JEE 11 (1) 2022 : 66-79

Journal of Economic Education

http://journal.unnes.ac.id/sju/index.php/jeec

Competitiveness Analysis and Factors Affecting Indonesian Crude Palm Oil Exports in The International Market

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Article Info

Article History :
Received December 2021
Accepted March 202
Published June 2022

Keywords:
Crude Palm Oil, Export, Competitiveness, RCA and EPD

Abstract

The aim of this research was to analyze the competitiveness of Indonesian crude palm oil in ten export destination countries in 2011-2019 using the Revealed Comparative Advantage and Export Product Dynamics methods and analyze the factors that affect export volume using panel data regression. The type of research used is quantitative research that uses secondary data. The results showed an average RCA > 1, which means that Indonesian palm oil in the ten main export destination countries has a comparative advantage or high competitiveness. Meanwhile, through the EPD analysis, China, Pakistan and Bangladesh are in the Rising Star position. In the United States, Egypt and Singapore are in the Falling Star position. Meanwhile, India, Spain, the Netherlands and Italy are in the Retreat position. In panel data analysis, the population of export destination countries, real GDP per capita of export destination countries, economic distance, and inflation of export destination countries affect the volume of Indonesian palm oil exports either simultaneously or partially.

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p-ISSN 2301-7341
e-ISSN 2502-4485

INTRODUCTION

Indonesia as an agricultural country makes Indonesia dominated by the agriculture sector which plays an important role in terms of development. One of the largest plantation products in Indonesia produced is palm oil which is processed into semi-finished oil called Crude Palm Oil or finished oil called Palm Oil. This can be seen from the data on oil palm production compiled by the Directorate General of Plantations in the form of Crude Palm Oil production in the following table:

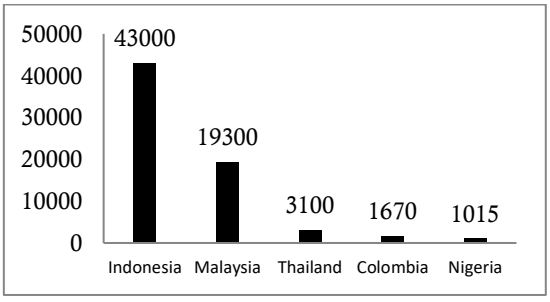
Table 1 Development of Indonesian Plantation Commodities in 2016-2020

No	Indonesian Plantation Commodities	Plantation Production (ton)				
		2016	2017	2018	2019*)	2020**)
1.	Rubber	3.357.951	3.680.429	3.630.359	3.448.783	3.545.523
2.	Crude Palm Oil	31.730.961	37.965.224	42.883.632	45.861.121	49.117.260
3.	Coconut	2.904.170	2.854.300	2.840.148	2.828.167	2.798.980
4.	Coffe	663.871	717.962	756.051	760.963	773.409
5.	Cocoa	658.399	590.684	767.280	783.978	739.483
6.	Cashewnut	137.094	135.569	147.647	134.183	139.873
7.	Pepper	86.334	87.991	88.235	88.949	89.902
8.	Clove	139.611	113.178	131.014	134.792	137.758
9.	Tea	138.935	146.251	140.236	137.803	138.323
10.	Tobacco	126.728	181.142	195.482	197.250	198.739

Source : Directorate General of Plantation 2020

Explanation : Temporary Figures *) Estimated Figures **)

Besides being the largest plantation product in Indonesia. Indonesian palm oil ranks first as the largest producer of palm oil in the world from several major palm oil producing countries. This can be seen in the picture below:



Picture 1 Palm Oil Producing Countries 2020

Source : Indexmundi, 2020

According to CPOPC (2019), Indonesia provides about half of the world's palm oil supply. Palm oil production is a contributor to 11 percent of Indonesia's export revenue of US$ 5.7 billion. This makes palm oil production the largest export commodity. Even though Indonesia is the largest producer and exporter of palm oil in the world. The competitiveness of Indonesian palm oil products tends to be weak, such as research conducted by Prasetyo et al (2017) that Indonesia's CPO export growth is lower than other producing countries, the same study was also conducted by Sasmito et al (2019) which revealed that the RCA value (comparative advantage) Indonesian palm oil products have decreased, while the RCA value of Malaysia (as a competing country) has actually increased. From some of these studies, it can be concluded that although the level of Indonesian palm oil production is high, Indonesia has the potential not to have good competitive advantage and ability in the main export destination countries. So from these problems, this study will look at the extent of market dominance by looking at the position of export competitiveness owned by Indonesia as the largest palm oil producing country in the world based on available data and information.

In addition, in 2010-2018 the volume and value of Indonesian palm oil exports experienced

fluctuations which tended to decrease at a decreasing rate of 0.09% per year (Directorate General of Plantation, 2019). Although in 2015 the export volume increased, the following year it decreased again, this also happened in 2017-2018. The decline was influenced by environmental issues and black campaigns about the environmental and health impacts of oil palm in the European region. This can be seen in the research conducted by Yonanda and Sohadak (2019), Sasmito et al (2019) which stated that there was a decline in the value of Indonesian palm oil exports due to the oil palm black campaign carried out by the European Union. The European Union carried out the Palm Oil And Deforestation Of Rainforest campaign in the campaign stating that palm oil has a positive effect on deforestation that occurs in the world, thus it will worsen the negative image of palm oil in the world market so that it will make the demand for palm oil decrease and the price will decrease down (GAPKI, 2018). However, from the point of view of the destination countries for palm oil exports. Indonesia does not only export palm oil in the European region, but also in several countries in Asia, America and Africa. So it is suspected that there are other factors that affect the volume of palm oil exports in Indonesia.

Export volume can be seen from the demand for a commodity on the international market. The demand for a commodity produced by a country in the international market is an export demand. The population is one of the factors that affect the volume of exports in a country. Bakri and Fafurida (2020: 4) stated that the size of the population is one of the determining factors in export demand. The more the population of a country, the more the country's demand for an item to meet the needs of its people (cateris paribus). Research conducted by Khairunisa and Novianti (2018) states that the population of export destination countries is significant and has a positive relationship, meaning that if the population of the importing country increases by one percent, the export value of Indonesian palm oil will increase by 20.6483 percent (cateris paribus).

The next determining factor for a country's export demand is the country's real GDP per capita. GDP per capita represents people's purchasing power of a country's goods and services. If a country has a high GDP per capita, it means that the welfare of its people is also high, so this will result in people's purchasing power as the country imports more because the ability to buy is also higher. This is in line with the results of research conducted by Adi (2017), Hadi and Setyo (2019) stating that the value of GDP has a positive and significant effect on Indonesian exports. However, there is a gap in the results of research conducted by Novianti and Sanusi (2019), Kurniasari and Monica (2019) which states that the value of GDP does not affect the export performance of palm oil.

Furthermore, the geographical factor of the geographical landscape between export destination countries can affect the volume of palm oil exports or not. Economic distance describes transportation costs where the farther the economic distance will result in higher transportation costs. Transportation costs can be in the form of shipping costs, loading and unloading costs at the port, and insurance premiums. This increase in transportation costs will increase the production cost of an exported product so that it will cause the selling price of the product to be expensive, so that it will cause the price to be higher and in the end will reduce the exports demanded by the importing country. In a study conducted by Kusuma and Firdaus (2015) it was stated that when the economic distance is further away, it will cause export volume to decrease. However, it is different from the research conducted by Wicaksono (2018) which states that economic distance has no effect on the volume of Indonesian palm oil exports.

Inflation is a monetary event that is always found in almost all countries' economies in the world. In determining export demand, inflation is one of the factors that can affect export volume. In general, inflation triggers import growth to develop faster than export growth (Sukirno, 2006:339). If domestic inflation increases, it will cause the price of domestic goods to be more expensive than the prices of goods abroad. This

will cause when people need an item they need or want, domestic people will tend to look for alternative goods from other countries that are cheaper or save their money. As a result, imports of foreign goods will increase and exports of domestic goods will decrease. From this theory, when the inflation rate in the destination country for Indonesian palm oil exports increases, the volume of Indonesian palm oil exports will also increase. This is inversely proportional to the theory expressed by Triyono (2008:157) that inflation can cause a decline in exports. In addition, there is a research gap regarding the effect of inflation on export volume. In research conducted by Putri, Suhadak and Sulasmiyati (2016), Nagari and Suharyono (2017) stated that inflation had a significant effect on Indonesian exports. Meanwhile, in a study conducted by Pratiwi (2018), Azaria and Irawan (2019) inflation does not have a significant effect in the short or long term on Indonesian exports.

Based on the above background, the research objectives to be achieved by the authors are as follows: (1) To analyze the competitiveness of Indonesian palm oil exports in the international market. (2) To analyze the effect of the population of export destination countries, real GDP per capita of export destination countries, economic distance, and inflation of export destination countries compared to the United States dollar on the volume of Indonesian palm oil exports in the international market.

RESEARCH METHODS

The research method used in this study is a quantitative research method with a descriptive approach which was carried out in two stages. The first stage in this research is to analyze competitiveness by using a descriptive study design. Meanwhile, in the second stage of this research, the aim of this research is to analyze the factors that affect the volume of oil exports by using a hypothetical study design.

This study uses secondary data obtained from several sources. The type of data used in this study is panel data which is a combination of time series data from 2011-2019 and cross section that is ten destination countries for Indonesian palm oil exports.

The population studied in this study were all countries that were export destinations for Indonesian palm oil which were recorded and taken from BPS in the period 2011-2019. Based on BPS data from 2011-2019, there are ten main destination countries for Indonesia's palm oil exports, that is India, China, Pakistan, the Netherlands, the US, Spain, Egypt, Bangladesh, Italy, Singapore. So that the number of samples (n) from time series and cross section data is obtained, which is 90 samples.

The variables used in this study used two types of variables. The dependent variable is the export volume (Y) and the independent variable is the population (X1), real GDP per capita (X2), economic distance (X3), and inflation (X4).

The data collection technique used in this research is the documentation method, namely by collecting data from various related sources. The use of the documentation method is because in this study using secondary data available in statistical publications through the official websites of related agencies, with data sources from the Central Statistics Agency (BPS), Directorate General of Plantation, World Bank (World Development Indicators), Index Mundi, and site searches related to research.

The data analysis methods used are Revealed Comparative Advantage (RCA), Export Product Dynamic (EPD) and panel data methods. Then the secondary data that has been obtained is processed using Microsoft Excel and SPSS which then the results obtained are interpreted.

The Revealed Comparative Advantage (RCA) method is used to measure the export performance of a commodity from a country by evaluating the role of certain commodity exports in a country's total exports compared to the share of that commodity in world trade (Granabetter, 2016:103). As for the calculation of the Revealed Comparative Advantage (RCA) value according to Balassa (in Bakri and Fafurida, 2020: 6), it is formulated as follows:

$$\mathrm{RCA} = \frac{\mathrm{Xij} \,/\, \mathrm{Xt}}{\mathrm{Wij/Wt}}$$

Explanation:

RCA = Revealed Comparative Advantage

Xij = The export value of palm oil commodities from Indonesia to the destination countries for palm oil exports

Xt = Indonesia's total export value to palm oil export destination countries

Wij = The export value of the world's palm oil commodity to the destination countries for palm oil exports

Wt = Total world export value to palm oil export destination countries

After performing the above calculations, the Revealed Comparative Advantage (RCA) index will be calculated. The RCA index is obtained by comparing the RCA value in the current year with the RCA value in the previous year. Mathematically, the RCA index can be described as follows:

RCA Index= $\frac{RCA\ t}{RCA\ t-1}$

Explanation:

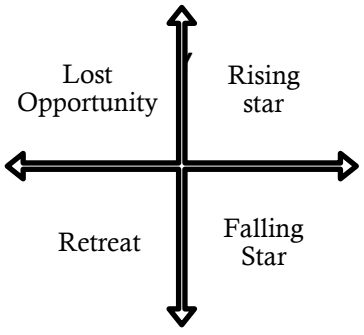
RCA Index= Revealed Comparative Advantage Index

RCAt = RCA value in year t

RCAt-1 = RCA value in the previous year

RCA index value > 1 then the commodity has a relative advantage and vice versa if the RCA index value < 1 then the commodity has relative disadvantage.

Export Product Dynamics (EPD) is used to measure the market position of a country's commodities for certain market purposes. The combination of market attractiveness and business strength results in the positional character of the commodity to be analyzed into four categories, which can be seen in the picture below:



Source : Wardani dan Multasih, (2017:88)

Picture 2 Export Product Dynamics (EPD) market position quadrant

Explanation :

Rising Star : Export market share growth is positive and commodity market share growth is positive

Falling Star : Export market share growth is positive and commodity market share growth is negative

Lost Opportunity: Export market share growth is negative and commodity market share growth is positive

Retreat : Export market share growth is negative and commodity market share growth is negative

As for measuring Export Product Dynamics (EPD) according to Wardani and Multasih, (2017:88) use the formula below:

X axis: Growth of business strength or so-called export market share i:

$$\frac{\sum_{t=}^{t}\left(\frac{Xij}{Xiw}\right)_t\ x\ 100\% - \sum_{t=1}^{t}\left(\frac{Xij}{Xiw}\right)_{t-1}\ x\ 100\%}{T}$$

Y axis: The growth of market attractiveness or so-called product market share n:

$$\frac{\sum_{t=1}^{t}\left(\frac{Xj}{Xw}\right)_t\ x\ 100\% - \sum_{t=1}^{t}\left(\frac{Xj}{Xw}\right)_{t-1}\ x\ 100\%}{T}$$

Explanation:

Xij = Export value of Indonesian palm oil products to palm oil export destination countries (USD)

Xiw = Export value of world palm oil products to palm oil export destination countries (USD)

Xj = Total value of Indonesia's exports to palm oil export destination countries (USD)

Xw = Total export value from the world to palm oil export destination countries (USD)

T = Number of years

t = Year t

The panel data method aims to analyze the factors that affect the volume of Indonesian palm oil exports. In panel data regression, there are several regression models, namely Common Effect, Fixed Effect and Random Effect that need to be tested first to determine the most appropriate model. The tests are Chow test, Hausmant test, and Langrage Multiple (LM) test. After the model is selected, the classical assumption test is then carried out. In this study, the classical assumption test used was the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. After testing the classical assumptions, then hypothesis testing is carried out including the F test, F test, and R^2 test.

RESULTS AND DISCUSSION

Analysis of Indonesian Palm Oil Competitiveness in International Markets

Competitiveness can be analyzed using Revealed Comparative Advantage (RCA) and Export Product Dynamic (EPD) methods. In analyzing the condition of competitiveness or comparative advantage of Indonesian palm oil commodities in ten export destination countries in this study using the RCA method. In using the RCA method, the first step is to calculate the RCA value in order to determine the competitiveness performance of a commodity in a certain year. After knowing the RCA value, then the next step is to calculate the RCA index value by dividing the RCA value in the current year with the previous year's RCA value. The RCA index value serves to see the increase in export performance in the current year and compared to the previous year.

After knowing the competitiveness performance or competitive advantage of Indonesian palm oil commodities in ten export destination countries. This study also looks at the market position of the Indonesian palm oil commodity which is obtained using the EPD method. The summary of the performance and competitive position of Indonesian palm oil in ten export destination countries calculated based on the average annual growth in the period 2011 to 2019 is as follows:

Table 2 Results of Analysis of Indonesian Palm Oil Competitiveness in International Markets 2011-2019

Country	RCA Value	RCA Index	Competitiveness	Export Market Share Growth (%)	Product Market Share Growth (%)	Market Share Position
India	21,9	0,94	Low	-0,0068	-4,4897	*Retreat*
China	43,77	1,06	High	0,0031	2,8073	*Rising Star*
Pakistani	14,83	1,28	High	0,0076	0,0003	*Rising Star*
US	47,49	1,73	High	0,0059	-3,7625	*Falling Star*
Spanish	103,4	1,09	High	-1,8927	-3,8529	*Retreat*
Egypt	102,88	1,39	High	0,0011	-4,5859	*Falling Star*
Netherlands	47,68	0,95	Low	-0,0052	-2,7598	*Retreat*
Bangladesh	18,81	1,21	High	0,0061	2,3072	*Rising Star*
Italy	127,87	0,99	Low	-0,003	-1,4612	*Retreat*
Singapore	37,51	1,06	High	0,0013	-9,6929	*Falling Star*
Average	56,614	1,17	High	-0,18826	-2,54901	*Retreat*

Source : UN Comtrade (2021)

Based on the estimation results of RCA and EPD for 2011-2019 from Table 4.15, it is found that India, Italy and the Netherlands have an RCA index < 1 and have a market share position in a retreat position. This shows that Indonesia's palm oil commodity does not have a comparative advantage or weak competitiveness or is unfit to compete in the Indian, Italian and Dutch markets because it is inefficient and there is no increase in performance compared to the previous year so it should not be encouraged to be export-oriented to the three countries. that. In addition, the growth value of the export market share is negative and the product market share growth is also negative. This condition was due to a decrease in demand for Indonesian palm oil exports in the Indian, Italian and Dutch markets, and Indonesia also did not provide the amount of exports that matched the demand. The decline was due to a new basic nutrient determination policy for palm oil imports in the Indian market, as well as a negative campaign carried out by the European Union.

In contrast to the China, Pakistan and Bangladesh markets which obtained an RCA index value > 1, which means that Indonesian palm oil commodities have a comparative advantage or strong competitiveness and there is an increase in performance compared to the previous year so that they can be maintained to remain export-oriented to China, Pakistan and Bangladesh . And has a market share position in the Rising Star position. So that the Chinese, Pakistani and Bangladeshi markets are the most ideal markets for Indonesian palm oil exports.

In contrast to Spain, which obtained a retreat position. This is indicated by the negative value of the export market share growth of -1.8927% and the negative growth of the product market share of -3.8529%. However, the RCA index value on the Spanish market shows 1.09, which means that Indonesian palm oil has a comparative advantage or strong competitiveness in the market. Even though Spain is included in the European Union, Indonesia's palm oil commodity can still be maintained to remain export-oriented to Spain.

The United States market shows the highest RCA index value compared to other export destinations for Indonesian palm oil. The RCA index value shows a number of 1.73 (>1). The Egyptian and Singapore markets also show an RCA index value of more than one. This means that Indonesia's palm oil commodity has a comparative advantage or strong competitiveness and an increase in performance compared to the previous year so that it can be maintained to remain export-oriented to the United States, Egypt and Singapore. However, the three markets have a falling star market position. This is because the growth in the export market share is positive, but the product market share growth is negative. This position is an undesirable position, because this position is in a condition when market share increases but the product is not dynamic.

From these results, it can be concluded that of the ten export destination countries, there are only three countries that have high competitiveness conditions with an ideal market position as export destinations for Indonesian palm oil. In addition, it was found that the condition of competitiveness and market position of Indonesian palm oil in ten export destination countries changes every year. Where the Indonesian palm oil commodity occupies a volatile position both in terms of competitiveness, export market share and product market share in ten main export destination countries. It can be concluded that although Indonesia is the largest producer and exporter of palm oil in the world, Indonesian palm oil products do not always have a comparative and competitive advantage in the main export destination countries. According to Patone et al (2020: 31), the changing position of Indonesian palm oil competitiveness in the main export destination countries is caused by several main factors, namely, soaring prices, government (government) actions or policies, high export costs, value (value) and low productivity.

In increasing the comparative advantage and export performance of Indonesian palm oil, namely by improving product quality, starting

from the development of human resources for the palm oil industry players by means of technical efficiency of oil palm farmers independently. In addition, farmers can also replating oil palm, this is because oil palm is an annual crop. With the replating of oil palm, it is hoped that it will increase the productivity of plants that have decreased after a certain age. The active role of business actors is also needed. The capacity of exporters to take advantage of market opportunities will be very influential. With this intelligence, exporters can get a wide marketing area. So that exporters must be experts in the field of marketing strategy. The need for an active role from the government in order to increase the comparative advantage and export performance of Indonesian palm oil is also very necessary in order to create a conducive business climate, complete facilities and infrastructure, and regulate policies that make it easier for producers to export Indonesian palm oil.

Analysis of Factors Affecting Palm Oil Exports in International Markets

Based on the estimated model using panel data regression analysis, it produces a fixed effect model as the best model based on the Chow test and Hausman test and Lagrange test. In addition, based on the results of the fixed effect regression model using the Ordinary Least Squared (OLS) approach in its estimation technique, the data passed the classical assumption test.

Where the normality test is known that the probability value is greater than 0.05 (0.100121 > 0.05), which means the data is normally distributed. In the Multicollinearity test, it is known that the correlation coefficient value of each independent variable shows the number < 0.9, which means it can be concluded that the regression model in this study does not exist and there are no symptoms of multicollinearity. Furthermore, the probability value test of all independent variables shows a significant level greater than 0.05, meaning that the data is free from heteroscedasticity symptoms. And lastly, the autocorrelation test showed that the DW value was between dU to 4–dU (1.7507 < 1.808820 < 2.2492), it can be concluded that this study did not have autocorrelation.

Following are the results of panel data regression estimates for each independent variable, namely Population (X1), Real GDP Perkaputa (X2), Economic Distance (X3), and Inflation (X4) to export volume (Y):

Table 3 Fixed Effect Models (FEM) Test Results

Dependent Variable: Y
Method: Panel Least Squares
Date: 04/30/21 Time: 06:02
Sample: 2011 2019
Periods included: 9
Cross-sections included: 10
Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3428.745	1301.177	-2.635110	0.0102
JUMLAH_PENDUDUK_X1	302.4515	111.9044	2.702768	0.0085
GDP_RIIL_PER_KAPITA_X2	-7.334446	2.653201	-2.764377	0.0072
JARAK_EKONOMI_X3	2.069485	0.547847	3.777486	0.0003
INFLASI_X4	-52.56113	25.31623	-2.076183	0.0413

Effects Specification

Cross-section fixed (dummy variables)			
R-squared	0.916655	Mean dependent var	1175.925

Adjusted R-squared	0.902399	S.D. dependent var	519.5700
S.E. of regression	162.3201	Akaike info criterion	13.15905
Sum squared resid	2002433.	Schwarz criterion	13.54791
Log likelihood	-578.1573	Hannan-Quinn criter.	13.31586
F-statistic	64.29781	Durbin-Watson stat	1.808820
Prob(F-statistic)	0.000000		

Source : Processed from *Output E-Views 10*

Based on the table of Fixed Effect Models (FEM) test results above, it is known that the panel data regression equation formed is:

Y = -3428.745 + 302.4515X1¬ - 7.334446X2 + 2.069485X3 - 52.56113X4 + e

After performing the panel data regression test, the researcher then tested the hypothesis. In the simultaneous test, it was found that the F-count value was greater than the F-table value (64,29781 > 2.48000), with a significance value of 0.000000 <0.05. Thus, H_0 is rejected and H_a is accepted, which means that the variables of population, real GDP per capita, economic distance, and inflation simultaneously or simultaneously affect the export volume variable.

In the partial test (T test) the sig value for the population variable is 0.0085 <0.05, while the t-count value is 2.702768 > t-table (1.98827) which means that there is a significant effect of population on export volume. Then it is known that the significance value for Real GDP per capita is 0.0072 <0.05 while for the t-count value of 2.764377 > t-table (1.98827) which means that there is a significant effect of real GDP per capita on export volume. The same result is also shown in the economic distance variable with a sig value of 0.0003 <0.05, while the t-count value is 3.777486 > t-table (1.98827) which means that there is a significant effect of economic distance on export volume. And for the inflation variable, it shows a sig value of 0413 <0.05, while the t-count value is 2.076183 < t-table (1.98827) which means that there is a significant effect of inflation in export destination countries on export volume.

In the simultaneous determination test, the coefficient of determination (R^2) shows the R-squared value of 0.916655. This value indicates that the research model can explain the large influence of the population of the export destination country, the real GDP per capita of the export destination country, the economic distance, and the inflation of the export destination country together is 91.67%. While the remaining 8.33% is influenced by other variables outside this study or the error value.

The results of the research as stated above have provided empirical evidence that the research model proposed in this study is quite good. The population is one of the factors that affect the volume of exports in a country. Based on table 4.23 shows the probability value of 0.0085 <0.05 while the t-count value is 2.702768> t-table (1.98827) which means H_0 is rejected and H_a is accepted. The regression coefficient value of the population of export destination countries also shows a positive regression direction with an export volume of 302.4515. This means that the higher the population in an export destination country, the higher the export volume. Thus, it can be interpreted that the research results are in accordance with the research hypothesis, namely the population of the export destination country has a positive and significant impact on the volume of Indonesian palm oil exports in the international market. This is in line with the results of research conducted by Khairunisa and Novianti (2017), Alatas (2015), and Bakri and Fafurida (2020) which state that the population of the export destination country is significant and has a positive relationship, meaning that if the population of the importing country increases, the value of the export destination country increases. Indonesia's palm oil exports will also increase (cateris paribus).

Real GDP per capita represents people's purchasing power of a country's goods and services. If a country has a high real GDP per

capita, it means that the welfare of its people is also high, so this will result in people's purchasing power as the country imports more because the ability to buy is also higher. Based on table 4.23 shows the probability value of 0.0072 <0.05 while for the t-count value of 2.764377> t-table (1.98827) which means H_0 is rejected and H_a is accepted. However, the coefficient value of real GDP per capita shows a negative regression direction with an export volume of -7.334446 which means that if the real GDP per capita of the export destination country increases by one unit, the export volume will decrease by -7.334446.

Thus, it can be interpreted that the real GDP per capita of export destination countries has a negative and significant impact on the volume of Indonesian palm oil exports in the international market. The results of the study also show a discrepancy with the hypothesis that has been made and the best comparison with the existing theory. This indicates that palm oil is included in the category of inferior goods for export destination countries, especially countries with very high per capita incomes. Inferior goods are goods whose demand decreases as the level of income or real GDP in the economy increases. These results are in line with the research of Hardy (2015) and Siburian (2012) which show that real GDP per capita has a negative and significant effect on exports. A negative coefficient value indicates that if there is a one percent increase in real GDP per capita, exports will decrease. People with high income levels will choose similar products from other countries that have better quality (Sunardi et al., 2014: 106). This is because people with high income levels usually have higher levels of public awareness and concern about the standards of the food they consume, especially Sanitary and Phytosanitary (SPS) standards.

Distance is a reference for determining transportation costs. The farther the distance between the export destination country and the country of origin, the higher the cost of transporting the goods being traded. This will cause prices to increase and reduce demand. In the research results shown in table 4.23, the significance value for the economic distance is 0.0003 <0.05, while the t-count value is 3.777486 > t-table (1.98827) which means H_0 is rejected and H_a is accepted. The coefficient value of the economic distance variable has a positive regression direction with an export volume of 2.069485, which means that if the economic distance increases by one unit, the export volume will increase by 2.069485. Thus, it can be interpreted that the economic distance has a positive and significant impact on the export volume of Indonesian palm oil in the market. The results of the study also show a discrepancy with the hypothesis that has been made and inversely proportional to the theory which states that the closer the distance and lower transportation costs will increase the volume of palm oil exports.

This is in accordance with research conducted by Mulyadi and Balaka (2017), Carolina and Aminata (2019) and Wicaksono (2018) that economic distance has a positive and significant effect on exports. According to Wicaksono (2018: 54) economic distance is not the dominant determinant of a country's decision to export or import because it only affects a small part of the costs given the high technological progress. With advances in technology, moving goods is becoming cheaper and faster on an ongoing basis. Carolina and Aminata (2019:18) explain that the further apart Indonesia's main trading partner countries are, the greater Indonesia's exports will be. In this study, the ten main export destination countries, namely India, China, Pakistan, the Netherlands, the United States, Spain, Egypt, Bangladesh, Italy and Singapore are Indonesia's main trading partners and are the main markets for Indonesian palm oil commodities. When the geographical distance of these countries is quite far from Indonesia and it requires higher transportation costs to export to these countries. Indonesia can increase fixed costs. So that Indonesia will further increase exports to cover fixed costs and benefit from the implications of the longer distance to export destinations.

Inflation in Indonesia's palm oil export destination countries will trigger export growth. It can be explained that when the inflation rate in export destination countries increases, the volume of Indonesian palm oil exports will also increase. In table 4.23, it is known that the significance value for inflation in export destination countries is

0.0413 < 0.05 while the t-count value is 2.076183 < t-table (1.98827) which means H_0 is rejected and H_a is accepted. The value of the inflation variable coefficient for export destination countries as shown in table 4.21 has a negative regression direction with an export volume of -52.56113, which means that when inflation in export destination countries increases by one unit, export volume will decrease by -52.56113. Thus, it can be interpreted that inflation in export destination countries has a negative and significant impact on the export volume of Indonesian palm oil in the market. The results also show a discrepancy with the hypothesis that has been made and is inversely proportional to the theory which states that when the inflation rate in the destination country for Indonesian palm oil exports increases, the volume of Indonesian palm oil exports will also increase.

This is in line with research conducted by Gururaj et al (2016), and Wardhana (2011) which showed that inflation had a negative effect on exports. The results of this study indicate that there is a decline in exports when the inflation rate of the export destination country increases. This condition is due to import substitution policies carried out in several countries in order to develop new industries and encourage economic growth. However, when import substitution is carried out, consumers have to pay a higher price because cheaper imported goods cannot enter. So that consumers are forced to consume more expensive domestic goods (due to production inefficiency). So that this condition will cause inflation.

CONCLUSION

Based on the analysis of competitiveness, through the Revealed Comparative Advantage (RCA) analysis, it was found that the Indonesian palm oil commodity in the ten main export destination countries has a comparative advantage or high competitiveness. Meanwhile, through Export Product Dynamics (EPD) analysis, it was found that the position of competitiveness of Indonesian palm oil commodities in China, Pakistan and Bangladesh was in the Rising Star position. The position of competitiveness in the United States, Egypt and Singapore is in the Falling Star position. Meanwhile, India, Spain, the Netherlands and Italy are in the Retreat position. The two competitiveness analyzes show that Indonesia's palm oil commodity has strong competitiveness and has increased export demand to China, Pakistan and Bangladesh.

Based on panel data analysis, it is known that the factors that affect export volume are as follows: (1) The population of export destination countries has a positive and significant impact on the volume of Indonesian palm oil exports in the international market. The results showed the probability value was 0.0085 <0.05 while the t-count value was 2.702768 > t-table (1.98827). The value of the regression coefficient shows the direction of the regression which is positive with an export volume of 302.4515. (2) Real GDP per capita of export destination countries has a negative and significant impact on the export volume of Indonesian palm oil in the international market. The results of the study obtained a probability value of 0.0072 <0.05 while the t-count value was 2.764377 > t-table (1.98827). The coefficient value indicates that the regression direction is negative with an export volume of -7.334446. (3) Economic distance has a positive and significant effect on the volume of Indonesian palm oil exports in the International Market. The results obtained a significance value of 0.0003 <0.05 while the t-count value was 3.777486 > t-table (1.98827). The coefficient value indicates the direction of the regression which is positive with an export volume of 2.069485. (4) Inflation in export destination countries has a negative and significant effect on the volume of Indonesian palm oil exports in the international market. The results obtained a significance value of 0.0413 <0.05 while the t-count value was 2.076183 < t-table (1.98827). The coefficient value indicates the direction of the regression which is negative with an export volume of -52.56113.

The suggestions that can be given are as follows: (1) The active role of farmers is needed to improve the quality of Indonesian palm oil products. Improving the quality of Indonesian palm oil according to the standards of export destination countries is needed to increase exports and competitiveness of Indonesian palm oil.

Quality improvement is expected to provide more economic benefits and is needed to strengthen Indonesia's position to be able to compete with other countries' palm oil producers. (2) The need for an active role of the government in the context of creating a conducive business climate, equipping facilities and infrastructure, and regulating policies that make it easier for producers to export Indonesian palm oil. When the government provides policies in the field of foreign trade by providing convenience to exporters, exporters will be encouraged to increase exports. In addition, policies to prevent an increase in production input prices in the event of an economic crisis are also needed to maintain the comparative advantage of Indonesian palm oil. (3) The active role of business actors is also needed. The capacity of exporters to take advantage of market opportunities will be very influential. With this intelligence, exporters can get a wide marketing area. So that exporters must be experts in the field of marketing strategy. (3) Based on the results of panel data analysis, the population of export destination countries is a factor that has a very large influence on the volume of Indonesian palm oil exports. So that the researchers give advice to Indonesian palm oil export business actors to intensify exports to countries with a high population. (4) In addition, the results of panel data analysis on the variable Real GDP per capita of export destination countries are known to have a negative effect on the volume of Indonesian palm oil exports. This identifies that people with high income levels will choose similar products from other countries that have better quality. So it is necessary to improve the quality of palm oil in accordance with market demand in order to maintain the competitiveness of Indonesian palm oil commodities. To improve the quality of palm oil, it is recommended that there be strict selection or screening and the government establishes standards for palm oil companies in Indonesia that are officially or legally registered.

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