

## Macroeconomic Factors Affecting The Volume Of Indonesian Cocoa (*Theobroma Cacao L*) Exports, 1990–2024

Yosefina Niis<sup>1\*</sup>, Agnes Quartina Pudjiastuti<sup>2</sup>, Jatmiko Setiaji<sup>3</sup>

<sup>1,2,3</sup> Master's Program in Agricultural Economics, Graduate School, Tribhuwana Tungga Dewi University, Malang

Corresponding email: [itsyosefina02@gmail.com](mailto:itsyosefina02@gmail.com)

### Abstract

*This study aims to analyze the factors influencing the volume of Indonesian cocoa exports from 1990 to 2024. The variables used include world cocoa prices, domestic cocoa prices, domestic coffee prices, domestic rubber prices, domestic CPO prices, domestic cocoa production, domestic cocoa land area, Indonesian cocoa consumption, world coffee production, and world cocoa production, as well as Indonesia's cocoa export volume. This study employs a quantitative approach using 35 years of time-series data. The analysis method used is multiple linear regression in SPSS. The results indicate that only domestic cocoa production has a positive and significant effect, while domestic cocoa consumption has a negative and significant effect on Indonesia's cocoa export volume. The other variables do not have a significant effect. An adjusted  $R^2$  of 0.677 indicates that this model explains 67.7% of the variation in Indonesia's cocoa export volume, while the remainder is explained by factors outside the model. Domestic cocoa production and consumption play a dominant role in determining Indonesia's cocoa export volume. Therefore, increasing domestic production and consumption is a crucial step in maintaining the stability of Indonesia's cocoa exports.*

**Keywords:** Exports, cocoa, macroeconomics, consumption, production.

### INTRODUCTION

Cocoa (*Theobroma cacao L.*) is one of the strategic plantation commodities that plays a vital role in Indonesia's economy, both as a source of foreign exchange and as a provider of employment and income for farmers.

361

IJEBIR, Volume 05 Issue 04, 2026



Copyright at authors some right reserved this work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

This commodity has the advantage of being harvestable year-round, thereby offering the potential for relatively sustainable income (Agriculture, 2022). Over the past two decades, the area under cocoa cultivation in Indonesia has increased significantly, with smallholder plantations dominating the sector (Amalia et al., 2024)

Additionally, cocoa plays a role in supporting agro-industrial development, particularly as a raw material for the food, beverage, cosmetic, and pharmaceutical industries (Zulaihah, 2024). The high demand for processed cocoa products, such as chocolate, is driven by their health benefits, including their antioxidant properties, which can reduce the risk of heart disease and improve cognitive function (Neshatdoust, S.; Saunders, C.; Castle, S. M.; Vauzour, D.; Williams, C.; Butler, L.; Lovegrove, J. A.; Spencer, 2016; Agriculture, 2023). This indicates that cocoa has significant market potential both domestically and internationally.

In terms of quality, Indonesian cocoa is quite competitive in the global market, especially when it undergoes a proper fermentation process. Additionally, the high melting point of Indonesian cocoa makes it highly sought after in the processing industry (Budiman, 2016). Indonesia currently ranks as one of the world's leading cocoa producers, with ample export opportunities despite facing global market dynamics (FAOSTAT, 2022).

However, the development of Indonesian cocoa exports in recent years has shown a fluctuating trend and a tendency to decline. This situation indicates the influence of various factors, particularly macroeconomic factors, that affect cocoa export performance. Therefore, a more in-depth study is needed to analyze how macroeconomic factors influence the volume of Indonesian cocoa exports.

A number of previous studies have shown that Indonesia's cocoa exports are influenced by various economic factors. Research by (Padang, D.; Abbas, T.; Rahmah, M.; Trisniarti, 2025) found that production, government-owned land area, and the exchange rate have a significant effect on cocoa export volume. Meanwhile, (Meidrieswida, 2024) showed that simultaneously, the variables of production, world cocoa prices, the exchange rate, and export prices have a significant effect, although not all are significant when considered partially.

Another study by (Putri, A.; Juanda, 2024) using the ARDL approach showed that production significantly affects cocoa exports, both in the short and long term, while the exchange rate and international prices tend to be insignificant. Research by (Puspita, R.; Hidayat, K.; Yulianto, 2018) also found that domestic cocoa production is a dominant factor influencing Indonesian cocoa exports. Additionally, (Faris, M. M.; Wisnujati, 2019)



state that production and consumption have a significant impact on cocoa exports, while other variables, such as exchange rates and prices, do not always show a significant influence.

In general, these studies indicate that production, price, exchange rates, and consumption are key variables in determining cocoa export performance. However, there remain discrepancies in research findings, particularly regarding the significant influence of these variables. Therefore, this study re-examines the impact of macroeconomic factors on Indonesia's cocoa exports using a broader range of variables and a longer time period.

From a macroeconomic perspective, cocoa exports are part of aggregate demand influenced by various components such as consumption, investment, and international market conditions (Salsabila et al., 2024). Theoretically, net exports represent the difference between exports and imports, influenced by factors such as exchange rates, international prices, and domestic production conditions. Additionally, international trade theories such as comparative advantage explain that a country will export commodities in which it has a higher relative efficiency compared to other countries. In international trade, export activities are influenced by global market conditions, trade relations between countries, and prevailing economic policies (Ghauri, 1986).

## **Objectives**

This study aims to analyze the long-term impact of macroeconomic factors on Indonesia's cocoa export volume, with the expectation of providing appropriate policy recommendations to enhance the competitiveness and stability of cocoa exports in the future.

## **LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

### **Macroeconomics**

Macroeconomics is the study of the economy as a whole (at the aggregate level), encompassing the analysis of aggregate economic behavior, such as changes in aggregate income, general price changes, and the unemployment rate, without focusing too much on specific details. Aggregate behavior refers to the behavior of all households and firms collectively. For example, when discussing markets, what we are referring to here is the interaction between the labor market, the commodity market, and the financial market—not a market for a single type of good, as in microeconomics (such as the cocoa



market, the electronics market, or the textile market)—but markets as an integrated whole that interact with one another (Salsabila et al., 2024).

### International Trade

International trade is a commercial activity conducted between countries to meet the needs of each nation. International trade occurs due to differences in resources, technology, and production capabilities among countries, thereby driving the exchange of goods and services (Purba et al., 2023).

According to David Ricardo's theory of comparative advantage, a country will tend to export commodities that it can produce more efficiently than other countries. Through such specialization, each country can benefit from international trade (Hastarini, 2017).

### Exports and Imports

Exporting is the activity of selling or shipping goods from the domestic market to foreign markets to generate foreign exchange for the country. Meanwhile, importing is the activity of bringing goods from foreign markets into the domestic market to meet domestic needs. Export and import activities are a vital component of international trade as they can influence a country's economic growth.

### Macroeconomic Factors

Several macroeconomic factors influencing the volume of Indonesia's cocoa exports include global cocoa prices, Indonesia's cocoa production, the area of cocoa plantations, and Indonesia's cocoa consumption. Global cocoa prices can affect international market demand for Indonesian cocoa. High cocoa production increases the supply available for export. Additionally, the area of cocoa plantations is linked to national cocoa production capacity, while domestic cocoa consumption can affect the amount of cocoa available for export.

### Assumptions

H0= Simultaneously, none of the independent variables has a significant effect on the volume of Indonesia's cocoa exports.

H1= Simultaneously, all independent variables have a significant effect on the volume of Indonesian cocoa exports.

H0= Partially, World Cocoa Price, Domestic Cocoa Price, Domestic Coffee Price, Domestic Rubber Price, Domestic CPO Price, Domestic Cocoa Production,

364



Domestic Cocoa Farmland Area, Indonesian Cocoa Consumption, Domestic Coffee Production, and World Cocoa Production do not have a significant effect on Indonesia's cocoa export volume.

H1= Partially, World Cocoa Prices, Domestic Cocoa Prices, Domestic Coffee Prices, Domestic Rubber Prices, Domestic CPO Prices, Domestic Cocoa Production, Domestic Cocoa Farmland Area, Indonesian Cocoa Consumption, World Coffee Production, and World Cocoa Production have a significant effect on Indonesia's Cocoa Export Volume

## RESEARCH METHOD

This study employs a quantitative approach using time-series data spanning the period 1990–2024. Data were obtained from various official sources, including the Central Statistics Agency (BPS), FAOSTAT, Bank Indonesia, and the Center for Agricultural Data and Information Systems (Pusdatin).

The dependent variable in this study is Indonesia's cocoa export volume, while the independent variables include global cocoa prices, domestic cocoa prices, prices of substitute commodities (coffee, rubber, and CPO), domestic cocoa production, cocoa land area, domestic cocoa consumption, as well as global coffee and cocoa production.

The analysis method used is multiple linear regression to determine the effect of independent variables on the dependent variable. The regression model used is:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + e$$

Notes:

Y = Indonesia's Cocoa Export Volume (tons/year)

X1= World Cocoa Price (US\$/MT)

X2= Domestic Cocoa Price (IDR/kg)

X3= Domestic Coffee Price (Rp/kg)

X4= Domestic Rubber Price (Rp/kg)

X5= Domestic CPO Price (Tons/Year)

X6= Domestic Cocoa Production (Tons/Year)

X7= Domestic Cocoa Farmland Area (ha)

X8= Indonesian Cocoa Consumption (Tons/Year)

X9= Global Coffee Production (MT/Year)

X10= Global Cocoa Production (MT/Year)

a = Constant

b(1) –b10= Regression coefficients for each independent variable

365



$e$  = Error term

This regression model was used to analyze the effect of independent variables on Indonesia's cocoa export volume.

## RESULTS AND DISCUSSION

### Trends in Indonesia's Cocoa Export Volume, 1990–2024

The development of Indonesia's cocoa export volume from 1990 to 2024 shows an upward trend, although it has fluctuated over time. A significant increase occurred during the early period of 1990–2000, marked by a surge in export volume to nearly four times the previous level. This was driven by the expansion of cocoa plantations and increased domestic cocoa production. The development of Indonesia's cocoa export volume during the 1990–2024 period is presented in Table 1 and Figure 1.

**Table 1: Indonesia's Cocoa Export Volume, 1990–2024**

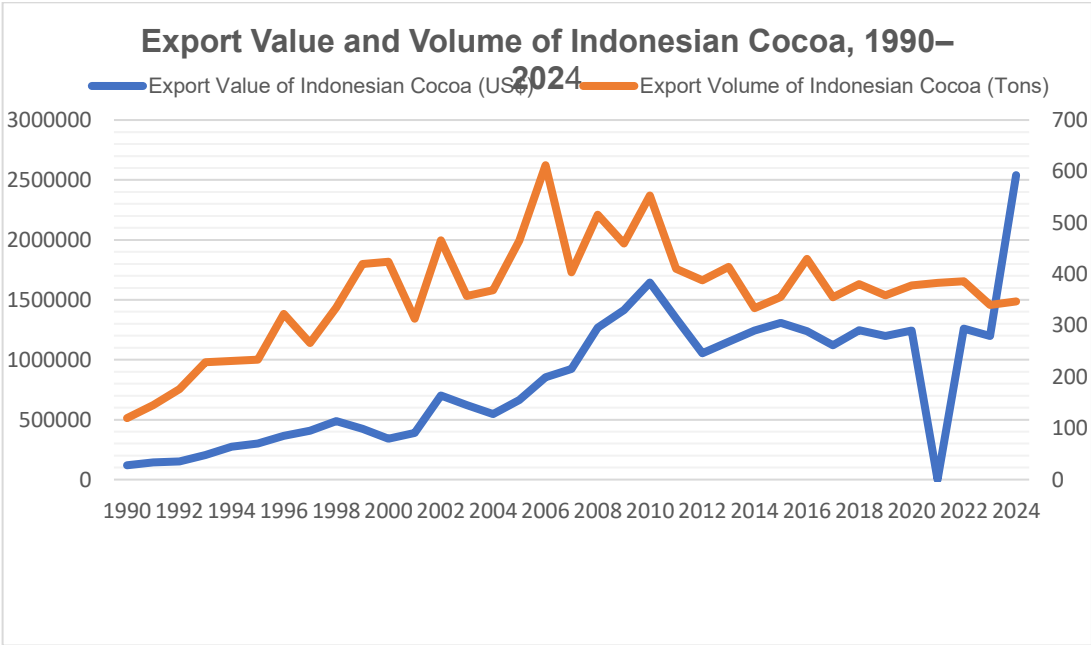
| Year | Export Volume (Tons) | Year | Export Volume (Tons) | Year | Export Volume (Tons) |
|------|----------------------|------|----------------------|------|----------------------|
| 1990 | 119,725              | 2002 | 465,621              | 2014 | 333,679              |
| 1991 | 145,217              | 2003 | 357,737              | 2015 | 355,321              |
| 1992 | 176,001              | 2004 | 368,758              | 2016 | 430,029              |
| 1993 | 228,799              | 2005 | 465,162              | 2017 | 354,752              |
| 1994 | 231,168              | 2006 | 612,124              | 2018 | 380,747              |
| 1995 | 233,593              | 2007 | 403,547              | 2019 | 358,482              |
| 1996 | 322,858              | 2008 | 515,576              | 2020 | 377,869              |
| 1997 | 265,949              | 2009 | 459,799              | 2021 | 382,712              |
| 1998 | 334,807              | 2010 | 552,892              | 2022 | 385,981              |
| 1999 | 419,874              | 2011 | 410,257              | 2023 | 339,989              |



|      |         |      |         |      |         |
|------|---------|------|---------|------|---------|
| 2000 | 424,088 | 2012 | 387,803 | 2024 | 346,667 |
| 2001 | 313,224 | 2013 | 414,087 |      |         |

Source: FAOSTAT, BPS, 2026 (processed).

Figure 1: Development of Indonesia's Cocoa Export Volume and Value, 1990–2024



Based on the graph showing the development of Indonesia's cocoa export volume and value from 1990 to 2024, it is evident that export volume has experienced significant fluctuations from year to year. Export volume tended to increase during the early to mid-2000s, then fluctuated and remained relatively stagnant in the subsequent period through 2024. A substantial increase in cocoa export volume occurred in 2006, reaching 612,124 tons.

This was driven by increased domestic cocoa production, the expansion of plantation areas, and strong international market demand for Indonesian cocoa. Additionally, during that period, Indonesia primarily exported cocoa in the form of raw beans, resulting in relatively high export volumes. However, after 2010, cocoa export volumes began to decline and have since fluctuated. This trend was driven by the



implementation of cocoa downstream processing policies through export duties on cocoa beans, increased domestic consumption by the processing industry, and a decline in domestic cocoa production due to pest infestations and reduced cocoa plant productivity.

In contrast to export volume, the value of cocoa exports has shown a long-term upward trend. Although there were some declines in certain years, overall export value has increased significantly, particularly in recent years. In fact, in 2024, export value surged to approximately 2.54 billion US\$, even though export volume did not see a significant increase. This situation indicates that the increase in export value is driven more by rising global cocoa prices than by an increase in export volume. The rise in global cocoa prices in 2024 was influenced by a decline in global cocoa supply due to production disruptions in major producing countries such as the Ivory Coast and Ghana. These conditions caused international cocoa prices to surge sharply, leading to an increase in the value of Indonesia's cocoa exports even though export volume remained relatively stable.

The divergence in trends between export volume and value indicates that the increase in cocoa export value is not solely driven by export volume but also by price factors and the composition of exported products. The rise in cocoa prices in the international market is one of the primary factors behind the increase in export value, even as volumes remained relatively stable. Additionally, the shift in Indonesia's cocoa export structure from raw materials toward processed products such as *cocoa butter*, *cocoa powder*, and *cocoa paste* has also contributed to the increase in export value.

Processed products have a higher value-added compared to cocoa beans, resulting in greater export value even though volumes did not increase significantly. These findings align with the research by (Faris, M. M.; Wisnujati, 2019) in *the Journal of Socio-Agribusiness*, which states that Indonesia's cocoa exports are influenced by various factors, so export volumes do not always increase consistently. Additionally, (Gautama, 2019) in *the Journal of Customs and Excise Perspectives* found that global cocoa prices have a significant influence on export value, so an increase in export value can occur without a corresponding increase in volume. Research by (Purnomo, D. M.; Koesriwulandari; Siswati, 2019) also indicates that price and domestic production factors play a crucial role in determining Indonesia's cocoa exports.



### The Influence of Factors on Indonesia's Cocoa Export Volume

#### Classical Assumption Tests

The results of the classical assumption tests indicate that the regression model meets the established criteria. The normality test yielded an Asymp. Sig. value of 0.059 ( $>0.05$ ), indicating that the data are normally distributed. The multicollinearity test showed a tolerance value  $>0.10$  and VIF  $<10$ , meaning there is no multicollinearity among the independent variables. Furthermore, the heteroscedasticity test showed a significance value  $>0.05$ , indicating no heteroscedasticity. The autocorrelation test using the Run Test yielded a significance value of 0.168 ( $>0.05$ ), suggesting no autocorrelation in the model. Thus, the regression model is suitable for further analysis.

#### Simultaneous and Partial Effects

The test results indicate that all independent variables simultaneously have a significant effect on Indonesia's cocoa export volume. This suggests that the combination of price, production, consumption, and global market conditions collectively determines the performance of Indonesia's cocoa exports. Based on the F-test results, the calculated F-value of 8.133 is greater than the critical F-value of 2.28 at a significance level of 0.001 ( $<0.05$ ). This indicates that all independent variables simultaneously have a significant effect on Indonesia's cocoa export volume.

**Table 2: Results of Simultaneous and Partial Regression Tests**

| Yes | Variable                     | Regression Coefficient (B) | Standard Error | Beta   | t-value | Sig   |
|-----|------------------------------|----------------------------|----------------|--------|---------|-------|
|     | World Cocoa Price            | -0.016                     | 0.019          | -0.174 | -0.835  | 0.412 |
|     | Domestic Cocoa Price         | 3.31                       | 3.495          | 0.258  | 0.947   | 0.353 |
|     | Domestic Coffee Price        | 4,263                      | 3,306          | 0.394  | 1.29    | 0.209 |
|     | Domestic Rubber Price        | -0.336                     | 1.96           | -0.024 | -0.171  | 0.865 |
|     | Domestic CPO Price           | 0.039                      | 0.064          | 0.101  | 0.606   | 0.55  |
|     | Domestic Cocoa Production    | 0.461                      | 0.083          | 0.93   | 5,564   | 0     |
|     | Domestic Cocoa Farmland Area | -0.076                     | 0.055          | -0.343 | -1.393  | 0.177 |



|   |                             |                      |                    |                                       |                                       |                                       |
|---|-----------------------------|----------------------|--------------------|---------------------------------------|---------------------------------------|---------------------------------------|
|   | Domestic Cocoa Consumption  | -1,809               | 0.67               | -<br>0.765                            | -2,699                                | 0.013                                 |
|   | World Coffee Production     | -0.102               | 0.245              | -<br>0.103                            | -0.418                                | 0.68                                  |
| 0 | World Cocoa Production      | 0.036                | 0.02               | 0.36<br>5                             | 1.779                                 | 0.088                                 |
|   | <b>Calculated F = 8.133</b> | <b>Ftable = 2.28</b> | <b>sig. = 0.05</b> | <b>Adjusted R<sup>2</sup> = 0.677</b> | <b>Adjusted R<sup>2</sup> = 0.677</b> | <b>Adjusted R<sup>2</sup> = 0.677</b> |

Source: Processed Secondary Data, 2026

Based on the t-test results, only the variables of domestic cocoa production and domestic cocoa consumption have a significant effect on Indonesia's cocoa export volume. Domestic cocoa production has a significant positive effect, while domestic cocoa consumption has a significant negative effect. Meanwhile, the other variables do not have a significant effect because their significance values are above 0.05.

### The Effect of Domestic Cocoa Production on Indonesia's Cocoa Export Volume

The research results indicate that domestic cocoa production has a positive and significant effect on Indonesia's cocoa export volume. This implies that an increase in cocoa production will directly boost export volume. Theoretically, this aligns with the concept of supply in economics, where increased output expands the quantity of commodities available for marketing, including to international markets. Thus, the higher the domestic cocoa production, the greater the opportunity to increase exports.

These results are also consistent with the research by (Padang, D.; Abbas, T.; Rahmah, M.; Trisniarti, 2025), (Putri, A.; Juanda, 2024), and (Puspita, R.; Hidayat, K.; Yulianto, 2018), which state that domestic cocoa production is the primary factor influencing Indonesia's cocoa export volume. This is because exports are highly dependent on the availability of domestic supply.

### The Effect of Domestic Cocoa Consumption on Indonesia's Cocoa Export Volume

The research results indicate that domestic cocoa consumption has a negative and significant effect on Indonesia's cocoa export volume. This means that the higher the domestic consumption, the lower the export volume will be. These findings align with the research by (Pudjiastuti, A. Q.; Anindita, R.; Hanani, N.; Kaluge, 2013) in the study *"Sugar Price Policy and Indonesia's Trade Balance"* as well as (Pudjiastuti, A. Q.; Anindita, R.;

370



Hanani, N.; Kaluge, 2013) in their study *"Changes in Indonesia's Trade Balance as a Result of the Elimination of Sugar Import Tariffs,"* which states that exports play a crucial role in determining the trade balance of a commodity, so changes in domestic consumption can affect trade balance and export volume.

Additionally, the study by (Lero, O. R.; Pudjiastuti, 2020) in *"Factors Influencing Indonesia's Cashew Export Volume"* explains that the export performance of agricultural commodities is influenced by domestic demand conditions and the nation's production capacity to meet international market needs. These findings align with the results of this study, where increased domestic cocoa consumption caused the majority of production to be absorbed for domestic needs, thereby reducing export volumes.

This can be explained by the fact that increased domestic consumption absorbs the majority of available cocoa production, thereby reducing the amount of cocoa available for export. This situation indicates a *trade-off* between meeting domestic needs and exports. Furthermore, the growth of the domestic cocoa processing industry is another factor contributing to the decline in cocoa bean exports, as the majority of production is utilized as raw material for domestic industries.

### **The Impact of Global Cocoa Prices on Indonesia's Cocoa Export Volume**

The research results indicate that global cocoa prices do not have a significant impact on Indonesia's cocoa export volume. This suggests that price fluctuations in the international market do not directly affect the volume of Indonesia's cocoa exports. This situation may be attributed to several factors, such as the dominance of domestic production factors, government policies involving export duties, and the existence of long-term trade contracts that keep export volumes relatively stable despite price changes. These results align with previous research stating that global cocoa prices are not always the primary determining factor in Indonesia's cocoa exports, particularly when government policy interventions and domestic production constraints are present.

### **Implications of the Research Findings**

These research results indicate that domestic cocoa production plays a dominant role as an internal macroeconomic factor, compared to external macroeconomic factors, in determining the volume of Indonesia's cocoa exports. Specifically, domestic cocoa production, Meanwhile, external macroeconomic factors such as global cocoa prices have not been able to exert a significant influence on the volume of Indonesia's cocoa exports because exports are more influenced by domestic production conditions,

371



downstream processing policies, and domestic industrial demand. This indicates that domestic cocoa production capacity remains the primary factor in supporting the growth of Indonesia's cocoa exports. This finding aligns with the research by (Puspita, R.; Hidayat, K.; Yulianto, 2018), (Faris, M. M.; Wisnujati, 2019), and (Putri, A.; Juanda, 2024), which states that domestic cocoa production has a positive and significant effect on Indonesia's cocoa export volume. This indicates that production availability is the primary factor in enhancing a country's export capacity.

The results of this study are also relevant to the research by (Pudjiastuti, A. Q.; Anindita, R.; Hanani, N.; Kaluge, 2013) on changes in sugar import tariffs in Indonesia, which states that international trade policies can affect a country's trade balance, exports, and imports. In the context of this study, Indonesia's cocoa downstreaming policy has also influenced the development of Indonesia's cocoa export volume after 2010. Furthermore, the study by (Pudjiastuti, A. Q.; Kembauw, 2020) on sugar pricing policies and Indonesia's trade balance explains that changes in pricing and trade policies can affect the stability of a commodity's trade. These findings support the results of this study, which indicate that government policies also influence the development of Indonesia's cocoa exports.

However, the results of this study differ from those of (Meidrieswida, 2024), who found that domestic cocoa production does not significantly affect Indonesia's cocoa exports. This discrepancy is likely due to differences in the study period, analytical methods, and the trade policy conditions applied.

## **CONCLUSION**

The development of Indonesia's cocoa export volume during the 1990–2024 period shows a generally increasing trend, but experienced a decline after 2010 due to downstream processing policies and rising domestic consumption. Simultaneously, all independent variables—comprising world cocoa prices, domestic cocoa prices, domestic coffee prices, domestic rubber prices, domestic CPO prices, domestic cocoa production, domestic cocoa land area, Indonesian cocoa consumption, world coffee production, and world cocoa production—significantly influence Indonesia's cocoa export volume. Partially, the variables that significantly influence Indonesia's cocoa export volume are domestic cocoa production and cocoa consumption. The other variables—world cocoa prices, domestic cocoa prices, domestic coffee prices, domestic rubber prices, domestic CPO prices, domestic cocoa land area, world coffee production, and world cocoa production—do not significantly influence Indonesia's cocoa export volume.

372



## REFERENCES

- Amalia, L., Sondari, N., Noertjahyani, Budiasih, Turmuktini, T., & Indriana, K. R. (2024). *More Cocoa* (E. Setiawan & A. N. Ihwati (eds.)). Eureka Media Script.
- Budiman, M. A. (2016). Analysis of Economic Factors of Indonesia's Raw Cocoa Export Volume. *Agricore: Journal of Agribusiness and Agricultural Socio-Economics Unpad*, 1(2), 158–164. <https://doi.org/10.24198/agricore.v1i2.22713>
- FAOSTAT. (2022). *Crops and Livestock Products: Cocoa*.
- Faris, M. M.; Wisnujati, N. S. . K. (2019). Analysis of Indonesian cocoa commodity exports. *Socio-Agribis Scientific Journal*, 19(2), 15–27.
- Gautama, B. P. (2019). The effect of international cocoa prices and exchange rates on the value of Indonesian cocoa exports. *Journal of Customs and Excise Perspective*, 3(2), 85–96.
- Ghuri, P. N. (1986). Guidelines for International Business Negotiations. *International Marketing Review*, 3(3), 72–82.
- Hastarini, D. A. (2017). A Study of the Theory of Economic Thought of the Classical School of Economics and Its Relevance to the Indonesian Economy. *Journal of Economics & Business*, 2(2), 511–524.
- Lero, O. R.; Pudjiastuti, A. Q. . S. (2020). Factors Influencing Indonesia's Cashew Export Volume. *Agrieconomics*, 9(2), 1–10.
- Meidrieswida, A. G. (2024). The effect of the amount of cocoa production, world cocoa prices, exchange rates, and cocoa export prices on cocoa exports in Indonesia. *Journal of Development Economic Dynamics*, 1(2), 73–79. <https://doi.org/10.33005/jdep.v1i2.416>
- Neshatdoust, S.; Saunders, C.; Castle, S. M.; Vauzour, D.; Williams, C.; Butler, L.; Lovegrove, J. A.; Spencer, J. P. E. (2016). High Flavonoid Intake Improves Cognitive Function. *Nutrition and Healthy Aging*, 4(1), 81–93. <https://doi.org/10.3233/NHA-1615>
- Padang, D.; Abbas, T.; Rahmah, M.; Trisniarti, N. (2025). The influence of land area, production and exchange rate on cocoa export volume in Indonesia. *Unimal Journal of Agricultural Economics*, 8(1), 15–26. <https://doi.org/10.29103/jepu.v8i1.22192>
- Agriculture, P. D. and S. I. (2022). *Cocoa Plantation Commodity Outlook* (Suyati, A. A. Susanti, & R. K. P. Widiyanto (eds.)). Agricultural Data and Information System Center of the Secretariat General - Ministry of Agriculture.
- Agriculture, P. D. and S. I. (2023). *Cocoa Plantation Commodity* (A. A. Susanti, R. K. P.



- Widiyanto, & Y. Rohmah (eds.)). Agricultural Data and Information System Center of the Secretariat General- Ministry of Agriculture.
- Pudjiastuti, A. Q.; Anindita, R.; Hanani, N.; Kaluge, D. (2013). Changes Effect of Sugar Import Tariff in Indonesia. *Russian Journal of Agricultural and Socio-Economic Sciences*, 3(15), 31–40.
- Pudjiastuti, A. Q.; Kembauw, E. (2020). Sugar Price Policy and Indonesia's Trade Balance. *International Journal of Scientific and Technology Research*, 9(3), 145–152.
- Purba, A. M., Anastasya, Utami, M., Saparianti, N., Sinar, T. B. M., & Adlina, H. (2023). International Trade Theory: Conceptual Understanding and Its Implications in a Global Context. *Madani: Multidisciplinary Scientific Journal*, 1(5), 938–945.
- Purnomo, D. M.; Koesriwulandari; Siswati, E. (2019). The Influence of Indonesian Cocoa Exports Viewed from International Trade Policy. *Socio-Agricultural Scientific Journal*, 19(2), 28–44.
- Puspita, R.; Hidayat, K.; Yulianto, E. (2018). No Title. *Journal of Business Administration*, 27(1), 1–8.
- Putri, A.; Juanda, R. (2024). The effect of the rupiah exchange rate, international prices and the amount of cocoa production on Indonesia's cocoa export volume. *Unimal Journal of Agricultural Economics*, 7(1), 11–21.
- Salsabila, N., Muna, N., Pradana, V. H., & Nurcahya, W. F. (2024). Analysis of the Effectiveness of Social Assistance (Bansos) in Overcoming Poverty in Indonesia. *Journal of Macroeconomics and Social Development*, 1(4), 1–13. <https://doi.org/10.47134/jmsd.v1i4.317>
- Zulaihah. (2024). *Equilibrium of the Cocoa Commodity Market in South Sulawesi Province*. Muhammadiyah Makassar.

