E-ISSN. XXXX-XXXX
P-ISSN. XXXX-XXXX
Vol. 1, No. 1 (2024), July - December

MONEY SUPPLY AND MACROECONOMIC FACTORS THAT INFLUENCED BEFORE COVID 2019

Musaiyadi[1], Ahmad Sauqi[2], Angga Ade Permana[3]

[1,2,3] Department of Finance and Banking, Institut Teknologi dan Sains Mandala, Indonesia

Article History:
Submited: 21-10-2024
Revised: 02-11-2024
Accepted: 08-11-2024
Published: 05-12-2024

*Correspondence Author
Name: Musaiyadi
E-mail: musaiyadi@itsm.ac.id

Abstract

This study is intended to determine what macroeconomic variables or factors affect the money supply (JUB) in Indonesia. By using secondary data for 1999 – 2019 collected from BPS and BI – using the OLS regression method on the partial adjustment model – the results obtained are: (1) interest rates and inflation both have a statistically significant negative effect on JUB in Indonesia, (2) the exchange rate, foreign exchange reserves, government spending and GDP do not affect the JUB in Indonesia. From the results of the study, it appears that the Indonesian government is more dominant in using monetary policy instruments than fiscal policy in managing the money supply in Indonesia. JUB in Indonesia.

Keywords: Total Money Supply (JUB) in Indonesia, Macroeconomiic, Monetary Policy Instruments

Introduction

Economic stabilization policy can be pursued through monetary policy by analyzing the demand for money. The money demand analysis measures the economic quantities needed to guide a government policy in the monetary sector so as to create stable conditions in the macroeconomy which in turn have an impact on real economic growth. Given the importance of money demand analysis, there is a lot of literature that discusses both theoretical and empirical aspects of money demand in each country, both developed and developing countries. Economists in each country conduct very intense studies to maintain short-term and long-term economic stability through monetary policy.

Research on the demand for money is mostly done in Indonesia. Setiadi 2013 conducted research on the factors that influence the demand for money in 1999: Q1 – 2010: Q4. The results of his research found that inflation and GDP in the short and long term have a positive and significant effect on the demand for money, while interest rates in the long term have a negative and significant relationship with the demand for money. Another study was conducted by Damayanti 2018 with the title "Analysis of the Effect of Rupiah Exchange Rates, Interest Rates, Inflation and Foreign Exchange Reserves on JUB in Indonesia". The results of this study indicate that the rupiah exchange rate and foreign exchange reserves have a positive effect on JUB in Indonesia. Meanwhile, inflation and interest rates have no effect on JUB in Indonesia.

A similar study was also conducted by Halia P Aini 2016. This study aims to determine how big the relationship between the variables of GDP, inflation rate, interest rates and exchange rates to real money demand in Indonesia. The data used are time series on monthly data from 2011.01 to 2015. 12. By using Vector Error Correction Model (VECM) analysis, the results are obtained: there is a unidirectional relationship between real money demand and interest rates, between GDP and exchange rates and interest rates, between inflation and the exchange rate. Finally, there is a two-way relationship between GDP and real money demand, a two-way relationship between inflation and real money demand, a two-way relationship between GDP

and inflation, a two-way relationship between interest rates and inflation and a two-way relationship between interest rates and the exchange rate. . The results of this study also show that GDP does not significantly affect the demand for money. The exchange rate variable has a positive and significant effect on the demand for real money in the short term. While the interest rate has a negative and significant effect on the demand for real money. Real money demand in Indonesia in the long term is positively and significantly influenced by the GDP variable. While the exchange rate and interest rate variables have a negative effect. Real money demand in Indonesia in the long term is positively and significantly influenced by the GDP variable. While the exchange rate and interest rate variables have a negative effect. Real money demand in Indonesia in the long term is positively and significantly influenced by the GDP variable. While the exchange rate and interest rate variables have a negative effect.

The monetary phenomenon of the demand for money is interesting and its development is always being investigated. The identification of economic quantities that affect the demand for money is always studied in theory, and proven by the results of empirical studies. Thus, the development of these studies is expected to create a conducive and progressive economic situation in Indonesia. Based on the background described above, this study was conducted to find out what variables affect JUB in Indonesia. The title of this research can be written: "TOTAL MONEY SUPPLY (JUB) AND AFFECTING MACRO ECONOMIC FACTORS (STUDY OF MONEY SUPPLY YEAR 1999 - 2019)".

Formulation of the problem

Based on the above background, the formulation of the problem in this study can be written: what macroeconomic factors affect the money supply (JUB) in Indonesia during the period 1999 to 2019?

Scope of problem

1. This research is about the money supply (JUB) in Indonesia from 1999 to 2019.
2. This study uses independent variables consisting of exchange rates, interest rates, inflation, foreign exchange reserves, gross domestic product/GDP, government spending and the money supply.
3. The data to be analyzed in this study uses regression analysis (regression analysis) dynamic model.

Research purposes

The purpose of this study is to determine what macroeconomic factors (including: exchange rates, interest rates, inflation, foreign exchange reserves, gross domestic product and government spending) that affect the money supply (JUB) in Indonesia over a period of nineteen years.

Benefits of research

1. Can compare the theory and empirical studies conducted by previous researchers related to the factors that affect the money supply in Indonesia.
2. As input and information for further research related to the factors that affect the money supply in Indonesia.
3. As input or consideration for decision making for the government in determining policies to control the amount of money circulating in Indonesia.

LITERATURE REVIEW

a. Total Money Supply (JUB)

According to Rahardja (2004), what is meant by the money supply is the total value of money in the hands of the public. The money supply in a narrow sense (narrow money) is the money supply consisting of currency and demand deposits. Technically, what counts as the money supply is money that is actually in the hands of the public. Money that is in the hands of

banks (commercial banks and central banks), as well as banknotes and coins (currency) owned by the government are not counted as money supply.

Nopirin (2009) explains that the development of the money supply reflects or is in line with economic development. Usually when the economy grows and develops, the money supply also increases, while its composition changes. When the economy is more advanced, the portion of the use of currency (paper and metal) decreases, replaced by demand deposits or near money. Usually also when the economy increases, the composition of M1 in the money circulation decreases, because the portion of quasi money is getting bigger. The above phenomenon also occurs in Indonesia, seen from the increase in the money supply and changes in its composition.

b. Relationship between Exchange Rate, Interest Rate, Inflation, Foreign Exchange Reserves, GDP and Government Expenditure on the Money Supply

According to Nopirin (2009) the factor that affects the money supply is inflation. The money supply is largely determined by the level of output. He then developed an equation which was written as follows: MxV = PxY. Where M is the money supply, V is the velocity of money circulation, P is the price level, and Y is real GDP. If nominal GDP (P x Y) is 5 trillion a year, the velocity of money is 5, then the money supply is 1 trillion rupiah. These findings were then further developed and analyzed by classical economists who later gave rise to a theory called the quantity theory of money. When explaining the relationship between the money supply and inflation, this theory states that price movements (inflation) are only caused by changes in the money supply. Assuming that the velocity of money supply is (M) and real GDP (Y) is constant, then the growth in the money supply (M) will directly affect the increase in prices/inflation (P). So, according to this theory, if the money supply increases by 5 percent, there will be an increase in prices (inflation) by 5 percent as well (Nopirin, 2009, p. 98).

Sunariyah (2006) suggests that if the interest rate increases, the amount of savings will also increase. Because the interest rate is expressed as a percentage of principal per unit of time. This is very logical because interest is an attraction so that people with excess funds will save and a measure of the resources used by debtors that are paid to creditors. The government can use interest rates to control the money supply. That is, the government can regulate the circulation of money in an economy. Interest rates can be used as a monetary tool in order to control supply.

Meanwhile, according to Sukirno (2009) states that in people's lives, the amount of money in circulation is determined by the policy of the central bank to increase or decrease the amount of money through monetary policy. Economic growth requires the growth of money or sufficient liquidity. However, the pace of money growth that is too fast can have an unfavorable impact on the economy. Changes in the money supply can affect price stability. Growth in the money supply that is too fast without being matched by an increase in production can cause inflation. The abundance of the circulating amount that exceeds the need for transactions will encourage the public to speculate on foreign exchange which will lead to the weakening of the rupiah. But on the contrary, If the increase in production is faster than the growth in the money supply, it will result in deflation. This will result in a decrease in business income and will have a negative impact on Arif Widodo's economic growth (2015).

Foreign exchange reserves are another variable that affects the money supply. Foreign exchange reserves are a benchmark for assessing the credibility of the government in managing the country. If the foreign exchange reserves are depleted, it is feared that in the short term it will reduce the government's ability to pay off its foreign debt obligations, furthermore the political impact will cause public distrust and economic/business players because it will create uncertainty in the value of the rupiah against hard currency and provoke unpopular policies. government, namely the devaluation policy of Imam Murtono Soenhaji, (2003).

Method

a. Data Description

1. Data Type

The data used in this study is secondary data for the time series from 1999 to the 2019 period. The reason for making 1999 the initial year of the study is because that year the government was carrying out a policy of recovering from the economic crisis that was triggered by the monetary crisis in 1998.

2. Data source

The data is taken from the publications of Bank Indonesia and the Central Statistics Agency (BPS) from various publications.

b. Analysis Instrument

1. Unit Roots Test

Prior to statistical testing, all data will be analyzed whether it is in a stationary condition or not. This test is important because it relates to the spurious regression problem that often occurs in time series analysis, so it often makes the regression analysis invalid. To find out whether the data is stationary or not, this study will use the stationarity test with the unit root test developed by Dickey and Fuller, namely the DF test (Dickey Fuller) and the ADF test (Augmented Dickey Fuller). The model used to estimate this existence is by estimating the autoregressive model of each variable to be observed using the OLS method as follows (Tien Setyawati, 1993).

k

DYt = a0 + a1 BYt + bj Bi DYt …… (1)

i=1

k

DYt = c0 + c1 T + c2 BYt + dj Bi DYt…… (2)

i=1

Where DYt = Yt – Yt –1, BYt = Yt – 1, T = time trend, Yt is the variable observed in period t, and K is the amount of lag time calculated by the formula K = N1/3, where N = number of samples . The next step is to compare the statistical DF and ADF values with the table DF and ADF, indicated by the ratio t to the BYt regression coefficient in equations (1) and (2).

2. Integration Degree Test

If the data observed in the unit roots test is not stationary, then the next step is to test the degree of integration. This test is conducted to determine the degree of integration of how much data will be observed in this study is stationary. To carry out the test, an autoregressive model was assessed using OLS as follows (Tien Setyawati, 1993):

k

D2Yt = b0 + b1 BDYt + fj Bi D2Yt …… (3)

i=1

k

D2Yt = d0 + d1 T + d2 BDYt + hj Bi D2Yt..... (4)

i=1

Where D2Yt = DYt – DYt –1, and BDYt = DYt – 1

After the calculated DF and ADF values are known – by looking at the statistical value of the BDYt regression coefficient in equations 3 and 4 – the next step is to compare them with the table DF and ADF values. If b1 and d2 are equal to one, then the variable Yt is said to be stationary at degree one or Yt – I (1). Otherwise, the Yt variable is not stationary at the first degree of integration. In this case, the integration degree test needs to be continued until at what degree of integration a stationary condition is obtained (Tien Setyawati, 1993).

3. PAM (partial adjustment model)

To answer the problem identification above, this research will use a partial adjustment model which can be said, as a dynamic model, is seen as a model that is quite successful in the analysis of the money supply. However, it must be admitted that this approach has also received a lot of criticism from economists in connection with the problem of interpreting the coefficient of the lag variable which statistically results in a fairly long adjustment. Furthermore, the basic model used follows the model developed by Arif Widodo 2015 as follows:

Mt =0 + 1Yt + 2INFt + 3KURSt + 4IRt

Note: Mt is the demand for money per year (billions of rupiah) in period t., Yt is the Gross Domestic Product per capita in period t, INFt is the inflation rate variable in period t., Kurst is the exchange rate of the rupiah against the US dollar for period t., IRt is the deposit interest rate in period t.,*01234*is the short-run coefficient.

From the above model, it is further modified by using a partial adjustment model as follows:

JUBt =0 + 1Kurs + 2SB + 3Inf + 4CD + 5PP + 6PDB

Note: JUBt is the money supply, exchange rate is the exchange rate of the Rupiah against the US Dollar, SB is the interest rate, Inf is inflation, CD is foreign exchange reserves, PP is government spending, GDP is gross domestic product.

Results and Discussion

Analysis Results

Based on the results of calculations using the help of the time series processor program, the results obtained in the form of OLS regression analysis equations using a partial adjustment model are as follows:

LJ = 2.0218 + 0.0239LK – 0.9216LI – 0.6638LINF + 0.1671LCD
(tstats) (0.460) (0.085) (-3.812) (-2.795) (0.954) + 0.0977LP + 0.0842LG + 0.5265LJ(-1) + e
(1.643) (1.2169) (3.812)

R2 = 0.9531 DW statistics = 2.0149 F-statistics =286
Where,

LJ	= Total Money Supply (JUB)
LK	=Exchange rate
LI	= Inflation
LCD	= Foreign Exchange Reserves
LP	= Government Expenditure
LG	= GDP
LJ(-1)	= JUB (-1)
L	= in the form*log*

From the equations obtained from the regression results above, the coefficient values can be interpreted completely as follows:

1. The constant value of the above equation is 2.0218, indicating the autonomous money supply, which is not influenced by the independent variables (Lk, LI, LCD, LP, LG).
2. Variable exchange rate of Rupiah against USS (LK) has a positive regression coefficient value of 0.0239 to the money supply. Which means that if there is a 1 percent exchange rate depreciation, the money supply will increase by 0.0239 percent. However, this coefficient is partially statistically insignificant with an alpha level of 5 percent. This means that the depreciation of the Rupiah against USD that occurred during the observation period (1999 to 2019) did not affect the money supply in Indonesia.
3. The interest rate variable has a negative regression coefficient of –0.9216 to the money supply. If the interest rate increases by 1 percent, the money supply will decrease by –0.9216 percent. The coefficient of the interest rate variable is partially statistically significant with an alpha level of less than 1 percent. In economic theory, it can be said that the level of interest rates that occurred during the observation period (1999 to 2019) greatly influenced the money supply in Indonesia. If the Indonesian government adopts a monetary policy in the form of a tight money policy by raising interest rates, the money supply will decrease. And vice versa, if the government takes an exspansive monetary policy, the money supply will increase.
4. The inflation variable has a negative regression coefficient of – 0.6638 to the money supply. If there is an increase in inflation of 1 percent, then the money supply will decrease by -0.6638 percent. The coefficient of this inflation variable is partially statistically significant with an alpha level of less than 5 percent. In economic theory, it can be said that the inflation rate that occurred during the observation period (1999 to 2019) greatly affected the money supply in Indonesia. The Indonesian government takes policies related to controlling inflation through the inflation targeting network in order to keep price stability under control.
5. The variable of foreign exchange reserves (LCD) has a positive regression coefficient of 0.1671 to the money supply. Which means that if there is an increase in foreign exchange reserves of 1 percent, the money supply will increase by 0.1671 percent. However, this coefficient is partially statistically insignificant with an alpha level of 5 percent. This means that the increase and decrease in foreign exchange reserves that occurred during the observation period (1999 to 2019) did not affect the money supply in Indonesia.
6. The government expenditure variable (LP) has a positive regression coefficient value of 0.0977 to the money supply. Which means that if there is a 1 percent increase in government spending, the money supply will increase by 0.0977 percent. However, this coefficient is partially statistically insignificant with an alpha level of 5 percent. This

means that government spending that occurred during the observation period (1999 to 2019) did not affect the money supply in Indonesia.

7. Real GDP (LG) variable has a positive regression coefficient value of 0.0842 to the money supply. Which means that if there is a 1 percent increase in real GDP, the money supply will increase by 0.0842 percent. However, this coefficient is partially statistically insignificant with an alpha level of 5 percent. This means that real GDP during the observation period (1999 to 2019) does not affect the money supply in Indonesia.
8. Last year's JUB variable (LJ (-1)) has a positive regression coefficient of 0.5265 to the money supply. This coefficient is partially statistically significant with an alpha level of 1 percent. This means that if there is an increase in JUB by 1 percent in the previous year, the money supply will increase in the following year by 0.5265 percent. In other words, it can be stated that the increase in the money supply (JUB) in Indonesia in a given year is influenced by the money supply in the previous year.
9. Simultaneous testing (simultaneous test) on the research - the money supply and the macroeconomic factors that influence it - can be seen in the F statistic of 286 with a prob (F-statistic) of less than one percent. Statistically, the figures in this F-stat mean that simultaneously all independent variables in the research model which include the Rupiah exchange rate against the USD, interest rates, inflation rates, foreign exchange reserves, government spending and Indonesia's Gross Domestic Product/Real GDP are simultaneously effect on the rise and fall of the money supply in Indonesia. The variation of all the independent variables affects the variation of the dependent variable by R-Squared (0.9531 or 95.31 percent). While the rest (1 – 0.9531 = 0.0469 or 4.

Conclusion

From the results of the regression analysis using OLS above, the conclusions of the study can be written as follows:

1. The variable exchange rate of the Rupiah against the United States Dollar partially did not have a statistically positive-significant effect on the money supply (JUB) in Indonesia during the observation period 1999 – 2019.
2. The interest rate variable partially has a statistically negative-significant effect on the money supply (JUB) in Indonesia during the 1999 – 2019 observation period.
3. The inflation rate variable partially has a statistically negative-significant effect on the money supply (JUB) in Indonesia during the 1999 – 2019 observation period.
4. The foreign exchange reserve variable partially has no statistically positive-significant effect on the money supply (JUB) in Indonesia during the 1999 – 2019 observation period.
5. The government expenditure variable against the United States Dollar partially does not have a statistically positive-significant effect on the money supply (JUB) in Indonesia during the observation period 1999 – 2019.
6. The GDP variable partially has no statistically positive-significant effect on the money supply (JUB) in Indonesia during the 1999 – 2019 observation period.

Suggestion

This study uses six independent variables to answer the dominant factors that affect the money supply in Indonesia. The result of the research shows that theoretically the interest rate (LI) and inflation rate (LI) have a negative effect on the money supply. The results of the study are in accordance with the existing theory, and also support the results of research conducted by previous researchers. For example, Sunariyah (1996) stated that pThe government can use interest rates to control the money supply. That is, the government can regulate the circulation of money in an economy. Interest rates can be used as a monetary tool in order to control supply.The government needs to take a policy of increasing interest rates to reduce the money supply so that it can have an impact on reducing the demand for money. And if there is an increase in inflation, the money supply will decrease by itself as a result of the tight money policy implemented by the government.

The results of the study also show that for the variables of foreign exchange reserves (LCD), government spending (LP), and real economic growth (GDP) partially have no effect on the money supply in Indonesia. This shows that the three variables are still very small in value, and have little impact on the money supply. In theory, the more money supply in a country reflects an increase in output and national spending. Thus, a country's economic performance will be of good value if: there is a large enough increase in foreign exchange reserves and export value as a marker of an increase in the productivity of the foreign sector, and there is a large enough increase in government spending to encourage aggregate consumption which in turn has an impact on an increase in real GDP. or economic growth.

References

A an Aditia Mulya Putra and I Nyoman Mahendra Yasa, (2016), The Effect of Inflation and Economic Growth on the US Dollar Exchange Rate and Indonesian Exports, Journal of Development Economics, Udayana University

Aliman, (2000), Applied Econometrics Module, PAU ECONOMIC STUDIES, Gadjah Mada University, Jogjakarta

Arif Widodo, (2015), Economic Factors Affecting Money Demand in Indonesia, Journal of Economics and Development Studies Volume 16, Number 1, April 2015, pp. 63-72, Institute of Public Policy and Economic Studies, Jogjakarta.

BPS, Economic Indicators, various publications

Damayanti Yulita Putri, (2018), Analysis of the Effect of Rupiah Exchange Rates, Inflation Interest Rates and Foreign Exchange Reserves on the Money Supply in Indonesia, Scientific Publications, UMS, Surakarta

Gujarati, Damodar (1995), Basic Econometrics, McGraw-Fill, Inc. USA

Halia Butra Aini, et al (2016), Analysis of Real Money Demand in Indonesia, Journal of Financing and Regional Development Perspectives Vol. 4 No. 1, July-September 2016, FEB, Jambi University.

Imam Murtono Soenhaji, (2003), Amount of Money Supply and Influencing Factors, Journal of Economics and Business, Gunadarma University, Jakarta

Insukindro, (1991), Sharp Linear Regression in Economic Analysis: A Review with One Case Study in Indonesia, JEBI, FE UGM, Jogjakarta

Insukindro, (1993), Selection of Empirical Economic Model with Error Correction Approach, JEBI, FE UGM, Jogjakarta

Insukindro, Aliman, (1999), Selection and Forms of Empirical Model Functions: Case Study of Real Currency Demand in Indonesia, JEBI, UGM, Jogjakarta