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COMPETITIVENESS OF RUBBER COMMODITIES AND EXCHANGE RATE ON RUBBER EXPORTS IN INDONESIA

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ABSTRACT

This study aims to determine the effect of rubber commodity competitiveness and exchange rates on rubber exports in Indonesia. This study uses time series data from 2006 to 2023 obtained from the trade map, the Directorate General of Plantations, and Bank Indonesia. The data analysis method uses multiple linear regression. The results of the T-test of this study indicate that the competitiveness variable has no or no significant effect on rubber exports in Indonesia, and the exchange rate variable has a positive or significant effect on rubber exports in Indonesia. The results of the statistical F-test indicate that the competitiveness and exchange rate variables simultaneously have a significant effect on rubber exports in Indonesia.

Keywords: Competitiveness, Exchange Rate, Rubber

1. INTRODUCTION

Rubber is one of Indonesia's important sources of foreign exchange, occupying a leading position after palm oil in the national export structure (Bandi et al., 2023). In 2021, the value of Indonesia's rubber exports increased by US$2.335 million, driven by a 3.15% growth in export volume and a 26.21% increase in international rubber prices. Rubber exports make a significant contribution to the increase in foreign exchange reserves and economic growth, particularly in rubber plantation centers (Puspita1 & Nasir2, 2024).

However, from 2022 to 2023, the value of rubber exports declined due to a decrease in local production and fluctuations in the US dollar exchange rate against the rupiah. The decline in the competitiveness of rubber commodities was also evident during the 2018-2023 period, caused by traditional cultivation techniques, pest attacks, and competition from major producing countries such as Thailand and Vietnam, which use modern technology.

In recent years, the competitiveness of Indonesian rubber commodities in the international market has declined, contrary to price movements in the global market. This can be seen from stagnant and even declining exports, despite rising prices for similar commodities in the world

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market. Opportunities that should have been exploited to increase export value have not been optimally responded to.

The decline in competitiveness not only affects industry players, but also influences macroeconomic variables in global trade. Therefore, an in-depth study is needed to find the right strategy to strengthen Indonesia's competitiveness in the future. Meanwhile, the exchange rate of the rupiah against the US dollar affects export prices and demand. A strengthening rupiah tends to increase the price of export goods, reducing demand, while a weakening rupiah tends to lower the price of export goods, increasing demand.

Studies on rubber commodity exports have been widely published, such as the research by Apriansyah et al. (2019), which focuses on the independent variables of productivity, exchange rates, and Thailand's RCA (Revealed Comparative Advantage), Sani & Huda (2022), and Kusrini & Novandalina (2016), which develop a focus on land area, production, exchange rates, and international prices. Silaban et al. (2020) and previously Kamalia (2020) have studied global rubber prices, the rupiah exchange rate, and added natural rubber production, synthetic rubber prices, GDP per capita, inflation, and the volume of natural rubber exports to the United States. Priyono Agus (2019) added the independent variable of gross domestic product (GDP) in addition to inflation and exchange rates. Claudia et al. (2016) further developed domestic natural rubber production, international natural rubber prices, and exchange rates. Fihri et al. (2021) added the independent variable of international rubber prices in addition to exchange rates, inflation, and GDP. Martha et al. (2023) focused on the independent variables of exchange rates, inflation rate, and added a new independent variable, namely gross domestic product (GDP) growth. Kurniawaty et al. (2022) focused on the independent variables of production, GDP, and exchange rate, and the research conducted by Andriantoni et al. (2020) focused on the independent variables of GDP and specifically examined the exchange rates of trading partner countries.

Research on rubber exports has developed in terms of the competitiveness of rubber exports, as reported by Juliansyah et al. (2024). The study by Juliansyah et al. (2024) did not specifically examine competitiveness by understanding the RCA formula. This study continues the previous research, more specifically by using the RCA value as an independent variable and then examining its effect on rubber exports in Indonesia.

This study aims to evaluate the extent of the influence of competitiveness and exchange rates on rubber exports in Indonesia during the period 2006-2023. The findings of this study are expected to contribute to relevant policy recommendations for improving the performance of rubber exports and the competitiveness of Indonesian plantation commodities in the global market.

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2. LITERATURE REVIEW

International trade is defined as a trading activity involving more than one country. Foreign trade is a crucial component of the national economy because it plays a role in transferring domestic production and obtaining capital goods to support domestic industrial development (Taufiq & Natasah, 2024).

International trade occurs because of variations in capabilities and resources between countries. Countries engage in international trade to meet their needs and achieve profits and economies of scale (Natasya Ali, 2024). According to Salvatore in Purba et al., (2021), "international trade brings significant benefits, as countries around the world specialize in the production of goods and services through more efficient methods.

The basic theory of international trade developed from two main schools of thought, namely classical theory and modern theory. Classical theory was introduced by John Stuart Mill, Adam Smith, and David Ricardo, who based their views on international trade on the theory of supply and demand. The assumptions of classical theory were later criticized by a group of economists known as Hecksher and Ohlin, who developed the modern theory, as well as by Samuelson and partial theory (Taufiq & Natasah, 2024).

Comparative advantage describes how superior a product is in the international market. This idea was introduced by David Ricardo in 1817. The theory of comparative advantage is the main foundation of international trade between countries. In 1936, Haberler refined the theory of comparative advantage through the theory of opportunity cost. According to this theory, a country has a comparative advantage if it can produce a good at a lower opportunity cost than other countries (Salvatore, 1997) and (Widyaningtyas & Widodo, 2017).

Exports

According to Mankiw (2006), exports are the sale of locally produced goods and services to other countries. Exporting involves the shipment of goods from one country to another. This strategy is commonly used by many small and medium-sized enterprises as their main strategy in facing international competition (Taufiq & Natasah, 2024).

Based on Law No. 2 of 2009 concerning the Indonesian Export Financing Agency, exports are defined as the shipment of products from the customs territory of the Republic of Indonesia (Wulansari et al., 2013). Exports are the most important gross output in international trade. Without relationships and cooperation with other countries, it is difficult to meet their needs (Mankiw, 2018).

Competitiveness

According to Muslika & Tamami (2019), competitiveness generally refers to a country's ability to excel in a particular field through favorable conditions and circumstances.

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Competitiveness is the ability to access export markets and maintain imports. A country's achievements in international trade can be measured by its level of competitiveness (Harahap & Segoro, 2018).

The theory of competitiveness began with Adam Smith's idea of product superiority and used a method called "classical theory" to determine the competitiveness of a product relative to products made in other countries. The basic concept of classical theory emphasizes the importance of a country's competitiveness, as global trade is considered a source of economic growth.

According to Porter (1990), competitiveness involves two main aspects, namely the ability of a commodity to penetrate international markets and maintain its position in those markets (Christiadi et al., 2024). RCA (Revealed Comparative Advantage) is one way of measuring comparative advantage and is an indicator of a region's competitiveness.

Exchange rate

According to Mankiw (2003), exchange rate is defined as the price used in international trade activities. A country's currency exchange rate is divided into two types, namely nominal exchange rate, which reflects the direct comparison between two currencies, and real exchange rate, which shows the comparison of prices of goods between two countries.

Exchange rates have both positive and negative effects on exports. Positive effects arise when a stronger exchange rate encourages an increase in exports. Conversely, exchange rates can affect the price of export products. If the rupiah strengthens against the dollar, the price of Indonesian exports will increase.

There are two main types of exchange rate systems: fixed exchange rates and floating exchange rates. Both systems are commonly used by countries around the world, including Indonesia. A fixed exchange rate is an exchange rate that requires government intervention in the event of excessive fluctuations. Meanwhile, a floating exchange rate is an exchange rate that can fluctuate freely without government intervention because it is influenced by supply and demand in the money market (Puspitaning Tyas Hania, 2022).

Conceptual Framework

Based on the existing background, the researcher developed a conceptual framework related to the background as follows:

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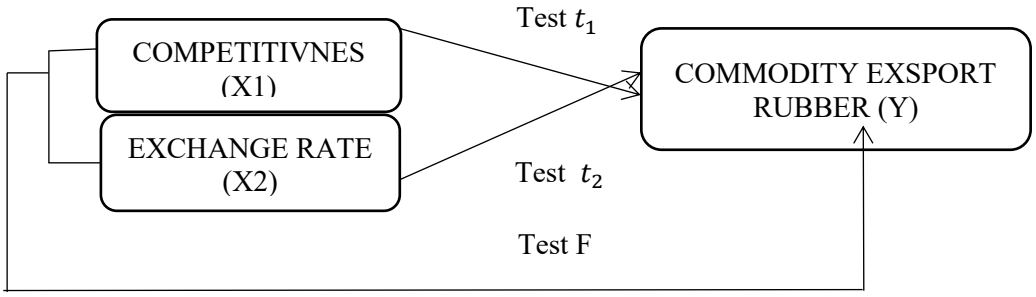
Figure 2.1

Conceptual Framework



As shown in Figure 2.1 above, it is known that the variables of competitiveness and exchange rate have an effect on rubber commodity exports in Indonesia. In this study, rubber commodity exports in Indonesia are the dependent variable (Y), and the independent variables in this study are competitiveness (X1) and exchange rate (X2).

3. METHODOLOGY

3.1. Research Design

This study uses a quantitative approach utilizing secondary data, and in terms of the time of collection, the data used in this study is time series data from 2006 to 2023. The data sources were obtained from relevant agencies, namely Bank Indonesia, Trade Map, and the Directorate General of Plantations (Ditjenbun)

3.2. Data Collection

The data used is time series data from 2006 to 2023. The data sources are taken from relevant agencies, namely Bank Indonesia, Trade Map, and the Directorate General of Agriculture (Ditjenbun).

3.3. Data Analysis

This study applies multiple linear regression analysis to assess the extent to which independent variables influence dependent variables. The analysis model used is multiple linear regression that has been transformed into a semi-natural logarithmic form, with the following formula:

$$\boldsymbol{lnY_t = \beta_0 + \beta_1 lnX_{1t} + \beta_2 lnX_{2t} + \varepsilon_t}$$

Description :

$logY_t$: Logarithm of the dependent variable Y

β_0 : Constant

lnX_{1t} : Logarithm of the independent variable X1

lnX_{2t} : Logarithm of the independent variable X2

β_1, β_2 : Regression coefficients X1 and X2

ε_t : Standard eror

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In order to determine whether the regression model is good, it is necessary to test normality and classical assumptions. Meanwhile, to analyze the effect of each independent variable on the dependent variable, tests are carried out using the t-test, F-test, analysis of the coefficient of determination (R^2), and analysis of the correlation coefficient R.

Normality Test

A normality test is conducted to assess whether the variables included in the regression model are normally distributed or not. An appropriate regression model must have normally distributed data. To see the normality test, we usually look at the Jarque-Bera and probability values, with the following conditions:

1. If $JB_{hit} > X^2_{tab}$ and the probability value < 0,05, then the model is not distributed normally.
2. If $JB_{hit} < X^2_{tab}$ and the probability value > 0,05, then the model is normally distributed.

Classical Assumption Test

According to Gujarati (2004), classical assumption testing is applied to ensure that the model in the study meets the basic requirements in multiple linear regression analysis, meaning that the model used must be free from classical assumption deviations.

Autocorrelation Test

An autocorrelation test is conducted to identify whether there is a connection between the error in period t and the error in period t-1 (previous) in a multiple linear regression model. Methods for identifying the presence or absence of autocorrelation include the Lagrange Multiplier Test (LM test), Durbin-Watson Test (DW test), and Q Statistics Test.

Heteroscedasticity Test

A heteroscedasticity test is conducted to examine whether there are differences in residual variance between one observation and another. To check for the existance of heteroscedasticity, the White test can be used. The conditions for testing heteroscedasticity are as follows:

1. The R^2 value obtained is very high, but many independent variables are individually insignificant or have no effect on the dependent variable.
2. Perform an analysis of the independent variable matrix. If there is too high a correlation amongs independent variables (greater than 0.80 and 0.85), this indicates multicollinearity.
3. Observation of the Variance Inflation Factor (VIF) value in the regression model: if the VIF value is >10, multicollinearity occurs, and if the VIF value is <10, multicollinearity does not occur.

ISSN: 3047-969X
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4. Observation of the Variance Inflation Factor (VIF) value in the regression model: if the VIF value is >10, multicollinearity occurs, and if the VIF value is <10, multicollinearity does not occur.

This study uses the Variance Inflation Factor (VIF) to detect the presence or absence of multicollinearity.

T-Statistic Test

Statistical tests are applied to observe the degree of relationship between independent variables partially to the dependent variable. The t-statistic test estimate is performed by comparing the calculated t value with the table t value. The following are the testing criteria in the partial test (t-test):

1. If the value of $t_{hit} > t_{tab}$, then H_0 is rejected, meaning that the independent variable partially shows a significant effect on the dependent variable.
2. If the value $t_{hit} < t_{tab}$, then H_0 is accepted, indicating that the independent variable has no significant partial effect on the dependent variabel.

F-Statistic Test

The F-statistic test is used to value whether the independent variables simultaneously have a significant impact on the dependent variable. The test criteria include:

1. If the value $f_{hit} > f_{tab}$, then H_0 is rejected, meaning that the independent variables collectively have a significant effect on the dependent variable.
2. If the value of $f_{hit} < f_{tab}$, then H_0 is accepted, meaning that the independent variables collectively have no significant effect on the dependent variable.

Coefficient of Determination (R^2)

According to Gujarati (2004), the coefficient of determination is used to measure the extent of influence exerted by independent variables on dependent variables. The R-Square value ranges from 1 to 0. If the R-Square value is close to 1, it means that the higher the R-Square value, the greater the influence of the independent variable on the dependent variable. Conversely, if the R-Square value is close to 0, the influence tends to be small.

Correlation Coefficient (R)

According to Gujarati (2004), the correlation coefficient is a statistical indicator that describes the strength of the linear relationship between two variables. In the process of multiple linear regression analysis, R reflects the strength of the relationship between the dependent variable Y and the linear combination of independent variables X1, X2, ... Xn.

ISSN: 3047-969X
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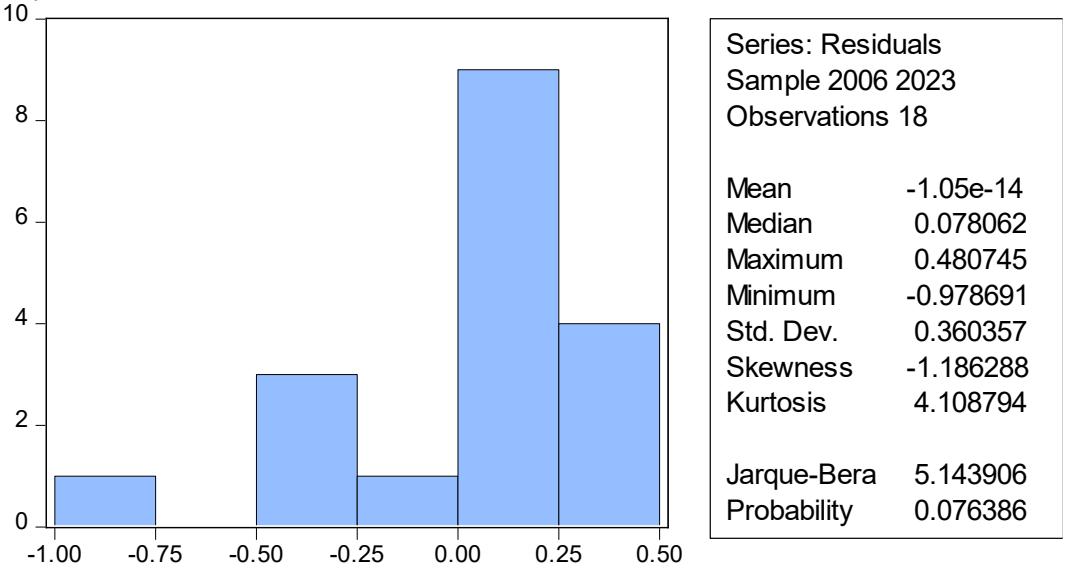
4. RESULTS AND DISCUSSION

4.1. Normality Test

After testing using Eviews, the following results were obtained:

Present the findings of your study. Use tables, figures, and charts as necessary to illustrate your results.

Figure 4.1
Normality Test



Source: processed data (2025)

Based on the results of the normality test in Figure 4.1 above, the Jarque-Bera result is 5.143906 compared to the Chi-Square table with df α : 5% of 5.99. So 5.143906 < 5.99. This may also be seen from the probability value of 0.076386 > 0.05. Thus, the residual data in this model is normally .

Table 4.1
Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.762647	Prob. F(2,13)	0.4862
Obs*R-squared	1.890171	Prob. Chi-Square(2)	0.3886

Source: processed data (2025)

As seen in Table 4.1 above, Obs *R-square reaches 1.890171 and Chi-Square(2) table at α : 5% is 5.99 or 1.890171 < 5.99. This can be observed from the Chi-Square probability of 0.3886 > 0.05. Thus, the results show that this model is free from autocorrelation.

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Table 4.2
Heteroscedasticity Test Results

Heteroskedasticity Test: White			
F-statistic	0.296828	Prob. F(2,15)	0.7474
Obs*R-squared	0.685266	Prob. Chi-Square(2)	0.7099
Scaled explained SS	0.739705	Prob. Chi-Square(2)	0.6908

Source: processed data (2025)

Judging from table 4.2 below, it shows that Obs*R-squared is 0.685266 and Chi-Square (2) table at α: 5% is 5.99 so 0.685266 < 5.99. This is also seen from the Chi-Square probability of 0.7099 > 0.05. Thus, this model is free from heteroscedasticity symptoms.

Table 4.3
Multicollinearity Test Results

Variance Inflation Factors
Date: 05/26/25 Time: 21:52
Sample: 2006 2023
Included observations: 18

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	24.58221	3006.555	NA
LOGDAYA_SAING	0.201510	273.7749	1.047664
LOGKURS	0.222839	2389.571	1.047664

Source: processed data (2025)

Referring to table 4.4 below, it can be seen that the results of the variance regression can be observed that the centered VIF value for the competitiveness variable is 1.047664, the centered VIF value for the exchange rate variable is 1.047664. Where the centered VIF value for all variables is less than 10. This means that there is no multicollinearity between the competitiveness and exchange rate variables.

Table 4.4
Results of Multiple Linear Regression Analysis

Dependent Variable: LOGEKSPOR
Method: Least Squares
Date: 05/26/25 Time: 21:22
Sample: 2006 2023
Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	33.53218	4.958045	6.763186	0.0000
LOGDAYA_SAING	-0.490320	0.448899	-1.092273	0.2919
LOGKURS	1.775456	0.472059	3.761091	0.0019
R-squared	0.486898	Mean dependent var		15.28022

ISSN: 3047-969X
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Adjusted R-squared	0.418484	S.D. dependent var	0.503073
S.E. of regression	0.383630	Akaike info criterion	1.072733
Sum squared resid	2.207575	Schwarz criterion	1.221129
Log likelihood	-6.654601	Hannan-Quinn criter.	1.093195
F-statistic	7.116971	Durbin-Watson stat	1.751984
Prob(F-statistic)	0.006707		

Source: processed data (2025)

From the data in table 4.4 above, the regression model equation can be interpreted as follows:

$$\boldsymbol{lnY_t = 33.53218 - 0{,}490320\ lnX_{1t} + 1775456\ lnX_{2t}}$$

The model formulation above shows:

1. The competitiveness coefficient (X1) is negative at 0.490320 units. This indicates that a one-unit increase in competitiveness results in a 0.490320 decrease in the value of Indonesian rubber exports, assuming the exchange rate is held constant.
2. The exchange rate coefficient (X2) has a positive value of 1.775456 USD. This fact indicates that if the exchange rate appreciates by 0.00001 USD, the export value will also increase by 1.775456 USD, assuming that the independent variable of competitiveness remains stable.

Table 4.5
t-test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	33.53218	4.958045	6.763186	0.0000
LOGDAYA_SAING	-0.490320	0.448899	-1.092273	0.2919
LOGKURS	1.775456	0.472059	3.761091	0.0019

Source: processed data (2025)

According to table 4.5 above, the t_{hit} value is obtained for each independent variable. By looking at the predetermined criteria :

a. 5% = 0,05
b. Df = n – k = 18 – 3 = 15 = 1,75305

From the description above, the following explanation can be drawn:

1. Parameter (β_1) = -1,092273

   Since $t_{hit} < t_{tab}$ or 1,092273 < 1,75305, H_0 is accepted and H_1 is rejected, indicating that rubber commodity competitiveness has no significant and negative effect on rubber exports in Indonesia. This result is supported by a probability value of 0.2919 > 0,05.

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2. Parameter (β_2) = 3,761091

   Since $t_{hit} > t_{tab}$ or 3,761091> 1,75305, H_0 is rejected and H_2 is accepted, indicating that the exchange rate has a significant and positive influence on rubber exports in Indonesia. This result is also supported by the probability value of 0,0019 < 0,05.

Table 4.6
F-Test

R-squared	0.486898	Mean dependent var	15.28022
Adjusted R-squared	0.418484	S.D. dependent var	0.503073
S.E. of regression	0.383630	Akaike info criterion	1.072733
Sum squared resid	2.207575	Schwarz criterion	1.221129
Log likelihood	-6.654601	Hannan-Quinn criter.	1.093195
F-statistic	7.116971	Durbin-Watson stat	1.751984
Prob(F-statistic)	0.006707		

Source: processed data (2025)

How to get f_{tab} with df = (k-1) (n-k) is (3-1) (18-3) = (2) (15) at α = 5% is 3,68. F count is 7,11.

Since $f_{hit} > f_{tab}$ or 7,11 > 3,68, H_0 is rejected and H_a is accepted. This indicates that the competitiveness of rubber commodities and the exchange rate simultaneously have a positive and significant impact on rubber exports in Indonesia. This conclusion is also supported by a probability value of 0,006 < 0,05.

Table 4.7
Results of the Coefficient of Determination (R^2)
Test

R-squared	0.486898	Mean dependent var	15.28022
Adjusted R-squared	0.418484	S.D. dependent var	0.503073
S.E. of regression	0.383630	Akaike info criterion	1.072733
Sum squared resid	2.207575	Schwarz criterion	1.221129
Log likelihood	-6.654601	Hannan-Quinn criter.	1.093195
F-statistic	7.116971	Durbin-Watson stat	1.751984
Prob(F-statistic)	0.006707		

Source: processed data (2025)

Based on the information in table 4.4 above, the Adjusted R-Squared figure is 0.418484. Therefore, the competitiveness of rubber commodities and the exchange rate influence rubber exports in Indonesia by 0.418484 (41.8%). Meanwhile, the remaining 1-0.418484 = 0.581516 (58.1%) is influenced by additional variables not included in the model used in this study. Other aspects that have the potential to influence rubber exports in Indonesia but are not included in this model include international prices, GDP (Gross Domestic Product) of export destination countries, FDI (Foreign Direct Investment), and inflation.

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Table 4.8
Correlation Coefficient (R) Test Results

R-squared	0.486898	Mean dependent var	15.28022
Adjusted R-squared	0.418484	S.D. dependent var	0.503073
S.E. of regression	0.383630	Akaike info criterion	1.072733
Sum squared resid	2.207575	Schwarz criterion	1.221129
Log likelihood	-6.654601	Hannan-Quinn criter.	1.093195
F-statistic	7.116971	Durbin-Watson stat	1.751984
Prob(F-statistic)	0.006707		

Source: processed data (2025)

Judging from table 4.8 above, it is known that the correlation coefficient is obtained from R = $\sqrt{R^2}$ = $\sqrt{0{,}4868}$ = 0,6977. Therefore, the relationship between the competitiveness of rubber commodities and the exchange rate on rubber exports in Indonesia is very close and positive, with a correlation figure reaching 0.6977 which is getting closer to +1.

4.2. DISCUSSION

The Influence of Rubber Commodity Competitiveness on Rubber Exports in Indonesia According to Porter (1990), a country's competitive advantage is not determined by the specialization and quantity of production elements, as stated by previous figures, but rather by the ability of producers in that country to compete effectively in producing goods that can penetrate foreign markets. In global trade, countries with strong competitiveness are able to dominate markets and maximize profits from trade, while countries with weak competitiveness tend to serve as market segments for other countries and often struggle to profit from trade.

The results of the study, which applied a multiple linear regression model, indicate that the rubber commodity competitiveness variable has no or insignificant effect on rubber exports in Indonesia. This study indicates that statistically, rubber commodity competitiveness has not fully functioned as a key factor in increasing national exports. The insignificant influence of the rubber commodity competitiveness variable on rubber exports in Indonesia occurred because the competitiveness of rubber commodities experienced fluctuations over several years, especially from 2018 to 2023, caused by a decrease in the value of rubber exports from Indonesia while the value of global rubber exports increased. As a result, Indonesia's market share decreased and Indonesia's position was displaced by competitors such as Thailand and Vietnam. This indicates that the competitiveness of rubber commodities is not yet able to compete consistently in the global market.

The findings of this study differ from those of Ramadhan & Fahmi (2023) in South Sumatra, which indicated that high RCAvalues significantly impact rubber exports in the region. This is understandable because at the regional level, factors of production, demand,

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and industrial support are more focused, so the impact of competitiveness is stronger in local conditions that support exports. Therefore, the results of this study do not directly contradict Porter's theory, but rather demonstrate that competitiveness as a determinant of exports must be supported by good production, quality improvement, and a consistent strategy as key to increasing Indonesian exports. Therefore, supporting factors for competitiveness are needed to enable Indonesia to compete better in the global market.

The Effect of Exchange Rates on Rubber Exports in Indonesia

According to Paul R. Krugman and Maurice Obstfeld (1999) in Kamalia (2020), an exchange rate is said to depreciate or appreciate if, other factors being constant, a depreciation of a country's currency makes its goods more affordable to foreign consumers. Conversely, other factors being constant, a currency appreciation makes its goods more expensive to foreign consumers.

The estimated results of the US dollar exchange rate against the rupiah have a positive and significant impact on rubber exports in Indonesia. This means that if the US dollar appreciates by 0.0001 USD against the rupiah, Indonesian rubber exports will increase, and conversely, if the USD depreciates by 0.0001 USD against the rupiah, Indonesian rubber exports will decrease. On the one hand, the dollar appreciates against the rupiah, meaning the number of dollars exchanged for rupiah decreases. On the other hand, the rupiah depreciates, as evidenced by the increasing number of rupiah exchanged. Viewed from the dollar, this will certainly increase the number of rubber imports from Indonesia to the international market. Likewise, a depreciating rupiah will increase Indonesian rubber exports to the international market. Because this study uses the dollar, which has certainly appreciated, it will present a significant opportunity for increasing rubber exports in Indonesia.

Going forward, if the dollar exchange rate continues to strengthen in a controlled manner, there are significant opportunities for rubber exports. Concurrently, continued rupiah depreciation will also provide export opportunities, from a currency perspective. However, other macroeconomic variables must also be considered. However, sharp and unstable exchange rate fluctuations will create uncertainty for businesses, which could hamper exports. Therefore, the government needs to maintain economic stability to provide certainty to exporters, while simultaneously strengthening the rubber sector from upstream to downstream and expanding export markets. This is in line with previous research conducted by Priyono & Widyawati (2019), Andriantoni et al. (2020), Taufiq and Natasah (2019), and Kusrini & Novandalina (2016), which concluded that exchange rates have a positive and significant impact on rubber exports in Indonesia.

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CONCLUSION

The results of this study allow us to draw several important conclusions which will be outlined below:

1. Based on the research results through partial tests, it shows that the competitiveness of rubber commodities (X1) does not show a real influence and does not have a significant impact on rubber exports in Indonesia.
2. Based on the partial research results, it can be seen that the exchange rate (X2) has a positive and significant effect on rubber exports in Indonesia.
3. Based on the results of simultaneous research, it was concluded that simultaneously the variables of rubber commodity competitiveness and exchange rates have a strong and significant influence on rubber exports in Indonesia.

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