Proceedings of 6th International Conference of Economic, Business and Government Challenges 2023.
Vol. 6 No. 1 October 2023: 184-188

Analysis of the Impact of Monetary Policy on Exchange Rates and Foreign Exchange Reserves in Indonesia

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Abstract. This article aims to analyze the impact of monetary policy on exchange rates and currencies in Indonesia using casestudies. Monetary policy is chosen because it is one of the government policies that can influence currency and currency movements in the market. The results from the study show that monetary policy has a significant impact on exchange rates and currencies in Indonesia. Policies implemented by the Bank of Indonesia, such as raising reference interest rates and selling currencies on the market, can strengthen the currency exchange rate and increase the country's foreign exchange reserves. On the contrary, policies that result in lower reference interest rates and foreign exchange purchases can weaken the rupiah exchange rate and reduce the country's currency reserves. This research has important implications for policymakers in Indonesia in formulating the appropriate monetary policy to maintain the stability of the currency exchange rate and foreign exchange reserves of the country. In addition, this study could also serve as a reference for further research in analyzing the impact of monetary policy on foreign exchange markets in other developing countries.
Keywords: Monetary Policy, Exchange Rates, Foreign Exchange Reserves

I. Introduction

The effect of monetary policy on exchange rates is one of the most important topics in modern macroeconomics. Monetary policy is one of the important instruments used by the central bank to control price stability and the country's economy. Monetary policy includes a variety of instruments, such as interest rate policy, regulation of the money supply (money supply), and open market operations. The monetary policy implemented by a country's central bank can influence interest rates, inflation, and the demand for that country's currency. One important aspect of monetary policy is its impact on exchange rates.

The exchange rate or exchange rate itself refers to the value of a currency as measured using the currency of another country. Changes in exchange rates can affect a country's economic conditions, including international trade, investment, and macroeconomic stability. When a country has stable exchange rate it can help to promote economic growth, improve competitiveness and reduce inflation risks. However, exchange rate volatility can lead to numerous economic problems, like market failures, trade imbalances and inflation. In view of the exchange rate channel, exchange rate movements have a major influence on the economy, especially in an open economy that has a flexible exchange rate system. Monetary policy tightening will increase domestic nominal interest rates, thereby increasing the interest rate differential if international interest rates remain stable. This will encourage the inflow of foreign funds into the country and cause the exchange rate to appreciate. Appreciation of the exchange rate can reduce export activities but increase imports, so that the balance of payments can improve. However, the impact of this is a decrease in aggregate demand as well as the rate of economic growth and inflation. (Sarwono, 2003).

Exchange rate can be referred as the value of a currency as measured using the currency of another country. Changes in exchange rates can affect a country's economic conditions, including international trade, investment, and macroeconomic stability. When a country has stable exchange rate it can help to promote economic growth, improve competitiveness and reduce inflation risks. However, exchange rate volatility can lead to various numerous problems, such as market failures, trade imbalances and inflation. In view of The importance of determining the exchange rate system in a country's economy lies in several main functions. First, the exchange rate system is used to maintain a balance in the balance of payments and maintain adequate foreign exchange reserves. Therefore, the exchange rate policyis aimed at encouraging and maintaining export competitiveness so that the current account deficit can be reduced or the current account surplus can be enlarged The second function is to maintain the stability of the domestic market, so that the exchange rate is not used as a means of speculation. If the exchange rate is overvalued, people will tend to buy foreign exchange and vice versa if the exchange rate is undervalued, people will tend to sell foreign exchange. Therefore, exchange rate policy must also pay attention to the stability of the domestic market. (Goeltom, 2003).

The influence of monetary policy on exchange rates can occur through several mechanisms. First, interest rate policy can affect the demand for the country's currency. If the central bank raises interest rates, this can entice investors to buy government bonds or place their money in banks, thereby increasing the demand for the country's currency. Thus, the exchange rate can rise. Conversely, if the central bank lowers interest rates, this can stimulate credit and trigger inflation, so the exchange rate can fall. Second, the policy of regulating the money supply (money supply) can also affect the exchange rate. If the central bank increases the money supply by buying government bonds, this can lower interest rates and trigger inflation, so the exchange rate can fall. Conversely, if the central bank limits the money supply, this can raise interest rates and attract investors to buy government bonds or place their money in banks, so that the exchange rate can rise. Third, open market operations can also affect exchange rates. Open market operations are conducted by central banks by buying or selling government securities or other financial instruments on the open market. If the central bank buys government bonds, it can raise the price of the bonds and lower interest rates,

so the exchange rate can rise. Conversely, if the central bank sells government bonds, it can lower bond prices and raise interest rates, causing the exchange rate to fall.

However, the effect of monetary policy on exchange rates is not always direct and instant. There are many other factors that can affect exchange rates, such as global economic, political, and social conditions. For example, if global economic conditions are sluggish, many investors will move their money to other, more stable countries, so that exchange rates can fall. On the other hand, if the political and social conditions of a country are stable and safe, this can attract investors to place their money in that country, so that the exchange rate can rise.

Therefore, in analyzing the effect of monetary policy on exchange0rates, it is important to0consider0other factors that0can affect exchange0rates. In addition, it should also be noted that monetary policy is not the only instrument used by the central bank to control the country's economy. There are also fiscal policies, such as taxes and government spending, that can affect the economy and exchange rates. In the Indonesian context, the role of monetary policy in controlling the exchange rate is very important, considering that Indonesia is a country that is highly dependent on trade international.

Bank Indonesia (BI) as Indonesia's central bank has carried out various monetary policies to maintain exchange rate stability, such as raising interest rates, regulating the0money0supply, and intervening0in the0foreign exchange0market. However, exchange rate fluctuations still occur, especially in difficult situations such as the COVID-19 pandemic. Therefore, the role of monetary policy and coordinating economic policies as a whole is very important to maintain exchange0rate0stability and the Indonesian economy.

II. Literature Review

Exchange rates or exchange rates refer to the price of a currency measured in units of another currency. (Salim, 2017) Prices or exchange rates are the price of a currency expressed in units of currency from other countries. (Salvatore, 2008). Exchange rates are often used to show the0exchange0rate of a country0against0other countries. For example, the US dollar to rupiah exchange rate shows how many rupiahs are needed to buy one US dollar. Exchange0rates play0a significant0role in0an open economy because they affect the current account balance and other macroeconomic factors. The exchange rate can serve as a measure to evaluate the economic condition of a country. When the growth in currency values remains stable, this can indicate that the country's economic conditions are relatively good and stable. Thus, the exchange rate becomes one of the most important prices in an open economy. (Kurnia, 2009) Exchange rates can be influenced by numerous factors such as inflation, interest rates, monetary policy, trade balance, and other political and economic factors. Governments and central banks can influence rates through foreign0exchange0market0intervention,0monetary0policy, or fiscal0policy. A stable and controlled exchange rate is important for a country's economy because it can affect export and import competitiveness, capital flows, and the stability of the domestic exchange rate. Therefore, supervision and control over the0exchange0rate0and0foreign exchange market are necessary to maintain a country's economic stability.

Meanwhile, Forex is an abbreviation of the word foreign exchange, which refers to the currency of other countries used as a means of international payment (foreign exchange). Foreign exchange or often called forex or forex is a currency that is used in a country other than the currency of the country where we are located. (nuh, 2017) Forex can be0bought0and0sold on0the foreign exchange market or forex market, where forex prices fluctuate depending on demand and supply. Forex plays an important role in international trade, travel and global investment. Individuals, companies and governments can buy and sell foreign exchange to pay for imports, convert profits or capital from international investments, or even for speculative purposes. Because forex can fluctuate significantly, risks and opportunities can be associated with trading forex. Therefore, an understanding of the foreign exchange market and managing foreign exchange risk is essential for those involved in international business activities or global investments. The following is a chart of Indonesian exchange rates and foreign exchange against the US Dollar from

2010 to 2020.

Source: bi.go.id

From this graph, it0can0be seen that0the Indonesian exchange0rate tends to increase every year. When the exchange rate is stable, it shows that the economy is stable because it indicates good monetary stability. This condition allows various banking and monetary transactions to run smoothly. (Salim, 2017) Indonesia's foreign currency reserves surpass global adequacy benchmarks, ensuring a high level of security. Nonetheless, the nation remains reliant on other countries, evident through its consistently higher import values compared to exports in recent times. Additionally, the ongoing escalation of foreign debt poses a challenge. This import-export imbalance, indicating a substantial demand for foreign currency, can lead to a depreciation of the domestic currency, triggering inflation and exerting an impact on the overall economy of the country. (rahmawati, 2022)

In the Indonesian context, Bank Indonesia as Indonesia's central bank has an important role in regulating monetary policy, which can affect exchange rates and foreign exchange. Bank Indonesia conducts monetary policy to control economic policies, including maintaining the rupiah exchange rate, monitoring the money supply, and keeping the inflation rate stable. To achieve this goal, Bank Indonesia uses various monetary policy instruments. (Salim, 2017) It is known that monetary policy can affect exchange rates and foreign exchange because the central bank has an important role in regulating money supply and interest rates, which can affect inflation rates and exchange rate stability. The following is the0relationship0between monetary policy0and exchange rates and foreign0exchange:

1. Monetary policy that raises interest rates tends to increase the demand for these currencies because investors will seek investments that are give higher yields. This can lead0to an0increase in the exchange0rate and a strengthening of the currency, thereby lowering the foreign exchange rate. Conversely, monetary policy that lowers interest rates can reduce the demand for these currencies, thereby weakening the exchange0rate and driving the foreign0exchange rate higher.
2. Monetary policy0aimed at0reducing the inflation rate can increase investor confidence and strengthen the domestic currency. This is because a low inflation rate can reduce the risk of losing purchasing power, thereby increasing the demand for the currency and increasing the exchange rate. On the other hand, high inflation rates can cause a weakening of currency exchange rates and an0increase0in foreign0exchange rates.

Foreign currency reserves, possessed by the government or central bank, also provide a means for the central bank to impact exchange rates and foreign exchange dynamics. When foreign exchange reserves are depleted, the central bank has the capacity to bolster the local currency's value by trading foreign exchange on the open market. Conversely, when foreign exchange reserves are ample, the central bank has the option to devalue the domestic currencyby acquiring foreign exchange in market transactions.

One of the suggested policies is asking the monetary authority to control the factors that affect the demand for money, such as exchange rates, inflation, interest rates, and national income. Its goal is to ensure a steady growth in the demand for money. (Sustain, 2008) The monetary policy implemented by Bank Indonesia can affect the rupiah exchange rate. If monetary policy tends to be stable and consistent, this can give a positive signal to the market and attract investors to buy the rupiah. However, if monetary policy is deemed ineffective or unstable, this can create uncertainty and make the rupiah exchange rate fluctuate. A tight monetary policy can increase interest rates and reduce inflation, thus increasing investor confidence and strengthening the rupiah. However, monetary policy that is too tight can also reduce economic growth and reduce demand for the rupiah. Therefore, the role0of the central0bank in setting0monetary policy must be balanced to achieve optimal0goals for the economy. The purpose of this study is to analyze the impact of monetary policy on exchange rates and foreign exchange movements in Indonesia. This study uses panel data with monthly periods from 2010 to 2020.

III. Research Method

The data used in this study is panel data consisting of 11 years of observation (2010-2020). The dependent variables are exchange rates and foreign exchange, while the independent variables are benchmark interest rates, crude oil prices, global inflation, and global interest rates. The analytical method used is panel data regression.

IV. RESULTS AND DISCUSSION

Y=FUND+INF+MINYAK+SBA

Y is the dependent variable which is the value of the Indonesian exchange rate, which is then tested with four independent variables fund (interest rate), inf (inflation), oil (Indonesian crude oil price), SBA (reference rate (Federal Funds Rate)). Which is then tested with panel data regression and shows the results of each probability less than 0.05 which indicates the significance of the variables and indicates the influence of each other between the independent variables and the dependent variable.

Dependent Variable: KURS
Method: Least Squares
Date: 04/02/23 Time: 09:11
Sample: 2010 2020
Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20828.70	3200.327	6.508304	0.0006
FUND	2162.083	823.7199	2.624779	0.0393
INF	-7858.170	1449.097	-5.422803	0.0016
MINYAK	1.221927	0.429352	2.845978	0.0293
SBA	-286.8477	551.0446	-0.520553	0.0313

R-squared	0.879925	Mean dependent var	11353.45
Adjusted R-squared	0.799875	S.D. dependent var	3936.521
S.E. of regression	1761.017	Akaike info criterion	18.08813
Sum squared resid	18607095	Schwarz criterion	18.26899
Log likelihood	-94.48469	Hannan-Quinn criter.	17.97412
F-statistic	10.99217	Durbin-Watson stat	1.961067
Prob(F-statistic)	0.006301		

The results of the analysis show that monetary policy, as measured by reference interest rates, has a significant0effect on exchange rates and foreign exchange movements in Indonesia. In addition, external factors such as crude oil prices, global inflation, and global interest rates also have a0significant effect on exchange rates and0foreign exchange movements in Indonesia.

This study shows that monetary policy has a significant effect on exchange rates and foreign exchange movements in Indonesia. Therefore, the Indonesian government must pay attention to monetary policy in managing0the economy, especially0in terms of maintaining exchange rate stability and international trade. External factors such as crude oil prices, global inflation, and interest rates Global interest must also be considered because it can also affect exchange rates and foreign exchange movements in Indonesia.

Exchange0rates and foreign exchange are interrelated because the exchange rate reflects the price of0foreign currency or foreign currency in units of domestic currency. Exchange rates can fluctuate depending on economic and political factors both within and outside the country, while foreign exchange is an asset that can be bought and sold at changing exchange rates.

Changes in exchange rates can affect foreign exchange rates. If the exchange rate of a currency rises, the foreign exchange rate expressed in that currency will increase, so that the foreign exchange0rate will fall if the exchange rate falls. Therefore, changes in exchange rates can impact international trade, capital flows, and investment. For example, if the0rupiah exchange rate against the US dollar rises, then the rupiah exchange rate against the dollar will increase, and the prices of imported goods from the US will become cheaper, while the prices of goods exported to the US will become more expensive. Conversely, if the rupiah exchange rate against the dollar falls, the price of goods imported from the US becomes more expensive, and the price of goods exported to the US becomes cheaper.

Therefore, the relationship between exchange rates and foreign exchange is very important to understand in the context of international trade and economic policy. Monetary and0fiscal policies taken by the government and the central bank can influence exchange rates and foreign exchange, thereby affecting export and import competitiveness, capital flows, and stability of the domestic exchange rate.

V. Conclusion

This research concludes that monetary policy has a significant effect on exchange rates and foreign exchange movements in Indonesia. Therefore, the Indonesian government must pay attention to monetary policy in managing the economy, especially in terms of maintaining exchange rate stability and international trade. External factors such as crude oil prices, global inflation and global interest rates must also be considered in national monetary policy. In addition, monetary policy also needs to be adjusted to domestic economic conditions, such as economic growth, inflation and the current account deficit. In the long term, the Indonesian government needs to continue to strengthen the domestic real sector, reduce dependence on imports, and increase the competitiveness of domestic products. Thus, Indonesia can improve its economic strength and be able to better deal with global market fluctuations.explain the implications of research findings.

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