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Review Article

An Analysis of the Competitiveness of Indonesian Crude Palm Oil (CPO) in the International Market

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Abstract - The Indonesian agricultural product shows significant development with an annual average export of 3.545.2 million USD. One of the well-developed products is Crude Palm Oil (CPO). The Indonesian CPO export has been distributed to Africa, America, Europe, Australia, and mainly Asia. This export potential requires more concern to increase competitiveness in the international market. Meanwhile, this study aims to analyze the competitiveness and the potential of CPO in dominating the international market. The researchers used a descriptive-quantitative approach with the CPO export-import time-series data from 2005 to 2019. The data were collected from bps.go.id and www.comtrade.un.org/data and then analyzed using Revealed Comparative Advantages (RCA), Acceleration Ratio (AR), and Trade Specialization Index (TSI). The results show that the Indonesian CPO has better competitiveness than the other CPO-exporting countries. Moreover, the position of competitiveness is favorable. In dominating the international market, the Indonesian CPO export outpaces the global export.

Keywords - Competitiveness, Export, CPO (Crude Palm Oil).

I. INTRODUCTION

According to the data of agricultural product exports, Indonesia has shown significant growth from 2021 to 2019 with an annual average value of 3.545.2 million USD. A palm tree is one of the primary export commodities. It has derivative products such as Crude Palm Oil (CPO) and Palm Kernel Oil (PKO). Several industries require CPO to produce cocoa butter substitutes, shortening, oleochemical, and soap (The Minister of Agriculture of The Republic of Indonesia, 2020).

Furthermore, based on the Indonesian Central Bureau of Statistics (2019), Indonesian CPO production in 2019 reached 48.4 tons, higher than the previous year. Due to the substantial amount of production, Indonesia has become one of the CPO producers and exporters in the international market. As an industrial raw material, CPO is highly demanded due to its nature. It is oxidation resistant, high-temperature resistant, and is capable of dissolving

chemicals better than other solvents. These qualities need improvement to compete with soybean, olive, sunflower, and rapeseed products, as Meijaard, E., Brooks, TM, and Carlson (2020) stated.

Indonesian CPO has reached Africa, America, Europe, and mainly Asia. The export-destination countries are Malaysia, the Netherlands, Singapore, and Spain (Indonesian Central Bureau of Statistics, 2019). The export potential needs improvement since the export rate is increasing every year. It is essential to maintain trust and cooperation between Indonesia and the destination countries.

Palm Oil Research Center (2009) reported that the issues of price-fixing and black campaign in the activity of Indonesian CPO in reaching the international market have emerged. The price of Indonesian CPO export refers to the physical market in Rotterdam and the futures market in Kuala Lumpur (MDEX) as the world CPO market price. This drawback constrains Indonesia from imposing a tax on exporters and import duty on importer countries to maintain a new balance in supply and demand activities in the market. The black campaign issue also affects the CPO export in the international market since Indonesian CPO cannot penetrate the European Union and the United States markets due to the NODA policy. GAPKI (2018) stated that recently, Indonesia had overcome the black campaign issue by applying Mutual Recognition Agreement (MRA) to maintain the Roundtable on Sustainable Palm Oil (Hagi & Tety, 2012a).

Many numbers of factor affecting CPO export in the international market makes it crucial to analyze competitiveness periodically with a specific time. The objectives are to analyze the competitiveness of Indonesian CPO in the international market, the position of Indonesian CPO in the international market, and the potential of Indonesian CPO in dominating the international market. The competitiveness analysis functions to determine the strategy to compete with other countries.



II. METHODS

This study uses the descriptive-quantitative method. The subjects are the data from the Indonesian Central Bureau of Statistics and comtrade.com. The object of the study is the information regarding Indonesian CPO trade in the international market, comprising data of export volume, import volume, and world price from 2005 to 2019. The used data are time series secondary data obtained from the second source in which the researchers indirectly involved in the collection of primary data (Ibrahim, 1996). The researchers collected the data using CADC (Computer-Assisted Data Collection) device downloaded from bps.go.id and www.comtrade.un.org/data with CVS and excel format for offline processing. Moreover, the study was conducted from February to June 2021. Meanwhile, the data were analyzed using the following methods:

A. Revealed Comparative Advantages (RCA)

Balassa (1965) stated that RCA is a method used to figure out the comparative quality of the commodity in a country. The formula is as follows:

$$RCA = \left(\frac{X_{iK}}{X_{iM}} \right) / \left(\frac{X_{wK}}{X_{wM}} \right)$$

Description:

X_{iK} = Export value of Indonesian palm tree product

X_{iM} = Total export value of all commodities from Indonesia

X_{wK} = World exports value of palm tree products

X_{wM} = Total world exports value of all commodities

The criteria of decision making in RCA are derived from the following conditions:

- If $RCA \geq 1$, the country has a comparative quality over its commodity above the world average.
- If $RCA \leq 1$, the country does not have a comparative quality over its commodity below the world average.

B. Trade Specialization Index (TSI)

According to the Ministry of Trade of the Republic of Indonesia (2017), this method is used to categorize the position of a commodity in a country into exporter or importer. The formula is as follows:

$$TSI = \frac{X_i - M_i}{X_i + M_i}$$

Description:

TSI = Trade Specialization Index (TSI)

X_i = Export of Indonesian palm tree products to other countries

M_i = Import of Indonesian palm tree products from other countries

The criteria of decision-making in TSA range from -1 to +1. If the value is above 0 to +1, the commodity has strong competitiveness, or the country tends to be an exporter. On the contrary, if the value is below 0 to -1, the commodity has low competitiveness, or the country tends to be an importer.

C. Acceleration Ratio (AR)

According to the Ministry of Trade of the Republic of Indonesia (2017), this method is used by a country to figure out whether it can take over the overseas market or know whether the situation of export and domestic markets is improving or declining over its commodity. The formula is as follows:

$$AR = \frac{[(trend X_i) + 100]}{[(trend M_i) + 100]}$$

Description:

In which AR = AR Index

AR = Acceleration Ratio

Trend X_i = Commodity export value of Indonesian CPO (ton)

Trend M_i = Commodity import value of Indonesian CPO

The criteria of decision making in AR are derived from the following conditions:

- If $AR \geq 1$, then the country can take over the market for its commodity, or the country's position is more secure in the export or domestic market.
- If $AR < 1$, then the country has not been able to take over the market for its commodity, or the country's position is getting less secure in export or domestic markets.

III. RESULTS AND DISCUSSION

A. Revealed Comparative Advantages (RCA) of Indonesian CPO

A country uses RCA to figure out the comparative quality of a commodity over the same product of other countries. The value of RCA indicates competitiveness. The higher the RCA value of a commodity, the higher the competitiveness of a country over other countries. The calculation results of Indonesian CPO in the international market using this method are as follows:

Table 1. Revealed Comparative Advantages(RCA) Value of Indonesian CPO in 2005-2019

No	YEAR	RCA VALUE
1	2005	75,40
2	2006	111,06
3	2007	76,93
4	2008	77,64
5	2009	73,79
6	2010	68,43
7	2011	52,83
8	2012	48,09
9	2013	54,33
10	2014	48,46
11	2015	54,77
12	2016	51,36
13	2017	57,39
14	2018	51,75
15	2019	57,37
Average		63,97

Source: Processed Secondary Data, 2021

Based on Table 1, the RCA value of Indonesian CPO from 2005 to 2019 shows fluctuating trend every year with values above 1. This trend indicates that Indonesian CPO has better comparative quality than CPO from other countries. This result is in line with Prajogo U. Hadi and Julia F. Sinuraya's (2015) study, which stated that Indonesian CPO has a comparative quality in competing with other ASEAN countries from 2009 to 2011. Moreover, the most substantial aspect of commodity competition is maintaining stability level of production, price, and capital strength (Wardhani & Agustina, 2015). An analysis is highly demanded since many developing countries are under the control of most developed countries (Imawan, 2002).

B. Trade Specialization Index (TSI) of Indonesian CPO

This method is used to analyze the position of a commodity in international trade. It illustrates the tendency of a country to become an exporter or importer. Moreover, it focuses on a competitive commodity's supply and demand, in which the export is identical with domestic supply, and the import is identical with domestic demand. This method applies the net surplus theory proposing that the export of commodities occurs when there are excess goods in the domestic market. The calculation results of Indonesian CPO in the international market using this method are as follows:

Table 2. Trade Specialization Index (TSI) Value of Indonesian CPO in 2005-2019

No	YEAR	TSI VALUE
1	2005	0,997
2	2006	0,997
3	2007	1,000
4	2008	0,999
5	2009	0,997
6	2010	0,994
7	2011	0,997
8	2012	1,000
9	2013	0,994
10	2014	1,000
11	2015	0,999
12	2016	0,999
13	2017	1,000
14	2018	1,000
15	2019	0,994
Average		0,998

Source: Processed Secondary Data, 2021

Table 2 illustrates that the TSI value of Indonesian CPO in the international market shows positive results (above 0 to 1). In fourteen years between 2005 and 2019, Indonesia's TSI value has stood between 0,994 – 1,000, indicating that the country is an exporter in the international market. These results are in accordance with the study by Ustiaji (2017), reporting that CPO is one of the primary commodities in the International market, and thus Indonesia is categorized as a CPO-exporting country. The results are also supported by studies reporting that Indonesian CPO has reasonably strong competitiveness in the Asian market compared to Malaysia (Hagi & Tety, 2012b). This tendency occurs due to the role of social process and heterogeneity of the actors or institutions in changing import tariff and export duty rates (van Tol et al., 2021).

The government also plays a pivotal part in this situation by focusing on integrating the actors' roles involved in global marketing. It is crucial since Indonesia is considered incapable of innovating palm tree yield and its derivatives. According to Maiti & Bidinger (1981), as a CPO-exporting country, Indonesia is unqualified for innovating the commodity of the palm tree and its derivatives, neither at ASEAN nor the world level.

Innovation in palm tree derivatives is essential for strengthening the competitiveness of Indonesian CPO in the international market and increasing the opportunity of dominating the CPO market in Asia, ASEAN, and the European Union. If Indonesia can establish a Mutual Recognition Agreement (MRA) to standardize the RSPO certificate with the NODA policy set by the United

States, it is admissible to re-export its CPO to the European Union (GAPKI, 2018). The improvement of the export also extends to the RPO, lauric oil, and oleochemical products.

C. Acceleration Ratio(AR) of Indonesian CPO

This method functions to analyze the potential of a country in taking over the market and figure out its position and stability in export and domestic markets. It is based on the value comparison between a country's export growth and the world export growth over a commodity. The calculation results of Indonesian CPO in the international market using this method are as follows:

Table 3. Indonesian CPO Export Growth Value in 2005-2019

No	YEAR	AR VALUE
1	2005	1.01
2	2006	1.01
3	2007	1.01
4	2008	1.01
5	2009	1.01
6	2010	1.01
7	2011	1.01
8	2012	1.01
9	2013	1.01
10	2014	1.01
11	2015	1.00
12	2016	1.00
13	2017	1.00
14	2018	1.00
15	2019	1.00
Average		1.00

Source: Processed Secondary Data, 2021

Table 3 demonstrates that the AR average value of Indonesian CPO in the international market is 1.00, indicating that the growth acceleration of Indonesian CPO export is higher than the growth acceleration of world CPO export. This result is in line with Huda & Widodo's (2017) study, reporting that the Indonesian CPO export growth rate peaked from 2011 to 2015 due to price. It is supported by the theory of demand, stating that an increase in price causes a decline in demand. Moreover, the non-tariff measures will be insignificant Indonesian CPO has good comparative quality and competitiveness (Sari et al., 2018). The excellence should be profitable in the long run. It can be used as an investment to improve regional autonomy regarding business development, provision of investors as a solution for limited capital, and quality management for CPO products (Wayan R. Susila, 2006). Furthermore, to refute the dumping issue accused by the European Union, Indonesia can optimize its CPO export in the international market.

IV. CONCLUSION

The conclusions of this study are as follows:

- Based on the calculation results of RCA (Revealed Comparative Advantages), Indonesian CPO is well-developed and has better comparative quality than the other CPO-producing countries. It has a value above the world average, and the average RCA value is above 1. Moreover, it has well-developed production stability every year.
- Based on the calculation results of TSI (Trade Specialization Index), Indonesian CPO indicates positive results with an average value of 1. It also demonstrates that Indonesia tends to export CPO in the international market.
- Based on the calculation results of the AR (Acceleration Ratio) method, Indonesian CPO shows higher growth than the world CPO, indicated by the average value of AR (1.00). This growth is due to well-developed comparative quality and competitiveness.

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