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DETERMINATION OF INDONESIA'S EXPORTS TO ASEAN-4

Soeharjoto[1*], Debbie Aryani Tribudhi[2], Isamu Rafael Soeharjoto[3]
Faculty of Economics and Business, Universitas Trisakti, Jakarta, Indonesia[1,2]
Faculty of Agricultural Technology, Universitas Brawijaya, Malang, Indonesia[3]
E-mail: soeharjoto@trisakti.ac.id[1], debbie.aryani@trisakti.ac.id[2], isamurafael24@gmail.com[3]*

Abstract: In globalization era, every country has the opportunity to increase its exports. Indonesia as one of the ASEAN member countries, participates in the ASEAN Economic Community. In winning the competition in the AEC market, Indonesia implements a strategy of prioritizing its exports to large importing countries of products from Indonesia. Singapore, Malaysia, Thailand, and Philippines are the four largest export destinations of Indonesia in the ASEAN member. However, the government also needs to pay attention to several macroeconomic indicators of the country, such as Gross Domestic Product per capita, exchange rates, and interest rates that can affect the demand for Indonesia's export destinations in ASEAN member countries. Aims of this study is to determine the determination of Indonesia's exports to ASEAN-4. The study used panel data in 2012-2021 from ASEAN-4, which came from Singapore, Malaysia, Thailand, and Philippines. This study was conducted using panel data regression method, using exports as the dependent variable and Gross Domestic Product per capita, exchange rate, and interest rate as dependent variable. The appropriate method used in this study is common effect model. This research obtained the results that Gross Domestic Product per capita and exchange rates have a positive and significant effect on Indonesia's exports to ASEAN-4. However, interest rates have no effect on Indonesia's exports to ASEAN-4.

Keywords: *ASEAN, Gross Domestic Product, Export, Exchange Rate, Interest Rate*

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1. Introduction

Progress and sustainability of a country depend on its economic condition. Until now, exports have become one of the key contributions to supporting the economic success of the country. The potential and resources of different countries result in the goods and services produced also being different (Ahmad & Widjaya, 2014). To meet their needs, countries need to exchange goods and services (Sanusi, 2017). However, this foreign trade policy can be implemented if the country has adopted an open economic system. Export is the process of exchanging goods from within the country to outside the country, crossing international borders, and carried out legally (Mankiw, 2009). All of this is done to meet the world's needs and simultaneously increase foreign exchange reserves (Sedyaningrum, M. & Nuzula, 2016). The real sector has become the largest component in exports (Zuhdi & Suharno, 2016). This makes every country strive to increase its export value so that the economy can grow rapidly. Economic growth can occur when production is carried out with specialization (Smith, 1776).

All of these provide added value and enhance the competitiveness of their products in the international market (Soeharjoto, 2016). In exporting, in reality, countries face many obstacles, so they need to strive to find solutions and develop strategies.

Globalization era causes countries to integrate with each other, leading to the disappearance of borders between countries and resulting in closer interconnections between nations (Soekapdjo & Esther, 2019). This phenomenon is a process that accelerates the increasingly open economies between countries (Tambunan, 2001). As for the impact, it increasingly heightens the economic dependence and competition between countries (Soeharjoto & Danova, 2020). Trade liberalization, marked by the increasingly rapid flow of goods and services between countries (Zulkarnaen, Oktaviani, Tambunan, & Yulius, 2012). This is due to the development of information technology and innovation, trade, political reforms, and the transnationalization of financial systems and investments. Indonesia, as one of the countries implementing an open economic system, participates in international trade in the Association of Southeast Asian Nations (ASEAN) region, which includes Indonesia, Malaysia, Singapore, Thailand, Philippines, Brunei Darussalam, Vietnam, Laos, Myanmar, Cambodia, and Timor-Leste. This region has agreed to the establishment of the ASEAN Economic Community (AEC) in 2015, as a single market in the ASEAN region (Jasin, 2017). The realization of this integration increasingly opens up opportunities for its members to enhance economic growth, competitiveness, and expand their market share in the ASEAN region. The existence of economic integration increasingly facilitates and accelerates the implementation of international trade in the regional area. In January 2016, the ASEAN Economic Community (AEC) was implemented in the ASEAN region. Indonesia, as a member of ASEAN, plays a role in meeting the consumption needs of the community in this region. This further encourages Indonesia to become more productive in export activities, in order to meet the needs of the community in the ASEAN region and simultaneously boost its domestic economy. However, despite the significant challenges and obstacles faced, Indonesia remains determined to participate in the competition within the ASEAN Economic Community. Indonesia, with its natural resource advantages and demographic bonus, is expected to be able to compete in facing the competition in the ASEAN Economic Community. This advantage can increase exports and boost Gross Domestic Product.

Indonesia's exports to the ASEAN region averaged USD 39,656.83 million (From 2012 to 2021) with a fluctuating trend (Figure 1). Indonesia's largest exports were to Singapore, Malaysia, Thailand, and the Philippines, with an average above USD 5,000 million, while exports to Vietnam, Myanmar, Cambodia, Brunei Darussalam, and Laos averaged below USD 4,000 million. For this reason, Indonesia prioritizes its exports to Singapore with an average of USD 13,589.8 million, Malaysia with an average of USD 9,295.96 million, Thailand with an average of USD 6,109.27 million, and the Philippines with an average of USD 5,534.19 million.

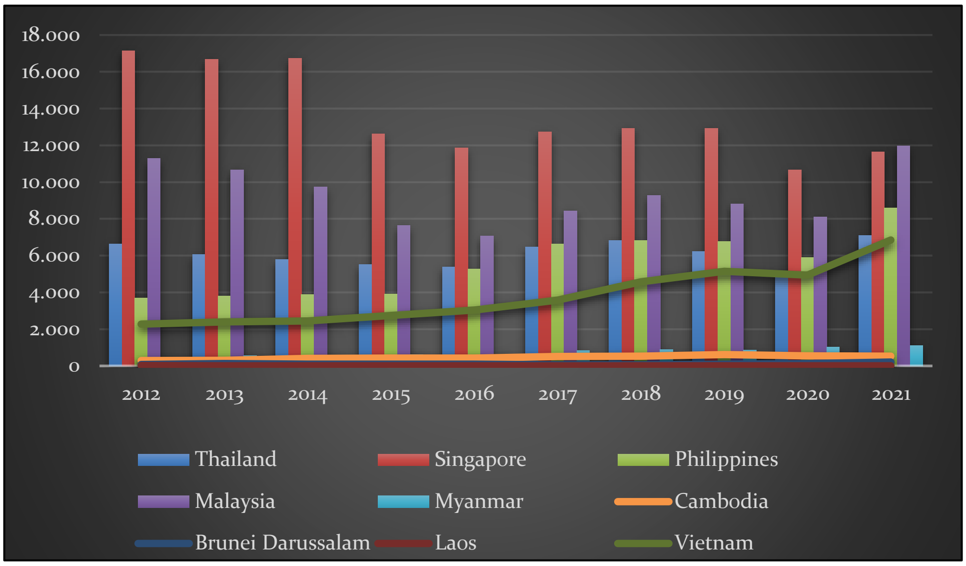

Figure 1. Indonesia's Exports to ASEAN Member Countries from 2012-2021 (USD million)
Source: Central Bureau of Statistics, 2023.

Research on the factors affecting exports has been conducted by several experts with varied results. Sunardi, Oktaviani & Novianti research at 2014 found that Gross Domestic Product per capita has a positive and significant effect on exports, whereas the study by Nugraheni et al. (2021) found that Gross Domestic Product per capita does not significantly affect exports. Suprianto's (2017) research found that the exchange rate has a positive and significant effect on exports, while Ginting's (2013) research found that in both the long and short term, the exchange rate has a negative effect on exports. On the other hand, Kurniasari & Monica's (2019) research found that the exchange rate does not affect exports. Research (Risma et al., 2018) found that interest rates affect exports, whereas research by Kumaat (2020) found that interest rates do not affect exports.

ASEAN Economic Community implementation further intensifies international trade competition among ASEAN member countries. This has resulted in an increasing number of factors that can affect exports in ASEAN member countries. However, purchasing power is one of the important indicators to determine the community's ability to buy products and services. In addition, exchange rates and interest rates can affect production costs and the purchasing power of the population. Based on the existing phenomenon, Singapore, Malaysia, Thailand, and the Philippines, which are members of ASEAN, remain the main destinations for Indonesia's exports. Therefore, it is necessary to conduct research on the influence of Gross Domestic Product per capita, exchange rates, and interest rates on Indonesia's exports to the ASEAN-4.

2. Research Method

This research was conducted using a quantitative approach. The data comes from the countries of Singapore, Malaysia, Thailand, and the Philippines from 2012-2021, sourced from the ASEAN Statistical Yearbook, Bank Indonesia, and the Central Bureau of Statistics. The research method used is panel data regression. The independent variable uses exports, while the dependent variable uses Gross Domestic Product per capita, exchange rate, and interest rate. As for the equation:

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$$\text{Exports} = \alpha_1 + \alpha_2\, \text{GDP per capita}_{it} + \alpha_3\, \text{Exchange rate}_{it} + \alpha_4\, \text{Interest rate}_{it} + \varepsilon_{it}$$

Where:

Export	= Indonesia's export to ASEAN-4.
α_1	= Constant.
GDP per Capita	= Gross Domestic Product per capita ASEAN-4.
Exchange rate	= The exchange rate of ASEAN-4 currencies.
Interest rate	= ASEAN-4 interest rate.
e_{it}	= Error regresi.

3. Results and Discussion

3.1. Results

Average growth of Indonesia's exports to ASEAN-4 from 2012-2021 was 2.9 percent (Figure 2). The Philippines is the destination country for Indonesian exports with the highest average export growth of 10.1 percent and a standard deviation of 18.6 percent. The second highest average growth is Thailand, which has a value of 3.0 percent with a standard deviation of 16.7 percent. Malaysia follows as a destination for Indonesian exports with an average export growth of 2.3 percent and a standard deviation of 19.8 percent. Singapore, as an export destination for Indonesia, has an average export growth rate of -4.0 percent with a standard deviation of 10.4 percent. The highest export value from Indonesia to ASEAN-4 occurred in 2021 and the lowest occurred in 2020 in the Philippines and Thailand, while in Malaysia and Singapore it occurred in 2015. This condition was caused by the global economy experiencing an experiment in 2015, which meant that all parties found it somewhat difficult to predict what would happen when stimulus measures were introduced, halted, and then tightened (Primadhyta, 2015). In 2021, there was an increase in export growth due to the early stages of the COVID-19 pandemic, as many countries closed themselves off. As the pandemic subsided, this led to an increased demand from ASEAN-4 for Indonesian products.

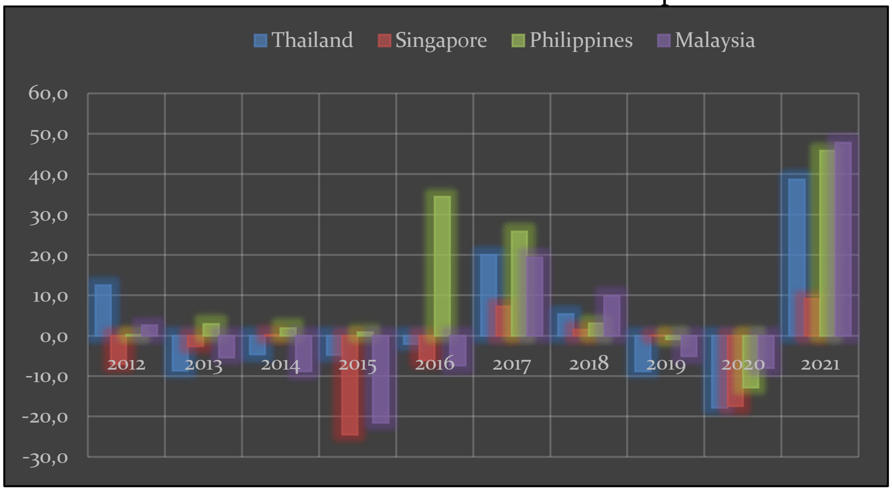

Figure 2. Growth of Indonesia's Exports to ASEAN-4 (Percentage)
Source: ASEAN Statistical Yearbook (Processed Data), 2023

Gross Domestic Product per capita of ASEAN-4 from 2012-2021 had an average growth rate of 3.06 percent, with an average exchange rate of 20.62 and an average interest rate of 2.01 percent. The average growth of Gross Domestic Product per capita in Thailand was 3.90 percent, in the Philippines 3.78 percent, in Singapore 3.23 percent, and in Malaysia 1.30

percent. The exchange rate for Singapore is 1.35, Malaysia is 3.83, Thailand is 29.64, and the Philippines is 47.64. The interest rate in Singapore is 1.39 percent, in Thailand 1.44 percent, in the Philippines 2.45 percent, and in Malaysia 2.77 percent. The average standard deviation of the ASEAN-4 for Gross Domestic Product per capita is 1.20 percent, the exchange rate is 22.09 percent, and the interest rate is 0.70 percent.

In the panel data method, the selection of the appropriate model can be done using the Chow test, the Hausman test, and the Lagrangian Multiplier test. In this test, if the fixed effect model is selected in the Chow test and the Hausman test, the researcher does not need to conduct the Lagrangian Multiplier test. This study in the Chow test has a probability value for the Cross-section Chi-square of 0.0589. The meaning is that, based on the test, it is more appropriate to use the common effect model rather than the fixed effect model because the Prob. Cross-section Chi-square is 0.0589>0.05.

Table 1. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.335674	(3,53)	0.0842
Cross-section Chi-square	7.450180	3	0.0589

Source: Processed data by the researcher, 2023

The Hausman test conducted resulted in a probability value of 0.0717 on the Cross-section Chi-square. This means that the Prob. Cross-section random 0.0717>0.05, so we choose the Random Effect model over the Fixed Effect model.

Table 2. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.007021	3	0.0717

Source: Processed data by the researcher, 2023

In the Chow Test, the selected result was a common effect, and in the Hausman test, the selected result was a random effect, so a Lagrangian Multiplier test needs to be conducted. From the Lagrangian Multiplier test that has been conducted, it resulted in a Breusch-Pagan P. Value of 0.8536. This result is significant because the Breusch-Pagan P-value of 0.8536 is greater than 0.05, thus choosing the Common Effect model over the Random Effect model.

Table 3. Lagrangian Multiplier Test Results

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.034070 (0.8536)	3.375995 (0.0662)	3.410065 (0.0648)

Source: Processed data by the researcher, 2023

In the global test, the F-Statistic Probability value obtained was 0.0000, indicating that at least one of the variables Gross Domestic Product per capita, exchange rate, and interest rate can influence Indonesia's exports to ASEAN-4. The Adjusted R-Square value from this study is 0.492890, indicating that Gross Domestic Product per capita, exchange rates, and interest rates can explain 49.2890 percent of Indonesia's exports to ASEAN-4, while the remaining 50.7110 percent is influenced by other variables not included in the model.

Table 4. Results of Individual Hypothesis Testing

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.192235	3232846	-0.059463	0.4764
GDP per Capita	1348481	0.188085	7169538	0.0000
Exchange Rate	0.139164	0.090794	1532747	0.0655
Interest Rate	-1136064	1139438	-0.997039	0.1615

Source: Processed data, 2023

In this individual test, the Prob. value was obtained. Gross Domestic Product per capita 0.0000<0.05 with a coefficient of 1.348481, thus GDP per capita has a positive and significant effect on Indonesia's Exports to ASEAN-4 (using α=5 percent). Prob. Value The exchange rate of 0.0655<0.1 with a coefficient of 0.139164 indicates that the exchange rate has a positive and significant effect on Indonesia's exports to ASEAN-4 (using α=10 percent). However, the Prob. value the interest rate of 0.1615>0.1, thus the interest rate has a negative and insignificant effect on Indonesia's exports to ASEAN-4 (using α=10 percent).

3.2. Discussion

The results of this study indicate that Gross Domestic Product per capita and the exchange rate have a positive and significant impact on Indonesia's exports to ASEAN-4, while interest rates do not affect Indonesia's exports to ASEAN-4. Gross Domestic Product per capita has a positive and significant effect on Indonesia's exports to ASEAN-4, in accordance with the research conducted (Sunardi, D., Oktaviani & Novianti, 2014). Gross Domestic Product is the total value of goods and services produced by a country within a certain period (Case & Fair, 2007). The increasing Gross Domestic Product per capita indicates the rising prosperity of a country's society, which can further increase its demand for imported goods. The exchange rate has a positive and significant impact on Indonesia's exports to ASEAN-4, according to the research (Suprianto, 2017). The exchange rate between two countries is the price of the currency used by the residents of those countries in conducting trade with each other (Mankiw, 2009). So, the exchange rate is the price of a country's currency in relation to another country's currency. However, the currency of a country can experience substantial changes. This is caused by changes in its economic and socio-political conditions. These changes can result in either appreciation or depreciation. Currency appreciation can occur when the domestic currency rises against foreign currencies, and depreciation occurs when the domestic currency falls against foreign currencies. The government always strives to control its exchange rate to maintain the purchasing power of the public and production costs. Therefore, the higher the exchange rate, the greater its ability to purchase imported goods. Interest rates have a negative and insignificant effect on Indonesia's exports to ASEAN-4, contrary to the research by Risma et al. (2018), but consistent with the research by Kumaat (2020). Interest rates are the cost that borrowers must pay on the loans they receive and the reward for lenders on their investments (Hubbard, 1997). Therefore, high interest rates can reduce investment in the real sector and cause production to decline, leading to an increase in product prices. This results in their products being difficult to compete with foreign products. Thus, the government always strives to maintain interest rate stability to ensure the stability of its economy, society, and politics.

4. Conclusion

This research was conducted to identify the factors influencing Indonesia's exports to ASEAN-4. The method used was panel data regression for the period 2012-2021 in ASEAN-4, which includes Singapore, Malaysia, Thailand, and the Philippines. The appropriate method used in this study is the common effect model. The results of this study indicate that Gross Domestic Product per capita has a positive and significant effect on exports, the exchange rate has a positive and significant effect on Indonesia's exports to ASEAN-4, but interest rates do not affect Indonesia's exports to ASEAN-4. Therefore, the increase in Indonesia's exports to ASEAN-4 can be achieved provided that the quality of the products improves and they are produced efficiently. In subsequent research, attention should be paid to the potential of Indonesia's export destination to Vietnam, as it shows an increasing trend, making Vietnam a potential main export destination for Indonesia in ASEAN. However, in order to understand the performance of Indonesian production, research needs to be conducted by sector. In addition, researchers also need to include other domestic internal variables and use alternative methodologies.

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