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# Does the ASEAN-Japan Comprehensive Economic Partnership cause trade creation and trade diversion?

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## Abstract

The establishment of ASEAN-Japan Comprehensive Economics Partnership or AJCEP create an economic cooperation between Japan and the member of ASEAN countries also trading partner of AJCEP. The purpose of this study is to find out trade creation effect and trade diversion effect in Indonesia's export with the AJCEP member countries and trading partner because of AJCEP agreement. Moreover, there were several factors, which influence the total export positive or negative, such as GDP and exchange rate that influence positively in Indonesia's export, also the distance between both country which trade and income difference per capita negatively influence in Indonesia's export.

**Keywords:** ASEAN-Japan comprehensive economics partnership, Trade creation, Trade diversion.

## ¿La Asociación Económica Integral ASEAN-Japonesa causa la creación y el desvío del comercio?

## Resumen

El establecimiento de la Asociación de Economía Integral ASEAN-Japón o AJCEP crea una cooperación económica entre Japón y el miembro de los países de la ASEAN, también socio comercial de AJCEP. El propósito de este estudio es descubrir el efecto de creación de comercio y el efecto de desviación del comercio en la exportación de Indonesia con los países miembros de AJCEP y el socio comercial debido al acuerdo de AJCEP. Además, hubo varios factores que influyeron en el total de exportaciones positivas o negativas, como el

PIB y el tipo de cambio que influyeron positivamente en la exportación de Indonesia, también la distancia entre ambos países, que el comercio y la diferencia de ingresos per cápita influyen negativamente en la exportación de Indonesia.

**Palabras clave:** ASEAN-Japón, Asociación económica integral, Creación de comercio, Desviación de comercio.

## 1. INTRODUCTION

International trade development leads to the freer trade which is accompanied by a form of cooperation namely bilateral, regional, and multilateral cooperation. The purpose of the international trade agreement is an effort to reduce or remove the trade barrier. Trade liberalization in a country with a pattern of international cooperation has a positive impact in economic growth in a country. The world trade value will grow larger than the growth of Gross Domestic Product (GDP) real world (KRUEGER, 1999).

There are several reasons which encourage countries in certain region to reach an agreement in establishing regional free trade. First, the establishment of the larger regional free trade area, second, the more increasing regional trade liberalization. Third, the cooperation of Regional Trade Agreement (RTA) provide benefit from the cheaper the price spent (KRUGMAN & OBSFELT, 2003). The fourth is regional free trade which expected can accelerate economy integration process in the region through more open economic trade and reduce or remove various tariff and non-tariff barriers. The fifth, establishment regional economic integration which can increase trade and

cooperation in the economy sector will increase the economic growth and welfare in that region (TAMBUNAN, 2004).

Therefore, the regional cooperation is expanded with the entry of more developed countries such as China, Japan, South Korea and the United State of America. The wider cooperation which carried out is expected to have positive effect on economic growth in each of its member countries. The increasing of good economic growth performance can result an economic improvement of each member country. In Southeast Asia, besides ASEAN cooperation, at this time, it already formed an economic cooperation with the member of other ASEAN countries, such as Japan, that has been called the ASEAN-Japan Comprehensive Economics Partnership (AJCEP).

AJCEP is a comprehensive economics partnership agreement between Japan and member of ASEAN countries. Then, this AJCEP agreement is signed on 2008. Based on this agreement, parties who are joined have been agreed to increase the economic cooperation. AJCEP member countries agree to increase the capacity of getting mutual benefits in the trade and investation side. In the other hand, they also agree to increase the welfare of countries member by different economic development (“WEBLET IMPORTER,” n.d.).

The emergence of this free trade agreement makes Indonesia more intensive in conducting trade in the AJCEP scheme. In the agreement, there is abolition of decreasing tariff and non-tariff barriers to reduce trade barrier with the partner countries includes ASEAN

countries, Japan, United State of America, China, South Korea, India and Australia. In the macroeconomics, the export-based economy has several advantages namely; first, export activities will bring cash inflow in the form of foreign exchange as payment of product sold abroad. The foreign exchange received will increase the foreign exchange reserves of exporting country. Second, export activities will be able to absorb labor. Third, export-based countries facilitate the achievement of objectives in the economy. Countries that depend on their national needs by importing goods from another country, will easily impact the economy (WARDHANA, 2016).

The AJCEP agreement is comprehensive and single undertaking also covers the fields of trade in goods, services, investment and economic cooperation. The agreement has several provisions, that is, first, the abolition of tariff posts and the trading goods value in the normal track. Second, there is a dispute resolution mechanism. Third, service agreements in trade and fourth is investment agreement. In its development, one of the important opportunities for expanding economic networks among the regions that continue to increase is the ASEAN-Japan FTA cooperation that has taken place since AJCEP (“ASIAN | ONE VISION ONE IDENTITY ONE COMMUNITY,” n.d.).

The FTA establishment will increase goods and services trade among member countries and increase the employment opportunities in these countries. Besides increasing prosperity, free trade will increase the quantity of world trade and efficiency (LINDERT &

KINDLEBERGER, 1986). FTA in East Asia will provide a positive influence on economic growth (Urata & Kiyota, 2003). On the other hand, trade liberalization by removing all trade barriers has an impact on the decline of the Gross Domestic Product (GDP) of Indonesia and Australia-New Zealand (HARYADI, TAMBUNAN, & ACHSANI, 2008).

Since the enactment of the FTA (free trade area) on 2008, ASEAN has always enjoyed a trade surplus with Japan whose value varies. In the period 2000-2015, the highest development of ASEAN exports with Japan was recorded in 2011 reaching US \$ 128 billion and the highest import development in 2012 was US \$ 135 billion. The growth of ASEAN-Japan exports in 2015 decreased from the previous year, looking at the movement of annual trade values and the opening of a wider market through the ASEAN-Japan Comprehensive economics partnership (AJCEP) scheme. However, there are many other factors which countries depend on each other, so that the country's economic policies and events will affect other countries and vice versa.

## **2. METHODOLOGY**

The approach used in this study was quantitative descriptive approach. Quantitative approach was carried out 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, that was in 2000 to 2015.

This study used six variables which can be classified into two parts, namely the dependent variable and the independent variable. The dependent variable in this study was the flow of bilateral international trade between 11 AJCEP member countries which are ASEAN and Japan and 5 non-AJCEP member countries which are the total trade exports in all commodity groups. Whereas the independent variable consists of the total Gross Domestic Product of country *i* and country *j*, the difference in GDP per capita of country *i* with country *j*, the distance between country *i* and country *j*, the exchange rate of country *j*, and dummy for member countries and trading partners of AJCEP .

The type of data used in this study was secondary data and panel data from 16 countries including Japan, namely 10 ASEAN countries (Indonesia, Malaysia, Singapore, Brunei Darrusalam, Cambodia, Philippines, Laos, Myanmar, Thailand, Vietnam) and 5 partner countries of AJCEP largest trade (United States, South Korea, India, China, Australia) in the 16-year period starting from 2000 - 2015. Exchange rate data was obtained from the International Financial Statistics (IFS) data base of the International Monetary Fund (IMF). Whereas distance data between countries was obtained from [http:// www.indo.com/distance](http://www.indo.com/distance).

In carried out estimation, the analysis technique used was to estimate the gravity model in this study, namely panel data regression. Panel data (pooled data) is a combination of time series and cross

sections data types. Panel data is able to explain both information related to cross section variables on the differences between subjects and time series information that reflects the alteration in subject time. In addition, this combination can improve the quality and quantity of data with an approach that is not possible carried out using only one of these data (GUJARATI, 2003).

If each cross section unit has the same numbers of time series observations, it is called a balanced panel. Conversely, if the number of observations is different for each cross section unit it is called an unbalanced panel. The advantages of using panel data in analyzing econometrics are, First, being able to control individual heterogeneity. Second is more and more diverse information and minimizes the problem of collinearity, increasing the number of degrees free and more efficient. Third is the repeated cross section observations (time series) panel data methods are able to learn *the study of dynamic change*. Fourth, it can be used to construct and test the behavior models that are more complex than cross section or time series data. The fifth is panel data in identifying and measuring effects that cannot be detected by cross section or time series data (BALTAGI, 2005).

There are three approaches of choosing panel data regression estimation models, namely pooled least square (PLS), fixed effect model (FEM), and random effect model (REM). The most appropriate model determined is the Pooled Least Square (PLS), Fixed Effect Model (FEM) and Random Effect Model (REM) which consists of several ways. First, the F test is used to choose the technique with the



Polled Least Square (PLS) or Fixed Effect Model (FEM) by comparing the probability value of F on FEM with  $\alpha$  (1%, 5% or 10%).

Second, doing the LM (Lagrangian Multiplier) test which aims to choose both models between Pooled Least Square (PLS) or Random Effect Model (REM). The first step taken to determine the PLS or REM method which is carried out the LM test by comparing the Chi-Square probability value of  $\alpha$  (1%, 5% or 10%). If the LM test probability value  $< \alpha$  (1%, 5% or 10%), then  $H_0$  is rejected so that the model chosen is the Random Effect Model (REM). The results of the LM test determine the use of FEM or REM in accordance with the study. Hausman testing is carried out by comparing the chi-square probability value of  $\alpha$  (1%, 5% or 10%). Whereas if the probability value  $< \alpha$  (1%, 5% or 10%), then  $H_0$  is rejected so the model chosen is the Fixed Effect Model (FEM).

Based on the F-restricted  $t$  test, Hausman test, and Lagrange Multiplier test with STATA 13, the value of the chi square probability (Prob  $< \alpha$ ) was 0.0000, which means it was smaller than the significance level of 10%  $\alpha$ . Because the probability value is smaller than the significance level of 10%, the model used in this study was the Random Effect Model. Differences in characteristics of the random effects model are differences in individual characteristics and time is accommodated in the error of the model. Considering there are two components that have contribution to the errors formation, namely individual and time, so the random error in REM needs to be broken down into errors for the time component and combined error.

The classic assumption test aims to determine and assess the feasibility of the regression model that will be used in this study. The model is assessed to be feasible if it has a BLUE (Best Linear Unbiased Estimator) estimation. The classic assumption test consists of heteroscedasticity test, multicollinearity test, and autocorrelation test. After that, we conducted a statistical test. This test is useful for analyzing whether the regression coefficient obtained is significant or not significant. There are three types of statistical tests conducted on the regression coefficient model. The test is the F-Test, t-test, and the coefficient of determination.

### 3. RESULTS AND DISCUSSION

The results of the classic assumption test which includes heteroscedasticity, multicollinearity test, and autocorrelation test indicate that the model is suitable for use in this study. In addition, the results from the estimation in table 1 show that the F-statistical probability value is 0.0000. This shows that all independent variables, together, have a significant effect on Indonesia's export trade in the 2000-2015 period.

Table 1. Random Effect Regression

<b>Variable</b>	<b>Influencetoward Export</b>	<b>Sig</b>
<b>GDPij</b>	2,31273	0,000*
<b>DGDPCij</b>	-0,123365	0,074
<b>Erij</b>	0,0505597	0,078
<b>DISTCij</b>	-1,307714	0,091
<b>DFTAij</b>	0,2071638	0,000*

<b>Number of obs</b>		240
<b>R-squared</b>		0,4567
<b>Prob Chi-Squared</b>		0,0000*

\*sig p<10%/ 0.1

Table 1 shows the results of the Random Effect Model that is to 0.4567, with a significance level ( $\alpha$ ) of 10%. The regression coefficient of the GDP variable (GDPij) to the exports is 2.31273 and the probability value is 0.000 with a significance level of 10%. This means that the GDP variable has a positive and significant effect on Indonesia's total exports with AJCEP and non-AJCEP member countries in the 2000-2015 period. The coefficient value shows positive which means that the two variables have an increase in GDP by 1% then on average will push exports up by 2.31% with the assumption that the other variables are constant.

The regression coefficient of the difference variable or the difference in income per capita (DGDPCij) to the total exports is - 0.123365 and a probability value is 0.074 with a significance level of 10%. It means, the DGDPCij variable is in the rejected area. GDPPCij has a negative and significant effect on Indonesia's total exports with AJCEP and non AJCEP member countries in the period 2000-2015. This means that if the variable of income difference per capita decreases by 1%, then on average it will reduce exports by -0.12% assuming the variable is constant.

The regression coefficient of the exchange rate variable (ERj) to the total exports is 0.0505597 and the probability value is 0.078 with a significance level of 10%. This explains that the ERj variable significantly influences Indonesia's total exports with AJCEP and non

AJCEP member countries in the 2000-2015 period. These results indicate that the exchange rate appreciates in trading partner countries and depreciates in Indonesia so that it will increase Indonesia's exports.

The regression coefficient of distance among countries variables (DISTC<sub>ij</sub>) to the total exports is -1.307714 and the probability value is 0.091 with a significance level of 10%. This explains that there is a negative relationship to Indonesia' total exports with AJCEP member countries and AJCEP trading partners in the period of 2000-2015. A negative coefficient value indicates a negative relationship between the two variables. If there is an increase of the distance among countries by 1% then on average it will reduce exports by 1.3% assuming the other independent variables are considered constant. These results indicate that the further the distance of the trading country, the higher the transportation costs spent.

Regression coefficient of dummy FTA variable (DFTA<sub>ij</sub>) to the total exports is 0.2071638 and the probability value is 0,000 with a significance level of 10%. This explains that the intra dummy variable is significant. This means that there is a positive relationship with Indonesia's total exports with AJCEP and non AJCEP members in the 2008-2015 period. In other words, there was a trade creation in Indonesia's export trade with AJCEP member countries and trading partners.

Our findings indicate that there is an effect of trade creation on Indonesia's exports to the AJCEP member and non-members countries

due to the establishment of AJCEP. The dummy FTA value in table 1 shows the effect of trade creation or trade diversion on Indonesia's exports with AJCEP member and non-member countries.

The establishment of AJCEP creates a trade creation effect that is bigger than trade diversion. Trade creation occurs when a free trade agreement causes an increase in products imports from member countries with the lower prices to replace domestic products with higher prices. Whereas trade diversion occurs when a free trade agreement causes an increase in products import from member countries to replace imported products from non-member countries whose prices are lower (KRUGMAN, OBSTFELD, & MELITZ, 2012)).

In the aggregate, the establishment of the agreement area creates trade creation, with a note that the producers produce the low prices products (YANG & MARTINEZ-ZARZOSO, 2014) (KIEN, 2009) (OKABE & URATA, 2014). This is in accordance with the conditions after the agreement was held the AJCEP agreement in 2008, the value of Indonesia's exports to ASEAN and Japan tended to be greater and doubled than before the enactment of the trade agreement. In addition, trade creation does not applicable only in the agreement area, but also applicable for trading partner countries outside the region or area (YANG & MARTINEZ-ZARZOSO, 2014). Indonesian goods prices are more efficient and cheaper compared to the same products as fellow AJCEP members. This causes Indonesia's export products increase to AJCEP's trading partner countries. The trade creation effect

that appears indicates that a cooperation agreement generally increases the welfare of member countries and non-member countries.

In addition, there are several factors that affect Indonesia's total exports, such as exchange rates, GDP and GDP differences, and distances among countries. Our findings statistically show that total GDP is significant and influences Indonesia's exports. GDP and exports have a positive relationship. Increased income and request for output in a country will encourage increased request for goods and services. Therefore, an increase of GDP in a country tends to increase the number of exports produced by that country. The high level of exporting country indicates a higher level of production for exports. While the high level of importing country shows a higher level of import request (YANG & MARTINEZ-ZARZOSO, 2014) (DIONYSIOS CHIONIS, 2002).

The exchange rate has a positive effect on Indonesia's total exports in the period of 2000-2015. Positive coefficient values indicate that high exchange rates or the strengthening of the domestic currency that is relative to the trading partner countries towards Indonesia which indicate that the low price of Indonesia's relative products. This condition encourages domestic residents or trading partners to buy more imported goods and foreign people buy domestic goods in smaller quantities. There is a positive and significant relationship between exchange rates and trade volume (KIEN, 2009).

On the other hand, the difference of income per capita between the two trading partners has a statistically negative effect on Indonesia's total exports with AJCEP member and non-member

countries. Consumption patterns can explain the flow in Indonesia's export trade. The difference of income per capita shows a significant and negative relationship (RAHMAN, 2010). Countries with greater income differentials tend to have export level that relatively small. The difference of GDP per capita captures the extend of trading partner countries request for goods that tend to be similar but different. The demand is measured by population. Exports will tend to increase more if these countries have a more similar level of difference of GDP per capita.

In addition, the distance among countries also negatively affects Indonesia's exports with AJCEP member countries and non-AJCEP countries. There is a negative relationship to trade flows due to the high costs so that the price of imported goods will increase (VAN BEERS, 2000) (YANG & MARTINEZ-ZARZOSO, 2014). This shows that the gravity model is able to explain the flow of Indonesia's export trade with AJCEP member countries and AJCEP's trading partners.

Gravity model explains that the further the distance between a country and its trading partners, the trade level of the two countries will decrease. The further the distance between countries causes the emergence of trade costs such as transportation costs and risks in the shipping period so that the further distance of the trading country will cause the costs incurred to increase or increase.

From several exposures related to the results of the analysis above, it can be seen that there is a trade creation effect due to the establishment of the ASEAN-Japan Comprehensive Economic Partnership (AJCEP) on Indonesia's export side of AJCEP member

countries and AJCEP trading partners. The trade creation effect indicates that a cooperation agreement can improve the welfare of member countries and non-member countries. In addition, several other factors also affect Indonesia's exports, such as GDP and the exchange rate that has a positive effect to the exports in Indonesia. On the other hand, the difference income per capita and the distance between the two trading countries negatively affects Indonesia's export.

#### **4. CONCLUSION**

The establishment of the ASEAN-Japan Comprehensive Economic Partnership caused a trade creation effect on Indonesia's export side of AJCEP member countries and AJCEP trading partners. In addition, GDP and exchange rates also have a positive effect on exports in Indonesia. On the other hand, the difference income per capita and the distance between the two trading countries negatively affects Indonesian exports. The further the distance between the two trading countries, the trade flow will decrease. In addition, the higher difference in income per capita indicates lag in a country's economic conditions. Therefore, Indonesia will reduce its total exports to AJCEP member countries. Therefore, the Indonesian government should be able to take advantage of this opportunity to increase Indonesia's exports, it means the government must increase real income, stabilize the exchange rate, maintain Indonesia's trade relations with member and non-member countries in order to obtain imported products at low



prices, and take advantage of agreements regional as much as possible in order to improve the Indonesia public welfare.

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