

THE PHENOMENON OF INCREASING PALM OIL PRICES AND THE FEASIBILITY OF BIODIESEL MANDATORY PROGRAM

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RESUME

The increase in world crude oil and vegetable oil prices (including palm oil) was one of the effects of the Russia-Ukraine War. If you look at the development of world palm oil prices for the last three years, it shows that the upward trend in prices began in the middle of 2020. One of the factors that caused this price trend was a supply shock that caused a decline in palm oil production. A supply shock was formed as a result of the climate anomalies (El-Nino and IOD+), the COVID-19 pandemic and the implementation of B30 in Indonesia, and the Russia-Ukraine war. The accumulation of supply shocks further pushed palm oil prices to continue to rise. With the implementation of biodiesel, the increase in the price of palm oil and crude oil will increase the market index price (HIP) of biodiesel and diesel. This condition affects the disparity between the prices and the feasibility of the program. Even though the increase in prices has led to an increase in the market index price (HIP) of biodiesel and diesel, the difference is expected to be getting smaller. This condition shows that palm biodiesel is quite competitive as well as provides momentum to continue the biodiesel program in Indonesia. Thus, the objectives of biodiesel development, such as energy independence, a healthy trade balance, and reducing greenhouse gas emissions, will soon be achieved.

INTRODUCTION

The Russia-Ukraine War, which began on February 24, 2022, has brought about new dynamics in global markets. Russia is the world's Top-3 crude oil producer. Meanwhile, Russia and Ukraine are also the world's largest producers and exporters of sunflower seed oil in the world. Given their position, this war affected the global supply chain, resulting in rising prices for crude oil and vegetable oil, including palm oil prices.

The increase in world palm oil prices was not only caused by the Russia-Ukraine War. This price trend has started since mid-2020. On the supply side, the increase in palm oil prices is due to production, which tends to decrease. The decline in production was the impact of the accumulation of supply shocks that occurred due to the El Nino, the COVID-19 pandemic and the Russia-Ukraine war. The dynamics of production and supply of other vegetable oils (soybean oil, rapeseed oil, and sunflower seed oil) also contributed to the higher price of palm oil.

The phenomenon of increasing crude oil and palm oil prices in the global market raises critical questions regarding the impact on the implementation of the biodiesel program. Therefore, this article will discuss the

phenomenon of increasing palm oil prices from the supply side and its effect on the feasibility of the biodiesel program.

THREE PHASE OF INCREASING PALM OIL PRICES

World palm oil (CPO) prices have shown an increasing trend in the last three years (Figure 1). From the supply side, there was a supply shock caused the increase in CPO prices. The following are the three phases of the supply shock that led to an upward trend in world CPO prices from 2019 to March 2022.

The first phase is the climate anomaly. In 2019, Indonesia and Malaysia experienced two climate anomaly phenomena, namely El-Nino and positive IOD (PASPI, 2019). This climatic phenomenon causes a significant decrease in rainfall, resulting in a long and extreme dry season. In addition to causing low levels of rainfall, these climate anomalies also cause forest and land fires. The impact of the dry climate and forest and land fires causes low productivity of oil palm plantations.

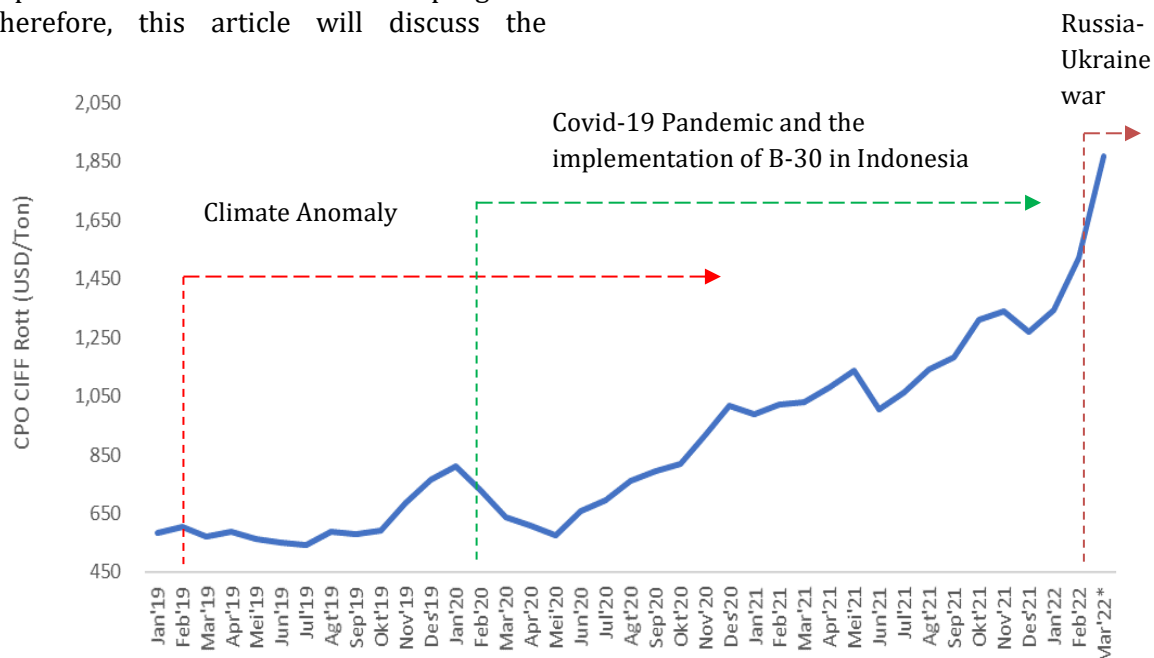


Figure 1. The Palm Oil (CPO) Oil Price (CIFF Rotterdam) (Source: World Bank and GAPKI*)

*) CPO CIFF Rotterdam's average price until March 21, 2022.

The low productivity of palm oil is also caused by the reduced use of fertilizers. As a form of disincentive due to the low prices of CPO and FFB in the previous year, companies and smallholders are less than optimal in fertilizing. The decline in palm oil productivity, also due to non-optimal replanting program and the enactment of the Presidential Instruction on the Moratorium, has caused palm oil production to decline (PASPI, 2020).

In contrast to Indonesia and Malaysia, which experienced the El-Nino climate anomaly in 2019, other vegetable oil-producing countries experienced this phenomenon in 2021. Droughts that occurred in soybean oil producing countries such as Argentina, Brazil, and Paraguay caused soybean oil production to decline. Production of rapeseed oil in Canada and France also declined due to the drought.

The second phase is the COVID-19 pandemic and the implementation of B30 in Indonesia. The COVID-19 pandemic, which is accompanied by a lockdown and restrictions on socioeconomic activities in several countries, has caused production and supply chain problems for all commodities in the world. Likewise, world palm oil production has been affected by the pandemic. Malaysian palm oil production has decreased significantly due to the shortage of plantation workers during the pandemic. As the outbreak has also caused disruptions in the palm oil supply chain to importing countries, the logistics (containers and tankers) were hampered during that period.

Although the decline in Indonesian palm oil production was not as large as the decline in Malaysian production, the implementation of the mandatory B30 policy in Indonesia caused palm oil stocks to decline. The B30 program has led to an increase in palm oil absorption from 5.8 million tons of CPO in 2019 to 7.2 million tons of CPO in 2020 and

7.3 million tons of CPO in 2021 (Sitanggang, 2021). This causes the supply and stock of world palm oil to decrease, resulting in excess demand.

The third phase is the Russia versus Ukraine War. One of the impacts caused by the war involving the two countries is the commodity sector route. The commodities in question include crude oil and sunflower seed oil.

Russia is a big country in the world's energy sector. Based on IEA data (2022), Russia is included in the top-3 largest crude oil producers in the world with a production volume of 10.5 million barrels per day. Russia is also listed as the world's second-largest exporter, with an export share of 11 percent.

Given this position, the Russia-Ukraine war had an impact on the flow of the world crude oil commodity trade. Economic sanctions in the form of an embargo on imports of Russian crude oil imposed by the United States and Britain have also pushed the price of world crude oil to continue to rise. World crude oil prices have risen above USD 100 per barrel, which is the highest level since 2008.

The increase in world crude oil prices caused production costs to increase, considering that crude oil is an input for all sectors. The high production costs will be caused by a decrease in commodity production, including palm oil production. The decline in production could be one of the factors driving the increase in palm oil prices.

The upward trend in crude oil prices can also directly affect world palm oil prices because these two products have a positive and significant correlation (Purba and Hartoyo, 2010; Hartoyo et al., 2011; PASPI, 2016; Kurniawan et al., 2020; Zaidi et al., 2021). This means that an increase in world oil prices will be followed by an increase in world CPO prices, and vice versa (Figure 2).

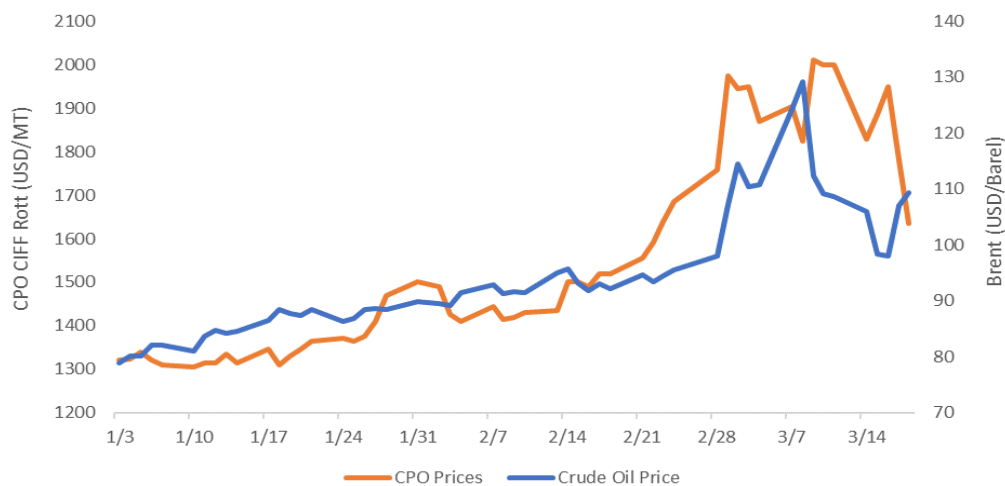


Figure 2. The Crude Oil (Brent) Prices and CPO Prices (CIFF Rott) Throughout 2022 (Source: Investing.com)

The positive relationship between crude oil and palm oil is because these two products are substituted. Palm oil is a biodiesel feedstock. Palm biodiesel is an alternative renewable energy that can replace fossil fuels (Purba, 2010; Hartoyo et al., 2011; Khalid et al., 2018). This also shows that the increase in world crude oil prices will be followed by an increase in demand for palm oil as a feedstock for biodiesel. This increased demand has also contributed to an increase in world palm oil prices.

Apart from the crude oil commodity route, the impact of the Russia-Ukraine war can also be transmitted through the sunflower seed oil commodity route. These two countries are major producers and exporters of sunflower seed oil, accounting for 78 percent of total exports. The war disrupted the supply chain of sunflower oil to the world market. This condition means importing countries will increase imports of palm oil to substitute for sunflower seed oil needs.

Thus, climate anomalies (El-Nino and IOD+), the COVID-19 pandemic and the Russia-Ukraine war became supply shocks that accumulated, causing palm oil to continue to increase beyond prediction. The price of palm oil for the March 2022 period is around USD 1700–1900 per tonne. In fact, the price of palm oil has reached its highest level in history, namely at the level of USD 2,010 per tonne on March 9, 2022.

THE IMPACT ON THE FEASIBILITY OF PALM BIODIESEL

Biodiesel development in Indonesia aims to reduce dependence on fossil fuels (energy security) and contribution of carbon emissions (Sipayung, 2018; PASPI Monitor, 2021). The development of biodiesel is also a solution to the increase in world crude oil (diesel) prices. The increase in world crude oil prices has caused many countries to consider the use of vegetable oil-based energy (Khalid et al., 2018).

Indonesia is a country that is fully committed to the development of biodiesel. This is indicated by the support of mandatory policies in implementing biodiesel development. Through the Biodiesel-30 (B30) program, Indonesia has become the first country in the world to develop renewable energy with a blending rate of up to 30 percent.

The success of biodiesel development in Indonesia cannot be separated from the role of the Oil Palm Plantation Fund Management Agency (BPDPKS). This is because one of the uses of the Palm Oil Fund managed by BPDPKS is to provide incentives for biodiesel development in Indonesia. This incentive is used to cover the difference between the market index price (HIP) of biodiesel and diesel.

With the increase in crude oil prices and CPO prices (Figure 2), these conditions will affect the sustainability of the development of biodiesel in Indonesia. The increase in crude oil and CPO prices in the world market caused

HIP Diesel and HIP Biodiesel prices to also increase. The price disparity will also affect the adequacy of the biodiesel incentive fund.

Referring to the Decree of the Minister of Energy and Mineral Resources Number 149 K/12/MEM/2020 concerning the Market Index Price (HIP) of Fuel Oil, the determination of the HIP for Diesel Oil is based on the published price of MOPS or Argus Gas Oil type 0.25 percent Sulfur. The MOPS price also refers to and follows the trend of Brent crude oil prices (Sipayung, 2018).

Meanwhile, the HIP Biodiesel formulation refers to the average price of domestic palm oil (CPO at KPB Nusantara),

the cost of converting raw materials into biodiesel, and transportation costs. Domestic palm oil prices are the result of world palm oil transmission. This means that if the price of world palm oil increases, the domestic price of domestic will also rise and have an impact on Biodiesel HIP.

The Ministry of Energy and Mineral Resources has set a diesel HIP for January 2022 at Rp. 7,506 per liter. Meanwhile, the Directorate General of EBTKE has also announced the 2022 Biodiesel HIP, which is Rp. 13,177 per liter for the January period, Rp. 13,867 per liter for the month of February, and Rp. 14,436 per liter in March (Figure 3).

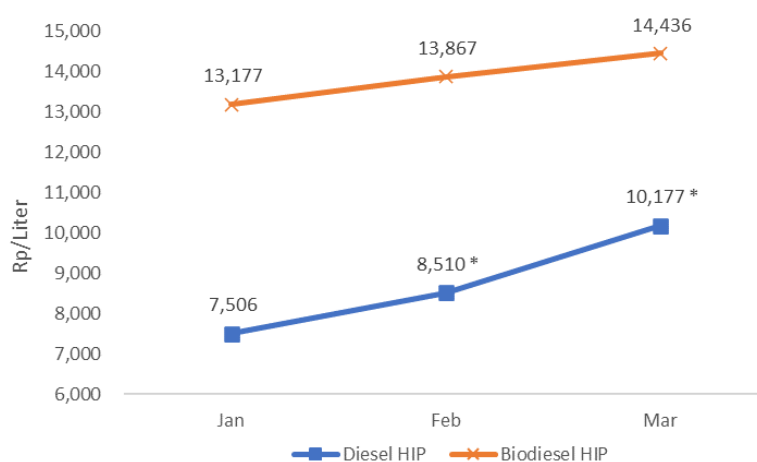


Figure 3: Disparity of Biodiesel HIP and Diesel HIP in January-March 2022 (Source: Directorate General of Oil and Gas, EBTKE, PASPI*, 2022).

*) Forecast for Diesel HIP based on rising Brent crude oil prices.

The increase in crude oil and palm oil prices caused Diesel HIP and Biodiesel HIP to increase during the period January–March 2022 (Figure 3). Despite the increase, the disparity in Diesel HIP and Biodiesel HIP is getting smaller. The amount of the difference in the January 2022 period is Rp. 5,671 per liter and is estimated to decrease to Rp. 4,259 per liter in March 2022.

The disparity between Diesel HIP and Biodiesel HIP is getting smaller, indicating that palm biodiesel is becoming more competitive, thus saving biodiesel incentive funds. This condition can also be used as momentum to maintain the sustainability of the mandatory biodiesel program in Indonesia. Thus, the objectives of biodiesel development, such as energy independence, a healthy trade balance, and reducing

greenhouse gas emissions, will soon be achieved.

CONCLUSION

The world palm oil price shows an increasing trend, even reaching a record high price in the last three years. One of the factors causing the price trend is the accumulation of a supply shock that has an impact on the decline in palm oil production.

There are three phases in the development of world palm oil prices that are affected by the supply shock, namely: (1) the El-Nino and IOD+ climate anomaly phases that occurred in 2019; (2) the COVID-19 Pandemic phase and the implementation of B30 in Indonesia in 2020; and (3) the Russia-Ukraine war in 2022.

On the other hand, the increase in palm oil prices (due to an accumulation of supply shocks) and crude oil prices (the impact of the war and oil embargo) has an effect on the feasibility of the biodiesel program in Indonesia. Although the increase in prices has led to an increase in the market index price (HIP) of biodiesel and diesel, the difference is estimated to be getting smaller. This condition shows that palm biodiesel is quite competitive as well as provides momentum to continue the biodiesel program in Indonesia.

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