International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 05 May 2024
DOI: 10.47191/ijcsrr/V7-i5-56, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

The Role of Relationship between Money Supply and Exports in the Context of Economic Development through Increasing the Resilience of Foreign Exchange Reserves: Evidence from Selected Asian Countries

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ABSTRACT: The importance of building foreign exchange reserve performance is the main requirement in safeguarding the economy in the global order from potential risks and threats originating from the external sector. This has become an important discussion in recent times, but several previous studies have not answered the urgency in building sustainable economic resilience, especially in countries that have economic experience with economic shocks caused by potential risks originating from the external sector. Ordinary-Least Square (OLS) analysis chosen to prove impact of financial stability and international trade on the growth and resilience of foreign exchange reserves as external liquidity for several countries in Asia during 1990 - 2020.
The results of this research show that in the long term, both the money supply variable and exports as an independent variable have a positive and significant influence in increasing the resilience of the external liquidity performance of selected Southeast Asian countries. Our policy recommendations emphasize the importance of maintaining the resilience of foreign exchange reserves as external liquidity in order to increase economic resilience in the global economic arena. The government should provide the main focus in increasing policies by increasing the role of the external sector itself through international cooperation.

KEYWORDS: Asian Countries, Export, Foreign Exchange Reserve, Money Supply.

1. INTRODUCTION

Economic development is a way for the country to maintain its existence in the context of global competition. In the global order, the existence of a country shows the level of independence of a country in building an optimal image of sustainable national development (Marlinah, 2017). Moreover, in national economic development, the main goal is how the development process can bring about an adequate and general improvement in the welfare of society. Therefore, it is important to build economic resilience in countries with open economies which are faced with vulnerability as a result of risks in the external sector in long-term economic development. Potential risk provides an illustration of the possibility of not achieving national economic goals caused by factors that hamper the economy. In an open economic system, the external sector has an important function in accommodating stability of the performance of macro variables in the economy. By maintaining the performance of the external sector, growth in the performance of macro variables which are of course very important for the economy can be achieved according to the targets that have been set. Foreign exchange reserves as external sector liquidity have an important influence in maintaining economic stability from potential risks arising from the external sector. The existence of shocks that occur in other countries' economies could be a potential risk that threatens the performance of the domestic economy. Through international trade, globalization has brought a new direction to a more open pattern of interaction between countries. The interaction pattern of dependency relations between countries in terms of international trade is something that may occur due to differences in factors that influence demand and supply in each country, namely prices.

In the discussion, the performance of trade variables has an important function in determining the performance of foreign reserve variables, including exports. Export transactions are trade transactions from inside and out of the customs area that allow the movement of goods and services. Every export transaction contributes to the economy through foreign exchange proceeds from exports as payment received in foreign currency. This indicates that strengthening net export performance will bring accumulated national foreign exchange reserves to continue to grow optimally. This is confirmed by the results of research by Manto (2022) which analyzed the effect of exports on foreign reserves in four Islamic countries: Indonesia - Malaysia - Turkey - United Arab Emirates in the period 2000-2017. Apart from that, research conducted by Dananjaya et al., (2019) focused on analyzing the

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influence of the variables Export, Import, Rupiah Exchange Rate, and Inflation Rate on Indonesia's Foreign Exchange Reserves in the 1999-2018 period, where the results of this research show that both partially and simultaneously, the Export and other independent variables have a positive impact on the Foreign Reserves.

Apart from the international trade sector, monetary variables, namely the money supply in both a limited and broad sense, also support the formation of foreign exchange reserves in the domestic economy. The money supply in a limited sense is a combination of currency and demand deposits circulating in society. Meanwhile, the Money Circulation in a broad sense is the total of currency, demand deposits and public savings in commercial banks. The Money Supply as a monetary variable is related to foreign exchange reserves through the balance of payments. There are fluctuations in the circulation of money circulating in society as a result of capital outflows, but this is not accompanied by the placement of funds in the non-banking sector. This will have an impact on reducing the accumulation of external sector liquidity. Likewise, vice versa, maintaining the accumulation of Money Circulation in domestic banks due to high interest rates will attract foreign investors to invest their funds into the country. The presence of capital inflows recorded in the balance of payments will increase the portion of domestic foreign exchange reserves. Furthermore, the central bank's intervention in providing credit to banks ultimately increased public savings in banks.

This condition provides an illustration of the influence of money circulating in society on foreign exchange reserves, which is also illustrated by the results of research conducted by Sonia & Setiawina (2016) which focuses on examining the influence of the variables Exchange Rate, JUB and Inflation Rate on the variables Exports, Imports and Indonesian Foreign Exchange Reserves in the period 1984 to 2014. The results of this research show that the variable number money supply has a positive and significant influence on exports, and the money supply variable has a positive and significant influence on foreign exchange reserves. These results were also strengthened by research conducted by Niaz Murshed Chowdhury et al., (2014) focused on analyzing the effect of the variables Remittances, Exchange Rates, Inflation, Import Price Index, Export Price Index, Interest Rates, Money Supply, Foreign Aid & GDP Per Capita on Foreign Exchange Reserves in Bangladesh from 1972 to 2011. Apart from that, research conducted by Prabheesh et al., (2007) discusses the influence of the Import variables, Money Supply, Exchange Rate and Interest Rates on the Foreign Exchange Reserve variables in India for the period 1983Q1 to 2005Q1 also showed similar results, namely the positive and significant influence of the variables Import, Money Supply, Exchange Rate and Interest Rate on Foreign Exchange Reserves.

The challenge in building resilient foreign exchange reserves in 6 Asian countries can become an important urgency in itself and is related to national economic development. Foreign exchange reserves, which also act as external sector liquidity, have an important role in maintaining exchange rate balance. A crucial point in managing foreign exchange reserves is when there is a deadline for payment of international transactions, which is faced with insufficient availability of foreign exchange reserves.Foreign debt is the state's obligation to carry out its obligations by providing allocation of funds in foreign currency. This will have a negative impact on the domestic currency exchange rate due to increased demand for foreign currency. The vulnerability of currencies to external risks is a strategic discussion, especially for the countries that are the focus of this research.

Another thing that is the focus of this research is the economic condition of the Asian region. The economic development that has been achieved by countries in the Asian region is demonstrated by the potential economic performance achievements of each country which cannot be separated from the economic experiences that each country has gone through which is the focus of the research, including when the economy was experiencing a period of crisis. The years 1998 and 2008 showed a lot of important history that Asian countries such as Indonesia, Thailand, Malaysia, the Philippines, Singapore and South Korea were affected by shocks to the economic performance of each of these countries.

From all the background discussions above, there is a reason why it is important to review the role of the relationship between international trade and monetary variables in influencing the liquidity performance of the external sector in several Asian countries.

2. METHODOLOGY

As stated in the introduction, this research tries to analyze the relationship pattern between International Trade and financial liquidity which in this research is presented in the variables Export and Money Supply on the independent variable, namely foreign exchange reserves, is the main focus with case studies in Thailand, Indonesia, Malaysia, Singapore, the Philippines and South Korea from 1990 to 2020. The data used in this research comes from World Bank publications.

In this research, panel data analysis is used in data calculations. In determining the most appropriate model estimation, tests are carried out using the Chow Test and Hausman Test so that from the results of these two tests it can be decided on the most appropriate

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model, whether Fixed Effect Model, Random Effect Model or Common Effect Model. This research uses panel data analysis to calculate the effect of Money Supply (LIQ) and Exports (EXP) on Foreign Exchange Reserves (FER) with the following equation:

$$FER_{it} = \alpha + \beta_1 LIQ_{it} + \beta_2 EXP_{it} + e$$

Where: FER = Foreign Exchange Reserves in Selected Asian Countries (Indonesia, Malaysia, Thailand, Philippines, Singapore and South Korea); LIQ = Money Circulation in Selected Asian Countries (Indonesia, Malaysia, Thailand, Philippines, Singapore and South Korea); EXP = Exports in Selected Asian Countries (Indonesia, Malaysia, Thailand, Philippines, Singapore and South Korea); α = regression coefficient; β1, β 2, β3= independent variable coefficients; ε = error term; i = 6 Selected Asian Countries (Indonesia, Malaysia, Thailand, Philippines, Singapore and South Korea); t = Year.

3. RESULT

The general picture of economic performance shown by the development of several macroeconomic variables in the countries that are the objects of this research has experienced ups and downs along the way. The performance development of each variable experienced its worst decline when the 1998 financial crisis hit. In 1998, all commodity sectors experienced a decline, this was due to the economic crisis which caused foreign demand for domestic goods to decrease. Exports experienced fluctuations again, especially entering 2008, where in that year the world economy experienced a recession due to the economic crisis that occur. This is in accordance with the export-led growth hypothesis which states that exports are a driver of economic growth. A decline in the share of exports means a decline in the market share of domestic products, both at home and abroad, which of course results in a decline in productivity and a decline in the use of domestic sources. Apart from that, liquidity performance also experienced a significant shock in that year where the crisis resulted in a decline in the value of the local currency which caused Capital Outflow which eroded Foreign Exchange Reserves.

In Ordinary-Least Square (OLS) analysis, there are several steps in testing the results of this research. First, we determined the most appropriate panel data regression model using the Hausman Test and Chow Test.

Tabel 1. Hasil Chow Test

Fixed Effect Model		
F test that all u_i=0	F(5,178) = 14,68	Prob > F = 0.0000

The significance value of 0.0000 (less than 5%) shown through the Chow Test results in table 1 shows that the appropriate initial estimation model to use is Fixed Effect Mode (FEM). Considering that the results of the Chow test show that the more appropriate model to use is the Fixed Effect Model (FEM), further testing via the Hausman test is needed to determine the most appropriate model.

Tabel 2. Hausman Test Result

Test Summary	Signifikansi
Cross-section random	0,0008

The random cross-section significance value is 0.0008 (less than 0.05) shown through Hausman Test Result, which shows that statistically Ho is rejected and Ha is accepted. Thus, the most appropriate estimation model used in this research is the Fixed Effect Model.

Table 3. Results of Panel Data Regression Estimation Using Common Effect Model, Fixed Effect Model, and Random Effect Model Methods

Variable	Common Effect Model		Fixed Effect Model		Random Effect Model	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
C	3,50e+09	0,172	-1,51E+09	0,561	-7,58E+08	0,880
LIQ	5,459371	0,000	7,853006	0,000	7,344909	0,000
EXP	0,4046563	0,000	0,386991	0,000	0,3923022	0,000

After determining that the most appropriate estimation model is the Fixed Effect Model, the next step is to test the regression equation. The constant value of 1.51 and negative shown in the results of the regression equation in table 3 explains the decline in foreign exchange reserve performance of 1.51% when the condition of the money supply and exports simultaneously remains constant. These results explain the positive effect of the money supply on foreign exchange reserves with a coefficient value of 7.853006, which means that an increase in the performance of the money supply by 1% will cause an increase in the accumulation of foreign exchange reserves by 7.85%. These results explain that the money supply supports external liquidity performance. The need for liquidity in international transactions encourages the economy to maintain the external liquidity accumulation at a balanced level.

Through the results of the regression equation above, exports are proven to have a positive influence on external liquidity performance. The coefficient value for Exports is 0.386991, which indicates that when export performance experiences growth of 1%, there will be an increase in Foreign Exchange Reserve performance of 0.38%. The existence of net exports indicates that there is a surplus from international trade transactions which are expressed in foreign currency. In other words, an increase in export performance that exceeds imports (net exports) will improve external liquidity performance. This indicates the urgency in implementing policies that improve export performance as a driver of foreign exchange reserves as external liquidity which will have an influence on the national economy. These results confirm the results of research conducted by (Azar, 2014; Niaz Murshed Chowdhury et al., 2014) and later confirmed by (Dananjaya et al., 2019; Juliansyah et al., 2020) and (Manto, 2022) where the results of each study show the same test results as this study.

Based on the description of several analyses, both through general reviews and explanations of statistical and econometric test results, the main results of this research can be explained, where international trade and financial liquidity through export variables and money supply are proven to have a positive influence on the liquidity performance of the external sector in the country. – the country that is the object of this research. Increasing net exports and adequate management of domestic financial liquidity have proven to have a beneficial impact in increasing national foreign exchange.

4. DISCUSSION

Economic resilience development is aimed at maintaining and improving economic capacity in facing and minimizing potential risks that may arise in the economy. In an open economic system, foreign exchange reserves as external sector liquidity have an important role in maintaining economic performance. The monetary authority as the institution controlling national foreign exchange reserves has a role and authority in monetary stabilization through the exchange rate (Benny, 2013).

The results of this research further strengthen the evidence of a positive correlation between the variables tested in the economies of several selected Asian countries. An increase in the amount of money circulating in domestic banking as a result of rising interest rates will increase the confidence of investors, mainly from abroad, to place funds in the domestic money market, which will have an impact on increasing the accumulation of national foreign exchange reserves. This research supports the results of research researched by (Niaz Murshed Chowdhury et al., 2014; Sonia & Setiawina, 2016) which also explains the results regarding the positive effect of the money supply on foreign exchange reserves. Furthermore, this research also explains the positive influence of international trade, which in this research is proxy into the export variable on the performance of foreign exchange reserves. Export transactions as a component in the international trade sector have an influence on foreign exchange reserves through recording in the country of payment. Thus, increasing international trade performance through exports will also increase the accumulation of foreign exchange reserves, which supports the results of previous research by (Dananjaya et al., 2019; Manto, 2022) which explains the increase in foreign exchange reserves triggered by increased international trade through exports.

Maintaining the performance of foreign exchange reserves is an important priority in implementing macroeconomic policies through external sector stability. In its application, the external sector is an important key in maintaining the internal stability of the domestic economy, especially for countries that implement an open economic system. The exchange rate is an indicator in the external sector that contributes to maintaining monetary stability and is used as a reference for economic actors in international transactions, both through trade and direct investment. Domestic economic stability will be achieved if the condition of the domestic currency exchange rate is also maintained, where when the accumulation of national foreign exchange reserves increases, the performance of the domestic currency exchange rate will be maintained. This condition is proven by the results of research conducted by (Yusuf

& Ichsan, 2019) and (Yuliyanti, 2014) which explains the positive effect of increasing the accumulation of foreign exchange reserves on maintaining exchange rate stability.

The foreign exchange reserve variable as an important control indicator for the balance of the external sector is also a reference indicator for rating agencies in ranking a country's economy (Silaban, 2022). The stable growth rate of foreign exchange reserves is a reference for the success of monetary policy implemented by the government. This will increase foreign credibility and trust in domestic economic conditions. This has implications for increasing demand for goods and services in connection with increasing people's income and purchasing power. An increase in demand will have an effect on increasing investment. Business actors will increase investment, both capital-intensive and physical, to increase production capacity. The increase in productivity carried out by the company is accompanied by an increase in the competitiveness of the company's products. Increasing production capacity carried out on a wide scale will give rise to efficiency which will affect the prices of goods and services. Specialization carried out through professional mechanisms will encourage product diversification which affects the quality of goods and services. So it can be concluded that the two things above will ultimately encourage the emergence of local product competitiveness.

This becomes an urgency in itself when correlated with the conditions of economic development in developing countries. Some of the countries that are the main focus of this research, namely Indonesia, Malaysia, Thailand, Singapore, the Philippines and South Korea are included in the category of developing countries and have currencies that are classified as vulnerable. Various impulses originating from external sources can trigger the emergence of economic risks related to external liquidity. This is becoming an increasingly important discussion regarding tips for each country to maintain economic strength amidst the uncertainty of the global situation which tends to increase. Economic stability in countries that adhere to an open economy tends to fluctuate in line with changes in conditions both in terms of economics, security and global politics. The influence of turbulent global conditions on countries with open economies requires the existence of programs specifically designed to anticipate shocks that have the risk of lowering expectations of economic performance.

The role of policy makers is very necessary through various programs aimed at maintaining the power of foreign exchange reserves by maximizing the role and influence of economic cooperation and organizations. Economic cooperation and organizations both bilaterally and globally are considered as efforts that can provide mutual benefits and be effective for each country(Avivi & Siagian, 2020). In terms of trade, the competent authorities are expected to be able to maintain and increase the achievement of net exports. This can be done with several policies such as incentives to increase import substitution industrialization (ISI) (Nurpatria et al., 2022). The development of import substitution industries will have a positive influence not only in maintaining net export growth, but also production and processing efficiency in raw materials which are widely available in developing countries.

From the monetary side, the role of monetary authority is very necessary to maintain the stability of foreign exchange reserves. monetary policy makers is expected to be disciplined in maintaining the accumulated money supply with several policies related to the community's economic activities (Mukhlis, 2011). The existence of a common currency diversification policy in bilateral and regional trade transactions is expected to be an important key in improving monetary liquidity conditions.

5. CONCLUSION

Discussions regarding the trade and financial sectors have continued to become increasingly important in recent times, where this has become the main topic of discussion in this research in discussing and analyzing relationship patterns and their influence on external liquidity conditions in Asian countries which continue to show progressive economic strengthening. In this research, the combination of international trade and finance, each of which is proxied into exports and money supply, is proven to be successful in providing a positive effect in increasing the performance of foreign exchange reserves as external liquidity.

Macroeconomic performance is greatly influenced by the effects of the external sector, especially for countries that implement open economic policies. This clearly makes it important to maintain a balance of external liquidity in creating a potential and strong level of macroeconomic performance in the face of global turbulent pressures. Apart from that, the existence of this research is also an important reflection for countries in setting policy priorities in strengthening the external sector, this is considering the economic experience of many countries in Asia which struggled with economic revival after being shaken by the 1998 Asian financial crisis. Therefore, strengthening economic resilience through external liquidity stabilization must be an important program for every government by maximizing the role of international cooperation to improve net export performance. Apart from that, bilateral cooperation in the use of local currency for trade transactions is also needed to maintain the stability of the money supply.

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Cite this Article: Hanafi Arie Sunaryo, Siti Aisyah Tri Rahayu, Bhimo Rizky Samudro (2024). The Role of Relationship between Money Supply and Exports in the Context of Economic Development through Increasing the Resilience of Foreign Exchange Reserves: Evidence from Selected Asian Countries. International Journal of Current Science Research and Review, 7(5), 2951-2956