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Competitiveness of Indonesia Palm Oil in the International Market

Indah Susilowati, Etma Puji Setyowati✉, Haidar Akhmad Al Barabasi, Siti Naeni Nur Khaeni

Development Economic Study Program, Faculty of Economics and Business, Universitas Diponegoro

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Abstract

Indonesia is the largest exporter of palm oil in the world. The growth of production and exports and the decreasing of import Indonesia palm oil should also increase the competitiveness of Indonesia palm oil in the international market. Therefore, we need to know the competitiveness of palm oil in Indonesia by calculate the value of export, production, and import through descriptive method model analysis using Import Dependency Ratio (IDR), Self Sufficiency Ratio (SSR), and Revealed Comparative Advantage (RCA) as the analysis tools. The data we used in this research is secondary data from Central Bureau of Statistic and UN Comtrade year 1990 until 2022.

Keywords: palm oil, competitive advantage, import, export

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✉ Correspondence Address :
Address: Jl. Prof. Moeljono Trastotenojo, Tembalang
E-mail : Etma768@gmail.com

INTRODUCTION

Palm oil is the edible vegetable oil derived or extracted from reddish pulp of the fruit of oil palm of the palm tree. In the food industry, palm oil is primarily used as cooking oil, margarine, non-dairy creamers, and ice cream. Traditionally, the main non-food usage for palm oil is in the manufacturing of soaps, detergents, greases, lubricants, and candles. More recently, the biofuels market has provided a significant new non-food use for palm oil where it is used as the feedstock for the production of biodiesel and as the alternative to mineral oils for use in power stations. The fatty acid derivatives of palm oil are

used in the production of bactericides, cosmetics, pharmaceuticals and water-treatment products.

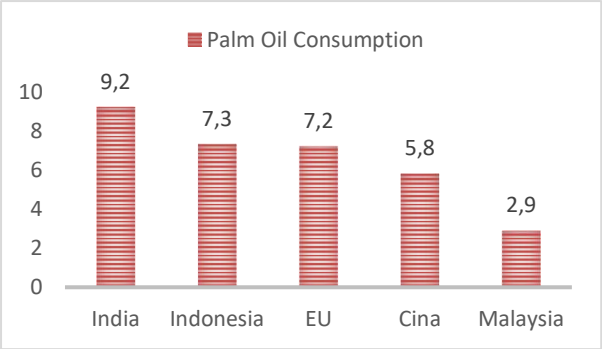

Figure 1. The Largest Countries consumed Palm Oil in 2020
Source : Data Processed, 2024

Because of its advantages, palm oil demands in the world continues to grow. Every people needs palm oil to fulfill their daily needs. In November 2011 the global population reached seven billions and by 2050 is its expected to increase by two until three billion. Since oil palm is the most efficient oil crop available, it is a crucial commodity when it comes to feeding the growing number of people.

Table 1. The Top Producer, Exporter, and Importer Countries of Palm Oil

No	The Top Producer	The Top Exporter	The Top Importer
1	Malaysia (21M)	Indonesia (45.5%)	India (9.75 MT)
2	Indonesia (3.6M)	Malaysia (29.4%)	EU-27 (7.3 MT)
3	Thailand (2.2M)	Colombia (4%)	China (7.2 MT)
4	Colombia (1.32M)	Thailand (3.6%)	Pakistan (3.35 MT)

Source : Data Processed, 2024

The importance of palm oil becomes clear when we consider that many people in developing world rely on it as cheap and available cooking medium. Many people rely on palm oil for their livelihoods. Oil palm smallholders are some of the poorest farmers in the world.

Table 2. Trend of Volume and Value of Palm Oil Exports and Imports by Harmonized System Code year 2019-2022

	2019	2020	2021	2022
Import (Volume/Ton)	7,583	2,676	2,518	845
Import (Nilai/Value)	4,655	4,144	1,812	983
Export (Volume/Ton)	28,286,871	24,338,304	29,070,932	29,671,779
Export (Nilai/Value)	16,950,960	16,277,278	20,724,460	18,231,743

Source : Data Processed, 2024

A total of 61 million tonnes of palm oil was consumed in 2020. India is the country that consumed the most palm oil compared to other countries. It consumed 9.2 million tonnes in 2020. And the second position of country that consumed most of the palm oil is Indonesia, 7.3 million tonnes in 2020. Followed by EU 28 of 7.2 million tonnes palm oil consumption in 2020, China of 5.8 million tonnes in 2020, and Malaysia that consumed 2.9 million tones in 2020.

Tridge recorded that Indonesia is the top exporters of Crude Palm Oil (CPO) who gives 45.5% of the global export markets followed by

Malaysia who gives 29.4% of the global export markets, Colombia has 4.0% of the global export markets, and Thailand who gives 3.6% of the global export markets in 2021.

Table 1 shows the top producer of Crude Palm Oil in the world is Malaysia with production volume 21 M, followed by Indonesia who has 3.6 M, Thailand who has 2.2 M, and Colombia who has 1.32 M. The largest importer country of palm oil is India 9.75 million tonnes, followed by EU-27 who imported 7.3 million tonnes of palm oil, and China who imported 7.2 million tonnes (Index Mundi). According to Central Bureau of Statistic, the trend of volume and value of palm oil exports and imports in Indonesia by Harmonized System Code year 2019-2022 increases each year.

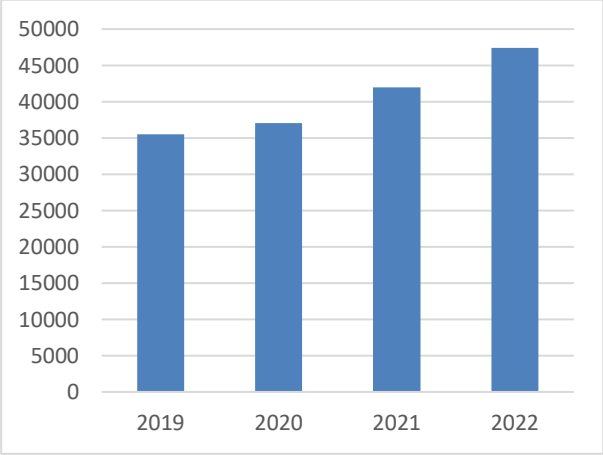

Figure 2. Palm Oil Production in Indonesia Year 2019-2022 (Ton)
Source : Data Processed, 2024

The same things also happens in palm oil production in Indonesia. The production of palm oil increases each year according to data given by Gabungan Pengusaha Kelapa Sawit Indonesia (GAPKI). In 2019 the production of palm oil in Indonesia around 35,500 tonnes, increase to 37,076 tonnes in 2020. Increasing constantly in 2021 and 2022 by 41,883 tonnes and 47,388 tonnes.

The area of oil palm plantations is spread over 25 provinces, namely all provinces on the islands of Sumatra and Kalimantan, West Java Province, Banten, Central Sulawesi, South Sulawesi, Southeast Sulawesi, West Sulawesi, Gorontalo, Maluku, Papua and West Papua. Of the 25 provinces, Riau Province is a province with the largest oil palm plantation area in Indonesia, which is 2.21 million hectares in 2017 or 17.84 percent of the total area of oil palm plantations in Indonesia.

According to the status of the concession, most of the oil palm plantations in 2018 it was undertaken by a large private plantation of 6.05 million hectares (48.83%), 5.70 million hectares (46.01%) are cultivated by plantations people, and 0.64 million hectares (5.15%) are cultivated by the country's large estates. In 2019, the amount of oil palm land cultivated by large private estates will be 6.36 million hectares (49.81%), amounting to 5.81 million hectares (45.54%) cultivated by smallholder plantations, and 0.59 million hectares (4.65%) cultivated by plantations country size.

An increases of production and exports and the decreasing imports of palm oil in Indonesia should also increases the competitiveness of Indonesia palm oil in the International market. Therefore, in our research we want to know the competitiveness power of Indonesia palm oil in the International market.

RESEARCH METHODS

The type of data used is the time series data of palm oil in Indonesia and global year 1990 until 2022. The data is secondary data from Central Bureau of Statistic and UN Comtrade year 1990 until 2022. The method of analysis is

descriptive method model analysis. Descriptive method is used for analyze Import Dependency Ratio (IDR), Self Sufficiency Ratio (SSR), and Revealed Comparative Advantage (RCA). Import Dependency Ratio (IDR) is the dependency import of production of a country. The complement of this ratio to 100 would represent that part of the domestic food supply that has been produced in the country itself. Import dependency ratio (IDR) is defined as:

$$\text{IDR} = \frac{Imports \times 100}{(Production + Imports - Exports)}$$

If the result is greater than 1, it means that country has no dependency of import of the product. If the result is less than 1, it means that country has dependency of import of the product. Self Sufficiency Ratio (SSR) is the ability production of one country to fulfill the needs inside country and export.

The SSR can be calculated for individual commodities, groups of commodities of similar nutritional values and, after appropriate conversion of the commodity equations, also for the aggregate of all commodities. In the context of food security, the SSR is often taken to indicate the extent to which a country relies on its own production resources, i.e. the higher the ratio the greater the self-sufficiency.

While the SSR can be the appropriate tool when assessing the supply situation for individual commodities, a certain degree of caution should be observed when looking at the overall food situation. In the case, however, where a large part of a country's production of one commodity, e.g. other cereals, is exported, the SSR may be very high but the country may still have to rely heavily on imports of food commodities to feed the population. The self-sufficiency rate (as defined above) cannot be the complement to 100 of the import dependency rate, or viceversa. The self-sufficiency ratio (SSR) is defined as:

$$\text{SSR} = \frac{Production \times 100}{(Production + Imports - Exports)}$$

If the result is greater than 1, it means that country has great production of that product. If the result is less than 1, it means that country has less production of that product. Revealed Comparative Advantage (RCA) measures of revealed comparative advantage have been used to help assess a country's export potential. The RCA indicates whether a country is in the process of extending the products in which it has a trade potential, as opposed to situations in which the number of products that can be competitively exported is static.

It can also provide useful information about potential trade prospects with new partners. Countries with similar RCA profiles are unlikely to have high bilateral trade intensities unless intraindustry trade is involved. RCA measures, if estimated at high levels of product disaggregation, can focus attention on other nontraditional products that might be successfully exported. The RCA index of country I for product j is often measured by the product's share in the country's exports in relation to its share in world trade. The formula is :

$$\text{RCAij} = \frac{xij/Xit}{xwj/Xwt}$$

Where xij and xwj are the values of country is exports of product j and world exports of product j and where Xit and Xwt refer to the country's total exports and world total exports. If the result is greater than 1, it means that country has comparative advantage of that product. If

the result is less than 1, it means that country has comparative disadvantage of that product.

RESULTS AND DISCUSSION

The dependency Indonesia of palm oil import is showed by Import Dependency Ratio (IDR) in Figure 3. Based on the calculation, IDR value for 33 years is vulnerable around 49 percent. It means that Indonesia is relatively not depends on imported palm oil especially to fulfill the needs of the palm oil commodity domestic.

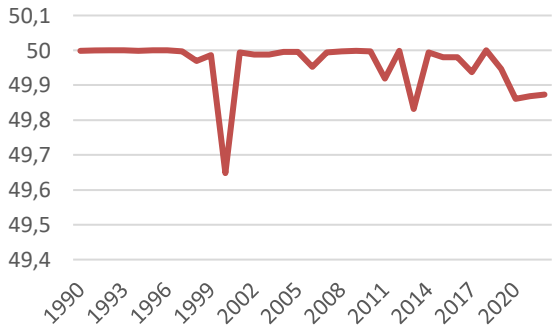

Figure 3. Import Dependency Ratio of Palm Oil in Indonesia years 1990-2022 (Percent)
Source : Data Processed, 2024

This result is supported by a decrease in palm oil imports every year. According to Statistics of Palm Oil by GAPKI, in 2019 the total volume of palm oil imports is around US $4,500 thousand. This total volume of imports palm oil decreased 64.71 percent in 2020. In 2021 and 2022 the volume of palm oil imports returned decrease. The fall in import volume in 2020 was 5.90 percent from 2019. While in 2022, import volumes were 845 thousand tons, down 66.44 percent from 2021 with a value of US $983 thousand.

The capability of Indonesia palm oil production to fulfill the consumption needs countries and exports can be seen through the Self Sufficiency Ratio (SSR) value in Figure 4. Based on the calculation SSR value from 1990 to 2022 we got the average value 19,62 percent. This value indicates that production palm oil in country is fully able the fulfill the needs of domestic market and still has stock that can be exported to the International market.

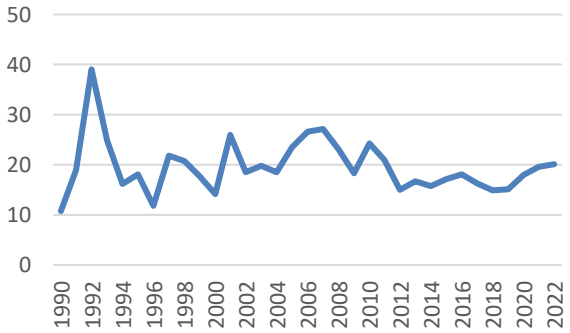

Figure 4. Self Sufficiency Ratio (SSR) of Indonesia Palm Oil Years 1990-2022 (Percent)
Source : Data Processed, 2024

This result does not surprising. Indonesia has large palm oil plantation and always increase each year even though in 2016 was decreasing. In the year of 2019 land area of Indonesia oil palm plantation was 11.26 million hectares. In 2020 the area of palm oil plantations decreased by 0.52 percent from 2021 to 11.20 million hectares. The next year in 2021, the area has increased by 10.55 percent and increased again in 2022 by 3.06 percent to 12.76 million hectares.

The temperature for the best production of palm oil is between 25 ± 27 degree celcius, where the average temperature annual growth and production of palm oil is around 24 to 29 degree Celcius. The optimal height is 200 m above sea level and a maximum of 400 m above sea level. Areas in Indonesia such as Central Kalimantan, West Kalimantan, North Sumatera, South Sumatera, Riau, Sulawesi has fulfilled the land requirements, but in some places in Indonesia,

like Sumatra, oil palm plants grow quite well in altitude up to 500 m above sea level.

Palm oil fields also need sunlight around 5-12 hours per day. Ideal rainfall for plants Palm oil is around 2,000-3,500 mm/year evenly distributed with a minimum of 100mm/month throughout years, Paramananthan (2003) in Syakir et al. (2010: 2-3) The optimal slope of the land is less of 23% (120) and a maximum of 38% (120) with The best pH ranges from 5.0 to 6.0.

That province carried out rejuvenation and development by the Indonesian government to improve palm oil exports are Nangroe Aceh Darusalam, Jambi, Riau, North Sumatra, West Sumatra, Banten, Bali, West Kalimantan, Riau Islands, Central Kalimantan, Central Sulawesi, Irian Jaya West and Papua. Riau and Central Kalimantan are centers the largest palm oil production in Indonesia with contributions of 19.5% and 15.74% followed by North Sumatra by 14.88%, West Kalimantan of 8.4%, and South Sumatera by 8.31%. (Ministry Agriculture, 2014: 14).

Input accessibility such as convenience for get raw materials and supporting materials which, namely oil palm seeds and easy fertilizers found in Indonesia. Palm seed can obtained from several official manufacturers but several the need for seeds is still imported from Malaysia above consideration of meeting the needs that have not been fulfilled.

In addition, imports are carried out because sometimes the quality of seeds in Indonesia is not so good compared to seeds from Malaysia. Fertilizer functions to supply the ingredients that is needed by oil palm plants for help accelerate the growth of oil palm the.

From Figure 5 we can see value of Revealed Comparative Advantage (RCA). RCA greater than 1 indicates the export of Indonesia palm oil has strong competitiveness in international market. The average RCA value based on calculation is 9,32. It could tell us that Indonesia palm oil has strong competitiveness in International market.

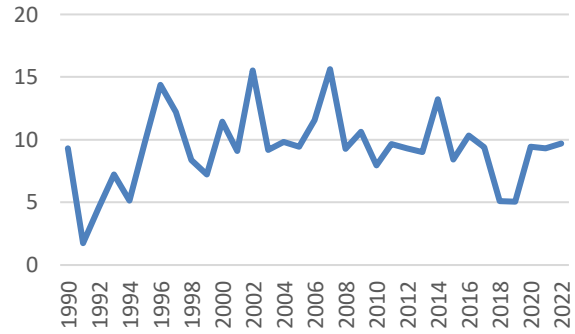

Figure 5. Revealed Comparative Advantage (RCA) of Palm Oil in Indonesia Years 1990-2022 (Percent)
Source : Data Processed, 2024

The main factor that causes Indonesia's comparative advantage is high is the values of Indonesia palm oil exports tend to be the highest among other countries (Table 1). The highest export value of Indonesia palm oil is due to its volume annually always increase and bigger among the other countries (Table 1). In addition, the excellence also supported palm oil price on the world market. Thus, motivating entrepreneurs palm oil plantations in Indonesia for selling it on the International Market.

CONCLUSION

The competitiveness of Indonesia palm oil still has strong power in International market. It shows based on its average RCA 9,32 percent. Production palm oil in Indonesia is fully able the fulfill the needs of domestic market and still has stock that can be exported to the International market. It can be seen by its SSR. The average SSR of palm oil in Indonesia is 19,62 percent.

That is why Indonesia relatively not depends on imported palm oil especially to fulfill the needs of the palm oil commodity domestic it is showed by its IDR that less than 1.

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