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Determination Analysis Of Factors Affecting The Export Of Indonesian Tea

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Abstract

The plantation sector is one of the important sectors in the Indonesian economy. One of the leading products in the Indonesian plantation sector in export and domestic market activities is the tea commodity. This study aims to analyze the effect of production variables, USD exchange rate, and land area simultaneously and partially, on the volume of Indonesian tea in 1989-2018. The analysis technique used is multiple linear regression analysis. The results of data analysis show that simultaneously production, USD exchange rate, and land area have a significant effect on the export volume of Indonesian tea in 1989-2018. Partially, the production variable has a positive and significant effect on the volume of Indonesian tea exports, and the exchange rate variable has a negative and significant effect, while the land area variable has no effect on the volume of Indonesian tea exports in 1989-2018. Given the importance of exports to a country's economy, the export of tea, which is one of Indonesia's leading export commodities, must be increased, taking into account the factors that can affect the value of exports.

Keywords: *Exports, Tea, Production, Exchange Rate, Land Area*

1. Introduction

Plantation is one of the important sectors in the Indonesian economy because it involves aspects of the life of the nation and has a significant contribution to the Indonesian economy (Kayika, 2010). According to Rosihan and Nesia (2008), the increasing trend of plantation exports illustrates that plantation commodities are able to compete in the international market, so they can make a very significant contribution to foreign exchange trade. Analysis of competitive advantage with Porter's Theory shows that the Indonesian tea commodity is highly competitive because internal and external factors in tea production are readily available, although there are several factors that must be addressed further. One of the leading products in the plantation sector in Indonesia in export and domestic market activities is tea (Teresia, 2012). Indonesia as one of the largest tea exporters in the world is very dependent on the production of tea commodities. When tea commodity production increases, the amount available in the country will be abundant, so that there will be a surplus of supply of tea commodities. The tea commodity surplus will increase the supply of tea owned by Indonesia, so that the ability to export tea will be even greater.

There are several factors that can affect the export volume of Indonesian tea commodities, one of which is production. High tea commodity production will increase the volume of tea to be exported. The increase in export volume will provide big opportunities for exporting countries to increase the value of their exports. Production plays a very important role in trading activities. This is because when the demand for fulfilling goods increases, production will also increase. When production increases, goods for fulfillment of needs will be available on the market so that trading activities will be able to run smoothly. The existence of abundant production factors makes tea commodity production increase. An increase in commodity production will lead to an abundance of available tea commodities, so that the export ability of tea commodities will also increase.

The second factor is the USD currency exchange rate (Abbas, 2018). The exchange rate of a country's currency can experience both strengthening (appreciation) and weakening (depreciation). When the domestic currency exchange rate depreciates, its value will weaken against the value of the foreign currency. This means that the price of export commodities will be relatively cheaper, so that there will be an increase in demand, and the volume of exported commodities will increase, and vice versa. If the value of the domestic currency depreciates or appreciates, it will affect the price of the exported commodity, which will have an impact on the export value of the commodity.

Another factor that can affect the export volume of tea is land area. Climate change has an important impact on production because the tea plant is highly dependent on good rainfall distribution, increased air temperature and changes in rainfall patterns which will affect the quantity and quality of tea production. So that it makes small farmers and tea plantation owners change the function of their land to other commodities. The reduction in plantation land had a negative impact on exports, so that tea exports experienced ups and downs due to reduced land area and production volume

2. Literature Review

Putra (2016)
Conducting research on Indonesian tea exports from 2003 to 2015, it is concluded that production has a positive and significant effect on tea exports. Increasing the amount of production of a commodity in the country, can cause an excess supply of these commodities, so that there will be a surplus of supplies. The existence of this surplus will increase the ability of a country to carry out export activities.

Suhartawan and Sudirman (2018)
Which states that the USD currency exchange rate has a positive effect on the export value of tea. When the rupiah exchange rate depreciates, the price of the exported tea commodity will be cheaper so that the export volume will increase. Low prices will increase the demand for tea in the international market, so that the volume of tea exported will increase.

Diah (2016)
Which states that fertile plantation land has also been converted into residential houses or company buildings so that the plantation land is reduced. The land shift was due to the lowprice set for the tea commodity as well as the reduced market coverage which made farmers shift their land function to other commodities.

3. Problem Formulation

The problem formulation of this study is:

a) Production, USD exchange rate, and land area simultaneously affect the volume of Indonesian tea exports in 1989-2018.
b) Production partially has a positive effect on the volume of Indonesian tea exports in 1989-2018.
c) The USD exchange rate partially had a negative effect on the volume of Indonesian tea exports in 1989-2018.
d) Land area partially has a positive effect on the volume of Indonesian tea exports in 1989-2018

4. Research Methodology

This research uses an associative quantitative method. The location of the research was carried out in Indonesia using data published by the Ministry of Trade of the Republic of Indonesia, the Directorate General of Plantation, the Central Bureau of Statistics, Indonesian Tea Statistics, as well as those related to the object of research. The objects of this research are production, exchange rate, and land area which are thought to have an effect on the tea export volume. This study uses multiple linear regression analysis techniques, which aim to determine the relationship between the independent variable and the dependent variable.

5. Analysis Result

1) Classic assumption test

- The normality test aims to test whether the regression model has a normal distribution or not. To detect the normality of the data, Kolmogorov-Smirnov was used with the criteria that if Asymp.Sig (2-tailed) was greater than the 0.05 level of significance, it could be concluded that the residuals were normally distributed. Based on the test results, it

can be seen that the Asymp. Sig (2-tailed) of 0.868 is greater than the level of significant 5 percent (0.868> 0.05), so it can be concluded that the variables used in this study are normally distributed.

- Multicollinearity test aims to test whether the regression model found a correlation between the independent variables. The presence or absence of multicollinearity in the regression model can be detected by looking at the tolerance value and the variance inflation factor (VIF) value. The test results show that the tolerance value of the production variable, exchange rate, and land area is greater than 10 percent (0.10) and the VIF of each of these variables is less than 10, so it can be concluded that the regression equation model in the study it is free from multicollinearity

- The autocorrelation test aims to test whether a linear regression model has a correlation between confounding error in period t and confounding error in period t-1 (Ghozali, 2016), carried out using the Durbin-Watson Test. Based on the test results, it is known that the value of Durbin Watson (dW) is 0.850. Because the DW value is between -2 to +2, it means that there is no autocorrelation. This shows that the regression model used does not occur autocorrelation so that the regression equation model formulated can be used as an estimation tool.

- This heteroscedasticity test aims to determine whether in the regression model there is an inequality of variance from the residuals of one observation to another which is carried out by the Scatterplot test. Based on the scatterplot graph, it shows a point pattern that spreads evenly above and below the number 0 on the Y axis, so it can be concluded that the regression equation model used in this study does not contain symptoms of heteroscedasticity.

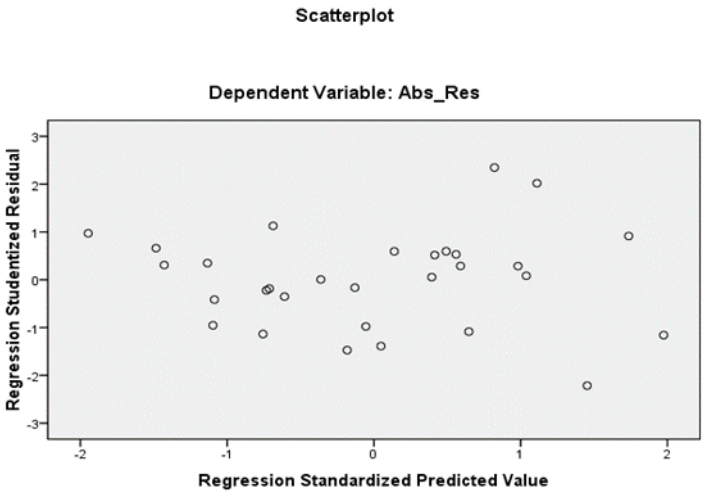

Figure 1. Heteroscedasticity Test Results

2) Descriptive Statistical Analysis

Table 1. Descriptive Statistical Analysis

Variable	N	Min.	Max.	Mean	Std. Deviation
Production	30	37205	169821	153651	10759
Exchange Rate	30	12718	14481	7980	4143
Land Area	30	52619	157039	134133	14382
Export Volume	30	78888	127926	87806	21140

Source: Processed Data, 2021

Based on the results of descriptive statistical analysis, it can be described as follows:

1. The production variable (X1) has a minimum value of 37205 and a maximum value of 169821. The average value of 153651 with a standard deviation of 10759 indicates that the volatility of production is not too high.

2. The exchange rate variable (X2) has a minimum value of 12718 and a maximum value of 14481. The average value of 7980 with a standard deviation of 4143 indicates that the exchange rate volatility is not too high.

3. Land area variable (X3) has a minimum value of 52619 and a maximum value of 157039. The average value of 134133 with a standard deviation of 14382 indicates that the volatility of land area is not too high.

4. The export volume variable (Y) has a minimum value of 78888 and a maximum value of 127926.The average value of 87806 with a standard deviation of 21140 indicates that the volatility of export volume is not too high.

3) Multiple Linear Regression Analysis

Based on the regression equation, it can be explained that:

1. The production regression coefficient (X1) is positive at 0.852 means that production has a positive relationship with export volume, where if production increases by one ton, the export volume will increase by 0.852 tons assuming the other independent variables are constant.

2. The exchange rate regression coefficient (X2) has a negative value of -3.039, which means that the exchange rate has a negative relationship with export volume, where if the exchange rate increases by one rupiah, the export volume will decrease by 3.039 tons, assuming the other independent variables are constant.

3. The value of the regression coefficient for land area (X3) is negative at -0.112, which means that the land area has a negative relationship with export volume, where if the land area increases by one hectare, the export volume will decrease by 0.122 ton, assuming the other independent variables are constant.

4) Model Feasibility Test

1. F test

The f test results show that the significance value of 0.000 is smaller than 0.05. This means that simultaneously production, exchange rates, and land area affect the export volume of Indonesian tea commodities from 1989 to 2018.

2. Determination Coefficient Test (R^2)

Based on the test results, it shows that the value of the adjusted R Square is 0.508 or 50.8 percent, which means that 50.8 percent of the variance in export volume is influenced by variance in production, exchange rates and land area, while the remaining 49.2 percent is influenced by other variables that not described in this study.

3. T test

Table 2 Hypothesis Test Results (t test)

Variable	Coefficient Regression	t-count	Sig.
(Constant)	-3895,397	-0,092	0,927
Production	0,852	2,355	0,026
Exchange Rate	-3,039	-3,786	0,001
Land Area	-0,112	-0,360	0,722

Source: Processed Data, 2021

Test of the Effect of Production (X1) on the Indonesian Tea Export Volume (Y)

It shows that production has a positive regression coefficient of 0.852, tcount of 2.355, and a significance value of 0.026. The significance value is 0.026 <0.05 means that production has a positive effect on the volume of Indonesian tea exports. When the production activities of a certain commodity weaken, it will reduce the quantity of the commodity produced. The

production results are only able to meet domestic needs because there is no surplus, so that export activities cannot be carried out. Conversely, when the quantity of a commodity produced increases or there is a surplus in supply of certain commodities, export activities can be carried out. The higher the amount of production of a commodity, the higher the volume of the commodity that is exported. This shows that when we want to increase the volume of commodities exported, it must be increased by increasing the production of these commodities. When production increases, the supply of export commodities will be abundant so that the volume of commodities to be exported will also increase. Similar to Indonesia's tea exports, the higher the tea production, the higher Indonesia's ability to carry out export activities, which is reflected in the higher volume of tea exported. The results of this study are in line with research conducted by Pangesti (2019), which in his research concluded that Indonesian tea production had a significant effect on the volume of Indonesian tea exports for the period 1991-2016.

Test of the Effect of Exchange Rate (X2) on Indonesian Tea Export Volume (Y)

It shows that the exchange rate has a negative regression coefficient of -3.039, tcount of -3.786, and a significance value of 0.001. The significance value of 0.001 <0.05 means that the exchange rate has a negative effect on the volume of Indonesian tea exports. Changes in exchange rates or exchange rates can affect the price of tea in international markets. When the value of the domestic currency depreciates, foreigners will receive exported goods originating from the country concerned at a lower or cheaper price, conversely, if the value of the domestic currency appreciates, foreigners will receive exported goods at a higher price. The stronger the USD currency exchange rate, the cheaper the price of export products is, so that the export volume will increase. Similar to the Indonesian tea commodity, when the rupiah exchange rate depreciates, the USD exchange rate will strengthen, which causes the price of exported tea commodities to be cheaper. The low price will increase the demand for tea in the international market, thereby increasing the volume of the exported tea commodity. The results of this study are in line with research conducted by Sevianingsih and Pangestuti (2016) which in their research concluded that the exchange rate partially has a negative value and has a significant effect on the volume of Indonesian tea exports 2010 - 2014

Test of the Effect Land Area (X3) on Indonesian Tea Export Volume (Y)

It shows that the land area has a negative regression coefficient of -0.112, tcount of -0.360, and a significance value of 0.722. The significance value of 0.722> 0.05 means that the land area has no effect on the volume of Indonesian tea exports. This means that land area has no effect on the volume of Indonesian tea exports. The existence of a negative value in the land area variable indicates the opposite direction, namely if the land area decreases, the export volume will also decrease and vice versa, if the land area increases, the export volume will also increase. The existence of an insignificant effect means that when the land area decreases, the export volume will not always increase but also decrease. Juliansyah (2018) in his research found that the variable land area had a significant negative effect on the volume of Indonesian tea exports. This can occur due to old plant age which reduces productivity levels and the effect of erratic weather changes resulting in damage to the soil structure. The results of this study are in line with the research conducted by Sudirman and Wardani (2015) who found that partially the variable of land area has no effect on the export volume of Indonesian tea for the 2000-2012 period.

6. Conclusion

Based on the research results that have been described, it can be concluded as follows: The simultaneous test results show that production, USD exchange rate, and land area have a significant effect on the export volume of Indonesian tea commodities in 1989-2018. This result is supported by the value of the coefficient of determination (R2) of 0.508 or 50.8 percent, indicating that the fluctuation of the variable volume of tea commodity exports in Indonesia is influenced simultaneously by the variable production, USD exchange rate, and land area, while the rest is 49.2 percent. influenced by other variables that are not explained in this study. Production (X1) partially has a positive effect on the export volume of Indonesian tea commodities in 1989-2018. This shows that, the higher the production of Indonesian tea, the higher the volume of tea commodity that can be exported. The USD exchange rate (X2) has a negative effect on the export volume of Indonesian tea commodities in 1989-2018. This shows that the stronger the USD exchange rate, the cheaper the price of the tea commodity on the export market, so that the increase in demand will increase the volume of Indonesian tea exports. Land area (X3) partially has no effect on the export volume of Indonesian tea commodities in 1989-2018. This shows that, if there is an increase in land area, the volume of Indonesian tea exports can increase but can also decrease.

7. References

1. Diah Candra Wati, Anak Agung. (2016). Pengaruh Produk Domestik Bruto (PDB), Kurs Dollar Amerika Serikat Dan Inflasi Terhadap Impor Sayuran Indonesia Kurun Waktu 1994-2013. E-*Journal Ekonomi Pembangunan Unud*. Vol. 5, No. 1

2. Ghozali, I. (2016). Aplikasi Analisis Multivariate dengan Program SPSS (Vol. 8). Semarang: Badan Penerbit Universitas Diponegoro.

3. Juliansyah, D. T. (2018). Pengaruh Harga, Nilai tukar, Produksi, dan Luas Lahan Terhadap Volume Ekspor Teh Di Indonesia (Tahun1990-2015).

4. Kayika Putri, Ida Ayu Agung. (2010). Analisis Daya Saing Dan Faktor-Faktor yang Mempengaruhi serta Prospek Ekspor Kopi provinsi Bali. *Skripsi* Program Studi Ekonomi Pembangunan Internasional

5. Pangesti, Y. A., & Hasmarini, I. M. I. (2019). *Analisis Faktor-Faktor yang Mempengaruhi Ekspor Teh Indonesia* (Doctoral dissertation, Universitas Muhammadiyah Surakarta).

6. Paul, F. H., Ali, S. R., Soomro, R., Ali, Q., & Abbas, S. K. (2018). Exchange Rate Volatility and Economic Growth: Evidence from Kuwait. *Eurasian Journal of Analytical Chemistry*, Vol. 13, No. 6.

7. Putra, A. A. N. A. M., & Yasa, I. N. M. (2016). Pengaruh inflasi dan pertumbuhan ekonomi terhadap kurs dollar Amerika Serikat dan ekspor Indonesia

8. Rosihan, Asmara dan Nesia, Artdiyasa. (2008). The Competitiveness Level Analysis of Indonesian Estate Commodity. AGRISE, Vol. 3, No. 2, pp: 105-111.

9. Sevianingsih, Y. E., Yulianto, E., & Pangestuti, E. (2016). Pengaruh Produksi, Harga Teh Internasional Dan Nilai Tukar Terhadap Volume Ekspor Teh Indonesia (Survey Volume Ekspor Teh Indonesia Periode 2010-2014). *Jurnal Administrasi Bisnis*, Vol. 40, No. 2, pp. 24-31

10. Suhartawan, Sudirman. (2018). Pengaruh Luas Lahan, Kurs Dollar Amerika, Indkes Harga Perdagangan Besar Terhadap Ekspor Teh Indonesia tahun 2000-2015

11. Sudirman, W., & Wardani, N. W. G. (2015). Pengaruh Harga, Produksi, Luas Lahan dan Kurs Dollar Amerika Serikat terhadap Volume Ekspor Teh Indonesia Serta Daya Saingnya Periode 2000-2012. *E-Jurnal Ekonomi Pembangunan Universitas Udayana*, Vol. 4, No. 1, pp. 44514

12. Teresia, Ananda. (2012). Kelapa Sawit, Kopi, Kakao dan Teh Jadi Unggulan. Artikel Tempo Bisnis, 27 Desember 2012.