Revealed Comparative Advantage in Indonesian Coffee Commodity in the International Market

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Abstract— **This research is important to be carried out to find out what factors influence the Revealed Comparative Advantage (RCA) of Indonesian coffee commodities in the international market by using the Revealed Comparative Advantage calculation and linear regression. From the research results, it can be seen that the Revealed Comparative Advantage of Indonesian coffee is very strong in the international market and simultaneously the independent variable influences the dependent variable. Partially, Indonesia's coffee esxport volume variable has a significant positive effect, the total number of Indonesian coffee production has a significant positive effect, the Indonesian coffee export price variable has a significant negative effect and the Rupiah exchange rate variable to the Dollar has a significant positive effect on Revealed Comparative Advantages.**

Keywords: Revealed Comparative Advantage, competitiveness, Indonesian coffee

I. INTRODUCTION

Trading activities has a very important role in improving a country's economy, especially for export activities in global trading. The role of export is very important for Indonesian economy. The Foreign Exchange gained from an export activity is a source of development financing.

According to the Ministry of Agriculture data, coffee is the fourth largest foreign exchange earner for Indonesia after palm oil, rubber, and coconut. Indonesia's coffee commodity export activities are influenced by the world coffee situation which is increasingly increasing. The increase in coffee consumption has led to increasingly fierce competition in world coffee exports. For example, Brazil in the 2013-2017 period controlled the world market share by 21 percent with an average export of 1.8 million tons, Vietnam had an average of exports in the last 5 years (2013-2017) of 1.5 million tons with a market share of 17.8 percent, and Colombia with a 7.8 percent market share had an average export of 670 thousand tons during 2013-2017. The increase in Vietnam coffee exports caused Indonesia to shift to fourth position. Indonesia's coffee exports have increased from previous years. During 2013-2017, Indonesia had an average export of 450,750 tons with a market share of 5.3 percent of the total world market.

The competitiveness of Indonesian coffee commodities is one of the important things that must be taken into account to get income from export competitiveness between countries. Coffee is a plantation commodity that has long been traded in Indonesia. Indonesian coffee is also famous for having many specialty coffees such as Luwak coffee which is known as the most expensive coffee in the world, Mandailing coffee which is an Arabica coffee from North Sumatra namely Mandailing area and other coffees that have no less delicious taste.

The Indonesian Coffee Exporters Association (AEKI) has a different estimate. This year's production could be better than in previous years because the effect of the 2015 *el nino* effect is starting to disappear. The Indonesian Coffee Exporters Association (AEKI) estimates that the results of coffee plantations in 2018 as a whole could reach 750 thousand tons, better than 2017 which only reached more than 637 thousand tons. The following is a graphic image of coffee production in Indonesia in 2012 - 2017.
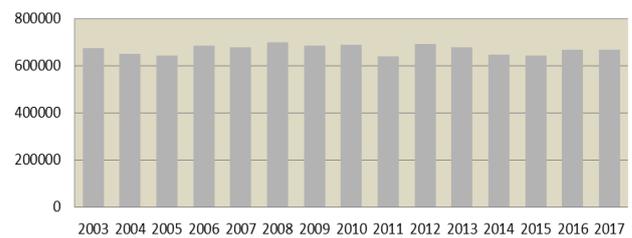
Figure 1 Coffee Production in Indonesia in 2003-2017
Source: Secondary Data Research Results (Processed), 2019

The development of coffee production from 2003 to 2017 is relatively stable although it has fluctuated slightly in recent years. In 2008 and 2012 was one of the years that had the highest amount of production compared to other years with a growth rate of 1.11%. This relatively stable coffee production is due to the large number of coffee plantations in Indonesia. Coffee plantations in Indonesia have around 96% of the people and the state and private plantations are 2% each. The stable amount of coffee production in Indonesia has made the State of Indonesia a coffee exporting country.

The large amount of coffee production in Indonesia is accompanied by a vast area for coffee plants. The area of coffee plantations in Indonesia according to their operations is divided into Large Plantation and Smallholder Plantation. Large estates consist of State Large Estates, and Private Large Estates. From 2012 to 2013, the area of coffee in Large Plantation increased from 22.556 million hectares to 22.565 million hectares. Whereas in 2013-2014 to 2015 the total area of coffee area decreased. Indonesia's PBN coffee

land was recorded at 22.369 thousand hectares, decreased to 22.366 thousand hectares in 2015 or decreased by 0.01 percent. In 2016 it increased by 14.3 percent from 2015 to 22.509 thousand hectares and in 2017 to 22.525 thousand hectares.

While Indonesia's PBS coffee land in 2012 recorded 25.056 thousand hectares increased to 25.076 thousand hectares in 2013. In 2014 there was an area of 24.462 thousand hectares, decreased to 24.391 thousand hectares in 2015 or decreased by 0.2 percent and in 2016 increased by 10.3 percent compared to 2015 to 25.447 thousand hectares.

Coffee PR data in Indonesia is data obtained from the Director General of Plantations, the Ministry of Agriculture. In 2013, the area of coffee increased from 1.187 million hectares to 1.194 million hectares. In 2014 the area cultivated by PR covered 1,184 million hectares, then declined by about 0.01 percent in 2015 to 1,183 million hectares, and was estimated to be 1,181 million hectares in 2016.

Indonesian Coffee Strata is very diverse, starting from *home* -scale business to multinational-scale coffee industry. The products are produced not only to meet the needs of domestic coffee consumption, but also to fill overseas markets. There are more than 50 destination countries exported by Indonesia coffee such as the USA, Germany, Malaysia, Russia, and Italy are the main destination countries.

Related to this position, it can be seen that the world coffee market players are not necessarily the main producers. Two countries (Brazil and Vietnam) are world coffee producers, while Germany, Switzerland and Belgium are not worlded coffee producers, but utilize the added value of coffee. These various problems encourage producer countries to be able to anticipate and utilize the situation to maintain their position in the global coffee trade. In addition, the wider and opening of the global market can indicate an increase in competition for the world coffee market.

Indonesia as a coffee producer is trying to exploit the added value of coffee, by developing organic coffee, *specialty* coffee including developing certified coffee with Georafis indications, such as Kintamani Coffee (Bali), Gayo Coffee (Aceh) and Flores Bajawa Arabian Coffee (NTT). We hope that in the future Indonesia can enjoy the added value of coffee and increase its role (competitiveness) in the international market.

II. LITERATURE REVIEW

A. International Trade Theory

International trade is based on differences in demand and supply between countries. This difference occurs because not all countries have and able to produce traded commodities, because the natural factors of the country do not support, such as geographical location and earth content and differences in the ability of a country to absorb certain commodities at a more efficient level.

According to Tambunan [7] international trade is trade between or across countries which includes export and import activities. International trade is divided into two categories, namely (physical) goods trading and services trading.

According to Setiawan, H, [14] international trade is trade carried out by residents of a country with residents of other countries based on mutual agreement. The intended population may be between individuals, between individuals and the government of a country or the government of a country and the government of another country. International trade will only occur if no one party benefits and no other party is disadvantaged. The benefits derived from international trade are called trade benefits or *gains from trade* .

The occurrence of international trade is characterized by the existence of export and import activities or the exchange of commodities between two or more countries. This activity can occur because of differences in demand and supply as well as differences in price levels between these countries.

The concept of international trade has emerged since the seventeenth and eighteenth centuries regarding the economic philosophy called mercantilism. According to the theory that the only way for a country to become rich and strong is to do as many exports as possible and import as little as possible [11].

B. Export-Import

According to Amir [1] exports is an activity of removing goods from circulation in the community and sending abroad in according to government regulations and expecting payment in foreign currencies. The purpose of export activities is to increase company profits through market expansion and obtain better selling prices (profit optimization), open new markets abroad as an expansion of the domestic market (open export markets). Whereas import is an activity of importing goods from abroad according to government regulations into circulation in the community, and goods are paid using a foreign exchange. The purpose of import activities is to meet the needs of the community for goods by bringing in goods that are not yet available domestically from abroad.

C. Concept of Competitiveness

Competitiveness is the capacity of a nation to face the challenges of international market competition and still maintain or increase its real income. In terms of international trade, international trade policy objectives should be directed to maintain the competitiveness of Indonesian products that have comparative advantages and specialize in developing *niche* in the manufacturing sector as well as developing new comparative advantages (including in services such as tourism and labor exports).

D. Framework for Thinking

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┌─────────────────────────────────┐
│        COFFEE COMMODITY         │
└─────────────────────────────────┘
                 │
                 ▼
┌─────────────────────────────────────────┐
│ The Commodity of world's and Indonesia's │
│ coffee:                                   │
│  1.  Export value of the coffee sector    │
│      in world's coffee production          │
│      countries                            │
│  2.  Total export from coffee production  │
│      countries                            │
│  3.  Total world export from coffee       │
│      sector                               │
│  4.  Total world export                   │
└─────────────────────────────────────────┘
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                 ▼
┌─────────────────────────────────────────┐
│ Comparative analysis of Indonesia's      │
│ coffee commodity                          │
└─────────────────────────────────────────┘
                 │
                 ▼
┌─────────────────────────────────────────┐
│ The power of coffee competitiveness      │
│ (X1, X2, X3,X4)                          │
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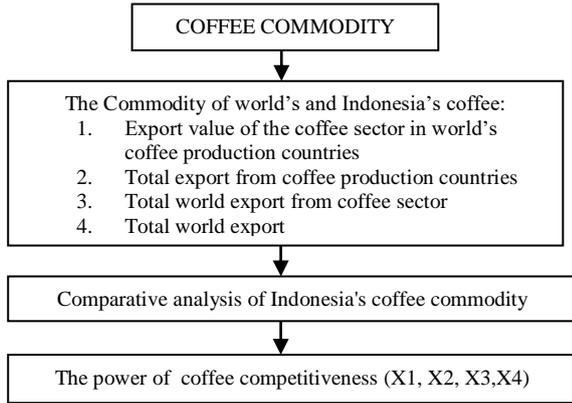
Figure 2. Framework for Thinking

III. METHOD

This study discusses the strength of competitiveness in Indonesian coffee commodities in the international market. Measuring the strength of competitiveness in this study was carried out based on comparative analysis (RCA index analysis) as well as knowing the factors that influence the competitiveness of Indonesian coffee by using multiple regression. The data used in this study include the amount of Indonesian and world coffee production, the value of coffee exports and imports of Indonesia, the producers and exporters of coffee in the world, the price, market share of each country, the exchange rate of the rupiah against the dollar, the volume of coffee exports, the value of Indonesian commodity exports, and world commodity exports.

Data sources were obtained from the BPS, FAO (*Food and Agricuture Organization*), AEKI, *USDA (United States Department of Agriculture)*, UN Comtrade, International *Coffee Organization* (ICO), Ministry of Agriculture, and the Directorate General of Plantations which are traced using the internet network and come directly to BPS. Other sources of information obtained from books, articles, journals and the internet. In this study also uses data derived from literature and previous studies.

Data analysis and processing techniques used in this study were conducted qualitatively and quantitatively. Quantitative analysis is used to analyze the situation and condition of the determinants of competitiveness and strategic factors in facing competition in international markets. According to (Tambunan, 2003), competitiveness analysis, in particular, the analysis of comparative advantage can use *Revealed Comparative Advantage* (RCA).

The RCA is an index that states the comparative advantage which is the ratio between the export share of a commodity in the country's total exports compared to the export market of the same commodity in total world exports. RCA is used in empirical studies to measure changes in the comparative advantage or level of competitiveness of a product from a country to the world.

The measured variable is the performance of coffee commodity exports to the total exports of a region (Indonesia) which is then compared with the share of world coffee export value to the total value of world exports. The RCA is formulated as follows:

$$RCA_{ij} = \frac{X_{ij}/\sum_i X_{ij}}{\sum_j X_{ij}/\sum_i \sum_j \sum X_{ij}} \qquad (1)$$

Where :

RCA_{ij} = Comparative advantage of state coffee j
X_{ij} = Export value of commodity i (coffee) country/ year to j
$\sum_i X_{ij}$ = Total export value of all state commodities j
$\sum_j X_{ij}$ = Total value of commodity exports i (coffee) world
$\sum_i \sum_j X_{ij}$ = Total export value for all world commodities

If a country has an RCA value greater than one (RCA> 1), then it can be said that the country has a comparative advantage in related products and is highly competitive. If an RCA value of less than 1 indicates a comparative loss in a product related to other words, it indicates weak competitiveness. The higher the RCA value, the more competitive it is.

In this research, regression analysis is used to find out what factors influence the competitiveness of Indonesian coffee, as seen from the RCA (*Revealed Comparative Advantage*) value. Regression model as follows:

$$L_n Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu \qquad (2)$$

Information :
$L_n Y$ = The dependent variable is RCA
α = Constant
$\beta_{1,...,4}$ = Regression coefficients of each independent variable
X1 = Volume of Indonesian coffee exports
X2 = Amount of Indonesian coffee production
X3 = Coffee Export Prices
X4 = Rupiah Exchange Rate Against Dollar

IV. RESULTS

A. Coffee Competitiveness (Revealed Comparative Advantage)

Based on figure 3 the competitiveness value of Indonesian coffee commodities shows a fluctuating trend from 2003 to 2017. The calculation of the RCA value from 2003-2017 shows that Indonesia has competitiveness in the coffee commodity against the world export value and the export value of all world commodities. This is evidenced by the average RCA value over the past 15 years (2003-2017) showing an RCA value of more than 1 which is 4.08 with a market share of 3.75 percent.

The value of the four exporting countries in figure 3 has a very good competitiveness value (more than 1). The State of Brazil has an average RCA value over the past 15 years (2003-2017) of 15.56, the State of Vietnam of 17.73 and the State of Colombia has the highest competitiveness of 38.56. If compared to the four countries, Indonesia has the lowest competitiveness of 4.08. Nevertheless, this shows that the competitiveness of the countries concerned with coffee commodities in the world market is above the world average. Conversely, if the acquisition of an RCA value of less than 1 means the country has weak competitiveness in the world market.
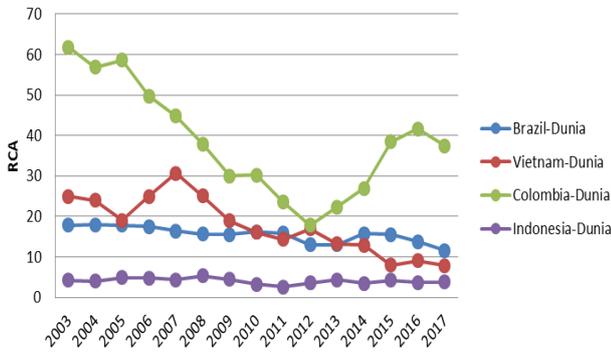
Figure 3: Graph of RCA Calculation Results
Source: Secondary Data Research Results from the UN *Commodity Trade Statistics Database*
(Data Processed, 2019)

Research conducted by Baso, A [4] also showed the results of RCAs from four exporting countries namely Columbia, Vietnam, Brazil and Indonesia concluded that the value of Indonesia's RCA was lower than the three other exporting countries. This is due to government involvement or the government's role in the development of coffee exports in each exporting country such as irrigation development, roads in coffee production centers, conducting research on coffee, providing counseling, facilitating credit, and granting processing rights with the unlimited area. In addition, differences in the types of coffee varieties traded. In Indonesia the coffee varieties traded are Robusta varieties (lower prices), whereas in Columbia the varieties traded are Arabica types (the price is higher) so that Columbia's export value is higher than the value of Indonesian exports.

In 2011, the competitiveness of Indonesian coffee commodities experienced the lowest point. This happened because of a significant increase in world coffee commodity exports but it was not followed by an increase in the value of Indonesian coffee commodity exports. The highest point of competitiveness of Indonesian coffee commodities occurred in 2008 of 5.38. The high value of competitiveness in 2008 was due to a significant increase in the value of Indonesia's coffee commodity exports from the previous year.

B. Regression Analysis Results

TABLE I VARIABLE COEFFICIENT

Variable	Coefficient	St. Error	t-Statistik	Prob.
C	-154.9616	68.68663	-2.256066	0.0477
X1	2.000183	1.035106	1.932347	0.0821
X2	11.07157	4.929481	2.245992	0.0485
X3	-1.619707	0.407999	-3.969879	0.0026
X4	1.088141	1.117210	0.973981	0.0353

Source: Secondary Data Research Results (Processed from E-Views), 2019

The econometric equation used in this study is:

$$L_nY = -\alpha + \beta_1 X_1 + \beta_2 X_2 - \beta_3 X_3 + \beta_4 X_4 + \mu \quad (3)$$

Then the regression results obtained using multiple linear regression are as follows:

$$Y = -154.9616 + 2.000183\, X_1 + 11.07157\, X_2 - 1.619707\, X_3 + 1.088141\, X_4$$

The constant value in this study is -154.96 16 with a significance of less than 5 percent ie 0.0477 which means that the constant value influences the *Revealed Comparative*

Advantage when the volume of Indonesian coffee exports (X_1), the amount of Indonesian coffee production (X_2) , the export price of Indonesian coffee (X_3) and the exchange rate of the Rupiah against the Dollar (X_4) = 0.

If the value of the X_1 coefficient of 2.000183 indicates that if the volume level of Indonesian coffee exports rises by 1 unit then it will be followed by an increase in *Revealed Comparative Advantage* of 2.000183 (Indonesia's export volume of coffee has a positive effect on *Revealed Comparative Advantage)*. Likewise with other independent variables, if the amount of Indonesian coffee (X_2) and the exchange rate of the Rupiah against the Dollar (X_4) increase by 1 unit, it will be followed by an increase in *Revealed Comparative Advantage*, respectively by 11.07157 and 1.0881411 (number of Indonesian coffee and the rupiah exchange rate against the dollar have a positive effect on *Revealed Comparative Advantage)* and a decline in *Revealed Comparative Advantage* of 1.619707 if the export price of coffee rises by 1 unit (the export price of coffee has a negative effect on *Revealed Comparative Advantage).*

C. Classic assumption test

Normality test
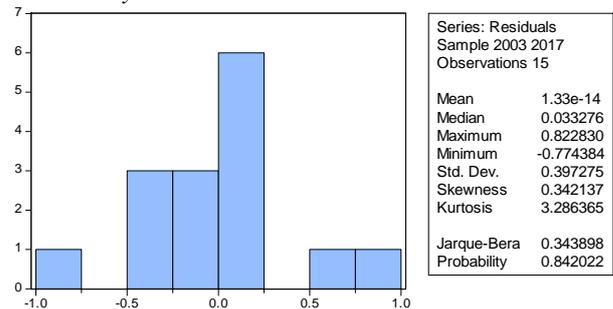
Figure 4 Normality Test Results
Source: Secondary Data Research Results (Processed from E Views), 2019

The value of *JB / Jarque-Bera is* 0.343898 while the *Chi Square* value by looking at the number of independent variables that we use in this case is 4 independent variables and the significant value that we use is 0.05 or 5%. Obtained a *Chi Square* value of 24.9958 which means the value of *Jarque-Bera* is smaller than the value of *Chi Square* (0.343898 < 24.9958). So it can be concluded that the data in this study are normally distributed.

Multicoloniarity Test

Some indicators in detecting the presence of multicollinearity, including (Gujarati, 2006):

1. R^2 values are too high, (more than 0.8) but there is no or little significant t-statistic.

2. The F-statistic value is significant, but the t-statistic of each independent variable is not significant.

To test the multicollinearity problem can see the correlation matrix of the independent variables, if there is a correlation coefficient of more than 0.80 then there is multicollinearity Gujarati [6]

TABLE II MULTICOLONIARITY TEST RESULT

	X1	X2	X3	X4
X1	1	0,204758	0,429615	0,516406
X2	0,204758	1	0,206500	-0,268487
X3	0,429615	0,206500	1	0,454451
X4	0,516406	-0,268487	0,454451	1

Source: Secondary Data Research Results (Processed from E-Views), 2019

From the table above, it can be seen the correlation coefficient between independent variables, thus the data in this study do not occur multicollinearity problems.

Heteroskedasticity Test

The *Breusch-Pagan-Godfrey* test results show the probability value of F Calculate is greater than 0.05 (5%) which is 0.2361 which means there is no heteroskedasticity problem in this study.

TABLE III MULTICOLONIARITY TEST RESULTS

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.464789	Prob. F(4,10)	0.2838
Obs*R-squared	5.541741	Prob. Chi-Square(4)	0.2361
Scaled explained SS	2.815654	Prob. Chi-Square(4)	0.5891

Source: Secondary Data Research Results (Processed from E-Views), 2019

D. Statistical Criteria

The coefficient of determination (Adjusted R-Squared)

TABLE IV COEFFICIENT DETERMINANT

Independent Variable	Dependent Variable	Adjusted R-Squared
Export Volume (X1) Indonesian Coffee Production (X2) Coffee Export Price (X3) Rupiah Exchange Rate Against Dollar (X4)	*Revealed Comparative Advantage*	0.554274

Source: Secondary Data Research Results (Processed from E- Views), 2019

If a study using regression with more than two independent variables it uses Adjusted (R²) as the determinant coefficient Santoso [12]. Because in this study using four independent variables, to determine the coefficient of determinant using Adjusted (R²). The determinant coefficient obtained from the output of e-Views is 55.42%, meaning that the percentage contribution of the influence of the independent variable on the dependent variable is 55.42% and the remaining 44.58% is influenced by other variables.

F-Test

The parameter for the f-test in this study is that if the calculated F value is greater than the F-table value it can be said that overall all independent variables in the model have a significant effect on the dependent variable.

The calculated F value obtained was 5.352366 with a significance level of 0.014420 while the F value of the Table seen from Table F α 5% was 4.67. Because the F count is greater than the F-Table, so all the independent variables simultaneously in this study have a significant effect on the dependent variable.

T-test

TABLE V TEST OF THE PARTIAL SIGNIFICANCE

Variable	Coefficient	t-Count	Prob.	Information
C	-154.9616	-2.256066	0.0477	Significant
X1	2.000183	1.932347	0.0821	Not Significant
X2	11.07157	2.245992	0.0485	Significant
X3	-1.619707	-3.969879	0.0026	Significant
X4	1.088141	0.973981	0.0353	Significant

Source: Secondary Data Research Results (Processed from E-Views), 2019

The parameter used in this study is an independent variable that is said to significantly influence the dependent variable if the value of t arithmetic is greater than the value of t Table or can also be known from the value of the probability of statistical t smaller than the value $\alpha = 5\%$.

V. DISCUSSION

A. The Influence of Indonesian Coffee Export Volume (X_1) Against Revealed Comparative Advantage (Y)

The results of the output produced from X_1 to Y obtained a regression coefficient value of 2.000183 with a significance of 0.0821 where the value is not significant if a significance value of 0.05 or 5 %. That is, partially variable X_1 (export volume) has a significant positive effect on the variable Y (*Revealed Comparative Advantage*). This is due to the relatively volatile *Revealed Comparative Advantage* value every year which does not show a positive trend.

The results of this study are supported by the results of research conducted by Setiawan, A [13] with the title competitiveness and determinants of Indonesian coffee exports to Malaysia in the AFTA CEPT scheme, revealing that the RCA has no significant effect on the volume of Indonesian coffee exports to Malaysia with a significance level of 0.753 > 0.05.

B. Effect of Total Indonesian Coffee Production (X_2) Against Revealed Comparative Advantage (Y)

The coefficient value of the variable number of Indonesian coffee production (X_2) is 11.07157 with a significance value of 0.0485 where the value is significant with a significance value of 5%. This suggests that a variable number of Indonesian coffee production (X_2) any changes of 1% on a variable number of Indonesian coffee production (X_2) the relative influence the increase *Revealed Comparatif Advantage* 4.85 % assuming other variables (X_1, X_3 and X_4) are considered constant.

The analysis of the competitiveness of Indonesian coffee exports in the International market showed that the amount of Indonesian coffee production had a significant positive effect on *Revealed Comparative Advantage.* To increase the value of *Revealed Comparative Advantage is* influenced by an increase in the number of Indonesian coffee production both in quality and quantity to increase the volume of coffee. The increase in volume can be done by simplifying procedures for coffee export activities such as export subsidies.

C. Effect of Coffee Export Prices (X_3) Against Revealed Comparative Advantage (Y)

In variable X_3 namely the export price of coffee, it has a coefficient value of -1.619707 with prob. 0.0026. This shows the exports price of coffee has a significant negative effect on the variable Y (*Revealed Comparatif Advantage).*

The results of this study are supported by research conducted by Rahman [10] with the title analysis of the

competitiveness of Indonesian coffee commodities and factors affecting the competitiveness of Indonesian coffee commodities in 2001-2015. The research shows that coffee prices have a significant negative effect on coffee competitiveness. The higher the price of coffee will inhibit and affect the growth of coffee competitiveness so that the profits to be gained from coffee exports to destination countries will be reduced.

D. *Influence of Rupiah Exchange Rate Against Dollar (X_4) Against Revealed Comparative Advantage (Y)*

The results of the regression show that the variable X_4 (Rupiah Exchange Rate Against the Dollar) has a significant positive effect on the variable Y (*Revealed Comparative Advantage*). This is evidenced by the coefficient of variable X_4 of 1.088141 with probability 0.0353 where the value is significant with a significance value of 5% or 0.05. When the Rupiah depreciates against the Dollar, the value of the *Revealed Comparative Advantage* will increase, this is because when depreciated, the value of goods will change in the two countries that carry out international trade. An appreciating dollar will cause a decline in the price of Indonesian coffee in the importer country. This study is in line with research conducted by Rahman [10] which shows that there is a significant positive effect of exchange rate variables on RCA. A weaker exchange rate can encourage increased competitiveness of Indonesian coffee.

VI. CONCLUSION

The results of the Revealed Comparative Advantage of Indonesian coffee commodities from 2003 to 2017 show that Indonesia has a strong level of competitiveness in the international market. This is proofed by the Revealed Comparative Advantage value of more than one Indonesian coffee commodity. In addition, the factor of the amount of Indonesian coffee production is the factor that has the biggest influence on the Revealed Comparative Advantage with a coefficient of 11.07157. In addition, the volume of Indonesian coffee exports affected 2.000183, the price of Indonesian coffee exports affected by -1.619707 and the Rupiah exchange rate against the Dollar affected 1.088141. Overall all variables affect the Revealed Comparative Advantage value with a determinant value of 0.554274. It,s means 55.42 percent of the independent variables affect the dependent variable and the remaining 44.58 percent are influenced or explained by other variables.

Indonesia should start to building a processing industry, especially for coffee extract and then, improve the supply side by overcoming export barriers experienced by coffee enterpreneurs. So as increase the competitiveness of coffee in the international market.

REFERENCES

[1] Amir, "Strategi Memasuki Pasar Ekspor Seri Bisnis Internasional", No 14, Penerbit: PPM, Jakarta, 2014.

[2] Asosiasi Eksportir Kopi Indonesia, "Sejarah Kopi Indonesia", Januari 2019. [Online]. http://www.aeki-aice.org/ [Accesied 12 Maret 2019].

[3] Badan Pusat Statistik, "Statistik organic pengolahan besar dan sedang Indonesia". Januari 2018. [Online]. https://www.bps.go.id/subject/54/perkebunan.html#subjekViewTab3. [Accesied 12 Maret 2019].

[4] Baso, R, "Analisis Daya Saing Kopi Indonesia", Jurnal Ekonomi Pertanian dan Agribisnis (JEPA), Vol.2(1), pp. 1-9, ISSN: 2614-4670, 2018.

[5] Direktorat Jenderal Perkebunan – Kementerian Pertanian, "Statistik Kopi Indonesia 2017". Januari 2018. [Online]. http://ditjenbun.pertanian.go.id [Accesied 19 Maret 2019].

[6] Gujarati D, "Ekonometrika Dasar", Penerbit: Erlangga, Jakarta, 2006.

[7] Tambunan, T, "Perdagangan Internasional dan Neraca Pembayaran", Pustaka:LP3ES, Jakarta, 2002.

[8] Tambunan, T, "Perekonomian Indonesia", Teori dan Temuan Empiris, Salena Empat, Jakarta, 2003.

[9] UN Comtrade, United Nation Commodity Trade Statistics Database. 2019. [Online]. https://comtrade.un.org/. [Accesied 6 Agustus 2019].

[10] Rahman, I , "Analisis Daya Saing Komoditas Kopi Indonesia dan Faktor-Faktor yang Mempengaruhi Daya Saing Komoditas Kopi Indonesia Tahun 2001-2015", Jurnal Universitas Islam Indonesia, Yogyakarta, 2017.

[11] Salvatore, D, "Ekonomi Internasional", Penerbit: Erlangga, Jakarta, 2016.

[12] Santoso, S, "Mengolah Data Statistik Secara Profesional", PT. Alex Media Komputindo, Jakarta, 2001.

[13] Setiawan, A,"Daya Saing dan Faktor Penentu Ekspor Kopi Indonesia ke Malaysia dalam Skema CEPTAFTA", Journal Trunojoyo Vol 5(2), 2016.

[14] Setiawan, H, "Perdagangan Internasional", Pustaka: Nusantara, Yogyakarta, 2011.

[15] Subhani, K, "Analisis Daya Saing Ekspor Kopi Indonesia di Pasar Internasional", Jurnal Universitas Jambi, 2017.