Analysis of Several Monetary Variables on Economic Growth and Its Implications on Fdi (Studies Analysis in Indonesia and Malaysia)

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ABSTRACT
This study analyzes the effect of the money supply, interest rate, inflation, public saving and exchange rate variables on economic growth and their implications for FDI, in Indonesia and Malaysia. The data used is secondary data during the period 1980-2019. This research uses multiple linear regression model of time series data. The results showed that the monetary variables together had a significant effect on economic growth and FDI in both countries. Variables that had a significant effect on Indonesia’s economic growth were interest, inflation and exchange rates. Meanwhile for FDI is the exchange rate. In Malaysia, which have a significant effect on economic growth are interest and inflation, on FDI are economic growth and inflation.

Keywords: monetary variables, Indonesia, Malaysia, time series, linear regression multiple.

I. INTRODUCTION
A. Background
The COVID-19 pandemic has devastated the economy of almost all countries. The economic growth of many countries in 2020 experienced contraction (negative economic growth) resulting in an economic recession. The most popular definition of an economic recession that is still used today is that of the US economist Julius Shiskin.

Shiskin in an article entitled “The Changing Business Cycle” published in the New York Times in 1974, said a recession is a decline in real gross national product (GNP) for two consecutive quarters. An economic recession can also occur when real economic growth for two or more quarters of a year is negative.

The economic growth of Indonesia and Malaysia in 2020 also experienced a contraction as shown in table 1.

<table>
<thead>
<tr>
<th>No</th>
<th>Country</th>
<th>Year 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Quarter 1</td>
</tr>
<tr>
<td>1</td>
<td>Indonesia</td>
<td>2.97%</td>
</tr>
<tr>
<td>2</td>
<td>Malaysia</td>
<td>- 0.7%</td>
</tr>
</tbody>
</table>

Source: www.cnbc accessed 5 February 2021

Indonesia has only experienced an economic recession starting in the 2nd quarter, while Malaysia has already experienced an economic recession in the 1st quarter of 2020. An economic recession if it occurs for a long time is called an economic depression. Depression is a drastic and sustainable economic downturn in the long term.

To overcome the economic recession so that it does not spread into an economic depression and all its impacts, the government carries out economic policies that are expected to be able to control and restore economic stability. The types of economic policies carried out by the government according to Mathias Aroef (2009) can be grouped into 3 groups, namely: fiscal policy, monetary policy and supply-side policy.

Fiscal policy is government policy by changing state revenues and state expenditures/expenditures with the aim of...
controlling the economy for the better. Examples of fiscal policies include increasing tax revenues and types of taxes, requiring the ownership of a TIN, saving state expenditures, making loans/debts by issuing state debt securities and foreign debt.

Monetary policy is the policy of the monetary authority or the Central Bank to control the demand for money in society to achieve certain goals, for example controlling inflation, maintaining the stability of the rupiah exchange rate, and increasing employment opportunities, determining interest rates and the money supply.

Supply-side policy is a government policy in the economic field to increase the efficiency of companies so that they can increase the supply of goods and services with lower prices and better quality.

Monetary policy variables include: money supply or money supply, interest, inflation, saving, exchange rate. The monetary policy variable is used to see the effect of the monetary policy variable on economic growth and its implications for foreign investment inflows (FDI).

The money supply or money supply has a major impact on the economy. The changes can affect economic growth. The quantity theory of money by Irving Fisher in his book “The Purchasing Power of Money Its Determination and Relation to Credit Interest and Crisis” states that the money supply multiplied by the velocity of circulation equals the price multiplied by the aggregate output. \( M \times V = P \times T \), where \( M \) = money supply, \( V \) = velocity of money supply which is constant in quantity, \( P \) = price and \( T \) = quantity of goods).

The money supply or the money supply has a positive effect on economic growth. The more the money supply increases, the more economic growth increases and vice versa.

Economic growth will affect investors to invest in a country. Positive economic growth will stimulate foreign investors to invest.

The theory of liquidity preference or Keynes's theory of interest rate determination in his book "The General Theory of Employment, Interest and Money" (1936, 2017 reprint edition) states that interest rates depend on the supply and demand for money in the money market. The interest rate determined by the bank has an influence on people's speculation to put their money in the bank.

According to Frederick Hayek, a low interest rate not only causes high investment, but also causes "malinvestment". Too much investment in long-term projects over short-term projects turns into failure. (www.Nobellaureates.com)

Low interest causes people to borrow money from banks. Some of the loans by the public are spent for consumption and some are used for business or business expansion so that economic growth increases.

High bank interest rates encourage people to prefer to save their money rather than use it for business or develop their business which causes the economy to become sluggish and economic growth to decline.

According to Barro (2017) Inflation is an increase in the prices of goods in general and continuously. Meanwhile, Brown (2006) said that inflation cannot be said if the increase in the price of goods is only one or two goods, except when the increase in prices results in an increase in the price of other goods.

Meanwhile, Case (2014) argues that inflation is related to market mechanisms caused by various factors, including: high public consumption, the ability to pay or purchasing power that is so large in the market that encourages consumption or even speculation, including due to congestion in the distribution of goods.

According to Keynes, people's savings are not influenced by interest, but are influenced by people's income. The greater the level of income, the greater the level of savings.

The value of the exchange rate fluctuates, one time the exchange rate goes up while another the exchange rate goes down. This can be explained in the theory of purchasing power parity (Purchasing Power Parity). Gustav Cassell's theory of purchasing power parity (1918) is based on the law of one price, where 1 unit of currency can buy the same amount of goods in all countries.

FDI in addition to having an impact on the economy of a country also has a negative impact on the economic development of the host country. The positive impacts of FDI as mentioned above are additional development funds, transfer of knowledge and technology, and job creation. While the negative impact of FDI is the hegemony of foreign countries against the host country, and environmental damage caused by excessive natural exploration.

B. Problem Identification
Based on the above background, the following problems can be identified:
1. How do the money supply, interest rates, inflation, public savings, and the exchange rate together affect economic growth?
2. How does the money supply affect economic growth?
3. How can interest rates affect economic growth?
4. How does inflation affect economic growth?
5. How can public saving/savings affect economic growth?
6. How does the exchange rate or currency exchange rate affect economic growth?
7. How economic growth can affect FDI

II. LITERATURE REVIEW
A. Monetary Policy
1. Definition of Monetary Policy

Monetary policy is the policy of the central bank in the context of economic stability. Stable economic indicators include high economic growth, stability in prices of goods and services, equitable development, balance of payments balance, job opportunities and others. Monetary policy is carried out by regulating the money supply, interest rates, inflation targeting, exchange rates and people's savings.

Natsir (2014) said that monetary policy is an attempt by the central bank to influence the development of monetary variables (money supply, exchange rates, and interest rates). Meanwhile, Perry Warjiyo (2016) said that monetary policy is the policy of the central bank in the form of monetary aggregates to achieve the development of economic activities carried out by taking into account the cycle of economic activity, the economic nature of a country and other fundamental economic factors.

2. Multiple Monetary Variables

Monetary variables are a small part of macroeconomic variables. In the economy, several macroeconomic variables that are often used to assess monetary policy are:

1. The money supply. The money supply is the total money supply in an economy, including currency, demand deposits, quasi money, bonds with maturities of less than 1 year. The money supply in the USA according to Anna J Schwartz (2021) consists of paper money, coins, issued by the Federal Reserve System and the US Treasury and various types of deposits held by the public in commercial banks and other depository institutions.
2. Interest rate. According to Pindyck (2005), the interest rate is the price paid by the borrower to the lender.
3. Inflation. Samuelson (2001) defines inflation as an increase in the prices of goods, services and factors of production.
4. Community savings. Community saving is part of income received by the community which has not been used for consumption icon or for future consumption. Community saving is the same as income reduced by community consumption. Savings only occurs if the income is greater than the consumption, which must be issued plus taxation which must be paid. The factors that determine community savings include, among others: community income, interest rates. The higher the level of trust the public has in bank
5. Exchange rate. The exchange rate is defined as the comparison of the value of one currency with another currency (Mishkin, 2008). Factors that affect this value are: imports, capital outflow factors, speculative activities, revenues and exports, capital flows in (capital inflows)

B. Economic Growth

Todaro (2020) explained that economic growth is a process of increasing production capacity in an economy over time and is unable to generate an increase in national income. Rapanna dkk (2017) mentions factors that influence economic growth, including: natural resources, human resources, investment, and technology. There are several theories of economic development in various economics literatures (Deliar Nov 2018, Jhingan 2014, Skousen 2016) or as it is written in the article “Corporate Finance Institute”, other:

1. Classical theory.
Developed since the 17th century, with its famous characters, namely, Adam Smith, David Ricardo and Thomas Robert Malthus.

a. Theory Adam Smith.

Adam Smith explained that there are two factors that influence economic growth, total output and population growth factors. The calculation of the total output using three variables, namely, natural resources, human resources, and modal resources. Population growth, is used to determine the area of the market and the rate of economic growth

b. The David Ricardo theory.

David Ricardo said that economic growth will only be achieved if the productivity of the workforce is supported by technological advances and a large amount of capital is accumulated.

c. Theory Thomas Robert Malthus

Malthus in his book “An Essay on the Principle of Population” published in 1798 said that the population growth rate is according to the geometrical series, while the growth rate of food is according to the arithmetic series. The growth in population is much greater than the growth in food, so there will be fish shortages.

2. Neoclassical Theory
There are three well-known figures in the theory of economic growth, namely Harrod-Domar, Joseph A. Schumpeter and Robert Solow.

a. Harrod-Domar theory of growth and economics. R.F. Harrod and Evsey Domar who introduced this theory. According to them, to achieve strong economic growth, it requires the formation of capital or investment.


c. Robert Solow's theory of economic growth. Economic growth according to Robert Solow is a series of activities that depend on four main factors, namely human, capital accumulation, modern technology and the result (output).

3 Historical Economic Growth Theory.
The economists who came up with this theory include:

The list categorizes 4 stages of economic growth, i.e. i) hunting and wandering stage (depending on nature), livestock raising and farming stage, farming and crafting stage, craft stage, industry and commerce

b. Theory of economic growth Werner Sombart.
Sombart said that there are three stages of economic growth, namely: the closed economic stage/age, the craft-and-growth stage/age, and the capitalist stage/age.

c. Walt Whitman Rostow's theory of economic growth.
W.W. Rostow in his book “The Stages of Economic, A Non Communist Manifesto” growth economic growth and development theory. Rostow said that the economic growth of the society took place through stages, namely: the traditional society or traditional isociey, the preconditions for leaving the ground or the icon consumption

d. Bruno Hildebrand's theory of economic growth. According to Bruno, the stages of economic growth are the period of exchange for goods (barter), the period of exchange for money, the period of exchange for credit.

e. Theory of economic growth Karl Bucher.
The stages of economic growth according to Karl Bucher are: the people are still subsistence, the barter economy (exchange of products), the international economy, the economy with trade that crosses the borders of a country

4. Keynes theory

John Maynard Keynes explained his economic theory in his book, his essay entitled “The General Theory of Employment, Interest and Money”. The Keynesian school of economics advocates something that is contrary to the theory of capitalism, namely the interference of the public sector in improving the economy. The theory of capitalism opposes the interference of the public sector and government in the economy. The capitalists believe that an uninterrupted market will achieve its own equilibrium. Keynes' theory criticizes government for increasing savings but not encouraging consumption. Keynes also supports controlled distribution of wealth when needed. Keynes' theory then concludes that for the distribution of wealth, the poorer people are given a certain amount of money, they will spend it rather than save it; which then drives economic growth.

5. Neokeynes theory.
In Neokeynes theory, the most important component is about investment capital, namely in the process of determining the success of economic growth

C. Foreign Direct Investment (FDI)

Krugman and Obstfeld (2009) defines FDI as the flow of fund enter (capital inflow) to one Country, is like foreign company which opens a branch of its company to another country, should do it specific ownership, specific location, internalization, having various kinds of alternatives to enter foreign markets.

III. DATA AND ECONOMETRIC MODELS

A. Population, Sample and Sampling
Population is the data of monetary variables of Indonesia and Malaysia, while the sample is part of the population, the idata of monetary variables of Indonesia and Malaysia during the period 40 of the last years 1980 to 2019. The sampling technique or sampling is non-probability sampling with quota sampling types.

B. Research operational variables
To facilitate the research, the research variables need to be defined both conceptually and operationally and given a measurement scale. The definitions of the variables in the research are as follows:
C. Data analysis technique
The data analysis techniques used in this research are as follows:
1. Quantitative Analysis
   The steps of the quantitative analysis carried out are:
   a. Data input. The multiple linear regression equation model is:
      \[ Y = \alpha + \beta_1X_1 + \beta_2X_2 + \cdots + \beta_nX_n \]
   b. Multicollinearity Test, to see whether there is a high correlation between the independent variables. The tool used is the VIF multicollinearity test. This test value is good if it is less than 10.
   c. Heteroscedasticity test to determine whether in the regression model there is an inequality of residual variance from one observation to another observation. A good regression model has no symptoms of heteroscedasticity, with a p-value > 0.05.
   d. Autocorrelation test to see whether there is a correlation between a period t and the previous period. Autocorrelation can be known by the Breusch-Godfrey Test. If the prob score > 0.05 then there is no autocorrelation

3. Feasibility Test Model Regression
   a. F-statistics test. The F-statistical test basically shows whether all independent variables in the model have an overall or joint effect on the independent variable (Kuncoro, 2012). This test was carried out with a confidence level of 15%. This test is carried out in two ways, namely:
      i. If the value of F statistic > 0.05, H₀ is accepted or H₁ is rejected. If the value of F-statistic < 0.05, H₀ is rejected or H₁ is accepted
      ii. If the value of F-statistic > Ftable, H₀ is rejected or H₁ is accepted. If the value of F statistic < Ftable, H₀ is accepted or H₁ is rejected
   b. Test t-statistics. This test was conducted to determine the effect of the independent variables on an individual basis on the dependent variable. To find out the significance of the effect, criterion is used: \( t \)-counts > \( t \)-table means has an effect
   c. Coefficient of Determination (R²). The coefficient of determination is to see how much the ability of the independent variable altogether gives an explanation of the iterative of the dependent variable. The value of R² ranges from 0 to 1 \((0 \leq R^2 \leq 1)\)

<table>
<thead>
<tr>
<th>No</th>
<th>Variable Name</th>
<th>Operational Definition</th>
<th>Measurement Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total money supply</td>
<td>Total money supply consists of currency, demand deposits, quasi-money, securities other than shares up to 1 year remaining</td>
<td>Nominal in USD</td>
</tr>
<tr>
<td>2</td>
<td>Interest Rate</td>
<td>Lending rate – Deposit rate</td>
<td>Ratio in % (Percent)</td>
</tr>
<tr>
<td>3</td>
<td>Inflation</td>
<td>Inflation proxied by GDP deflator</td>
<td>Ratio in percent (%)</td>
</tr>
<tr>
<td>4</td>
<td>Public savings</td>
<td>Total public savings in commercial banks</td>
<td>Nominal in USD</td>
</tr>
<tr>
<td>5</td>
<td>Exchange Rates</td>
<td>Comparative Exchange Rates 1 USD with IDR and RM currency</td>
<td>Nominal in IDR and RM currency units</td>
</tr>
<tr>
<td>6</td>
<td>Economic Growth</td>
<td>Economic growth is proxied by the GDP growth rate, with the formula:</td>
<td>Ratio in percent (%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GDPt = GDPt-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PE = -----------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GDPt-1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Foreign Direct</td>
<td>Net FDI is the capital inflow to a country – the outflow of funds from a country</td>
<td>Nominal in USD</td>
</tr>
<tr>
<td></td>
<td>Investment (FDI)</td>
<td></td>
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</table>

Table 2. Definition of Research Operational Variables
IV. RESULTS AND DISCUSSION

A. Indonesia
Based on the results of data processing with Eviews 10, obtained the following things:
1. Regression equation for economic growth:
   \[ Y = 26.82 + 0.98X1 - 0.24X2 - 0.19X3 - 0.20X4 - 3.47X5 \]
   \( (0.1986) (0.0000) (0.7259) (0.0015) \)
   The regression equation contains the meaning:
   a. If the money supply, interest rate, inflation, public saving and the exchange rate do not change at a certain point/condition or \( \delta = 0 \), then economic growth = 26.82 percent.
   b. The money supply has a positive relationship with economic growth. If the money supply increases/decreases by 1 unit, then economic growth increases/decreases by 0.24 units.
   c. Interest rates have a negative relationship with economic growth. If the interest rate increases/decreases by 1 unit, then economic growth decreases/increases by 0.98 units.
   d. Inflation has a negative relationship with economic growth. If inflation increases/decreases by 1 unit, then economic growth will decrease/increase by 0.19 units.
   e. Public saving has a negative relationship with economic growth. If public saving increases/decreases by 1 unit, then economic growth increases/decreases by 0.20 units.
   f. The exchange rate or the exchange rate of IDR to USD has a negative relationship with economic growth. If the exchange rate increases/decreases by 1 unit, then economic growth will decrease/increase by 3.47 units.
2. Regression equation for FDI
   \[ Z = 0.41 + 0.09Y \]
   \( (0.2515) \)
   This regression equation means that if economic growth is at a certain condition/point or \( \delta = 0 \), then FDI = 0.41 billion USD. Economic growth has a positive relationship with FDI. If economic growth increases/decreases by 1 unit, then FDI increases/decreases by 0.09 units.
3. Test requirements / Classical assumption test obtained values as follows:
   a. Normality test obtained Jarque-Bera value of 4.50. Value 4.50 > 0.05, then the data is normally distributed.
   b. Autocorrelation test with prob chi square value of 0.6799. The value is 0.6799 > 0.05, then the regression model has no autocorrelation symptoms.
   c. Heteroscedasticity test with a prob chi square value of 0.0628. Value 0.0628 > 0.05, then the regression model has no symptoms of heteroscedasticity.

2. Malaysia
Based on the results of data processing with Eviews 10, obtained the following things:
1. Regression equation for economic growth:
   \[ Y = 39.36 - 4.51X1 - 1.22X2 - 1.10X3 + 3.08X4 - 7.33X5 \]
   \( (0.1205) (0.0018) (0.0093) (0.3239) (0.1185) \)
   The regression equation contains the meaning:
   a. Economic growth with a prob value of 0.2514. Value 0.2514 > 0.05 which means economic growth has no effect on FDI. In line with Graham, multinational companies/countries engage in FDI because they seek consumers, seek knowledge and take advantage of the economic and political stability of the host country.
   b. The money supply has a negative relationship with economic growth. If the money supply increases/decreases by 1 unit, then economic growth decreases/increases by 4.50. Value 4.50 > 0.05, then the data is normally distributed.
   c. Interest rates have a negative relationship with economic growth. If the interest rate increases/decreases by 1 unit, then economic growth decreases/increases by 4.51 units.
   d. The money supply has a negative relationship with economic growth. If the interest rate increases/decreases by 1 unit, then economic growth decreases/increases by 4.51 units.
increase/decreases by 1 unit, then economic growth decreases/increases by 1.22 units.

d. Inflation has a negative relationship with economic growth. If inflation increases/decreases by 1 unit, then economic growth increases/decreases by 1.10 units.

e. Public saving has a positive relationship with economic growth. If public saving increases by 1 unit, then economic growth increases/decreases by 3.08 units.

f. The exchange rate or exchange rate has a negative relationship with economic growth. If the exchange rate increases/decreases by 1 unit, then economic growth decreases/increases by 7.33 units.

2. Regression equation for FDI: \( Z = 0.56 + 0.10Y \) (0.0511)

This regression equation means that if economic growth is at a certain condition/point or delta = 0, then FDI = 0.56 billion USD. Economic growth has a positive relationship with FDI. If economic growth increases/decreases by 1 unit, then FDI increases/decreases by 0.10 units.

3. Test requirements / Classical assumption test obtained values as follows:

a. Normality test obtained Jarque-Bera value of 4.45. The value of 4.45 > 0.05 indicates that the data is normally distributed.

b. Autocorrelation test with prob chi square value of 0.9424. The value 0.9424 > 0.05 indicates that there is no autocorrelation in the model.

c. Heteroscedasticity test with a prob chi square value of 0.0257, a value of 0.0257 < 0.05, this means that in the model there are symptoms of heteroscedasticity.

4. The model feasibility test consists of

The t-statistical test obtained the value of each independent variable:

Economic growth with a prob value of 0.0511. Value 0.0511 > 0.05 which means economic growth has an effect on FDI. Good economic growth will increase the entry of FDI into a country. Economic growth will lead to a healthy business climate.

c. Determination Test (R2) obtained an adjusted R-Square value of 0.409784. The contribution of the money supply, interest rate, inflation, public saving and the exchange rate to Malaysia's economic growth is 40.98%, the remaining 59.02% is influenced by other variables not included in the research model.

V. CONCLUSIONS AND SUGGESTIONS

A. Conclusion

1. Indonesia

a. The money supply, interest rate, inflation, public saving and the exchange rate together have a significant effect on economic growth.

b. The money supply has no effect on economic growth. The money supply is positively related to economic growth.

c. Interest rates have a significant effect on economic growth. The interest rate has a negative relationship with economic growth.

d. Inflation has a significant effect on economic growth. Inflation also has a negative relationship with economic growth.

e. Public saving has no effect on economic growth. Public saving also has a negative relationship with economic growth.

f. Exchange rate has a significant effect on economic growth. Exchange rate has a negative relationship with economic growth.

g. Economic growth has no effect on FDI. Economic growth is positively related to FDI.

2. Malaysia

a. The money supply, interest rate, inflation, public saving and the exchange rate together have a significant effect on economic growth.

b. The money supply has no effect on economic growth. Besides, the money supply is negatively related to economic growth.

c. Interest rates have a significant effect on economic growth. The interest rate also has a negative relationship with economic growth.

d. Inflation has a significant effect on economic growth. Inflation also has a negative relationship with economic growth.

e. Public saving has no effect on economic growth. Public saving has a positive relationship with economic growth.

f. Exchange rate has no effect on economic growth. Exchange rate has a negative relationship with economic growth.

g. Economic growth has no effect on FDI. Economic growth has a positive relationship with FDI.

B. Suggestion

a. The government, both the Central Bank and the Ministry of Finance, must coordinate to synergize financial policies related to the money supply, interest rates, inflation, public savings and exchange rates in order to increase economic growth.

b. The government must be able to determine the amount of money in circulation correctly. So that the growth rate of the money supply is not greater than the growth rate of the real output, so that there is no increase in the price of goods.
c. The trend of growth in interest rates in countries in the world is almost 2%. Therefore, the government must correctly determine the interest rate that is moderate, not too high and not too low.
d. The government must make inflation targeting adjusted to the determined interest rate.
e. The government must reactivate public saving activities. So that people do not use their income to buy imported goods, but rather use it as development funds.
f. The government must be able to control the exchange rate not to soar too high.
g. Because economic growth has no effect on FDI. So the government must be able to create a good business climate, which can attract countries or companies to make foreign direct investment.

DAFTAR PUSTAKA


