

## Analysis of Factors Influencing Indonesian Coffee Export Volume Abroad

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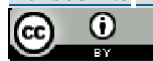
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### ABSTRACT

The aim of this research is to analyze factors influencing Indonesian coffee export volume abroad. The type of data used in this research is quantitative secondary data. Data taken from the Indonesian Central Statistics Agency, World Bank, United Nations International Trade Statistics Database, Indonesian Shoe Association, and United Nations Conference on Trade and Development. This research uses the literature study method, by analyzing secondary data obtained from official publications related to this research. The data analysis method in this research uses panel data regression. The research results show that real gross domestic product has a positive and significant effect on Indonesian coffee export volume abroad. Exchange rate has a positive and significant effect on Indonesian coffee export volume abroad. Price has a negative and significant effect on Indonesian coffee export volume abroad. Population has a positive and significant effect on Indonesian coffee export volume abroad.

## **INTRODUCTION**

The dynamics of world economic conditions continue to change and can have various impacts on a number of countries, including Indonesia. As a result, every country must have an anticipatory strategy to be able to survive in the arena of international competition. The global crisis that hit a number of developed countries has had an impact on international trade activities, where generally developing countries export most of their local commodities to developed countries.

The role of trade in a country is quite important, one of which is in the economic sector which is the driving force of the economy. Determining price stability, providing needs and circulating money in society is the role of trade in a country (Mankiw, 2003). Indonesia is a country that adheres to an open economic system, meaning that the country carries out economic transactions with foreign parties or what is called international trade, the main aim of which is to improve welfare and meet domestic needs. International trade is a very important activity in meeting the country's needs through imports and exports or increasing state income (Lilimantik, 2015).

International trade provides benefits for countries, because countries can sell their goods abroad. International trade occurs because of differences in tastes or consumption between countries and international trade arises because a country can produce certain goods more efficiently than other countries (Anggraini, 2006).

Trade in the modern era like now, where global market competition is getting tighter, means that there is an urge to carry out international trade, one of which is by exporting, especially non-oil and gas exports, both goods and services. The main objective of this export development program is to support efforts to increase competitiveness globalization of Indonesian products and increasing the role of exports in spurring economic growth. This is done by the Indonesian state, with its abundant natural wealth, Indonesia is improving its position in international market competition, such as in the fields of agriculture and plantations.

Exports are one of the international trade systems with the most important factor being gross national product, that is, if there is a change in the value of exports, there will also be a direct change in people's income (Putong, 2003). Exports have activities that reflect trade activities between nations which can provide encouragement in the dynamics of trade growth between nations and the growth of international trade (Ekananda and Mahyus, 2014).

Indonesia's exports were initially dominated by oil and natural gas products. From 1974 to 1986 Indonesia's economic financing depended heavily on oil and gas revenues. This situation causes the Indonesian economy to be very sensitive to changes in oil and gas prices on the international market. With the fall in oil and natural gas prices in 1982, industrial development became more difficult. In response to falling oil prices, the government launched a series of deregulation packages.

This deregulation is intended to restructure the economy which depends on oil and natural gas towards exporting non-oil and gas commodities. This can be seen from the increase in exports of natural resources generally in the agricultural sector.

In the era of economic globalization, Indonesia faces a continuously developing free trade process which will ultimately provide influences, opportunities and challenges to trade activities.

Indonesia has abundant natural resources. These natural resources can be managed well and can produce something valuable for the Indonesian people. One of the natural resource sectors that can be developed in Indonesia is the agricultural sector because it is supported by a good soil structure for farming. Indonesia's agricultural sector can be used to meet food needs.

Agriculture is a need that will never stop being used as a business commodity, both macro and micro, because agriculture is a basic need for the Indonesian nation and economy. Agriculture is the second largest supporting sector for the Indonesian economy. Based on the Central Statistics Agency, the gross domestic product of agricultural businesses based on current prices reached Rp2.25 quadrillion throughout 2021. This value contributed 13.28 percent to the national gross domestic product.

## **LITERATURE REVIEW**

Gross domestic product per capita is the average income of the population in a country at a certain time which can be used as an indicator to measure the level of consumption or purchasing power of a country for goods and services. A high gross domestic product per capita indicates that the country can be used as a market opportunity for export activities. This is supported by Putra's (2013) research entitled analysis of competitiveness and factors influencing tobacco exports to Germany. The results of this research state that Germany's gross domestic product has an influence on Indonesia's tobacco exports. The influence of German gross domestic product on Indonesian tobacco exports to Germany is in accordance with the theory which states that a high gross domestic product per capita indicates that the country can be used as a market opportunity for export activities. In accordance with this research, the higher Germany's gross domestic product, the greater the opportunity for that country to become an export country.

The aim of this research is to analyze factors influencing Indonesian coffee export volume abroad.

## **METHODOLOGY**

The type of data used in this research is quantitative secondary data. Secondary data is a variety of information that previously existed and is deliberately collected by researchers which is used to complete research data needs (Nasution, 1996; Kurdhi et al., 2023). Quantitative secondary data is a research method that involves using already existing data or secondary data. Existing data is summarized and collated to increase the overall effectiveness of the research (Sugiyono, 2014; Pandiangan, 2023). Data taken from the Indonesian Central Statistics Agency, World Bank, United Nations International Trade Statistics Database, Indonesian Shoe Association, and United Nations Conference on Trade and Development.

This research uses the literature study method, by analyzing secondary data obtained from official publications related to this research. A literature study is an analytical technique for obtaining information through notes, literature, etc., that is still relevant, and documentation techniques are carried out by tracing and documenting data and information related to the object of study (Maleong, 2004; Pandiangan et al., 2023).

The data analysis method in this research uses panel data regression. Panel data regression analysis where data processing is carried out with the Eviews 10.0 program. Panel data analysis is generally defined as the analysis of a group of variables that not only have diversity (dimensions) in the time series but also in the cross-section, it is one of the advantages of panel data because it can see the influence of the independent variable on the dependent variable in the time series but also in cross-section (Gujarati, 2004; Yoppy et al., 2023). Based on existing literature, there are several advantages obtained by using panel data, including (Intriligator, 1978; Ratnawita et al., 2023):

- a) Panel data is a combination of two time series and cross-section data, capable of providing more, varied data, reducing collinearity between variables, increasing the degree of freedom, and being more efficient.
- b) Able to control individual heterogeneity, in turn panel data is used to test and build more complex behavioral models.
- c) Combining information from time series and cross section data can overcome problems that arise when there is a problem of eliminating variables.

## RESULTS AND DISCUSSION

### General Description

Indonesia is one of the countries in the world that has natural characteristics that are suitable for the productivity or cultivation of coffee plants. The climate in Indonesia is a tropical climate which is agronomically very suitable for coffee plant productivity. Coffee in Indonesia can generally grow well at an altitude of 700 meters above sea level because it is related to the taste of coffee, but some clones can now be planted at an altitude of 500 meters above sea level.

Coffee first entered Indonesia in 1696 from the arabica coffee type. This coffee is entered via Batavia (now Jakarta) brought by Dutch Troop Commander, Adrian Van Ommen, from Malabar, India, who is then planted and developed in a place now known as Pondok Kopi East Jakarta, using Kedaung private land. Unfortunately, these plants were all killed by a flood, so in 1699 new seeds were brought in, which then developed around Jakarta and West Java, including in Priangan, and finally spread to various parts of the Indonesian archipelago such as Sumatra, Bali, Sulawesi, and Timor.

Then, coffee became a trade commodity that the Vereenigde Oostindische Compagnie (VOC) relied heavily on. In 1706 Javanese coffee is researched by the Dutch in Amsterdam, then in 1714 the results of this research are introduced by the Dutch and planted in Jardines Plantes by King Louis XIV.

Our first export of Indonesian coffee is carried out in 1711 by the VOC, and within 10 years it increased to 60 tonnes or year. The Dutch East Indies then became the first coffee plantations outside of Arabia and Ethiopia, which made the VOC monopolize the coffee trade from 1725-1780. Javanese coffee is then very well known in Europe, so that Europeans called it "a cup of Java". Until the mid-19th century, Javanese coffee is the best coffee in the world. Coffee production in Java experienced a significant increase, in 1830-1834 arabica coffee production reached 26,600 tons, and 30 years later it increased to 79,600 tons and peaked in 1880-1884 reaching 94,400 tons. For seven quarters of a century arabica coffee is the only type of commercial coffee grown in Indonesia. Arabica in Indonesia experienced a major decline, due to the attack of leaf rust disease (*Hemileia vastatrix*), which entered Indonesia since 1876. As a result, arabica coffee can survive only at an altitude of 1000 above sea

level, where the attack of this disease is not so great. Remains of arabica coffee plants can still be found on the Ijen plateau (East Java), Tanah Tinggi Toraja (South Sulawesi), the upper slopes of Bukit Barisan (Sumatra) such as Mandailing, Lintong, and Sidikalang in North Sumatra and the Gayo plateau in Nangroe, Aceh Darussalam.

Overcoming attacks by leaf rust pests. The Dutch government brought liberica coffee to Indonesia in 1875. However, it turned out that this type is also easily attacked by leaf rust disease and is not acceptable on the market because the taste is too sour.

The Dutch Government's next effort is to bring in robusta coffee (*coffea canephora*) in 1900, which turned out to be resistant to leaf rust disease and required light growing and maintenance conditions, while its production is much higher. So robusta coffee is rapidly growing to replace the arabica type, especially in areas with altitudes below 1000 m above sea level and is starting to spread throughout both Java, Sumatra, and Eastern Indonesia.

**Panel Data Regression Test Result**

Table 1. Fix Effect Model

Dependent Variable: VOLUME?  
 Method: Pooled Least Squares  
 Date: 04/06/23 Time: 11:05  
 Sample: 2002 2021  
 Included observations: 100  
 Cross-sections included: 5  
 Total pool (balanced) observations: 100  
 Cross sections without valid observations dropped

Variable	Coefficien t	Std. Error	t-Statistic	Prob.
C	7.42700	2910.489	9.423505	0.0000
RGDP?	3.000633	966.0641	3.107074	0.0025
EXC?	1.865330	1.207154	1.545229	0.0256
PRICE?	-0.025542	0.013724	-1.861119	0.0158
POP?	2.054347	0.101876	2.533464	0.0050
Fixed Effects				
(Cross)				
_AS_--C	5.97E-12			
_JERMAN_--C	3.68E-11			
_MALAYSIA_--C	1.26E-10			
_ITALY_--C	1.81E-12			
_JEPANG_--C	4.14E-11			
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.700189	Mean dependent var		42259.80
Adjusted R-squared	0.374934	S.D. dependent var		19335.45
S.E. of regression	15286.82	Akaike info criterion		22.15608
Sum squared resid	2.22E+10	Schwarz criterion		22.28633
Log likelihood	-1102.804	Hannan-Quinn criter.		22.20879
F-statistic	15.84583	Durbin-Watson stat		0.719345
Prob(F-statistic)	0.000000			

Source: Eviews (Processed Data)

The research results show that real gross domestic product has a positive and significant effect on Indonesian coffee export volume abroad. Exchange rate has a positive and significant effect on Indonesian coffee export volume abroad. Price has a negative and significant effect on Indonesian coffee export volume abroad. Population has a positive and significant effect on Indonesian coffee export volume abroad.

## **CONCLUSIONS AND RECOMMENDATIONS**

The research results show that real gross domestic product has a positive and significant effect on Indonesian coffee export volume abroad. Exchange rate has a positive and significant effect on Indonesian coffee export volume abroad. Price has a negative and significant effect on Indonesian coffee export volume abroad. Population has a positive and significant effect on Indonesian coffee export volume abroad.

Based on the results of this research, the author suggests:

- a) For export players to continue to improve the quality and productivity of coffee commodities in order to improve the performance of Indonesian coffee export on the international market.
- b) Export players and related government agencies should give deeper consideration regarding the variables of coffee export value, gross domestic product per capita of the export destination country, and exchange rates. If coffee commodity exporters and related agencies pay more attention to these three variables, it can be predicted that Indonesian coffee export volume can show more satisfactory results in the next period.
- c) For research with similar cases in the future, it is recommended to compare the competitiveness of Indonesian coffee commodities with other exporting countries in one destination country. On the other hand, researchers recommend using a combination of different variables to look at the factors that influence Indonesian coffee export volume. This is because the development of the world coffee industry is experiencing very rapid changes.

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