

Export Competitiveness of Indonesian Copra in International Trade 2017-2021

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ARTICLE INFO

Keywords: Copra, Competitiveness, Exports, Revealed Comparative Advantage (RCA), Trade

Received : 16, July

Revised : 21, August

Accepted: 26, September

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ABSTRACT

Indonesia is the main coconut-producing country in the world. One of the coconut derivative export products is copra. In 2019, the volume of Indonesian copra exports was 154 thousand tonnes, then fell to 107 thousand tonnes in 2020 and decreased to 39 thousand tonnes in 2021. This research will identify the competitiveness and specialization index of the Indonesian copra trade. The data used in this research is secondary data in the form of time series (cross-section) from 2017 to 2021. The data was analyzed using Revealed Comparative Advantage (RCA) analysis and the Trade Specialization Index (TSI). The data processing was carried out using the Microsoft Excel 2019 program. The research results explain that the RCA value of the Indonesian Copra Commodity in 2017-2021 is between 28.16 and 48.80, with an average RCA of 41.55. $RCA > 1$ means that Indonesian copra commodities have high competitiveness in the international market. And higher than the RCA countries of Malaysia, India and Guatemala. Indonesia's TSI during the 2017-2021 period was 0.97, and This indicates that the Indonesian copra commodity has strong competitiveness as an exporter of copra commodities.

INTRODUCTION

Indonesia is the world's coconut-producing country. However, in the 2013-2022 period, it experienced a decline of 1.01% per year. In 2013, the coconut area was 3.65 million ha and is predicted to decrease to 3.33 million ha in 2022. The highest coconut area was achieved in 2013, while the smallest area is projected to occur in 2022, namely 3.33 million ha (Ministry of Agriculture, 2022). People's plantations cultivate coconut commodities in Indonesia, large state plantations and large private plantations. Smallholder plantations cultivate the majority of coconut plants in Indonesia. In 2013-2022, 99.02% of Indonesia's total coconut area was dominated by community plantations. Large state plantations cultivate the remaining 0.11% of the coconut area. The Sawsta Large Plantation controls 0.87% of Indonesia's coconut area (Ministry of Agriculture, 2022). Characteristics of smallholder coconut plantations include narrow land ownership, monoculture business patterns and low productivity (Alouw & Wulandari, 2020; Zainol et al., 2023). Apart from that, community coconut plays more of a role as a trade commodity rather than a subsystem commodity; this is because people's coconut products are generally used as raw materials for further processing for the industrial sector (Anggrasari et al., 2023).

From the production aspect, during the 2013-2022 period, the average Indonesian coconut production was 2.80 million tons, while hybrid coconut production was 95 thousand tons. In 2013, coconut productivity in Indonesia reached 1,130 kg/ha and increased to 1,140 kg/ha in 2022 (Ministry of Agriculture, 2022). In general, Indonesia's coconut productivity tends to stagnate and does not increase significantly (Prasada & Masyhuri, 2019). The decline in Indonesian coconut production is caused by several things, including a decrease in land area, limited use of herbicides and limited labour (Rusdi et al., 2021). The decline in coconut productivity is also influenced by other factors such as pest and disease attacks (Pathmeswaran et al., 2018), climate change, lack of coconut land maintenance, and the low adoption of modern technology in coconut cultivation (Zakia & Marifatullah, 2023).

Coconut has many derivative products, such as coconut oil, copra, coconut cake, coconut charcoal, and coconut fibre (Moreno et al., 2020; Purba et al., 2021). One of the coconut derivative products which is a commodity strategic export is copra. Copra is one of the coconut derivative products that is a mainstay of Indonesian exports. Most coconut farmers in Indonesia produce coconut in the form of copra (Ministry of Agriculture, 2022). In 2012, the volume of copra exports was 48 thousand tons. The export volume of copra during the COVID-19 pandemic in 2020 decreased compared to the export volume in 2019. In 2019, the export volume of copra was recorded at 154 thousand tons and was the highest export achieved during the last ten years. In 2020, the volume of copra exports fell to 107 thousand tons. In 2021, the volume of copra exports will actually decrease to 39 thousand tons (Ministry of Agriculture, 2022)

The decline in the volume of Indonesian copra exports is an illustration that the sustainability of the copra business is very fluctuating. Even though Indonesia is the country with the highest coconut area and production in the world, the export aspect of coconut derivative products still needs to be higher

compared to other countries. Raw and semi-finished products still dominate Indonesia's export products. Therefore, this research will identify the competitiveness and specialization index of the Indonesian copra trade.

THEORETICAL REVIEW

A country's competitiveness can be measured based on the number of exports using the Revealed Comparative Advantage (RCA) method. RCA is a method based on the premise that a country's export performance is largely determined by its level of competitiveness relative to similar products made in other countries. Bela Balassa introduced this method, and this Balassa method became known as the Balassa RCA Index. The RCA index shows the comparison of the share of commodity exports in a country compared to the share of exports of the same commodity from the rest of the world. This index shows the comparative advantage or competitiveness of a particular country with the assumption (*caters paribus*) that other factors that influence export growth remain unchanged (Bustami and Hidayat, 2013). The RCA method was proposed by Balassa (1965) with the aim of measuring the competitiveness of a commodity at the international level. The RCA method, or what is usually called the Balassa Index, neutralizes the effects of the size of a country's economy or industry so that it can compare export performance between countries (Erkan & Yildirimci, 2015). In the RCA calculation, if the results show a commodity number greater than 1, then the country has a comparative advantage. On the other hand, if the result is smaller than 1, then the comparative advantage is low or below the world average (kemenkeu.go.id). (Aprilia, 2015). In more detail, the strength of international competitiveness shown by the Balassa RCA Index is grouped into four classifications by Hinloopen (2010), Erkan & Yildirimci (2015), namely Classification 1 : $0 < RCA_{ij} < 1$, not competitive; Classification 2: $1 < RCA_{ij} < 2$, weak competitiveness; Classification 3: $2 < RCA_{ij} < 4$, medium competitiveness; and Classification 4 : $4 < RCA_{ij}$, strong competitiveness (Manalu, Harianto, Suharno, and Hartoyo, 2022).

The Trade Specialization Index (TSI) is an index used to calculate a country's trade specialization. TSI analyzes the position or stage of development of a commodity by describing whether, for a commodity, Indonesia's position tends to be an exporter or importer country (kemenkeu.go.id). TSI is a comparison of the difference between the net trade value and the total trade value of a country. The TSI is used to analyze the position or stage of development of a product (Wulandari, 2013:4). The value of this index is between 0 and 1. If the value is positive (above 0 to 1), then the commodity has high competitiveness, or the country/region concerned tends to be an exporting country of the commodity. Conversely, if the value is negative (below 0 to -1), competitiveness is low, or they tend to be importers (Safriansyah, 2010).

The TSI is used to analyze the position or stage of development of a product. This TSI can describe whether, for a particular type of product, Indonesia tends to be an exporter or importer country. Implicitly, this index considers the demand side and supply side, where exports are identical to domestic supply and imports to domestic demand, or in accordance with

international trade theory, namely the net of surplus theory, where exports of a good occur if there is an excess of that good in the domestic market. This index value has a range between -1 to +1. Suppose the value is positive above 0 to 1. In that case, the commodity in question is said to have strong competitiveness or the country in question tends to be an exporter of that commodity (domestic supply is greater than domestic demand). On the other hand, their competitiveness is low, or they tend to be importers (domestic supply is smaller than domestic demand) if the value is negative below 0 to -1. If the index increases, it means that competitiveness increases, and vice versa.

METHODOLOGY

Data Types and Sources

The data used in this research is secondary data in the form of a time series (cross-section). Time series data includes annual data from the period 2017 to 2021 according to data availability. Meanwhile, for cross-section data, this research uses Indonesia's main export destination countries, namely China and India, as the main importing countries for Indonesian palm oil. The data in this research was obtained from various sources related to the research object, such as the Central Statistics Agency (BPS), Ministry of Trade (Kemendag), UN Comtrade (United Nation Commodity Trade), literature, articles, journals, and related internet sites.

Data Analysis Method

The data and information obtained in this research were analyzed using quantitative descriptive methods. This quantitative model uses several modelling approaches, namely Revealed Comparative Advantage (RCA) analysis and Trade Specialization Index (TSI). The data processing was carried out using the Microsoft Excel 2019 program.

Revealed Comparative Advantage (RCA)

Mathematically, Revealed Comparative Advantage (RCA) can be formulated as follows (Basri & Munandar, 2010)

$$RCA = \frac{X_{ij}/X_j}{X_{iw}/X_w}$$

Information:

X_{ij} = Commodity export value by country j

X_j = Total export value of country j

X_{iw} = World total export value of commodity i

X_w = Total world export value

The Revealed Comparative Advantage (RCA) equation result index with a value equal to or more than one ($RCA \geq 1$) means that the country has a product's competitiveness above the world average, while the RCA value < 1 , meaning that country j does not have a comparative advantage (weak competitiveness).

Trading Specialization Index (TSI)

The Trade Specialization Index (TSI) is a method used as a measure of the level of competitiveness. This index is used to see whether a type of product in a country tends to make the country an exporter or an importer country (Bustami and Hidayat, 2013). The TSI index is formulated as follows:

$$ISP = \frac{Xia - Mia}{Xia + Xia}$$

Information:

Xia = the value of product exports i in a country

Xia = the value of product import i in a country

The provisions of the TSI index are between 1 and +1; if the value is positive (above 0 to 1), then product I has strong competitiveness and the country has the potential to export that product. Likewise, if the TSI index value is negative (below 0 to -1), then product I is not competitive, and the country tends to be an importing country.

RESULTS

Copra's Contribution to International Trade

In 2016, Indonesia's coconut production reached 18.3 million tons, and this was the highest in the world. The Philippines and India are the second and third largest producers, with production reaching 15.4 and 11.9 million tons of coconut, respectively. The 10 largest producers in the world include. Indonesia (18.3 million tonnes), Philippines (15.4 million tonnes), India (11.9 million tonnes), Brazil (2.9 million tonnes), Sri Lanka (2.5 million tonnes), Vietnam (1, 3 million tonnes), Papua New Guinea (1.2 million tonnes), Mexico (1.1 million tonnes), Thailand (1 million tonnes) and Malaysia (646.9 thousand tonnes)(Ministry of Agriculture, 2022). Then, in 2020, Indonesia's coconut production reached 2,811,954 tons with an area of 3,396,776 ha (Sangadji et al., 2022).

Even though it is a world coconut producer, Indonesia is ranked third as the largest copra exporter in the world. The coconut agro-industry products exported by Indonesia are products that are still classified as primary with low added value. It is predicted that demand for processed coconut products will increase in the future. Indonesia is more dominant in producing semi-finished processed coconut products such as copra. Copra is grouped into the industrial sector (raw materials). Therefore, copra traded on the international market cannot be consumed directly by consumers. First, copra is usually processed into Crude Coconut Oil, and then Crude Coconut Oil is processed again into cooking oil, raw material for making soap, raw material for making allelochemicals, cosmetics and other products(Resminiasari et al., 2018; Dwiyani et al., 2021).

The total export and trade value of Indonesian copra from 2018 to 2020 experienced fluctuations. In 2018, total copra exports to the international market were 41,376 tons, then increased significantly to 153,655 tons in 2019 and decreased again to 107,486 tons in 2020. Fluctuations in the volume of Indonesian copra exports also had an impact on decreasing the value of copra exports with

a value of USD 37,890,000 in 2018, USD 29,525,000 in 2019 and USD 36,545,000 in 2020 (Ministry of Agriculture, 2022). Overall, in 2020, the contribution of copra commodities to primary coconut products and HS code manufacturing was 8.41% or an increase compared to 2019 of 4.62%.

Indonesian copra export activities still face tight competition from other producing countries such as Papua New Guinea, Thailand, Vanuatu, Sri Lanka and Brazil. In 2018, Indonesia's copra market share reached around 29% (Rinaldi, 2020). As the number of copra-producing countries increases, the demand for quality copra also increases. Not only that, but Indonesian exports also face the problem of low competitiveness, which is influenced by the weak exchange rate, high-cost economy and lack of infrastructure.

Competitiveness of Indonesian Copra Exports

The competitiveness of a country's export commodity or industry can be analyzed using various methods or measured using a number of indicators. One of them is Revealed Comparative Advantage (RCA) (Pratama et al., 2020). A country's export potential can be assessed using the RCA index, which shows the process of expanding production in a country that has trade potential (Nurkhoiry, 2017).

Analysis of the competitiveness of Indonesian copra commodities in international markets is approached using the comparative advantage Balassa's Revealed Comparative Advantage Index (RCA), which aims to compare the export market share of certain sectors of a country with the market shares of certain sectors of other countries or producers (Suparmono et al., 2022). Copra export data was obtained from <https://comtradeplus.un.org/> to see the volume and value of copra trade in Indonesia and several other competing countries. Results of RCA calculations for copra commodities with HS code 1513 in Indonesia and other comparison countries such as Malaysia, India and Guatemala.

Table 1. RCA Value of Indonesian Copra Commodities and Competing Countries 2017-2021

Year	RCA Score			
	Indonesia	Malaysia	India	Guatemala
2017	42,38	11,31	0,13	20,49
2018	43,63	9,89	0,07	22,65
2019	48,80	11,82	0,08	22,23
2020	44,79	14,65	0,13	20,49
2021	28,16	10,33	0,12	16,09
Average	41,55	11,60	0,11	20,39

Table 1 shows that the average value of the competitiveness of Indonesian copra commodities in the international market is above Malaysia, India and Guatemala. In the last 5 years, the comparative advantage of Indonesian copra has averaged above 40, which means that the competitiveness of Indonesian

copra exports is quite good, but in 2021, it will experience a decline. Indonesian copra commodities in the international market have high competitiveness when compared with Malaysia, India and Guatemala. In general, the copra commodity has high competitiveness in the international market because the average RCA index is > 1 . The copra commodity is Indonesia's leading commodity, which has quite good competitiveness because having an RCA greater than 1 means that the country concerned has an above-average comparative advantage. -world average in copra commodities. The strong competitiveness and high market share of Indonesian copra in the international market show that Indonesia has a fairly strong position and has the potential to become a leader in copra trading in the international market (Prades et al., 2016; Keintjem et al., 2023).

Indonesia has a competitive advantage in the number of natural resources and the large number of human resources and the opportunities available, such as increasing the population of importing countries, increasing per capita income in importing countries, processing potential by industry, product diversification into other derivative products, and trade liberalization. Copra commodities in Guatemala and Malaysia are competitive because they have an RCA value greater than 1, so they have a comparative advantage above the world average in these commodities. Meanwhile, India has low competitiveness for copra commodities in the international market because the average RCA index is < 1 , namely 0.11, so the comparative advantage for this commodity is low or below the world average.

Trading Specialization Index of Indonesian Copra

The TSI is an index used to analyze the position or stage of development of the Indonesian copra commodity (Ikasari & Ngatindriatun, 2016). This index can provide an idea of Indonesia's specialization as an importer or exporter of copra (Ximenes et al., 2021). Implicitly, this index considers the demand side and the supply side, where exports are identical to domestic supply and imports are domestic demand, or in accordance with international trade theory, namely the net of surplus theory, where exports of a good occur if there is an excess of that good in the domestic market.

Table 2. Indonesian Copra Commodity Trade Specialization Index and Competitor Countries 2017-2021

Year	Indeks Spesialisasi Perdagangan			
	Indonesia	Malaysia	India	Guatemala
2017	0,99	0,35	-0,78	1,00
2018	0,99	0,20	-0,90	1,00
2019	0,97	0,26	-0,90	1,00
2020	0,96	0,33	-0,83	0,99
2021	0,93	0,25	-0,80	0,99
Average	0,97	0,28	-0,84	0,99

In Table 2, Indonesia's TSI during the 2017-2021 period shows an average of 0.97. This indicates that the Indonesian copra commodity has strong competitiveness or that Indonesia tends to be an exporter of copra commodities (domestic supply is greater than domestic demand). Based on the TSI index, the growth rate of the Indonesian copra commodity is at the maturity stage; at this stage, the product in question is already at the standardization stage regarding the technology it contains. At this stage, Indonesia is a net exporter country.

When compared to the TSI, Guatemala is the world's main copra exporter, so the TSI value is close to 1 or 0.99, which is at the maturity stage. Meanwhile, Malaysia has a TSI of 0.28 and is at the growth stage, so to increase the TSI value, Malaysia is carrying out large-scale production and starting to increase its exports. India is a country that imports copra because its TSI value is small -0.84, so this commodity has low competitiveness, so India tends to be an importing country (domestic supply is smaller than domestic demand). The tea industry in India has entered the import substitution stage, which shows very low competitiveness because the level of production is not high enough to achieve economic scale. The industry exports products of poor quality, and domestic production is still smaller than domestic demand. In other words, for these commodities, at this stage, India imports more than it exports.

In increasing the competitiveness of copra commodities in the international market, the role of the government, both through the Ministry of Agriculture and Regional Government, still needs to be improved in developing copra plants from production to post-harvest. This commodity has never implemented an output price policy. The determination of output selling prices has so far been left to market mechanisms. The status of the commodity as not a basic need and the relatively low level of per capita use could be explanatory factors for the need for more urgency in price policy intervention for coconut products. New government policy intervention was carried out on import activities. This intervention takes the form of setting import duties on imported goods and sales taxes, which, apart from providing income for the state, are also intended to protect domestic producers

Efforts to increase copra competitiveness are directly related to the national industrial development program. Several fiscal policies can be implemented to increase the competitiveness of copra in Indonesia, including the implementation of tiered export duties, subsidies to farmers or copra business actors and improving infrastructure through increasing APBN funds as well as the need to improve bureaucracy and the need for national copra research and development.

Increasing the competitiveness of Indonesian copra commodities in international markets can be increased through increasing productivity. It is hoped that the government will pay more attention to this copra commodity. Such as by assisting in the form of superior seeds to copra farming communities so that coconut trees that are no longer productive can be replaced and by intensifying Indonesian copra production by providing special training for copra farmers so that they can increase copra production, especially to improve the quality and quantity of Indonesian copra. Socialization of good quality standards

will lead to high demand for copra in export destination countries. The prospects for copra are expected to continue to increase and benefit business actors. This opportunity should be utilized optimally by domestic business actors by increasing the competitiveness of their businesses and the products they produce. Efforts to increase plantation productivity and business efficiency of copra products as well as improve the quality of processed materials.

CONCLUSIONS AND RECOMMENDATIONS

Total copra exports to international markets in 2018 amounted to 41,376 tons and increased significantly to 153,655 tons in 2019 and 107,486 tons in 2020. The value of copra exports in the last three years has decreased significantly. In 2018, it was USD 37,890,000, and in 2019, it was USD 29,525,000, while in 2020, it increased to USD 36,545,000 in 2020. Overall, the contribution of copra commodities to primary coconut products and HS code manufacturing in 2020 was 8.41% or an increase compared to 2019 of 4.62%.

Indonesia's RCA values for 2017-2021 were 42.38, 43.63, 48.80, 44.79 and 28.16 respectively. An RCA value > 1 means that the Indonesian copra commodity has export competitiveness in the international market. The competitiveness of Indonesian copra exports is above competing countries such as Malaysia (average RCA of 11.60), India (average RCA of 0.11), and Guatemala (average RCA of 20.39). The Indonesian TSI for 2017-2021 averaged 0.97 (close to 1). A TSI value of 0.97 indicates that the Indonesian copra commodity has strong competitiveness or that Indonesia tends to be an exporter of this commodity (domestic supply is greater than domestic demand). Indonesia's TSI is superior to Malaysia's, with a TSI of 0.28, but below Guatemala, which is the world's main copra exporter with a TSI value of 0.99.

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