THE EFFECT OF PRICE, EXCHANGE RATE, AND CONSUMPTION ON INDONESIAN RUBBER EXPORTS BY MAIN DESTINATION COUNTRY

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Article Info

Abstract

As one of the largest natural rubber exporters in the world, Indonesia has global potential to conquer the rubber export market. This condition is indicated by the high value of Indonesia's natural rubber exports to the global market. Based on the current world natural rubber export data of 64.8%, this value is of course controlled by the world's two largest rubber exporters, one of which is Indonesia at 28.8%. This study aims to determine the effect of prices, exchange rates, and consumption on Indonesian rubber exports according to the main destination countries. The method used in this study is the panel data regression method of the five main destination countries for Indonesian rubber exports, namely the United States, Japan, China, India, and South Korea in the 2013-2019 period with a fixeffect model. This data is secondary data obtained through a trade map and world bank and processed using Eviews 11. The results show that the variables of price, exchange rate, and consumption have a significant and positive effect on rubber exports in Indonesia by destination country.

Abstrak

Sebagai salah satu eksportir karet alam terbesar di dunia, Indonesia memiliki potensi global menaklukkan pasar ekspor karet. Kondisi ini ditunjukkan dari tingginya nilai ekspor karet alam Indonesia ke pasar global. Berdasarkan data ekspor karet alam dunia saat ini sebesar 64,8%, nilai ini tentunya dikuasai dua negara eksportir karet terbesar dunia, salah satunya yaitu Indonesia sebesar 28,8%. Penelitian ini bertujuan untuk mengetahui pengaruh harga, nilai tukar, dan konsumsi terhadap ekspor karet Indonesia menurut negara tujuan utama. Motode yang digunakan dalam penelitian ini adalah metode regresi data panel lima negara tujuan utama ekspor karet Indonesia yaitu Amerika Serikat, Jepang, China, India, dan Korea Selatan dalam rentang waktu 2013-2019 dengan model fixeffect. Data ini merupakan data sekunder yang diperoleh melalui trade map serta world bank dan diolah menggunakan Eviews 11. Hasil penelitian

menunjukan bahwa variabel harga, nilai tukar, dan konsumsi berpengaruh signifikan dan positif terhadap ekspor karet di Indonesia menurut negara tujuan.

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INTRODUCTION

International trade which Indonesia participates in in carrying out its trade cooperation is also incorporated in several world organizations both in the regional and multilateral scope. The purpose of international trade itself is to meet the needs of its country, given that each country is not able to meet its needs effectively by relying on domestic resources alone without the help of other countries. (Amornkitvikai, Harvie, & Charoenrat, 2012) Indonesia is one of the countries that are active in international trade in relying on the export of commodity goods to drive economic growth. (Puspita, 2015)

The value of Indonesia's trade balance in the last three years starting from 2015 to 2017 based on data has proven to increase. This value is known as the highest achievement. A positive value on Indonesia's trade balance means that the value of exports is greater than the value of imports. The value of exports is high because it gets a contribution from the value of non-oil exports. Indonesia's non-oil exports continued to increase. The non-oil and gas export sector currently has a lot of potential to be developed. In export activities, the non-oil and gas sector, such as the manufacturing sector, is still the main sector that contributes greatly to non-oil and gas exports in Indonesia. The manufacturing sector in recent years has contributed significantly. In 2019 it contributed 81.71% of the total value of non-oil exports. In the manufacturing sector, there are several commodities that encourage exports of the Indonesian manufacturing industry. Graph 1.2 below is the 5 leading manufacturing industry sub-sectors for Indonesia's exports in the international market. The export values of the largest manufacturing industry sub-sectors are vegetable fats and oils, electrical machinery and equipment, rubber and their goods, natural and cultured pearls, and vehicles.
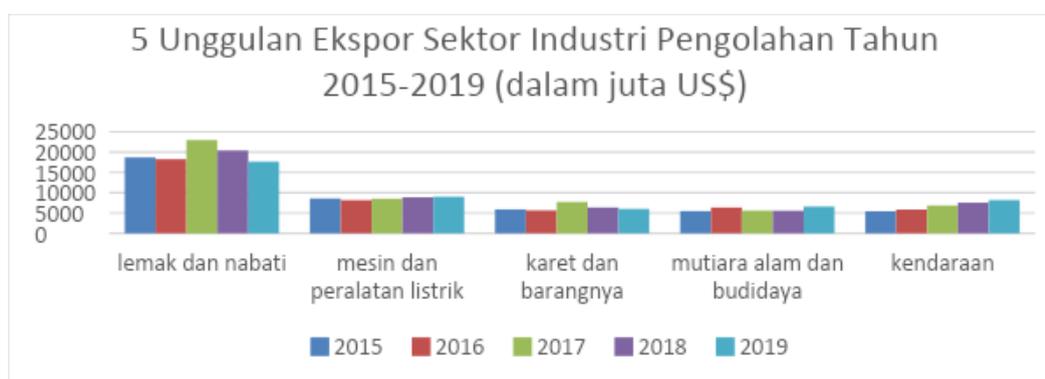

Figure 1. 5 Leading Exports of the Manufacturing Sector in 2015-2019

Source: Ministry of Trade (2020)

Rubber is a sub-sector of the manufacturing industry in Indonesia which is included in the 5 leading commodity commodities that contribute to the export of the manufacturing sector. By donating 3.90 percent. Indonesia's natural rubber trade performance based on the trade balance from 2015 to 2019 shows good conditions, this is evidenced by a positive national trade balance (surplus) every year in all major export destination countries.

At this time the need for rubber continues to increase in line with the increasing standard of human life. This is related to human needs that require components made of

rubber materials such as vehicle tires, shoes, sandals, transmission belts, asphalt, and others. The role of rubber is considered quite important and able to contribute to efforts to improve the Indonesian economy. Indonesia is one of the right countries for the survival of rubber plants. Rubber trees require a constant high temperature (26-32 degrees celsius) and a humid environment in order to produce maximum. As one of the largest natural rubber exporters in the world, Indonesia has global potential to conquer the natural rubber export market. (Rachman, Antriyandarti, & Java, 2020) Besides Indonesia, there are several countries in Southeast Asia that produce world rubber, including Thailand and Malaysia. In a trade ministry report that discusses the analysis of Indonesia's and ASEAN's competitiveness in Indonesia's main product markets, around 70% of global rubber production comes from Thailand, Indonesia and Malaysia. This means that these three countries conquered almost 70% of the world market share. (Zuhdi & Anggraini, 2020) Indonesia controls about 28.8% of the world's natural rubber exports. About 85% of Indonesia's rubber production is exported abroad. Nearly half of this exported rubber is shipped to the five biggest rubber importing countries. The five countries are the United States (which consumes almost 22% of Indonesia's total exports), Japan, China, India and South Korea. Domestic rubber consumption in Indonesia is mostly absorbed by Indonesia's manufacturing industries (especially the automotive sector). Considering that the manufacturing industry is difficult to develop significantly, rubber consumption in the domestic market only grows slightly. Currently, the country is dependent on imports of processed rubber products due to the lack of domestic processing facilities. The low consumption of domestic rubber is the reason why Indonesia exports around 85% of its rubber production. Thus, in recent years there has been a change (albeit slowly) as the number of exports has decreased slightly due to increased domestic consumption. About half of the domestically absorbed rubber is used by the tire manufacturing industry, followed by rubber gloves, rubber thread, footwear, retread tires, military equipment industry, medical gloves and other tools.

Table 1. Indonesian Rubber Export Value by 5 Main Destination Countries, 2013-2019 (in million US$)

Tahun	Negara				
	U.S.A	Jepang	China	India	Korea Selatan
2013	1563789	1092585	1307400	361145	378788
2014	1074514	732687	681517	354515	285098
2015	874988	598140	404325	289933	257775
2016	743091	551956	401027	306422	232406
2017	1004439	790734	764105	441728	327937
2018	848577	678125	353968	429215	263908
2019	778494	709889	310465	285117	237783

The table shows the development of the value of Indonesian rubber exports to the five main destination countries within a period of 7 years experiencing a fluctuating trend. The United States became the main destination for rubber exports from Indonesia, followed by four other large importing countries.

In general, Indonesian rubber products are more competitive than Vietnam, the Philippines and Singapore. Factor conditions include the availability of natural resources, human resources, capital resources, science and technology resources and infrastructure

resources. If these factors are available according to the number of needs or even the higher the quality of the inputs, the greater the opportunity for the industry and the country to increase competitiveness. When talking about the condition of the rubber industry in Indonesia, there are still several things that become obstacles, including competition between the use of natural and synthetic rubber, the unattainable development of crumb rubber technology that is increasingly advanced, natural disturbance factors and prices, not yet maximal use of rubber plantation land when in fact the land is Indonesian rubber plantations are the largest rubber plantations in the world with an area of 3.44 million owned in 2010 about 85% ownership of rubber plantations in Indonesia is still dominated by smallholder rubber plantations, the quality of rubber produced by Indonesia is still below that of Thailand and Malaysia (the rubber production process is still ineffective, the raw materials used do not meet quality standards, the use of traditional tools), the natural rubber sold by the people does not meet the standards and is dirty and does not meet the provisions in the Regulation of the Minister of Agriculture no. 38/2008, rubber that is sold should be in a clean condition. Inadequate means of transportation to all areas causes the marketing and transportation of rubber commodities to be less effective.

There are several factors that influence rubber exports, including (1) price, (2) exchange rate, and (3) consumption.

Price is one of the factors that affect exports. The price referred to here applies to the price of exports to foreign countries. Through the strength of the interaction mechanism of demand and supply of an item, a price will be formed. If the quantity of goods supplied is greater than the quantity demanded, the price will fall, and vice versa if the quantity of goods supplied is less than the quantity demanded, the price will rise. If the price has reached the highest price level, consumers will replace it with substitute goods which are relatively cheaper.

Another factor that can affect exports is the exchange rate. Exchange rate is the value of one currency against another country's currency. With the exchange rate we can find out the price of goods or services that are determined and produced by other countries. Then we can compare prices from our own country with prices from other countries so that we can set prices for transactions. The exchange rate in a country will experience two events, namely the strengthening of the currency (appreciation) and the weakening of the currency (depreciation). If the exchange rate appreciates then the value of the exchange rate will increase and will cause the value of exports to increase. On the other hand, if the exchange rate depreciates, the value of the exchange rate will weaken and will result in a decrease in the value of exports.

Then another factor that affects exports is consumption. According to Dumairy's book, households in an economy will make consumption expenditures depending on the income received by them. So the greater the income received, the greater the consumption. Income has an important role in influencing public consumption expenditure. This will also have an impact on the demand for consumer goods. Demand for consumer goods describes the amount of something that consumers want and can buy to meet their needs at various price levels for a certain period. Where if the demand for the commodity of an item in a particular country increases, the consumption of commodity goods in that country will increase. Thus, there will be an increase in consumption in the importing country if the importing country cannot meet the needs of its country. This will benefit the producing countries that produce these commodities. The importing country will continue

to request re-delivery to meet the needs in its country. So that the number of goods exported by exporting countries will increase, this will affect the number of exports of exporting countries. From the demand side, currently the demand for natural rubber in the world is increasing, especially from industrialized countries, influenced by the flexibility and physical elasticity of natural rubber which makes it a raw material that can be used in various product industries, increasing people's incomes, economic growth, welfare of consumer countries, implementation of various government policies and policies for the development of downstream industries or rubber finished goods. Based on data from the Bulletin of Rubber Statistics (2018), the world's consumption of natural rubber increased by 8.93% during 2015-2017, one of which was due to the development of the automotive industry in China. . The IRSG (International Rubber Study Group) stated that China is the largest natural rubber consumer country in the world, which has experienced a significant increase in consumption from year to year, with a total consumption of 5.3 million tons in 2018 and is expected to continue to increase to 5.8 million. tons in 2021 due to the development of China's industry which also continues to grow, where 90% of rubber imports are used as raw material for the radial tire industry. The current high demand for natural rubber in the global market has triggered rubber-producing countries to export.

Therefore, based on the explanation above, this study aims to discuss "The Influence of Prices, Exchange Rates, and Consumption on Indonesian Rubber Exports by Main Destination Countries".

METHOD

The research method used in this research is to use quantitative research methods with a descriptive approach. According to Sugiyono (2014) descriptive method is a method used to determine the value of the variables studied independently or without connecting one variable to another.

This research ranges from 2013-2019 with the object of 5 countries importing Indonesian rubber. The data obtained for this study were obtained on the Trade Map and the World Bank. The variables used as objects in this study include Rubber Exports which is the dependent variable (Y) and the independent variables include Price (X1), Exchange Rate (X2), and Consumption (X3).

RESULTS AND DISCUSSION

Based on the results of selecting the best model from panel data regression in this study, the model used is the Fixed Effect Model (FEM). Table 2 shows the results of the Chow test and table 3 shows the results of the Hausman test.

Tabel 2. Hasil Uji *Chow*

Probabilitas F	Hipotesis Uji *Chow*	Keterangan
0.0456	Probabilitas < alpha (0,05)	Model FEM

Based on table 2 shows that the value of Prob. F has a value of 0.0456 which means it is smaller than 0.05. This explains that the best model in this study is FEM. **Tabel 3. Hasil Uji *Hausman***

Probabilitas F	Hipotesis Uji *Hausman*	Keterangan

0.0110	Probabilitas < alpha (0,05)	Model FEM

Based on table 3 shows that the value of Prob. F has a value of 0.0110 which means it is smaller than 0.05. This explains that the best model in this study is FEM.

After knowing that the best model used is the FEM model, then the panel data estimation results can be obtained as follows:

Tabel 4. Estimasi Model Regresi

Dependent Variable: EKS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1162724.	188435.4	-6.170412	0.0000
HARGA	390138.3	33597.94	11.61197	0.0000
NT	1578.201	571.6078	2.760986	0.0102
KONS	1.949442	0.237495	8.208335	0.0000
R-squared	0.962850			

Table 4 above shows that the regression results for the export model are as follows:

EKS = -1162724. +390138.3PRICE + 1578.201NT + 1.949442KONS+ e

The results of the regression equation above show that the effect of price (X1) has a coefficient of 390138.3 which means that every 1% increase in the price variable is predicted to reduce the level of rubber exports by 390138.3. The second variable, namely the exchange rate (X2) has a coefficient of 1578,201 meaning that if the exchange rate increases by 1% it will increase rubber exports by 1578,201. The regression coefficient value of the X3 variable, which is consumption is positive at 1.949442, meaning that if X3 increases by 1%, then rubber exports are predicted to increase by 1.949442.

Price

Price is a value agreement that applies when trade occurs between countries. Price is a component that affects a country's exports. An increase or decrease in prices has an impact on the number of exports. Low export prices make a commodity more competitive in the international market. The relationship between export prices and exports can be explained as follows:

Export Price=(Export Value)/(Export Volume)

Price is one of the factors that affect exports. High and low prices will affect the demand for a product. If the price offered is proportional to the quality then the demand for the product will increase. The state will spur and aggressively offer the products it produces. Thus, the export of these products will increase.

In this study, the price has an effect on rubber exports. Marked by a probability value of 0.0000 which is smaller than the alpha significance level of 0.05. The results of this study are in line with research conducted by Adi Muhammad Muslih, Wan Abbas Zakaria in 2013 that prices have a positive and significant effect on CPO exports in Lampung Province. In addition, research conducted by Bonansi in 2014 also obtained the same results, this is because an increase in prices can affect the exports of exporting countries.

This study also shows that for the last seven years, namely 2013-2019 in the five main destination countries for Indonesian rubber exports, prices fluctuated every year.

Exchange rate

The exchange rate is the value or price of a country's currency expressed by the value of another country's currency. The exchange rate can also be defined as the amount of domestic currency required to acquire one unit of foreign currency. In the international economy, exchange rates are important and have a great influence on international economic transactions. The exchange rate is also an important factor in seeing the prices of both goods and services in other countries being more expensive or cheaper than goods produced in their own country.

It can be seen from the probability value of 0.0102 where the value is smaller than the specified alpha of 0.05. The positive coefficient of 1578,201 indicates that an increase in the destination country's exchange rate against the dollar has an effect on increasing Indonesia's rubber exports. These findings prove that if the importing country's exchange rate appreciates against the dollar, it will affect Indonesia's rubber exports because the rupiah exchange rate also moves. This means that if the dollar is weakening, it will increase the purchasing power of the exporting country. The results of this study are in line with research conducted by Kusrini & Novandalina in 2018 which states that the exchange rate has a positive and significant influence on Indonesian rubber exports and research conducted by Karagöz in 2016 shows that exchange rate depreciation can positively affect export demand because export demand increases while the domestic currency remains depreciating.

The appreciation of the importing country's currency exchange rate against the dollar can increase the purchasing power of the importing country which causes the export value of the exporting country to increase. The exchange rate (exchange rate) plays a central role in international trade relations, because the exchange rate allows to compare the prices of goods and services produced by a country. (Sukirno) This is quite rational because each unit of dollar obtained from export activities will earn more rupiah. A decrease in the value of the rupiah is tantamount to a cheaper purchase price of rubber, while from the importer whose goods are sold back to the export destination country, it will bring double profits.

Consumption

Consumption variables affect rubber exports in Indonesia. This is based on the

results of the t-test on the consumption variable which produces a t-count whose value is greater than the t-table of 1.949442 > 1.696. Besides that, it is also seen by the probability value of 0.0000 which is smaller than the alpha significance level of 0.05. Through the results of the t-test, it proves that the consumption variable has a positive and significant relationship with Indonesia's rubber exports.

This study obtained the same results as research conducted by (Marisa, 2014) which showed that consumption had a positive and significant influence on Indonesian garlic imports, meaning that the greater public consumption, the greater the import of garlic in Indonesia, with trade Internationally, Indonesia can import garlic to cover the shortage of domestic garlic consumption because the increase in the level of domestic garlic consumption is not matched by sufficient garlic production so that it can benefit the exporting country because the importing country continues to ask for the return of the goods.

CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the discussion of the results of the analysis regarding prices, exchange rates, and consumption of Indonesian rubber exports by main destination countries, among others:

1. Prices have a significant influence on rubber exports in Indonesia in 2013-2019. The results of this variable provide a positive coefficient.

2. The exchange rate has a positive and significant effect on rubber exports in Indonesia.

3. Consumption has a positive and significant impact on rubber exports in Indonesia.

Suggestion

1. The Indonesian government should maintain the stability of domestic rubber prices, then continue to compare the prices of rubber from the world's largest exporters, including Thailand and Malaysia. So that the price of Indonesian rubber is not more expensive than competing countries, so that Indonesia can increase the number of Indonesian rubber exports.

2. The government of each rubber importing country, especially the United States, Japan, China, India, and South Korea and rubber exporters, especially Indonesia, should maintain the stability of the domestic exchange rate against the dollar. When the rupiah exchange rate depreciates, it will stimulate an increase in Indonesian rubber exports.

3. The Indonesian government should pay attention to the consumption opportunities of importing countries. Because for Indonesia, the consumption of importing countries can be used as an indicator in determining rubber marketing targets, so it is expected to increase Indonesia's rubber exports

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