensive and imports are much cheaper (Krugman, 2012: 376). This exchange rate data is then converted into natural logarithms. 6. Dummy FTA ($DFTA_{ijt}$) Dummy variables for intra regions indicate the effects of trade creation or trade diversion. The dummy variable will be worth one since 2008 if the country of origin and export destination is a member of AJCEP that trades in the region and has zero value for the destination country of export is a non-member of AJCEP.

6. Dummy FTA ($DFTA_{ijt}$)

Dummy variables for intra regions indicate the effects of trade creation or trade diversion. The dummy variable will be worth one since 2008 if the country of origin and export destination is a member of AJCEP that trades in the region and has zero value if the destination country of export is a non-member of AJCEP.

Finding and Discussion

Effect of GDP Total on Indonesia's Total Exports

The total GDP (GDP_{ij}) variable that represents economic size of Indonesian exports with AJCEP member countries and non-AJCEP members. Based on the statistical estimation results of this study is that the total GDP variable is significant and influential on Indonesian exports. GDP and exports have a positive relationship. Increased income and demand for output in a country will encourage increased demand for goods and services. Therefore, by increasing GDP in a country, it tends to increase the amount of exports produced in that country.

Table 1. *Random Effect* Regression Results

Variable	Regression Coefficient	Coef	Conclusion
	Unstandardized		
Constants	-32.32918	0,000*	-
GDP_{ij}	2.31273	0,000*	Significant
$DGDPC_{ij}$	-0.123365	0,074*	Significant
ER_{ij}	0.0505597	0,078*	Significant
$Dist_{ij}$	-1.307714	0,091*	Significant
$DFTA_{ij}$	0.2071638	0,000*	Significant
R^2	0.4567		
Dependent Variable: X_{ijt}			

Source: Data on *Random Effect Model* Regression Results, STATA 2013
Description: (*) 10% significant

Effect of Difference in GDP Per Capita on Indonesia's Total Exports

Variable differences or differences in income per capita ($DGDPC_{ij}$) between two trading partners are statistically significant and affect the total exports of Indonesia with AJCEP member countries and non-AJCEP countries. It is generally found that consumption patterns are able to explain the flow in Indonesia's export trade. Research from Elliot and Ikemoto (2004), is in line with the results of this study by including differences or differences in per capita income. Countries with greater differences or differences in income tend to have relatively small export levels. Differences or differences in GDP per capita capture the extent to which trading partner countries demand for goods that tend to be similar but different. The demand is measured by the population. Exports tend to increase if these countries have a similar level of difference or difference in GDP per capita.

Effect of Exchange Rates on Indonesia's Total Exports

Exchange rate variable (ER_j) has a positive and significant relationship to Indonesia's total exports in the period 2000-2015. Positive coefficient values indicate that the exchange rate is high or the strengthening of the domestic currency is that which is relative to the trading partner country against Indonesia which indicates that the low price of Indonesia's relative products. This condition encourages domestic residents or trading partners to buy more imported goods and overseas communities buy less domestic goods. This is in agreement with Kien's research (2009) which states that there is a positive and significant relationship between exchange rates and trading volume.

The influence of inter-country distance on total Indonesian exports

Variable distance between countries has a negative and significant effect on Indonesian exports with AJCEP member countries and non AJCEP countries. The results of this estimation indicate the negative relationship between Indonesian exports and AJCEP member countries and non-member countries of AJCEP. This shows that the gravity model is able to explain the flow of Indonesian export trade with AJCEP member countries and non-AJCEP members. Gravity model determines that the farther the distance between one country and its trading partners, the trade level of the two countries will decrease. The farther distance between countries causes the emergence of trading costs such as transportation costs and risks in the delivery period so that the farther the distance of the country that trades it will cause the costs incurred to increase or increase.

Dummy FTA On Indonesia's Total Exports

FTA dummy variables show the effect of trade creation or trade diversion on Indonesian exports in member and non-AJCEP countries. Based on previous estimates, the formation of AJCEP creates a greater effect of trade creation than trade diversion. The estimation results are in line with the results of research conducted by Yang and Inmaculada (2014). In his research stated that in the aggregate the formation of the agreement area creates trade creation, with a note that producers who produce products at low prices. This also agrees with Kien (2010), and Okabe and Urata (2014). A positive coefficient indicates that there is an effect of Indonesia's export trade creation with AJCEP member countries. This means that Indonesia's export goods can replace a portion of domestic goods produced in ASEAN and Japan.

Conclusion

Based on the results of the estimation of the research described earlier with the aim to estimate the effect of trade creation and trade diversion between Indonesia and AJCEP member countries and non-AJCEP members in the period 2000-2015. Based on the results of this study and the discussion in chapter four, the following conclusions are obtained.

First, the total GDP variable has a positive and significant effect on Indonesia's total exports. This shows that with increasing income and output in a country will encourage increased demand for goods and services. Therefore, an increase in GDP can boost exports.

Second, difference variables or differences in GDP per capita have a negative and significant effect on Indonesia's total exports. This shows that the high difference or difference in income per capita of a country that conducts trade so that when the difference or difference in per capita income of the country of Indonesia with member countries and non-AJCEP members increases or increases it will have an impact on the decline in total Indonesian exports. Because the higher the difference or the difference in per capita income indicates the lag of a country's economic conditions. So that the Indonesian state will reduce its total exports to AJCEP member countries because it is considered that its goods and services cannot compete and its quality is deemed unable to meet the qualifications of import destination countries.

Third, exchange rate variables have a positive and significant effect on Indonesia's total exports. This shows that the exchange rate of the partner country has experienced appreciation and the exchange rate of Indonesia experiences depreciation so that this will make goods relatively more expensive and will increase export demand.

Fourth, AFTA dummy variables have a positive and significant effect on Indonesia's total exports. This shows that the formation of the ASEAN-JAPAN COMPREHENSIVE ECONOMIC PARTNERSHIP agreement has caused the effect of trade creation on Indonesia's export side towards AJCEP member countries. The impact as a whole can improve welfare for member countries and non-AJCEP members.

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