International Journal of Management Research and Economics
Vol. 2 No. 2 Mei 2024
e-ISSN : 2986-7398, p-ISSN : 2987-6311, 182-190
DOI: https://doi.org/10.54066/ijmre-itb.v2i2.1789

Analysis of Money Demand and Supply on International Trade In Five Asean Countries

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Abstract: *A country's international trade really takes into account the comparison of its currencies which also gives rise to different levels of exports and imports according to domestic consumption. The higher the consumption, the more money in circulation will also increase. The aim of this research is to determine the influence of the money supply on exports and imports as well as other supporting variables such as the exchange rate, inflation and interest rates. With the two stage least squares (TSLS) analysis method, it is found that exports and imports have a significant influence on each other and the exchange rate, inflation and interest rates show positive and negative results.*

Keywords: *International Trade, JUB, Export, Import*

1. INTRODUCTION

The economic development of a country cannot be separated from the global economy, relations between countries are an important factor which also influences economic development. The relationship between international trade and economic growth is an interesting topic to discuss and is still controversial(Wulandari & Laut, 2022). In international trade, buying and selling activities are called export-import operations to meet the needs of a country(Muklis & Imam, 2013). The Asia Pacific region has the second best economic prospects in the world and is an area that is always dynamic in the global economy(IMF, 2018). One of the Asia Pacific regions, namely Southeast Asia, is called ASEAN because of its regional integration, with Indonesia, Malaysia, the Philippines, Thailand and Vietnam being regions with rapid economic growth rates.(Alunaza, Sunarti, & Maulana, 2018).

In international trade, export and import activities are important factors in economic growth that provide benefits for a country to participate. Exports are a source of foreign exchange that the country needs, because exports work widely with various countries which allows an increase in production which is expected to contribute to maintaining the stability of the country's economy.(Hodijah & Angelina, 2021). Imports are also an important component of the process of purchasing foreign goods or services from a country. Large imports can cause demand for money to increase, thereby weakening the domestic currency(Andi T & P, 2023).

Received on March 28th, 2023; Accepted on April 24th, 2024; Published on May 31st, 2024
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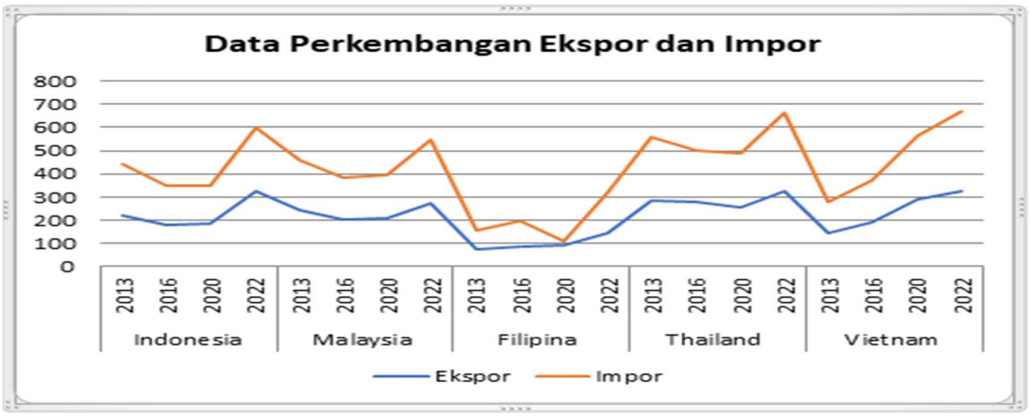

Figure 1. Graph of development of export and import data in Five ASEAN Countries

If you look at the graph of export and import development in 2013-2022, it looks like it is fluctuating. Export activities are what a country needs to introduce domestic products to the international market(Indra & Safrida, 2019). If exports increase, economic growth will also increase(Hodijah & Angelina, 2021). Imports are related to inflation, where imports increase but inflation decreases, but the money supply has the ability to predict high levels of inflation with the speed of money circulating over a long period of time.(Dona, Hidayat, Aswan, & Oktavian, 2022).

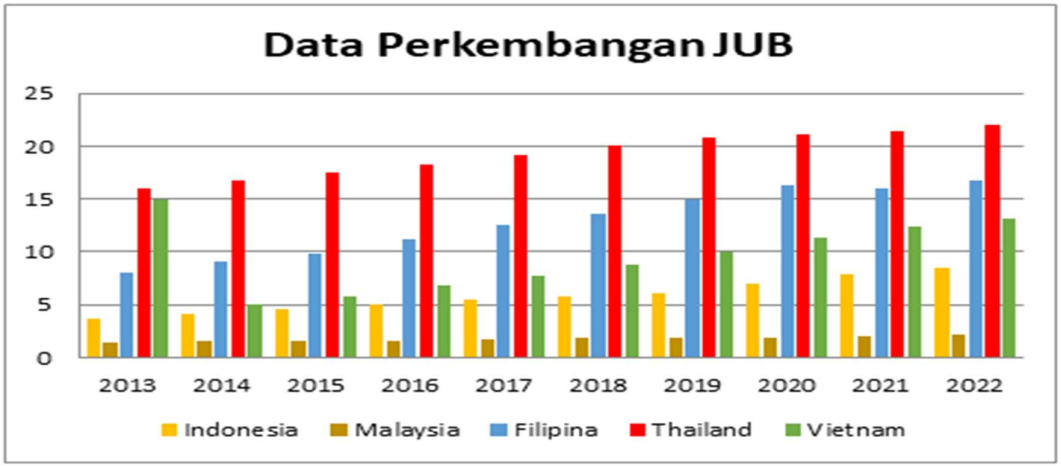

Figure 2. Graph of data development on the amount of money circulating in five ASEAN countries

The development of the money supply in 2013-2022 continues to increase. The addition of money in circulation will cause the exchange rate to weaken or depreciate(Ardiyanto & Ma'ruf, 2014). In developing countries, especially the ASEAN region, an increase in the money supply can partly increase prices and partly increase output because they produce more, the increase in output prices is available due to an increase in the money supply. This increase in

the money supply was caused by inflation and Bank Indonesia's efforts to intervene in the market (banking activities). If Bank Indonesia adds foreign currency to the market, the money supply will increase, on the other hand, people's needs will increase. This will certainly increase demand for goods and services. This increase in turn will increase the demand for money(Aryani & Murtala, 2019). Therefore, in this research, we want to see the success of export and import activities on the economy through controlling the demand and supply of money, which in this case is seen from the amount of money in circulation, so the author is interested in conducting research with the title "Analysis of the Demand and Supply of Money on International Trade in Five ASEAN Countries"

2. LITERATURE REVIEW

INTERNATIONAL TRADE

Trade between countries is better known as international trade. This arises because there are commodities that a country cannot produce at all due to limited resources or climate conditions and is considered as a result of the interaction between competitive demand and supply. Two things that are taken into consideration in the occurrence of international trade are the specialization of the products being traded. This occurs due to natural conditions of different availability between countries.

DEMAND AND SUPPLY OF MONEY

What is defined as the demand for money is the amount of money demanded by the public for activities, namely transaction purposes, precautionary purposes and speculative purposes. The demand for money for transaction and precautionary purposes has a different nature from the demand for money for speculative purposes. The demand for money for transaction and precautionary purposes is determined by national data collection, the higher the national income, the more money is needed for transaction and precautionary purposes. Meanwhile, the demand for money for speculative purposes is influenced by interest rates. When interest rates are high, the demand for money for speculation is low, therefore money is used to buy securities. On the other hand, if the interest rate is low, the demand for money for speculation is high because people are not willing to buy securities and will hold onto money.

AMOUNT OF MONEY SUPPLYING TO EXPORTS

The relationship between money supply and exports is quite significant. The money supply is a condition where the demand and supply of money is controlled. The amount of money in circulation can also occur due to high and low public consumption of transactions, excess market liquidity which triggers speculation, and uneven distribution of the use of money for goods.(Sari & Rauf, 2018).

AMOUNT OF MONEY CIRCULATION REGARDING IMPORTS

The relationship between the money supply and imports is due to demand pull money, excess total demand will usually be triggered by changes in the level of money demand. This can also result in a decrease in imported goods. Furthermore, the relationship between the amount of money in circulation and imports is triggered by the existence of cost push money, the large amount of money in circulation causes import activities to increase as the amount of demand for a country's needs increases.(Bau, Kumaat, & Niode, 2016).

3. RESEARCH METHODS

This research is a quantitative descriptive study that describes the country's economy with its variables. With a simultaneous analysis approach with monetary variables on international trade variables between countries by forming simultaneous equations. This research data is secondary sourced from the World Bank for 2013-2022. The simultaneous model with two equations uses the Two Stage Least Square (TSLS) approach to determine the level of correlation and influence that occurs in the model. The TSLS model is used when simultaneous equations have been identified (Widarjono, 2013). The variables used include Money Supply, Exchange Rate, Inflation, Interest Rates, Exports and Imports. With the following econometric model:

First equation

EX= (JUB, EXCHANGE AND IMP)

EXPORT=C(10)+C(11)*JUB+C(12)*EXCHANGE+C(13)*IMPORT

Second equation

IMP= (INF, SB AND EX)

IMPORT= C(20)+C(21)*INF+C(22)*SB+C(23)*EXPORT

Where:

EKS= Export

IMP= Import

JUB= Money Supply

EXCHANGE = Exchange Rate

INF= Inflation

SB= Interest Rate

Next, simultaneous identification with the aim of finding out whether the equation is identified in the condition of under identified (cannot be identified), absolutely identified or over identified (still identified). To state that an equation can be accepted in research, it must meet the criteria of being exactly identified or over identified(Rusiadi, Subianto, & Hidayat, 2017).

Table 1. Equation identification test

No.	Dependent Variable	Kk … m-1		Results	Identification
1.	EKS (Eq. I)	4-2	3-1	2=2	*Exactly Identified*
2.	IMP (Eq. II)	4-2	3-1	2=2	*Exactly Identified*

After knowing the identification of simultaneous equations in the absolutely identified condition, TSLS analysis can be carried out, then by fulfilling the classical assumptions carried out with the data normality test and autocorrelation test.

4. RESULTS AND DISCUSSION

These results were carried out by testing classical assumptions in the data normality test and autocorrelation test. The data normality test uses the Jarque-Bera value if the probability is > 0.05 then the data is said to be normal. Meanwhile, the autocorrelation test looks at the probability value of Adj Q-Stat with chi-squared results < 0.05, so the data has an autocorrelation effect(Fikri, 2021).

Table 2. Classic Assumption Test

Classical Assumptions	
Jarque-Bera 0.6020 > 0.05	Prob. Adj Q-Stat 0,000 < 0.5
Passed the data normality test	Passed the Autocorrelation test

From the results of the classical assumption test above, it was found that the data in this study passed the classical assumption criteria specifications, so under these conditions estimation of simultaneous equations could be carried out.

Table 3. Simultaneous Estimation Test Results

	Coefficient	Std. Error	t-Statistics	Prob.
C(10)	-43.12340	77.19115	-0.558657	0.5778
C(11)	-0.648687	4.105788	-0.157993	0.8748
C(12)	-0.358884	1.709284	-0.209962	0.8342
C(13)	1.305250	0.357563	3.650410	0.0004
C(20)	39.99653	14.32794	2.791505	0.0065
C(21)	4.360866	1.718280	2.537926	0.0130
C(22)	-0.624362	1.447287	-0.431401	0.6673
C(23)	0.741633	0.041874	17.71121	0.0000
Determinants of residual covariance		59613.01		
Equation: EXPORT=C(10)+C(11)*JUB+C(12)*EXCHANGE+C(13)*IMPORT				
Instruments: JUB EXCHANGE INF SB C				
Observations: 47				
R-squared	0.902898	Mean dependent var		214.6345
Adjusted R-squared	0.896123	SD dependent var		79.32248
SE of regression	25.56557	Sum squared resid		28104.72
Durbin-Watson stat	0.807596			
Equation: IMPORT=C(20)+C(21)*INF+C(22)*SB+C(23)*EXPORT				
Instruments: JUB EXCHANGE INF SB C				
Observations: 47				
R-squared	0.914379	Mean dependent var		208.9560
Adjusted R-squared	0.908406	SD dependent var		64.56442
SE of regression	19.54015	Sum squared resid		16418.15
Durbin-Watson stat	0.900772			

EXPORTS= -43.12 – 0.64*JUB – 0.35*EXCHANGE + 1.30*IMPORTS

The estimation results show that R2=0.9028 means that the variables of money supply, exchange rate and imports are able to explain exports by 90.28%. The t-calculated value can also show significance in the import variable with a prob value of 0.0004, so that imports have a significant effect on exports. Then the coefficient value of the money supply variable is -0.64, if the demand for money is 1 percent then exports will fall. Exports decreased due to the weakening global economy resulting in decreased demand(Adhista, 2022). Thus, with a weakening exchange rate, exports will also decrease by -035. Demand for domestic products decreased because the exchange rate weakened which caused domestic production conditions

to decline so that export levels were also affected(Yoga, 2013). In contrast to imports, the coefficient value is 1.30, which explains that if imports increase by 1 percent, exports will also increase. This result is in line with economic conditions for several imported commodities depending on the size of exports.(Yuliadi, 2008).

$$IMPORT= 39.99 + 4.36*INF – 0.62*SB + 0.74*EXPORT$$

The R2 value = 0.9143 shows the estimation results that the variables inflation, interest rates and exports influence imports by 91.43% with a probability value of 0.0000, so exports have a significant effect on imports(Yuniarti, 2018). The coefficient also shows different values when the inflation variable increases by 1 percent, imports also increase by 4.36, because inflation is caused by a lack of domestic production which causes the amount of imports in a country to increase. Meanwhile, if interest rates rise, imports will fall by -0.62. This is related to monetary theory that interest rates rise, the demand for money rises to maintain price/inflation stability.(Fikri, 2021).

Exports and imports are an important part of international trade, the influence of a country's exports and imports on international trade can increase economic growth(Saputra & Effendi, 2021). This is due to limited resources in a country and different potentials, because each country needs each other to meet the needs of its people. A country's imports are influenced by international trade regulations by providing tax fees to limit foreign products so they can compete with domestic products.(Nopirin, 2011). An increasing money supply can also increase public consumption of domestic and foreign products. The impact of increasing the money supply causes an increase in prices in a country, resulting in depreciation of the currency(Landa, 2017).

5. CONCLUSION

The results of the simultaneous analysis of the variable amount of money circulating in international trade show that there is a relationship between the two equations. From the export equation model, only the import variable shows a significant influence, while the money supply and exchange rate variables are not significant. Then, in the import equation, the variable that has a significant effect is also shown by exports, while the inflation and interest rate variables are not significant, but variables that do not show significant results still have a positive and negative impact on a country's international trade.

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