

## THE IMPACT OF EGYPT'S GROSS DOMESTIC PRODUCT (GDP) ON THE VOLUME OF INDONESIA'S COFFEE EXPORTS (25-Year Data)

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### Abstract

*This study analyzes the effect of Egypt's Gross Domestic Product (GDP, USD) on the volume of Indonesian coffee exports to Egypt (kg) (Harmonized System Code: 090111) over the period 2000–2024 using a simple regression method. The analysis is conducted based on the prediction that there is a relationship between two quantitative variables (GDP → export volume). The quality of the regression equation is assessed using the coefficient of determination, where  $0 \leq R^2 \leq 1$ , which measures the proportion of variability explained by the regression model. The results show that GDP has a positive and statistically significant effect on coffee exports ( $t = 9.49$ ,  $p = 0,0000000202$ ), with an  $R^2$  Value of 0.796, and the F-test result was statistically significant ( $p < 0.001$ ). These findings indicate that Egypt's GDP has a statistically significant simultaneous effect on the volume of coffee exports (*ceteris paribus*). The R-squared value of 0.797 indicates that 79.7% of the variation in coffee export volume can be explained by Egypt's GDP, while the remaining 20.3% is influenced by other factors outside the model.*

**Keywords:** Simple Regression; Coffee Export Volume; GDP; Egypt.

### INTRODUCTION

Coffee is one of Indonesia's leading plantation commodities and holds strategic value both as a source of foreign exchange earnings and as the main livelihood for millions of farmers. Referring to data from the United States Department of Agriculture, in the 2023/2024 period, Indonesia ranked fifth as the world's largest coffee producer, contributing approximately 5% of global coffee production (Faojiah et al., 2025). According to data from Statistics Indonesia, Indonesia's total coffee production in 2024 reached 813,345 thousand tons (Statistics Indonesia, 2025).

In the current era of global trade, exporting coffee to countries outside Indonesia represents a significant opportunity for farmers. Through export activities, farmers have the potential to obtain more favorable prices and gain access to broader market opportunities. Coffee is the agricultural commodity with the largest export value in 2024. This commodity includes unroasted coffee, whether or not decaffeinated. During the period 2020–2024, coffee accounted for an average contribution of 36.08 percent of total exports in the perennial crops agricultural sector. Its contribution to total exports of this sector increased from 35.39 percent in 2023 to 41.85 percent in 2024 (Statistics Indonesia, 2025).

Data from Statistics Indonesia represent that the main destination for Indonesian coffee exports in 2024 was the United States, with an export value of USD 307.4 million, equivalent to 18.93 percent of Indonesia's total coffee exports in that year. This was followed by four other major destination countries: Egypt with an export value of USD 142.5 million; Malaysia with USD 122.3 million; Belgium with USD 115.7 million; and Russia with USD 104.7 million (Statistics Indonesia, 2025). These figures indicate that Egypt has become one of the key export destinations for Indonesian coffee. The export volume of coffee classified under the Harmonized System (HS) code 090111 (not roasted and not decaffeinated) over the period 2012–2024 shows that Indonesia dominates coffee exports to Egypt with a market share of 58%, followed by Vietnam at 19% and Brazil at 9%, with the remainder supplied by other countries (United Nation, 2026). This demonstrates that Indonesian coffee is well accepted by Egyptian consumers in terms of taste, quality, and price.

In addition, Egypt’s economy currently shows strong potential supported by several key factors, although it also faces certain challenges. The International Monetary Fund (IMF) has noted that Egypt’s economy is showing signs of recovery as a result of government reforms. Referring to World Bank data, Egypt’s Gross Domestic Product (GDP) has shown steady growth over time, increasing from USD 218 billion in 2010 to USD 389 billion in 2024 (World Bank, 2026). These facts indicate that Egypt’s economy is experiencing significant growth and simultaneously suggest that there remains substantial opportunity for Indonesian coffee farmers to increase the volume of coffee sales (HS code 090111) to Egypt amid intense competition among coffee-producing countries. Furthermore, it is also important to examine estimates of the impact of GDP on the growth of Indonesian coffee exports to Egypt, analyzed using a 25-year time series dataset, in order to strengthen confidence in the export prospects of Indonesian coffee to Egypt for Indonesian coffee farmers.

## RESEARCH METHODS

### Research Type and Design

The data source used in this research is secondary data obtained from official sources such as official websites, statistical data publications, and related journals. This research uses time series data covering twenty-five years from 2000 to 2024. There are 25 data points for each variable. The commodity data used is coffee export data with the Harmonized System (HS) code 090111 (not roasted and not decaffeinated). The Harmonized System code or HS code, is an international naming and numbering system for classifying logistics goods shipped worldwide. This code is used to simplify the process of product identification in international trade. The data used in the research are listed in Table 1.

Table 1. Data Type and Sources

No	Jenis Data	Sumber
1	Export volume	UN COMTRADE ( <a href="https://comtradeplus.un.org/">https://comtradeplus.un.org/</a> )
2	<i>Gross Domestic Product</i> (GDP)	WORLD BANK ( <a href="https://data.worldbank.org/">https://data.worldbank.org/</a> )
3	Destination country for coffee exports	CENTRAL STATISTICS AGENCY / BPS RI ( <a href="https://www.bps.go.id/publication.html">https://www.bps.go.id/publication.html</a> )
4	Coffee plantation area	DIRECTORATE GENERAL OF ESTATES, MINISTRY OF AGRICULTURE

### Location and Time of Research

The research was conducted in the Jakarta area from January 3, 2025, to January 9, 2025.

### Data Analysis Technique

This research method uses secondary data as the primary data. Subsequently, the data will be analyzed using a simple linear regression approach with Microsoft Excel. The analysis is conducted using a simple linear regression, with export volume serving as the dependent variable (Y), and Gross Domestic Product (GDP) as the independent variable (X).

The general equation of the simple linear regression method in this study is:

$$Y = \alpha + bX$$

Description:

- $\alpha$  = Intercept (value of Y when X = 0)
- $b$  = Regression coefficient (slope of the line)
- Y = Dependent variable (Export volume)
- X = Independent variable (GDP in USD)

**Hypothesis**

H0: Egypt's Gross Domestic Product (GDP) has no effect on the export volume of Indonesian coffee to Egypt.

H1: Egypt's Gross Domestic Product (GDP) has an effect on the export volume of Indonesian coffee to Egypt.

**RESULTS AND DISCUSSION**

**Egypt's GDP from 2000 to 2024**

Based on data from the World Bank, Egypt's Gross Domestic Product (GDP) from 2000 to 2024 shows a generally increasing trend each year. This indicates that Egypt's economy is managed quite well. Despite challenges from both domestic and international geopolitical conditions, Egypt's GDP has been able to grow significantly. Table 1 illustrates that Egypt's GDP from 2000 to 2024 generally shows an upward trend, although it experienced a decline in 2023 and 2024.

**Table 1.** Egypt's Gross Domestic Product (GDP) from 2000 to 2024 (in USD)

Tahun	GDP (USD)	Tahun	GDP (USD)
2000	99.838.543.960	2013	288.434.108.527
2001	96.684.636.119	2014	305.595.408.895
2002	85.146.067.416	2015	329.366.576.819
2003	80.288.461.538	2016	332.441.717.791
2004	78.782.467.532	2017	248.362.771.739
2005	89.660.339.660	2018	262.588.632.527
2006	107.426.086.957	2019	318.678.815.490
2007	130.437.828.371	2020	383.817.841.547
2008	162.818.181.818	2021	424.671.765.456
2009	189.147.005.445	2022	476.747.720.365
2010	218.983.666.062	2023	395.926.075.163
2011	235.989.672.978	2024	389.059.911.004

(Source: World Bank, 2026)

**Coffee Export Volume to Egypt from 2000 to 2024**

Based on time series data from UN Comtrade, the export volume of coffee (HS Code 090111) from Indonesia to Egypt from 2000 to 2024 shows a generally increasing trend each year. This indicates that the Egyptian coffee market remains quite attractive for coffee exporters in Indonesia (**Figure 1**).

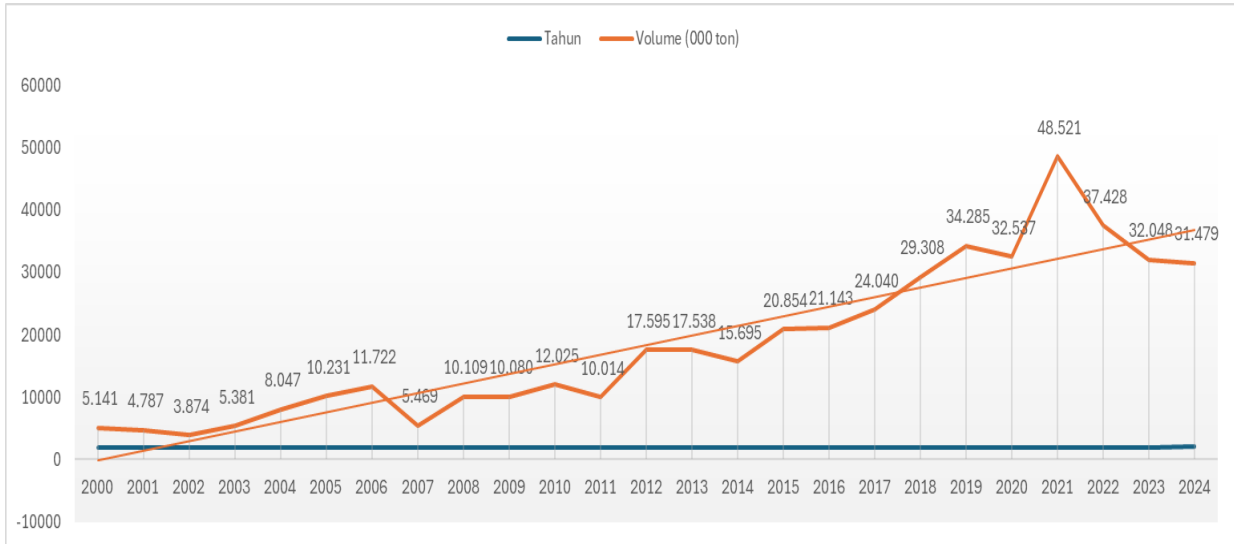


Figure 1. Indonesian Coffee Export Volume to Egypt 2002-2024  
(Source: UN Comtrade, 2025)

**Simple Linear Regression Analysis (Export Volume and GDP)**

The study uses annual secondary data (N = 25; 2000–2024) on Egypt's GDP and the export volume of coffee from Indonesia to Egypt under HS code 090111. This data was input into a constructed linear regression model with the following results:

Table 2. Regression Linear Analysis of GDP to Export Volume

	Coefficients	Standard Error	t Stat	P-value
Intercept	-2998882,182	2520247,599	-1,18992	0,246218
XVariable 1	8,89053E-05	9,36513E-06	9,49323	2,02E-09

Regression Statistics	
Multiple R	0,892568568
R Square	0,796678648
Adjusted R Square	0,787838589
Standard Error	5663321,362
Observations	25

From the regression analysis of the processed data, the following regression equation is obtained:

$$Y = -2,998,882.182 + 0.0000889053 X$$

Interpretation:

- The regression results indicate that Egypt’s GDP has a positive and Statistically significant effect on Indonesia’s coffee export volume ( $\beta = 8.89 \times 10^{-5}$ ,  $p < 0.001$ ). This implies that an increase in Egypt’s economic growth tends to increase Indonesia’s coffee exports.
- Based on the t-test results, the estimated t-Statistics for GDP is 9.49 with a p-value of 2.02E–09, indicating that Egypt’s GDP has a positive and Statistically significant effect on the volume of Indonesian coffee exports. Therefore, Egypt's GDP has a positive and significant effect on the volume of Indonesian coffee exports to Egypt, or  $H_0$  is rejected.
- R-squared value of 0.796 indicates that 79.6% of the variation in coffee export volume can be explained by Egypt's GDP, while the remaining 20.4% is influenced by other factors outside the model.

As for the F-test (simultaneous), the F-value can be explained in the table below:

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	2,89048E+15	2,89E+15	90,12142	2,02062E-09
Residual	23	7,37684E+14	3,21E+13		
Total	24	3,62817E+15			

From the analysis above, it is known that the calculated F-value = 90.121 with Sig. = 0.000 < 0.05. Therefore, it can be concluded that Egypt's GDP has a significant simultaneous effect on coffee export volume.

## CONCLUSIONS

1. Egypt's GDP has a positive and significant influence ( $R^2$  value of 0.796) on the volume of Indonesian coffee exports to Egypt (HS Code 090111). Every increase of USD 1 in Egypt's GDP increases coffee export volume by approximately 0.0000889 kg, *ceteris paribus*.
2. The Significance F value of 0.000000002 (< 0.05) indicates that the regression model is statistically significant overall. Furthermore, the t-test results show that Egypt's GDP variable has a p-value of 0.000000002 (< 0.05), leading to the conclusion that Egypt's GDP has a positive and statistically significant effect on the volume of Indonesian coffee exports to Egypt (HS Code 090111).

## SUGGESTIONS

1. Policymakers should support stakeholders in the coffee industry, including farmers, particularly in capacity-building efforts to increase sales to the global market through export mechanisms.
2. Coffee industry stakeholders should work to improve service and the quality of exported coffee so that destination countries can have strong confidence in Indonesian coffee.

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