

ANALYSIS OF FACTORS AFFECTING THE EXPORT OF NATURAL RUBBER PT. PERKEBUNAN NUSANTARA IX CENTRAL JAVA TO INDIA

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Abstract

India is a consistent country to import PTPN IX natural rubber. Natural rubber production can export as much as 40.31% of PTPN IX natural rubber to India. The high export of natural rubber of PTPN IX and the lower production due to land conversion. PTPN IX natural rubber prices experienced a growth of 1.3% - 1.6%. PTPN IX's natural rubber exports to India reached 20,761,038 kg, with a total sales price of 238,415 million US\$ per Kg. High exports of PTPN IX natural rubber to India in 2007-2017, research is needed on the factors affecting PTPN IX's natural rubber exports to India. The analysis method in this study is a quantitative model by compiling a system model of multiple regression equations, with *Eviews* version 11.

The results showed that PTPN IX's natural rubber exports to India were influenced by the selling price of PTPN IX natural rubber, PTPN IX's natural rubber production volume, Indonesia's natural rubber price, and world synthetic rubber prices, while the world natural rubber price and Thailand's natural rubber price had no effect on PTPN IX's natural rubber exports to India. Meanwhile, the signification value of PTPN IX natural rubber exports to India is influenced by the price of PTPN IX natural rubber, world natural rubber prices and world synthetic rubber prices, and has no significant effect, namely production volume, Indonesian natural rubber prices, and Thai natural rubber prices.

Keywords: Natural Rubber, Synthetic Rubber, Selling Price, Multiple Regression.

INTRODUCTION

Perkebunan Nusantara (PTPN) IX Semarang is one of the PBNs in Central Java, which was established on March 11, 1996. The company, which has the status of a State-Owned Enterprise (BUMN), is a merger of several plantation companies, namely PT. Perkebunan Nusantara XVIII (Persero) manages rubber, tea, coffee, and cocoa commodities with PT Perkebunan XV – XVI (Persero) which manages sugar and drip commodities (PTPN IX, 2017:65). About 85 percent of Indonesia's rubber production is exported abroad, almost half of the exported natural rubber is shipped to countries in Asia, and partly to the United States and to countries in Europe. The low price of raw rubber makes synthetic rubber very competitive, so the price of natural rubber has dropped significantly. Meanwhile, advances in the development of bio-based tires are also a threat to the natural rubber industry. The world's rubber shortage will rise to one million tons in 2020 as demand from tire manufacturers will increase consumption to around 15.4 million tons (PTPN IX, 2017:74).

The high demand for natural rubber in the world does not necessarily increase the world's natural supply of rubber. This condition often results in *over-demand* which makes the price of natural rubber soar, but this situation is responded to too late by rubber-producing countries which then encourages *oversupply* and restores rubber prices to normal levels. In addition, the growth of the abundant synthetic rubber industry in China and Singapore has caused competition in world natural rubber demand to be tighter because the price of synthetic rubber is cheaper than the price of natural rubber. The joint policy of the *Agreed Export Tonnage Scheme* (AETS) carried out by Indonesia, Malaysia, and Thailand which aims to boost rubber prices, as well as the implications of this policy on natural rubber exports from Indonesia, especially PTPN IX has a positive impact on the *Agreed Export Tonnage Scheme* (AETS) policy carried out by Indonesia (PTPN IX, 2012: 52).

The rubber market in India is very large, this can be seen from the data that shows that Indonesia's natural rubber exports to India are very large compared to other natural rubber producing countries. However, if it imposes rubber production quotas such as the Proposal of the *International Rubber Consortium* (IRC) to limit natural rubber production quotas as an effort to increase rubber prices, Indonesia must be vigilant because if it does not have large reserves of rubber for sale during this period, it will only be enjoyed by countries that have large rubber reserves such as Thailand. On the other hand, India's economy is slowing down due to the impact of demonetization policies and the implementation of a new tax system that negatively affects investment and economic performance (PTPN IX, 2017:71).

Based on the description of the problem above, problems can be formulated (1) How is the development of natural rubber exports of PT. Perkebunan Nusantara IX to India? and (2) Whether the natural rubber-production volume of PTPN IX, the selling price of PTPN IX natural rubber, the price of Indonesian natural rubber, the world natural rubber price, the Thai natural rubber price and the world synthetic rubber price affect the export of PT. Perkebunan Nusantara IX to India?

RESEARCH METHODS

Research Location and Time

This research was carried out april 2019-April 2020 in the rubber sales and Marketing Department of PT. Perkebunan Nusantara IX Semarang, Central Java.

Data Types and Sources

This study used *Time Series* data from 2007-2017.

Data Analysis

Multiple Linear Regression

The basic model used to perform multiple linear regression analysis is as follows (Widarjono, 2017:59).

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \varepsilon_i$$

Information:

Y_i = Dependent variables

β_1 and β_2 = Partial regression coefficient

X_1 and X_2 = Free variables (independent variables)
 ε_i = Interference variable

In this study, the model used was as follows.

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + e$$

Information:

Y = PTPN IX natural rubber export (US\$)

X_1 = PTPN IX natural rubber production volume (tons)

X_2 = Selling price of PTPN IX natural rubber (US\$/Kg)

X_3 = Indonesian natural rubber price (US\$/Kg)

X_4 = World natural rubber price (US\$/Kg)

X_5 = Thai natural rubber price (US\$/Kg)

X_6 = World synthetic rubber price (US\$/Kg)

B_i = Regression coefficient

ε_i = Interference variable

RESULTS AND DISCUSSION

Development of PTPN IX Natural Rubber Exports to India

The need for natural rubber of PT Perkebunan Nusantara IX for ten years has experienced an upward growth, India as a country that consistently imports natural rubber PT Perkebunan Nusantara IX amounted to 4,960,926 kg in 2017 but experienced a decrease of 4,082,238 kg in 2018. The quality and quality assurance of products caused India to become a permanent importer of PTPN IX natural rubber. ISO rubber certification is carried out by *Jogja Environmental Certification Assurance (JECA) for the Environmental Management System ISO 14001: 2004 (SNI ISO 19-14001-2005)*, while the work unit that produces RRS has also implemented SNI 06-0001-1987 with ISO 9001-2008 and ISO 14001: 2005 issued by *Societe Des Matieres Premieres Tropicales PTE LTD*, as one of the efforts to meet customer requirements (PTPN IX, 2017: 282). This is proven by PTPN IX to guarantee products to convince and increase the confidence of natural rubber export destination countries and can compete with natural rubber producing countries around the world.

Factors affecting PTPN IX's Natural Rubber exports to India

PTPN IX natural rubber export value (US\$) = -847,426.4 + 39,191 PTPN IX natural rubber production volume (tons) + 315,155 PTPN IX natural rubber selling price (US\$/Kg) + 2,283 Indonesian natural rubber prices (US\$/Kg) + -94,008 World natural rubber price (US\$/Kg) + -2,019 Thai natural rubber price (US\$/Kg) + 122,675 World synthetic rubber price (US\$/Kg) + ε

Production of PTPN IX Natural Rubber Exports to India

The result of the natural rubber production volume coefficient of PTPN IX is 39.19127, where the natural rubber production of PTPN IX affects the export of natural rubber. Producing a t- statistic of $0.420254 < 2.015$ from the t-table, which means that the natural rubber production volume of PTPN IX has an insignificant effect on PTPN IX's natural rubber exports to India. This is to the results of the research by Mejaya, Fanani, and Mawardi (2016) which explained that production variables have a positive effect but do not have a significant effect on the export volume of Indonesian tea commodities. The significant influence shows that when production

increases, not always the volume of exports also increases due to a large supply. Tea production is not always much and when the production is small, a lot of production is marketed to the domestic market to meet domestic consumption. Natural rubber is an export commodity of PTPN IX because most of PTPN IX's natural rubber production is marketed abroad while a small part is marketed too domestic. Realization in the field shows that when production has increased, it is not always accompanied by an increase in natural rubber exports to India. This is due to the increase in PTPN IX's natural rubber exports to export destination countries other than India, which can be seen in the production volume in the past five years, as well as PTPN IX's natural rubber exports to India over the past five years.

Selling Price of Natural Rubber Against PTPN IX Natural Rubber Export to India

The results of the analysis of the selling price of PTPN IX natural rubber on the export of PTPN IX natural rubber to India have a coefficient value of 315.1551, meaning that the selling price of PTPN IX natural rubber affects the export of PTPN IX natural rubber to India. Resulting in a statistical t of $8.223104 > 2,015$ from the t table, which means that the selling price of PTPN IX natural rubber has a significant effect on PTPN IX's natural rubber exports to India. This is to research by Prabowo (2017) that the price of natural rubber has a positive and significant effect on Indonesia's natural rubber exports to export destination countries.

PTPN IX continues to optimize its production to offer its productions in large quantities so that it is expected that its exports can increase to India, there is a guarantee of production and product quality which causes the Indian state to import natural rubber from PTPN IX at an expensive price. To make it easier for its customers, PTPN IX applies an online and offline-based rubber auction pattern, at the PT Kharisma Bersama Nusantara (PTKBN) Jakarta Office, online auctions can be accessed through the PTKBN website, while offline prospective buyers can come to PTKBN to bargain on the price of these commodities, this is to boost the selling price in the market (PTPN IX, 2018:68). Table 1. Selling Price of PTPN IX Natural Rubber against Natural Rubber Exports in 2013-2017

Table 1. Selling Price of PTPN IX Natural Rubber against Exports in 2013-2017

Year	Production Volume (Tons)	Selling Price US\$ Million/Kg)
2013	27.155	1.982
2014	23.911	4.013
2015	26.038	2.745
2016	27.448	4.584
2017	25.443	9.967

Source: PTPN IX

Price of Natural Rubber Against PTPN IX Natural Rubber Export to India

The variable coefficient of the world natural rubber price is -94.00849, which means that the world natural rubber price does not affect PTPN IX's natural rubber exports to India. the statistical t-value of $-5.106578 < 2.015$ from the t-table, which means that the world natural rubber price variable has an insignificant influence on PTPN IX natural rubber exports to India.

This is to the results of Herlina's research (2018), namely the variable world rubber price negatively affects Indonesia's natural rubber exports to the United States, and the results of Atika's research (2015), namely the variable world natural rubber price negatively affects the volume of Indonesian rubber exports to Japan. According to the theory of demand, the higher the price of a commodity, the less the amount of demand for the commodity will be.

World Synthetic Rubber Price Against PTPN IX Natural Rubber Export to India

The regression results showed that the world synthetic rubber price coefficient was 122.6756, which means that the world synthetic rubber price affects the export of PTPN IX natural rubber to India. The statistical t value of $2.950190 > 2.015$ of the table t value, meaning that the results of the regression of world synthetic rubber prices have a significant effect on PTPN IX's natural rubber exports to India. This result is by the results of Purnomowati's research (2015), namely the price of synthetic rubber in the world market has a positive effect on the volume of Indonesian natural rubber exports to America, China, Japan, and Singapore. In realization, the price of synthetic rubber has increased over the past five years while natural rubber exports have also increased over the past five years.

Thai Natural Rubber Price Against PTPN IX Natural Rubber Export to India the coefficient value of the regression result of Thai natural rubber price regression is -2.019836 , which means that the price of Thai natural rubber does not affect PTPN IX natural rubber exports to India. The t-statistical value of $-0.538233 < -2.015$ from the t table, means that the price of Thai natural rubber has an insignificant effect on the export value of PTPN IX natural rubber to India. This is to the results of his research by Raditio, Dwiastuti, and Muhaimin (2014), namely that the price of Thai natural rubber negatively affects the export volume of Indonesian natural rubber in the world market.

CONCLUSIONS AND SUGGESTIONS

The conclusion obtained from this study is that the development of PTPN IX natural rubber exports to India from 2007-2017 has increased significantly, this is because India's demand for natural rubber is very high for raw materials for automotive products such as tires and car spare parts. PTPN IX is one of the exporters of natural rubber to India, this is evidenced by the trend of PTPN IX's natural rubber exports to India from 2007 to 2017. PTPN IX's natural rubber exports to India are influenced by PTPN IX's natural rubber production volume, PTPN IX's natural rubber selling price, Indonesia's natural rubber price and world synthetic rubber price. Meanwhile, the worlds natural rubber price and Thailand's natural rubber price do not affect PTPN IX's natural rubber exports to India. These six variables need to be considered by PTPN IX because it directly affects the export of natural rubber to India.

The suggestion obtained in this study is that PT Perkebunan Nusantara IX should increase the volume of natural rubber production to increase natural rubber exports to India, namely by expanding the rubber plant land area and rejuvenating rubber plants that have entered the old age of the plant. PT Perkebunan Nusantara IX must increase the selling price of PTPN IX natural rubber to India to increase rubber exports, and to have a price that is competitive with the price of natural rubber in other countries. PT Perkebunan Nusantara IX had to increase natural rubber exports to India

when the price of Indonesian natural rubber increased. PT Perkebunan Nusantara IX had to increase natural rubber exports to India when the world's synthetic rubber prices increased.

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